Dixon Quarry Group
Haerses Road Quarry, Maroota

Annual Review
2025 – 2026

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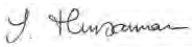
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Client: Dixon Sand (No.1) Pty Ltd

Prepared by: Project Environmental Services Pt Ltd

Project Environmental Services

Document Control

Name of Operation	Haerses Road Quarry, Maroota
Name of Operator	Dixon Sand (No. 1) Pty Ltd
Development Consent / Project Approval #	DA165-7-2005 (Modification 6) – Haerses Road Quarry
Annual Review Start Date	1 July 2025
Annual Review End Date	30 June 2026
Name of Authorised reporting officer	Hunsamon Churcher
Title of Authorised reporting officer	Environmental Advisor
Signature of Authorised reporting officer	
Date	28/09/2026

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Appendix C Groundwater and Surface Water Monitoring Data

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Appendix H Annual Biodiversity & Rehabilitation Management Report

Appendix I Section 94 Contribution

Appendix J CCC Meeting Minutes

Appendix K Complaints Register

Abbreviations

Annual Review	This document (also formerly known as 'Annual Environmental Management Report')
Biodiversity Stewardship Agreements	BSA
Biodiversity Conservation Trust	BCT
DA250-09-01	Development Consent DA250-09-01 for the Old Northern Road quarry
DA165-7-2005	Development Consent DA165-7-2005 for the Haerses Road quarry
DCCEEW - Water	Department of Climate Change, Energy, the Environment and Water – Water Division
Dixon Sand	Dixon Sand (No.1) Pty Ltd
DPE	Department of Planning and Environment (now Department of Planning, Housing and Infrastructure)
DPE (Resources Regulator)	Department of Primary Industries and Regional Development – Resources Regulator
DPE Water	Department of Planning, Industry and Environment – Water Division (now DCCEEW – Water)
DPHI	Department of Planning, Housing and Infrastructure
DPIRD	Department of Primary Industries and Regional Development
EIS	Environmental Impact Statement
EPA	NSW Environment Protection Authority
EP&A Act	NSW *Environment Planning and Assessment Act* 1979
EPL12513	Environment Protection Licence 12513 for the Haerses Road quarry
LALC	Local Aboriginal Land Council
MEG	Mining, Exploration and Geoscience, within the Department of Regional NSW (now NSW Resources, Department of Primary Industries and Regional Development)
MTSGS	Maroota Tertiary Sands Groundwater Source
NRAR	Department of Planning and Environment – Natural Resources Access Regular
PIRMP	Pollution Incident Response Management Plan
PM10	Particulate matter <10µm
SCBGS	Sydney Central Basin Groundwater Source
TEOM	Tapered Element Oscillating Microbalance
TSP	Total suspended particulates
WAL	Water Access License

Statement of Compliance

Table 1: Statement of Compliance

All Conditions of the relevant approval(s) were complied with?		
Haerses Road Quarry	DA165-7-2005	No
	EPL12513	No
	WAL 25941	Yes
	WAL 25956	Yes

Table 2: Non-Compliances

Relevant Approval	Condition #	Condition description (summary)	Compliance Status	Section addressed in Annual Review
DA 165-7-2005	Cond. 16(a) of Sch.3	Cessation of submission of quarry production data to DRG using the standard form as this is no longer a requirement for DRG. Production data continued to be reported in Annual Review. DPHI acknowledgement received	Non-compliant	Section 3.2
DA 164-7-2005	Cond. 12 of Sch.5	Submission of Annual Review later than end of March 2024. DPHI approved an alternative date.	Non-compliant	Sections 2.2 and 11.1

Compliance Status Key		
Risk Level	Colour code	Description
High	Non-compliant	Non-compliance with potential for significant environmental consequences, regardless of the likelihood of occurrence
Medium	Non-compliant	Non-compliance with: • Potential for serious environmental consequences, but is unlikely to occur, or • Potential for moderate environmental consequences, but is likely to occur
Low	Non-compliant	Non-compliance with: • Potential for moderate environmental consequences, but is unlikely to occur, or • Potential for low environmental consequences, but is likely to occur
Administrative non-compliances	Non-compliant	Only to be applied where the non-compliance does not result in any risk of environmental harm (e.g. submitting a report to government later than required under approval conditions)

Introduction

2.1 Project Background

Dixon Sand Pty Ltd (Dixon Sand) operates two sand quarries at Old Northern Road (Lots 29 and 196 DP 752025 and Lots 1 and 2 DP 547255) and at Haerses Road (Lot 170 DP 664766, Lot 170 DP 664767, Lots A and B DP 407341, Lots 176 and 177 DP 752039 and Lot 216 DP 752039) in Maroota, New South Wales. The quarries are located approximately 40 kilometres north of Parramatta. The locations of the quarries are shown in Figure 1.

Extraction commenced at Haerses Road quarry in 2006. Sand is being transferred to Old Northern Road Quarry for processing, blending and sales. Products are also permitted to be sold directly to the market from Haerses Road Quarry. Modification to the development approval under Section 75W of the *Environmental Planning and Assessment Act* 1979 was granted on 22 January 2018 which permits the expansion of the extraction areas. DA165-7-2005 Modification 4 permits a varied sequence of extraction and Modification 5 permits the relocation of the approved and to construct site facilities. Modification 6 permits the relocation of the site office and sandstone cutting shed.

Current extractions are occurring in Stage 1, Stage 2 and Cells 1A, 1B, 2A, 2B, 3A and 3B.

Environmental Monitoring locations for Haerses Road quarry are shown in Figure 2.

2.2 Scope of this document

The objective of this Annual Review is to report on the overall environmental performance and management of the operations and compliance of Haerses Road Quarry with the consent conditions issued by the Secretary of NSW Department of Planning, Housing and Infrastructure (DPHI). The reporting period is from 01 July 2025 to 30 June 2026, which is in line with the reporting period for Old Northern Road Quarry. Reporting for the rehabilitation assessment and ecological monitoring extends outside the specified period due to seasonal timing requirement for surveys.

The following consent conditions outline the requirement of the Annual Review.

Condition 12 of Schedule 5 of DA165-7-2005 (Modification 6) states:

By the end of March each year, or other timing as may be agreed by the Secretary, the Applicant must submit a review to the Department reviewing the environmental performance of the development to the satisfaction of the Secretary. This review must:

- *(a) describe the development (including any progressive rehabilitation) that was carried out in the previous calendar year, and the development that is proposed to be carried out over the current calendar year;*
- *(b) include a comprehensive review of the monitoring results and complaints records of the development over the previous calendar year, which includes a comparison of these results against the:*
    - *relevant statutory requirements, limits or performance measures/criteria;*
    - *requirements of any plan or program required under this consent;*
    - *monitoring results of previous years; and*
    - *relevant predictions in the documents listed in condition 2(a) of Schedule 2;*
- *(c) evaluate and report on:*

- *the effectiveness of the air quality and noise management systems; and*
- *compliance with the performance measures, criteria and operating conditions in this consent.*

(d) identify any non-compliance over the past calendar year, and describe what actions were (or are being) taken to ensure compliance;

(e) identify any trends in the monitoring data over the life of the development;

(f) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies;

(g) escribe what measures will be implemented over the current calendar year to improve the performance of the development.

The Applicant must ensure that copies of the Annual Review are submitted to Council and are available to the Community Consultative Committee (see condition 8 of Schedule 5) and any interested person upon request.

Dixon Sand requested approval from the DPHI for the submission deadline of the Annual Review to be adjusted to reflect the financial year reporting. Approval was granted by the DPHI on 9 February 2018 to submit the Annual Review by the end of September each year.

This Annual Review will report on the environmental performance in relation to the requirements of DA165-7-2005 (Modification 6), Environment Protection License (EPL) # 12513 (dated 10 June 2026) and Water Access Licenses (WALs) 25941 and 25956. The Annual Review has been prepared in accordance with *Post-approval requirements for State Significant mining developments – Annual Review Guideline* (DP&E, 2015).

2.3 Haerses Road Quarry Approvals

Development consent was granted by the Minister for Planning on 14 February 2006 (DA165-7-2005) for the extraction of sand from Dixon Sand's properties at Lot 170 DP 664767, Lots A and B DP 407341, and Lots 176 and 177 DP 752039 Haerses Road in Maroota. Haerses Road Quarry is approximately two kilometres south of the existing Old Northern Road Quarry. Sand extracted from the Haerses Road site has been trucked, processed and stockpiled at the existing processing plant on Lot 1 DP1288211 (formerly Lot 196 DP 752025 (Lot 196)) at Old Northern Road Quarry. The development involves the blending and processing of variable quality sands from the Haerses Road site at the plant on Lot 1 DP1288211 (formerly Lot 196), and uses the existing processing plant and ancillary facilities such as the workshop, weighbridge and office, as well as the existing haul roads via the intersection with Old Northern Road. Direct sale of sandstone products (sand and sandstone block products) to local and regional markets from Haerses Road site commenced in 2015.

Under the original DA165-7-2005 Haerses Road Quarry is permitted a maximum extraction quantity of 250,000 tonnes per annum, of which 190,000 tonnes may be transported to the Old Northern Road Quarry for processing per annum.

Dixon Sand lodged a modification application to modify DA165-7-2005 to expand the quarry extraction area, process products on site and to extend the life of the quarry (Modification 1). Approval for DA165-7-2005 Modification 1 was granted on 22 January 2018.

A modification under Section 4.55(1) of the *Environment Planning and Assessment Act* 1979 (EP&A Act) was subsequently lodged to correct an administrative error in Appendix 2 of the development consent. Approval for DA165-7-2005 Modification 2 was granted on 29 January 2019.

DA165-7-2005 Modification 3 was lodged to seek approval to increase:

- the extraction rate from 250,000 tpa to 495,000 tpa,
- overall truck movements from 56 movements to 180 movements per day,
- the disturbance footprint by 1 hectare in Stage 5 and accessing an additional 250,000 tonnes of resource,
- the maximum rate of VENM/ENM importation from 100,000 tpa to 250,000 tpa, for the purposes of site rehabilitation and reprocessing to produce blended products,
- altering some site plant and equipment, and
- increasing the number of full-time employees.

Modification 3 was approved on 23 July 2021.

DA165-7-2005 Modification 4 was lodged to seek approval to change the consented initial sequence of extraction to allow Dixon Sand to next access the more commercially viable sand in extraction Cell 1B instead of Cell 2A. Modification 4 was granted on 30 June 2021.

Modification 5 was lodged to seek approval to:

- relocate the approved site office, workshop and weighbridge to a new site infrastructure location within the Tertiary Sand Extraction Area Stage 2 south of the current approved location,
- construct additional buildings (first aid room, lunchroom, weighbridge office, sandstone cutting shed), associated hardstand areas and carpark within the new site infrastructure envelope,
- introduce a new extraction method within the Sandstone Extraction Areas A and B involving sandstone cutting using an excavator fitted with a hydraulic circular saw attachment (enclosed or hollow drum saw) to produce large blocks of sandstone to supplement the approved dozer ripping extraction method,
- carried out final cutting of the large blocks of extracted sandstone using additional stone cutting saws (wet cutting) within a new dedicated sandstone cutting shed,
- increase the footprint of the site infrastructure envelope to accommodate new buildings, and
- updating figures associated with Porters Road Biobank site and Conceptual Final Landform.

Modification 5 was approved on 29 June 2022.

DA 165-7-2005 Modification 6 was lodged under section 4.55(3) of the EP&A Act to seek approval to relocate the approved site building envelope on Lot 177 approximately 90 metres to the north within Lot 176. Modification 6 was approved on 7 September 2023.

A summary of the development consent and modifications is provided in Table 3.

For the purpose of the reporting period which falls within this Annual Review, Development consent DA165-07-2005 Modification 6 is applicable to the timeframe and is the consent used for the assessment of Dixon Sand’s environmental compliance and performance.

Table 3: Summary of Haerses Road Quarry Development Consents and Modifications

Development Consents	Status	Date of Determination	Comments
DA165-7-2005	Approved and superseded by Modification 1	14 February 2006	Approval for sand extraction, processing and rehabilitation for extraction stages 1 to 6 (inclusive)
DA165-7-2005 Modification 1	Approved and superseded by Modification 2	22 January 2018	Approval for the expansion of the quarry and additional sand extraction in Cells 1 to 5 (inclusive).
DA165-7-2005 Modification 2	Approved and superseded by Modification 4	29 January 2019	Correction applied to an administrative error in Appendix 2 of DA165-7-2005 Modification 1 consent conditions.
DA165-7-2005 Modification 4	Approved and superseded by Modification 3	30 June 2021	Approval for altering the sequence of approved extraction cell, by accessing Cell 1B instead of Cell 2A. Modification 4 was approved before Modification 3
DA165-7-2005 Modification 3	Approved and superseded by Modification 5	23 July 2021	Approval for the increased in extraction rate, truck movements, VENM/ENM importation quantity, expansion of disturbance footprint in Stage 5, and modifying site plant, equipment and number of employees.
DA165-7-2005 Modification 5	Approved and superseded by Modification 6	29 June 2022	Approval to construct approved and new site infrastructure and administration buildings (including sandstone cutting shed, weighbridge, weighbridge office, First Aid and lunchroom and carpark) to a new location
DA 165-7-2005 Modification 6	Approved and current	9 September 2023	Approval to relocate the previously approved site building envelope in Modification 5 on Lot 177 approximately 90m north within Lot 176. Relocation of the site office to Stage 4 extraction area

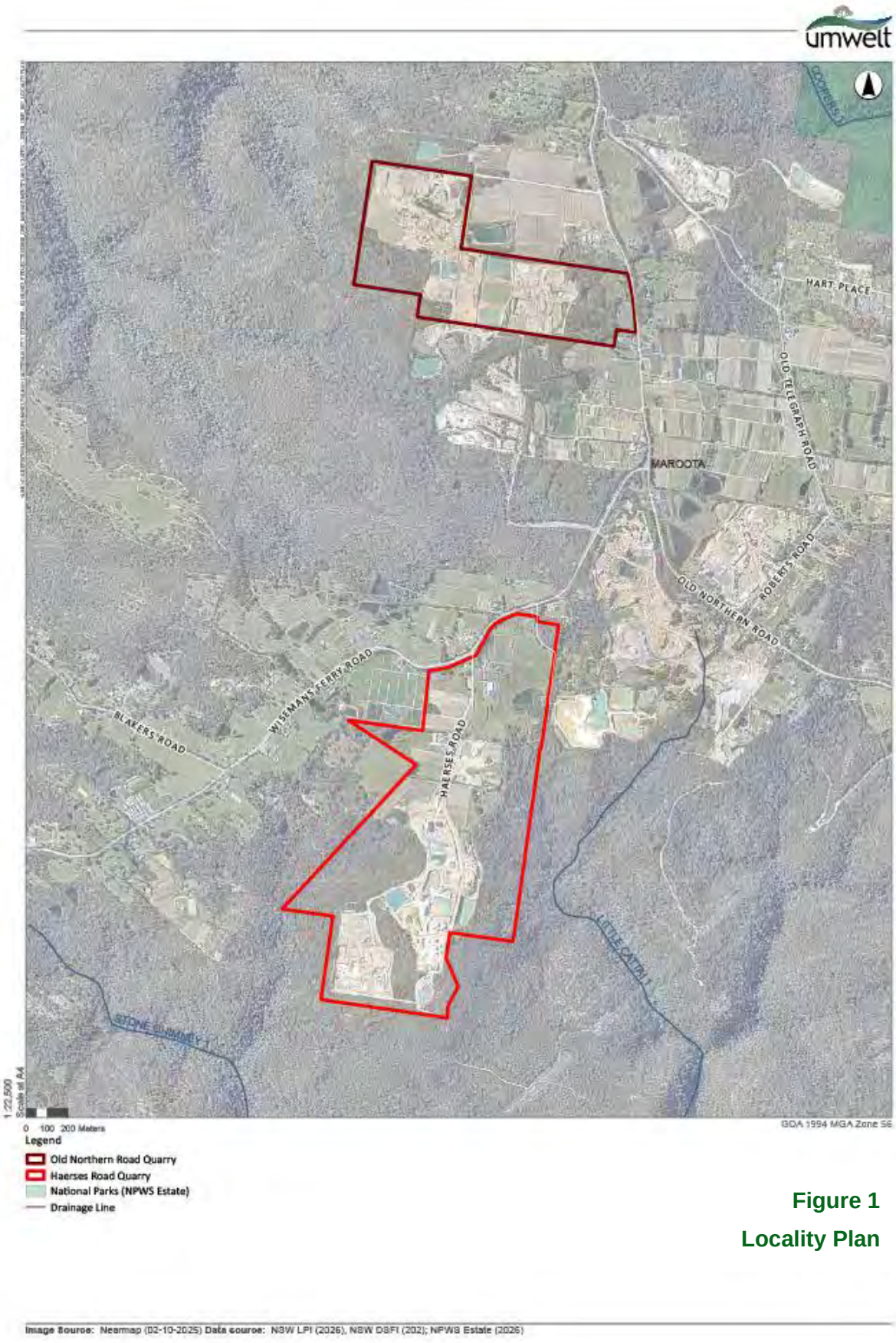


Figure 1

Locality Plan

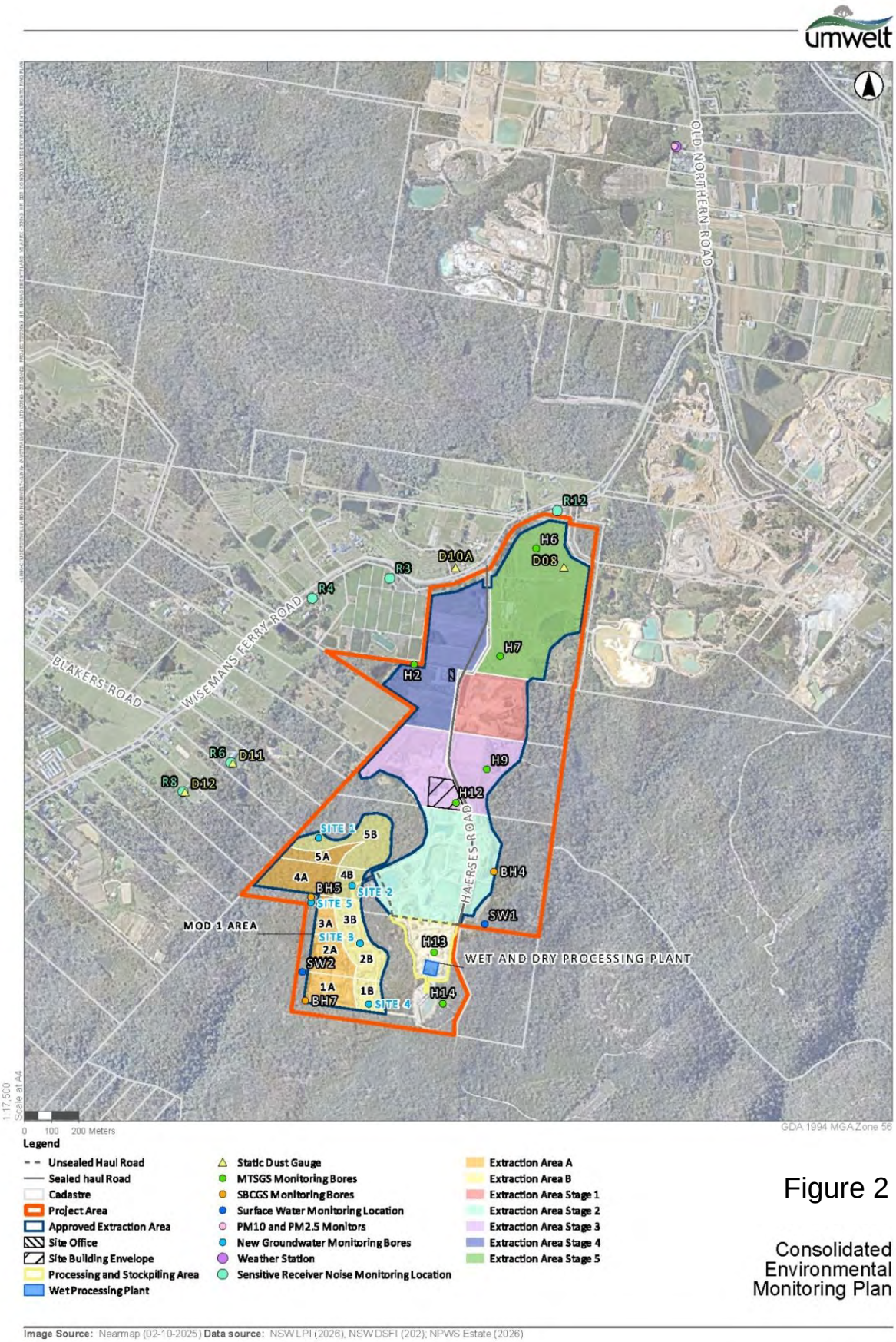


Figure 2

Consolidated Environmental Monitoring Plan

3. Operations Summary

3.1 Production and Vehicle Movements

All bulk sand truck movements from the Haerses Road Quarry since commencement of extraction in November 2006 have delivered raw product to the Old Northern Road Quarry for processing. Products have also been sold directly from Haerses Road quarry since 2015.

A total of **354,443** tonnes of product has been extracted at Haerses Road Quarry, of which **136,884** tonnes were transferred to Old Northern Road Quarry and **217,558.83** tonnes of products have been sold directly to local and regional markets from the Haerses Road Quarry during this reporting period. The Quarry did not receive any ENM/VENM during this reporting period. Table 4 provides a summary of the annual production quantities, truck movement, direct sales and material transfers between Haerses Road and Old Northern Road Quarries during the reporting period.

Table 4: Production Data & Truck Movements at Haerses Road Quarry.

Month	Total Transfers from Haerses Rd to Old Northern Road Quarry (t)	Total Sales from Haerses Rd (t)	Total Extraction (t)	Total Processed Materials (t)	Total ENM / VENM received (t)	Max Total Daily Truck (inclusive of transfers, direct sales and ENM/VENM import, in and out bound)	Max Daily Morning Truck between 6:00-7:00am (in and out bound)
Jul 2025	19,142	21,833.51	40,976	21,833.51	0	154	20
Aug 2025	13,600	16,739.17	30,339	16,739.17	0	130	12
Sep 2025	13,804	21,046.16	34,850	21,046.16	5,800.20	178	20
Oct 2025	11,288	21,265.96	32,554	21,265.96	0	144	16
Nov 2024	10,268	18,837.10	29,105	18,837.10	3,352.88	162	18
Dec 2025	5,508	16,083.69	21,592	16,083.69	1,750.34	174	14
Jan 2026	9,724	14,949.79	24,674	14,949.79	0	104	12
Feb 2026	12,920	17,022.48	29,942	17,022.48	426.92	132	16
Mar 2026	10,030	18,443.82	28,474	18,443.82	385.56	112	16
Apr 2026	9,520	15,373.89	24,894	15,373.89	0	108	16
May 2026	11,424	17,677.86	29,102	17,677.86	0	108	16
Jun 2026	9,656	18,285.40	27,941	18,285.40	0	118	20
Totals / Maximum	**136,884**	**217,558.83**	**354,443**	**217,558.83**	**11,715.90**	**178**	**20**
Annual Limit	**190,000**		**495,000**	**320,000**	**250,000**		
		Daily Max Criteria				**180**	**20**

3.2 Submission of Quarry Production Data to MEG

Condition 16(a) of Schedule 2 of DA 165-7-2005 requires Dixon Sand to submit calendar year annual production data to the MEG (now NSW Resources, Department of Primary Industries and Regional Development (DPIRD)) using the standard form and include a copy of this data in the Annual Review.

The DPIRD Minerals Return forms require reporting of extractive materials for the financial year, and not for the calendar year as specified in the consent condition above.

Historically, the Minerals Return form for each financial year were submitted to DPIRD (formerly DRG) within the specified deadlines.

On 16 July 2026, Dixon Sand received correspondence from the DPIRD advising that the submission of the Extractive Minerals Return form is no longer a requirement. Dixon Sand then notified the DPHI Compliance Team of its intention to continue reporting the production data in the Annual Reviews, as detailed in Table 4.

4. Actions Required from Previous Annual Review

The proposed recommendations contained in the previous 2024 - 2025 Annual Review and relevant actions undertaken by Dixon Sand are summarised in Table 5.

Table 5: Summary of Recommendations and Actions from the previous 2024 – 2025 Annual Review.

Recommendation from the 2024 - 2025 Annual Review	Actions
Air Quality Monitoring Program	
• The air quality monitoring program and Air Quality Management Plan will be revised in accordance with the outcome of the ongoing consultation with the EPA.	• Actioned – the air quality monitoring program and Air Quality Management Plan were revised following EPL variation (dated 15 April 2026 and 10 June 2026). DPHI approved the revised Air Quality Management Plan on 31 July 2026.
Vegetation Clearing	
• Continue to implement the pre-clearing survey and multistage habitat tree felling procedures prior to any vegetation felling.	• No vegetation clearing undertaken during this reporting period.
Rehabilitation and Bush Regeneration	
Stage 1 Extraction Area • Continued screening of stockpiled rehabilitation material to remove unsuitable larger rocks and boulders	• Screening paused until additional materials imported

Recommendation from the 2024 - 2025 Annual Review	Actions
• Continue importing VENM and ENM to assist with void filling if required	• Actioned – VENM and ENM imported as fill material this period.
• Final landform for active rehabilitation areas	• Agricultural planting will commence after suitable material has been placed to ensure cover crop can be supported.
• Layering stockpile material to create suitable agricultural terrain	• Layering of stockpile material paused until additional materials imported
Stage 2 Extraction Area	
• Continued monitoring the native vegetation growth and the supplemented planting to the west of the water storage dam in Stage 2 west	• Actioned - native vegetation growth to the west of the water storage dam monitored
• Continued weed management in this area	• Actioned - weed management undertaken
2009 Translocation and Offset Area	
• Continued management of competitive native shrubs and species particularly *Kunzea ambigua* to minimise overshadowing and encroachment of ground dwelling plants	• Actioned – culling of competitive species undertaken A
Wisemans Ferry Road 30 metre Buffer Area	
• Continued weed management in this area with a focus on WONS and High Threat species	• Actioned – weed management undertaken
• Undertake regular maintenance of the recent plantings	• Actioned – maintenance of supplementary planting undertaken
Buffer to Deerubbin LALC Property	
• Continued bush regeneration maintenance in the previously disturbed area	• Actioned - on-going regeneration maintenance undertaken in the previously disturbed area
• Continued weed management in this area	• Actioned – weed management undertaken

Recommendation from the 2024 - 2025 Annual Review	Actions
Extraction Cells A and B • Continued monitoring of vegetation quadrats for in Cells 4 and 5	• Actioned - vegetation baseline survey being undertaken in accordance with the Biodiversity and Rehabilitation Management Plan
Old Dam area in Stage 3 and track to groundwater monitoring network • Undertake secondary and maintenance works on Lantana camera and Ageratina adenophora (Whiskey grass)	• Actioned – management of Lantana and Whiskey Grass undertaken. This area now falls within the Haerses Road Biobanking Site which has entered Active Management phase. The management actions are as per the Biobanking Agreement and BCT.
Haerses Road and Porters Road Biobank Sites • Monitoring and management of the Haerses Road and Porters Road biobank BSA sites to be undertaken in accordance with the Biobanking Agreement, BCT reporting and directions given by the BCT. • Whilst Haerses Road biobank site remains under Passive Management status, continued with management of perennial grasses along the western and northern boundary to reduce the edge effect.	• Actioned – monitoring and management of the Haerses Road and Porters Road biobank sites undertaken in accordance with the Biobanking Agreement and specific directions as agreed with the BCT. • Actioned – The Haerses Road biobank site has entered 'Active Management' phase on 22nd December 2025. Management of weed species will now be undertaken in accordance with the management actions outlined in the Biobanking agreement and any specific directions as agreed with the BCT.

5. Environmental Performance

5.1 Air Quality

5.1.1 Dust Sources and Mitigation Measures

The objectives, criteria limits, procedures, response, reporting and responsibilities of air quality management are contained in the Haerses Road quarry Air Quality Management Plan.

The following potential sources of dust generated from Haerses Road quarry and mitigation measures have been identified in Table 6.

Table 6: Potential sources of dust and mitigation measures.

Potential Dust Sources	Mitigation Measures
• topsoil stripping; • ripping with a bulldozer; • extraction with an excavator and truck; • sandstone cutting with saw attachment • sandstone cutting within the designated sandstone cutting shed • crushing and screening • wind erosion from stockpiles; • loading sand products into trucks; • vehicle movement and haulage on site; • product transportation along unsealed haul roads; and • occasional haul road grading. • Rehabilitation and placement of VENM/ENM in the disturbed areas.	• minimising the area of disturbance by only clearing areas immediately prior to extraction; • progressive rehabilitation; • stabilising topsoil stockpiles by planting with a cover crop of non-invasive cereal or legumes; • using a water cart to suppress dust on unsealed roads, during dry conditions on days of operation; • sealing Haerses Road; • limiting vehicle speed to 20 km/hr on internal unsealed access tracks; • ensuring all loads leaving the site are covered; and • regularly maintaining mobile and fixed equipment to minimise exhaust emissions. • Utilisation of wet technique for sandstone cutting

5.1.2 Compliance Limits

Condition 10 of Schedule 3, DA165-7-2005 require Dixon Sand to operate a continuous air quality monitoring system to minimise the impacts at sensitive receivers such as the Maroota Public School. The following air quality criteria are to be complied with:

- dust deposition - 4g/m²/month (annual average) or 2g/m²/month increase;
- total suspended particulate matter (TSP) – 90µg/ m³ (annual mean); and
- particulate matter <10µm (PM10):
    - 50 µg/m³ (average for 24-hour period)
    - 30 µg/m³ (annual mean).
        - Since the previous 2024 – 2025 Annual Review, the NSW Environment Protection Authority (EPA) issued two EPL variations.

Since the previous 2024 – 2025 Annual Review, the NSW Environment Protection Authority (EPA) issued two EPL variations.

EPA also requires the automatic alarm system of the Tapered Element Oscillating Microbalance (TEOM) continuous dust monitoring device to be set at a PM10 trigger value which triggers specific dust mitigation measure:

- 42 µg/m³ (average for rolling 24-hour period for wind directions between 180° and 240°)

Table 7 lists the relevant PM10 and Total suspended particulates (TSP) criteria as required by the Development Consent and Environment Protection Licence.

Table 7: PM10, TSP and Deposited Dust Criteria.

Source	Condition	Criteria / Trigger Value	Comments
EPL12513	M2.3	42 µg/m^3 with prevailing wind direction from 180º-240º	Rolling average 24-hour PM10 criteria for enacting management plan strategies to notify the EPA, reduce dust emissions immediately and cease dust generating activities on site.
DA165-7-2005	Sch. 3, Cond. 9	30 µg/m^3	Annual average – long term impact assessment
EPL12513	O3.6		
DA165-7-2005	Sch. 3, Cond. 9	50 µg/m^3	24-hour average – NEPM short term impact assessment
EPL12513	O3.6		
EPL12513	O3.3	42 µg/m^3	Trigger value for PM_{10} automatic alarm and management plan strategies
DA165-7-2005	Sch. 3, Cond. 9	90 µg/m^3	Annual average criteria for TSP
EPL12513	O3.6		
DA165-7-2005	Sch. 3, Cond. 9	4 g/m2/month	Annual average deposited dust
EPL12513	O3.6		

5.1.3 Results

Climatic Data

Monthly climatic measurements were recorded by the weather station located adjacent to the Maroota Public School, in accordance with Condition M4.1 of EPL 12513. These results are shown in Table 8.

Table 8: Monthly Total Rainfall and Averaged Temperatures.

Month	Jul 2025	Aug 2025	Sep 2025	Oct 2025	Nov 2025	Dec 2025	Jan 2026	Feb 2026	Mar 2026	Apr 2026	May 2026	Jun 2026
Ave Temp (°C)	11.7	12.0	16.4	19.5	20.4	21.5	21.7	22.2	20.6	17.6	15.6	13.5
Total Rainfall (mm)	94.0	180.0	43.2	15.0	28.0	51.2	175.8	124.6	156.0	6.6	143.0	20.6

Data presented in Table 8 shows that the highest monthly rainfall of 180. mm was recorded in August 2025 and the lowest monthly rainfall of 6.6 mm was recorded in April 2026. The total annual rainfall recorded during this reporting period is 1,038mm which is higher than last year (2024 – 2025) which recorded 809.2mm. In comparison, historical rainfall recorded 872mm (2023 - 2024), 915.4mm (2022 – 2023), 1527mm (2021 - 2022) and 1090.4mm (2020 - 2021).

From the recorded monthly temperature data, February 2025 experienced the highest average temperature at 22.2°C whilst July 2025 experienced the lowest average temperature at 11.7°C. Fluctuations in temperatures and rainfalls are generally influenced largely by the El-Nino and La-Nina climatic cycle.

Dust Deposition

Four dust deposition gauges are located at Haerses Road quarry. Table 9 lists the locations of these dust gauges. Following consultation with the EPA, dust gauge D10 was deemed to be located in the area influenced by non-quarry related dust.

Following EPL variation (15 April 2026), D10 relocated to the new locations at D10A. Refer to Figure 2 for the locations of the new and current dust deposition gauges.

Table 9: Site location of dust deposition gauges

Dust Gauge I.D.	Location Reference	Status
D08	Hitchcock Road, Olive Grove	Active monitoring
D10	Haerses Road Quarry – Stage 4 Extraction Area	Decommissioned on 27/05/2026
D10A	Receiver R2 (located at 1680 Wisemans Ferry Road) - EPL#12513, Monitoring Point 3	Active monitoring – commissioned on 27/05/2026
D11	Haerses Road Receiver R6 (located at 1543 Wisemans Ferry Road)	Active monitoring
D12	Haerses Road Receiver R8 (located on the boundary of R7 and R8)	Active monitoring

Dust deposition results were collected and analysed monthly by a NATA accredited laboratory. Table 10 presents the monthly dust deposition results between 25 June 2025 – 27 May 2026. Table 11 contains the calculated rolling annual averages for the deposited dust.

The monthly laboratory results for dust deposition for this reporting period are presented in Appendix A.

Charts 1 to 4 illustrate the annual average dust deposition results for the reporting periods of 2022 – 2023, 2023 – 2024, 2024 – 2025 and 2025 – 2026 respectively.

Table 10: Dust Deposition Results: 25 June 2025 – 27 May 2026

Dust Gauge Location	25/06/25 - 23/07/25	23/07/25 - 20/08/25	20/08/25 - 17/09/25	17/09/25 - 15/10/25	15/10/25 - 12/11/25	12/11/25 - 10/12/22	10/12/25 - 07/01/26	07/01/26 - 04/02/26	04/02/26 - 04/03/26	04/03/26 - 01/04/26	01/04/26 - 29/04/26	29/04/29 - 27/05/26
D08	0.6	0.3	0.6	0.6	5.3	1.5	1.1	0.9	0.8	0.6	0.6	0.3
D10	2.7	5.7	5.7	1.4	1.5	1.1	14.4	4.9	9.1	4.0	2.5	1.9
D11	0.4	1.2	2.8	0.9	2.2	1.5	1.9	0.9	1.1	0.9	0.6	0.5
D12	0.4	0.3	0.3	0.3	0.5	0.6	0.9	3.1	0.5	0.4	0.2	0.2

Table 11: Calculated Rolling Annual Averages of Dust Deposition: 25 June 2025 – 27 May 2026.

Dust Gauge Location	25/06/25 - 23/07/25	23/07/25 - 20/08/25	20/08/25 - 17/09/25	17/09/25 - 15/10/25	15/10/25 - 12/11/25	12/11/25 - 10/12/22	10/12/25 - 07/01/26	07/01/26 - 04/02/26	04/02/26 - 04/03/26	04/03/26 - 01/04/26	01/04/26 - 29/04/26	29/04/29 - 27/05/26
D08	1.2	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.0
D10	3.7	4.0	4.4	4.3	4.3	4.3	5.1	5.0	5.0	4.9	4.7	4.7
D11	1.0	1.0	1.2	1.2	1.2	1.4	1.4	1.3	1.4	1.4	1.4	1.2
D12	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.7	0.6	0.6	0.6

TEOM PM_{10}

In accordance with Condition 10 of Schedule 3, DA165-7-2005, the concentration of particulates with an aerodynamic diameter less than ten microns (PM_{10}) is monitored via the continuous dust monitor (TEOM) near Maroota Public School. The TEOM records data for the whole 360º angles, of which the 180º - 240º quadrat (southerly to south-westerly) indicate potential airborne contributions from Haerses Road Quarry. Chart 8 illustrates the PM_{10} results for this reporting period, in comparison with relevant consent criteria. Charts 5 to 7 show the PM_{10} results for the previous reporting periods of 2022 – 20.32, 2023 – 2024, 2024 – 2025 and 2025 – 2026 respectively.

The annual average PM10 result for this reporting period is 16.6 μg/m³.

During the reporting period, the following PM10 criteria has been complied with:

- Annual average PM10 criteria of 30 μg/m³.

During the reporting period, the following PM10 criteria have been exceeded:

- EPL 24-hour average PM10 criteria of 42 μg/m³, and
- NEPM 24-hour maximum PM10 criteria of 50 μg/m³

TSP

Reporting of TSP results commenced in December 2017. Charts 9 to 12 display TSP results during the 2022 – 2023, 2023 – 2024, 2024 – 2025 and 2025 - 2026 respectively.

No TSP exceedance occurred during this reporting period. The following TSP criteria has been complied with:

- Annual average TSP criteria of 90 μg/m³

The annual average TSP for this reporting period is 41.4 μg/m³

A copy of the full reports containing PM10, TSP and meteorological data provided by CBased Environmental Pty Ltd are contained in Appendix B.

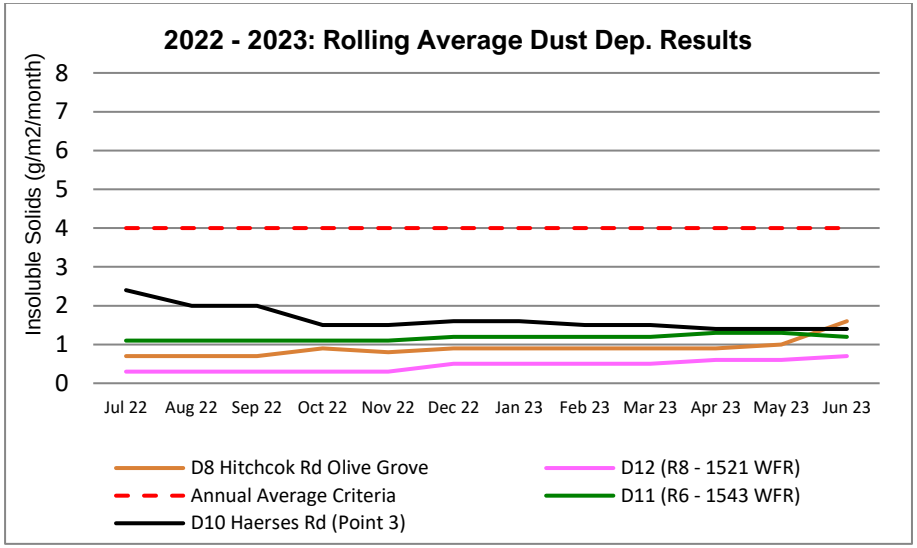


Chart 1: 2022 – 2023 Rolling Average of Dust Deposition Results

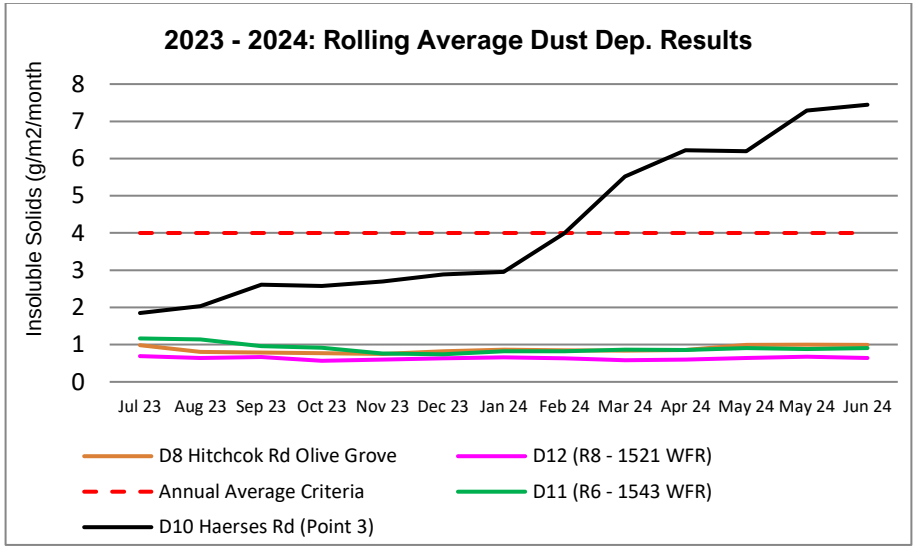


Chart 2: 2023 – 2024 Rolling Average of Dust Deposition Results

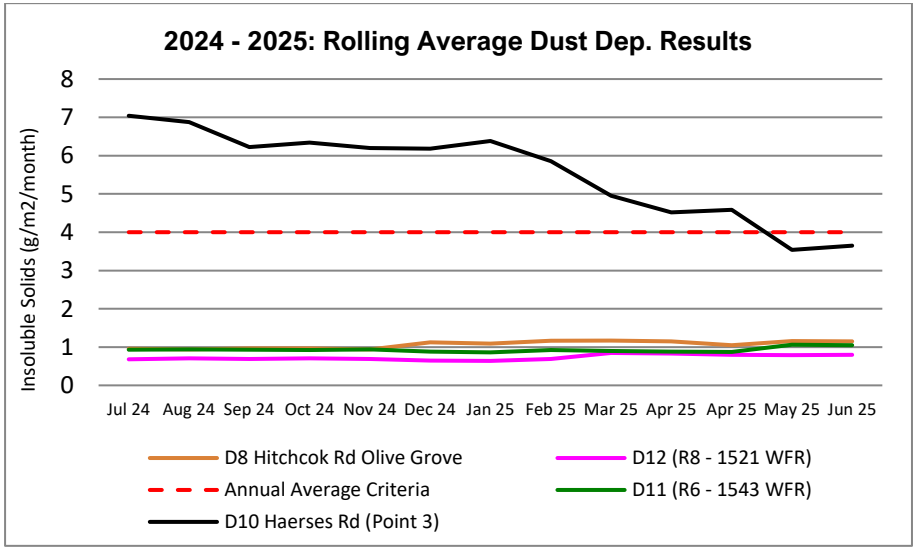


Chart 3: 2024 – 2025 Rolling Average of Dust Deposition Results

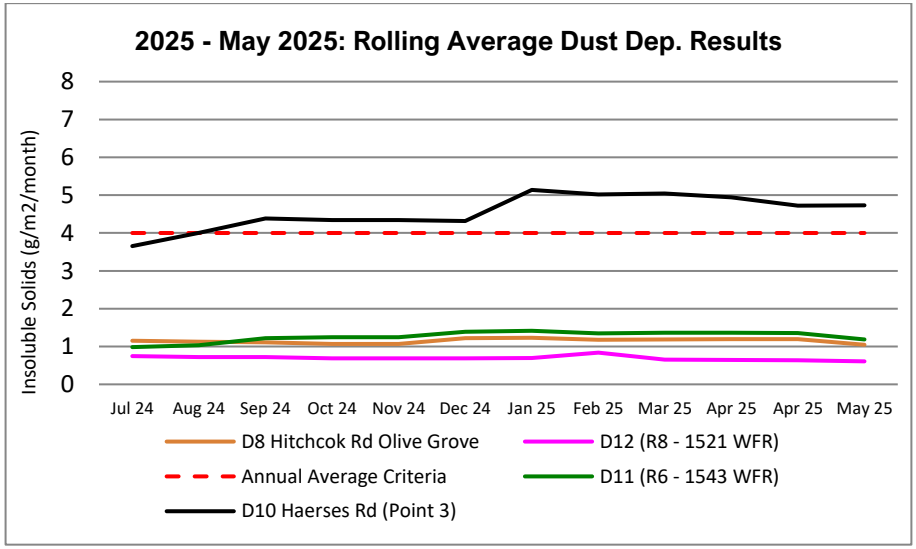


Chart 4: 2025 – 2026 Rolling Average of Dust Deposition Results

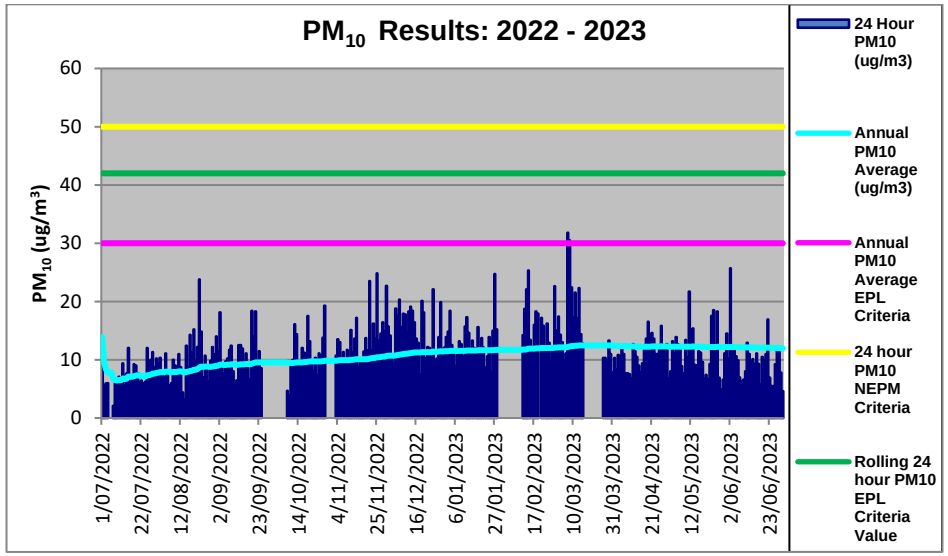


Chart 5: 2022 – 2023 PM10 Results and Criteria

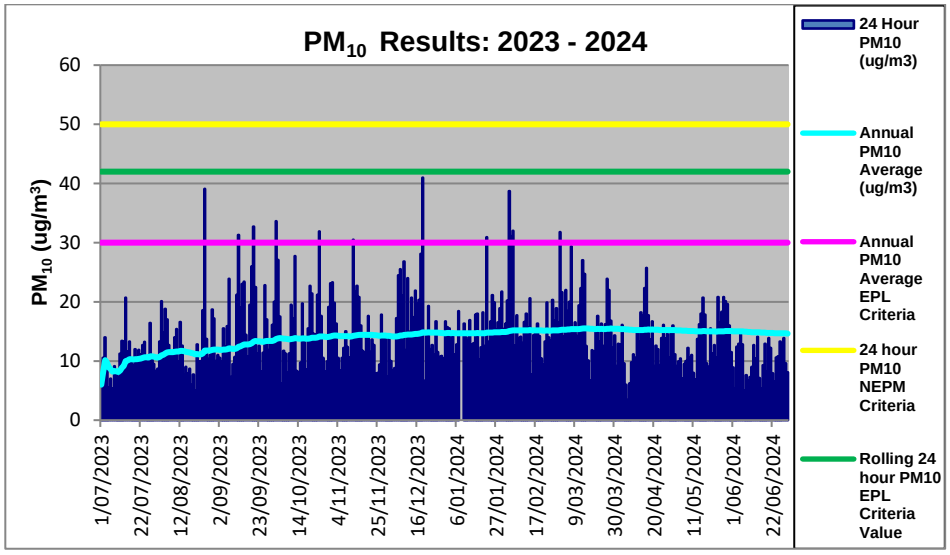


Chart 6: 2023 – 2024 PM10 Results and Criteria

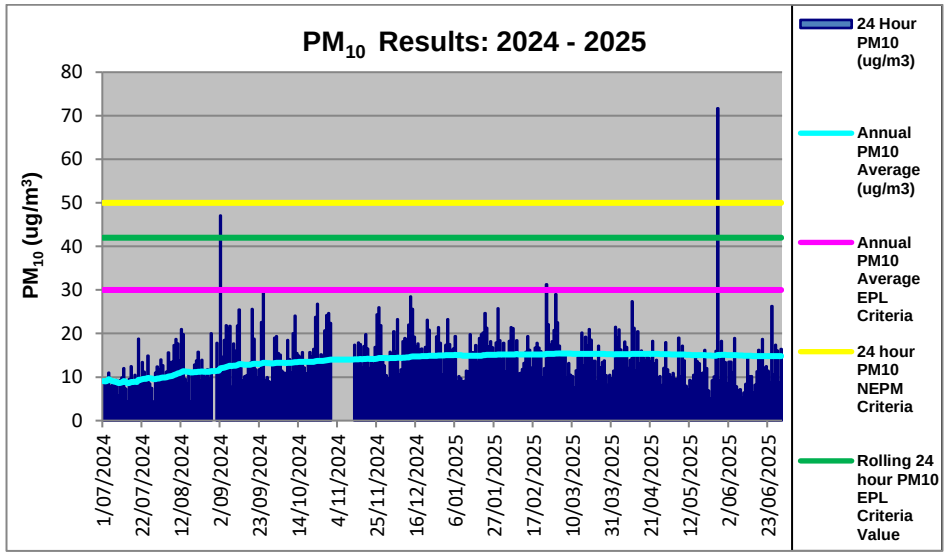


Chart 7: 2024 - 2025 PM10 Results and Criteria

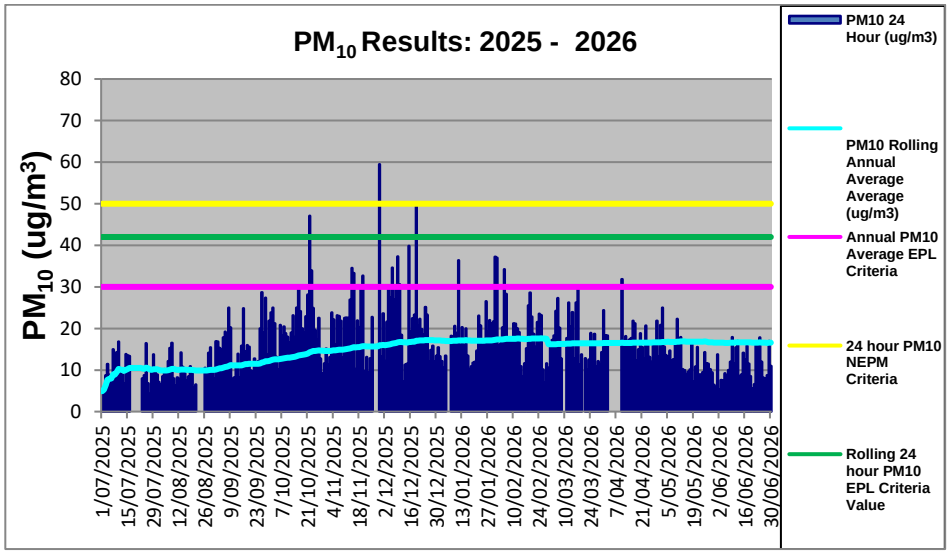


Chart 8: 2025 - 2026 PM10 Results and Criteria

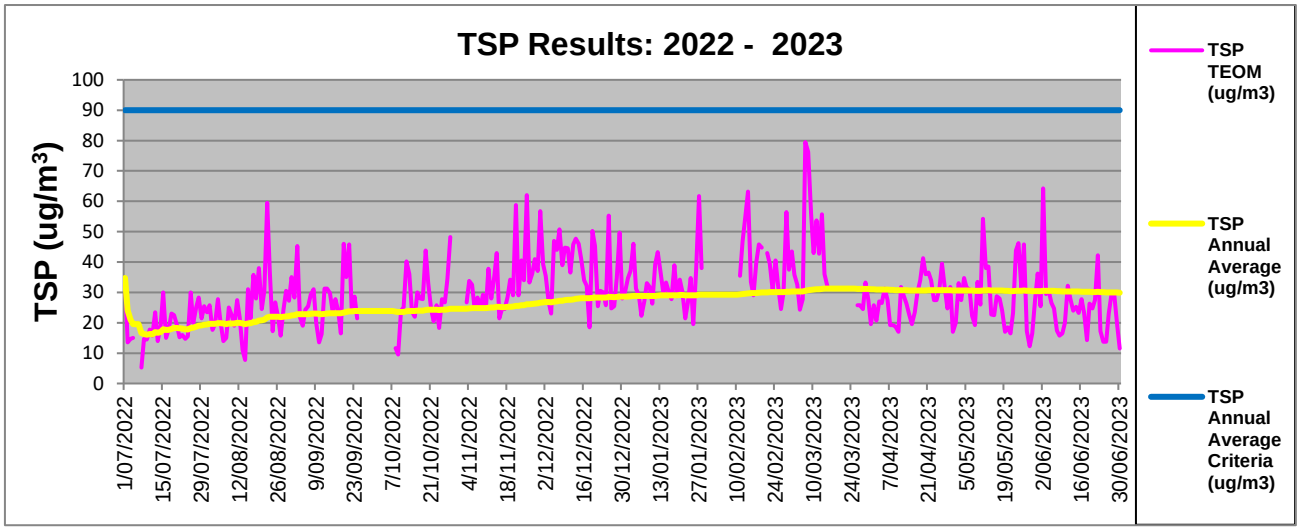


Chart 9: 2022 - 2023 TSP Results and Criteria

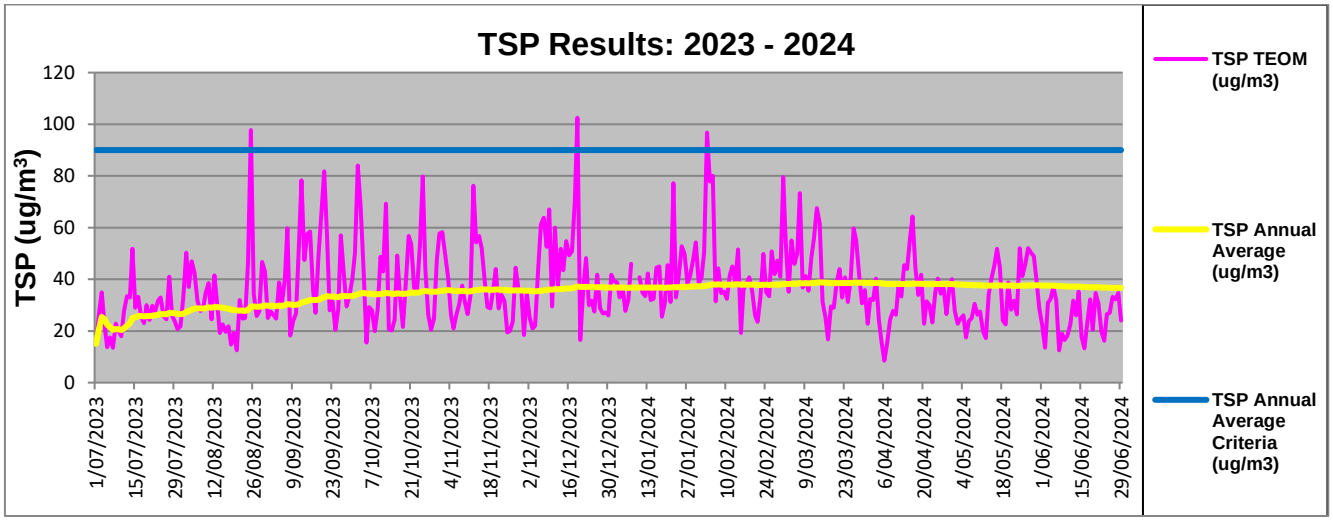


Chart 10: 2023 - 2024 TSP Results and Criteria

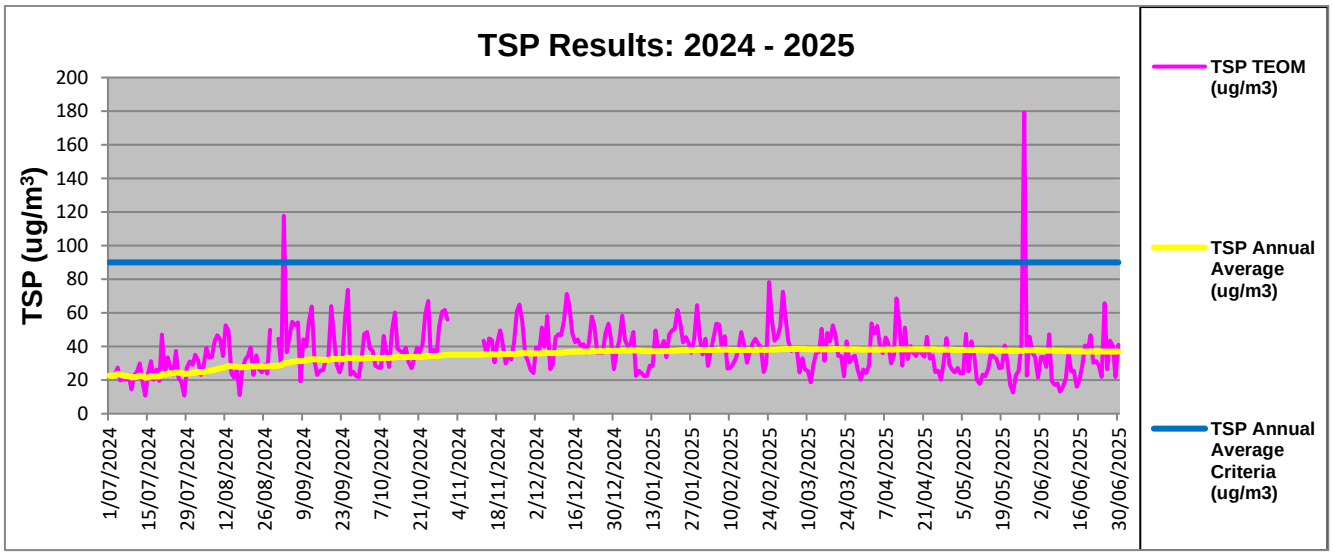


Chart 11: 2024 - 2025 TSP Results and Criteria

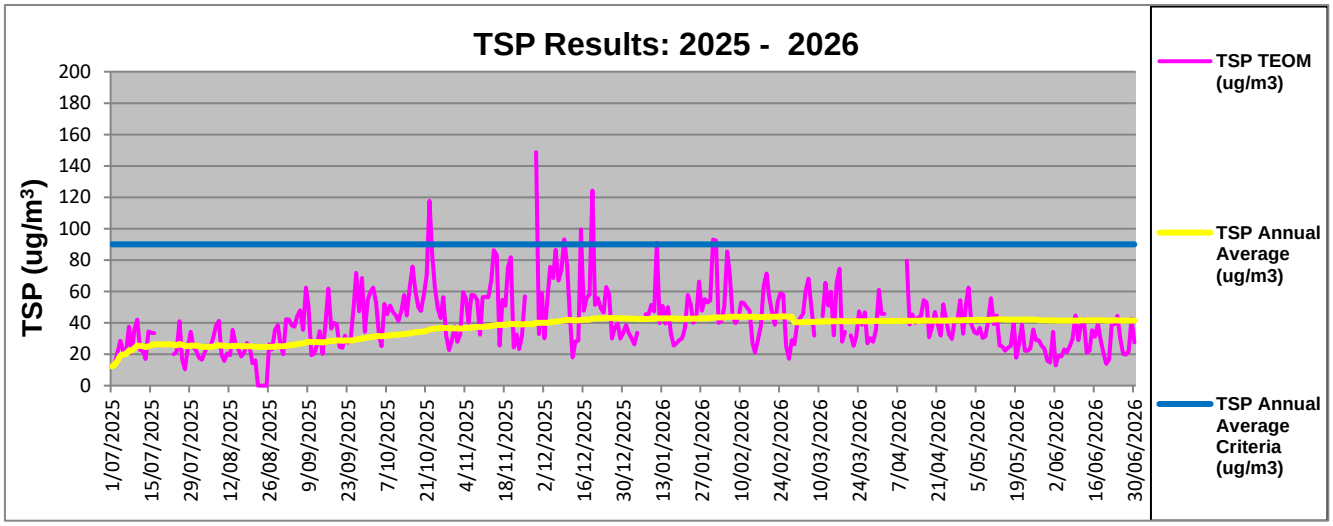


Chart 12: 2025 - 2026 TSP Results and Criteria

5.1.4 Analysis

Dust Deposition

Reporting Period 2025 – 2026

Four dust deposition gauges monitor potential dust impacts from Haerses Road quarry.

Monthly results dust deposition results were all compliant at dust gauges D08 (Olive Grove, Hitchcock Road), D11 (Receiver R6) and D12 (Receiver R8) for the July 2025 to M was y 2026 period, except during the October – November monitoring period where monthly dust deposition result at D08 was 5.3 g/m2/month. All rolling annual averages at D08, D11 and D12 were in compliant with the 4 g/m2/month criteria.

Monthly dust deposition results at D10 (EPL Monitoring Point 3) were elevated for five monitoring periods which resulted in the rolling annual averages exceeding the 4 g/m2/month criteria for the last ten monitoring periods. Elevated monthly dust deposition results over the early spring and summer months were attributed to a combination of property maintenance (paddock slashing) around the office precinct and farming activities in the adjacent land.

An Air Quality Assessment (ERM, 2019) undertaken for the Modification Report MR3 (Umwelt, 2019) specifies the annual average dust deposition of 1.5 g/m2/month. Rolling annual averages for D8, D11 and D12 were lower than this predicted level whilst the rolling annual averages for D10 exceeded this predicted impact for the whole duration of the reporting period.

Historical Data

It can be seen from Charts 1 to 3 that the majority of dust deposition results are in compliance over the previous 4 years of monitoring. Annual averages for D10 exceeded the 4.0 g/m2/month criteria for the last five months of the 2023 – 2024, first eleven months during the 2024 – 2025 and last ten months of the 2025 - 2026 monitoring period, attributed to property maintenance involving paddock slashing for the site office precinct and farmers undertaking dust generating activities in the immediate neighbouring fields to the dust gauge.

PM10

Reporting Period 2025 - 2026

An Air Quality Assessment (ERM, 2019) undertaken for the Modification Report MR3 (Umwelt, 2019) specifies the long term annual average PM10 concentration to be 13.8 µg/m^3, based on a 5-year average data collected at the TEOM located adjacent to the Maroota Public School. The annual average PM10 concentration for this reporting period is 16.6 µg/m^3 which is slightly higher than the long-term average.

The rolling annual average PM_{10} values (light blue line on Chart 8) remained below the EPA long term criteria of 30µg/m³ (pink line on Chart 8) for this reporting period.

The 24-hour average PM_{10} levels (dark blue columns on Chart 8) remained below the 24-hour EPL management level of 42 µg/m³ (green line on Chart 8) and the 24-hour NEPM short term criteria level of 50 µg/m³ (yellow line on Chart 8) for the whole duration of this reporting period, except on three days. The 24-hour average PM_{10} level of 47.1 µg/m³ exceeded the 24-hour EPL management level of 42 µg/m³ on 22 October 2025 due to the forecasted gusty winds moving across a number of states including NSW and Sydney region. The 24-hour average PM_{10} level of 59.5 µg/m³ exceeded both the 24-hour EPL management level of 42 µg/m³ and the 24-hour NEPM short term criteria level of 50 µg/m³ on 29 November 2025 due to a number of causes including a grass fire and bushfire at two properties adjacent to the Quarry, in conjunction with dusty conditions from farming activities. The 24-hour average PM_{10} level of 49.7 µg/m³ exceeded the 24-hour EPL management level of 42 µg/m³ on19 December 2025 due to insect interference with PM10 monitor during the extreme hot temperatures. These three exceedances are a result of extra-ordinary events as defined by Note d, Table 3, Condition 7, Schedule 3 of DA 250-09-01 which therefore do not constitute non-compliances.

Despite the elevated 24-hour average PM10 recorded on three days, the rolling annual average PM_{10} values (light blue line on Chart 8) remained below the EPA long term criteria of 30µg/m³ (pink line on Chart 8) for this reporting period.

Table 12: Elevated PM10 – EPL and NEPM Management criteria

Event No.	Exceedance Date	24-hour average PM10	Exceeded criteria	Comment
1	22 October 2025	47.1 µg/m³	24 hour average PM10 EPL limit of 42 µg/m³	This exceedance is attributed to the forecasted gusty winds moving across several states including NSW and Sydney region on 22 October 2025. This is considered an extra-ordinary event therefore does not constitute a non-compliance.
2	29 November 2025	71.7 59.5 µg/m³	NEPM 24 hour average PM10 criteria of 50 µg/m³ and 24 hour average PM10 EPL limit of 42 µg/m	This exceedance is attributed to the grass fire and bushfire burning on two properties adjacent to the Quarry, and potentially contributed by the neighbouring farming activities Grassfire and Bushfire are considered an extra-ordinary events therefore does not constitute a non-compliance.
3	19 December 2025	49.7 µg/m³	24 hour average PM10 EPL limit of 42 µg/m³	This exceedance is attributed to PM10 monitor being interfered by insect swarms during high temperatures. This is considered an extra-ordinary event therefore does not constitute a non-compliance.

Historical Data

It can be seen from Charts 5 to 8 that all the annual average PM10 results recorded at the TEOM comply with the annual average PM10 criteria of 30μg/m³ over the four years of annual review reporting.

A number of 24-hour average PM10 exceedances were recorded over the last four reporting periods with causes attributed to activities not related to quarry operations. There were no 24-hour average PM10 exceedances during the 2023-2024 reporting period. One 24-hour average PM10 NEPM criteria exceedance was recorded during the previous 2024-2025 reporting period which was due to forecasted extreme weather events, and therefore not considered a non-compliance. One 24-hour average PM10 NEPM criteria exceedance was recorded during this 2025-2026 reporting period which was due to grassfire and bushfire occurring in the adjacent property, along with potential dust being generated from neighbouring farming activities.

The rolling annual PM10 average for the 2024-2025 reporting period is 16.6 μg/m³, which is lower than the EPA criterion of 30μg/m³ and slightly higher than the predicted annual average of 13 μg/m³ contained in the Modification Report MR 3 (Umwelt, 2019). This annual average is comparable to the recorded historical values of 14.8 μg/m³ (2024-2025), 14.6 μg/m³ (2023-2024), 12.0 μg/m³ (2022-2023), 12.7 μg/m³ (2021-2022), 13.7 μg/m³ (2020-2021) and much lower than the 21.3 μg/m³ (2019-2020). The cause of the previous higher annual average of recorded 21.3 μg/m³ (2019-2020) is attributed to higher frequency of extraordinary events such bushfire, hazard reduction burns and hot and gusty weather conditions.

Total Suspended Particles

Reporting Period 2025 - 2026

The Total Suspended Particles (TSP) results are reported in Charts 9 to 12 inclusive. The annual average TSP for this reporting period is 41.4 μg/m³ which is lower than the annual average TSP criteria of 90 μg/m³ set out by the consent and EPL. Elevated TSP values were a reflection of high PM10 values.

Historical Data

Reporting of TSP commenced in December 2017. Historical annual average TSP values were 38.3 μg/m³ (2017-2018), 40.0 μg/m³ (2018-2019), 53.4 μg/m³ (2019-2020), 34.3 μg/m³ (2020-2021), 31.8 μg/m³ (2021-2022), 29.9 μg/m³ (2022-2023), 36.6 μg/m³ (2023-2024) and 37.0 μg/m³ (2024-2025). The higher annual average TSP value recorded in 2019-2020 were attributed to cumulative effects of poor air quality associated with bushfires in the local, and regional and inter-state areas.

5.1.5 Discrepancies between Predicted and Actual Air Quality Impacts

Dust Deposition

The EIS (ERM, 2005) prepared for the original DA 165-7-2005 predicted dust deposition during quarrying Stages 1 and 5 to be between 2.2 and 3.0 g/m²/month for all receptors. During this reporting period, imported fill materials have been placed in Stage 1 extraction area. Quarry extraction, material stockpiling and processing occurred in Stage 2. Sand and sandstone extraction took place in Extraction Cells 1A, 1B, 2A, 2B, 3A and 3B of the Modification 1 area.

The most recent Air Quality Assessment undertaken for Modification Report MR 3 (Umwelt, 2019) predicted that quarry operations will not exceed the predicted EPA criterion of 2 g/m2/month and annual average of 4 g/m2/month.

The EA (Umwelt, 2016) prepared for DA 165-7-2005 (Modification 1) predicted that no privately owned receivers are projected to experience ground level concentration of dust deposition above the assessment criteria, due to emissions from the modification only (Extraction Cells 1A-B to 5A-B inclusive). The highest predicted impacts occur at receivers R1, R3 and R13 with predicted incremental annual average dust deposition of 0.04 g/month/m^2. The Modification Report MR 3 (Umwelt, 2019) determined that quarry operations proposed under Modification 3 would not result in the EPA dust deposition criteria to be exceeded.

Monthly dust deposition at D8 ranged from 0.3 to 5.3g/m^2/month which were generally in line with the predicted air quality impacts, with one elevated monthly dust deposition result. The rolling annual average dust deposition at D8 ranged from 1.0 to 1.2 g/m^2/month which falls within the predicted dust levels.

Monthly dust deposition at D10 ranged from 1.1 to 14.4 g/m^2/month with a number of monthly results exceeding the predicted air quality impacts. The rolling annual averages ranged from 3.7 to 5.1 g/m^2/month with a number of the rolling annual averages exceeding the predicted dust levels.

Monthly dust deposition at D11 ranged from 0.4 to 2.8 g/m^2/month with the rolling annual averages ranging from 1.0 to 1.4 g/m2/month, which fall within the predicted dust impact levels, and compliant with the annual average criteria of 4.0 g/m2/month.

Monthly dust deposition at D12 ranged from 0.2 to 3.1 g/m^2/month with the rolling annual average dust deposition ranging from 0.6 to 0.8 g/m2/month, with all dust levels falling within the predicted dust impact levels and compliant with the annual average criteria of 4.0 g/m2/month.

PM10

Earlier PM10 predictions contained in the EIS (ERM, 2005) prepared for the original DA 165-7-2005 showed ground level concentrations of 24-hour average PM10 of 13 µg/m3 and an annual average PM10 to be 12 µg/m3. Recent Air Quality Assessment undertaken for Modification Report MR 3 (Umwelt, 2019) specifies a slightly higher 24-hour average PM10 of 13.8 µg/m3 and an annual average PM10 to be 12 µg/m3. The Modification Report MR 3 (Umwelt, 2019) also predicted that under worst-case operational scenarios, the predicted combined background and quarry increment particulate levels would remain below the 24-hour average PM10 criteria of 50 µg/m3 which has been complied with during this reporting period except one exceedance on the 29 November 2025 which was attributed to the grass fire and bushfire burning on two properties adjacent to the Quarry, and potentially contributed by the neighbouring farming activities. Grassfire and Bushfire are considered an extra-ordinary events therefore does not constitute a non-compliance.

Total Suspended Particle (TSP)

TSP predictions contained in the EIS (ERM, 2005) prepared for the original DA 165-7-2005 showed ground level concentrations of 24-hour average TSP of 26 µg/m^3 and an annual average TSP to be 25 µg/m^3. The EA (Umwelt, 2016) prepared for DA 165-7-2005 (Modification 1) predicted that no privately owned receivers will experience TSP above the assessment criteria. The highest predicted TSP will occur at receiver R4 as a result of Modification 1 extraction where the predicted incremental 24-hour TSP concentration is 1.5 µg/m^3. Further to this, the Modification

Report MR 3 (Umwelt, 2019) predicted an annual average TSP concentration of 34.5 µg/m^3 which was calculated based on the assumption that 40% of the TSP is PM10.

During this monitoring period, the annual average of TSP of 41.4 µg/m^3 was recorded, which is slightly higher than the predicted levels in the Air Quality Assessment undertaken for the Modification Report MR 3 (Umwelt, 2019).

5.1.6 Changes to Environmental Procedures

Following the issue of the EPL12513 variation on 15 April 2026, dust gauge D10 was decommissioned on 27 May 2026 and relocated to the alternative location. D10 has been relocated north to D10A at private property 1680 Wisemans Ferry Road. D10A remains an EPL Monitoring Point #3.

Dust deposition monitoring at D10A commenced on 27 May 2026, and results will be reported in the next 2026 – 2027 Annual Review.

The Air Quality Management Plan was updated following the outcome of the EPL variation and dust gauge relocation.

5.2 Noise Management

5.2.1 Noise Sources and Mitigation Measures

The objectives, criteria limits, procedures, response, reporting and responsibilities of noise management are contained in the Noise Management Plan.

The potential sources of noise from Haerses Road quarry and mitigation measures have been identified in Table 13.

Table 13: Potential sources of Noise and mitigation measures.

Potential Noise Sources	Mitigation Measures
• Extraction by bulldozers and excavators; • Moving of materials and stockpiling by dump trucks and excavators; • Truck haulage including bogie trucks, truck and dogs; • Wet/dry processing of sand; and • Sandstone cutting and processing in the sandstone cutting shed	• Construction of noise bunds in strategic locations as stipulated in the EIS/EAs and consent conditions; • Compliance with approved hours of operation; • Regular maintenance of road surfaces, vehicles and equipment to reduce noise emissions; and • Enforcement of speed limits for trucks and limited use of exhaust brakes in residential and school areas. • Enforcement of a 20km/h speed limit on quarry access road and haul roads. • Switch off plant when not in use and use of automatic idle shutdown. • Sealed sections of Haerses Road

The Noise Management Plan requires attended noise monitoring to be undertaken every six months during the first two years of operation once extraction in Modification 1 area has commenced. After two years a review of the monitoring results will be undertaken and if deemed appropriate, approval will be sought from the DPHI to revert to annual attended noise monitoring for the remainder of operations in the Mod 1 extraction area.

During this reporting period, extraction has taken place in Stage 2 west (original extraction area) and Cells 1A, 1B, 2A, 2B, 3A and 3B (Modification 1 extraction area). Noise monitoring was undertaken in December 2025 and June 2026.

During the December 2025 monitoring, noise sources were generated from the following four distinct operational areas:

- Cell 3A (OAS1) – 2x Excavators cutting sandstone, excavator popping sandstone, grinder and Front-End Loader loading sandstone onto Dump Truck
- Cells 1A/2A (OAS2) – 2x Excavators sawing sandstone, excavator ripping sandstone, grinder and Front-End Loader loading sandstone onto Dump Truck
- Processing Plant/stockpiling area (OAS3) – Front end loader and 2x mobile crushers.
- Stage 2 (OAS4) – Excavator loading mobile crusher, Front-end loader loading sandstone onto trucks

During the June 2026 monitoring, noise sources were generated from the following three distinct operational areas:

- Quarry Stage 2 (OAS1): dozer moving material and dump truck operating (both approximately 100m from the measurement location)
- Processing plant and stockpiling area (OAS2) – excavator loading material into screener (approximately 95m from measurement location) and dozer moving material adjacent to the screener (approximately 95m from the measurement location)
- Quarry Cells 1A-2A-2B (OAS3): 2 excavators hammering to the east (approximately 80m away), one excavator hammering to the north-west (approximately 110m away) and intermittent operation of dozers and light vehicles within the surrounding work area

5.2.2 Compliance Limits

Haerses Road's new noise criteria determined during DA Modification 3 are listed in Table 14. The locations of noise receivers are displayed in Figure 3. Noise criteria in Table 14 do not apply if the quarry has an agreement with the relevant landowner to exceed the noise criteria. Dixon Sand currently has a noise agreement in place with the following receivers:

- R2
- PF1, PF2 and PF3 (receivers on Hitchcock Road to the east of Haerses Road quarry), and
- R12

Approved hours of operation are contained in Table 15. Noise monitoring for the quarry is based on these criteria.

Table 14: Haerses Road Noise Criteria

<table>
<tr><th>Consent</th><th>Conditions</th></tr>
<tr><td>DA165-7-2005, Condition 3 of Schedule 3</td><td>
The Applicant must ensure that operational noise generated by the development (excluding acoustic bund construction) does not exceed the criteria in Table 2 at any residence on privately-owned land.

Table 2: Operational noise criteria dB(A)
<table>
<tr><th rowspan="2">Receiver</th><th>Day</th><th colspan="2">Shoulder (6.00 am to 7.00 am)</th></tr>
<tr><th>$L_{Aeq\ (15\ minute)}$</th><th>$L_{Aeq\ (15\ minute)}$</th><th>$L_{A(max)}$</th></tr>
<tr><td>R05, R06</td><td>41</td><td>35</td><td rowspan="4">52</td></tr>
<tr><td>R03</td><td>40</td><td>37</td></tr>
<tr><td>R13, R14</td><td>40</td><td>36</td></tr>
<tr><td>All other receivers</td><td>40</td><td>35</td></tr>
</table>
Noise generated by the development must be measured in accordance with the relevant requirements and exemptions (including certain meteorological conditions) of the NSW Noise Policy for Industry.

However, the noise criteria in Table 2 do not apply if the Applicant has an agreement with the relevant landowner to exceed the noise criteria, and the Applicant has advised the Department in writing of the terms of this agreement.

Note:
Should an agreement with a landowner be terminated for any reason, the Applicant must comply with the noise criteria in Table 2.
</td></tr>
</table>

Table 15: Haerses Road Approved Hours of Operation.

<table>
<tr><th>Consent Condition</th><th>Condition</th></tr>
<tr><td>DA165-7-2005, Condition 1 of Schedule 3</td><td>
The Applicant must comply with the operating hours set out in Table 1.

Table 1: Operating hours
<table>
<tr><th>Activity</th><th>Permissible Hours</th></tr>
<tr><td rowspan="2">Quarrying operations (excluding truck arrival, loading and dispatch)</td><td>7.00 am to 6.00 pm Monday to Saturday</td></tr>
<tr><td>At no time on Sundays or public holidays</td></tr>
<tr><td rowspan="2">Truck arrival, loading and dispatch</td><td>6.00 am to 6.00 pm Monday to Saturday</td></tr>
<tr><td>At no time on Sundays or public holidays</td></tr>
<tr><td rowspan="2">Acoustic bund construction and road and intersection works on Haerses Road and Wisemans Ferry Road</td><td>8.00 to 5.00 pm Monday to Friday</td></tr>
<tr><td>At no time on Saturdays, Sundays or public holidays</td></tr>
<tr><td>Maintenance</td><td>At any time, provided that these activities are not audible at any privately-owned residence outside of permissible hours for quarrying operations</td></tr>
</table>
</td></tr>
<tr><td>DA165-7-2005, Condition 2 of Schedule 3</td><td>
The following activities may be carried out outside the hours specified in condition 1 above:

(a) delivery or dispatch of materials as requested by the NSW Police Force or other public authorities; and

(b) emergency work to avoid the loss of lives, property or to prevent environmental harm.

In such circumstances, the Applicant must notify the Secretary and affected residents prior to undertaking the activities, or as soon as is practical thereafter.
</td></tr>
</table>

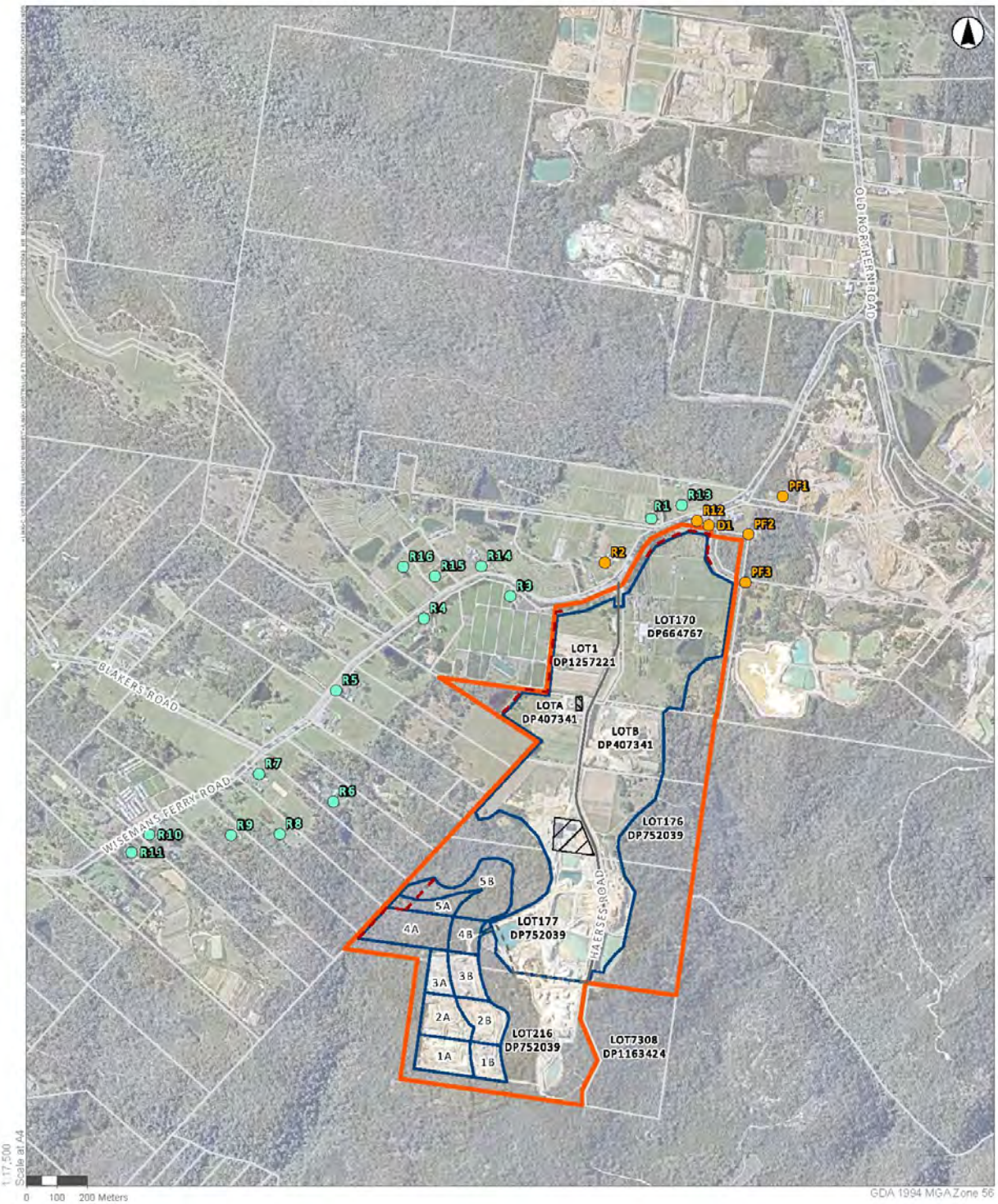


Figure 3

Haerses Road Quarry Noise Receiver Locations and Acoustic Bunds

Image Source: Nearmap (02-10-2025) Data source: NSW LPI (2026), NSW DSFI (202), NPWS Estate (2026)

5.2.3 Results

Attended noise monitoring for Haerses Road quarry was undertaken in December 2025 and June 2026. Attended noise monitoring was conducted at receivers (where permission to enter the property was granted) and at-source, in accordance with the staging requirement of the Noise Management Plan. In instances where extraneous noise such as road traffic and insects was found to be the dominant noise sources, noise levels were obtained at alternative locations closer to the quarry. Predicted noise levels are then extrapolated from the near-distance location to the sensitive receiver locations.

During the December 2025 monitoring, quarry operations were inaudible at all residential receivers during shoulder period prior to 7am, with traffic noise in all cases the dominant source of noise. No LAmax noise levels were attributable to the quarry in the shoulder period. During daytime period, quarry noise ranged from being inaudible to intermittently audible at the monitoring locations.

During the June 2026 monitoring, quarry operations were inaudible at residential receivers during shoulder period prior to 7am, with traffic noise on Wisemans Ferry Road in all cases the dominant source of noise. No LAmax noise levels were attributable to the quarry in the shoulder period. During daytime period, quarry noise was inaudible at residential receivers. Similarly, dominant noise source during daytime period were from vehicles (light and heavy) traffic on Wisemans Ferry Road.

On-site noise measurements were taken to determine the noise level of various noise sources without the influence of traffic noise. Measurements were taken to determine the LAeq15min to establish representative sound power levels of the quarry operation to facilitate calculation of extrapolated noise levels at receivers where background noise was too high to enable quarry noise contribution to be determined. Extrapolated noise results were calculated and are presented in Table 16. The full noise monitoring reports for December 2025 and June 2026 are contained in Appendix D.

Table 16: Extrapolated Noise Monitoring results, December 2025 and June 2026

Receiver	Noise Criteria		Extrapolated Daytime noise level (LAeq 15 min) December 2025	Extrapolated Daytime noise level (LAeq 15 min) June 2026	Comment
	Shoulder (dBA)	Daytime (dBA)			
R3	37	40	38	38	All locations comply with noise limits. Results of attended monitoring and extrapolated noise levels demonstrate observed operations during shoulder and day periods were compliant with the noise criteria at each receiver under the meteorological conditions at the time.
R4	35	40	39	39	
R6	35	41	40	40	
R8	35	40	40	40	
All other receivers	35	40	See Figure 4	See Figure 5	

Note: *A noise agreement is in place between Dixon Sand and receivers R2, R12 and receivers located on Hitchcock Road (PF1, PF2 and PF3), therefore the noise criteria do not apply at these receivers.*

Dixon Sand owns the property at Receiver D1 and therefore the noise criteria does not apply at this location

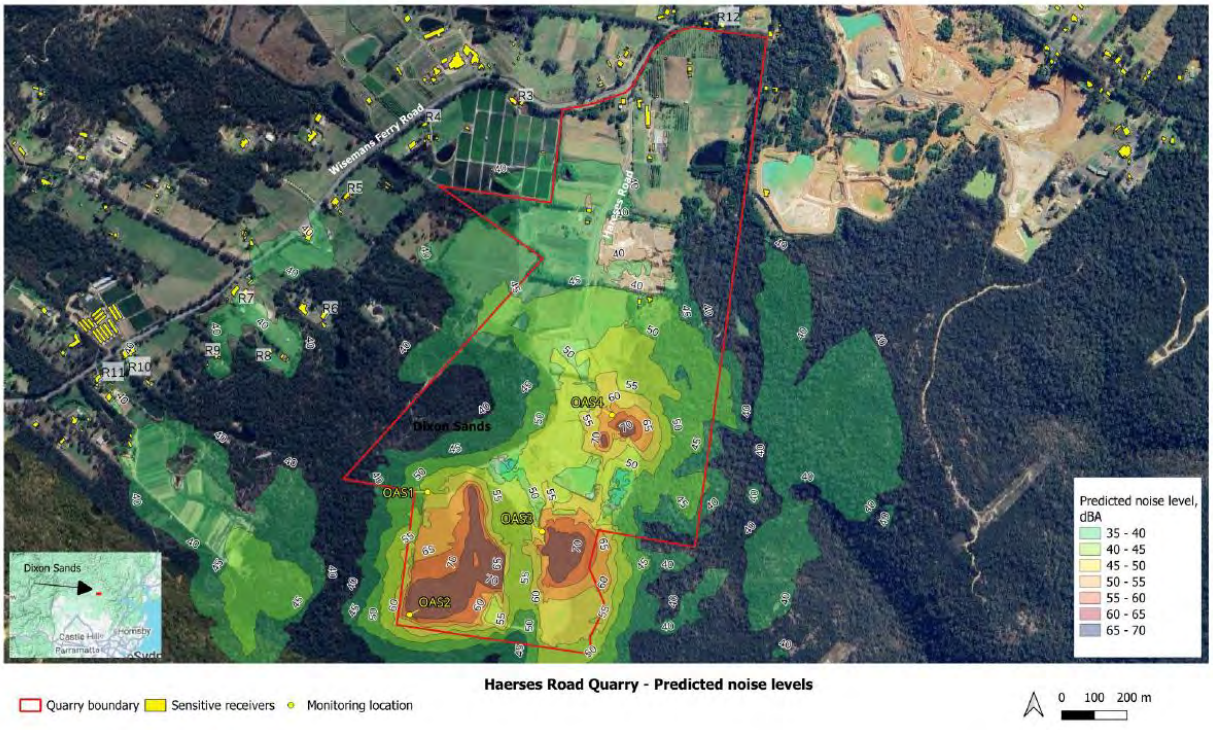


Figure 4 – Extrapolated noise levels from Haerses Road Quarry based on on-site measurements, December 2025

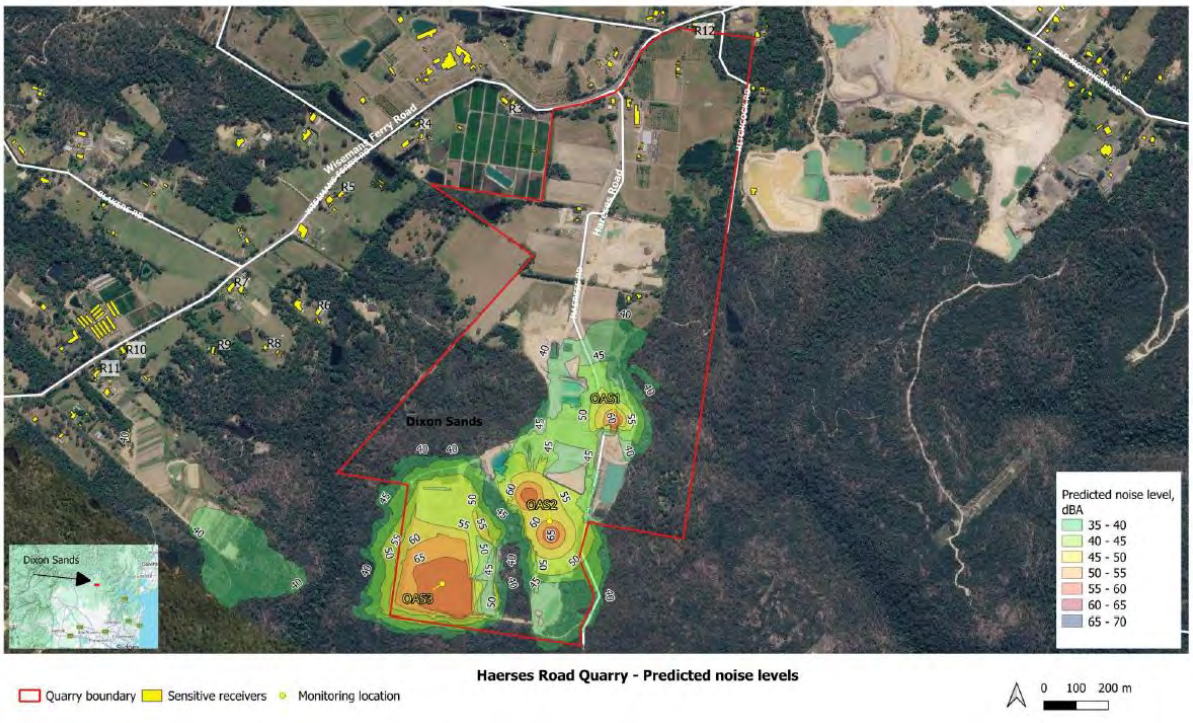


Figure 5 – Extrapolated noise levels from Haerses Road Quarry based on on-site measurements, June 2025

5.2.4 Analysis

Results of attended noise monitoring and extrapolated noise levels indicate that Haerses Road quarry operations are compliant with shoulder and daytime noise criteria under the meteorological conditions at the time of monitoring in December 2025 and June 2026.

5.2.5 Noise Trend

Dixon Sand has a noise agreement in place with receiver R2, R12 and properties owned by PF Formations along Hitchcock Road and therefore, noise criteria do not apply at these locations.

New noise criteria were established during DA Modification 3. Therefore, this marks the starting point for a new long-term trend for quarry noise. Attended noise monitoring results and extrapolated noise levels from the December 2025 and June 2026 monitoring are displayed in Charts 13 to 17, inclusive. All attended noise monitoring results and extrapolated noise levels are compliant for both shoulder and daytime operations at all receivers.

Future noise monitoring results will contribute to establishing new noise trends for quarry operations as extraction occurs in different extraction areas and depths.

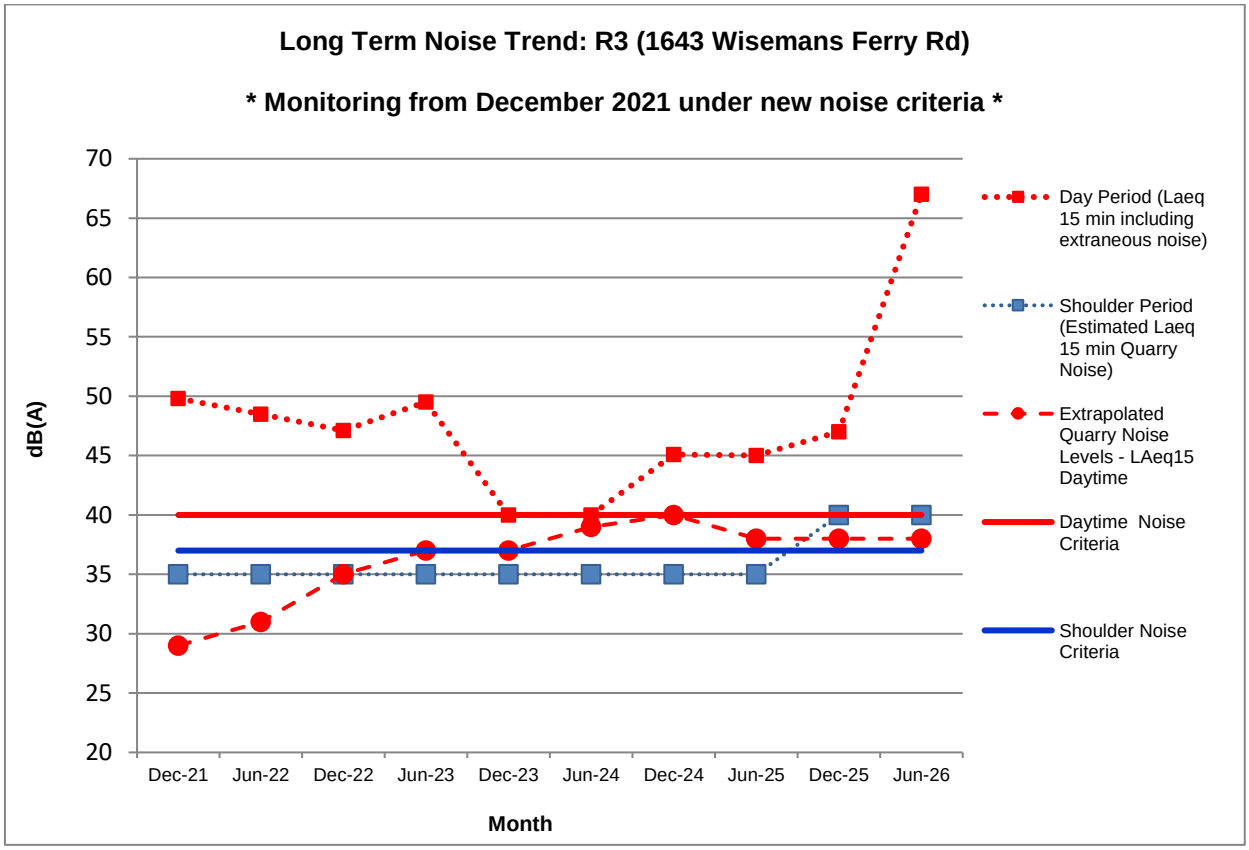


Chart 13: Noise Monitoring Results – R3

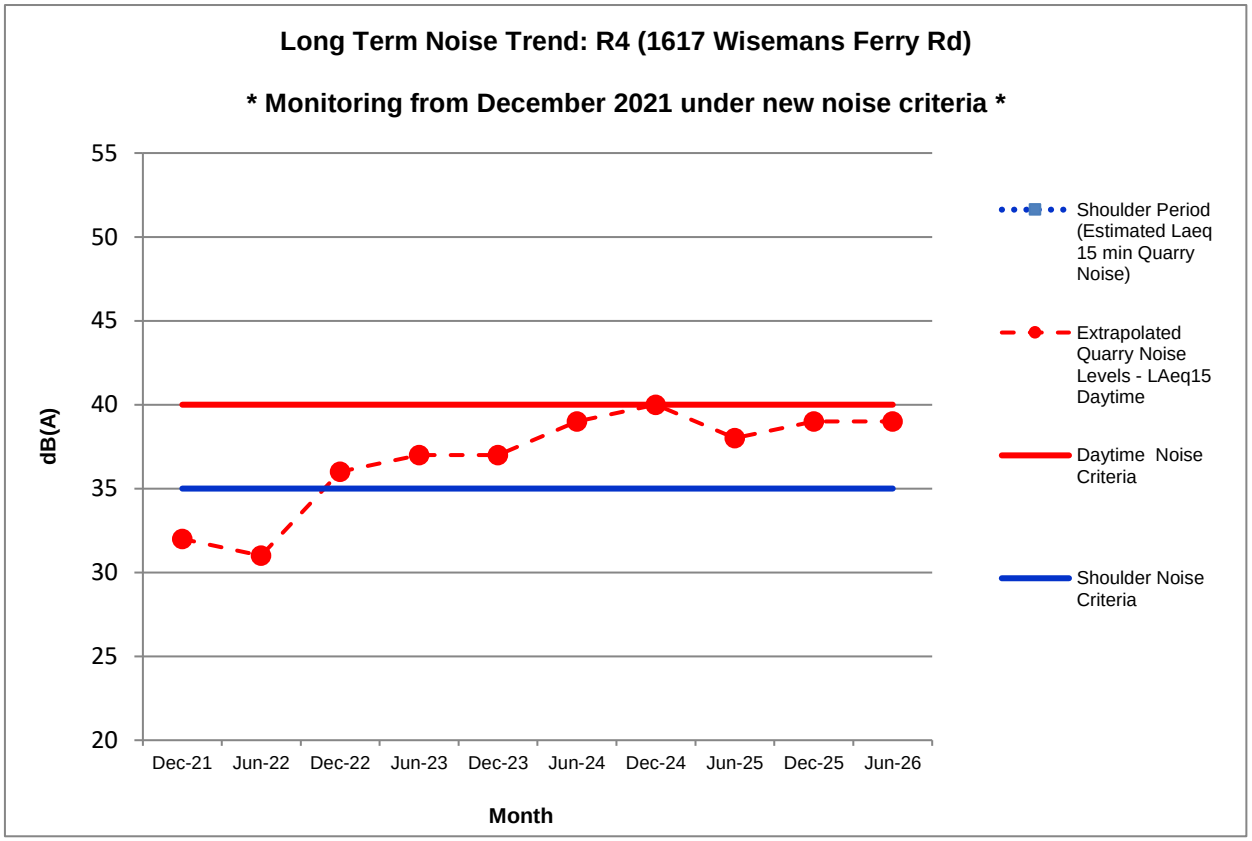


Chart 14: Noise Monitoring Results – R4

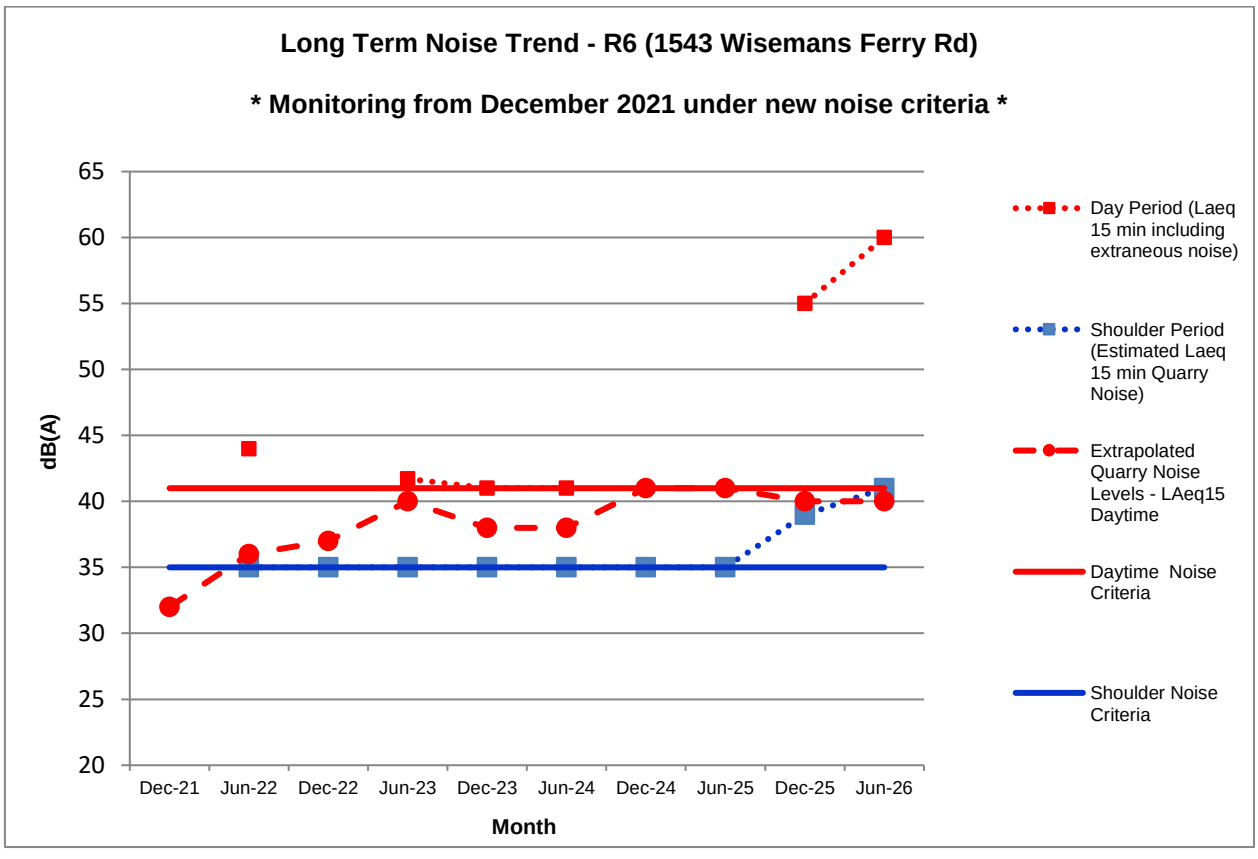


Chart 15: Noise Monitoring Results – R6

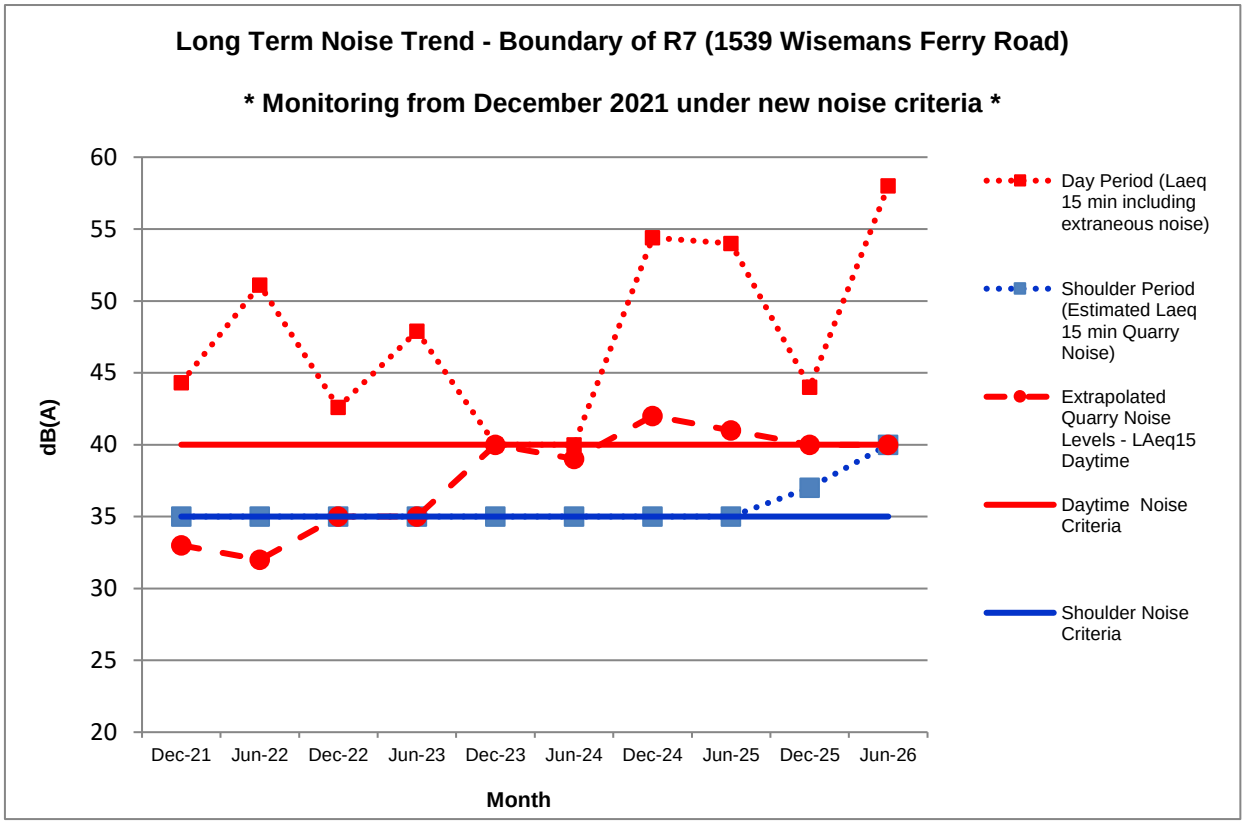


Chart 16: Noise Monitoring Results – R7

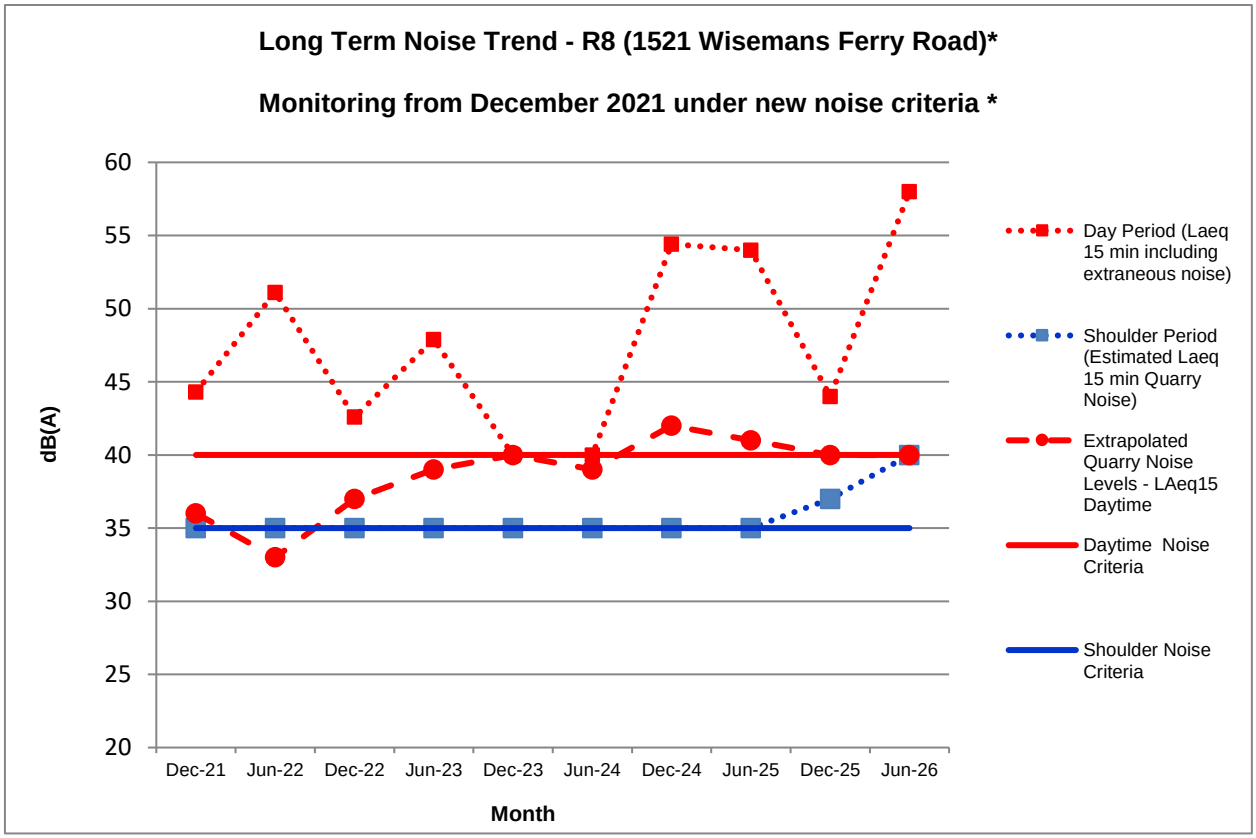


Chart 17: Noise Monitoring Results – R8

5.2.6 Discrepancies between Predicted and Actual Noise Impacts

The EIS (ERM, 2005) prepared for the original development consent DA 165-7-2005 contains predictions for noise impacts during quarry operations in the following extraction Stages:

- Stage 1,
- Stage 4 (scenario a),
- Stage 4 (scenario b), and
- Stage 5.

The EA (Umwelt, 2016) prepared for development consent DA 165-7-2005 (Modification 1) contains predictions for noise impacts for quarry activities in the newly approved extraction cells:

- early extraction in Cells 4,
- early extraction in Cells 5,
- clearing, pre-stripping and early extraction for Cell 1,
- clearing, pre-stripping and early extraction for Cell 3, and
- bund construction in Cell 4.

The Modification Report MR3 (Umwelt, 2019) prepared for DA Modification 3 included a new Noise Impact Assessment which considered the potential noise emissions of the Quarry against the Project Noise Trigger Levels established in accordance with the Noise Policy for Industry (EPA 2017) which considered noise emissions over the remaining life of the Quarry including the proposed Modification under this DA Modification.

During this monitoring period, the main source of noise from quarry operations on Lot 216 were mobile sand screening and processing and loading of haulage trucks for transfer to Old Northern Road quarry (front end loaders, mobile screener and haulage trucks), extraction operation in the Modification 1 area, and stockpile management in Stage 2. Since 2021 – 2022, there is an upward trend in the measured noise levels at receivers R3, R4, R6, R7 and R8 due to quarry operations moving in the northward directions closer to the receivers. Nevertheless, extrapolated daytime noise levels for receivers R3, R4, R6, R7, R8 and other receivers from noise monitoring in December 2025 and June 2026 are compliant with the daytime noise criteria. Shoulder period noise criteria remained in compliant during this reporting period. The complying noise levels are as predicted and in line with the NIA in the Modification Report (Umwelt, 2019) where noise modelling results are based on worst-case meteorological conditions and conservatively modelled scenarios demonstrating that noise emission from quarry operations can be managed to maintain compliance with the Project Noise Trigger Levels throughout the life of the quarry. Until quarry operations progress to Stage 4 of the Tertiary Sand Extraction Area (original extraction area), no change to the existing management and monitoring measures implemented by the Quarry are required.

Ongoing noise monitoring results will enable a better understanding of the actual noise impacts associated with quarry operations in the new extraction cells of Modification 1 as the quarry moves into different extraction cells and depths.

5.2.7 Changes to Environmental Procedures

No changes to environmental procedures in relation to noise management is required.

Undertake noise monitoring in accordance with the Noise Management Plans and continue with the 6-monthly monitoring frequency.

Noise bund walls are to be constructed and maintained as per the strategies outlined in the Haerses Road Acoustic Bund Construction Noise Management Plan.

5.3 Traffic and Transport

5.3.1 Ongoing Management Measures

Vehicle Movements

Vehicle movements are recorded in the truck register. Records have been sent to Council and Section 94 Contribution payments made.

There were no exceedances of permitted vehicle movements during the reporting period.

Monthly Inspections

Observations of road conditions, maintenance requirements and the effectiveness of the Wisemans Ferry Road intersection upgrade are inclusive in the monthly site inspection checklists. An example of the monthly site inspection checklist is attached in Appendix E.

Community Liaison

Liaison between Dixon Sand and the representative of Maroota Public School is conducted on a regular basis during the Community Consultative Committee meetings which are held bi-annually. Details of the CCC meetings and community engagement and contributions are discussed further in Section 8.

5.3.2 Traffic Related Complaints

Dixon Sand received no traffic related complaint for Haerses Road Quarry during this reporting period.

A copy of the summary of complaint register is contained in Appendix K.

5.3.3 Compliance

Assessment of compliance with the relevant conditions is summarised in Table 17.

Table 17: Road and Traffic Compliance.

DA165-7-2005 (Mod 2)	Condition	Compliance	Comments
Condition 8 of Schedule 2	Truck movements at the site (i.e. either arrival or dispatch), including truck movements between the site and the Old Northern Road Quarry, must not exceed: (a) 180 per day; and (b) 20 between 6.00 am and 7.00 am.	Yes	Refer to Table 4 in Section 3.1.
Condition 10 of Schedule 2	The Applicant must: (a) maintain accurate records of all VENM and ENM received at the site (including the date, time and quantity received); and (b) include a copy of this data in the Annual Review.	Yes	VENM/ENM imported during this reporting period. Refer to Section 5.4.2

<table>
<tr><th>DA165-7-2005 (Mod 2)</th><th>Condition</th><th>Compliance</th><th>Comments</th></tr>
<tr><td>Condition 15 of Schedule 2</td><td>The Applicant must pay Council a monthly financial contribution toward the maintenance of local roads used for haulage of quarry products. The contribution must be determined in accordance with The Hills Shire Council Contributions Plan No. 6 Extractive Industries, or any subsequent relevant contributions plan adopted by Council.</td><td>Yes</td><td>Refer to Appendix I for a summary of s.94 monthly contribution for sales from Haerses Road Quarry.
Note these contributions are not inclusive of products sold at Old Northern Road Quarry.</td></tr>
<tr><td>Condition 1 of Schedule 3</td><td>The Applicant must comply with the operating hours set out in Table 1.</td><td>Yes</td><td>Refer to truck record</td></tr>
<tr><td colspan="4">Table 1: Operating hours
<table><tr><th>Activity</th><th>Permissible Hours</th></tr><tr><td>Quarrying operations (excluding truck arrival, loading and dispatch)</td><td>7.00 am to 6.00 pm Monday to Saturday
At no time on Sundays or public holidays</td></tr><tr><td>Truck arrival, loading and dispatch</td><td>6.00 am to 6.00 pm Monday to Saturday
At no time on Sundays or public holidays</td></tr><tr><td>Acoustic bund construction and road and intersection works on Haerses Road and Wisemans Ferry Road</td><td>8.00 to 5.00 pm Monday to Friday
At no time on Saturdays, Sundays or public holidays</td></tr><tr><td>Maintenance</td><td>At any time, provided that these activities are not audible at any privately-owned residence outside of permissible hours for quarrying operations</td></tr></table></td></tr>
<tr><td>Condition 2 of Schedule 3</td><td>The following activities may be carried out outside the hours specified in condition 1 above:
(a) delivery or dispatch of materials as requested by the NSW Police Force or other public authorities; and
(b) emergency work to avoid the loss of lives, property or to prevent environmental harm.</td><td>Yes</td><td>Condition not triggered</td></tr>
<tr><td>Condition 20 of Schedule 3</td><td>Prior to carrying out any development, the Applicant must upgrade Haerses Road to meet the requirements for ‘internal haul roads’, under Baulkham Hills Development Control Plan No. 16 – Extractive Industries, to the satisfaction of Council.</td><td>Yes</td><td>Completed</td></tr>
</table>

DA165-7-2005 (Mod 2)	Condition	Compliance	Comments
Condition 21 of Schedule 3	The Applicant must: (a) maintain safe access to the site for the public and emergency services for the duration of the development; and (b) reinstate the extracted length of Haerses Road to the satisfaction of Council. *Notes:* • *The Applicant must ensure that the final alignment and design of Haerses Road is approved by Council prior to the commencement of the development.* • *The Applicant must bear the full costs associated with the design, survey and construction of the road works, including the relocation of utilities, if required.* • *All works are to be in accordance with Council's Design Guidelines and Work Specifications for Subdivisions and Developments.* • *Following the reconstruction of Haerses Road, the Applicant must rehabilitate any temporary access roads that were established on site.*	Yes	Ongoing Condition not yet triggered Completed Completed Completed Condition not yet triggered
Condition 22 of Schedule 3	Prior to carrying out any development, the Applicant must: (a) provide for appropriate sight distances at the intersection of Haerses Road and Wisemans Ferry Road, by clearing and/or loping vegetation along the eastern approach of Wisemans Ferry Road; and (b) provide warning signage ("Truck Turning") on the eastern and western approaches of Wisemans Ferry Road, to the satisfaction of TfNSW.	Yes	Completed

DA165-7-2005 (Mod 2)	Condition	Compliance	Comments
Condition 23 of Schedule 3	Within 12 months of the commencement of the development, the Applicant must construct a Type 'AUR' treatment at the intersection of Haerses Road and Wisemans Ferry Road to the satisfaction of TfNSW. Until the intersection works have been completed to the satisfaction of TfNSW, the Applicant must limit the number of trucks entering the site to 15 truck movements per day. *Notes:* • *Prior to the Construction Certificate being released the Applicant must:* - *enter into a Memorandum of Understanding with the TfNSW that the Type 'AUR' intersection treatment shall be fully constructed and handed over to the TfNSW within 12 months of the commencement of the development; and* - *issue a bank guarantee in favour of the TfNSW for the total cost of the intersection works (the cost to be determined following the approval of detailed design plans by the TfNSW).* • *The Applicant shall ensure that the intersection works comply with the TfNSW Road Design Guide.* • *The Applicant shall bear the full costs associated with the design, survey and construction of the works, including the relocation of utilities, if required.*	Yes	Completed
Condition 24 of Schedule 3	Prior to transporting any quarry products derived from quarrying operations within the Mod 1 extraction area, the Applicant must construct a channelised right-turn 'CHR' treatment at the intersection of Haerses Road and Wisemans Ferry Road to the satisfaction of TfNSW. The Applicant must: (a) submit detailed design plans to TfNSW for approval prior to the issue of a construction certificate by Council or the commencement of road works; and (b) design and construct the intersection treatment in accordance with the Austroads *Guide to Road Design*.	Yes	Completed in May 2021
Condition 24A of Schedule 3	The Applicant must monitor trucks queuing within the right turn bay at the quarry intersection on Wisemans Ferry Road and, in the instance that there are trucks regularly queuing at the intersection, extend the length of the right turn bay to the satisfaction of TfNSW.	Yes	Monitoring of truck queuing at the intersection is undertaken during monthly site inspection. Refer to Appendix E.
Condition 25 of Schedule 3	Prior to commencement of the works referred to in condition 24 above, the Applicant must prepare and implement a Traffic Control Plan for the development to the satisfaction of the TfNSW.	Yes	Completed by Civil Contractor

DA165-7-2005 (Mod 2)	Condition	Compliance	Comments
Condition 26 of Schedule 3	The Applicant must keep accurate records of all laden truck movements to and from the site (including time of arrival and dispatch) and publish a summary of these records on its website every 6 months.	Yes	Refer to Traffic Management Plan and Truck Records
Condition 27 of Schedule 3	The Applicant must: (a) ensure that all laden trucks have their loads covered when arriving at or leaving the site; (b) ensure that all laden trucks are cleaned of material that may fall from vehicles, before leaving the site; and (c) use its best endeavours to ensure that appropriate signage is displayed on all trucks used to transport product from the development so they can be easily identified by road users.	Yes	Refer to Traffic Management Plan
Condition 28 of Schedule 3	The Applicant must prepare a Traffic Management Plan for the development to the satisfaction of the Secretary. This plan must: (a) be prepared in consultation with the TfNSW and Council; (b) be submitted to the Secretary for approval within 6 months of the determination of Modification 1, unless otherwise agreed by the Secretary; (c) describe the processes in place to control the arrival and dispatch of trucks; (d) include a Drivers' Code of Conduct that details the safe and quiet driving practices that must be used by drivers travelling to and from the site, particularly in the vicinity of Maroota Public School; (e) describe the measures to be put in place to ensure compliance with the Drivers' Code of Conduct; (f) include specific measures to minimise the impact of heavy vehicles, including restrictions on routes and times (particularly in relation to peak hours, holiday periods and times immediately before and after school hours, i.e. 8.30 am – 9.00 am and 3.00 pm – 3.30 pm); and (g) propose measures to minimise the transmission of dust and tracking of material onto the surface of the public road from vehicles leaving the quarry. The Applicant must implement the approved Traffic Management Plan as approved by the Secretary.	Yes	Refer to Traffic Management Plan

5.3.4 Analysis

The production and truck movement data outlined above is evidence that Dixon Sand has operated in compliance with the consent conditions during the 2025 - 2026 reporting period.

The quarry did not receive any traffic related complaint was received by Haerses Road Quarry during this reporting period.

5.3.5 Findings

The findings show that mitigation measures proposed in the EIS and Management Plans are being implemented adequately. The permitted truck movements and hours of operations have been adhered to.

5.3.6 Changes to Environmental Procedures

No changes to the environmental procedures are proposed or deemed necessary for road and traffic management.

5.4 Waste Management

5.4.1 Waste Generation

During this reporting period, refuelling of plant and machinery at Haerses Road quarry was carried out using a fuel trailer. Chemicals, hazardous materials, hydrocarbon wastes and diesel fuel are stored in appropriate bunded and/or designated areas. Spill response kits and fire extinguishers are located at vantage locations on site.

Glass, paper, cardboard and plastic (general solid waste – non-putrescible) were recycled via Council's fortnightly scheduled bin collection service. Food waste and other general solid waste (putrescible) were disposed of and collected via Council's weekly scheduled bin collection. Other bulky solid waste associated with the operations were disposed of in skip bins and transported offsite by a licensed waste transporter.

Printer ink cartridges and batteries were dropped off at Officeworks. Coffee pods were returned to the manufacturer to composting and package recycling.

The amount of waste transported off site from Haerses Road for disposal, recycled and processed during the monitoring period is contained in Table 18.

Table 18: Haerses Road – Total Waste Generated, July 2025 to June 2026

Waste Type	Disposal / Recycling / Processing	Amount of Waste Generated
Putrescible	The Hills Shire Council Waste Contractor weekly pickup	Approx. 12.5 m^3
Recyclables	The Hills Shire Council Waste Contractor fortnightly pickup (1 x 240L Yellow bin)	Approx. 6.2 m^3
General Waste – Non-putrescible	Skip bins provided by a licensed Waste Contractor	29 m3
Printer Cartridges	Drop off at Post Office or Officeworks	< 0.1 m3

Coffee Pods	Returned to supplier for composting and package recycling	< 0.1 m3
Batteries	Drop off at Post Office or Officeworks	< 0.1 m3
Sewerage	Onsite Sewerage treatment	As per manufacturer's specification.

The waste tracking register is contained in Appendix F.

5.4.2 VENM and ENM Importation

Condition 9 of Schedule 2 of DA165-7-2005 permits the importation of up to 250,000 tonnes of Excavated Natural Material (ENM) and Virgin Excavated Natural Material (VENM) per calendar year to Haerses Road quarry. Importation of VENM commenced in June 2019. The following quantity of ENM and VENM have been imported:

- A total of **10,903.42** tonnes of VENM/ENM was imported to Haerses Road Quarry during the 2025 calendar year,
- A total of **812.48** tonnes of VENM/ENM were imported to Haerses Road Quarry from January 2026 to June 2026,
- A total of **11,715.90** tonnes of VENM/ENM were imported to Haerses Road Quarry during the 2025 - 2026 financial year (Annual Review reporting period).

A summary and excerpt of the VENM/ENM Material Transport Register is contained in Appendix F. The ***VENM / ENM Material Transport Register*** records:

- Transport Company name
- Truck Registration number
- Date of transport
- Material tip time
- Testing Certificate demonstrating compliance with the Waste Classification
- Quantity of material received
- Total annual quantity

5.4.3 Changes to Environmental Procedures

No changes to the waste management procedure are proposed.

Continue efforts to minimise waste generation and maximise recycling and reuse of materials are to be undertaken such as labelling of bins for waste segregation, waste reduction posters and toolbox talks to raise awareness.

6. Water Management

6.1 Monitoring and Compliance Limits

DA165-7-2005 Modification 1 requires 13 additional monitoring wells to be installed (in clusters) in the 100m buffer zone to the Maroota Tertiary Sand Groundwater Source (MTSGS) in the expanded extraction area. These new monitoring bores have been installed in May 2018 and are an addition to the nine existing bores. Groundwater monitoring for bores in the buffer zone commenced in July 2018.

6.1.1 Groundwater Levels and Criteria / Trigger Levels

Out of the fourteen boreholes originally installed at Hearses Road quarry, six of the original boreholes are currently active and being monitored. Boreholes H1, H4, H5, H8, H10, H11 and H13 have been decommissioned due to their locations being obsolete or in the active quarry operational areas. Monitoring ceased at borehole H3 due the bore running dry. In 2011 two additional boreholes BH4 and BH5 were added to Haerses Road quarry water monitoring program. Additional 13 boreholes (Cluster bores located in the MTSGS 100m buffer) were required to be installed by DA165-7-2005 Modification 1. Cluster bores in the MTSGS buffer zone were installed in May 2018 with groundwater levels (utilising continuous data loggers) and quality monitoring program commencing in July 2018 with continuous data loggers installed. A number of cluster bores were decommissioned, and one additional borehole installed following consultation with DCCEEW - Water. Active groundwater bores at the Haerses Road quarry are listed in Table 19. The adopted 20th and 80th percentile water levels as site specific trigger values in the Soil and Water Management Plan are listed in Table 20.

Table 19: Groundwater monitoring bores for Haerses Road quarry site.

Monitoring Bore	Location Reference	Aim of Monitoring
H2	Stage 4, adjacent to the dam	MTSGS
H6	Stage 5, northern boundary	MTSGS
H7	Stage 5, southern boundary	MTSGS
H9	Stage 3, behind tomato vines	MTSGS
H12	Stage 3, adjacent to the shed	MTSGS
H14	Fire trail, south of quarry boundary	MTSGS
BH4	South-west of quarry, outside Stage 2.	SCBGS
BH5	Stage 2, western boundary	SCBGS
BH01A	100m MTSGS Buffer – Site 1	Perched groundwater in weathered Hawkesbury sandstone
BH01B	100m MTSGS Buffer – Site 1	Perched groundwater in unweathered Hawkesbury sandstone
BH01C	100m MTSGS Buffer – Site 1	SCBGS
BH02A	100m MTSGS Buffer – Site 2	Perched groundwater in weathered Hawkesbury sandstone
BH02B	100m MTSGS Buffer – Site 2	Perched groundwater in unweathered Hawkesbury sandstone

Monitoring Bore	Location Reference	Aim of Monitoring
BH02C	100m MTSGS Buffer – Site 2	SCBGS
BH05B	Lot 216, adjacent to BH5	Perched groundwater in unweathered Hawkesbury sandstone
BH06A	100m MTSGS Buffer – Site 4	Perched groundwater in weathered Hawkesbury sandstone
BH06B	100m MTSGS Buffer – Site 4	Perched groundwater in unweathered Hawkesbury sandstone
BH06C	100m MTSGS Buffer – Site 4	SCBGS
BH07	South-western corner of Extraction Cell 1A in Modification 1 area	SCBGS

Table 20: Baseline Groundwater Level Statistics and Trigger Values.

Monitoring Bore	Minimum	20th Percentile	50th Percentile	80th Percentile	Maximum
H2	178.1	179.4	180.0	180.9	182.4
H6	179.4	181.2	181.4	182.4	184.7
H7	178.2	180.2	180.4	180.5	182.6
H9	182.6	184.9	185.0	185.3	186.9
H12	178.2	181.0	181.1	181.2	184.0
H14	171.9	174.7	174.9	175.1	177.2
BH4	139.3	140.5	140.6	140.7	141.2
BH5	121.4	123.2	123.2	123.3	123.4

6.1.2 Groundwater Quality and Criteria / Trigger Levels

Groundwater quality analyses for H-series bores, BH4 and BH5 were undertaken 6-monthly in December 2025 and May 2026, in accordance with the Soil and Water Management Plan. Groundwater quality monitoring for the were undertaken on a monthly basis. Groundwater samples were obtained and analysed by a NATA qualified laboratory for analysis of electrical conductivity and total suspended solids. pH measurements were undertaken in the field due to short sample holding time. The baseline groundwater quality statistics and trigger values for H-series, BH4 and BH5 are listed in Table 21 below.

Table 21: Baseline Groundwater Quality Statistics and Trigger Values

	pH			Electrical Conductivity (µS/c)		
Monitoring Bore	20th Percentile	50th Percentile	80th Percentile	20th Percentile	50th Percentile	80th Percentile
H2	4.3	4.4	4.6	56	69	108
H6	4.2	4.3	4.4	161	182	205
H7	4.2	4.3	4.4	114	189	298
H9	4.4	4.6	4.7	116	127	145
H12	4.5	4.6	4.8	133	182	210
H14	4.3	4.6	4.7	94	117	193
BH4	4.4	4.7	4.9	89	97	114
BH5	5.1	5.6	6.1	126	137	158

6.1.3 Surface Water Monitoring and Discharge Criteria

The EPL 12513 does not require any surface water monitoring, and no surface water discharge is permitted at Haerses Road quarry. The Soil and Water Management Plan stipulate the requirement to monitor surface water quality at the Little Cattai Creek – “SW1” (located east of Stage 2 east extraction cell) and a tributary of Stone Chimney Creek –“SW2” (located west of the extraction Cell 1A) to achieve surface water quality baseline data downstream of quarry operations. Monitoring at these locations were to commence in September 2018 however, due to prolonged drought conditions and the fact that these monitoring points are located in ephemeral tributaries, water samples can only be obtained when there has been sufficient rainfall to generate flows in the tributaries. Up until the 2020 – 2021 reporting, only four sampling events for SW1 and SW2 were carried out. Since then, 3 additional sampling events were carried out during this 2021 – 2022 reporting period. No sampling had been taking during this 2025 - 2026 reporting period due to unsuitable sampling condition. The surface water quality statistics presented in Table 22 were derived from these seven sampling events and consequently, these trigger values represent the interim baseline values which will be subjected to on-going review once additional surface water quality results have been obtained.

Surface water quality monitoring for quarry basins commenced during the 2022 – 2023 reporting period and the preliminary data is presented in this Annual Review. Continued monitoring will enable an establishment of trend in water quality in these quarry basins. A copy of the surface water quality results for quarry basins are contained in Appendix C.

Table 22: Baseline surface water quality statistics and trigger values

Parameter	Minimum		20th Percentile		50th Percentile		80th Percentile		Maximum	
	SW1	SW2	SW1	SW2	SW1	SW2	SW1	SW2	SW1	SW2
pH	5.5	5.1	6.0	5.2	6.5	5.8	6.6	5.9	6.7	6.1
TSS (mg/L)	5.0	5.0	7.8	13.2	12.0	16.0	58.8	41.6	90.0	84.0
Turbidity (NTU)	82.1	9.0	97.0	25.7	193.0	54.4	357.4	95.9	475.0	160.0

6.2 Extraction Limits

Extraction limits for Haerses Road quarry are defined by DA165-7-2005 and listed in Table 23 below.

Table 23: Haerses Road Quarry Extraction limits

DA165-7-2005 Conditions	Extraction limit
Condition 19 of Schedule 2	The Applicant must not undertake any extraction within 2 metres of the highest recorded wet weather groundwater level of both the MTSGS and the SCBGS.
Condition 20 of Schedule 2	Within 6 months of the determination of Modification 1, the Applicant must: (a) establish the highest recorded wet weather groundwater levels for the site based on all available local and site-specific groundwater monitoring data; and (b) engage a suitably qualified and experienced person to prepare a Maximum Extraction Depth Map (contour map or similar) for the development to ensure compliance with condition 19 above and submit this map to the Secretary for approval. Within 14 days of the approval of the Maximum Extraction Depth Map, the Applicant must submit a copy of the approved map and the supporting groundwater monitoring data to DPE Water.
Condition 21 of Schedule 2	The Applicant must comply with the extraction depths specified in the approved Maximum Extraction Depth Map, to the satisfaction of the Secretary.
Condition 22 of Schedule 2	The Applicant must review and update the Maximum Extraction Depth Map: (a) annually, for the duration of the baseline groundwater monitoring program (see condition 17 of Schedule 3); and (b) within 3 months of the completion of each Independent Environmental Audit (see condition 13 of Schedule 5), to the satisfaction of the Secretary.

6.3 Results

Groundwater Levels

Chart 18 depicts the long term recorded groundwater levels which commenced in June 2003 for H-series, BH4 and BH5. Charts 19 to 34 (inclusive) illustrate the groundwater levels for all active bores during this reporting period.

Groundwater Quality

Chart 35 depicts the long term recorded groundwater pH which commenced in June 2003. Charts 36 to 46 (inclusive) illustrate the groundwater pH across all bores during this reporting period.

Chart 47 depicts the long term recorded groundwater electrical conductivity commencing June 2003. Charts 48 to 58 (inclusive) illustrate the groundwater electrical conductivity across all bores during this reporting period.

Surface Water Quality

Table 24 contains the laboratory analyses results for water samples obtained at SW1 and SW2 to date. Water quality results for quarry related water basins are displayed in Charts 59 to 62 (inclusive).

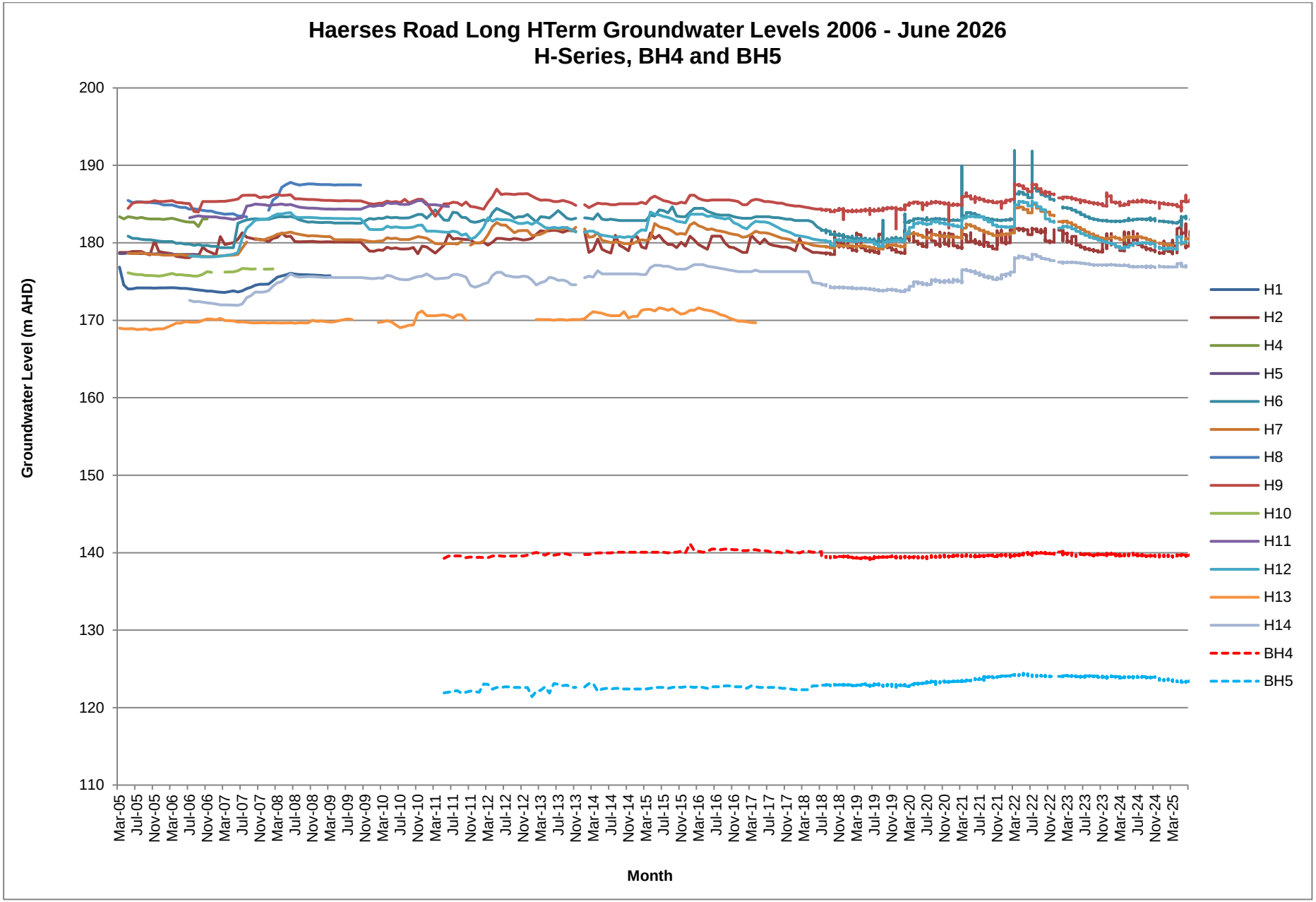


Chart 18: Haerses Road Long Term Groundwater Levels for H-Series, BH4 and BH5.

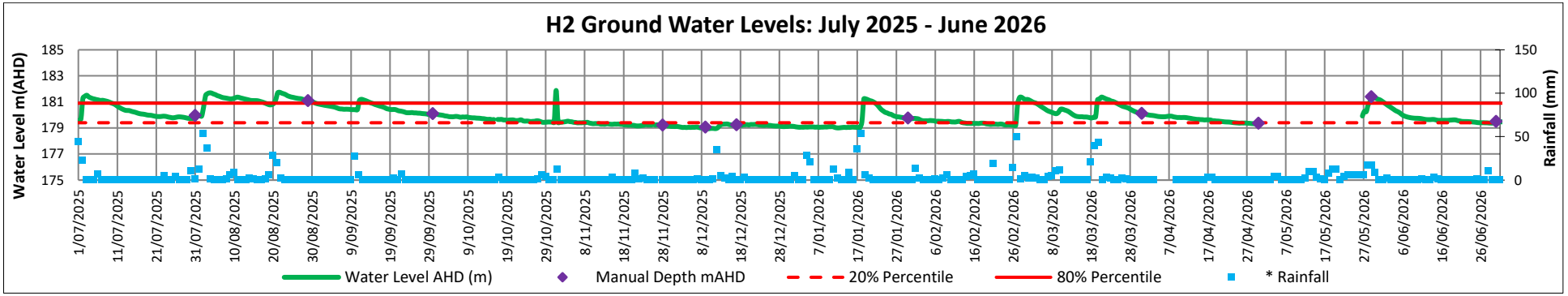


Chart 19: H2 Groundwater Levels for July 2025 – June 2026

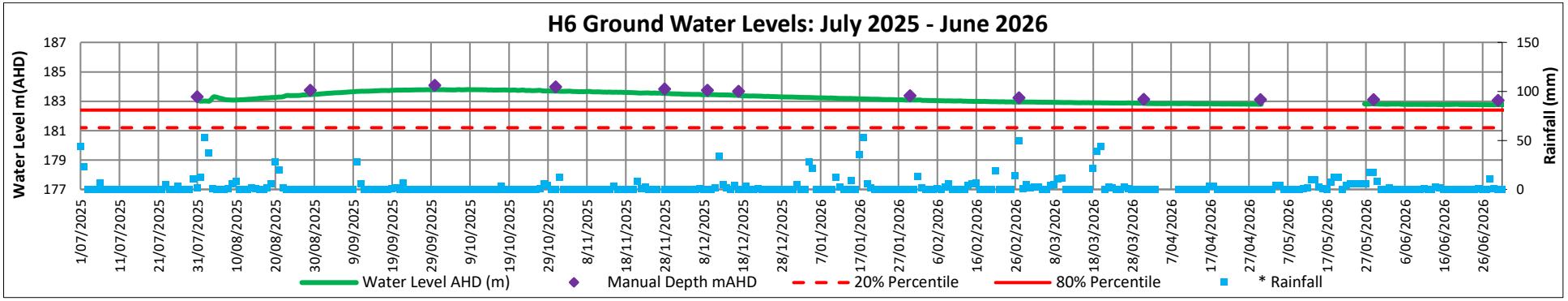


Chart 20: H6 Groundwater Levels for July 2025 – June 2026

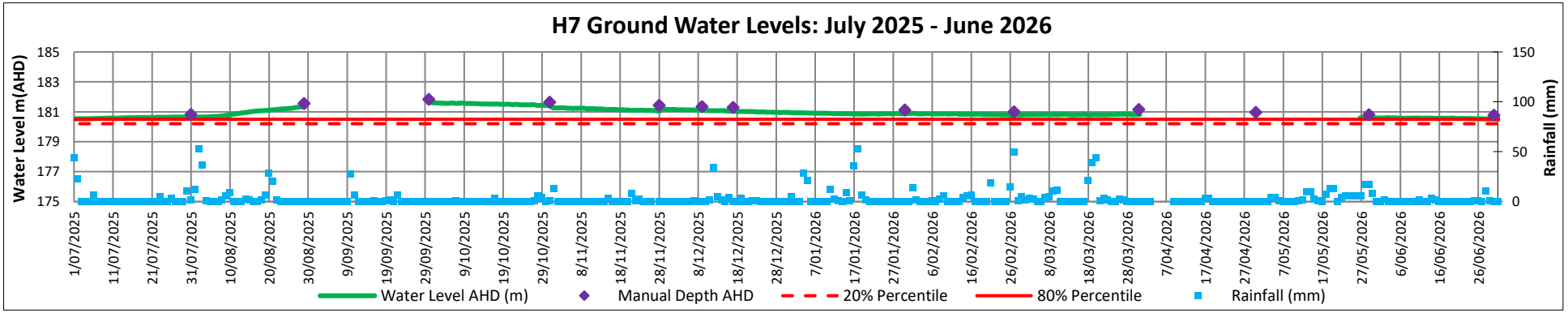


Chart 21: H7 Groundwater Levels for July 2025 – June 2026

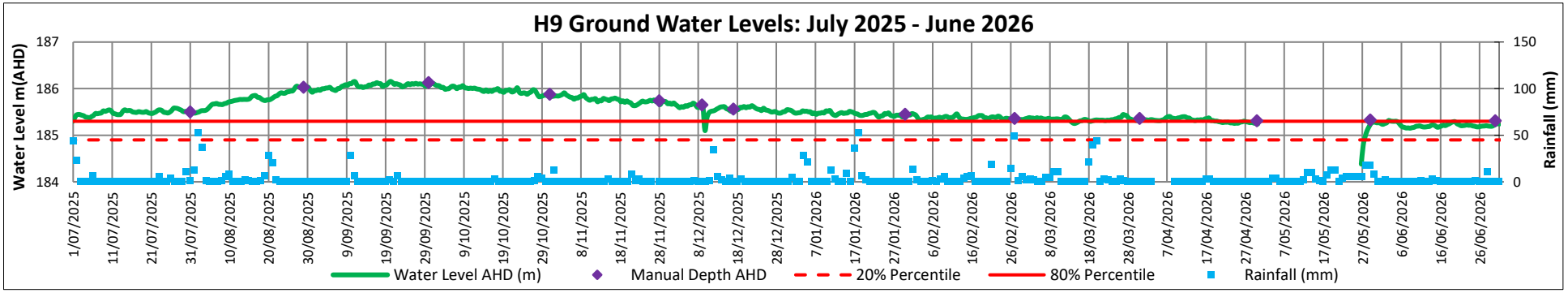


Chart 22: H9 Groundwater Levels for July 2025 – June 2026

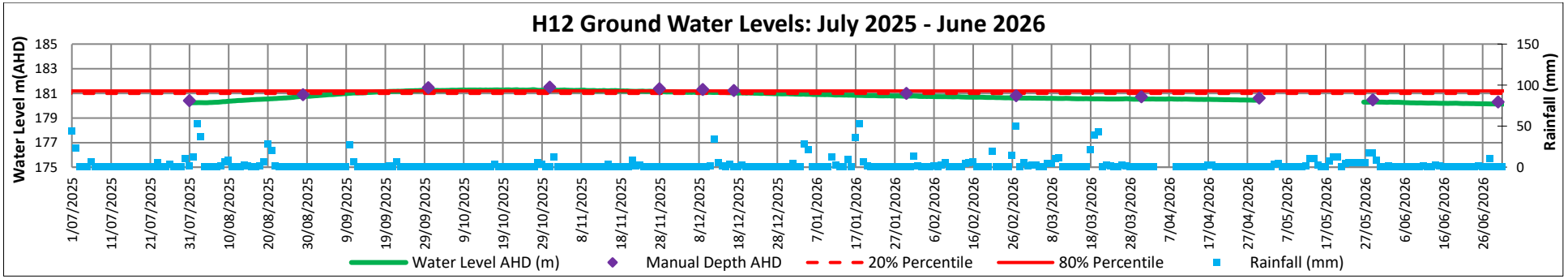


Chart 23: H12 Groundwater Levels for July 2025 – June 2026

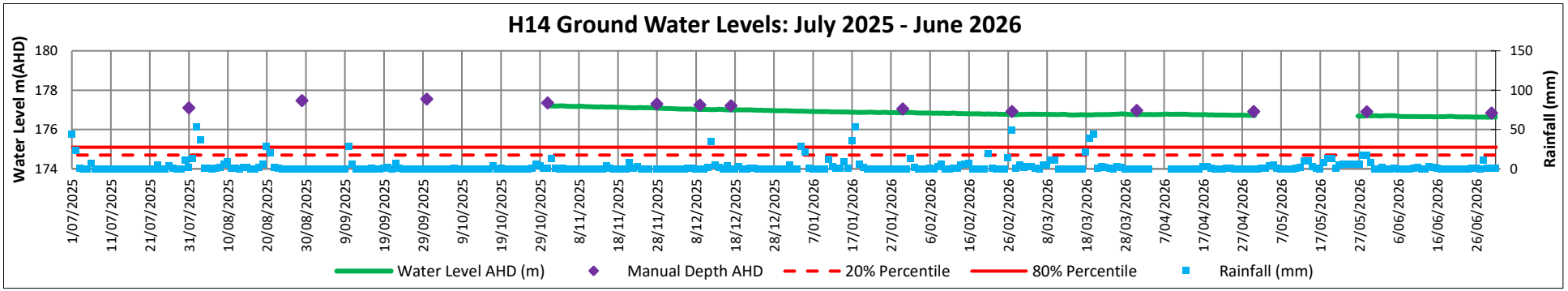


Chart 24: H14 Groundwater Levels for July 2025 – June 2026

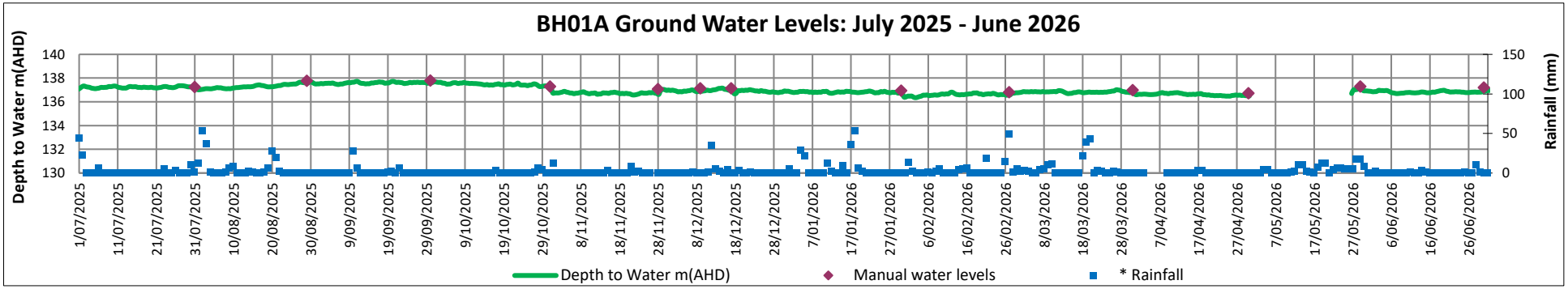


Chart 25: BH01A Groundwater Levels for July 2025 – June 2026

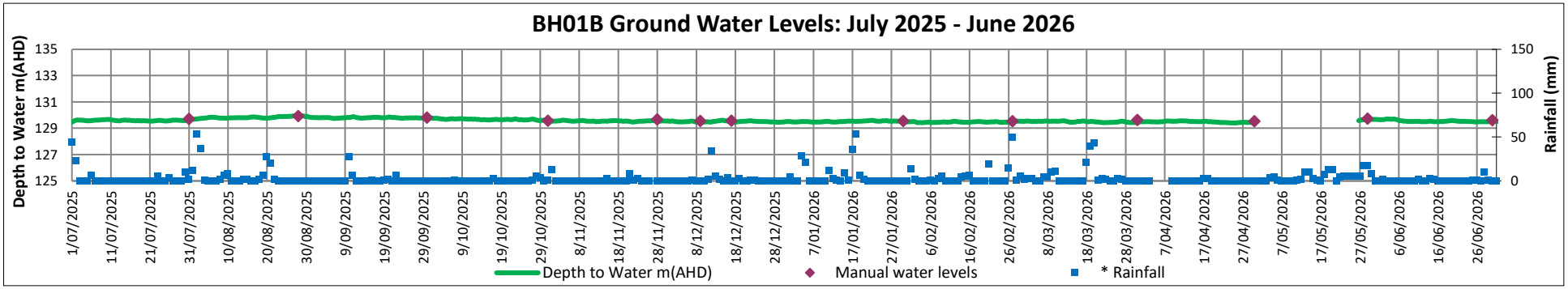


Chart 26: BH01B Groundwater Levels for July 2025 – June 2026

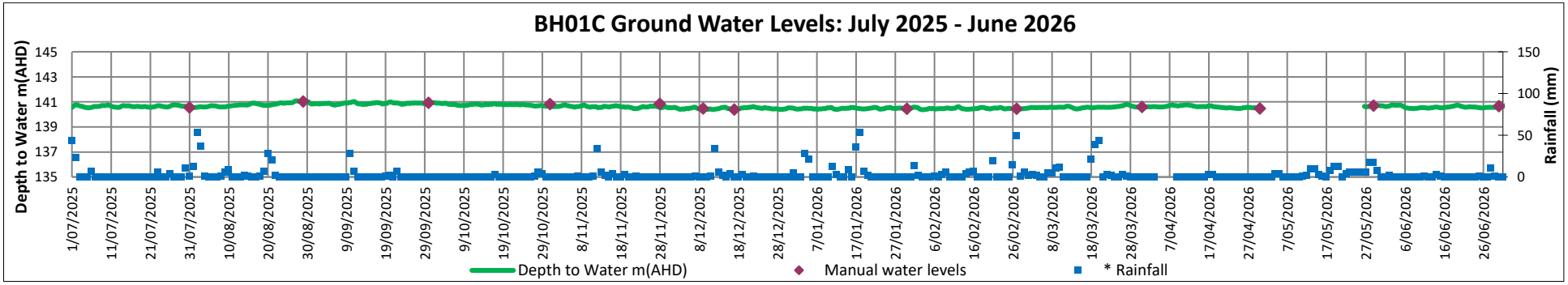


Chart 27: BH01C Groundwater Levels for July 2025 – June 2026

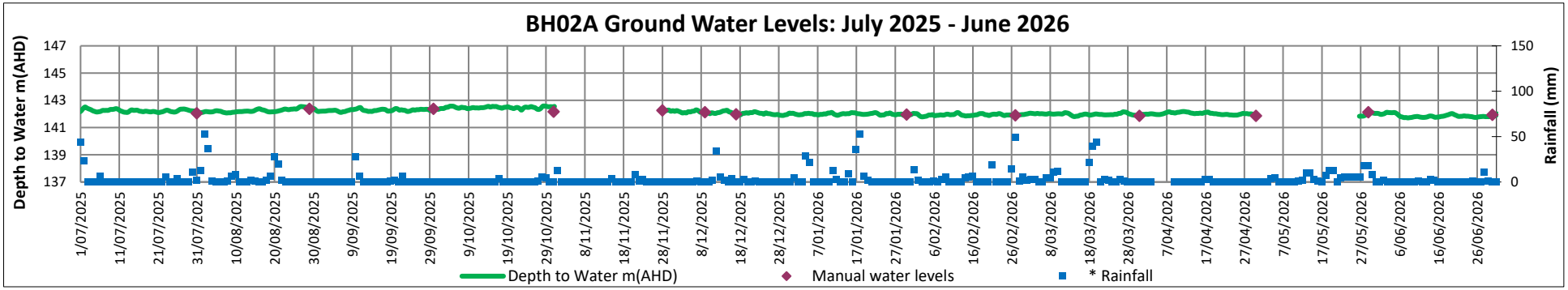


Chart 28: BH02A Groundwater Levels for July 2025 – June 2026

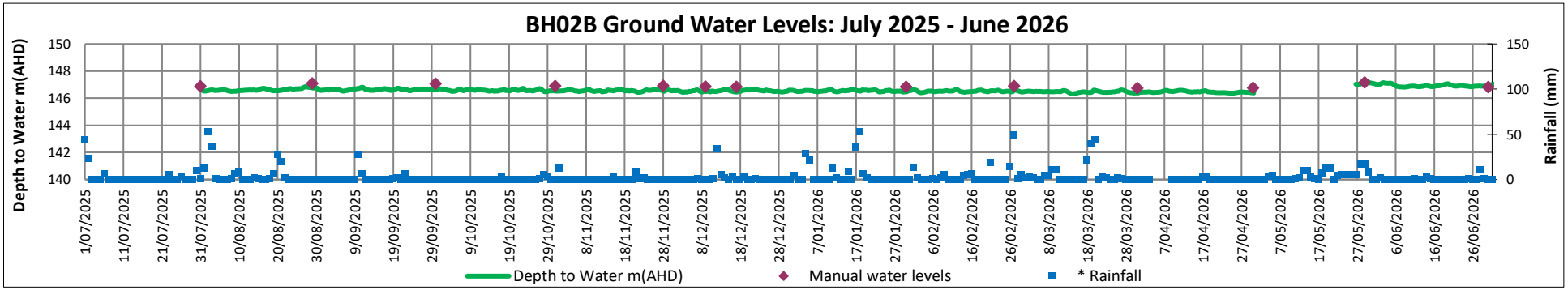


Chart 29: BH02B Groundwater Levels for July 2025 – June 2026

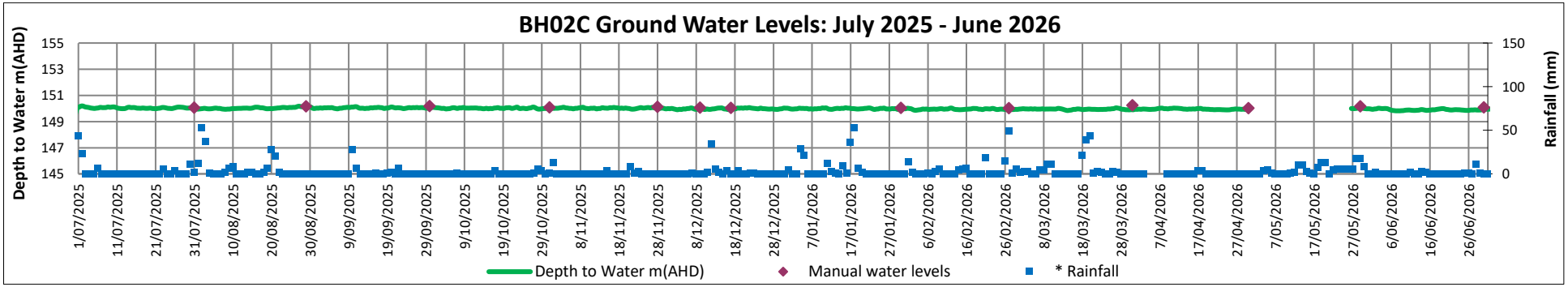


Chart 30: BH02C Groundwater Levels for July 2025 – June 2026

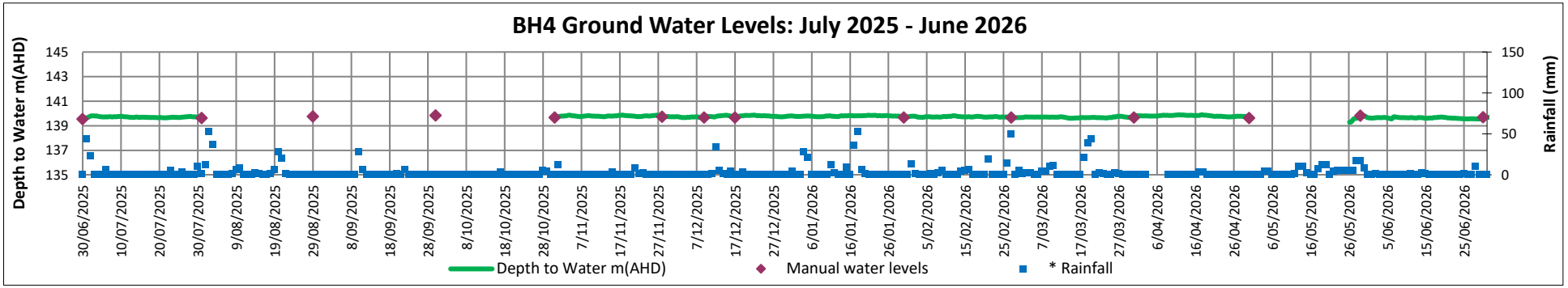


Chart 31: BH4 Groundwater Levels for July 2025 – June 2026

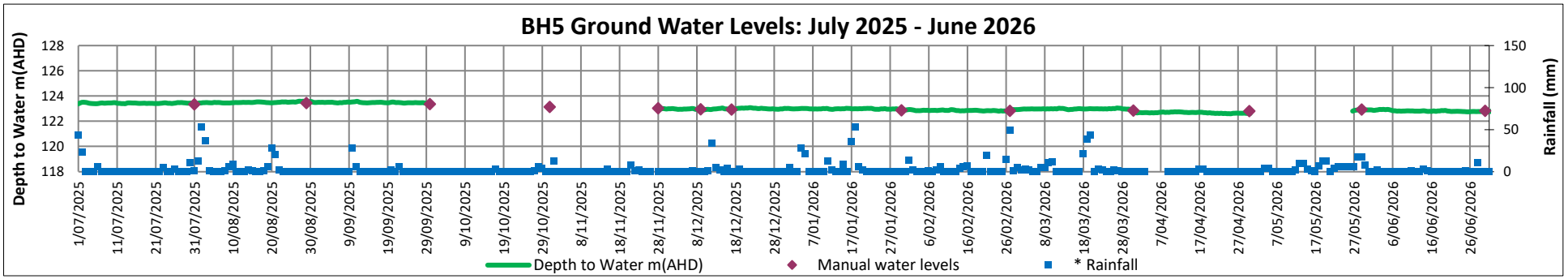


Chart 32: BH05 Groundwater Levels for July 2025 – June 2026

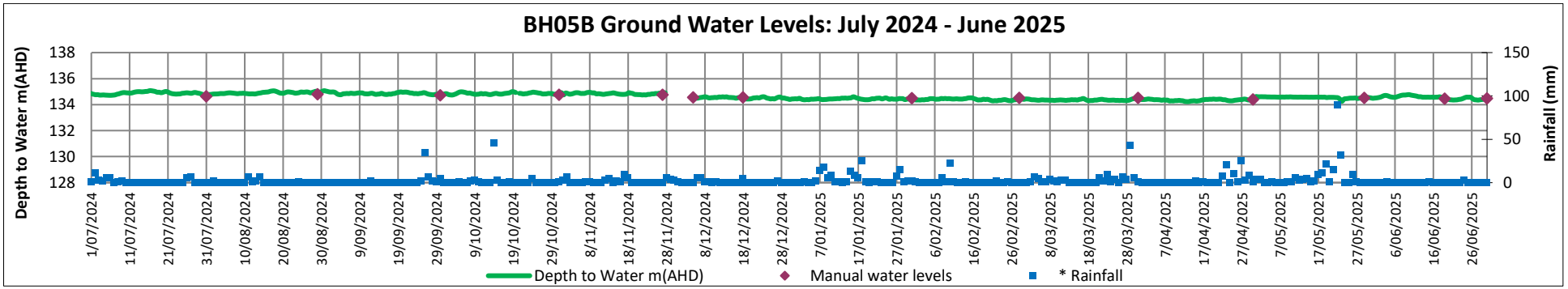


Chart 33: BH05B Groundwater Levels for July 2025 – June 2026

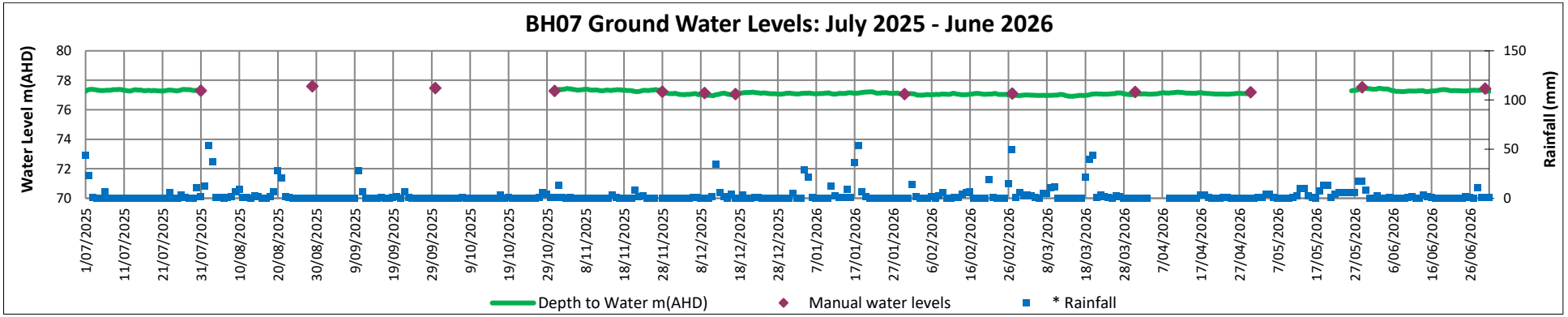


Chart 34: BH07 Groundwater Levels for July 2025 – June 2026

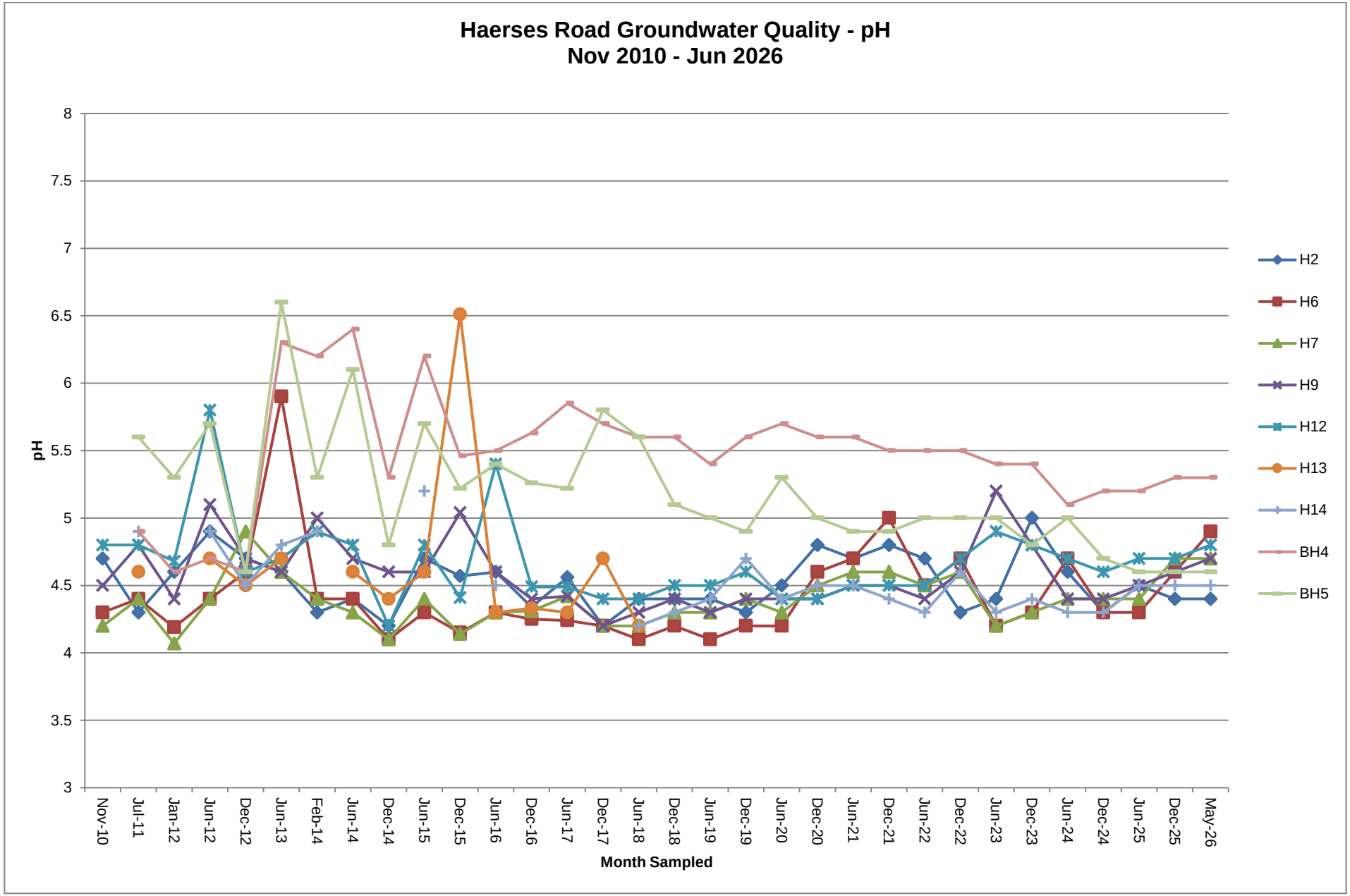


Chart 35: Haerses Road Long Term pH – H series, BH4 and BH5

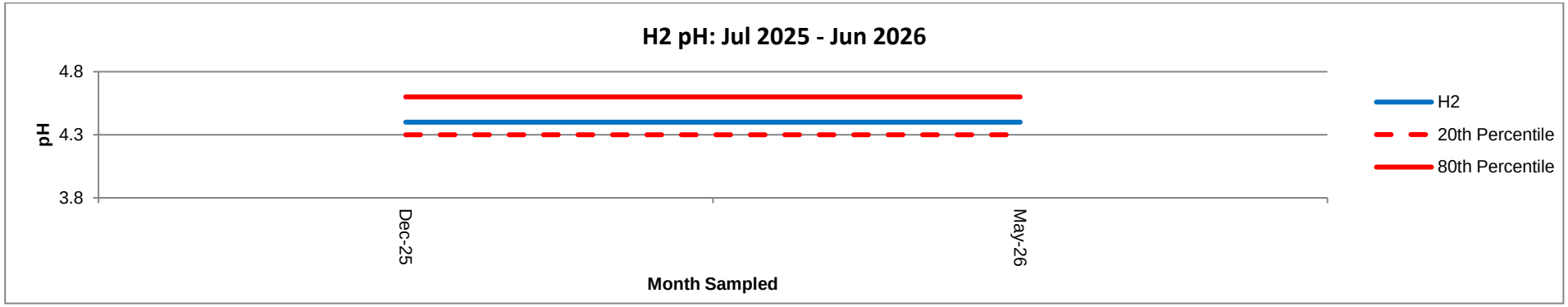


Chart 36: H2 pH Results July 2025 – June 2026

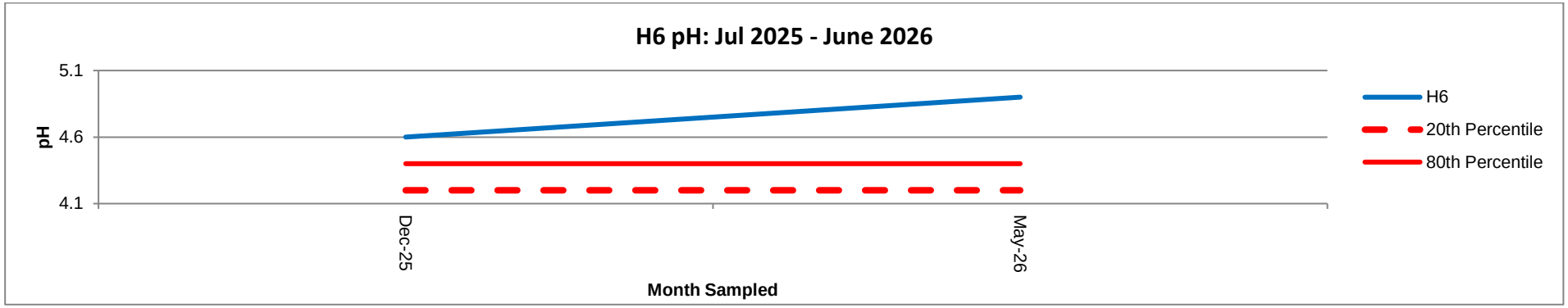


Chart 37: H6 pH Results July 2025 – June 2026

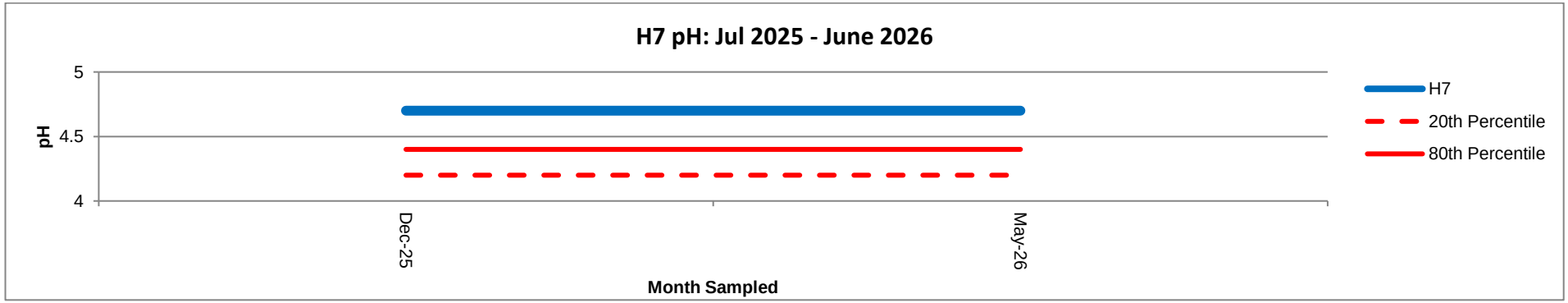


Chart 38: H7 pH Results July 2025 – June 2026

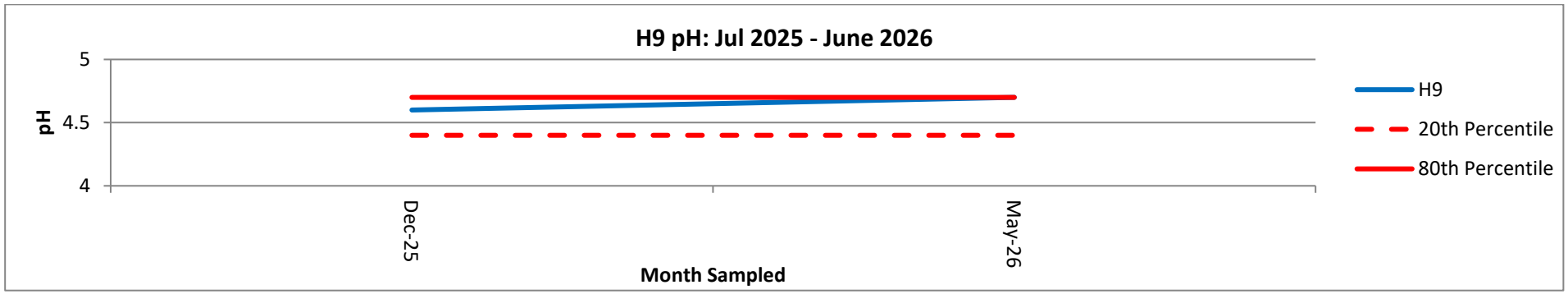


Chart 39: H9 pH Results July 2025 – June 2026

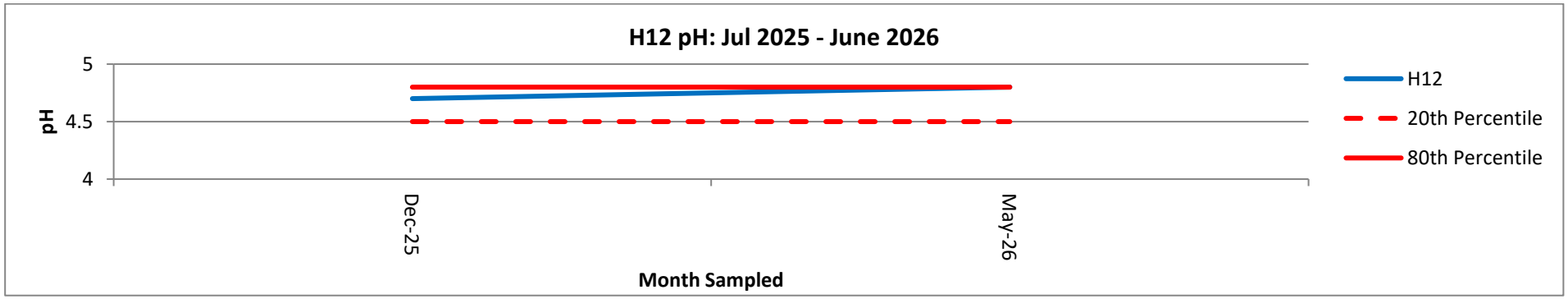


Chart 40: H12 pH Results July 2025 – June 2026

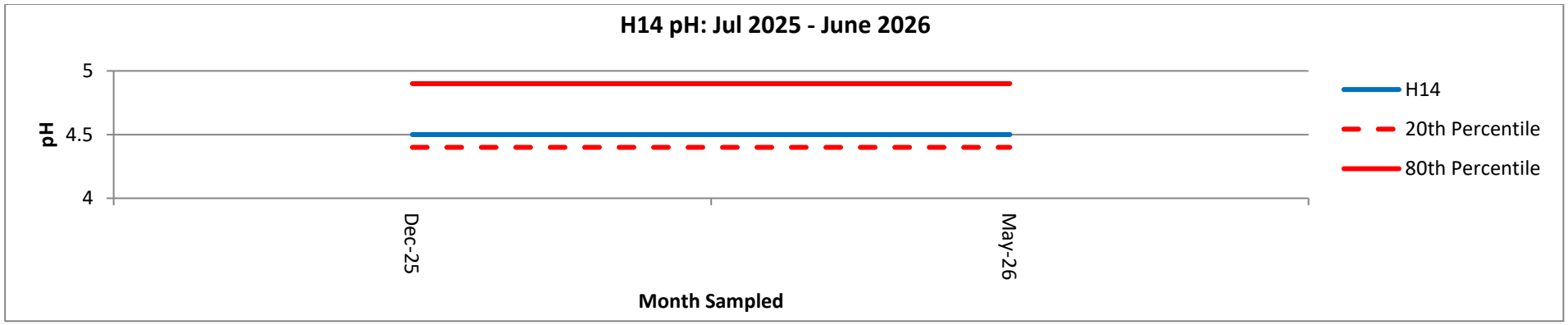


Chart 41: H14 pH Results July 2024 – June 2025.

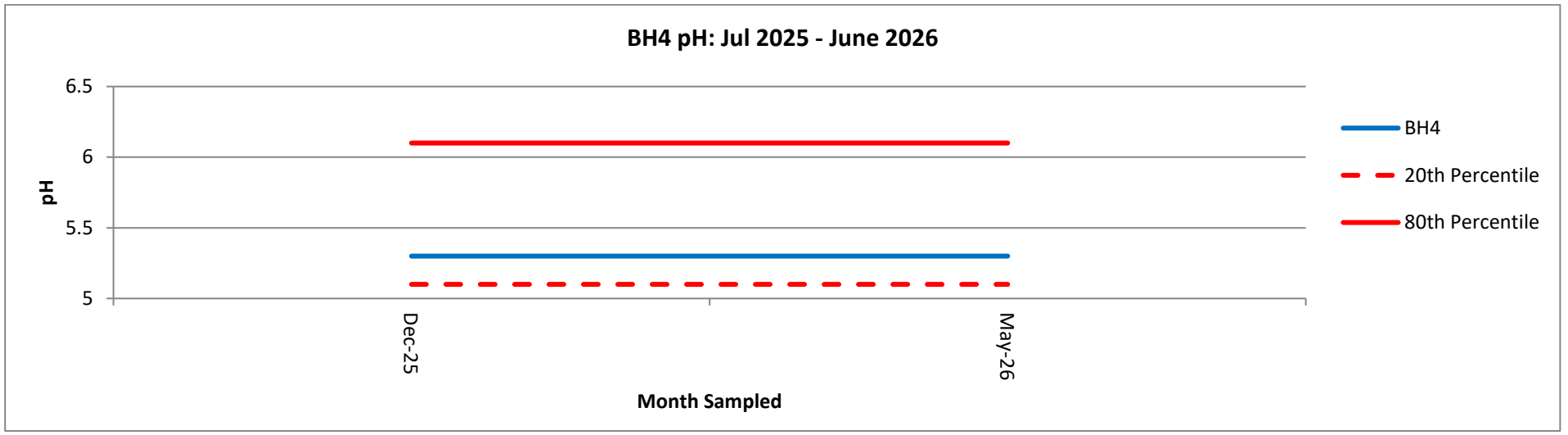


Chart 42: BH4 pH Results July 2025 – June 2026

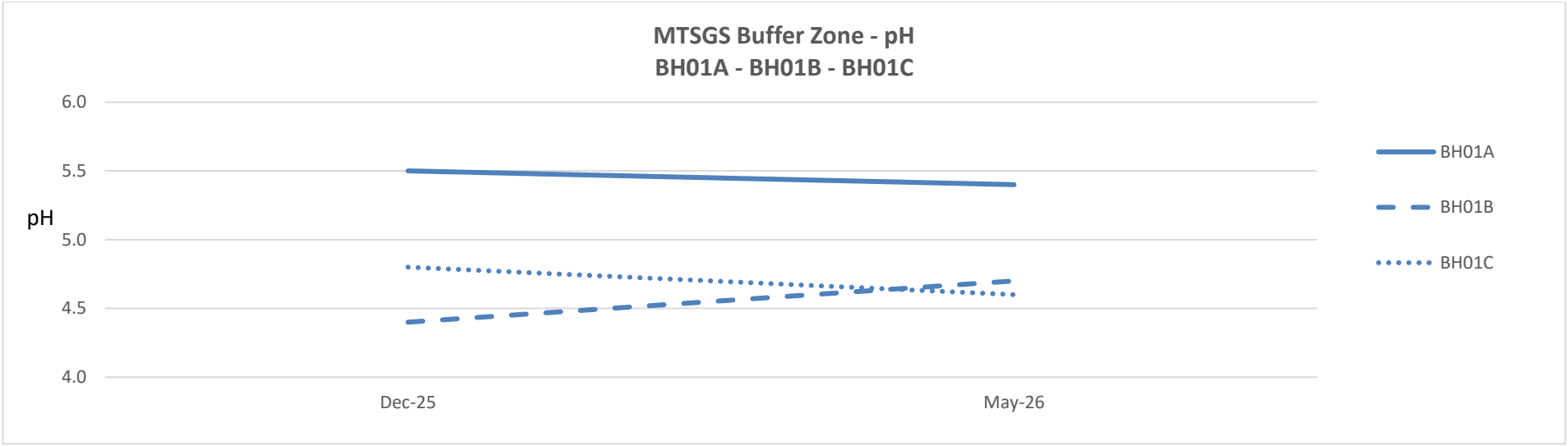


Chart 43: BH01A, BH01B and BH01C pH Results July 2025 – June 2026

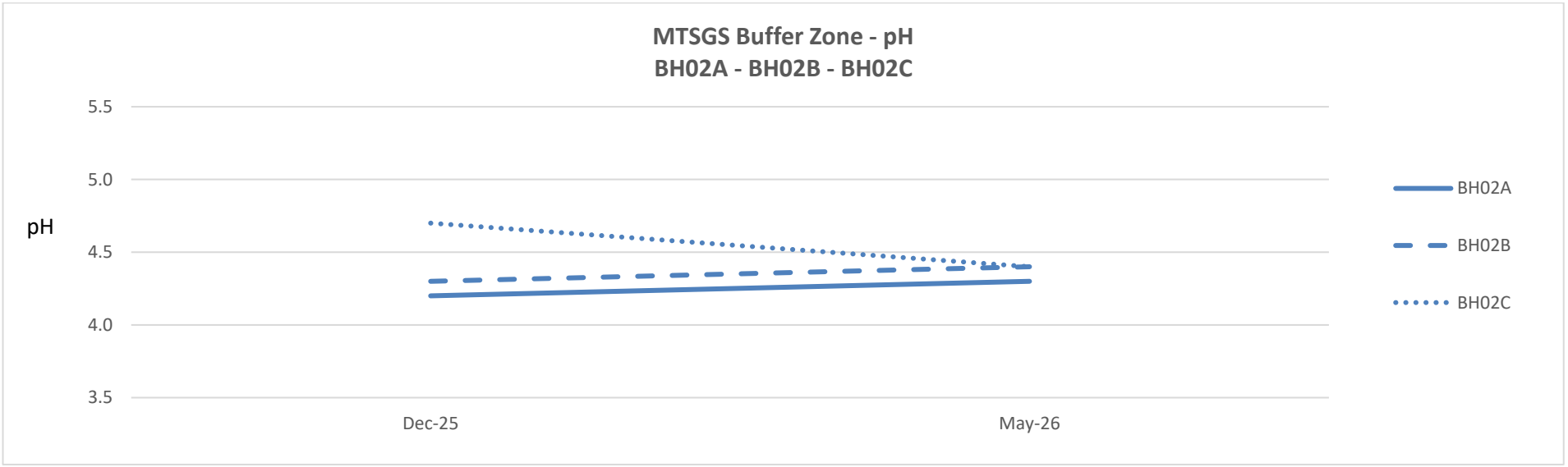


Chart 44: BH02A, BH02B and BH02C pH Results July 2025 – June 2026

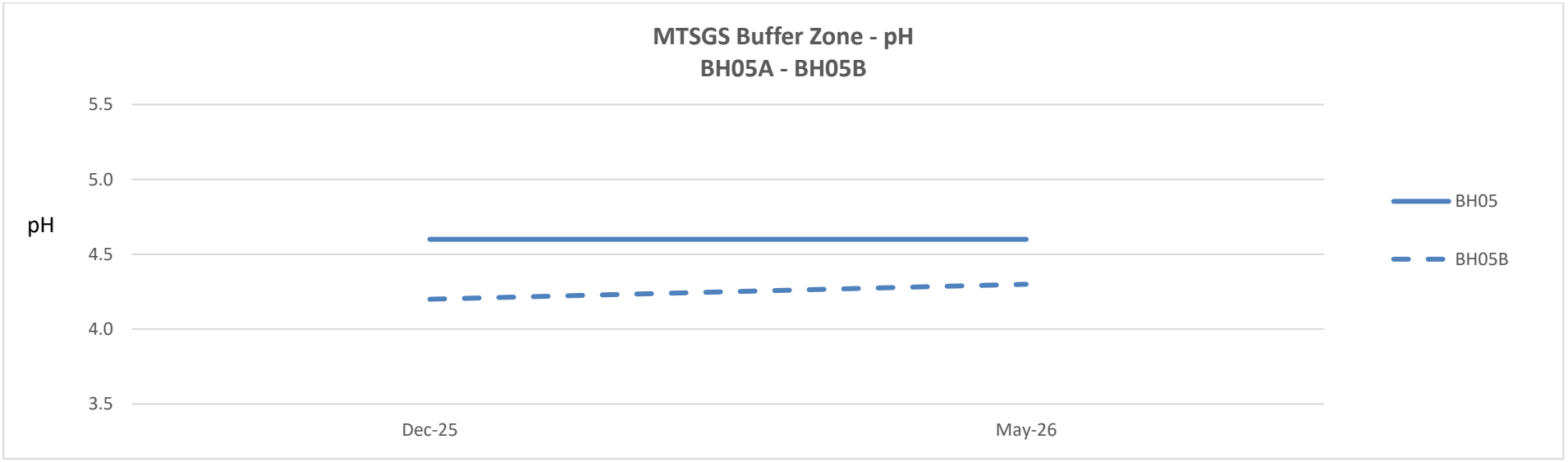


Chart 45: BH5 and BH05B pH Results July 2025 – June 2026

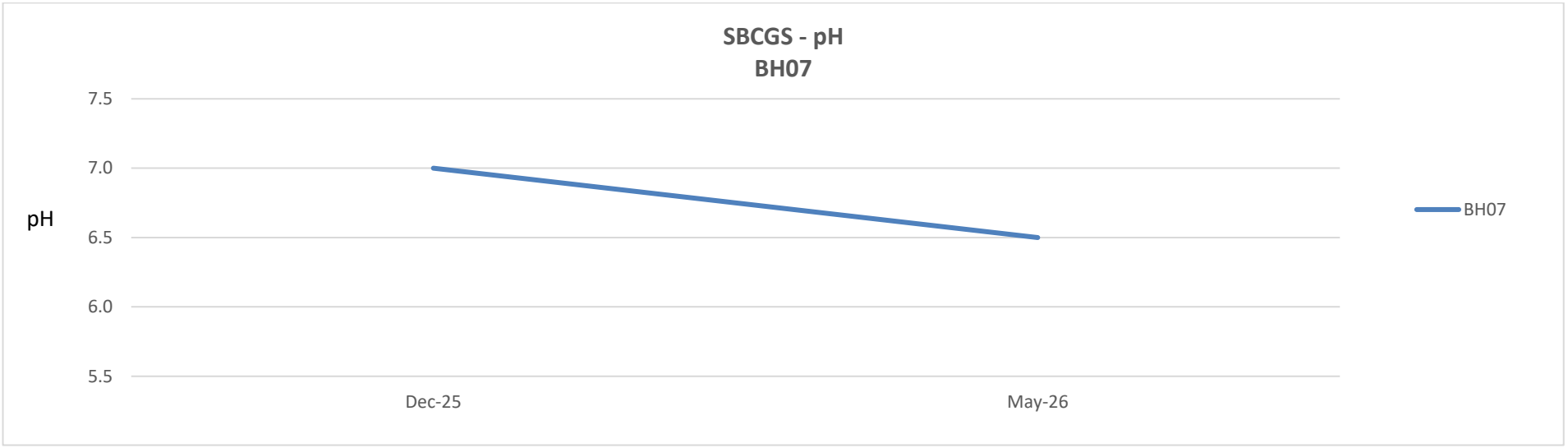


Chart 46: BH7 pH Results July 2025 – June 2026

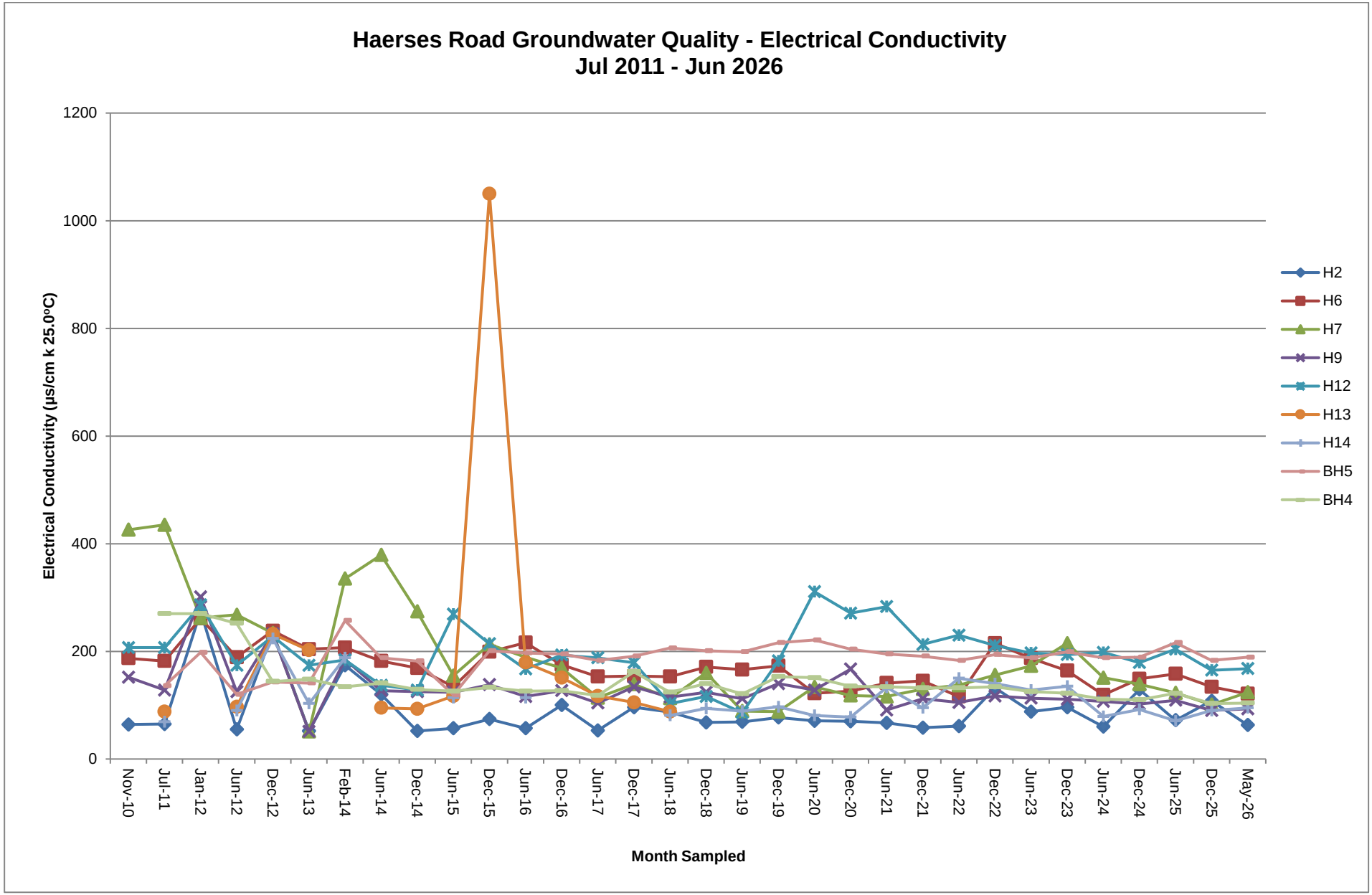


Chart 47: Haerses Road Long Term Electrical Conductivity – H series, BH4 and BH5

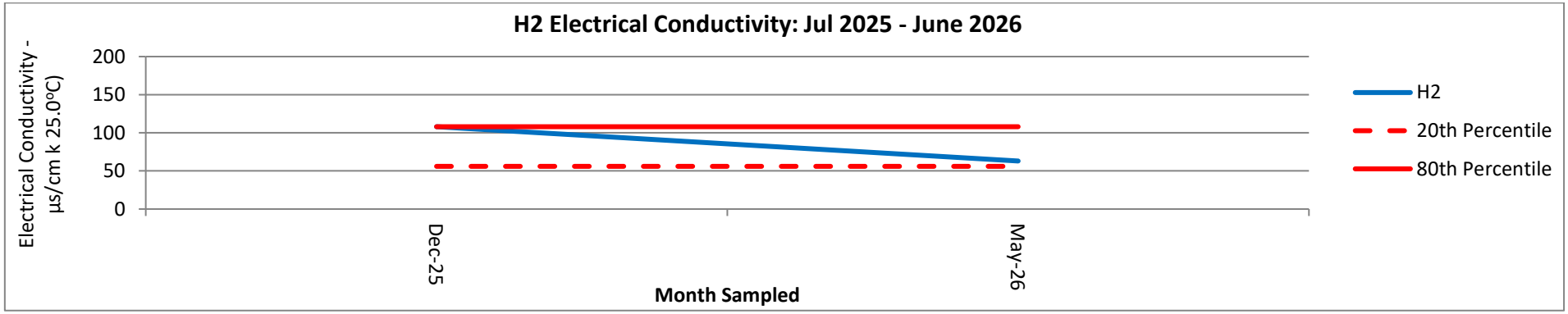


Chart 48: H2 Electrical Conductivity Results July 2025 – June 2026

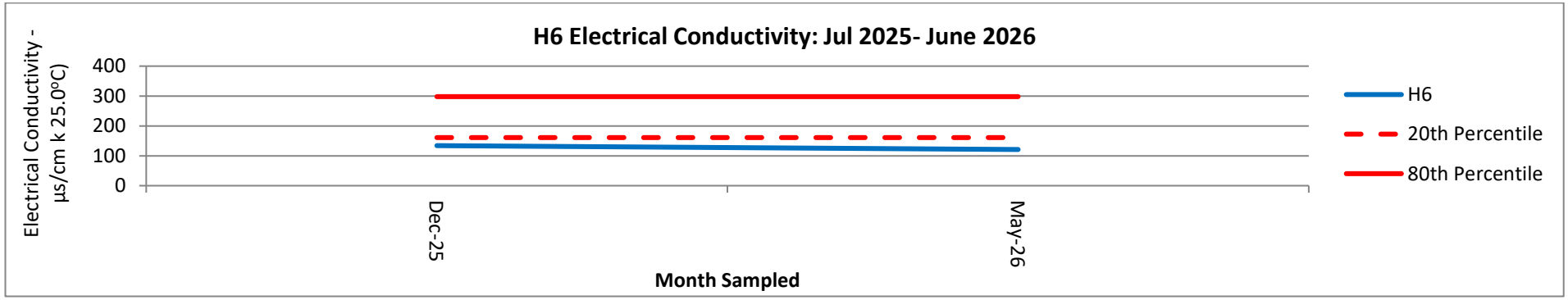


Chart 49: H6 Electrical Conductivity Results July 2025 – June 2026

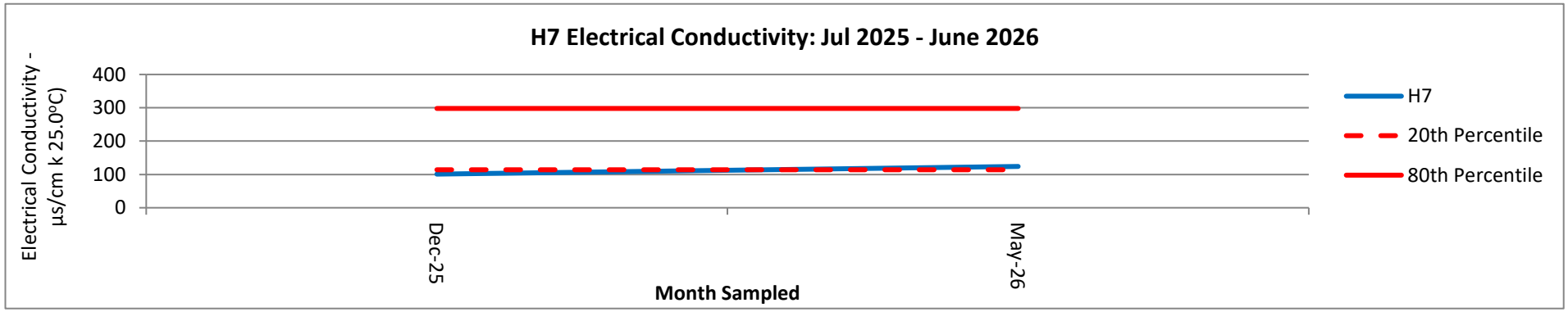


Chart 50: H7 Electrical Conductivity Results July 2025 – June 2026

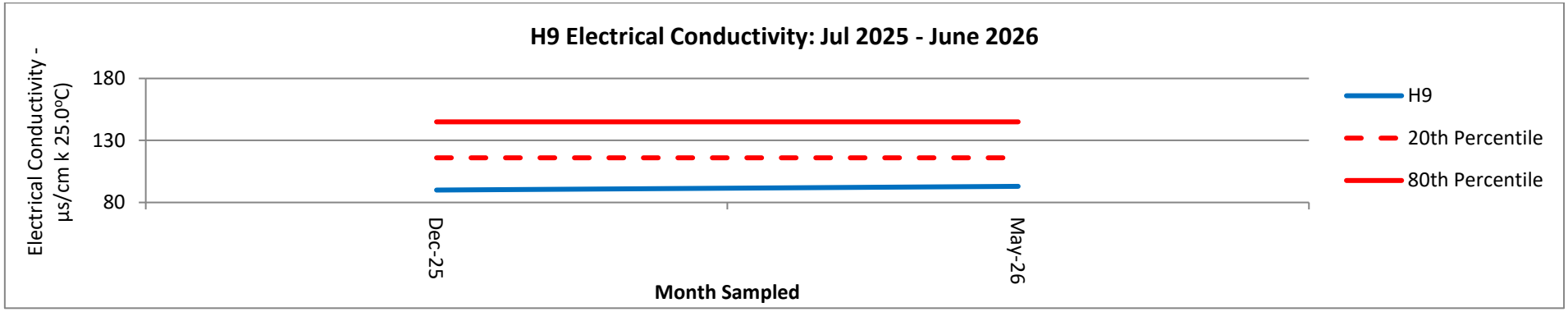


Chart 51: H9 Electrical Conductivity Results July 2025 – June 2026

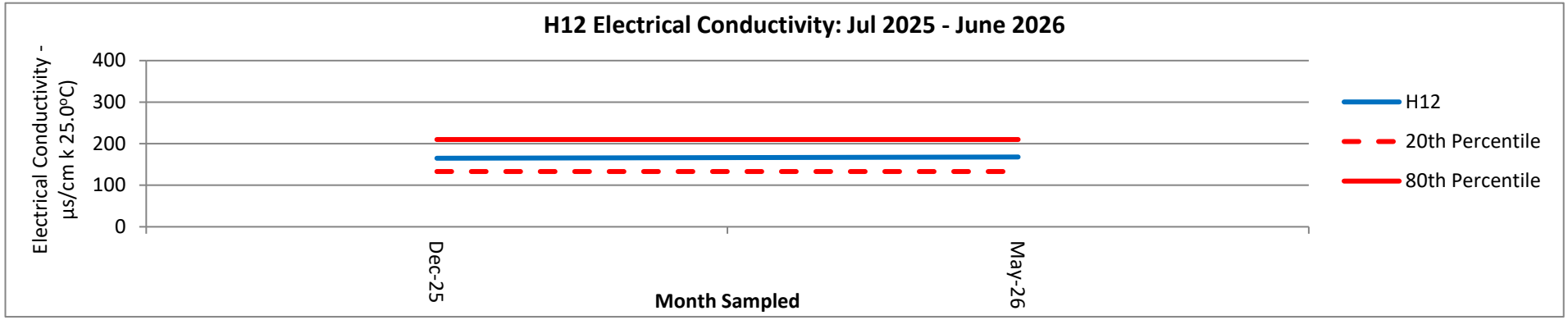


Chart 52: H12 Electrical Conductivity Results July 2025 – June 2026

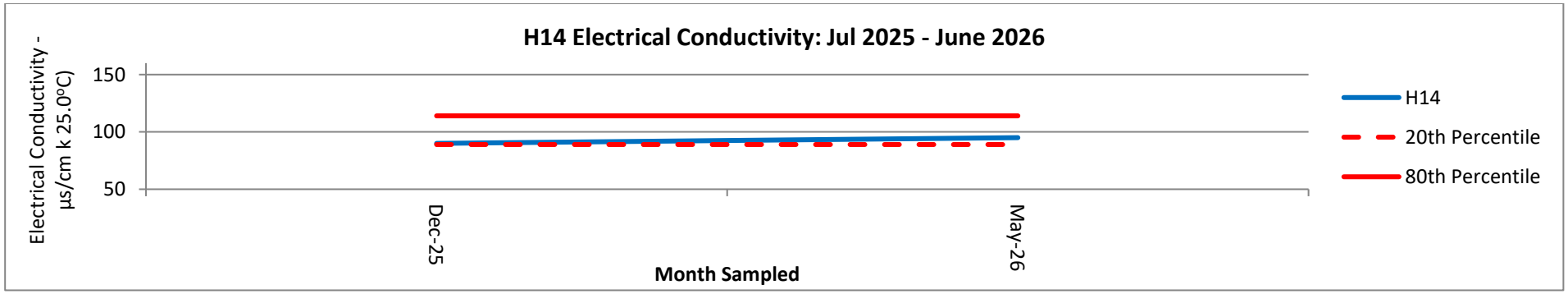


Chart 53: H14 Electrical Conductivity Results July 2025 – June 2026

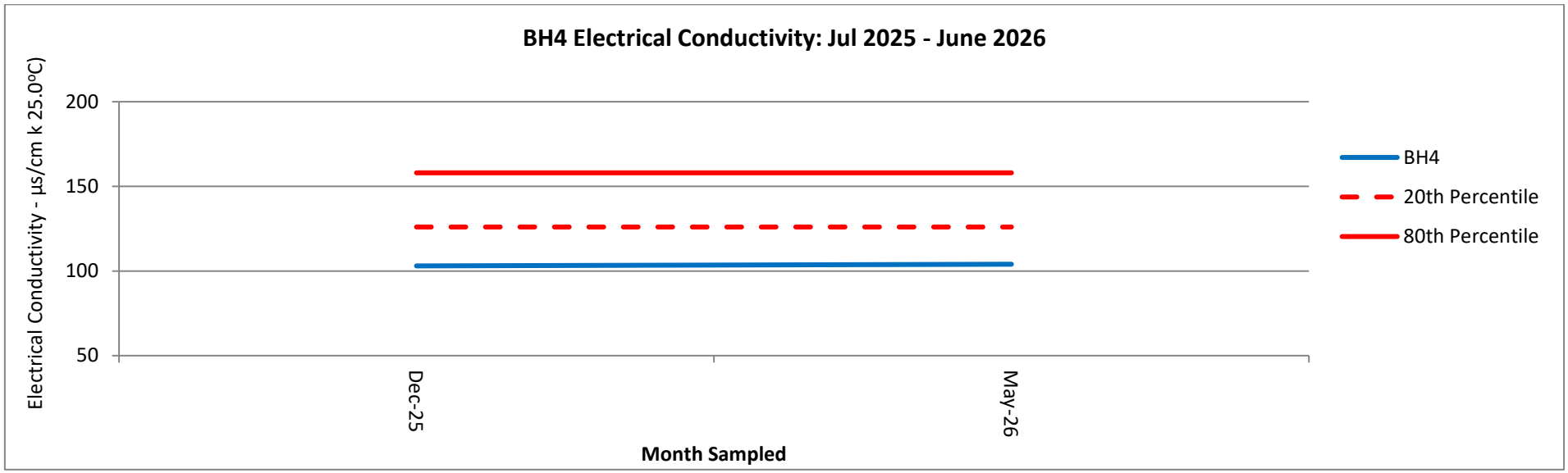


Chart 54: BH4 Electrical Conductivity Results July 2025 – June 2026

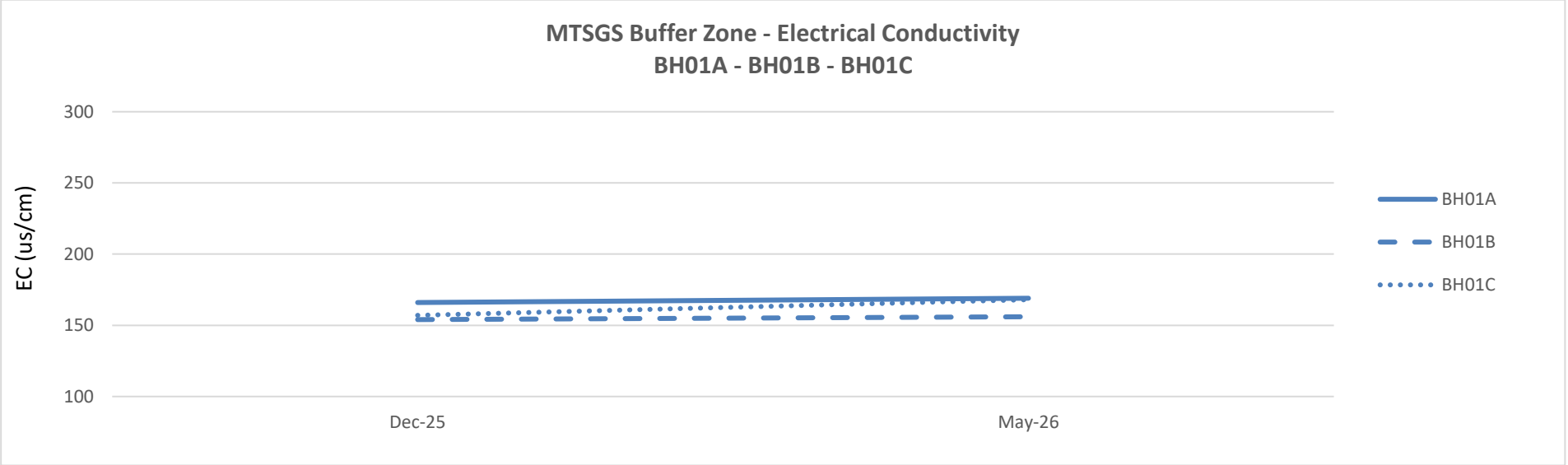


Chart 55: BH01A, BH01B and BH01C Electrical Conductivity Results July 2025 – June 2026

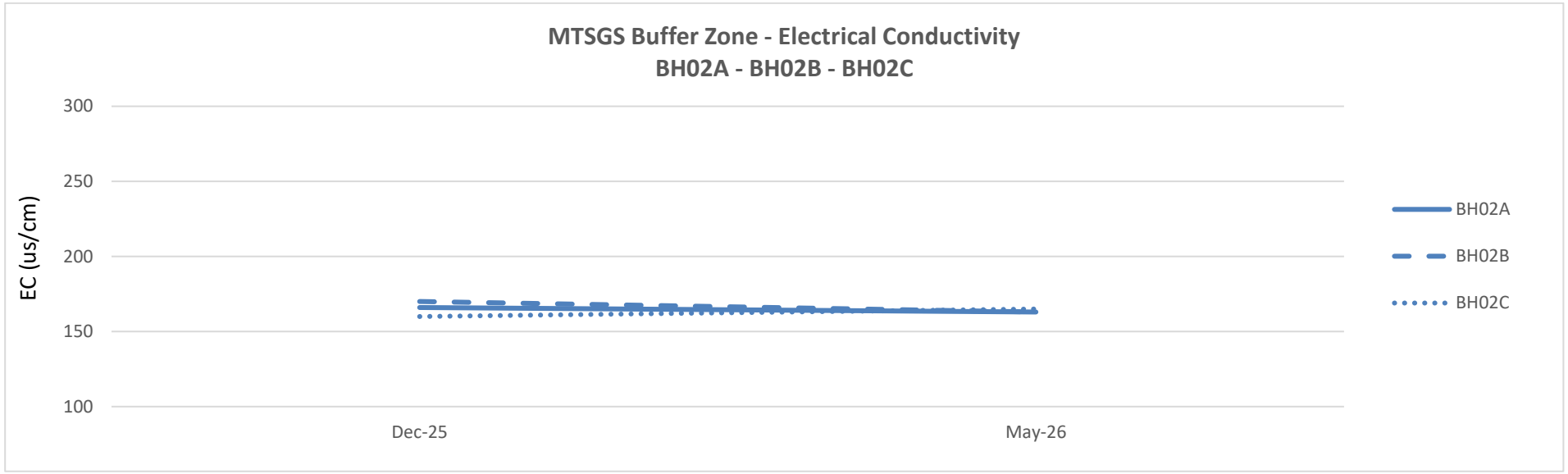


Chart 56: BH02A, BH02B and BH02C Electrical Conductivity Results July 2025 – June 2026

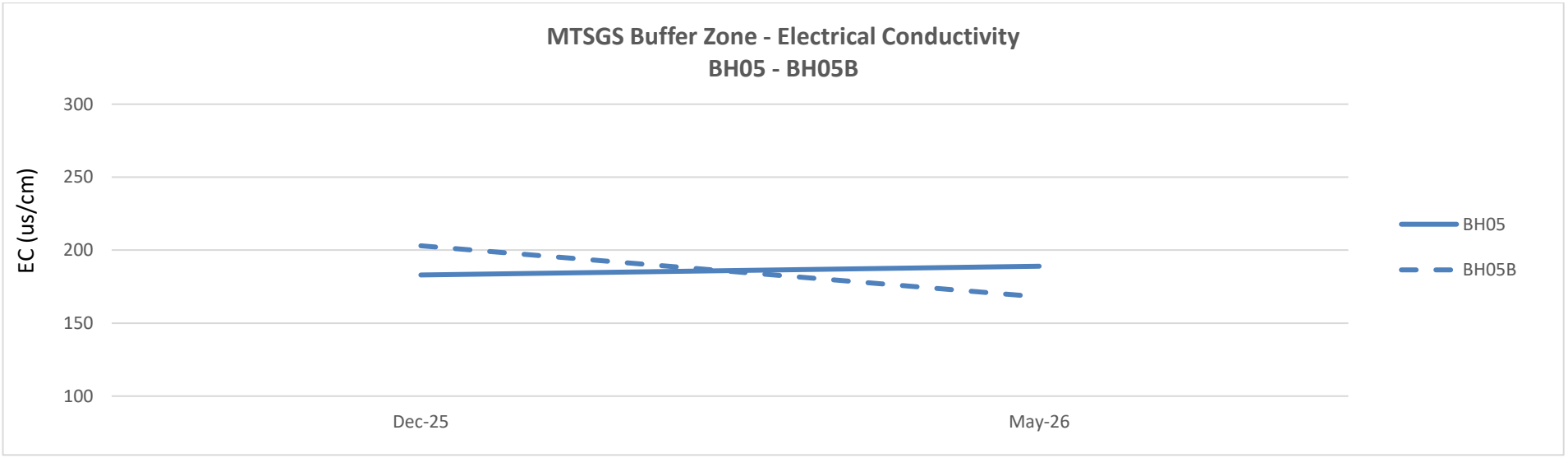


Chart 57: BH5 and BH05B Electrical Conductivity Results July 2025 – June 2026

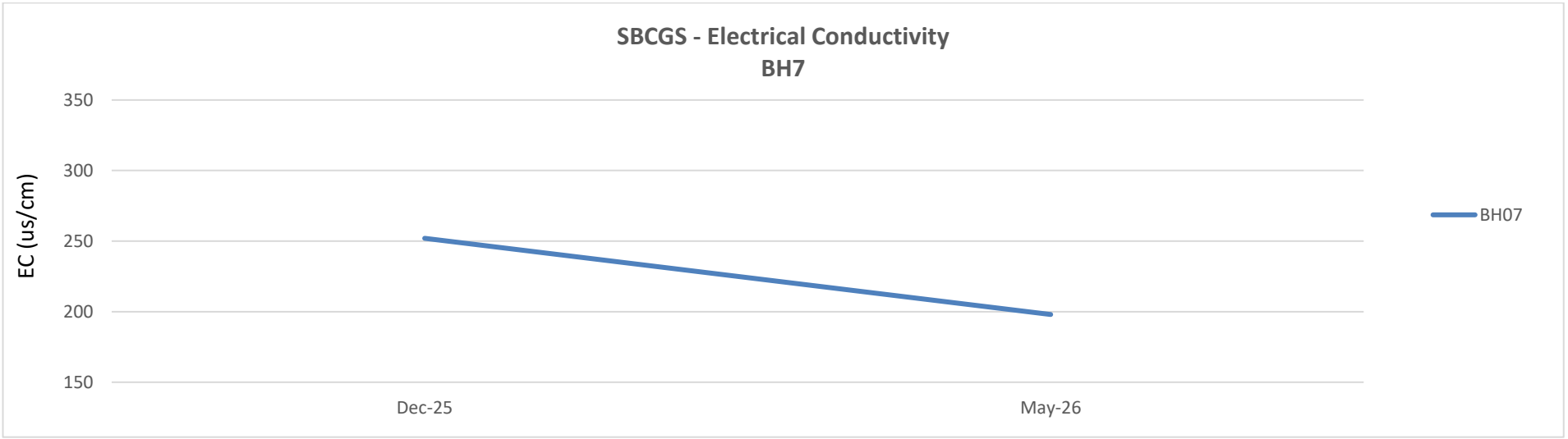


Chart 58: BH7 Electrical Conductivity Results July 2025 – June 2026

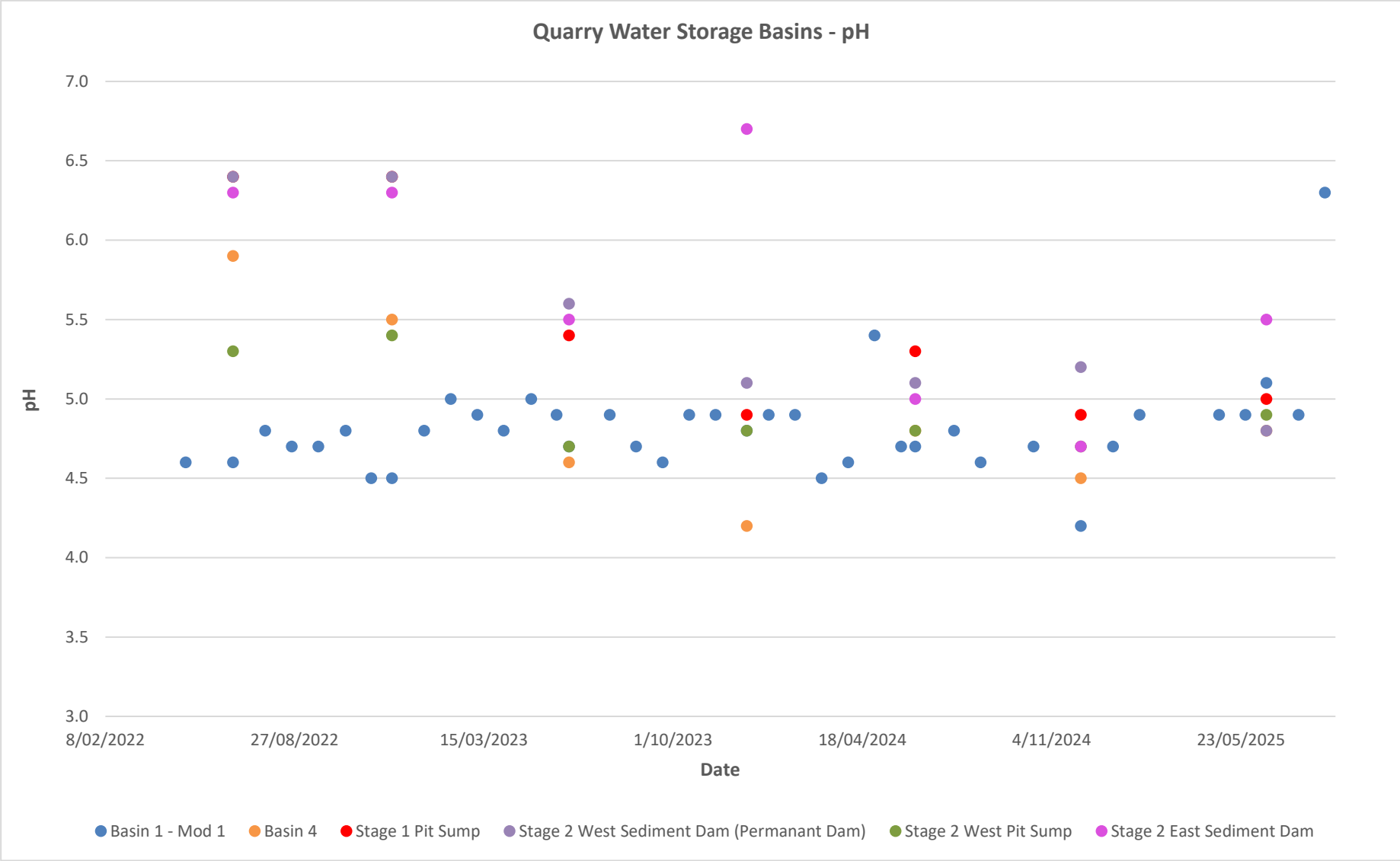


Chart 59: Quarry water storage basins - pH.

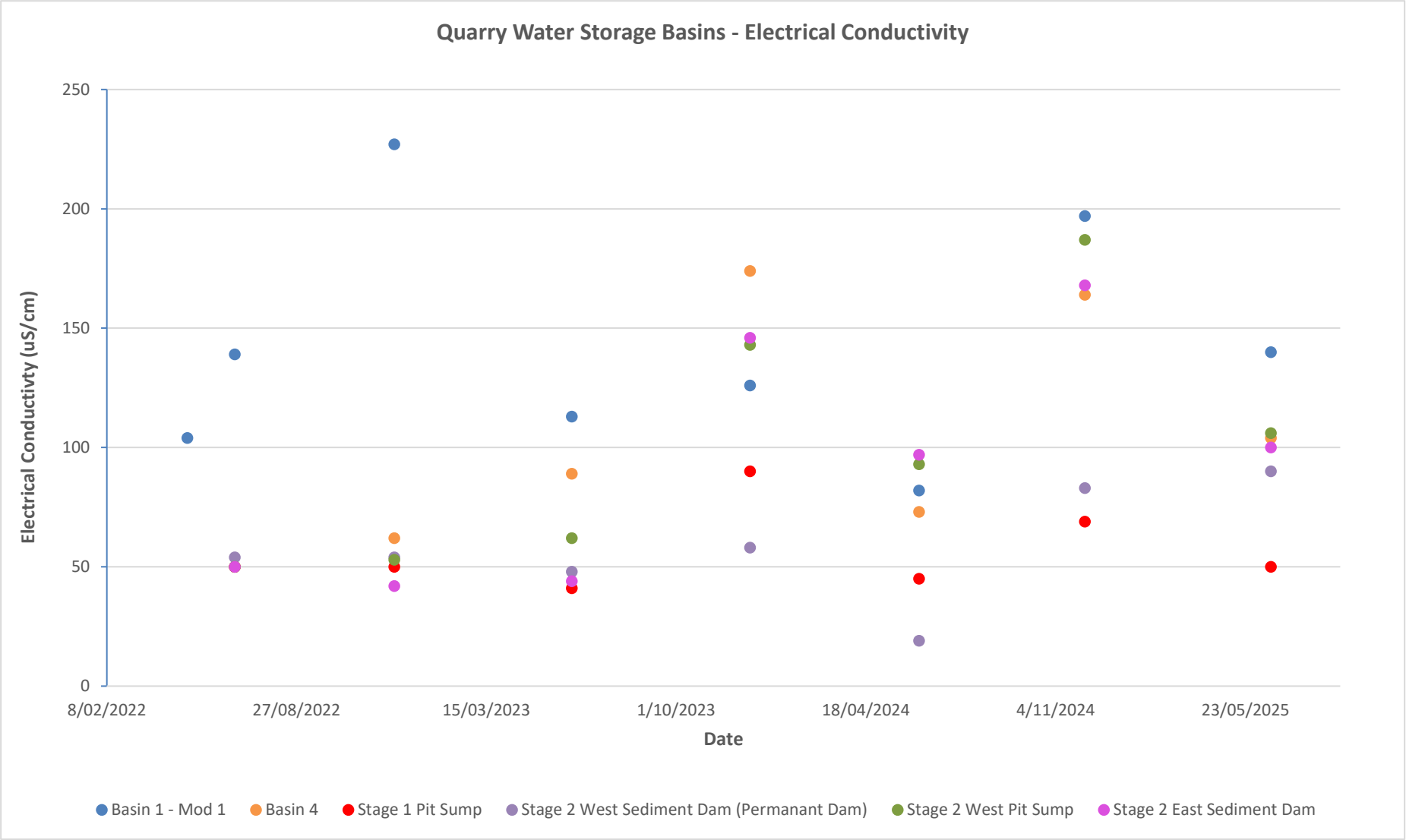


Chart 60: Quarry water storage basins – Electrical Conductivity

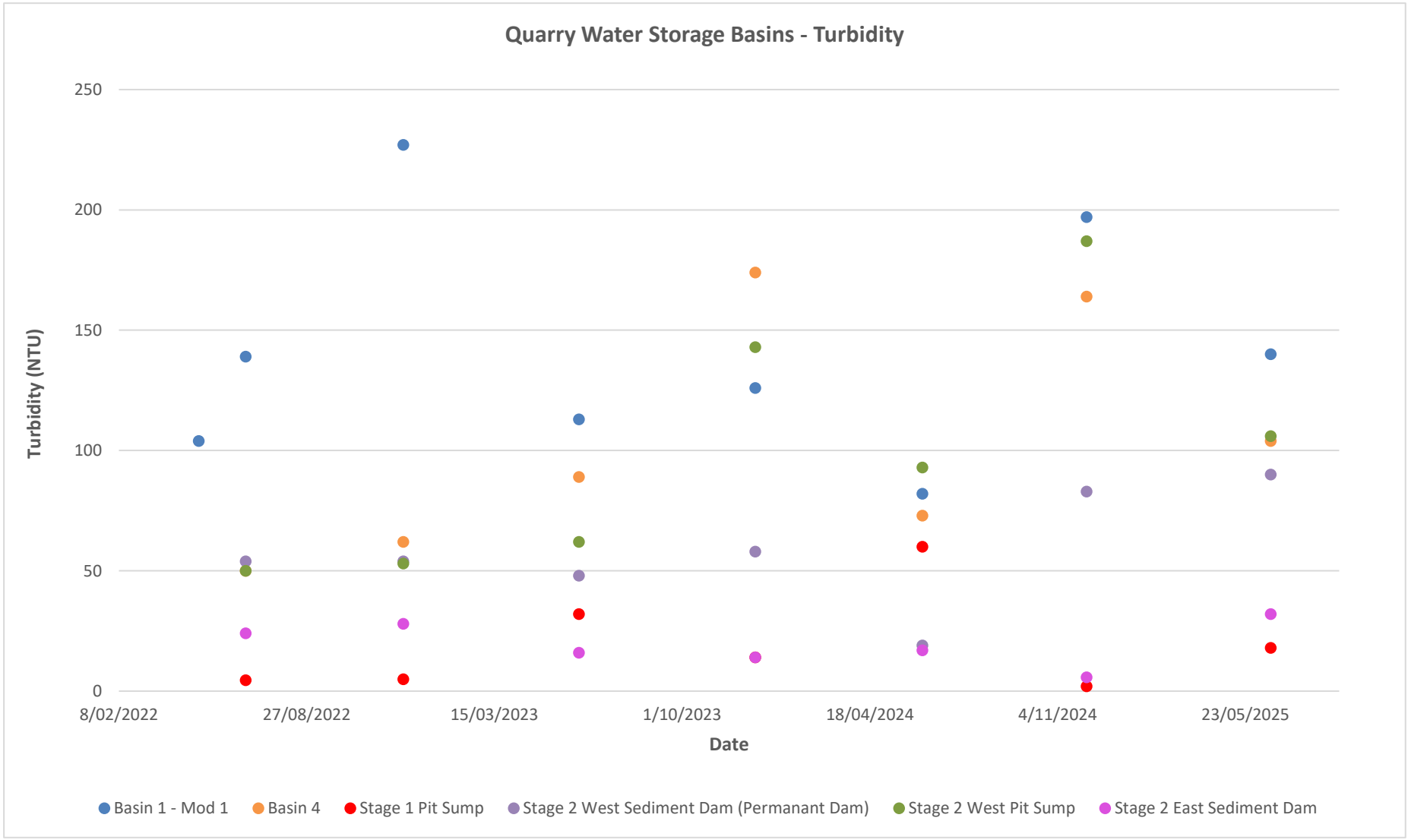


Chart 61: Quarry water storage basins – Turbidity

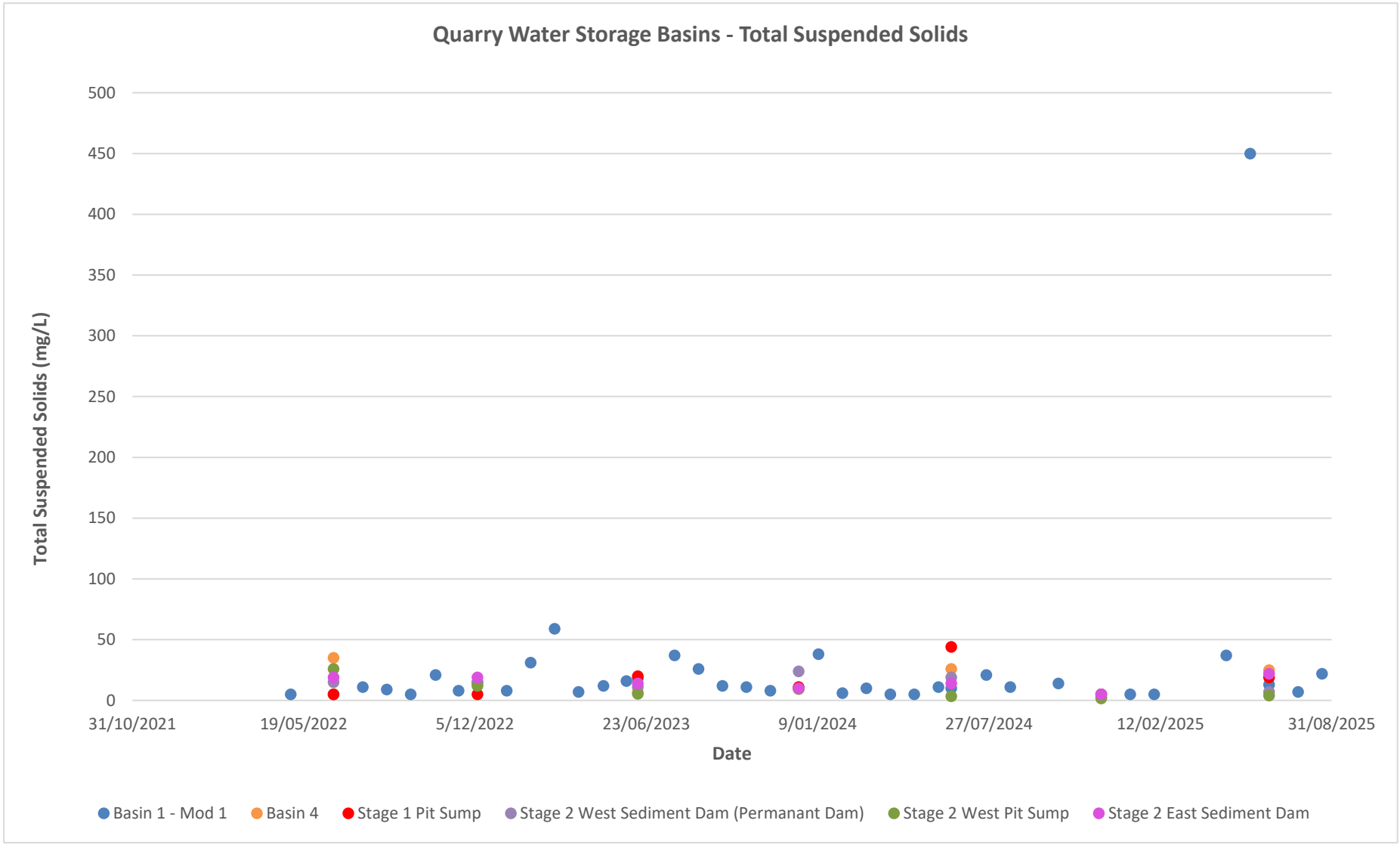


Chart 62: Quarry water storage basins – Total Suspended Solids

Table 24: SW1 and SW2 laboratory results

Sample Date	pH		Total Suspended Solids (mg/L)		Turbidity (NTU)	
	SW1	SW2	SW1	SW2	SW1	SW2
10/02/2020	6.70	5.88	12	14	82.1	25.3
10/08/2020	6.58	5.79	n/a	44	279	105
26/102020	6.33	5.84	5	16	107	54.4
05/01/2021	n/a	5.68	n/a	5	n/a	9
10/11/2021	n/a	5.06	n/a	84	n/a	160
26/11/2021	n/a	6.12	n/a	32	n/a	59.3
25/02/2022	5.49	5.06	90	13	475	27.1

Note: n/a denotes to parameter not being analysed due to invalid sample from insufficient water sample or lack of water for sampling.

6.4 Analyses

Groundwater Levels

During the 2025 - 2026 reporting period, groundwater levels for H-series boreholes indicated a strong relationship between water levels, existing ground moisture content and rainfall events. This is evident since the commencement of the groundwater monitoring program in 2005 shown on Chart 18. Fluctuations of water levels in the H-series boreholes directly correlate to the recharge from surface infiltration and percolation after rain events. This is clearly demonstrated in the months of July 2022 where a sharp rise in water levels was a result of aquifer recharge after significant rainfall events (refer to Chart 18). In comparison, lower water levels were observed over the 2017 – 2018, 2018 – 2019 and 2019 - 2020 reporting periods due to extended drought conditions with less than average annual rainfall being evident. Since the 2020 – 2021 reporting period, rise in groundwater levels have been recorded with the La Nina climatic condition and the return of average rainfall.

Minor water level fluctuations have been recorded during this reporting period for Boreholes BH4, BH5 and the newly installed BH7 which monitor the SBCGS however, there has been a relatively stable trend since the commission of these boreholes in 2011.

Twelve boreholes have been drilled and monitoring wells installed in the 100 metre MTSGS buffer zone. One additional monitoring well was installed next to the existing BH5. Groundwater monitoring of these thirteen bores has commenced since July 2018. Six boreholes in MTSGS buffer zone have been decommissioned and one new borehole installed. The minor reduction in groundwater levels was due to monthly sampling of water using the low flow pump out methodology for laboratory analysis (refer to Charts 25 to 30 inclusive, 32 to 34 inclusive). Condition 17 of Schedule 3 of DA 165-7-2005 requires that prior to commencing quarry operations within the MTSGS buffer zone, Dixon Sand is to complete a baseline groundwater monitoring program which includes monthly monitoring of groundwater levels and quality within the MTSGS buffer zone for a period of no less than 2 years. The 2-year baseline period was met at the end of July 2020. The assessment of the 2-year groundwater levels for the bores installed in the 100 metre MTSGS buffer zone is discussed further in Section 6.8.

Groundwater Quality

pH and electrical conductivity (EC) results for H-series, BH4 and BH5 have remained relatively stable from 2010 to the current reporting period, showing minimal fluctuations with occasional occurrences of anomalies due to human-induced environmental change such as application of fertiliser (from cropping) directly adjacent to the monitoring bore (refer to Charts 35 and 47. Elevated pH and EC results in H13 during 2015 were a result of influence from direct application of fertiliser in the immediate area surrounding the monitoring well. Water quality parameters obtained from H13 during this reporting period have returned to levels similar those previously recorded. Borehole H13 have since been decommissioned due to its location being the designated area for the processing plant and material stockpiles on Lot 216. Borehole H14 was unblocked in May 2018 and groundwater depth, and quality sampling have resumed.

The assessment of the 2-year groundwater quality for the bores installed in the 100 metre MTSGS buffer zone will be further discussed in Section 6.8.

Surface Water

Due to these nominated monitoring points being ephemeral tributaries, water samples were only able to be collected when there has been sufficient rainfall to generate flows in the tributaries and when it is safe to undertake sampling. Despite some wet weather during this monitoring period, surface water sampling at SW1 and SW2 was not always possible due to heavy rainfall affecting safe site access or insufficient flow for sampling. Table 24 presents the pH, total suspended solids and turbidity of water samples obtained from SW1 and SW2 since the commencement of surface water monitoring. Additional data is still required to enable baseline surface water quality to be established.

Basin Water Quality

Surface water monitoring for quarry related water storage basins commenced in May 2022 to date, equating to approximately four years of monitoring. Charts 59 – 62 inclusive show pH, electrical conductivity, turbidity and total suspended solids result for five quarry related water storage basin which actively support quarry operations.

pH levels across the water storage dams generally fall within the slightly acidic range with occasional results returning results closer to the neutral end of the pH scale.

Electrical conductivity results are within the 0 – 250 uS/cm range.

Turbidity results are within 0 – 250 NTU.

Total suspended solid results range from 0 – 59 mg/L with one anomaly recorded at 450 mg/L possibly due to significant rainfall events which occurred in May 2025.

Overall, the pH, electrical conductivity, turbidity and total suspended solids result in the five water storage basins are influenced by quarry operations due water being transferred between the different basins and different stages of the quarry to support quarry operations.

6.5 Review of Maximum Extraction Depth Map

A review of the Maximum Extraction Depth Map (MEDM) was undertaken by WSP Golder within 3 months of the Independent Environmental Audit in accordance with Condition 22(b) of Schedule 2 of DA 165-7-2005 and was submitted on 4 May 2026. At the time of submitting this Annual Review, the MEDM (April 2026) is still under review by DPHI.

Condition 22(a) of Schedule 2 of DA 165-7-2005 requires Dixon Sand to review and update the MEDM annually, for the duration of the baseline groundwater monitoring program within the MTSGS buffer zone which commenced in July 2018. Additional review of the MEDM was undertaken on 30 June 2026 by Dixon Sand as part of the Annual Review. No changes to the current MEDM (April 2026) are warranted.

The next review of the MEDM will be undertaken within 3 months of the IEA which is scheduled for late 2028.

6.6 Water Access License Usage

The Annual Returns for Water Access Licenses (WALs) 25941 and 25956 for the 2025 - 2026 reporting period were submitted to WaterNSW in July 2026. The total water usage and usage purposes for each WAL are listed in Table 25 below.

Table 25: Water usage for Water Access Licences during the Financial Year 2024 – 2025.

Water Access License Number	Annual Water Usage (Megalitres)	Usage Purpose
WAL 25941	3.0	Crop irrigation by onsite farmers
WAL 25956	8.7	Plant irrigation by onsite plant nursery
	0	Quarry operation

6.7 Water Balance Monitoring

The following water balance related monitoring in Table 26 applied to the quarry during the monitoring period.

Table 26: Quarry Water Balance monitoring in accordance with Soil and Water Management Plan.

Monitoring Item	Response
Water inventories on site will be monitored by continuous level monitoring instrumentation	Groundwater levels are monitored using continuous data loggers.
The number of Water Cart fills per month	Water Cart records kept

Monitoring Item	Response
Monthly water transfer volumes between water storages (based on rated pump capacity and run time)	Overall water transfer from the WAL access point to quarry operation recorded.
Monthly clean water imports volumes;	A total of *nil* megalitres of water was utilised for quarry operations in accordance with the WAL conditions.
Monthly processing plant water consumption (if constructed) (either metered or based on rated pump capacity and run time).	Wet processing plant not yet in operation at the quarry.
Surface water related complaints	No surface water related complaints received during this reporting period.
Assessment of the overall effectiveness of the Water Management System	Overall, the Water Management System at Haerses Road quarry has shown to be effective during this reporting period.

6.8 Groundwater Monitoring Program for Bores located in the 100m MTSGS Buffer

Condition 17 of Schedule 3 of DA 165-7-2005 requires Dixon Sand to complete a baseline groundwater monitoring program which includes monthly monitoring of groundwater levels and quality within the Maroota Tertiary Sands Groundwater Source (MTSGS) buffer zone for a period no less than 2 years prior to commencing quarrying operations within the MTSGS buffer zone. This is to be undertaken in consultation with DPE – Water (now Department of Climate Change, Energy, the Environment and Water – Water Group) and to the satisfaction of the Secretary.

Dixon Sand has completed the abovementioned groundwater monitoring program in July 2020 and engaged Mr Peter Dundon from Dundon Consulting Pty Ltd to carry out a review and presentation of baseline groundwater levels and quality data. Consultation with DPE Water was undertaken through a series of meetings during the consultation process for DA 165-7-2005 Modification 1 which resulted in the required scope of works outlined in Conditions 16 and 17.

The review by Mr Dundon concluded that there is a clear distinction between the Maroota Sands groundwater and perched groundwater within the Hawkesbury Sandstone. It was therefore unlikely that any excavation of Hawkesbury Sandstone within the buffer zone around the Maroota Sands approved area will cause any disturbance to the groundwater remaining in the Maroota Sands after sand extraction had been completed down to the approved depth. There was no evidence to suggest that extraction could not safely proceed within the temporary 100m buffer zone along the eastern margin of the Hawkesbury Sandstone resource.

Dixon Sand submitted the abovementioned report containing the reviewed baseline data of monitoring bores within the MTSGS buffer zone to DPE Water (now DCCEEW – Water Group). On 4 September 2020. On 24 May 2021 Dixon Sand received the confirmation of satisfaction from NRAR.

Dixon Sand received the DPHI's endorsement on 11 June 2021 acknowledging that the Baseline Groundwater Monitoring Program meets the relevant conditions of consent and that the pre-extraction requirements relating to the MTSGS buffer zone and Buffer Groundwater Monitoring Program have been met and extraction can therefore occur (subject to other relevant consent conditions being met).

Subsequently, a number of cluster boreholes have been removed due to their location being in active extraction area. These include BH03A – BH03B – BH03C cluster and BH06A – BH06B – BH06C cluster. After the recent review of the 6-monthly grounder water data for the 100m buffer to the MTSGS, Dixon Sand received a recommendation from DCCEEW – Water Group to replace the decommissioned monitoring boreholes BH06A, BH06B and BH06C with a new monitoring borehole targeting the SBCGS. Dixon Sand engaged WSP Golder to undertake an assessment of the most appropriate location and design specification for the new bore (BH07). It was proposed that the new monitoring bore be installed in the south-western corner of Extraction Cell 1A in the Modification 1 extraction area. This proposal was excepted by DWWEEC - Water Group on 24 May 2023. BH07 was commissioned in August 2023.

6.9 Chages to Environmental Procedures

Current groundwater and surface water management measures are considered adequate.

7. Ecological Monitoring and Rehabilitation

7.1 Vegetation Clearing

No vegetation clearing undertaken during this reporting period.

7.2 Bush Regeneration and Weed Management

Rehabilitation and weed management at Haerses Road quarry were undertaken on a monthly basis by a bush regeneration contractor, Bush-It Pty Ltd.

Approximately 270.5 hours were spent on bush regeneration works at Haerses Road Quarry, equating to approximately 44% of the time spent between Haerses Road Quarry and Old Northern Road Quarry.

Bush regeneration and weed management were carried at the following locations:

- Western Haerses Road Biobanking Site under the BCT agreement,
- Eastern Haerses Road Biobanking Site under the BCT agreement,
- Porters Road Biobanking Site under the BCT agreement,
- Original translocation and planting offset area located east of Stage 2 west (Lot 177 DP 752039), and
- Vegetation buffer from Wisemans Ferry Road.

Bush regeneration works involved mechanical and chemical methodologies.

Figures 6 and 7 illustrate the areas and methodologies where bush regeneration works have been completed during this reporting period.

The Annual Rehabilitation Report provided by the contractor for the 2025 - 2026 reporting period is attached as Appendix G.

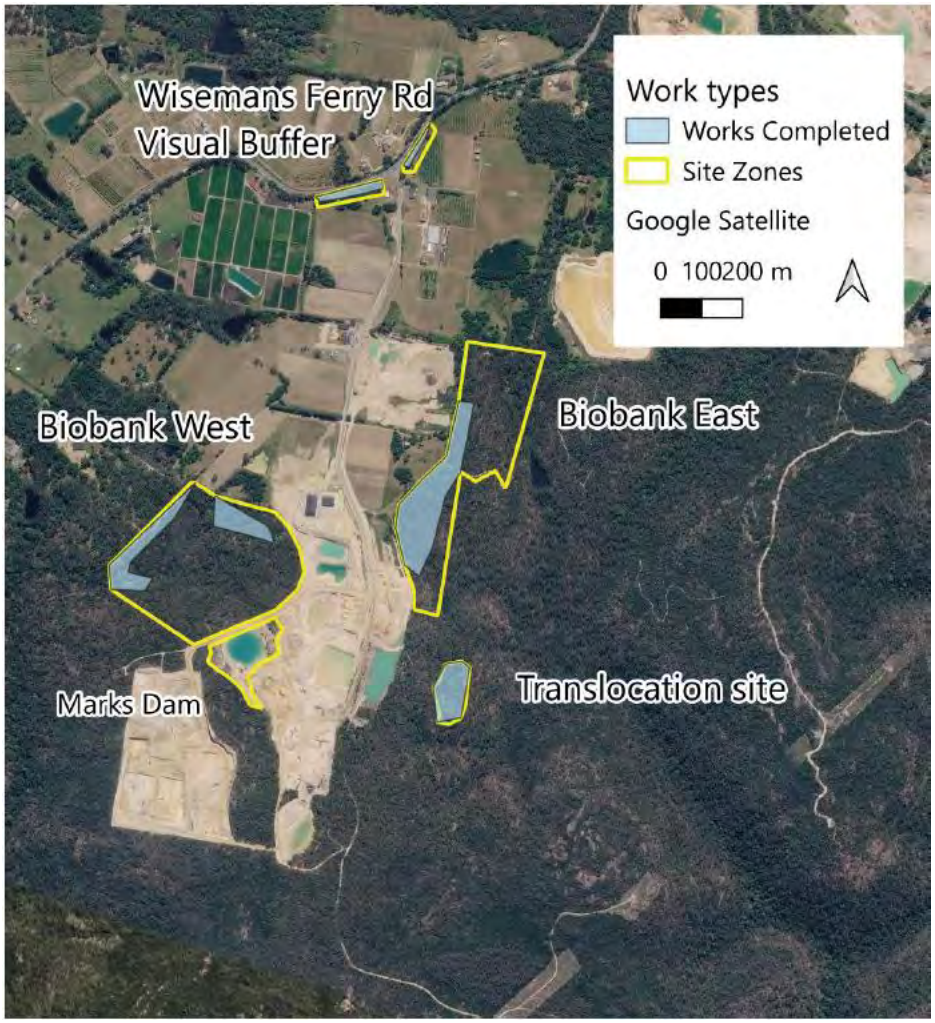


Figure 6: Location of bush regeneration works within the western and eastern boundary of the biobank area, original offset area and vegetation buffer for Wisemans Ferry Road (source: BushIT 2025).

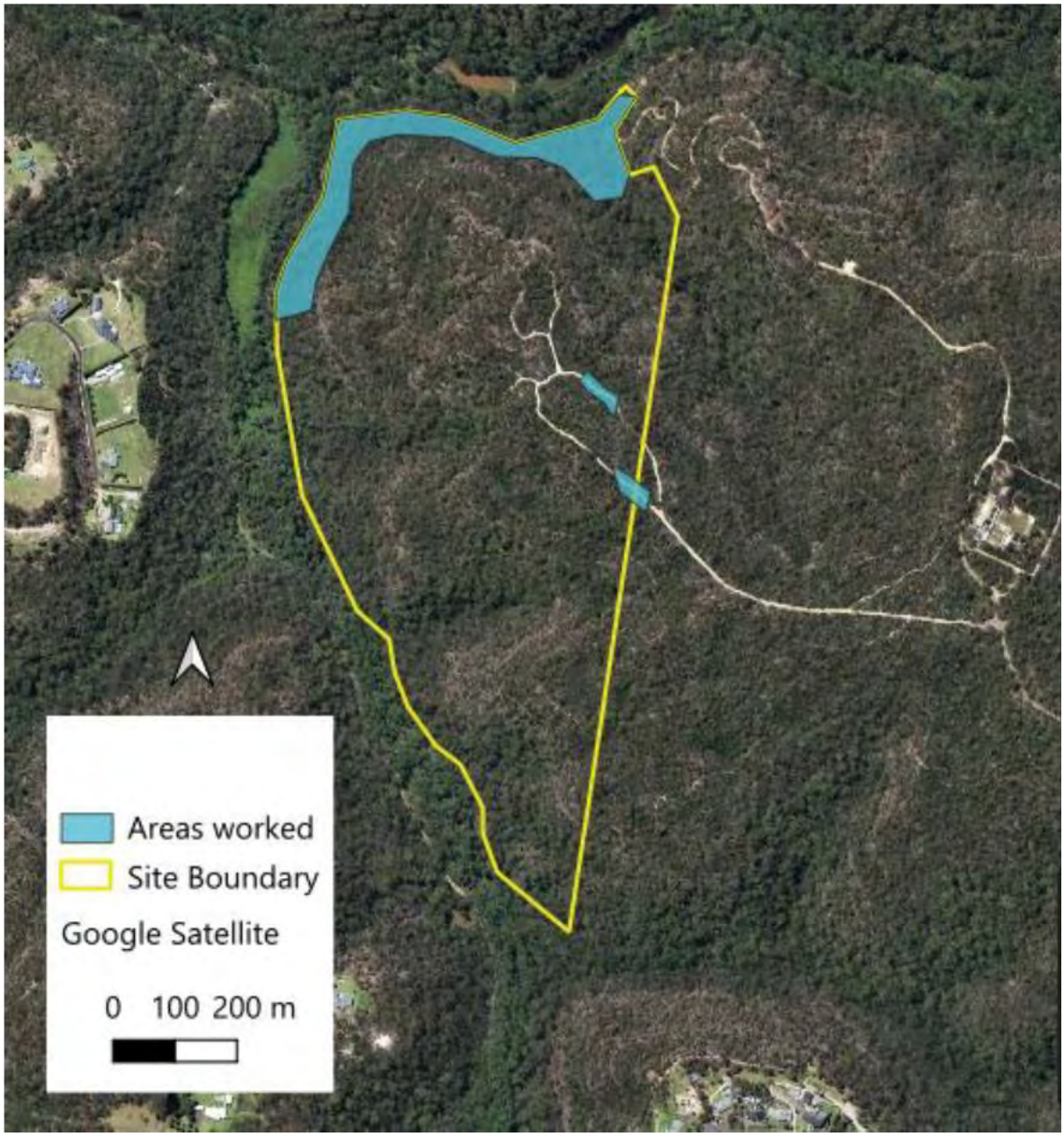


Figure 7: Location of bush regeneration works within the Porters Road Biobank Site (source: BushIT 2026)

7.2.1 Haerses Road Biobank Site and Porters Road Biobank Site

During this reporting period, Porters Road Biobank Site is within its Year 2 active management status whilst Haerses Road biobank entered its Year 1 active management status under the BCT agreement.

Management actions contained within the Porters Road biobanking agreement have continued during this reporting period. Bush regeneration (namely weed management) was undertaken for Porters Road biobank site in August 2026 and September 2026, which lie outside the reporting period of this Annual Review. Weed management focused on eradication of Lantana infestation along the track at the creek line and exotic grasses on the ridgetop loop track.

Management actions have commenced within the Haerses Road biobank site (eastern and western sites) including management of Lantana infestation and control of invasive exotic perennial grasses particularly Whiskey Grass.

The annual active management reports for both biobank sites were submitted to the BCT within the specified reporting deadlines.

More information on the BSA sites is provided in Section 7.4.

7.2.2 2009 Translocation Site and Original Offset

Rehabilitation works in the translocation and original offset areas began in 2009. During this reporting period, a combination of spraying and maintenance works were undertaken in the areas shown in Figure 6 which focused on controlling infestations of whiskey grass, African love grass, couch and Bridal Creeper. The growth of *Kunzea ambigua* and other canopy trees were managed in order to assist regeneration at mid-storey groundcover strata.

7.2.3 Wisemans Ferry Road 30 Metre Buffer

The Haerses Road and Wisemans Ferry Road intersection upgrade works have severely impacted access for maintenance of this area during the 2020-2021 reporting period. Further assisted revegetation and rework to this area commenced since the completion of the intersection upgrade work and including during this reporting period. Supplementary planting, weed spraying and manual removal and maintenance works were caried out.

The works area is categorised into sandstone ‘capped’ (east of intersection) and ‘uncapped’ (west of intersection) areas.

In the capped areas, regular scans of Weeds of National Significance (WoNS) species were undertaken with a focus on *Cynodon dactlyon* (Bermuda grass) management continuing from last year. During the 2022 - 2023 reporting period, this area was stripped back with the aid of quarry machinery, weed species removed and the area capped with crushed sandstone. Planting of approximately 240 native trees, shrubs and ground cover species was undertaken in this area during the 2022 – 2023 reporting period, followed by routine weed monitoring and treatment of exotic grasses such as Kikuyu and couch, and blackberry throughout the previous and previous reporting period.

In the uncapped area, Weeds of National Significance has managed with a focus on eradicating *Asparagus aethiopicus* (Asparagus fern), *Asparagus asparagoides* (Bridal creeper), *Rumex sagittatus* (Turkey rhubarb) and *Rubus fruticosus* (Blackberry). An additional of 30 plants were supplementary planted in the uncapped area during this reporting period, utilising hardy Acacia species due to environmental constraints including low soil moisture and exposure to wind.

Overall, the status of the revegetation and screen planting continues to improve since the impact from the 2020 intersection upgrade works.

7.3 Ecological Monitoring

Dixon Sand engaged South East Environmental to undertake the annual biodiversity and rehabilitation monitoring and reporting for Haerses Road Quarry. Progress assessments were made against the commitments in the Haerses Road Quarry Biodiversity and Rehabilitation Management Plan (BRMP).

The Biodiversity and Rehabilitation Management Report (South East Environmental, 2026) aimed to:

- Identify native flora and fauna species, populations and ecological communities known to or likely to occur within the Haerses Road site,
- describe the native vegetation and habitats within the Haerses Road site,
- describe the current condition of the threatened flora and its habitat found within the Haerses Road site,
- determine the legislative and conservation significance of species, populations and ecological communities known or likely to occur within the Haerses Road site with reference to the Commonwealth *EPBC Act* 1999 and the NSW *BC Act* 2016,
- recommend appropriate biodiversity and environmental management measures that should be implemented to reach criteria for monitoring success set by the Haerses Road Quarry Biodiversity and Rehabilitation Management Plan v5 (2020), and
- provide an independent monitoring report for inclusion as part of the external reporting for the quarry Annual Review.

Figure 8 shows the buffer zones at Haerses Road Quarry.
Figure 9 shows the location of Haerses Road quarry, in relation to the biobank sites.
Figure 10 displays the areas delegated as the Haerses Road Biobank site (BSA 414).

Figure 11 displays the areas delegated as the Porters Road Biobank site (BSA 415).

Annual vegetation survey and baseline monitoring were undertaken for this reporting period.

Rehabilitation work at Haerses Road quarry is in the early stages and will increase with both intensity and measurable criteria over the next five-year period.

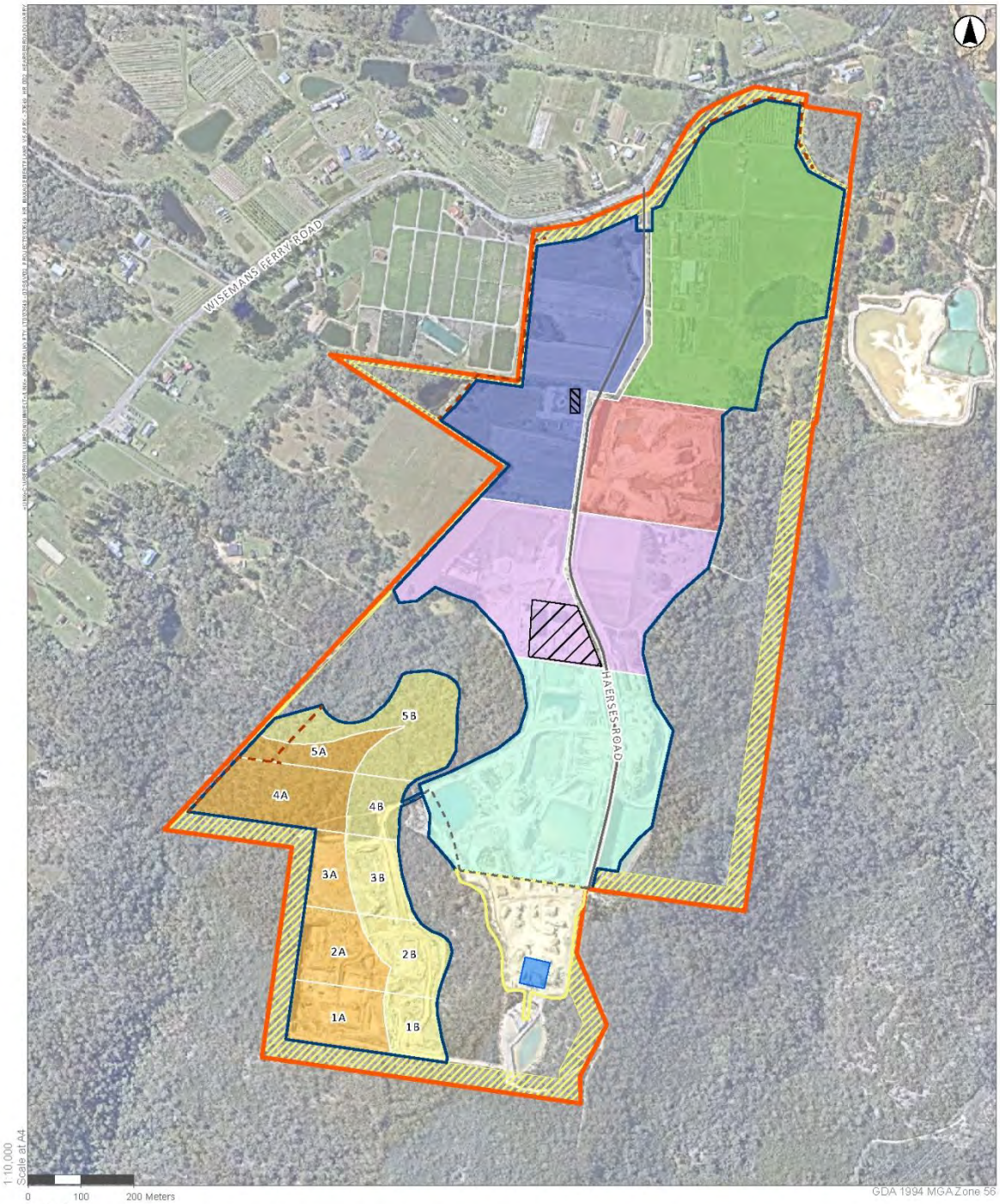


Figure 8
Buffer Zones, Haerses Road Quarry

Image Source: Nearmap (02-10-2025) **Data source:** NSW LPI (2026), NSW DSFI (202), NPWS Estate (2026)

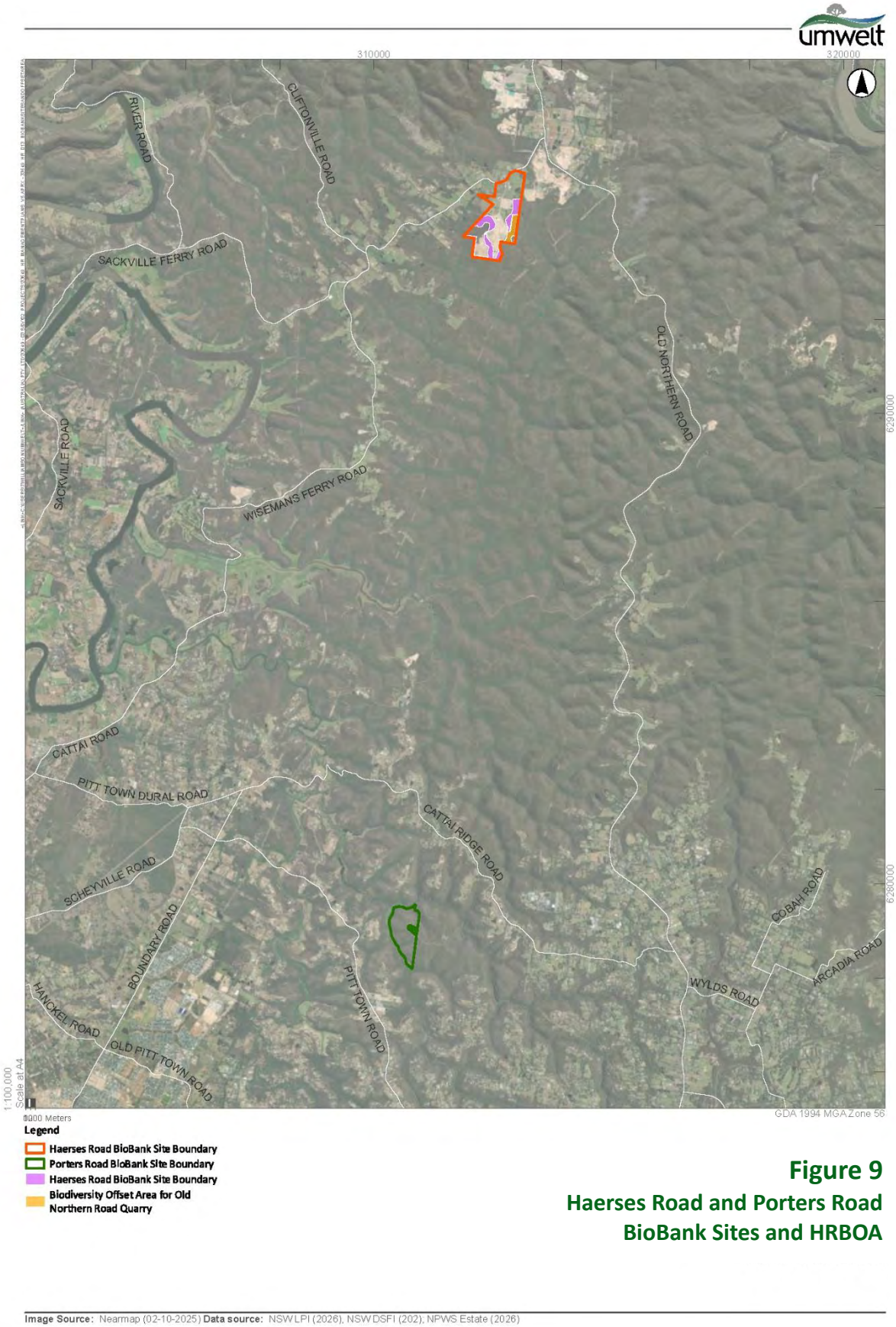


Figure 9
Haerses Road and Porters Road BioBank Sites and HRBOA

Image Source: Nearmap (02-10-2025) **Data source:** NSW LPI (2026), NSW DSFI (202), NPWS Estate (2026)

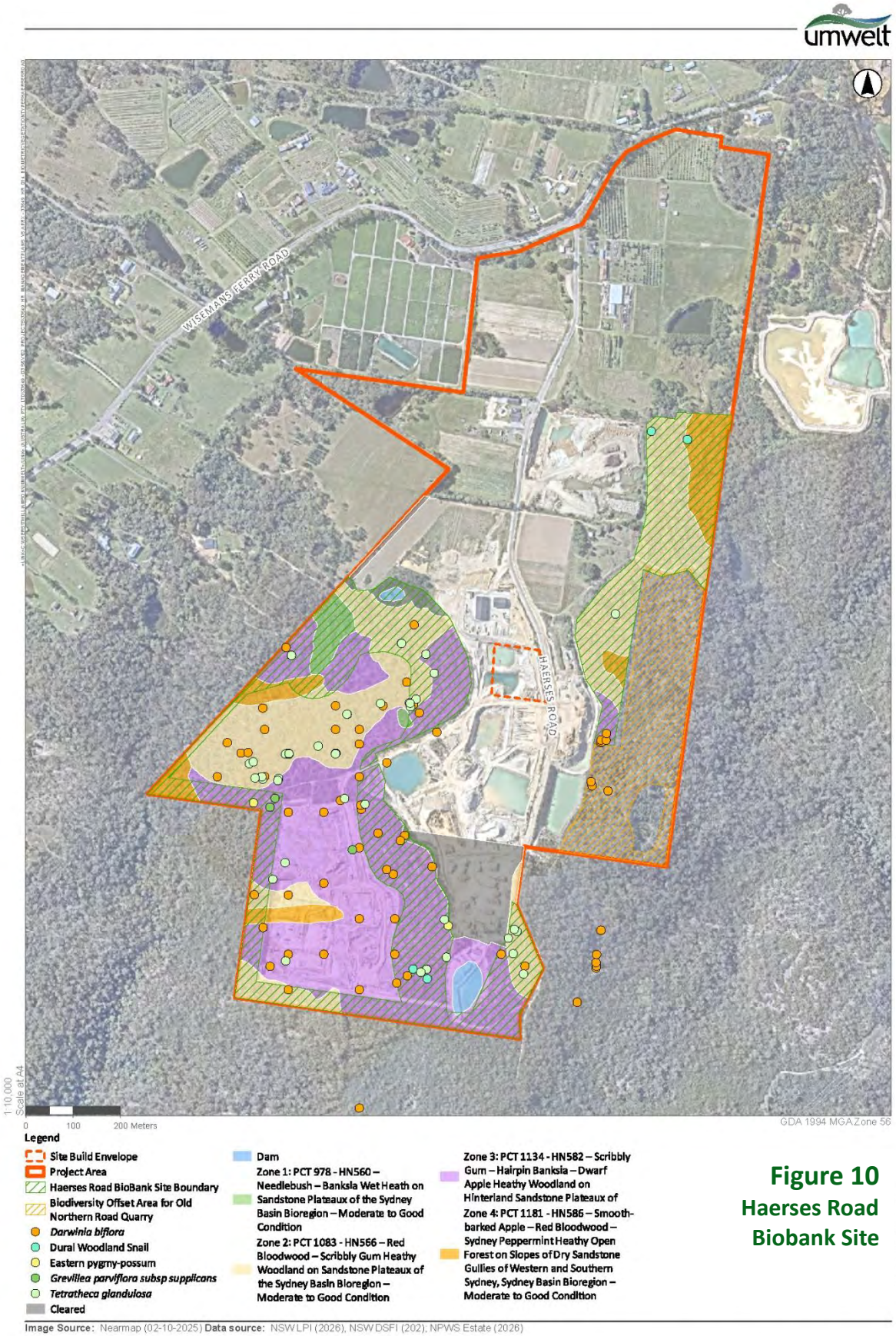


Figure 10
Haerses Road Biobank Site

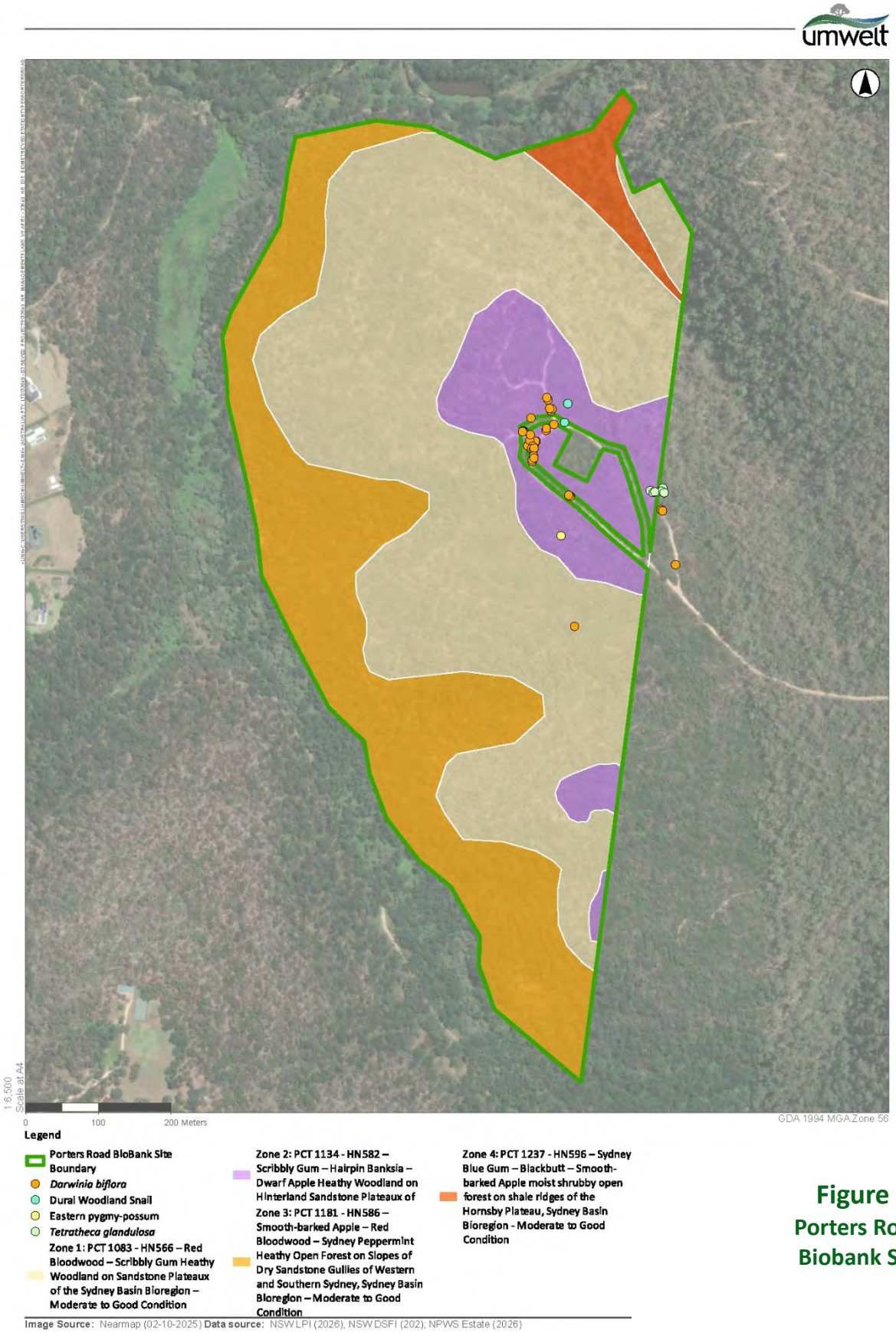


Figure 11
Porters Road Biobank Site

7.3.1 Stage 1 Extraction Cell

Approximately 5.68 hectares of Stage 1 has been disturbed for sand extraction. The remaining area to the east comprised of remnant native vegetation. Extraction has concluded for the eastern section (approximately 3 hectares) which is in the process of rehabilitation to agricultural land (refer to Plate 2). During this reporting period, rehabilitation work has continued in the eastern portion of Stage 1. A combination of imported VENM and ENM and overburden and interburden of clay and shale material from Extraction Cells A and B (Modification 1 area) have been utilised to fill in the void to achieve final landform height. During this reporting period, 11,715.90 tonnes of VENM/ENM have been imported and placed in Stage 1 to fill in the void and achieve final landform. Rehabilitation work is expected to continue during the next reporting period with the aim of rehabilitation the land to Agricultural Class 4 over the next two years.



Plate 1 – Stage 1 rehabilitation (South East Environmental 2026).



Plate 2 - Rehabilitation area in Stage 1, Google Earth Pro Imagery dated October 2025 (South East Environmental, 2026).

7.3.2 Stage 2 Extraction Cell

Stage 2 extraction cell is still an active quarry extraction area. Rehabilitation has commenced in Stage 2 west where sandstone extraction took place and concluded. The farm dam constructed in this area which will form a permanent water infrastructure for the property, in accordance with the Soil and Water Management Plan (refer to Plate 3).

Soil containing native vegetation seed bank from the extraction cells A and B was spread over the area between the dam and native vegetation on the western boundary. The natural regeneration process has commenced with a good diversity ground cover species emerging. In addition, the threatened *Darwinia biflora*, *Tetratheca glandulosa, Acacia bynoeana* and *Pimelea curviflora var. curviflora* have emerged in the compact soils immediately surrounding the dam. In total, sixteen *Darwinia biflora*, one *Tetratheca glandulosa, six Acacia bynoeana* and one *Pimelea curviflora var. curviflora* specimens were recorded around the dam edge (refer to Plates 5 to 8 inclusive).

The remaining soil from extraction cells A and B have been stockpiled in Stage 2 west. This soil contains native seed bank which are currently growing from the stockpile and continue to replenish the seed bank (refer to Plate 9). This stockpiled soil will be utilised or rehabilitation in extraction cells A and B (Modification 1 area) in the future.



Plate 3 – Farm dam located in Stage 2 west (South East Environmental, 2026).



Plate 4 – Stage 2 west rehabilitation area west of the farm dam (South East Environmental, 2026).



Plate 5 – Darwinia biflora in Stage 2 west rehabilitation area west of the farm dam (South East Environmental, 2026).



Plate 6 – Acacia byoneana in Stage 2 west rehabilitation area on the farm dam wall (South East Environmental, 2026).



Plate 7 – etratheca glandulosa in Stage 2 west rehabilitation area east of the farm dam (South East Environmental, 2026).



Plate 8 – Pimelea curviflora var. curviflora in Stage 2 west rehabilitation area east of the farm dam (South East Environmental, 2026).



Plate 9 – Soil containing native seed bank from extraction cells A and B being stockpiled in Stage 2 west (South East Environmental, 2026).

7.3.3 Extraction Cells A and B (Modification 1 area)

Vegetation clearing and extraction commenced in extraction Cell 1A in December 2019 following the completion of the pre-commencement conditions. All native vegetation has been cleared and extraction currently taking place in Cells 1A, 1B, 2A, 2B, 3A and 3B.

No rehabilitation has been undertaken in Cells A and B of the Modification 1 area as the area is still undergoing active extraction.

7.3.3.1 Baseline Monitoring for Extraction Cells A and B

Baseline vegetation data was obtained during the previous reporting periods in areas within the future extraction cells, as outlined in the Biodiversity and Rehabilitation Management Plan (BRMP v5, 2020). The Haerses Road Biodiversity and Rehabilitation management Plan outlines the annual monitoring of the extraction cells prior to disturbance for the purpose of providing baseline data for rehabilitation of the site post extraction.

A baseline monitoring site was not able to be established in Extraction Cells 1A and 1B due to commencement of extraction and current areas being subjected to disturbance. The monitoring locations within cell 2 and 3 have been disturbed as these areas are being subjected to active extraction and therefore monitoring at these sites has concluded. The remaining two monitoring locations within cells 4 and 5 were surveyed previously in July 2024, August 2025 and recently in August 2026 to collect further data which will contribute to the final rehabilitation of the quarry.

Information collected from these baseline monitoring sites was carried out in accordance with DPE Biodiversity Assessment Method, as approved via the *Biodiversity Conservation Act* 2016 and *the Biodiversity Conservation Regulation* 2017. Photo monitoring points have been nominated within these baseline monitoring sites for ongoing monitoring and comparison purpose each year. The survey sites were selected for ongoing survey monitoring with the aim of representing the two dominant vegetation communities within the Haerses Road BRMP (v5, 2020).

The Haerses Road BRMP (v5, 2020) describes the following four vegetation communities being present in the surveyed:

- PCT978/HN560 – Needlebush – Banksia Wet Heath on Sandstone Plateaux of the Sydney Basin Bioregion (consistent with Coastal Upland Swamp in the Sydney Basin Bioregion EEC (*BC Act* and *EPBC Act*)) – 0.95 ha
- PCT 1083/HN566 – Red Bloodwood – Scribbly Gum Heathy Woodland on Sandstone Plateaux of the Sydney Basin Bioregion – 10.53 ha
- PCT 1134/HN852 – Scribbly Gum – Hairpin Banksia – Dwarf Apple Heathy Woodland on Hinterland Sandstone Plateaux of the Central Coast, Sydney Basin Bioregion – 12.32 ha and
- PCT 1181/HN586 – Smooth-barked Apple – Red Bloodwood – Sydney Peppermint Heathy Open Forest on Slopes of Dry Sandstone Gullies of Western and Southern Sydney, Sydney Basin Bioregion – 2.98 ha.

The endorsement of the Eastern NSW PCT Classification by the NSW State Government in 2023 resulted in a number of the previously assigned Haerses Road PCT classification being reviewed and reassigned during this reporting period. Table 24 summarise the previously and newly assigned PCT classification adopted at Haerses Road Quarry and during the flora survey for this reporting period.

Table 27: Previously and newly adopted PCT classification for Vegetation Communities at Hearses Road Quarry

Previous PCT Classification	Newly adopted PCT Classification	Justification
PCT 978 Needlebush – Banksia Wet Heath on Sandstone Plateaux of the Sydney Basin Bioregion	**PCT3924** Sydney Coastal Upland Swamp Heath	**PCT978** was split into several PCT's which had association with the species present. The most relevant and best suited PCT for the vegetation within the Haerses Road site is now considered **PCT3924**
PCT1083 Red Bloodwood – Scribbly Gum Heathy Woodland on Sandstone Plateaux of the Sydney Basin Bioregion	**PCT3593** Sydney Coastal Sandstone Bloodwood Shrub	**PCT1083** was also split into several PCT's which had association with the species present. The most relevant and best suited PCT for the vegetation within the Haerses Road site is now considered as **PCT3593**
PCT1134 Scribbly Gum – Hairpin Banksia – Dwarf Apple Heathy Woodland on Hinterland Sandstone Plateaux of the Central Coast, Sydney Basin Bioregion	**PCT3586** Northern Sydney Scribbly Gum Woodland	**PCT1134** was amalgamated into **PCT3586** Northern Sydney Scribbly Gum Woodland due to the strong association with the new PCT.

Previous PCT Classification	Newly adopted PCT Classification	Justification
PCT1181 Scribbly Gum – Hairpin Banksia – Dwarf Apple Heathy Woodland on Hinterland	**PCT3617** Sydney Hinterland Peppermint – Apple Forest	**PCT 1181** was split into several PCT's which had association with the species present. The most relevant and best suited PCT for the vegetation within the Haerses Road site is now considered as **PCT3617**

Within the three vegetation survey quadrats the following information was collected:

- Composition – native plant species richness by growth form,
- Structure – foliage cover of native and exotic species by growth form, and
- Function – number of large trees, tree stem size class, canopy species regeneration, length of fallen logs, percentage of leaf litter, number of trees with hollows and high threat exotic cover

In summary, a reduction in groundcover species, specifically forbs and grasses were noted in all survey locations which could be a result of sporadic climatic conditions including drought over 2017-2020, extreme wet conditions in 2020-2023 and a slightly below average rainfall in 2025-2026. The slight decline in species is considered a normal fluctuation. Monitoring will continue into the future to determine if climatic conditions are the causes of species diversity increase or decline.

Same as last year, threatened species have been recorded in the survey quadrats. *Darwinia biflora* and *Tetratheca glandulosa* are both found in abundance in Quadrats 1 and 4. *Grevillea parviflora subsp. supplicans* was located in Quadrat 4.

Full details of the survey results can be found in the *Annual Biodiversity & Rehabilitation Management Report (South East Environmental, 2026)* contained in Appendix H.

7.3.4 Wisemans Ferry Road 30 Metre Buffer

Supplementary buffer planting commenced in 2016 utilising native species such as *Banksia*, *Melaleuca*, *Hakea* and *Acacia* to provide visual screening for motorist on Wisemans Ferry Road. Intersection upgrade works at the Haerses Road and Wisemans Ferry Road during early 2020 have caused disturbance to the planted vegetation in the buffer areas. The resulting disturbance from the road works was unavoidable. Works associated with the intersection upgrade was completed and finalised in May 2021.

Works are categorised into two areas: the eastern and western buffer areas.

Assisted planting was undertaken during the previous 2022 – 2023 reporting period on the western section of the buffer area, utilising soil and mulch containing native seed bank from Cells 2A and 2B. Currently a diverse Eucalyptus, Acacia, Leptospermum and native grass and forb species have emerged (refer to Plate 10). Additional assisted planting was carried out in 2024 to complement the native species emerged from the seed bank.

The success of revegetation in this western buffer area has so far outperformed the eastern area where the ground has been highly compacted. The eastern section of the buffer area has not shown any signs of natural regeneration due to the density of exotic pasture species dominating the area. Assisted rehabilitation planting utilising tough and

deep-rooted species has been carried previously in 2024 and 2025 with the aim of breaking up compacted soil to allow vegetation establishment in the future (refer to Plate 11).

Exotic species occur in the 30-metre buffer with Weeds of National Significance (WoNS) and High Threat Weeds (HTW) present. Weed management and control has commenced in the 2022 – 2023 reporting period and have continued since. Significant progress has been achieved in decreasing the presence of weed in the 30m buffer and efforts of weed management will continue into the future, with priority given to management of WoNS and HTW.



Plate 10 – Western side of 30m buffer to Wisemans Ferry Road in 2026 (South East Environmental, 2026).



Plate 11 – Eastern side of 30m buffer to Wisemans Ferry Road in 2026 (South East Environmental, 2026).

7.3.5 Buffer to Deerubbin Local Aboriginal Land Council Property

The translocation and original offset sites from 2006 are located to the west of the Deerubbin LALC property (formerly Maroota State Forest). A 40-metre buffer runs along the eastern and southern boundaries between the quarry and the Deerubbin LALC property. Rehabilitation of this area started in 2015 with continued regular regeneration works in this area, there has been no further disturbance to any areas of the buffer.

7.4 Management of Biodiversity Stewardship (Biobank) Sites

Two Biodiversity Stewardship Agreements (BSA) (biobank site) were finalised for DA 165-7-2005. The two sites are located at Haerses Road and Porters Road. The BSA stipulates a requirement that management actions are to be implemented when the Agreement commences, and management actions that are to be undertaken when the Total Fund Deposit is met, and Dixon Sand received the first annual management payment. Both sites have fulfilled the 80% payment of the Total Fund Deposit and therefore have entered into the active management status. The Porters Road site is in its 2nd year of active management whilst the Haerses Road site has entered its first year of active management during this reporting period.

Haerses Road Biobank Site

The Haerses Road biobank site entered into its Year 1 active management status on 22nd December 2025. The Year 1 active management report is due later in the year on 22nd December 2026.

Commencement of management actions contained in the agreement have been carried out including:

- **weed control** – Management of Lantana infestation has commenced on the northern boundary for both eastern and western portion of the site

- **grazing management** – no stock kept or located on both properties, no unauthorised grazing of stock,
- **fire management for conservation** – no fire within the Biobank site since Year 1 active management commenced.
- **Management of human disturbance** – fences and signage have been installed in areas deemed safe**.** Certain section of the boundary lines borders the quarry extraction pit wall which act as boundary delineation.
- **retention of native vegetation** – no disturbance or removal of native vegetation from the site.
- **retention of dead timber** – no removal or import of dead timber
- **erosion control** – no erosion observed within the site
- **retention of rocks** – no removal or import of rocks
- **Control of feral & overabundant native herbivores –** annual monitoring to be undertaken
- **Vertebrate pest management –** annual monitoring to be undertaken
- **Monitoring -** Photo points established.

Porters Road Biobank Site

Year 2 active management for Porters Road biobank site covers the period of September 2025 to September 2026. The Year 2 active management report was submitted on 18 September 2026.

Implementation of the management actions contained in the biobanking agreement have commenced which included:

- **grazing management for conservation** – no stock kept or located on both properties, no unauthorised grazing of stock,
- **weed control** – Management of *Lantana camera* in Zones 1, 3 and 4 mainly along the track adjacent to O'Haras Creek. Management of exotic grasses along the loop track on the ridgeline.
- **fire management for conservation** – no fire within the BSA sites during previous 12-month period. Dixon Sand has liaised with the RFS to schedule an ecological burn in the near future.
- **management of human disturbance** – no direct adverse human disturbance to biodiversity values within the Biobank site. However, motorbike tracks have been consistently observed along the tracks and trails. The installed signs, chains and locks have been vandalised on several occasions. No waste has been stored or disposed of onsite except several historic wrecked cars are on the sandstone escarpment and removal of these items would result in greater impacts.
- **native vegetation management** – no removal of native vegetation
- **Retention of dead timber** – no removal of dead or fallen timber or leaf litter from the site
- **Erosion control** – no erosion observed. Erosion has occurred on the track adjacent O'Haras creek but this is not within the boundary of the property.
- **Retention of rocks** – no removal of rocks from the site
- **Control of feral and overabundant native herbivores** – control program to be undertaken in accordance with Local Land Services' recommendations. Site is registered under the Cattai Deer Management Program but no deer control carried out on site this year. Fox trapping program was undertaken in May 2026.
- **Vertebrate pest management** – control program to be undertaken in accordance with Local Land Services' recommendations.
- **Nutrient control** – no application of fertilisers and pesticides in the biobank site. Herbicide usage for weed management undertaken by qualified bush regenerator.
- **Installation of nest boxes** – not required during this reporting period
- **Monitoring** –Photo points established and monitored.

7.5 Change in Environmental Procedures

The following recommendations for bush regeneration, rehabilitation work and monitoring have been made:

Stage 1 Extraction Area

- continue with screening of stockpiled rehabilitation material to remove unsuitable larger rocks and boulders
- continue with importing VENM and ENM to assist with void filling if required to achieve final landform
- Layering stockpile material to create suitable agricultural terrain

Stage 2 Extraction Area

- continue to monitor the native vegetation growth and the supplemented planting to the west of the water storage dam in Stage 2 west
- continue with weed management in this area

2009 Translocation and Offset Area

- Continue managing competitive native shrubs and species particularly *Kunzea ambigua* to minimise overshadowing and encroachment of ground dwelling plants
- Investigate the potential to undertake cool ecological burn of the area

Wisemans Ferry Road 30 metre Buffer Area

- Continue with weed management in this area with a focus on WONS and High Threat species
- Undertake regular maintenance of the recent plantings

Buffer to Deerubbin LALC Property (formerly Maroota State Forest)

- Continual bush regeneration maintenance in the previously disturbed area
- Continual weed management in this area

Extraction Cells A and B

- Continue to monitor vegetation quadrats for baseline data in Cells 4 and 5

Haerses Road and Porters Road Biobank Sites

- monitoring and management of the Haerses Road and Porters Road biobank BSA sites to be undertaken in accordance with the Biobanking Agreement, BCT reporting and specific directions given by the BCT.
- continue managing Whiskey Grass on the track adjacent to the western boundary of Haerses Road biobank site.

It is not expected any new areas of rehabilitation will take place within the next reporting period as extraction across the site continues.

8. Community and Social Impacts

8.1 Compliance

Dixon Sand is required to adhere to the following community related consent conditions:

Table 28: Community related consent conditions

Development Consent Condition	Requirement	Compliance
Condition 8 of Schedule 5	The Applicant must establish and operate a Community Consultative Committee (CCC) for the development to the satisfaction of the Secretary. The CCC must be established by 30 June 2018 and operated in general accordance with the Department's Community Consultative Committee Guidelines, November 2016 (or later version). Notes: • The CCC is an advisory committee. The Department and other relevant agencies are responsible for ensuring that the Applicant complies with this consent. • In accordance with the guidelines, the Committee should comprise an independent chair and appropriate representation from the Applicant, Council and the local community. • The CCC established and operated prior to the approval of Modification 1 must continue to be operated in accordance with the procedures required by the consent prior to the approval of Modification 1 until such time as the CCC required by this condition is established. • The Applicant may, with the approval of the Secretary, combine the function of this CCC with the functions of other CCCs in the area.	The current CCC members were re-appointed by the DPHI on 1st March 2018 (note joint CCC for the Old Northern Road and Haerses Road quarries).
Condition 1(e) of Schedule 5	describe the procedures to be implemented to: • keep the local community and relevant agencies informed about the operation and environmental performance of the development; • receive, record, handle and respond to complaints; • resolve any disputes that may arise during the course of the development; • respond to any non-compliance; • respond to emergencies; and	Refer to the Environmental Management Systems and Management Plans

8.2 Complaints and Follow-up Actions

No complaints were received for Haerses Road quarry during the 2025 - 2026 reporting period.

Table 29: Complaints received during the reporting period.

Complaint 1	
Date complaint received	Not Applicable – no complaint received during this reporting period.
Issue	
Recommended Action(s)	
Outcome	
Close out Date	

The summary of complaint register is contained in Appendix K.

8.2.1 Long Term Complaints Trend

Long term complaints monitoring data commencing 2006 – 2007 is depicted in Chart 68 below. It must be noted that complaints were recorded for the Haerses Road and Old Northern Road quarries combined from the 2006 – 2007 to 2017 – 2018 monitoring periods, with complaints recorded separately for individual quarries from thereon.

A total of sixteen complaints has been received by Dixon sand since the 2006 – 2007 monitoring period to date.

The number of complaints were nil and one during the 2006 - 2007 and 2007 – 2008 monitoring periods respectively, with the one complaint being associated with a haulage truck driving in a dangerous manner.

During the 2008 – 2009 monitoring period, the number of complaints increased to six, with the majority associated with trucks driving in a dangerous manner or exceeding the school zone speed limit. One complaint was made in relation to the quarry generating excessive noise where the source of noise was identified to have been caused by a different operation.

From 2009 – 2010 to 2016 – 2017 monitoring periods, the number of complaints were minimal and fluctuated between nil and two. These complaints were associated with haulage trucks driving in a dangerous manner or exceeding the speed limit.

The 2016 – 2017 monitoring period recorded an increase in number of complaints to eight complaints which were associated with haulage trucks driving in a dangerous manner, excessive noise generation, operation outside of approved hours and excessive dust generation.

From this point, a downward trend in number of complaints can be observed. The number of complaints received reduced to two complaints during the 2018 – 2019 monitoring period which were associated with haulage trucks exceeding the speed limit. No complaints were received during this 2019 – 2020 monitoring period. One complaint was received during this 2020 – 2021 reporting period associated with a haulage truck driving in a dangerous manner. There were no complaints during the 2021 – 2022 reporting period. One traffic complaint was received for the 2022 – 2023 reporting period.

Dixon Sand received no complaint during this reporting period.

The majority of the historical complaints were made by residents of Maroota, residents of neighbouring suburbs or local road users. One complaint was made by Dixon Sand Quarry Manager. Timing of events leading to complaints were mainly during quarry operation hours with the exception of complaints associated with operations outside of consented hours. The locations of haulage trucks driving in a dangerous manner, exceeding the speed limit, or excessively using engine brakes occurred mainly on Old Northern Road and Wisemans Ferry Road in the local areas. All complaints have been closed out.

Dixon Sand executed the steps to identify the validity of the complaints received and implemented appropriate actions outlined in the complaints procedure and Maroota Local Traffic Management Policy (inter-pit policy). Throughout the years, a number of complaints were identified to have been associated with other operations in or out of the area.

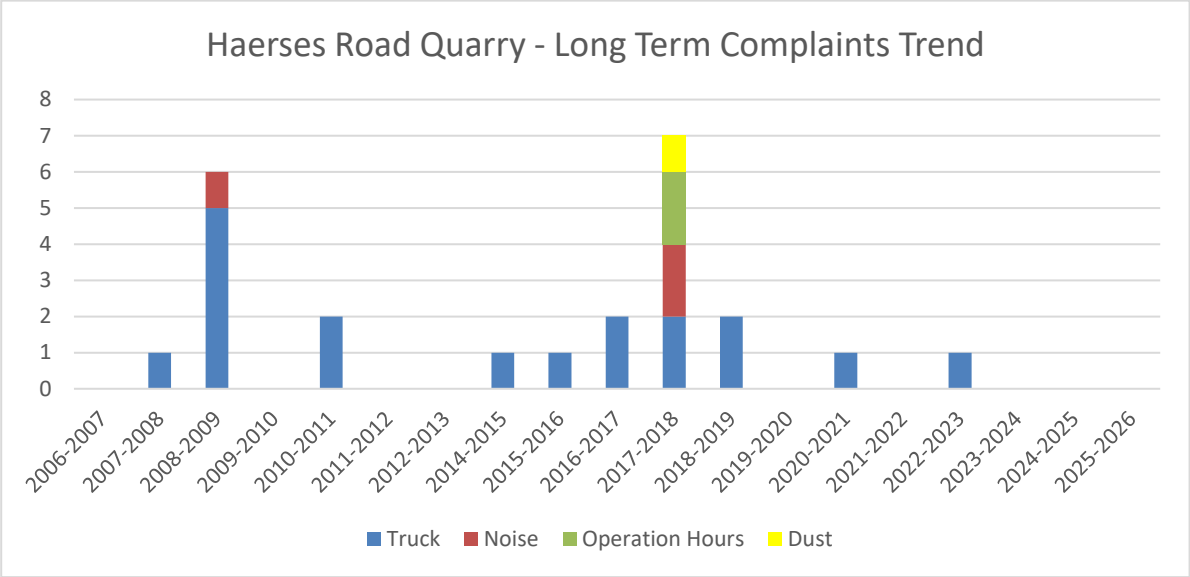


Chart 63: Long term complaints monitoring data.

8.3 Community Consultative Committee, Meetings and Guidelines

Two CCC meetings were held during the 2025 - 2026 reporting period, in accordance with the consent conditions and CCC Guidelines (2023). The ordinary bi-annual CCC meetings were held on 5th November 2025 and 6th May 2026.

The minutes from the ordinary CCC meetings are contained in Appendix J.

8.4 Community and Stakeholder Liaison

In addition to contacting Community Representatives of the CCC, the local community is provided with an opportunity to comment on Dixon Sand's environmental performance through direct contact with quarry staff or through the contact portal via the company's website.

Stakeholder Liaison and Correspondences

Dixon Sand staff made contact with local community members on a number of occasions. These include:

- Notifying the Maroota Public School regarding noise monitoring undertaken in December 2025 and June 2026 and other matters relating to ground maintenance on school ground or in proximity to the school,
- Liaising with the neighbouring property owner to the Old Northern Road quarry regarding general maintenance, and
- Bi-annual CCC meetings in November 2025 and May 2026.

Local Initiatives

Dixon Sand regularly makes monetary and resource contributions to a number of community initiatives and charities such as:

- monetary donation and participation in the Maroota Public School's Annual Maroota Muster Festival,
- monetary donation to Royal Flying Doctor Service,
- monetary sponsorship of Sporting Individuals, teams and associations
- Christmas appeal for the Salvation Army, and
- publication of environmental monitoring data, and provision of all current consents and site management plans for public viewing on the Dixon Sand website.

8.5 Ecologically Sustainable Development

Ecologically Sustainable Development (ESD) can be defined as "using, conserving and enhancing the community's resources so that the ecological processes, on which life depends, are maintained and the total quality of life, now and in the future, can be increased" (Commonwealth of Australia, 1992).

The four principles of ESD are listed in Schedule 2 of the *Environmental Planning and Assessment Regulation* 2021 as follows:

- the precautionary principle;
- inter-generational equity;
- conservation of biological diversity and ecological integrity; and
- Improved valuation, pricing and incentive mechanisms.

Dixon Sand's Haerses Road Quarry continues to manage all potential threats to the quality of the environment, determined with a reasonable degree of certainty through the use of scientific investigation and analysis of the individual and cumulative environmental impacts of the proposal.

Long-term environmental fluctuations have been, and will continue to be, monitored for the duration of extraction such as groundwater levels and quality, noise, air quality and threatened flora and fauna.

Threatened flora and fauna present on site are monitored annually to ensure they are not impacted by quarry activities. Similarly, noise and air quality monitoring will continue throughout the life of the developments. Mitigation measures are in place to minimise the potential adverse impacts likely to affect social and intergenerational equity. These measures relate to erosion and sediment control, surface and groundwater management, air quality control, and noise and waste management. Continual community relation strategies will ensure the community is well informed and has an effective means of voicing concerns and receiving feedback.

Dixon Sand aims to protect the biological diversity and ecological integrity of the sites through:

- progressive rehabilitation of the extracted areas using agricultural and native species;
- monitoring and maintenance of buffer areas to ecologically sensitive sites;
- establishment of native vegetation offset areas, biodiversity offset area and native rehabilitation areas to maximise native fauna habitats and enhance vegetation corridor for flora and fauna migration, and
- providing a final landform that integrates elements of the local area.

The value placed on environmental resources by Dixon Sand is represented as costs associated with the implementation of monitoring and mitigation measures throughout the life of the development consents.

8.6 Changes to Social Monitoring Procedures

No changes are proposed for the social management procedures.

9. Bushfire Management

9.1 Compliance

DA165-7-2005 requires Dixon Sand to ensure the quarry is suitably equipped to respond to any fires on site. Dixon Sand is to assist the Rural Fire Service and emergency services to the extent practicable if there is a fire in the vicinity of the site.

A Bushfire Management Plan has been prepared for Haerses Road quarry.

10. Competency, Training and Awareness

The quarry management team is to ensure all personnel, including contractors, are provided with appropriate environmental training and awareness to ensure they understand their environmental awareness, responsibilities and how to mitigate the impacts. Training is undertaken using the following avenues:

- Compulsory site environmental induction for employees and contractors,
- Truck driver induction training,
- Pollution incident response management plan (PIRMP) and mock scenario training,
- Multi staged pre-clearing procedures and fauna handling and rescue procedures training,
- Job Safety and Environmental Analysis,
- Environmental hazard identification workshop,
- Regular toolbox talks, and
- Bushfire Management and Emergency evacuation training.

11. Incidents and Non-Compliances

11.1 Environmental Incidents and Non-Compliances

Details of the incidents and non-compliances are listed in Table 30 below.

Table 30: Environmental Non-compliances and Incidents

Date of Incident	Applicable Condition(s)	Details, Cause and Mitigation of Incident
31 March 2026	Condition 12 of Schedule 5 of DA 165-7-2005	**Submission of 2025 - 2026 Annual Review after March 2026** Dixon Sand is required to submit the Annual Review for the Quarry by the end of March each year. The submission of this Annual Review at the end of September is technically non-compliant with the deadline required by the consent condition. However, Dixon Sand requested approval from the DPHI for the submission deadline of the Annual Review to be adjusted to reflect the financial year reporting. Approval was granted by the DPHI on 9 February 2018 to submit the Annual Review by the end of September each year. DPHI determined no breach of consent condition.
16 July 2026	Condition 16(a) of Schedule 2 of DA 165-7-2005	**Submission of calendar year annual quarry production data to DRG** Dixon Sand contacted DRG asking the department to confirm the submission deadline for the Financial Year 2025 – 2026 minerals return. DRG notified Dixon Sand that submission of the Minerals Return form is no longer a requirement. Dixon Sand then notified DPHI Compliance Team and confirmed that the production data will still be reported in the Annual Review. DPHI acknowledged that reporting the production data through Annual Review is adequate. Refer to email from DPHI Compliance Team dated 6 August 2026.
23 July 2025 - 20 August 2025	Condition 9 of Schedule 3 of DA 165-7-2005	DPHI Notification and Reporting: **DA-165-7-2005-PA-81** Dust deposition gauge D10 (Stage 4 Dam): • Monthly dust deposition = 5.7 g/m2/month • Rolling annual average dust deposition = 4.0 g/m2/month Elevated monthly dust likely to be attributed to property and garden maintenance for the site office, and not due to quarry extraction or operation. Dust gauge D10 is located on land owned by the Quarry (Stage 4 extraction) and not on private residence. No consent breached. No further action required by DPHI. Incident closed out.

Date of Incident	Applicable Condition(s)	Details, Cause and Mitigation of Incident
20 August 2025 - 17 September 2025	Condition 9 of Schedule 3 of DA 165-7-2005	DPHI Notification and Reporting: **DA-165-7-2005-PA-82** Dust deposition gauge D10 (Stage 4 Dam): • Monthly dust deposition = 5.7 g/m2/month • Rolling annual average dust deposition = 4.4 g/m2/month Elevated monthly dust likely to be attributed to property and garden maintenance for the site office, and not due to quarry extraction or operation. Grass paddock adjacent to D10 was slashed using a tractor. Annual average deposited dust continued to exceed the 4.0 g/m2/month criteria. Dust gauge D10 is located on land owned by the Quarry (Stage 4 extraction) and not on private residence. No consent breached.
17 September 2025 - 15 October 2025	Condition 9 of Schedule 3 of DA 165-7-2005	DPHI notification and reporting not required as monthly dust deposition is compliant. Dust deposition gauge D10 (Stage 4 Dam): • Monthly dust deposition = 1.4 g/m2/month • Rolling annual average dust deposition = 4.3 g/m2/month Monthly deposited dust results compliant. Annual average deposited dust continued to exceed the 4.0 g/m2/month criteria. Dust gauge D10 is located on land owned by the Quarry (Stage 4 extraction) and not on private residence. No consent breached.
15 October 2025 - 12 November 2025	Condition 9 of Schedule 3 of DA 165-7-2005	DPHI Notification and Reporting: **DA-165-7-2005-PA-85** Dust deposition gauge D8 (Olive Grove, Hitchcock Road): • Monthly dust deposition = 5.3 g/m2/month • Rolling annual average dust deposition = 1.1 g/m2/month Dust deposition gauge D10 (Stage 4 Dam): • Monthly dust deposition = 1.5 g/m2/month • Rolling annual average dust deposition = 4.3 g/m2/month Elevated dust at D8 likely to be attributed to a new gravel driveway being installed approximately 80 metres to the east. Annual average deposited dust at D8 is compliant. Monthly deposited dust at D10 is compliant, however, the annual average deposited dust continued to exceed the 4.0 g/m2/month criteria.

Date of Incident	Applicable Condition(s)	Details, Cause and Mitigation of Incident
		Both dust gauges D8 and D10 are located on quarry premise and not on private residence's property. No consent breached.
29 November 2025	Condition 9 of Schedule 3 of DA 165-7-2005	DPHI not notified. The 24-hour average PM10 level reached 59.5 µg/m^3 which exceeded the 50 NEPM µg/m3 maximum criteria, as required in Table 3 of Condition 9 of Schedule 3 of the DA. The elevated PM10 was attributed to grass fire and bushfire burning on two properties adjacent to the Quarry, and potentially contributed by the neighbouring farming activities during this monitoring period. Grassfire and Bushfire are considered extra-ordinary events as defined in Note d of Table 3. Therefore, no consent condition has been breached. No further action required. Incident closed out.
12 November 2025 - 10 December 2025	Condition 9 of Schedule 3 of DA 165-7-2005	DPHI notification and reporting not required as monthly dust deposition is compliant. Dust deposition gauge D10 (Stage 4 Dam): • Monthly dust deposition = 1.1 g/m2/month • Rolling annual average dust deposition = 4.3 g/m2/month Annual average deposited dust continued to exceed the 4.0 g/m2/month criteria. Dust gauge D10 is located on land owned by the Quarry (Stage 4 extraction) and not on private residence. No consent breached.
10 December 2025 - 7 January 2026	Condition 9 of Schedule 3 of DA 165-7-2005	DPHI Notification and Reporting: **DA-165-7-2005-PA-87** Dust deposition gauge D10 (Stage 4 Dam): • Monthly dust deposition = 14.4 g/m2/month • Rolling annual average dust deposition = 5.1 g/m2/month Elevated monthly dust attributed to adjacent farm paddocks having been stripped bare in preparation for vegetable planting. Annual average deposited dust continued to exceed the 4.0 g/m2/month criteria. Dust gauge D10 is located on land owned by the Quarry (Stage 4 extraction) and not on private residence. No consent breached.
7 January 2026 - 4 February 2026	Condition 9 of Schedule 3 of DA 165-7-2005	DPHI Notification and Reporting: **DA-165-7-2005-PA-90** Dust deposition gauge D10 (Stage 4 Dam): • Monthly dust deposition = 4.9 g/m2/month

Date of Incident	Applicable Condition(s)	Details, Cause and Mitigation of Incident
		• Rolling annual average dust deposition = 5.0 g/m2/month Elevated monthly dust attributed to adjacent farm paddock having been worked prior to vegetable planting. Annual average deposited dust continued to exceed the 4.0 g/m2/month criteria. Dust gauge D10 is located on land owned by the Quarry (Stage 4 extraction) and not on private residence. No consent breached.
4 February 2026 - 4 March 2026	Condition 9 of Schedule 3 of DA 165-7-2005	DPHI Notification and Reporting: **DA-165-7-2005-PA-92** Dust deposition gauge D10 (Stage 4 Dam): • Monthly dust deposition = 9.1 g/m2/month • Rolling annual average dust deposition = 5.0 g/m2/month Elevated monthly dust attributed to adjacent farm paddock having been worked prior to vegetable planting. Annual average deposited dust continued to exceed the 4.0 g/m2/month criteria. Dust gauge D10 is located on land owned by the Quarry (Stage 4 extraction) and not on private residence. No consent breached.
4 March 2026 - 1 April 2026	Condition 9 of Schedule 3 of DA 165-7-2005	DPHI notification and reporting not required as monthly dust deposition is compliant. Dust deposition gauge D10 (Stage 4 Dam): • Monthly dust deposition = 4.0 g/m2/month • Rolling annual average dust deposition = 4.9 g/m2/month Monthly deposited dust level is compliant. Annual average deposited dust continued to exceed the 4.0 g/m2/month criteria. Dust gauge D10 is located on land owned by the Quarry (Stage 4 extraction) and not on private residence. No consent breached.
1 April 2026 - 29 April 2026	Condition 9 of Schedule 3 of DA 165-7-2005	DPHI notification and reporting not required as monthly dust deposition is compliant. Dust deposition gauge D10 (Stage 4 Dam): • Monthly dust deposition = 2.5 g/m2/month • Rolling annual average dust deposition = 4.7 g/m2/month

Date of Incident	Applicable Condition(s)	Details, Cause and Mitigation of Incident
		Monthly deposited dust level is compliant. Annual average deposited dust continued to exceed the 4.0 g/m2/month criteria. Dust gauge D10 is located on land owned by the Quarry (Stage 4 extraction) and not on private residence. No consent breached.
29 April 2026 - 27 May 2026	Condition 9 of Schedule 3 of DA 165-7-2005	DPHI notification and reporting not required as monthly dust deposition is compliant. Dust deposition gauge D10 (Stage 4 Dam): • Monthly dust deposition = 1.9 g/m2/month • Rolling annual average dust deposition = 4.7 g/m2/month Monthly deposited dust level is compliant. Annual average deposited dust continued to exceed the 4.0 g/m2/month criteria. Dust gauge D10 is located on land owned by the Quarry (Stage 4 extraction) and not on private residence. No consent breached.

No archaeological artefacts or sites have been uncovered during this reporting period.

11.2 Notices issued by Resources Regulator

Dixon Sand received eight notices under the *Work Health and Safety Act* 2011 from DPIRD (Resources Regulator) during this reporting period. The identified issues have been rectified and closed out.

Table 31: Notices issued by Resources Regulator

Date Issued	Notice Reference	Identified Issues	Status
5 September 2025	NTCE0018232 - Section 191 Improvement Notice	Contractors on site must follow site procedures as documented in the Safety Management System and are adequately supervised	Closed
5 September 2025	NTCE0018242 - Section 191 Improvement Notice	A screener unit had defective emergency stop lanyards which were improperly installed	Closed
5 September 2025	NTCE0018261 - Section 23 Concerns	HR Firestone - The laser curtain has not been delineated or sign posted and noise levels exceed prescribed levels with no signs to identify the	Closed

Date Issued	Notice Reference	Identified Issues	Status
		requirements for hearing protection. Mobile Plant Conveyors (various) - guards are awaiting re-adjustment and several screen springs were missing covers	
5 March 2026	NTCE0019643 - Section 191 Improvement Notice	Inspect all mobile plant on site and identify all pressure equipment including air receivers and accumulators	Closed
5 March 2026	NTCE0019649 - Section 191 Improvement Notice	HR Wash plant - Inspect all rotating plant on site and install or secure guarding as required, access ladder requires a safety bar	Closed
5 March 2026	NTCE0019649 - Section 191 Improvement Notice	HR Screening Plants - Inspect all rotating plant on site and install or secure guarding as required	Closed
5 March 2026	NTCE0019652 - Section 23 Concerns	Items left at screening plant, battery terminals requiring covers and electrical test and tag items missed	Closed
5 March 2026	NTCE0019666 - Section 191 Improvement Notice	Review mechanical Engineering Control Plan re hydraulic hoses and control risk of oil injection on MEC Press	Closed

12. Independent Environmental Audit

12.1 Independent Environmental Audit Requirements

Condition 14 of Schedule 5 of DA 165-7-2005 requires:

> *Within 12 weeks of commencing this audit, or as otherwise agreed by the Secretary, the Applicant must submit a copy of the audit report to the Secretary and any other NSW agency that requests it, together with its response to any recommendations contained in the audit report, and a timetable for the implementation of these recommendations as required. The Applicant must implement these recommendations, to the satisfaction of the Secretary.*

The appointment of R.W. Corkery and Co Pty Ltd (RWC) to carry out the 2025 Independent Environmental Audit (IEA) for Haerses Road Quarry was approved by DPHI on 23rd October 2025.

The 2025 IEA covers the 3-year audit period between 19 October 2022 and 13 November 2025. The *Independent Environmental Audit: Haerses Road Report* (RW Corkery & Co, February 2026, Document No. 1022/03) was issued to Dixon Sand on 2nd February 2026.

The *Response and Action Plan for the 2025 Independent Environmental Audit, Haerses Road Quarry* document was prepared to provide Dixon Sand's response and proposed actions toward the IEA findings, recommendations for non-compliances and suggested improvements as identified in *the Independent Environmental Audit: Haerses Road Report (RW Corkery & Co, February 2026, Document No. 1022/03).*

The IEA report and Response and Action Plan report were submitted to the DPHI on 4th February 2026.

The status of the proposed actions to address the 2025 IEA's recommendations and suggested improvements are detailed in Tables 32 and 33.

The next IEA is scheduled to be undertaken late 2028.

Table 32: Status of Proposed Actions in response to the 2025 IEA Recommendations

ID	Consent Condition(s) relevant to Non-Compliance	IEA Comments and Recommended Action	Dixon Sand's Proposed Action, Implementation Timeframe and Status
HR R1/25	Sch 3 Cond 3	All exceedances, including minor exceedances, should be recorded and reported as a non-compliance within relevant reporting and reported as an incident if applicable. Where appropriate, review and revision of the methods / calculation should be undertaken to provide a more definitive result and reporting re-issued with the corrected results. *Due to high ambient noise levels, the contribution of the Quarry operations had to be extrapolated at three locations for the December 2024 and June 2025 noise monitoring.* *Calculated results were 2dB(A) and 1dB(A) above criteria for Receiver R8. Whilst the noise monitoring report states that operations were compliant it is considered that this remains an exceedance. It was advised that the calculations were complete assuming equipment was located at surface, however, most noise sources are located within the extraction area with substantial topographic shielding and that if this was taken into account compliance would likely have been predicted.*	**Proposed Action:** All exceedances will be recorded and reported if applicable **Implementation Timeframe:** From 4 February 2026 onwards (date in which this response is submitted to DPHI) **Status - Closed**
HR R2/25	Sch 2 Cond 19	The depth of extraction should comply with the currently approved Maximum Extraction Depth map. *Whilst a process is in place (Section 5.2.2 of the SWMP) to guide extraction to remain at or above the maximum extraction depth, based on the 2025 survey extraction levels in Cells 1a to 2b appear to be down to approximately 120m AHD whilst the 2023 approved Maximum Extraction Depth Map contour in this area appears to be 128m AHD. It is advised that groundwater levels in the new bore BH07 demonstrate that the groundwater level is much lower and that the Maximum Extraction Depth Map requires update. Notwithstanding, it remains important to comply with all conditions as currently approved.*	**Proposed Action:** Review and revise the Maximum Extraction Depth Map to include groundwater data from BH7 which indicates a much lower groundwater level than the current extraction depth. **Implementation Timeframe:** Within 3 months of completion of the 2025 IEA. **Status - Open** Revised Maximum Extraction Depth Map (April 2026) was submitted to DPHI on 4 May 2026 (DA165-7-2005-PA-95) and still in review.

ID	Consent Condition(s) relevant to Non-Compliance	IEA Comments and Recommended Action	Dixon Sand's Proposed Action, Implementation Timeframe and Status
HR R3/25	Sch 2 Cond 19	Surveys of the completed extraction depth should be overlain over the maximum extraction depth mapping to demonstrate the final extraction depth is compliant with the approved maximum extraction depth. *Whilst a process is in place (Section 5.2.2 of the SWMP) to guide extraction to remain at or above the maximum extraction depth, the survey information provided was not in a form that could definitively confirm compliance with approved extraction depths. It is noted that additional surveys are not suggested, rather the existing survey data be presented in a manner to assist interpretation.* *For example, approved maximum extraction contours could be displayed in blue, final extraction depths in green and in progress contours in black, all with elevations in m AHD.*	**Proposed Action:** Surveys of the completed extraction depth to be overlain over the maximum extraction depth map **Implementation Timeframe:** At the completion of each extraction stage / areas **Status - Open**
HR R4/25	Sch 3 Cond 16(d)	Water level data loggers should be installed in on-site dams or an amendment sought to DA Condition 3(16d) to remove this requirement. *Water level data loggers have been installed in groundwater bores, however Condition 16 (d) requires that loggers also be installed in on-site dams. It is acknowledged that the condition refers to groundwater management and that the Company has consulted with DPHI regarding this mater (with no response received to date). Until such time as this condition of the DA is amended or DPHI confirm in formal correspondence that loggers are not required compliance is required.*	**Proposed Action:** DPHI will be contacted the confirm the requirement to install the on-site water level loggers. **Implementation Timeframe:** Contact DPHI by 28 February 2026 **Status - Open** Following the IEA, Dixon Sand emailed DPHI on 28 February 2026. A follow-up email was sent on 18 June 2026. Awaiting DPHI's confirmation.
HR R5/25	Sch 3 Cond 26	*DPHI should be consulted to confirm the requirement to record the unladen truck movement entry/exit times and, if required, an appropriate system implemented.*	**Proposed Action:** DPHI will be contacted the confirm the requirement to record unladen truck movement entry/exit times. **Implementation Timeframe:**

ID	Consent Condition(s) relevant to Non-Compliance	IEA Comments and Recommended Action	Dixon Sand's Proposed Action, Implementation Timeframe and Status
		The current systems in place provide for recording of laden truck movements times as they cross the weighbridge, however, it does not provide for recording of the unladen movement time. Whilst the intent of DA Schedule 3 Condition 26 is to maintain accurate records of all laden movements it also specifies the requirement to record time of arrival and dispatch indicating the time of the unladen movement is also required to be recorded. In this case further upgrades to the current system will be required.	Contact DPHI by 28 February 2026 **Status - Open** Following the IEA, Dixon Sand emailed DPHI on 28 February 2026. On 2nd June 2026 DPHI Compliance Officers undertook a site inspection. Dixon Sand and DPHI Compliance Officers discussed the requirement of Condition 26 of Schedule 3 which concluded that the consent condition only requires times for 'laden' trucks to be recorded. Awaiting formal response from DPHI.
HR R6/25	Sch 3 Cond 36	The unapproved November 2022 Biodiversity and Rehabilitation Management Plan (BRMP) should be updated to: • address matters previous raised by the (then) Environment and Heritage Group; • incorporate any required changes following the September 2023 MOD6 approval; and • to include a rehabilitation strategy for the next 3-year period. *The BRMP has not been revised since receipt of comments in 2022. Review and update of the BRMP is required to ensure compliance with the requirements of DA Condition 3(36g) and 5(5).*	**Proposed Action:** Update the BRMP to the satisfaction of DPHI **Implementation Timeframe:** Post IEA - review of the EMS and Management plan **Status - Open** Dixon Sand submitted the revised BRMP (V3, dated 15 June 2026) on 15 June 2026 and is still in review.
HR R7/25	Sch 5 Cond 5(a)	The Department should be formally notified of all reviews of the Environmental Management Strategy and associated management plans in accordance with DA *Schedule 5 Condition 5*. *A total of 21 'incident' reports were submitted during the audit period. It is noted that incident reports from 16 May 2024 onwards included a note that the AQMP was under review and revision in consultation with EPA. However, previous reports did not include this, and it would be preferable to clearly identify that the review has been*	**Proposed Action:** Notify DPHI that a review of the EMS and management plans have been reviewed following an incident. If any revision is required, ensure the revised document(s) is submitted within the required timeframe. **Implementation Timeframe:** From 4 February 2026 onwards (date in which this response is submitted to DPHI)

ID	Consent Condition(s) relevant to Non-Compliance	IEA Comments and Recommended Action	Dixon Sand's Proposed Action, Implementation Timeframe and Status
		completed in accordance with Schedule 5 Condition 5. It is acknowledged that the incidents were not caused by Quarry activities and updates to the EMS and associated management plans were not likely required.	**Status - Closed**
HR R8/25	Sch 5 Cond 9	The Department should be notified immediately (in the manner agreed with the Department) of incidents and incident reports should specify when the Company became aware of the incident. *During the audit period a total of 21 'incidents' were recorded during the audit period. Whilst incident reports were submitted as relevant these were submitted "to provide the specific details of the dust deposition exceedance as required by Conditions 9 and 10, Schedule 5". Whilst it is acknowledged that the reports were likely provided the same day as becoming aware of the exceedance this does not technically meet the requirement to immediately notify.*	**Proposed Action:** Notify DPHI of an incident immediately upon becoming aware of the incident. Record and include the date the incident was made aware of in the submission of the incident report. **Implementation Timeframe:** From 4 February 2026 onwards (date in which this response is submitted to DPHI) **Status - Closed**
HR R9/25	EPL Cond. O4.9	A review should be undertaken of opportunities to reduce tracking / visible deposition of fines on the Quarry access road and intersection and identified actions implemented. This may include sealing of the truck pull over area on Haerses Road near the intersection with Wisemans Ferry Road. *Minor tracking / deposition was observed on the exit side of the access road. This appears to primarily be originating from an unsealed truck pull over area on Haerses Road near the intersection with Wisemans Ferry Road (Photos E1022C_003, 008 to 011).*	**Proposed Action:** The current pull-out bay near the intersection of Haerses Road and Wisemans Ferry Road will be sealed to assist in minimising tracking of fine sediment by trucks upon exiting the Quarry **Implementation Timeframe:** 30 June 2026 **Status – Closed** Pull out bay off Haerses Road outside was sealed with rota mill on 19 February 2026 to assist with reduction of sediment tracking.

ID	Consent Condition(s) relevant to Non-Compliance	IEA Comments and Recommended Action	Dixon Sand's Proposed Action, Implementation Timeframe and Status
HR R10/25	EPL Cond. U1.4	The EPA should be requested to vary the conditions of EPL 12513 to update special Condition U1 regarding the air quality monitoring and assessment to reflect the agreed actions and update implementation timeframes as appropriate. (see also **Improvement HR I1/25**). *A special condition was included in EPL 3916 12 September 2024 requiring a range of actions to assess air quality, implement a monitoring program and prepare an assessment report on the outcomes of the monitoring. Whilst the Company and its consultants submitted an assessment and program justifying alternative monitoring for EPA's review (in compliance with the requirements) EPA has not responded for >12months. This has resulted in an administrative non-compliance. In the event that EPA agree to the revised monitoring approach, this should also be reflected in the conditional requirements.*	**Proposed Action:** Request an EPA EPL variation to remove/amend the condition wording to reflect the correct timing stipulated by the condition. Discussion with the EPA will confirm the appropriate condition wording. **Implementation Timeframe:** At the conclusion of the air quality impact assessment required under Condition U1, or as initiated at the next EPL variation. **Status - Closed** EPA issued an EPL12513 variation on 15 April 2026. Condition U1 has been removed.
HR R11/25	Sch 2 Cond 11	The Occupation Certificate for the Sandstone Cutting Shed should be sought as soon as possible to ensure compliance. *It was identified that the final occupation certificate had not yet been issued. Whilst no environmental concerns were noted in the construction and use of the Sandstone Cutting Shed and hence the non-compliance is considered administrative, it remains important to comply with all statutory requirements.*	**Proposed Action:** Certifier to issue the Occupation Certificate for the Sandstone Cutting Shed at the earliest possibility **Implementation Timeframe:** 30 June 2026 **Status – Closed** Occupation Certificate issued on 11 August 2026

Table 33: Status of Proposed Actions in response to the 2025 IEA Suggested Improvements

ID	IEA Comments and Suggested Improvement	Dixon Sand's Proposed Action, Implementation Timeframe and Status
HR I1/25	The dust diary, recording actions during dry and windy conditions, should be implemented as soon as practicable. *Whilst the draft updated Air Quality Management Plan remains with EPA for review, the Company advises that the dust diary procedure is planned to be incorporated into the daily and end of shift procedure/record keeping. This action is supported and this improvement included to provide a means to track implementation.*	**Proposed Action:** Dust diary will be utilised to record adverse weather especially during dry and windy conditions, together with any modifications of quarry operations prior to or as a result of the adverse weather condition. **Implementation Timeframe:** From 4 February 2026 onwards (date in which this response is submitted to DPHI) **Status - Closed** Commenced implementation of Dust diary post EPL variation (dated 15 April 2026) being issued.
HR I2/25	Prior to commencement of earthworks near the eastern boundary of Stage 1, the boundary markers should be painted or highlighted (e.g. with high visibility PVC piping) to improve visibility from earthmoving equipment. *The eastern boundary of Stage 1 is currently inaccessible to mobile equipment. Whilst star pickets are present and visible on foot, they would likely be obscured from mobile equipment.*	**Proposed Action:** Boundary markers to be painted or augmented to increase visibility prior to resuming earthworks near the boundary of Stage 1 for rehabilitation purpose. **Implementation Timeframe:** Prior to resuming earthworks / rehabilitation works. **Status - Open**
HR I3/25	The Maximum Extraction Depth Map should be inserted into the Soil and Water Management Plan and/or cross references updated. *The Maximum Extraction Depth Map was not attached following the Appendix 3 cover page of the SWMP available via the Dixon Quarry Group website.*	**Proposed Action:** After the next revision of the Maximum Extraction Depth Map, the document will be inserted into the Soil and Water Management Plan **Implementation Timeframe:** Post revision of the Maximum Extraction Depth Map and at the next review and revision of the EMS and Management Plan **Status - Closed**

ID	IEA Comments and Suggested Improvement	Dixon Sand's Proposed Action, Implementation Timeframe and Status
		The revised Maximum Extraction Depth Map has been inserted into the Soil and Water Management Plan (v4 dated 15 June 2026) and submitted to DPHI on 15 June 2026.
HR I4/25	Following the next update to the Code and subsequent re-induction program, a copy of the Code should be signed by a representative of the Company and the nominated driver, with a copy of the Code and all attachments held by both the Company and the driver. *It is important that all drivers sign a copy of the Site Induction and are given a full set of all documents.*	**Proposed Action:** The Driver's Code of Conduct forms part of both the TMP and Truck Driver Induction Package. A review of the Driver's Code of Conduct will be undertaken. Any changes will require a re-induction for Truck Drivers. Note it is company policy that if the Driver's Code of Conduct has not changed following a review, then a re-induction is not required. **Implementation Timeframe:** 31 December 2026 **Status - Closed** Review of Driver's Code of Conduct undertaken on 12 June 2026 as part of the review of the Traffic Management Plan. No changes required.
HR I5/25	All 'historical' waste present on site should be removed and disposed of at an appropriate waste facility. *A range of waste from non-quarry sources has been collected on site near the site office (Photo E1022C_027) and around the old house south of Stage 1. Whilst not generated by Quarry activities, all wastes within the Quarry site should be managed and appropriated disposed of.*	**Proposed Action:** Any materials / items which are deemed as waste will be removed and disposed of appropriately. Other materials which are not classified as waste may remain at the location which is used as a storage area for non-quarry related purpose. **Implementation Timeframe:** 31 December 2026 **Status - Open** Removal of historical waste has commenced and still ongoing.

ID	IEA Comments and Suggested Improvement	Dixon Sand's Proposed Action, Implementation Timeframe and Status
HR I6/25	Section 7.0 of the Environmental Management Strategy should be updated to include guidance regarding the review of the Environmental Management Strategy and management plans following submission of an incident report. Alternatively, the Incident Register Form could be updated to include additional prompts or checklists. *Whilst the EMS notes the requirement to review the EMS and management plans within other sections, Section 7.0 which addresses incidents, does not include a component specifying the process to review and formally notify the Department of this review following submission of an incident report.*	**Proposed Action:** A review of the EMS will be undertaken and may include a procedure to review the EMS and management plans following an incident report OR a separate checklist/protocol will be developed to ensure compliance. **Implementation Timeframe:** At the next review and revision of the EMS and Management Plans **Status – Closed** EMS Section 7.0 updated and include the changes of non-compliance reporting in EPL 12513 variation dated 10 Jun 2026. Revised EMS submitted to DPHI on 15/06/26 (DA165-7-2005-PA-96)
HR I7/25	Covered waste receptacles should be utilised whenever they are utilised outside of covered areas and receive waste materials that may have residual hydrocarbons (or other chemicals). *Whilst no leakage was observed, uncovered skips were utilised within the extraction area to receive wastes including oily rags and empty grease cartridges (Photo E1022C_102). This presents a risk of contaminated water should the skip not be watertight.*	**Proposed Action:** Utilise covered waste receptacles in locations which are not covered and exposed to the elements. **Implementation Timeframe:** 30 June 2026 **Status - Closed** Installation of covers over skip bins on site.
HR I8/25	Where reporting is undertaken against the EPL PM10 criteria of 42µg/m3 this should be compared to the rolling 24hr average PM10 in accordance with EPL Condition M2.3. *The CBased monitoring reports appended to the Annual Reviews report against daily PM10 results rather than rolling 24-hour average PM10 results. This has resulted in reporting of compliance with the criteria when it was actually exceeded.*	**Proposed Action:** Contact CBased and amend the PM10 reporting variables to ensure compliance. **Implementation Timeframe:** 30 June 2026 **Status - Closed**

ID	IEA Comments and Suggested Improvement	Dixon Sand's Proposed Action, Implementation Timeframe and Status
		Report variables amended from March 2026 reporting onwards.
HR I9/25	The AQMP should be updated as appropriate to reflect relevant outcomes / updates to air quality management and monitoring arising from the assessment and monitoring program required by EPL 12513 Condition U1. If required, EPA should be requested to reference the AQMP required by DA 165-07-2005 rather than requiring a separate document be prepared for ongoing management / monitoring. *Whilst EPA have requested the assessment and monitoring program, the management and monitoring outcomes should ideally be managed through a single document to remove redundancy and potential for inconsistencies. It is noted that updates to the AQMP required by DA 165-07-2005 are required to be undertaken in consultation with EPA and therefore this should be a streamlined process.*	**Proposed Action:** The AQMP will be updated following the outcome of the review of the Air Quality Monitoring Program by EPA **Implementation Timeframe:** Post review of Air Quality Monitoring Program by EPA **Status - Closed** Dixon Sand submitted the revised AQMP (V4, dated 28 May 2026) on 15 June 2026. DPHI approved the AQMP on 31 July 2026.
HR I10/25	The logbook form for WALs 25942 and 25956 should be updated to remove the columns relating to conditions met for water take (which WaterNSW have confirmed do not apply) and a note added referencing Water NSW's correspondence confirming the dams are "runoff harvesting dams". The calculation for water volume should also be included in the row headers or the volume taken each time filled out. *Water NSW has previously confirmed that flow conditions (and hence cease to take) do not apply to the WALs, however, the logbooks still include columns to check cease to take conditions which adds confusion. A volume taken column is also included which appears to be automated (digitally), however, as the logbooks are filled out in hard copy the calculation should be included in the row header (as individual calculations weren't filled out for WAL25942).*	**Proposed Action:** The logbooks for both WALs will be updated to: • remove the columns relating to conditions met for water take • Include a reference to Water NSW's correspondence confirming the dams are runoff harvesting dams **Implementation Timeframe:** The new information will be implemented at the next FY 2026-27 reporting. Logbooks for the current FY 2025-26 have already been distributed out to users to complete. **Status - Closed** FY2026-2027 WAL logbooks amended.

ID	IEA Comments and Suggested Improvement	Dixon Sand's Proposed Action, Implementation Timeframe and Status
HR I11/25	The Company should seek advice from Water NSW regarding the application of Water Management (General) Regulation 2025 and how it relates to Condition MW8583-00001(D) of WAL25941 and WAL25956. *Whilst the mandatory meeting equipment condition under the Water Management (General) Regulation 2018 does not apply until 1 December 2026 for works within the Greater Metropolitan Region Unregulated Water Sources, this regulation has been superseded by the Water Management (General) Regulation 2025 which does not provide a specific date.*	**Proposed Action:** Contact Water NSW and request clarification on the application of *Water Management (General) Regulation 2025* and how it relates to Condition MW8583-00001(D) of WAL25941 and WAL25956. **Implementation Timeframe:** Contact Water NSW by 31 March 2026 **Status - Closed** Review of Driver's Code of Conduct undertaken on 12 June 2026 as part of the review of the Traffic Management Plan. No changes required.
HR I12/25	All monuments above the groundwater piezometers should be identified with a more permanent reference to the monitoring number. *Whilst all monuments inspected during the audit were observed to be labelled, some were labelled with felt pen, some were rusting or fading/wearing. A more permanent marking, such as engraving, would be preferable.*	**Proposed Action:** A more permanent labelling system will be implemented **Implementation Timeframe:** 30 June 2026. **Status - Closed** Borehole ID etching and marking carried out on 24 March 2026
HR I13/25	A map of all current soil stockpiles should be prepared with each stockpile labelled and approximate volume noted. Signage should also ideally be placed at the soil stockpile. *No documentation was available to confirm soil stockpile locations and volumes available. One soil stockpile was observed (Photo E1022C_121) though this was not signed and needed to be pointed out as a stockpile rather than area of rehabilitation. Soil material is a valuable rehabilitation resource and should be tracked and managed.*	**Proposed Action:** A map of current stockpiles will be created which include labels and approximate volume. Signage will be installed at each stockpile **Implementation Timeframe:** 30 June 2026. **Status - Open**

ID	IEA Comments and Suggested Improvement	Dixon Sand's Proposed Action, Implementation Timeframe and Status
HR I14/25	All documentation relied upon on site with respect to environmental and other matters should include relevant document control information including the computer file path, date created and review date. *Most of the documentation sighted during the audit didn't include sufficient document control information to assist in locating the document on the Company's server, whether it is the current version and when it should be reviewed. The progressive introduction of document control will assist in improved management of documentation on site. It is important to clarify differences for documentation for either Old Northern Road Quarry or Haerses Road Quarry.*	**Proposed Action:** The Quarry actively takes measures to improve its quality management system as far as reasonably practicable. **Implementation Timeframe:** Ongoing **Status – Open (ongoing)**
HR I15/25	During the next review and update of the Environmental Management Strategy and associated management plans updated figures should be prepared showing the latest aerial photography. *The current EMS and management plans principally include figures with aerial photography dated 2017 and 2022. Whilst not required for compliance, as a management tool it is helpful to see approved boundaries and monitoring locations etc in the context of the current site status.*	**Proposed Action:** Figures to be updated in the next review and revision of the EMS and relevant management plans. **Implementation Timeframe:** Post IEA - review of the EMS and Management plan. **Status - Closed** Figures and plans updated and contained in the revised EMS (v4 dated 15 June 2026) were submitted on 15-06-26 (DA165-7-2005-PA-96)
HR I16/25	The description and mapping within Section 3 of the Soil and Water Management Plan should be updated to reflect the current water management system and update the future water management system. *Section 3 describes the current water management system as of 2022, i.e. prior to commencement of extraction within Cells 1a to 3b and the construction of Stage 2 West Sediment Dam. Figures 3.1 and 3.3 also utilise an aerial photo base map dated 2017. Whilst no water management issues were noted during the audit, it is preferable to ensure that management plans are as up to date as possible.*	**Proposed Action:** Update Section 3 of the SWMP to reflect the current water management system and future water management system **Implementation Timeframe:** Post IEA - review of the EMS and Management plan. **Status – Open**

ID	IEA Comments and Suggested Improvement	Dixon Sand's Proposed Action, Implementation Timeframe and Status
HR I17/25	A review of the Company's system for reviewing / managing compliance items should be undertaken and updates made as needed that provide for practical system implementation. This may involve updates to the Monthly Site Condition Check List and/or utilisation of other internal systems. *Whilst the Monthly Site Condition Check List is comprehensive, additional operational management commitments and/or details could be included / clarified (e.g. around maximum extraction depth checks which cannot simply be confirmed through visual inspection) or alternatively managed through a separate system. It is noted that some aspects of the checklist are more appropriately completed as a desktop exercise (which may not be required monthly) whilst others require on ground confirmation. Notwithstanding this suggested improvement, the Company's efforts through the existing system are commendable.*	**Proposed Action:** A review will be undertaken on the current Monthly Site Checklist which is field based versus a desktop based checklist. **Implementation Timeframe:** 30 June 2026. **Status – Open (ongoing)**
HR I18/25	CBased should be requested to include additional tabs in the monthly monitoring data summary spread sheet which include: • each 15 minute PM10 result; and • each rolling 24-hour average PM10 results (each 15 minutes). Tabs including the meteorological data averaged at the time intervals outlined in EPL Condition M4.1 should also be preferentially provided so that the Company does not need to generate these for compliance. *The monitoring data supplied by CBased on a monthly basis provides a useful summary. The raw data collected by the TEOM and Meteorological Station collect the information required for compliance, however, data is not provided to the Company in the format / with averaging periods required by EPL 12513.*	**Proposed Action:** Contact CBased and amend the PM10 reporting variables to ensure compliance. **Implementation Timeframe:** 30 June 2026. **Status - Closed** Additional tabs of relevant data and interval included from March 2026 reporting

13. Proposed Actions to be completed in the next Reporting Period

13.1 Vegetation Clearing

- Continue to implement the pre-clearing survey and multistage habitat tree felling procedures prior to any vegetation felling.

13.2 Rehabilitation and Bush Regeneration

Stage 1 Extraction Area

- Continue importing VENM and ENM to assist with void filling
- Recommence screening of stockpiled rehabilitation material to remove unsuitable larger rocks and boulders
- Continue working towards final landform for active rehabilitation areas
- Layering stockpile material to create suitable agricultural terrain

Stage 2 Extraction Area

- Continued monitoring the native vegetation growth and the supplemented planting to the west of the water storage dam in Stage 2 west
- Continued weed management in this area

2009 Translocation and Offset Area

- Continued management of competitive native shrubs and species particularly *Kunzea ambigua* to minimise overshadowing and encroachment of ground dwelling plants

Wisemans Ferry Road 30 metre Buffer Area

- Continued weed management in this area with a focus on WONS and High Threat species
- Undertake regular maintenance of the recent plantings

Buffer to Deerubbin LALC Property (formerly Maroota State Forest)

- Continued bush regeneration maintenance in the previously disturbed area
- Continued weed management in this area

Extraction Cells A and B

- Continued baseline monitoring of vegetation quadrats for in Cells 4 and 5

Haerses Road and Porters Road Biobank Sites

- Undertaken site management, monitoring and reporting in accordance with the Biobanking Agreements or as agreed with the BCT.

15. Conclusion

A number of recommendations and changes in environmental procedures have been proposed throughout this Annual Review of 2025 – 2026 reporting period.

In general, Dixon Sand has maintained acceptable environmental performance outcomes throughout the reporting period. The company has committed to ongoing endeavours to minimise environmental impacts and potential exceedances related to quarry operations.

Appendix A – Dust Deposition Reports

VGT Laboratories Pty Ltd.
ABN 77 621 943 600
NATA Accreditation 20375
Unit 4, 30 Glenwood Drive Thornton NSW 2322|
P: (02) 4028 6412 | **E:** lab@vgt.com.au | **www.vgt.com.au**

Report Number: 18445

Date Issued: 30/07/2025 Revision Number: 00

Site/Job: Dixon Maroota - Dusts

Client: Dixon Sand (No.1) Pty Ltd
Address PO Box 4019
PITT TOWN NSW 2756
Contact David Dixon

The following Dust Deposition sample(s) were received on 23/07/2025

Client Sample Reference	Date On	Date Off	Lab ID	Matrix	Comments or Non-Compliances
D08&9 Hitchcock Rd Olive Grove	25/06/2025 12:38	23/07/2025 12:43	18445/1	Dust	
D10 Hearses Rd	25/06/2025 13:05	23/07/2025 13:10	18445/2	Dust	
D06 School	25/06/2025 11:27	23/07/2025 11:33	18445/3	Dust	
D05 Bund	25/06/2025 11:41	23/07/2025 11:47	18445/4	Dust	
D04 Rehab	25/06/2025 12:03	23/07/2025 12:11	18445/5	Dust	
D07 Mullock	25/06/2025 12:17	23/07/2025 12:26	18445/6	Dust	
D01(A) Front Gate	25/06/2025 11:49	23/07/2025 11:55	18445/7	Dust	
D11 Goldstien	25/06/2025 13:22	23/07/2025 13:43	18445/8	Dust	
D12 Ram	25/06/2025 12:51	23/07/2025 12:57	18445/9	Dust	

The sample(s) have been tested as received and results relate specifically to the samples tested.
The following reports are included:

- Test Report
- Sampling Report
- Chain of Custody (if available)



Authorised by: Anthony Crane
Laboratory Manager

Results have been approved and report finalised on 30/07/2025.

Test Report Number: 18445

Date Issued: 30/07/2025 Revision No: 00

Results

Deposited Matter	Method	Lab ID Sample Date Sample ID Units	18445/1 23/07/2025 D08&9 Hitchcock Rd Olive Grove	18445/2 23/07/2025 D10 Hearses Rd	18445/3 23/07/2025 D06 School	18445/4 23/07/2025 D05 Bund	18445/5 23/07/2025 D04 Rehab
Date Tested	AS 3580.10.1	--	24/07/2025	24/07/2025	24/07/2025	24/07/2025	24/07/2025
Number of Days	AS 3580.10.1	days	28	28	28	28	28
Insoluble Solids	AS 3580.10.1	g/m2/mth	0.6	2.7	0.5	1.0	0.1
Ash	AS 3580.10.1	g/m2/mth	0.4	1.8	0.3	0.8	<0.1
Combustible Matter	AS 3580.10.1	g/m2/mth	0.2	0.9	0.2	0.2	0.1
Calculated Rain	AS 3580.10.1	mm	87	88	95	73	81

Deposited Matter	Method	Lab ID Sample Date Sample ID Units	18445/6 23/07/2025 D07 Mullock	18445/7 23/07/2025 D01(A) Front Gate	18445/8 23/07/2025 D11 Goldstien	18445/9 23/07/2025 D12 Ram
Date Tested	AS 3580.10.1	--	24/07/2025	24/07/2025	24/07/2025	24/07/2025
Number of Days	AS 3580.10.1	days	28	28	28	28
Insoluble Solids	AS 3580.10.1	g/m2/mth	1.5	2.6	0.4	0.4
Ash	AS 3580.10.1	g/m2/mth	0.9	2.6	0.2	0.2
Combustible Matter	AS 3580.10.1	g/m2/mth	0.6	<0.1	0.2	0.2
Calculated Rain	AS 3580.10.1	mm	83	72	79	84

Report Comments:

Where present, indicates NATA accreditation does not cover the performance of this service.

Guideline applied - EPL Dust Limits.
Results in **bold** indicate an exceedance of the applied guideline.
When considering the pass or fail of tests the measurement of uncertainty of each parameter must be considered.
https://www.vgt.com.au/measurement-uncertainty

[NT]: Not tested

Location Analysed : 4/30 Glenwood Dr Thornton NSW 2322.

Sampling Report Number: 18445

Date Issued: 30/07/2025 Revision No: 00

Sampling Conditions: Cloudy, 18 - 20 °C

Lab ID	Client Sample Reference	Licence/ Reference	Sampler	Date Sampled	Method of Sampling	Pre-treatment / Preservation
18445/1	D08&9 Hitchcock Rd Olive Grove		T & D.Walker	23/07/2025 12:43	AS3580.10.1	CuSO4
18445/2	D10 Hearses Rd		T & D.Walker	23/07/2025 13:10	AS3580.10.1	CuSO4
18445/3	D06 School		T & D.Walker	23/07/2025 11:33	AS3580.10.1	CuSO4
18445/4	D05 Bund		T & D.Walker	23/07/2025 11:47	AS3580.10.1	CuSO4
18445/5	D04 Rehab		T & D.Walker	23/07/2025 12:11	AS3580.10.1	CuSO4
18445/6	D07 Mullock		T & D.Walker	23/07/2025 12:26	AS3580.10.1	CuSO4
18445/7	D01(A) Front Gate		T & D.Walker	23/07/2025 11:55	AS3580.10.1	CuSO4
18445/8	D11 Goldstien		T & D.Walker	23/07/2025 13:43	AS3580.10.1	CuSO4
18445/9	D12 Ram		T & D.Walker	23/07/2025 12:57	AS3580.10.1	CuSO4

Lab ID	Client Sample Reference	GPS-Easting	GPS-Northing	Sampling Observations
18445/1	D08&9 Hitchcock Rd Olive Grove	313058	6295137	Minor sand
18445/2	D10 Hearses Rd	312538	6294576	Minor sand, minor bird droppings
18445/3	D06 School	313518	6296537	
18445/4	D05 Bund	313160	6296838	
18445/5	D04 Rehab	312385	6296932	Minor vegetation
18445/6	D07 Mullock	312579	6296676	Minor sand, minor rubber fragments
18445/7	D01(A) Front Gate	313290	6297176	Minor sand
18445/8	D11 Goldstien	312034	6294213	Minor vegetation
18445/9	D12 Ram	311750	6294159	

Sampling procedures have been approved and report finalised on 30/07/2025.
Where method is "unknown" sampling procedures are not endorsed

VGT Laboratories Pty Ltd.
ABN 77 621 943 600
NATA Accreditation 20375
Unit 4, 30 Glenwood Drive Thornton NSW 2322
P: (02) 4028 6412 | **E:** lab@vgt.com.au | **www.vgt.com.au**

Report Number: 18702

Date Issued: 27/08/2025 Revision Number: 00

Site/Job: Dixon Maroota - Dusts

Client: Dixon Sand (No.1) Pty Ltd
Address PO Box 4019
PITT TOWN NSW 2756
Contact David Dixon

The following Dust Deposition sample(s) were received on 20/08/2025

Client Sample Reference	Date On	Date Off	Lab ID	Matrix	Comments or Non-Compliances
D08&9 Hitchcock Rd Olive Grove	23/07/2025 12:43	20/08/2025 11:47	18702/1	Dust	
D10 Hearses Rd	23/07/2025 13:10	20/08/2025 12:15	18702/2	Dust	
D06 School	23/07/2025 11:33	20/08/2025 10:36	18702/3	Dust	
D05 Bund	23/07/2025 11:47	20/08/2025 10:49	18702/4	Dust	
D04 Rehab	23/07/2025 12:11	20/08/2025 11:14	18702/5	Dust	
D07 Mullock	23/07/2025 12:26	20/08/2025 11:28	18702/6	Dust	
D01(A) Front Gate	23/07/2025 11:55	20/08/2025 10:58	18702/7	Dust	
D11 Goldstien	23/07/2025 13:43	20/08/2025 13:35	18702/8	Dust	
D12 Ram	23/07/2025 12:57	20/08/2025 12:01	18702/9	Dust	

The sample(s) have been tested as received and results relate specifically to the samples tested.
The following reports are included:

- Test Report
- Sampling Report
- Chain of Custody (if available)

Authorised by:
Anthony Crane
Laboratory Manager

Liane Peyra
Technical Officer

Results have been approved and report finalised on 27/08/2025.

Test Report Number: 18702

Date Issued: 27/08/2025 Revision No: 00

Results

Deposited Matter	Method	Lab ID Sample Date Sample ID Units	18702/1 20/08/2025 D08&9 Hitchcock Rd Olive Grove	18702/2 20/08/2025 D10 Hearses Rd	18702/3 20/08/2025 D06 School	18702/4 20/08/2025 D05 Bund	18702/5 20/08/2025 D04 Rehab
Date Tested	AS 3580.10.1	--	26/08/2025	26/08/2025	26/08/2025	26/08/2025	26/08/2025
Number of Days	AS 3580.10.1	days	28	28	28	28	28
Insoluble Solids	AS 3580.10.1	g/m2/mth	0.3	**5.7**	**43.7**	2.5	0.4
Ash	AS 3580.10.1	g/m2/mth	0.3	3.3	41.1	2.3	0.1
Combustible Matter	AS 3580.10.1	g/m2/mth	<0.1	2.4	2.6	0.2	0.3
Calculated Rain	AS 3580.10.1	mm	176	168	172	158	170

Deposited Matter	Method	Lab ID Sample Date Sample ID Units	18702/6 20/08/2025 D07 Mullock	18702/7 20/08/2025 D01(A) Front Gate	18702/8 20/08/2025 D11 Goldstien	18702/9 20/08/2025 D12 Ram
Date Tested	AS 3580.10.1	--	26/08/2025	26/08/2025	26/08/2025	26/08/2025
Number of Days	AS 3580.10.1	days	28	28	28	28
Insoluble Solids	AS 3580.10.1	g/m2/mth	0.3	**6.3**	1.2	0.3
Ash	AS 3580.10.1	g/m2/mth	0.1	6.1	0.5	<0.1
Combustible Matter	AS 3580.10.1	g/m2/mth	0.2	0.2	0.7	0.3
Calculated Rain	AS 3580.10.1	mm	178	116	149	188

Report Comments:

Where present, indicates NATA accreditation does not cover the performance of this service.

Guideline applied - EPL Dust Limits.
Results in **bold** indicate an exceedance of the applied guideline.
When considering the pass or fail of tests the measurement of uncertainty of each parameter must be considered.
https://www.vgt.com.au/measurement-uncertainty

[NT]: Not tested

Location Analysed : 4/30 Glenwood Dr Thornton NSW 2322.

Sampling Report Number: 18702

Date Issued: 27/08/2025 Revision No: 00

Sampling Conditions: Rain, 13 °C. Recent heavy rain.

Lab ID	Client Sample Reference	Licence/ Reference	Sampler	Date Sampled	Method of Sampling	Pre-treatment / Preservation
18702/1	D08&9 Hitchcock Rd Olive Grove		T & D.Walker	20/08/2025 11:47	AS3580.10.1	CuSO4
18702/2	D10 Hearses Rd		T & D.Walker	20/08/2025 12:15	AS3580.10.1	CuSO4
18702/3	D06 School		T & D.Walker	20/08/2025 10:36	AS3580.10.1	CuSO4
18702/4	D05 Bund		T & D.Walker	20/08/2025 10:49	AS3580.10.1	CuSO4
18702/5	D04 Rehab		T & D.Walker	20/08/2025 11:14	AS3580.10.1	CuSO4
18702/6	D07 Mullock		T & D.Walker	20/08/2025 11:28	AS3580.10.1	CuSO4
18702/7	D01(A) Front Gate		T & D.Walker	20/08/2025 10:58	AS3580.10.1	CuSO4
18702/8	D11 Goldstien		T & D.Walker	20/08/2025 13:35	AS3580.10.1	CuSO4
18702/9	D12 Ram		T & D.Walker	20/08/2025 12:01	AS3580.10.1	CuSO4

Lab ID	Client Sample Reference	GPS-Easting	GPS-Northing	Sampling Observations
18702/1	D08&9 Hitchcock Rd Olive Grove	313058	6295137	
18702/2	D10 Hearses Rd	312538	6294576	Minor sand, major bird droppings, algae. Bird droppings in funnel.
18702/3	D06 School	313518	6296537	Major sand, vegetation. Paddock recently slashed.
18702/4	D05 Bund	313160	6296838	Minor sand
18702/5	D04 Rehab	312385	6296932	
18702/6	D07 Mullock	312579	6296676	
18702/7	D01(A) Front Gate	313290	6297176	Full, sand. Soil turned over on adjacent crop farm.
18702/8	D11 Goldstien	312034	6294213	Full
18702/9	D12 Ram	311750	6294159	

Sampling procedures have been approved and report finalised on 27/08/2025.
Where method is "unknown" sampling procedures are not endorsed

VGT Laboratories Pty Ltd.
ABN 77 621 943 600
NATA Accreditation 20375
Unit 4, 30 Glenwood Drive Thornton NSW 2322
P: (02) 4028 6412 | **E:** lab@vgt.com.au | **www.vgt.com.au**

Report Number: 18849

Date Issued: 23/09/2025 Revision Number: 00

Site/Job: Dixon Maroota - Dusts

Client: Dixon Sand (No.1) Pty Ltd
Address PO Box 4019
PITT TOWN NSW 2756
Contact David Dixon

The following Dust Deposition sample(s) were received on 17/09/2025

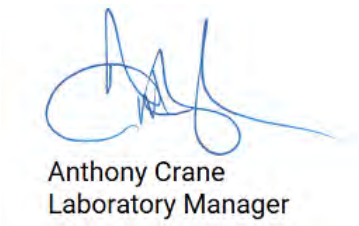
Client Sample Reference	Date On	Date Off	Lab ID	Matrix	Comments or Non-Compliances
D08&9 Hitchcock Rd Olive Grove	20/08/2025 11:47	17/09/2025 11:49	18849/1	Dust	
D10 Hearses Rd	20/08/2025 12:15	17/09/2025 12:18	18849/2	Dust	
D06 School	20/08/2025 10:36	17/09/2025 10:38	18849/3	Dust	
D05 Bund	20/08/2025 10:49	17/09/2025 10:51	18849/4	Dust	
D04 Rehab	20/08/2025 11:14	17/09/2025 11:23	18849/5	Dust	
D07 Mullock	20/08/2025 11:28	17/09/2025 11:36	18849/6	Dust	
D01(A) Front Gate	20/08/2025 10:58	17/09/2025 11:03	18849/7	Dust	
D11 Goldstien	20/08/2025 13:35	17/09/2025 13:14	18849/8	Dust	
D12 Ram	20/08/2025 12:01	17/09/2025 12:02	18849/9	Dust	

The sample(s) have been tested as received and results relate specifically to the samples tested.

The following reports are included:

- Test Report
- Sampling Report
- Chain of Custody (if available)

Authorised by:



Anthony Crane
Laboratory Manager

Results have been approved and report finalised on 23/09/2025.

Accredited for compliance with ISO/IEC 17025 – Testing.

Test Report Number: 18849

Date Issued: 23/09/2025 Revision No: 00

Results

Deposited Matter	Method	Lab ID Sample Date Sample ID Units	18849/1 17/09/2025 D08&9 Hitchcock Rd Olive Grove	18849/2 17/09/2025 D10 Hearses Rd	18849/3 17/09/2025 D06 School	18849/4 17/09/2025 D05 Bund	18849/5 17/09/2025 D04 Rehab
Date Tested	AS 3580.10.1	--	18/09/2025	18/09/2025	18/09/2025	18/09/2025	18/09/2025
Number of Days	AS 3580.10.1	days	28	28	28	28	28
Insoluble Solids	AS 3580.10.1	g/m2/mth	0.6	**5.7**	0.7	1.5	0.4
Ash	AS 3580.10.1	g/m2/mth	0.3	2.2	0.4	1.1	0.1
Combustible Matter	AS 3580.10.1	g/m2/mth	0.3	3.5	0.3	0.4	0.3
Calculated Rain	AS 3580.10.1	mm	91	93	91	83	90

Deposited Matter	Method	Lab ID Sample Date Sample ID Units	18849/6 17/09/2025 D07 Mullock	18849/7 17/09/2025 D01(A) Front Gate	18849/8 17/09/2025 D11 Goldstien	18849/9 17/09/2025 D12 Ram
Date Tested	AS 3580.10.1	--	18/09/2025	18/09/2025	18/09/2025	18/09/2025
Number of Days	AS 3580.10.1	days	28	28	28	28
Insoluble Solids	AS 3580.10.1	g/m2/mth	0.2	1.3	2.8	0.3
Ash	AS 3580.10.1	g/m2/mth	0.2	1.1	2.1	0.1
Combustible Matter	AS 3580.10.1	g/m2/mth	<0.1	0.2	0.7	0.2
Calculated Rain	AS 3580.10.1	mm	90	89	96	96

Report Comments:

Guideline applied - **EPL Dust Limits.**

Results in **bold** indicate an exceedance of the applied guideline.

When considering the pass or fail of tests the measurement of uncertainty of each parameter must be considered.

https://www.vgt.com.au/measurement-uncertainty

Location Analysed : 4/30 Glenwood Dr Thornton NSW 2322.

[NT]: Not tested

Where present, indicates NATA accreditation does not cover the performance of this service.

Sampling Report Number: 18849

Date Issued: 23/09/2025 Revision No: 00

Sampling Conditions: Fine, 22 - 26 °C

Lab ID	Client Sample Reference	Licence/ Reference	Sampler	Date Sampled	Method of Sampling	Pre-treatment / Preservation
18849/1	D08&9 Hitchcock Rd Olive Grove		T & D.Walker	17/09/2025 11:49	AS3580.10.1	CuSO4
18849/2	D10 Hearses Rd		T & D.Walker	17/09/2025 12:18	AS3580.10.1	CuSO4
18849/3	D06 School		T & D.Walker	17/09/2025 10:38	AS3580.10.1	CuSO4
18849/4	D05 Bund		T & D.Walker	17/09/2025 10:51	AS3580.10.1	CuSO4
18849/5	D04 Rehab		T & D.Walker	17/09/2025 11:23	AS3580.10.1	CuSO4
18849/6	D07 Mullock		T & D.Walker	17/09/2025 11:36	AS3580.10.1	CuSO4
18849/7	D01(A) Front Gate		T & D.Walker	17/09/2025 11:03	AS3580.10.1	CuSO4
18849/8	D11 Goldstien		T & D.Walker	17/09/2025 13:14	AS3580.10.1	CuSO4
18849/9	D12 Ram		T & D.Walker	17/09/2025 12:02	AS3580.10.1	CuSO4

Lab ID	Client Sample Reference	GPS-Easting	GPS-Northing	Sampling Observations
18849/1	D08&9 Hitchcock Rd Olive Grove	313058	6295137	Minor insects
18849/2	D10 Hearses Rd	312538	6294576	Minor sand, minor bird droppings, minor vegetation
18849/3	D06 School	313518	6296537	Minor vegetation
18849/4	D05 Bund	313160	6296838	Minor sand, insects
18849/5	D04 Rehab	312385	6296932	Minor insects
18849/6	D07 Mullock	312579	6296676	
18849/7	D01(A) Front Gate	313290	6297176	Minor insects
18849/8	D11 Goldstien	312034	6294213	Minor sand, minor vegetation
18849/9	D12 Ram	311750	6294159	Minor insects

Sampling procedures have been approved and report finalised on 23/09/2025.
Where method is "unknown" sampling procedures are not endorsed

VGT Laboratories Pty Ltd.
ABN 77 621 943 600
NATA Accreditation 20375
Unit 4, 30 Glenwood Drive Thornton NSW 2322
P: (02) 4028 6412 | **E:** lab@vgt.com.au | **www.vgt.com.au**

Report Number: 18993

Date Issued: 21/10/2025 Revision Number: 00

Site/Job: Dixon Maroota - Dusts

Client: Dixon Sand (No.1) Pty Ltd
Address PO Box 4019
PITT TOWN NSW 2756
Contact David Dixon

The following Dust Deposition sample(s) were received on 15/10/2025

Client Sample Reference	Date On	Date Off	Lab ID	Matrix	Comments or Non-Compliances
D08&9 Hitchcock Rd Olive Grove	17/09/2025 11:49	15/10/2025 11:38	18993/1	Dust	
D10 Hearses Rd	17/09/2025 12:18	15/10/2025 12:06	18993/2	Dust	
D06 School	17/09/2025 10:38	15/10/2025 10:29	18993/3	Dust	
D05 Bund	17/09/2025 10:51	15/10/2025 10:46	18993/4	Dust	
D04 Rehab	17/09/2025 11:23	15/10/2025 11:10	18993/5	Dust	
D07 Mullock	17/09/2025 11:36	15/10/2025 11:22	18993/6	Dust	
D01(A) Front Gate	17/09/2025 11:03	15/10/2025 10:56	18993/7	Dust	
D11 Goldstien	17/09/2025 13:14	15/10/2025 13:08	18993/8	Dust	
D12 Ram	17/09/2025 12:02	15/10/2025 11:54	18993/9	Dust	

The sample(s) have been tested as received and results relate specifically to the samples tested.

The following reports are included:

- Test Report
- Sampling Report
- Chain of Custody (if available)

Authorised by:

Anthony Crane
Laboratory Manager

Liane Peyra
Technical Officer

Results have been approved and report finalised on 21/10/2025.

Accredited for compliance with ISO/IEC 17025 – Testing.

Test Report Number: 18993

Date Issued: 21/10/2025 Revision No: 00

Results

Deposited Matter	Method	Lab ID Sample Date Sample ID Units	18993/1 15/10/2025 D08&9 Hitchcock Rd Olive Grove	18993/2 15/10/2025 D10 Hearses Rd	18993/3 15/10/2025 D06 School	18993/4 15/10/2025 D05 Bund	18993/5 15/10/2025 D04 Rehab
Date Tested	AS 3580.10.1	--	17/10/2025	17/10/2025	17/10/2025	17/10/2025	17/10/2025
Number of Days	AS 3580.10.1	days	28	28	28	28	28
Insoluble Solids	AS 3580.10.1	g/m2/mth	0.6	1.4	**12.2**	3.6	0.2
Ash	AS 3580.10.1	g/m2/mth	0.3	0.7	9.8	3.2	0.1
Combustible Matter	AS 3580.10.1	g/m2/mth	0.3	0.7	2.4	0.4	0.1
Calculated Rain	AS 3580.10.1	mm	10	9	10	8	9

Deposited Matter	Method	Lab ID Sample Date Sample ID Units	18993/6 15/10/2025 D07 Mullock	18993/7 15/10/2025 D01(A) Front Gate	18993/8 15/10/2025 D11 Goldstien	18993/9 15/10/2025 D12 Ram
Date Tested	AS 3580.10.1	--	17/10/2025	17/10/2025	17/10/2025	17/10/2025
Number of Days	AS 3580.10.1	days	28	28	28	28
Insoluble Solids	AS 3580.10.1	g/m2/mth	0.5	3.3	0.9	0.3
Ash	AS 3580.10.1	g/m2/mth	0.2	1.3	0.4	0.2
Combustible Matter	AS 3580.10.1	g/m2/mth	0.3	2.0	0.5	0.1
Calculated Rain	AS 3580.10.1	mm	9	11	8	9

Report Comments:

Guideline applied - **EPL Dust Limits.**

Results in **bold** indicate an exceedance of the applied guideline.

When considering the pass or fail of tests the measurement of uncertainty of each parameter must be considered.

https://www.vgt.com.au/measurement-uncertainty

Location Analysed : 4/30 Glenwood Dr Thornton NSW 2322.

[NT]: Not tested

Where present, indicates NATA accreditation does not cover the performance of this service.

Sampling Report Number: 18993

Date Issued: 21/10/2025 Revision No: 00

Sampling Conditions: Fine, 22 - 27 °C

Lab ID	Client Sample Reference	Licence/ Reference	Sampler	Date Sampled	Method of Sampling	Pre-treatment / Preservation
18993/1	D08&9 Hitchcock Rd Olive Grove		T & D.Walker	15/10/2025 11:38	AS3580.10.1	CuSO4
18993/2	D10 Hearses Rd		T & D.Walker	15/10/2025 12:06	AS3580.10.1	CuSO4
18993/3	D06 School		T & D.Walker	15/10/2025 10:29	AS3580.10.1	CuSO4
18993/4	D05 Bund		T & D.Walker	15/10/2025 10:46	AS3580.10.1	CuSO4
18993/5	D04 Rehab		T & D.Walker	15/10/2025 11:10	AS3580.10.1	CuSO4
18993/6	D07 Mullock		T & D.Walker	15/10/2025 11:22	AS3580.10.1	CuSO4
18993/7	D01(A) Front Gate		T & D.Walker	15/10/2025 10:56	AS3580.10.1	CuSO4
18993/8	D11 Goldstien		T & D.Walker	15/10/2025 13:08	AS3580.10.1	CuSO4
18993/9	D12 Ram		T & D.Walker	15/10/2025 11:54	AS3580.10.1	CuSO4

Lab ID	Client Sample Reference	GPS-Easting	GPS-Northing	Sampling Observations
18993/1	D08&9 Hitchcock Rd Olive Grove	313058	6295137	Insects
18993/2	D10 Hearses Rd	312538	6294576	Minor insects
18993/3	D06 School	313518	6296537	Sand, minor vegetation, minor insects. Funnel blocked with insects & vegetation. Paddock recently slashed.
18993/4	D05 Bund	313160	6296838	Sand, insects. Adjacent crop farming paddocks tilled to bare earth.
18993/5	D04 Rehab	312385	6296932	Minor vegetation
18993/6	D07 Mullock	312579	6296676	Insects
18993/7	D01(A) Front Gate	313290	6297176	Minor sand, insects. Adjacent crop farm paddocks tilled to bare earth.
18993/8	D11 Goldstien	312034	6294213	Minor vegetation
18993/9	D12 Ram	311750	6294159	Minor insects, minor vegetation

Sampling procedures have been approved and report finalised on 21/10/2025.
Where method is "unknown" sampling procedures are not endorsed

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NATA Accreditation 20375
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Report Number: 19062

Date Issued: 18/11/2025 Revision Number: 00

Site/Job: Dixon Maroota - Dusts

Client: Dixon Sand (No.1) Pty Ltd
Address PO Box 4019
PITT TOWN NSW 2756
Contact David Dixon

The following Dust Deposition sample(s) were received on 12/11/2025

Client Sample Reference	Date On	Date Off	Lab ID	Matrix	Comments or Non-Compliances
D08&9 Hitchcock Rd Olive Grove	15/10/2025 11:38	12/11/2025 11:45	19062/1	Dust	
D10 Hearses Rd	15/10/2025 12:06	12/11/2025 12:15	19062/2	Dust	
D06 School	15/10/2025 10:29	12/11/2025 10:43	19062/3	Dust	
D05 Bund	15/10/2025 10:46	12/11/2025 10:58	19062/4	Dust	
D04 Rehab	15/10/2025 11:10	12/11/2025 11:21	19062/5	Dust	
D07 Mullock	15/10/2025 11:22	12/11/2025 11:33	19062/6	Dust	
D01(A) Front Gate	15/10/2025 10:56	12/11/2025 11:08	19062/7	Dust	
D11 Goldstien	15/10/2025 13:08	12/11/2025 13:10	19062/8	Dust	
D12 Ram	15/10/2025 11:54	12/11/2025 12:01	19062/9	Dust	

The sample(s) have been tested as received and results relate specifically to the samples tested.

The following reports are included:

- Test Report
- Sampling Report
- Chain of Custody (if available)

Authorised by:

Liane Peyra
Technical Officer

Anthony Crane
Laboratory Manager

Results have been approved and report finalised on 18/11/2025.

Accredited for compliance with ISO/IEC 17025 – Testing.

Test Report Number: 19062

Date Issued: 18/11/2025 Revision No: 00

Results

Deposited Matter	Method	Lab ID Sample Date Sample ID Units	19062/1 12/11/2025 D08&9 Hitchcock Rd Olive Grove	19062/2 12/11/2025 D10 Hearses Rd	19062/3 12/11/2025 D06 School	19062/4 12/11/2025 D05 Bund	19062/5 12/11/2025 D04 Rehab
Date Tested	AS 3580.10.1	--	13/11/2025	13/11/2025	13/11/2025	13/11/2025	13/11/2025
Number of Days	AS 3580.10.1	days	28	28	28	28	28
Insoluble Solids	AS 3580.10.1	g/m2/mth	**5.3**	1.5	2.3	**4.6**	1.2
Ash	AS 3580.10.1	g/m2/mth	4.5	0.8	1.8	4.2	0.7
Combustible Matter	AS 3580.10.1	g/m2/mth	0.8	0.7	0.5	0.4	0.5
Calculated Rain	AS 3580.10.1	mm	28	24	32	27	30

Deposited Matter	Method	Lab ID Sample Date Sample ID Units	19062/6 12/11/2025 D07 Mullock	19062/7 12/11/2025 D01(A) Front Gate	19062/8 12/11/2025 D11 Goldstien	19062/9 12/11/2025 D12 Ram
Date Tested	AS 3580.10.1	--	13/11/2025	13/11/2025	13/11/2025	13/11/2025
Number of Days	AS 3580.10.1	days	28	28	28	28
Insoluble Solids	AS 3580.10.1	g/m2/mth	0.5	1.5	2.2	0.5
Ash	AS 3580.10.1	g/m2/mth	0.4	1.3	1.0	0.4
Combustible Matter	AS 3580.10.1	g/m2/mth	0.1	0.2	1.2	0.1
Calculated Rain	AS 3580.10.1	mm	30	27	25	27

Report Comments:

Guideline applied - **EPL Dust Limits.**

Results in **bold** indicate an exceedance of the applied guideline.

When considering the pass or fail of tests the measurement of uncertainty of each parameter must be considered.

https://www.vgt.com.au/measurement-uncertainty

Location Analysed : 4/30 Glenwood Dr Thornton NSW 2322.

[NT]: Not tested

Where present, indicates NATA accreditation does not cover the performance of this service.

Sampling Report Number: 19062

Date Issued: 18/11/2025 Revision No: 00

Sampling Conditions: Fine, 18 - 22 °C

Lab ID	Client Sample Reference	Licence/ Reference	Sampler	Date Sampled	Method of Sampling	Pre-treatment / Preservation
19062/1	D08&9 Hitchcock Rd Olive Grove		T & D.Walker	12/11/2025 11:45	AS3580.10.1	CuSO4
19062/2	D10 Hearses Rd		T & D.Walker	12/11/2025 12:15	AS3580.10.1	CuSO4
19062/3	D06 School		T & D.Walker	12/11/2025 10:43	AS3580.10.1	CuSO4
19062/4	D05 Bund		T & D.Walker	12/11/2025 10:58	AS3580.10.1	CuSO4
19062/5	D04 Rehab		T & D.Walker	12/11/2025 11:21	AS3580.10.1	CuSO4
19062/6	D07 Mullock		T & D.Walker	12/11/2025 11:33	AS3580.10.1	CuSO4
19062/7	D01(A) Front Gate		T & D.Walker	12/11/2025 11:08	AS3580.10.1	CuSO4
19062/8	D11 Goldstien		T & D.Walker	12/11/2025 13:10	AS3580.10.1	CuSO4
19062/9	D12 Ram		T & D.Walker	12/11/2025 12:01	AS3580.10.1	CuSO4

Lab ID	Client Sample Reference	GPS-Easting	GPS-Northing	Sampling Observations
19062/1	D08&9 Hitchcock Rd Olive Grove	313058	6295137	Major sand, minor vegetation
19062/2	D10 Hearses Rd	312538	6294576	Insects
19062/3	D06 School	313518	6296537	Sand, minor insects
19062/4	D05 Bund	313160	6296838	Sand, minor insects
19062/5	D04 Rehab	312385	6296932	Minor insects, minor vegetation
19062/6	D07 Mullock	312579	6296676	
19062/7	D01(A) Front Gate	313290	6297176	Minor sand
19062/8	D11 Goldstien	312034	6294213	Vegetation, minor bird droppings, minor algae
19062/9	D12 Ram	311750	6294159	

Sampling procedures have been approved and report finalised on 18/11/2025.
Where method is "unknown" sampling procedures are not endorsed

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Report Number: 19193

Date Issued: 16/12/2025 Revision Number: 00

Site/Job: Dixon Maroota - Dusts

Client: Dixon Sand (No.1) Pty Ltd
Address PO Box 4019
PITT TOWN NSW 2756
Contact David Dixon

The following Dust Deposition sample(s) were received on 10/12/2025

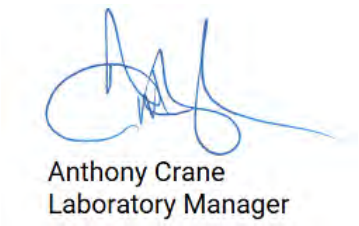
Client Sample Reference	Date On	Date Off	Lab ID	Matrix	Comments or Non-Compliances
D08&9 Hitchcock Rd Olive Grove	12/11/2025 11:45	10/12/2025 13:28	19193/1	Dust	
D10 Hearses Rd	12/11/2025 12:15	10/12/2025 14:17	19193/2	Dust	
D06 School	12/11/2025 10:43	10/12/2025 13:17	19193/3	Dust	
D05 Bund	12/11/2025 10:58	10/12/2025 11:27	19193/4	Dust	
D04 Rehab	12/11/2025 11:21	10/12/2025 09:16	19193/5	Dust	
D07 Mullock	12/11/2025 11:33	10/12/2025 10:02	19193/6	Dust	
D01(A) Front Gate	12/11/2025 11:08	10/12/2025 08:57	19193/7	Dust	
D11 Goldstien	12/11/2025 13:10	10/12/2025 14:02	19193/8	Dust	
D12 Ram	12/11/2025 12:01	10/12/2025 13:42	19193/9	Dust	

The sample(s) have been tested as received and results relate specifically to the samples tested.

The following reports are included:

- Test Report
- Sampling Report
- Chain of Custody (if available)

Authorised by:



Results have been approved and report finalised on 16/12/2025.

Accredited for compliance with ISO/IEC 17025 – Testing.

Test Report Number: 19193

Date Issued: 16/12/2025 Revision No: 00

Results

Deposited Matter	Method	Lab ID Sample Date Sample ID Units	19193/1 10/12/2025 D08&9 Hitchcock Rd Olive Grove	19193/2 10/12/2025 D10 Hearses Rd	19193/3 10/12/2025 D06 School	19193/4 10/12/2025 D05 Bund	19193/5 10/12/2025 D04 Rehab
Date Tested	AS 3580.10.1	--	12/12/2025	12/12/2025	12/12/2025	12/12/2025	12/12/2025
Number of Days	AS 3580.10.1	days	28	28	28	28	28
Insoluble Solids	AS 3580.10.1	g/m2/mth	1.5	1.1	3.0	**44.2**	3.0
Ash	AS 3580.10.1	g/m2/mth	1.0	0.6	2.0	11.5	2.1
Combustible Matter	AS 3580.10.1	g/m2/mth	0.5	0.5	1.0	32.7	0.9
Calculated Rain	AS 3580.10.1	mm	25	24	28	27	29

Deposited Matter	Method	Lab ID Sample Date Sample ID Units	19193/6 10/12/2025 D07 Mullock	19193/7 10/12/2025 D01(A) Front Gate	19193/8 10/12/2025 D11 Goldstien	19193/9 10/12/2025 D12 Ram
Date Tested	AS 3580.10.1	--	12/12/2025	12/12/2025	12/12/2025	12/12/2025
Number of Days	AS 3580.10.1	days	28	28	28	28
Insoluble Solids	AS 3580.10.1	g/m2/mth	1.5	3.6	1.5	0.6
Ash	AS 3580.10.1	g/m2/mth	1.2	3.0	0.7	0.5
Combustible Matter	AS 3580.10.1	g/m2/mth	0.3	0.6	0.8	0.1
Calculated Rain	AS 3580.10.1	mm	28	32	23	25

Report Comments:

Guideline applied - **EPL Dust Limits.**

Results in **bold** indicate an exceedance of the applied guideline.

When considering the pass or fail of tests the measurement of uncertainty of each parameter must be considered.

https://www.vgt.com.au/measurement-uncertainty

Location Analysed : 4/30 Glenwood Dr Thornton NSW 2322.

[NT]: Not tested

Where present, indicates NATA accreditation does not cover the performance of this service.

Sampling Report Number: 19193

Date Issued: 16/12/2025 Revision No: 00

Sampling Conditions: Cloudy, 22-28°C

Lab ID	Client Sample Reference	Licence/ Reference	Sampler	Date Sampled	Method of Sampling	Pre-treatment / Preservation
19193/1	D08&9 Hitchcock Rd Olive Grove		T & D.Walker	10/12/2025 13:28	AS3580.10.1	CuSO4
19193/2	D10 Hearses Rd		T & D.Walker	10/12/2025 14:17	AS3580.10.1	CuSO4
19193/3	D06 School		T & D.Walker	10/12/2025 13:17	AS3580.10.1	CuSO4
19193/4	D05 Bund		T & D.Walker	10/12/2025 11:27	AS3580.10.1	CuSO4
19193/5	D04 Rehab		T & D.Walker	10/12/2025 09:16	AS3580.10.1	CuSO4
19193/6	D07 Mullock		T & D.Walker	10/12/2025 10:02	AS3580.10.1	CuSO4
19193/7	D01(A) Front Gate		T & D.Walker	10/12/2025 08:57	AS3580.10.1	CuSO4
19193/8	D11 Goldstien		T & D.Walker	10/12/2025 14:02	AS3580.10.1	CuSO4
19193/9	D12 Ram		T & D.Walker	10/12/2025 13:42	AS3580.10.1	CuSO4

Lab ID	Client Sample Reference	GPS-Easting	GPS-Northing	Sampling Observations
19193/1	D08&9 Hitchcock Rd Olive Grove	313058	6295137	
19193/2	D10 Hearses Rd	312538	6294576	
19193/3	D06 School	313518	6296537	Minor sand, minor vegetation
19193/4	D05 Bund	313160	6296838	Sand, insects
19193/5	D04 Rehab	312385	6296932	Minor insects, minor vegetation
19193/6	D07 Mullock	312579	6296676	Minor insects
19193/7	D01(A) Front Gate	313290	6297176	Minor dust, minor insects
19193/8	D11 Goldstien	312034	6294213	Minor insects, vegetation
19193/9	D12 Ram	311750	6294159	Minor insects

Sampling procedures have been approved and report finalised on 16/12/2025.
Where method is "unknown" sampling procedures are not endorsed

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Report Number: 19292

Date Issued: 13/01/2026 Revision Number: 00

Site/Job: Dixon Maroota - Dusts

Client: Dixon Sand (No.1) Pty Ltd
Address PO Box 4019
PITT TOWN NSW 2756
Contact David Dixon

The following Dust Deposition sample(s) were received on 7/01/2026

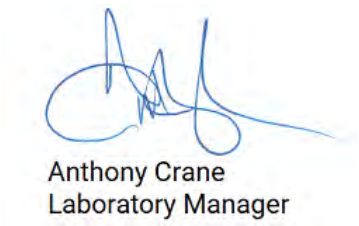
Client Sample Reference	Date On	Date Off	Lab ID	Matrix	Comments or Non-Compliances
D08&9 Hitchcock Rd Olive Grove	10/12/2025 13:28	7/1/2026 11:41	19292/1	Dust	
D10 Hearses Rd	10/12/2025 14:17	7/1/2026 12:10	19292/2	Dust	
D06 School	10/12/2025 13:17	7/1/2026 10:30	19292/3	Dust	
D05 Bund	10/12/2025 11:27	7/1/2026 10:48	19292/4	Dust	
D04 Rehab	10/12/2025 9:16	7/1/2026 11:13	19292/5	Dust	
D07 Mullock	10/12/2025 10:02	7/1/2026 11:25	19292/6	Dust	
D01(A) Front Gate	10/12/2025 8:57	7/1/2026 10:59	19292/7	Dust	
D11 Goldstien	10/12/2025 14:02	7/1/2026 13:10	19292/8	Dust	
D12 Ram	10/12/2025 13:42	7/1/2026 11:58	19292/9	Dust	

The sample(s) have been tested as received and results relate specifically to the samples tested.

The following reports are included:

- Test Report
- Sampling Report
- Chain of Custody (if available)

Authorised by:



Results have been approved and report finalised on 13/01/2026.

Accredited for compliance with ISO/IEC 17025 – Testing.

Test Report Number: 19292

Date Issued: 13/01/2026 Revision No: 00

Results

Deposited Matter	Method	Lab ID Sample Date Sample ID Units	19292/1 7/01/2026 D08&9 Hitchcock Rd Olive Grove	19292/2 7/01/2026 D10 Hearses Rd	19292/3 7/01/2026 D06 School	19292/4 7/01/2026 D05 Bund	19292/5 7/01/2026 D04 Rehab
Date Tested	AS 3580.10.1	--	09/01/2026	09/01/2026	09/01/2026	09/01/2026	09/01/2026
Number of Days	AS 3580.10.1	days	28	28	28	28	28
Insoluble Solids	AS 3580.10.1	g/m2/mth	1.1	**14.4**	2.2	**8.7**	1.2
Ash	AS 3580.10.1	g/m2/mth	0.7	10.2	1.5	7.6	0.5
Combustible Matter	AS 3580.10.1	g/m2/mth	0.4	4.2	0.7	1.1	0.7
Calculated Rain	AS 3580.10.1	mm	101	101	100	85	87

Deposited Matter	Method	Lab ID Sample Date Sample ID Units	19292/6 7/01/2026 D07 Mullock	19292/7 7/01/2026 D01(A) Front Gate	19292/8 7/01/2026 D11 Goldstien	19292/9 7/01/2026 D12 Ram
Date Tested	AS 3580.10.1	--	09/01/2026	09/01/2026	09/01/2026	09/01/2026
Number of Days	AS 3580.10.1	days	28	28	28	28
Insoluble Solids	AS 3580.10.1	g/m2/mth	0.7	2.1	1.9	0.9
Ash	AS 3580.10.1	g/m2/mth	0.5	1.0	0.8	0.5
Combustible Matter	AS 3580.10.1	g/m2/mth	0.2	1.1	1.1	0.4
Calculated Rain	AS 3580.10.1	mm	86	94	102	104

Report Comments:

Guideline applied - **EPL Dust Limits.**

Results in **bold** indicate an exceedance of the applied guideline.

When considering the pass or fail of tests the measurement of uncertainty of each parameter must be considered.

https://www.vgt.com.au/measurement-uncertainty

Location Analysed : 4/30 Glenwood Dr Thornton NSW 2322.

[NT]: Not tested

Where present, indicates NATA accreditation does not cover the performance of this service.

Sampling Report Number: 19292

Date Issued: 13/01/2026 Revision No: 00

Sampling Conditions: Fine, 28 - 34 °C

Lab ID	Client Sample Reference	Licence/ Reference	Sampler	Date Sampled	Method of Sampling	Pre-treatment / Preservation
19292/1	D08&9 Hitchcock Rd Olive Grove		T & D.Walker	7/1/2026 11:41	AS3580.10.1	CuSO4
19292/2	D10 Hearses Rd		T & D.Walker	7/1/2026 12:10	AS3580.10.1	CuSO4
19292/3	D06 School		T & D.Walker	7/1/2026 10:30	AS3580.10.1	CuSO4
19292/4	D05 Bund		T & D.Walker	7/1/2026 10:48	AS3580.10.1	CuSO4
19292/5	D04 Rehab		T & D.Walker	7/1/2026 11:13	AS3580.10.1	CuSO4
19292/6	D07 Mullock		T & D.Walker	7/1/2026 11:25	AS3580.10.1	CuSO4
19292/7	D01(A) Front Gate		T & D.Walker	7/1/2026 10:59	AS3580.10.1	CuSO4
19292/8	D11 Goldstien		T & D.Walker	7/1/2026 13:10	AS3580.10.1	CuSO4
19292/9	D12 Ram		T & D.Walker	7/1/2026 11:58	AS3580.10.1	CuSO4

Lab ID	Client Sample Reference	GPS-Easting	GPS-Northing	Sampling Observations
19292/1	D08&9 Hitchcock Rd Olive Grove	313058	6295137	Minor insects
19292/2	D10 Hearses Rd	312538	6294576	Sand, vegetation, algae. Adjacent paddock stripped bare.
19292/3	D06 School	313518	6296537	Minor dust, insects, minor vegetation
19292/4	D05 Bund	313160	6296838	Sand, minor insects
19292/5	D04 Rehab	312385	6296932	Minor vegetation
19292/6	D07 Mullock	312579	6296676	
19292/7	D01(A) Front Gate	313290	6297176	Minor vegetation
19292/8	D11 Goldstien	312034	6294213	Minor insects, minor vegetation
19292/9	D12 Ram	311750	6294159	Minor insects

Sampling procedures have been approved and report finalised on 13/01/2026.
Where method is "unknown" sampling procedures are not endorsed

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Report Number: 19467

Date Issued: 9/02/2026 Revision Number: 00

Site/Job: Dixon Maroota - Dusts

Client: Dixon Sand (No.1) Pty Ltd
Address PO Box 4019
PITT TOWN NSW 2756
Contact David Dixon

The following Dust Deposition sample(s) were received on 4/02/2026

Client Sample Reference	Date On	Date Off	Lab ID	Matrix	Comments or Non-Compliances
D08&9 Hitchcock Rd Olive Grove	7/1/2026 11:41	4/2/2026 11:46	19467/1	Dust	
D10 Hearses Rd	7/1/2026 12:10	4/2/2026 12:10	19467/2	Dust	
D06 School	7/1/2026 10:30	4/2/2026 10:45	19467/3	Dust	
D05 Bund	7/1/2026 10:48	4/2/2026 10:55	19467/4	Dust	
D04 Rehab	7/1/2026 11:13	4/2/2026 11:18	19467/5	Dust	
D07 Mullock	7/1/2026 11:25	4/2/2026 11:30	19467/6	Dust	
D01(A) Front Gate	7/1/2026 10:59	4/2/2026 11:04	19467/7	Dust	
D11 Goldstien	7/1/2026 13:10	4/2/2026 13:10	19467/8	Dust	
D12 Ram	7/1/2026 11:58	4/2/2026 11:58	19467/9	Dust	

The sample(s) have been tested as received and results relate specifically to the samples tested.

The following reports are included:

- Test Report
- Sampling Report
- Chain of Custody (if available)

Authorised by:

Anthony Crane
Laboratory Manager

Liane Peyra
Technical Officer

Results have been approved and report finalised on 9/02/2026.

Accredited for compliance with ISO/IEC 17025 – Testing.

Test Report Number: 19467

Date Issued: 9/02/2026 Revision No: 00

Results

Deposited Matter	Method	Lab ID Sample Date Sample ID Units	19467/1 4/02/2026 D08&9 Hitchcock Rd Olive Grove	19467/2 4/02/2026 D10 Hearses Rd	19467/3 4/02/2026 D06 School	19467/4 4/02/2026 D05 Bund	19467/5 4/02/2026 D04 Rehab
Date Tested	AS 3580.10.1	--	5/02/2026	5/02/2026	5/02/2026	5/02/2026	5/02/2026
Number of Days	AS 3580.10.1	days	28	28	28	28	28
Insoluble Solids	AS 3580.10.1	g/m2/mth	0.9	**4.9**	2.9	1.0	0.8
Ash	AS 3580.10.1	g/m2/mth	0.7	2.2	1.6	0.9	0.5
Combustible Matter	AS 3580.10.1	g/m2/mth	0.2	2.7	1.3	0.1	0.3
Calculated Rain	AS 3580.10.1	mm	150	132	155	146	148

Deposited Matter	Method	Lab ID Sample Date Sample ID Units	19467/6 4/02/2026 D07 Mullock	19467/7 4/02/2026 D01(A) Front Gate	19467/8 4/02/2026 D11 Goldstien	19467/9 4/02/2026 D12 Ram
Date Tested	AS 3580.10.1	--	5/02/2026	5/02/2026	5/02/2026	5/02/2026
Number of Days	AS 3580.10.1	days	28	28	28	28
Insoluble Solids	AS 3580.10.1	g/m2/mth	0.5	1.1	0.9	3.1
Ash	AS 3580.10.1	g/m2/mth	0.4	1.1	0.4	1.4
Combustible Matter	AS 3580.10.1	g/m2/mth	0.1	<0.1	0.5	1.7
Calculated Rain	AS 3580.10.1	mm	148	116	129	129

Report Comments:

Guideline applied - **EPL Dust Limits.**

Results in **bold** indicate an exceedance of the applied guideline.

When considering the pass or fail of tests the measurement of uncertainty of each parameter must be considered.

https://www.vgt.com.au/measurement-uncertainty

Location Analysed : 4/30 Glenwood Dr Thornton NSW 2322.

[NT]: Not tested

Where present, indicates NATA accreditation does not cover the performance of this service.

Sampling Report Number: 19467

Date Issued: 9/02/2026 Revision No: 00

Sampling Conditions: Fine, 23 - 28 °C

Lab ID	Client Sample Reference	Licence/ Reference	Sampler	Date Sampled	Method of Sampling	Pre-treatment / Preservation
19467/1	D08&9 Hitchcock Rd Olive Grove		T & D.Walker	4/2/2026 11:46	AS3580.10.1	CuSO4
19467/2	D10 Hearses Rd		T & D.Walker	4/2/2026 12:10	AS3580.10.1	CuSO4
19467/3	D06 School		T & D.Walker	4/2/2026 10:45	AS3580.10.1	CuSO4
19467/4	D05 Bund		T & D.Walker	4/2/2026 10:55	AS3580.10.1	CuSO4
19467/5	D04 Rehab		T & D.Walker	4/2/2026 11:18	AS3580.10.1	CuSO4
19467/6	D07 Mullock		T & D.Walker	4/2/2026 11:30	AS3580.10.1	CuSO4
19467/7	D01(A) Front Gate		T & D.Walker	4/2/2026 11:04	AS3580.10.1	CuSO4
19467/8	D11 Goldstien		T & D.Walker	4/2/2026 13:10	AS3580.10.1	CuSO4
19467/9	D12 Ram		T & D.Walker	4/2/2026 11:58	AS3580.10.1	CuSO4

Lab ID	Client Sample Reference	GPS-Easting	GPS-Northing	Sampling Observations
19467/1	D08&9 Hitchcock Rd Olive Grove	313058	6295137	Minor insects
19467/2	D10 Hearses Rd	312538	6294576	Minor insects, minor bird droppings
19467/3	D06 School	313518	6296537	Minor vegetation
19467/4	D05 Bund	313160	6296838	Minor sand, minor insects
19467/5	D04 Rehab	312385	6296932	Minor insects
19467/6	D07 Mullock	312579	6296676	
19467/7	D01(A) Front Gate	313290	6297176	Full
19467/8	D11 Goldstien	312034	6294213	Minor vegetation
19467/9	D12 Ram	311750	6294159	

Sampling procedures have been approved and report finalised on 9/02/2026.
Where method is "unknown" sampling procedures are not endorsed

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NATA Accreditation 20375
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Report Number: 19562

Date Issued: 11/03/2026 Revision Number: 00

Site/Job: Dixon Maroota - Dusts

Client: Dixon Sand (No.1) Pty Ltd
Address PO Box 4019
PITT TOWN NSW 2756
Contact David Dixon

The following Dust Deposition sample(s) were received on 4/03/2026

Client Sample Reference	Date On	Date Off	Lab ID	Matrix	Comments or Non-Compliances
D08&9 Hitchcock Rd Olive Grove	4/2/2026 11:46	4/3/2026 12:00	19562/1	Dust	
D10 Hearses Rd	4/2/2026 12:10	4/3/2026 12:33	19562/2	Dust	
D06 School	4/2/2026 10:45	4/3/2026 10:31	19562/3	Dust	
D05 Bund	4/2/2026 10:55	4/3/2026 10:49	19562/4	Dust	
D04 Rehab	4/2/2026 11:18	4/3/2026 11:30	19562/5	Dust	
D07 Mullock	4/2/2026 11:30	4/3/2026 11:42	19562/6	Dust	
D01(A) Front Gate	4/2/2026 11:04	4/3/2026 11:01	19562/7	Dust	
D11 Goldstien	4/2/2026 13:10	4/3/2026 13:42	19562/8	Dust	
D12 Ram	4/2/2026 11:58	4/3/2026 12:12	19562/9	Dust	

The sample(s) have been tested as received and results relate specifically to the samples tested.

The following reports are included:

- Test Report
- Sampling Report
- Chain of Custody (if available)

Authorised by:

Liane Peyra
Technical Officer

Results have been approved and report finalised on 11/03/2026.

Test Report Number: 19562

Date Issued: 11/03/2026 Revision No: 00

Results

Deposited Matter	Method	Lab ID Sample Date Sample ID Units	19562/1 4/03/2026 D08&9 Hitchcock Rd Olive Grove	19562/2 4/03/2026 D10 Hearses Rd	19562/3 4/03/2026 D06 School	19562/4 4/03/2026 D05 Bund	19562/5 4/03/2026 D04 Rehab
Date Tested	AS 3580.10.1	--	6/03/2026	6/03/2026	6/03/2026	6/03/2026	6/03/2026
Number of Days	AS 3580.10.1	days	28	28	28	28	28
Insoluble Solids	AS 3580.10.1	g/m2/mth	0.8	**9.1**	2.1	1.3	0.9
Ash	AS 3580.10.1	g/m2/mth	0.4	3.6	1.2	0.8	0.4
Combustible Matter	AS 3580.10.1	g/m2/mth	0.4	5.5	0.9	0.5	0.5
Calculated Rain	AS 3580.10.1	mm	132	130	138	132	141

Deposited Matter	Method	Lab ID Sample Date Sample ID Units	19562/6 4/03/2026 D07 Mullock	19562/7 4/03/2026 D01(A) Front Gate	19562/8 4/03/2026 D11 Goldstien	19562/9 4/03/2026 D12 Ram
Date Tested	AS 3580.10.1	--	6/03/2026	6/03/2026	6/03/2026	6/03/2026
Number of Days	AS 3580.10.1	days	28	28	28	28
Insoluble Solids	AS 3580.10.1	g/m2/mth	1.7	2.1	1.1	0.5
Ash	AS 3580.10.1	g/m2/mth	1.4	1.6	0.5	0.3
Combustible Matter	AS 3580.10.1	g/m2/mth	0.3	0.5	0.6	0.2
Calculated Rain	AS 3580.10.1	mm	140	116	140	136

Report Comments:

Guideline applied - **EPL Dust Limits.**

Results in **bold** indicate an exceedance of the applied guideline.

When considering the pass or fail of tests the measurement of uncertainty of each parameter must be considered.

https://www.vgt.com.au/measurement-uncertainty

Location Analysed : 4/30 Glenwood Dr Thornton NSW 2322.

[NT]: Not tested

Where present, indicates NATA accreditation does not cover the performance of this service.

Sampling Report Number: 19562

Date Issued: 11/03/2026 Revision No: 00

Sampling Conditions: Cloudy, 24 - 30 °C

Lab ID	Client Sample Reference	Licence/ Reference	Sampler	Date Sampled	Method of Sampling	Pre-treatment / Preservation
19562/1	D08&9 Hitchcock Rd Olive Grove		T & D.Walker	4/3/2026 12:00	AS3580.10.1	CuSO4
19562/2	D10 Hearses Rd		T & D.Walker	4/3/2026 12:33	AS3580.10.1	CuSO4
19562/3	D06 School		T & D.Walker	4/3/2026 10:31	AS3580.10.1	CuSO4
19562/4	D05 Bund		T & D.Walker	4/3/2026 10:49	AS3580.10.1	CuSO4
19562/5	D04 Rehab		T & D.Walker	4/3/2026 11:30	AS3580.10.1	CuSO4
19562/6	D07 Mullock		T & D.Walker	4/3/2026 11:42	AS3580.10.1	CuSO4
19562/7	D01(A) Front Gate		T & D.Walker	4/3/2026 11:01	AS3580.10.1	CuSO4
19562/8	D11 Goldstien		T & D.Walker	4/3/2026 13:42	AS3580.10.1	CuSO4
19562/9	D12 Ram		T & D.Walker	4/3/2026 12:12	AS3580.10.1	CuSO4

Lab ID	Client Sample Reference	GPS-Easting	GPS-Northing	Sampling Observations
19562/1	D08&9 Hitchcock Rd Olive Grove	313058	6295137	
19562/2	D10 Hearses Rd	312538	6294576	Insects, seeds, bird droppings, vegetation
19562/3	D06 School	313518	6296537	Very minor sand
19562/4	D05 Bund	313160	6296838	Minor insects
19562/5	D04 Rehab	312385	6296932	
19562/6	D07 Mullock	312579	6296676	
19562/7	D01(A) Front Gate	313290	6297176	Full
19562/8	D11 Goldstien	312034	6294213	Minor vegetation
19562/9	D12 Ram	311750	6294159	

Sampling procedures have been approved and report finalised on 11/03/2026.
Where method is "unknown" sampling procedures are not endorsed

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Report Number: 19780

Date Issued: 9/04/2026 Revision Number: 00

Site/Job: Dixon Maroota - Dusts

Client: Dixon Sand (No.1) Pty Ltd
Address PO Box 4019
PITT TOWN NSW 2756
Contact David Dixon

The following Dust Deposition sample(s) were received on 1/04/2026

Client Sample Reference	Date On	Date Off	Lab ID	Matrix	Comments or Non-Compliances
D08&9 Hitchcock Rd Olive Grove	4/3/2026 12:00	1/4/2026 13:17	19780/1	Dust	
D10 Hearses Rd	4/3/2026 12:33	1/4/2026 13:52	19780/2	Dust	
D06 School	4/3/2026 10:31	1/4/2026 10:53	19780/3	Dust	
D05 Bund	4/3/2026 10:49	1/4/2026 11:23	19780/4	Dust	
D04 Rehab	4/3/2026 11:30	1/4/2026 11:54	19780/5	Dust	
D07 Mullock	4/3/2026 11:42	1/4/2026 12:04	19780/6	Dust	
D01(A) Front Gate	4/3/2026 11:01	1/4/2026 11:40	19780/7	Dust	
D11 Goldstien	4/3/2026 13:42	1/4/2026 14:48	19780/8	Dust	
D12 Ram	4/3/2026 12:12	1/4/2026 13:31	19780/9	Dust	

The sample(s) have been tested as received and results relate specifically to the samples tested.

The following reports are included:

- Test Report
- Sampling Report
- Chain of Custody (if available)

Authorised by:

Liane Peyra
Technical Officer

Anthony Crane
Laboratory Manager

Results have been approved and report finalised on 9/04/2026.

Accredited for compliance with ISO/IEC 17025 – Testing.

Test Report Number: 19780

Date Issued: 9/04/2026 Revision No: 00

Results

Deposited Matter	Method	Lab ID Sample Date Sample ID Units	19780/1 1/04/2026 D08&9 Hitchcock Rd Olive Grove	19780/2 1/04/2026 D10 Hearses Rd	19780/3 1/04/2026 D06 School	19780/4 1/04/2026 D05 Bund	19780/5 1/04/2026 D04 Rehab
Date Tested	AS 3580.10.1	--	7/04/2026	7/04/2026	7/04/2026	7/04/2026	7/04/2026
Number of Days	AS 3580.10.1	days	28	28	28	28	28
Insoluble Solids	AS 3580.10.1	g/m2/mth	0.6	4.0	1.9	0.9	0.5
Ash	AS 3580.10.1	g/m2/mth	0.4	1.6	1.3	0.7	0.2
Combustible Matter	AS 3580.10.1	g/m2/mth	0.2	2.4	0.6	0.2	0.3
Calculated Rain	AS 3580.10.1	mm	92	86	108	98	91

Deposited Matter	Method	Lab ID Sample Date Sample ID Units	19780/6 1/04/2026 D07 Mullock	19780/7 1/04/2026 D01(A) Front Gate	19780/8 1/04/2026 D11 Goldstien	19780/9 1/04/2026 D12 Ram
Date Tested	AS 3580.10.1	--	7/04/2026	7/04/2026	7/04/2026	7/04/2026
Number of Days	AS 3580.10.1	days	28	28	28	28
Insoluble Solids	AS 3580.10.1	g/m2/mth	0.8	3.0	0.9	0.4
Ash	AS 3580.10.1	g/m2/mth	0.6	2.8	0.4	0.2
Combustible Matter	AS 3580.10.1	g/m2/mth	0.2	0.2	0.5	0.2
Calculated Rain	AS 3580.10.1	mm	93	106	97	104

Report Comments:

Guideline applied - **EPL Dust Limits.**

Results in **bold** indicate an exceedance of the applied guideline.

When considering the pass or fail of tests the measurement of uncertainty of each parameter must be considered.

https://www.vgt.com.au/measurement-uncertainty

Location Analysed : 4/30 Glenwood Dr Thornton NSW 2322.

[NT]: Not tested

Where present, indicates NATA accreditation does not cover the performance of this service.

Sampling Report Number: 19780

Date Issued: 9/04/2026 Revision No: 00

Sampling Conditions: Partly cloudy, 21 - 27 °C

Lab ID	Client Sample Reference	Licence/ Reference	Sampler	Date Sampled	Method of Sampling	Pre-treatment / Preservation
19780/1	D08&9 Hitchcock Rd Olive Grove		T & D.Walker	1/4/2026 13:17	AS3580.10.1	CuSO4
19780/2	D10 Hearses Rd		T & D.Walker	1/4/2026 13:52	AS3580.10.1	CuSO4
19780/3	D06 School		T & D.Walker	1/4/2026 10:53	AS3580.10.1	CuSO4
19780/4	D05 Bund		T & D.Walker	1/4/2026 11:23	AS3580.10.1	CuSO4
19780/5	D04 Rehab		T & D.Walker	1/4/2026 11:54	AS3580.10.1	CuSO4
19780/6	D07 Mullock		T & D.Walker	1/4/2026 12:04	AS3580.10.1	CuSO4
19780/7	D01(A) Front Gate		T & D.Walker	1/4/2026 11:40	AS3580.10.1	CuSO4
19780/8	D11 Goldstien		T & D.Walker	1/4/2026 14:48	AS3580.10.1	CuSO4
19780/9	D12 Ram		T & D.Walker	1/4/2026 13:31	AS3580.10.1	CuSO4

Lab ID	Client Sample Reference	GPS-Easting	GPS-Northing	Sampling Observations
19780/1	D08&9 Hitchcock Rd Olive Grove	313058	6295137	Minor insects
19780/2	D10 Hearses Rd	312538	6294576	Minor sand, vegetation, algae. Bird droppings in funnel.
19780/3	D06 School	313518	6296537	Minor sand, minor vegetation
19780/4	D05 Bund	313160	6296838	Minor sand, minor insects
19780/5	D04 Rehab	312385	6296932	Minor insects
19780/6	D07 Mullock	312579	6296676	Minor sand
19780/7	D01(A) Front Gate	313290	6297176	Minor sand
19780/8	D11 Goldstien	312034	6294213	Minor vegetation
19780/9	D12 Ram	311750	6294159	

Sampling procedures have been approved and report finalised on 9/04/2026.
Where method is "unknown" sampling procedures are not endorsed

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Report Number: 19897

Date Issued: 7/05/2026 Revision Number: 00

Site/Job: Dixon Maroota - Dusts

Client: Dixon Sand (No.1) Pty Ltd
Address PO Box 4019
PITT TOWN NSW 2756
Contact David Dixon

The following Dust Deposition sample(s) were received on 29/04/2026

Client Sample Reference	Date On	Date Off	Lab ID	Matrix	Comments or Non-Compliances
D08&9 Hitchcock Rd Olive Grove	1/4/2026 13:17	29/4/2026 11:42	19897/1	Dust	
D10 Hearses Rd	1/4/2026 13:52	29/4/2026 12:08	19897/2	Dust	
D06 School	1/4/2026 10:53	29/4/2026 10:41	19897/3	Dust	
D05 Bund	1/4/2026 11:23	29/4/2026 10:56	19897/4	Dust	
D04 Rehab	1/4/2026 11:54	29/4/2026 11:18	19897/5	Dust	
D07 Mullock	1/4/2026 12:04	29/4/2026 11:30	19897/6	Dust	
D01(A) Front Gate	1/4/2026 11:40	29/4/2026 11:06	19897/7	Dust	
D11 Goldstien	1/4/2026 14:48	29/4/2026 13:04	19897/8	Dust	
D12 Ram	1/4/2026 13:31	29/4/2026 11:56	19897/9	Dust	

The sample(s) have been tested as received and results relate specifically to the samples tested.

The following reports are included:

- Test Report
- Sampling Report
- Chain of Custody (if available)

Authorised by:

Liane Peyra
Technical Officer

Results have been approved and report finalised on 7/05/2026.

Accredited for compliance with ISO/IEC 17025 – Testing.

Test Report Number: 19897

Date Issued: 7/05/2026 Revision No: 00

Results

Deposited Matter	Method	Lab ID Sample Date Sample ID Units	19897/1 29/04/2026 D08&9 Hitchcock Rd Olive Grove	19897/2 29/04/2026 D10 Hearses Rd	19897/3 29/04/2026 D06 School	19897/4 29/04/2026 D05 Bund	19897/5 29/04/2026 D04 Rehab
Date Tested	AS 3580.10.1	--	5/05/2026	5/05/2026	5/05/2026	5/05/2026	5/05/2026
Number of Days	AS 3580.10.1	days	28	28	28	28	28
Insoluble Solids	AS 3580.10.1	g/m2/mth	0.6	2.5	2.6	0.7	0.3
Ash	AS 3580.10.1	g/m2/mth	0.5	1.4	0.9	0.6	0.2
Combustible Matter	AS 3580.10.1	g/m2/mth	0.1	1.1	1.7	0.1	0.1
Calculated Rain	AS 3580.10.1	mm	18	15	17	14	16

Deposited Matter	Method	Lab ID Sample Date Sample ID Units	19897/6 29/04/2026 D07 Mullock	19897/7 29/04/2026 D01(A) Front Gate	19897/8 29/04/2026 D11 Goldstien	19897/9 29/04/2026 D12 Ram
Date Tested	AS 3580.10.1	--	5/05/2026	5/05/2026	5/05/2026	5/05/2026
Number of Days	AS 3580.10.1	days	28	28	28	28
Insoluble Solids	AS 3580.10.1	g/m2/mth	0.2	2.7	0.6	0.2
Ash	AS 3580.10.1	g/m2/mth	0.2	2.5	0.4	0.2
Combustible Matter	AS 3580.10.1	g/m2/mth	<0.1	0.2	0.2	<0.1
Calculated Rain	AS 3580.10.1	mm	16	18	13	18

Report Comments:

Guideline applied - **EPL Dust Limits.**

Results in **bold** indicate an exceedance of the applied guideline.

When considering the pass or fail of tests the measurement of uncertainty of each parameter must be considered.

https://www.vgt.com.au/measurement-uncertainty

Location Analysed : 4/30 Glenwood Dr Thornton NSW 2322.

[NT]: Not tested

Where present, indicates NATA accreditation does not cover the performance of this service.

Sampling Report Number: 19897

Date Issued: 7/05/2026 Revision No: 00

Sampling Conditions: Cloudy, 19 - 24 °C

Lab ID	Client Sample Reference	Licence/ Reference	Sampler	Date Sampled	Method of Sampling	Pre-treatment / Preservation
19897/1	D08&9 Hitchcock Rd Olive Grove		T & D.Walker	29/4/2026 11:42	AS3580.10.1	CuSO4
19897/2	D10 Hearses Rd		T & D.Walker	29/4/2026 12:08	AS3580.10.1	CuSO4
19897/3	D06 School		T & D.Walker	29/4/2026 10:41	AS3580.10.1	CuSO4
19897/4	D05 Bund		T & D.Walker	29/4/2026 10:56	AS3580.10.1	CuSO4
19897/5	D04 Rehab		T & D.Walker	29/4/2026 11:18	AS3580.10.1	CuSO4
19897/6	D07 Mullock		T & D.Walker	29/4/2026 11:30	AS3580.10.1	CuSO4
19897/7	D01(A) Front Gate		T & D.Walker	29/4/2026 11:06	AS3580.10.1	CuSO4
19897/8	D11 Goldstien		T & D.Walker	29/4/2026 13:04	AS3580.10.1	CuSO4
19897/9	D12 Ram		T & D.Walker	29/4/2026 11:56	AS3580.10.1	CuSO4

Lab ID	Client Sample Reference	GPS-Easting	GPS-Northing	Sampling Observations
19897/1	D08&9 Hitchcock Rd Olive Grove	313058	6295137	
19897/2	D10 Hearses Rd	312538	6294576	Minor sand, bird droppings
19897/3	D06 School	313518	6296537	Insects
19897/4	D05 Bund	313160	6296838	
19897/5	D04 Rehab	312385	6296932	Minor insects
19897/6	D07 Mullock	312579	6296676	
19897/7	D01(A) Front Gate	313290	6297176	Minor sand, minor insects
19897/8	D11 Goldstien	312034	6294213	Vegetation
19897/9	D12 Ram	311750	6294159	

Sampling procedures have been approved and report finalised on 7/05/2026.
Where method is "unknown" sampling procedures are not endorsed

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Report Number: 19984

Date Issued: 3/06/2026 Revision Number: 00

Site/Job: Dixon Maroota - Dusts

Client: Dixon Sand (No.1) Pty Ltd
Address PO Box 4019
PITT TOWN NSW 2756
Contact David Dixon

The following Dust Deposition sample(s) were received on 27/05/2026

Client Sample Reference	Date On	Date Off	Lab ID	Matrix	Comments or Non-Compliances
D08&9 Hitchcock Rd Olive Grove	29/4/2026 11:42	27/5/2026 13:36	19984/1	Dust	
D10 Hearses Rd	29/4/2026 12:08	27/5/2026 14:10	19984/2	Dust	
D06 School	29/4/2026 10:41	27/5/2026 08:14	19984/3	Dust	
D05 Bund	29/4/2026 10:56	27/5/2026 11:53	19984/4	Dust	
D04 Rehab	29/4/2026 11:18	27/5/2026 08:39	19984/5	Dust	
D07 Mullock	29/4/2026 11:30	27/5/2026 09:16	19984/6	Dust	
D01(A) Front Gate	29/4/2026 11:06	27/5/2026 08:22	19984/7	Dust	
D11 Goldstien	29/4/2026 13:04	27/5/2026 13:49	19984/8	Dust	
D12 Ram	29/4/2026 11:56	27/5/2026 14:36	19984/9	Dust	

The sample(s) have been tested as received and results relate specifically to the samples tested.

The following reports are included:

- Test Report
- Sampling Report
- Chain of Custody (if available)

Authorised by:

Anthony Crane
Laboratory Manager

Liane Peyra
Technical Officer

Results have been approved and report finalised on 3/06/2026.

Accredited for compliance with ISO/IEC 17025 – Testing.

Test Report Number: 19984

Date Issued: 3/06/2026 Revision No: 00

Results

Deposited Matter	Method	Lab ID Sample Date Sample ID Units	19984/1 27/05/2026 D08&9 Hitchcock Rd Olive Grove	19984/2 27/05/2026 D10 Hearses Rd	19984/3 27/05/2026 D06 School	19984/4 27/05/2026 D05 Bund	19984/5 27/05/2026 D04 Rehab
Date Tested	AS 3580.10.1	--	29/05/2026	29/05/2026	29/05/2026	29/05/2026	29/05/2026
Number of Days	AS 3580.10.1	days	28	28	28	28	28
Insoluble Solids	AS 3580.10.1	g/m2/mth	0.3	1.9	0.5	1.8	0.2
Ash	AS 3580.10.1	g/m2/mth	0.2	1.4	0.4	1.6	0.1
Combustible Matter	AS 3580.10.1	g/m2/mth	0.1	0.5	0.1	0.2	0.1
Calculated Rain	AS 3580.10.1	mm	79	78	82	72	74

Deposited Matter	Method	Lab ID Sample Date Sample ID Units	19984/6 27/05/2026 D07 Mullock	19984/7 27/05/2026 D01(A) Front Gate	19984/8 27/05/2026 D11 Goldstien	19984/9 27/05/2026 D12 Ram
Date Tested	AS 3580.10.1	--	29/05/2026	29/05/2026	29/05/2026	29/05/2026
Number of Days	AS 3580.10.1	days	28	28	28	28
Insoluble Solids	AS 3580.10.1	g/m2/mth	0.2	0.6	0.5	0.2
Ash	AS 3580.10.1	g/m2/mth	0.2	0.5	0.3	0.1
Combustible Matter	AS 3580.10.1	g/m2/mth	<0.1	0.1	0.2	0.1
Calculated Rain	AS 3580.10.1	mm	77	80	83	89

Report Comments:

Guideline applied - **EPL Dust Limits.**

Results in **bold** indicate an exceedance of the applied guideline.

When considering the pass or fail of tests the measurement of uncertainty of each parameter must be considered.

https://www.vgt.com.au/measurement-uncertainty

Location Analysed : 4/30 Glenwood Dr Thornton NSW 2322.

[NT]: Not tested

Where present, indicates NATA accreditation does not cover the performance of this service.

Sampling Report Number: 19984

Date Issued: 3/06/2026 Revision No: 00

Sampling Conditions: Cloudy, 16 - 22 °C

Lab ID	Client Sample Reference	Licence/ Reference	Sampler	Date Sampled	Method of Sampling	Pre-treatment / Preservation
19984/1	D08&9 Hitchcock Rd Olive Grove		T & D.Walker	27/5/2026 13:36	AS3580.10.1	CuSO4
19984/2	D10 Hearses Rd		T & D.Walker	27/5/2026 14:10	AS3580.10.1	CuSO4
19984/3	D06 School		T & D.Walker	27/5/2026 08:14	AS3580.10.1	CuSO4
19984/4	D05 Bund		T & D.Walker	27/5/2026 11:53	AS3580.10.1	CuSO4
19984/5	D04 Rehab		T & D.Walker	27/5/2026 08:39	AS3580.10.1	CuSO4
19984/6	D07 Mullock		T & D.Walker	27/5/2026 09:16	AS3580.10.1	CuSO4
19984/7	D01(A) Front Gate		T & D.Walker	27/5/2026 08:22	AS3580.10.1	CuSO4
19984/8	D11 Goldstien		T & D.Walker	27/5/2026 13:49	AS3580.10.1	CuSO4
19984/9	D12 Ram		T & D.Walker	27/5/2026 14:36	AS3580.10.1	CuSO4

Lab ID	Client Sample Reference	GPS-Easting	GPS-Northing	Sampling Observations
19984/1	D08&9 Hitchcock Rd Olive Grove	313058	6295137	
19984/2	D10 Hearses Rd	312538	6294576	Minor bird droppings, minor algae
19984/3	D06 School	313518	6296537	Minor vegetation
19984/4	D05 Bund	313160	6296838	Minor insects
19984/5	D04 Rehab	312385	6296932	Minor vegetation. Adjacent trees require trimming
19984/6	D07 Mullock	312579	6296676	
19984/7	D01(A) Front Gate	313290	6297176	
19984/8	D11 Goldstien	312034	6294213	Minor vegetation
19984/9	D12 Ram	311750	6294159	Minor insects

Sampling procedures have been approved and report finalised on 3/06/2026.
Where method is "unknown" sampling procedures are not endorsed

Appendix B – PM10, TSP and Weather Station Reports

CBased Environmental Pty Limited
ABN 62 611 924 264

Dixon Sand Quarry

Environmental Monitoring
Air Quality

Tapered Element Oscillating Microbalance (TEOM) (PM_{10}) and Meteorological Data

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July 2025

Colin Davies BSc MEIA CENVP
Environmental Scientist
Date 29 August 2025

CBased Environmental Pty Ltd
Unit 3, 2 Enterprise Crescent SINGLETON NSW 2330
☎ (02) 65713334

1.0 Summary

CBased Environmental Pty Limited is contracted by Dixon Sand to conduct continuous Tapered Element Oscillating Microbalance (TEOM) for fine particulates (PM_{10}) and meteorological monitoring for the Dixon Sand Quarry. The information is required to assess air quality levels. The results for the TEOM and meteorological site are included in this report.

The monitoring programme includes:

- One continuous TEOM PM_{10} monitor; and
- One continuous meteorological station.

This monthly report for July 2025 was prepared by CBased Environmental and includes the following:

- TEOM (PM_{10}) monitoring results; and
- Meteorological results.

In accordance with Schedule 3, Condition 7 of the Dixon Sand development Consent and the Dixon Sand EPL;

- 24-hour average PM_{10} results were below the NEPM 24-hour maximum criteria of 50ug/m^3;
- 24-hour average PM_{10} results were below the Dixon Sand Quarry EPL limit of 42ug/m^3
- The PM_{10} annual average is below the Dixon Sand Quarry consent annual average criteria of 30ug/m^3; and
- The calculated TSP is below the Dixon Sand Quarry annual average criteria of 90ug/m^3.

Note: Based on the available data, statements in green indicate current conformance to Dixon Sand Quarry Air Quality Impact Assessment criteria, statements in red indicate possible non-conformance. Year to date annual average for PM_{10} is calculated from 1 July 2024 for TEOM's coinciding with the Dixon Sand project year.

Approximately 81.9% of valid meteorological data was recorded for July 2025

Approximately 81% of valid TEOM data was available for July 2025.

Please note: A fault with a communications protocol was identified which resulted in loss of meteorological and TEOM data from the 16th to the 22nd July 2025. Rainfall data was unaffected during this period.

2.0 Sampling Programme

The TEOM is sited and operated to the applicable Australian Standard and/or NSW EPA approved methods. The following Australian Standards were used:

- AS3580.9.8 - "*Methods for Sampling and Analysis of Ambient Air. Determination of Suspended Particulates—PM_{10} continuous direct mass method using a tapered element oscillating microbalance analyser*"; and
- AS/NZS 3580.1.1 - "*Methods for Sampling and Analysis of Ambient Air Part 1.1 Guide to Siting Air Monitoring Equipment*".

TEOM PM_{10} results are 24-hour averages at midnight and are reported as $\mu g/m^3$ corrected to 0 degrees C and 101.3kPa.

All laboratory analysis was conducted by a National Association of Testing Authorities (NATA) accredited laboratory.

Air Quality monitoring site descriptions and locations are provided in **Table 1**.

Table 1: Dixon Sand Air Quality Monitoring Description and Locations

Monitor	Site Code	Location Description
TEOM PM_{10}	TEOM	Old North Road, Maroota NSW
Meteorological Station	MET	Old North Road, Maroota NSW

3.0 Results

3.1 TEOM PM_{10}

24-hour average TEOM PM_{10} results from the AQMS data collection software are provided in **Table 2** and a chart of the data is provided in **Figure 1**.

During the July 2025 monitoring period, individual 24-hour TEOM PM_{10} results were below the National Environmental Protection Measure (NEPM) short-term (24hr) impact criteria of 50ug/m3 and the Dixon Sand Quarry EPL limit of 42ug/m3.

Approximately 81% of valid TEOM data was available for July 2025.

At present, the current TEOM PM_{10} annual average is below the Dixon Sand Quarry annual average PM_{10} criteria of 30ug/m^3. The current annual average for calculated Total Suspended Particulates (TSP) is below the annual average criterion of 90ug/m^3. The TSP is calculated by multiplying the PM_{10} by 2.5. Note: the annual average is calculated from 1 July 2025 and therefore an annual amount of data has not been collected.

The quarterly TEOM calibration was conducted in July 2025 (for June). The next calibration is due to be completed in September 2025. The calibration certificate is provided in **Appendix 1** (when required).

Table 2: Average Daily 24-hr TEOM PM_{10} and TSP Results for July 2025 from AQMS and Annual Average PM_{10} calculated from 1 July 2024.

Date	PM_{10} 24-hr Average ($\mu g/m^3$)	PM_{10} Annual Average ($\mu g/m^3$)	24-hr Average TSP* ($\mu g/m^3$)	Annual Average TSP** ($\mu g/m^3$)
1/07/2025	4.9	4.9	12.3	12.3
2/07/2025	5.7	5.3	14.3	13.3
3/07/2025	8.7	6.4	21.8	16.1
4/07/2025	11.4	7.7	28.5	19.2
5/07/2025	8.8	7.9	22.0	19.8
6/07/2025	8.5	8.0	21.3	20.0
7/07/2025	15.0	9.0	37.5	22.5
8/07/2025	8.4	8.9	21.0	22.3
9/07/2025	14.3	9.5	35.8	23.8
10/07/2025	16.8	10.3	42.0	25.6
11/07/2025	9.1	10.1	22.8	25.4
12/07/2025	8.9	10.0	22.3	25.1
13/07/2025	6.8	9.8	17.0	24.5
14/07/2025	13.8	10.1	34.5	25.2
15/07/2025	13.5	10.3	33.8	25.8
16/07/2025	13.4	10.5	33.4	26.2
17/07/2025	ND	10.5	ND	26.2
18/07/2025	ND	10.5	ND	26.2
19/07/2025	ND	10.5	ND	26.2
20/07/2025	ND	10.5	ND	26.2
21/07/2025	ND	10.5	ND	26.2
22/07/2025	ND	10.5	ND	26.2
23/07/2025	8.0	10.4	20.0	25.9
24/07/2025	8.7	10.3	21.8	25.6
25/07/2025	16.4	10.6	41.0	26.5
26/07/2025	6.8	10.4	17.0	26.0
27/07/2025	4.2	10.1	10.5	25.2
28/07/2025	9.6	10.1	24.0	25.2
29/07/2025	13.7	10.2	34.3	25.6
30/07/2025	9.7	10.2	24.3	25.5
31/07/2025	8.9	10.2	22.3	25.4

*Calculated from PM10

**Calculated from PM10 Annual Average

Note: results above the Dixon Sand EPL criteria limit of 42 ug/m^3 are highlighted in yellow

No Data (ND) - <18hrs hour of valid data to calculate a 24hr average

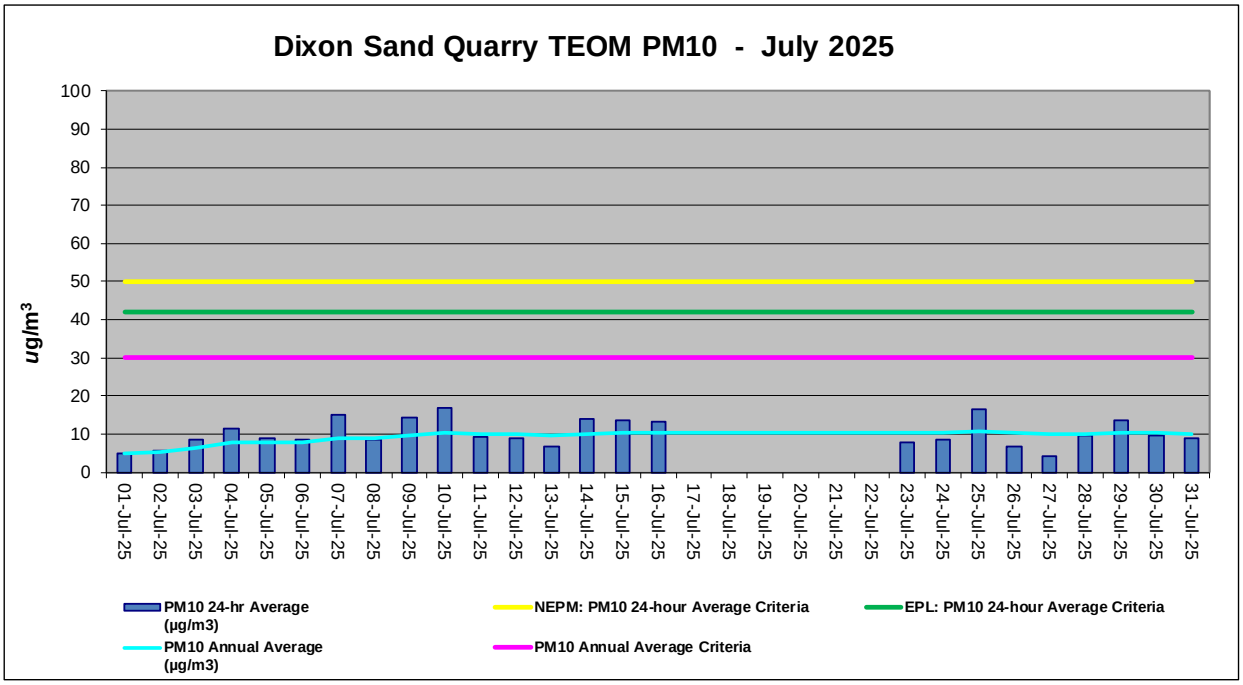


Figure 1: *TEOM PM_{10} 24 hr, Annual Average and Criteria*

3.2 Meteorological Data

The weather station logs data at 5-minute intervals and sends the data to a web database by NextG telemetry. The data is accessible from the web site http://console.teledata.com.au/index.html.

A summary of monthly results is presented in **Table 3**. Charts of meteorological parameters are presented in **Figures 2** and **3**. A Windrose is provided in **Figure 4**.

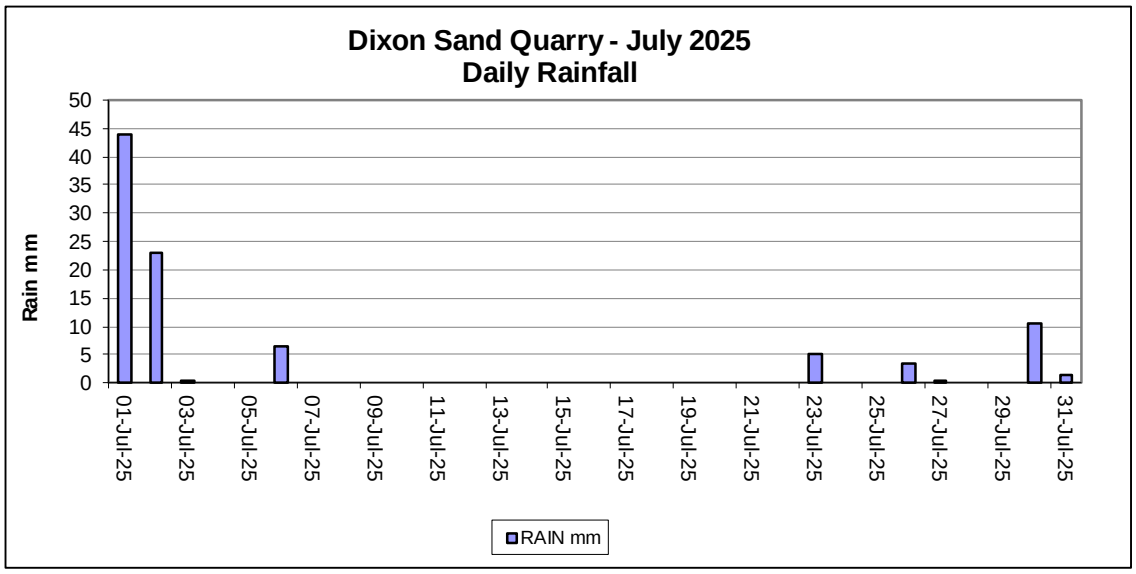
A 6-monthly physical screening and system check of the meteorological station was conducted in July 2025 (for June). The next physical screening and system check is currently scheduled for December 2025. The screening and system check certificates are provided in **Appendix 1** (when required).

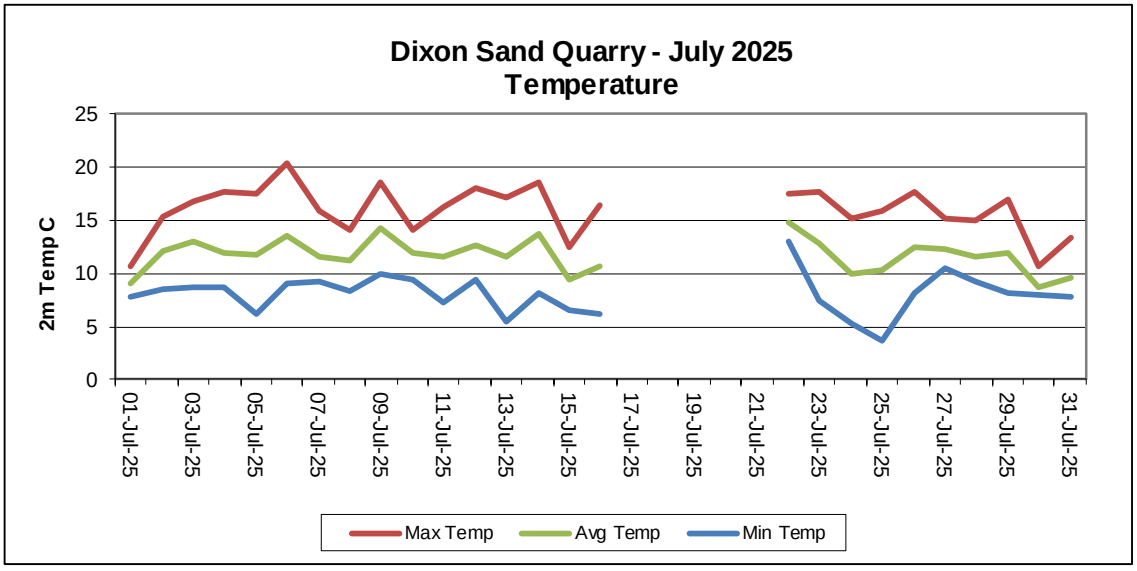
Approximately 81.9% of valid meteorological data was recorded for July 2025.

Table 3: Meteorological Data Summary for July 2025

Date	Min Temp	Avg Temp	Max Temp	RAIN mm	Min WS	Avg WS	Max WS	Min Humidity	Avg Humidity	Max Humidity	Min Pressure	Avg Pressure	Max Pressure
1/07/2025	7.8	9.0	10.6	43.8	1.0	8.9	23.0	79.6	92.6	95.9	970.6	981.1	992.4
2/07/2025	8.5	12.2	15.4	23.0	0.6	8.9	26.4	59.3	84.1	96.1	968.5	973.9	978.6
3/07/2025	8.7	13.0	16.7	0.2	0.0	5.8	26.1	49.6	65.1	78.6	978.2	983.0	988.2
4/07/2025	8.6	12.0	17.6	0.0	0.0	2.7	9.5	47.6	68.2	86.9	988.1	992.2	995.8
5/07/2025	6.1	11.7	17.4	0.0	0.1	2.3	10.2	62.1	78.1	91.1	993.7	995.2	997.7
6/07/2025	9.0	13.5	20.4	6.4	0.0	4.6	15.5	57.8	76.7	93.4	985.8	989.6	993.9
7/07/2025	9.3	11.6	15.9	0.0	0.1	3.2	13.6	51.5	69.9	82.1	986.5	988.1	989.3
8/07/2025	8.4	11.2	14.0	0.0	0.2	5.5	19.5	51.8	66.4	78.0	980.2	984.0	988.1
9/07/2025	10.0	14.2	18.6	0.0	0.2	5.8	16.4	46.9	55.9	68.1	977.7	980.7	983.1
10/07/2025	9.4	11.9	14.1	0.0	0.0	7.2	39.5	40.7	52.1	60.2	975.9	979.4	986.0
11/07/2025	7.2	11.5	16.2	0.0	0.2	5.0	16.7	43.4	57.3	67.6	985.9	990.1	993.5
12/07/2025	9.4	12.7	18.1	0.0	0.2	2.6	10.2	44.7	60.7	70.0	993.3	995.4	996.7
13/07/2025	5.5	11.5	17.1	0.0	0.2	4.1	13.1	35.0	58.8	82.7	983.9	990.5	996.4
14/07/2025	8.1	13.8	18.6	0.0	0.0	3.2	30.3	27.8	44.5	60.1	981.5	984.6	986.3
15/07/2025	6.6	9.3	12.4	0.0	0.2	3.2	12.4	53.9	64.1	76.1	982.8	984.9	988.2
16/07/2025	6.1	10.6	16.4	0.0	0.0	3.3	12.4	37.1	58.0	71.2	987.8	989.5	991.8
17/07/2025				0.0									
18/07/2025				0.0									
19/07/2025				0.0									
20/07/2025				0.0									
21/07/2025				0.0									
22/07/2025	13.0	14.8	17.4	0.0	0.2	4.1	10.9	65.4	75.2	84.6	985.1	986.8	991.6
23/07/2025	7.4	12.8	17.7	5.2	0.2	4.1	18.2	44.2	71.9	93.4	984.1	986.2	989.6
24/07/2025	5.3	9.9	15.2	0.0	0.1	2.6	8.7	35.8	56.7	76.0	989.4	992.4	995.0
25/07/2025	3.7	10.2	15.8	0.0	0.1	3.1	12.3	47.6	63.7	81.9	987.2	993.0	996.7
26/07/2025	8.2	12.5	17.7	3.4	0.0	5.6	20.9	58.3	74.1	90.8	978.2	981.9	987.2
27/07/2025	10.4	12.4	15.2	0.2	0.1	6.3	27.6	55.9	65.7	72.9	976.5	978.0	979.5
28/07/2025	9.2	11.6	15.0	0.0	0.2	5.6	30.4	51.4	62.9	71.6	978.4	981.1	984.6
29/07/2025	8.1	12.0	17.0	0.0	0.1	3.2	14.2	39.2	60.8	77.4	984.4	986.2	988.3
30/07/2025	7.9	8.7	10.6	10.4	0.1	4.8	11.8	70.6	89.5	95.8	984.5	986.3	988.0
31/07/2025	7.8	9.6	13.3	1.4	0.6	6.9	25.5	63.0	83.4	94.5	987.8	992.0	995.1
Monthly	**3.7**	**11.7**	**20.4**	**94.0**	**0.0**	**4.7**	**39.5**	**27.8**	**67.6**	**96.1**	**968.5**	**986.4**	**997.7**

No data available due to communication error resulting in data loss





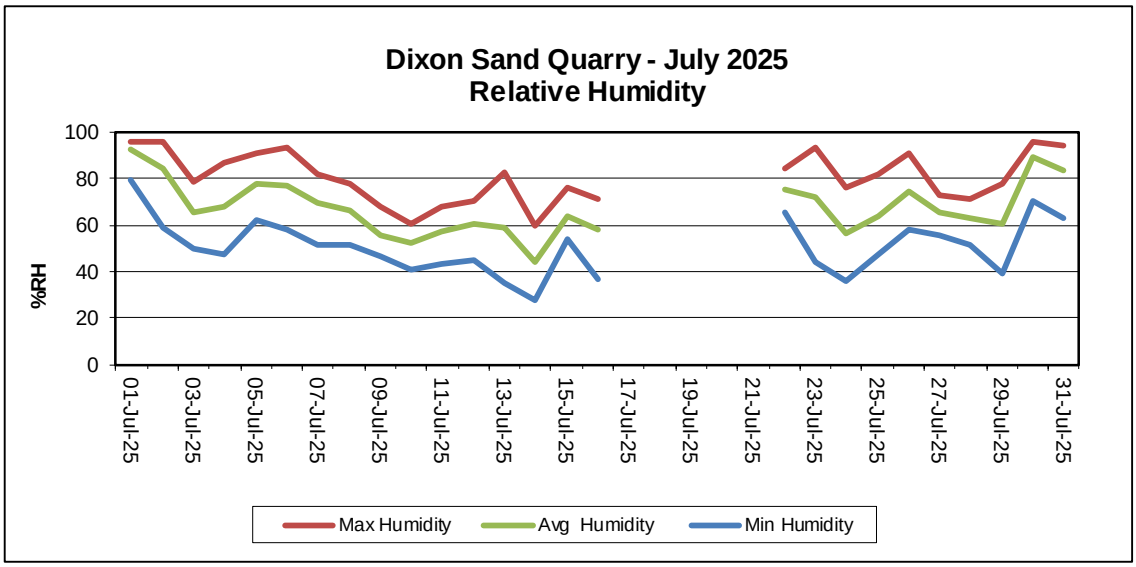


Figure 2: *Daily Rainfall, Temperature and Relative Humidity Charts*

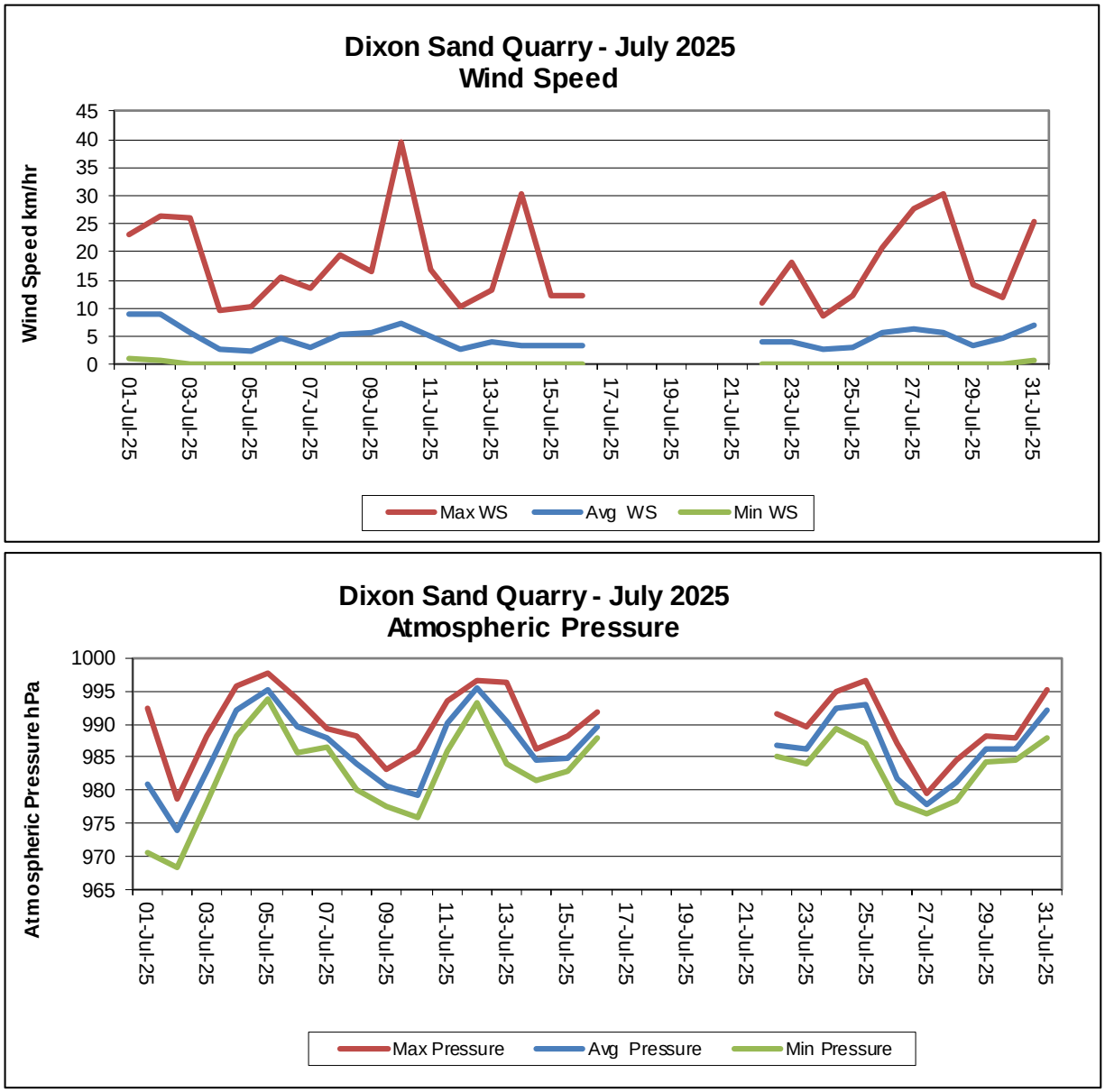


Figure 3: *Wind Speed and Atmospheric Pressure Chart*

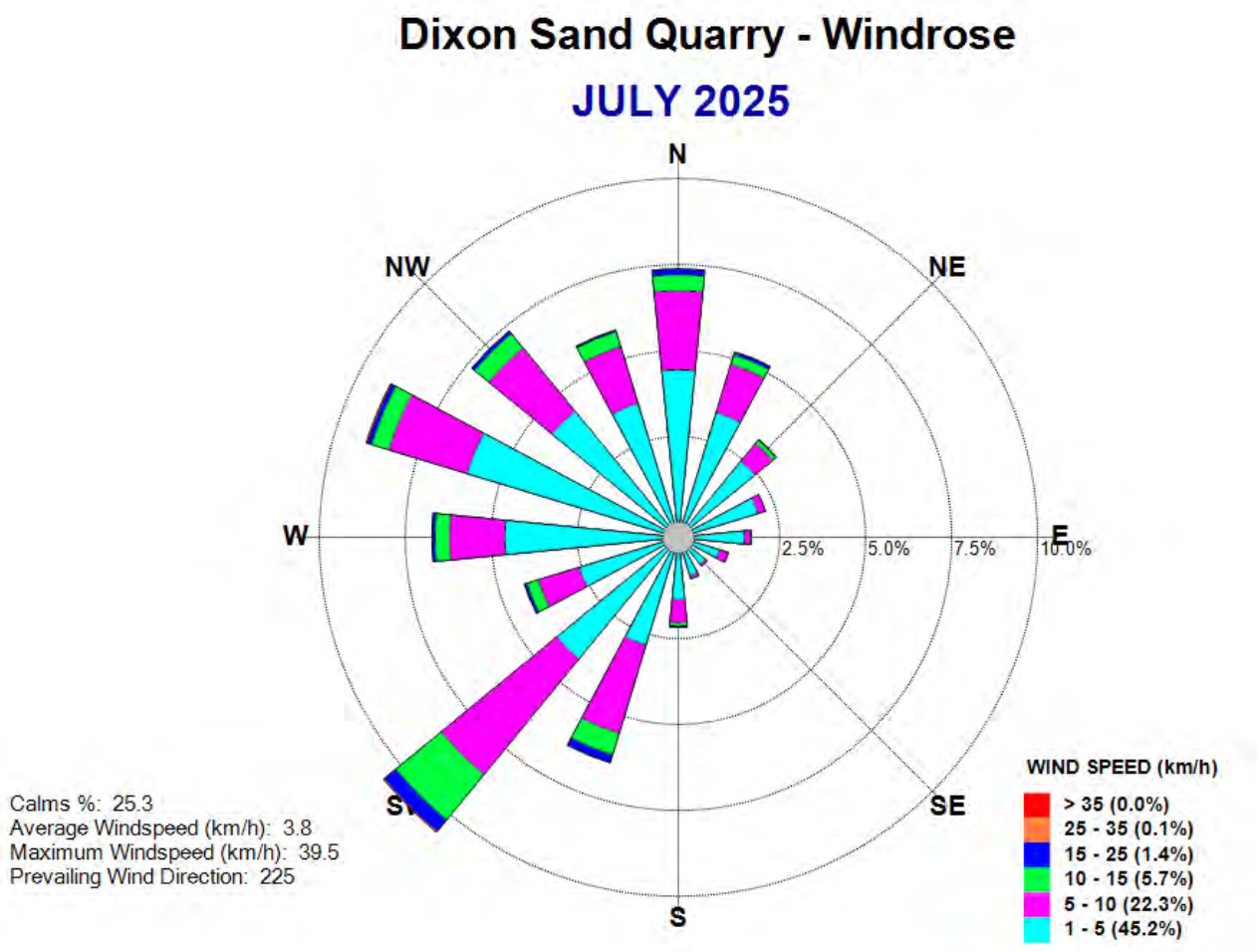


Figure 4: *Windrose*

Appendix 1

Calibration Documents (when required)

CBased Environmental Pty Limited
ABN 62 611 924 264

Dixon Sand Quarry

Environmental Monitoring
Air Quality

Tapered Element Oscillating Microbalance (TEOM) (PM_{10}) and Meteorological Data

---

August 2025

Colin Davies BSc MEIA CENVP
Environmental Scientist
Date 29 September 2025

CBased Environmental Pty Ltd
Unit 3, 2 Enterprise Crescent SINGLETON NSW 2330
☎ (02) 65713334

1.0 Summary

CBased Environmental Pty Limited is contracted by Dixon Sand to conduct continuous Tapered Element Oscillating Microbalance (TEOM) for fine particulates (PM_{10}) and meteorological monitoring for the Dixon Sand Quarry. The information is required to assess air quality levels. The results for the TEOM and meteorological site are included in this report.

The monitoring programme includes:

- One continuous TEOM PM_{10} monitor; and
- One continuous meteorological station.

This monthly report for August 2025 was prepared by CBased Environmental and includes the following:

- TEOM (PM_{10}) monitoring results; and
- Meteorological results.

In accordance with Schedule 3, Condition 7 of the Dixon Sand development Consent and the Dixon Sand EPL;

- 24-hour average PM_{10} results were below the NEPM 24-hour maximum criteria of 50ug/m^3;
- 24-hour average PM_{10} results were below the Dixon Sand Quarry EPL limit of 42ug/m^3
- The PM_{10} annual average is below the Dixon Sand Quarry consent annual average criteria of 30ug/m^3; and
- The calculated TSP is below the Dixon Sand Quarry annual average criteria of 90ug/m^3.

Note: Based on the available data, statements in green indicate current conformance to Dixon Sand Quarry Air Quality Impact Assessment criteria, statements in red indicate possible non-conformance. Year to date annual average for PM_{10} is calculated from 1 July 2024 for TEOM's coinciding with the Dixon Sand project year.

Approximately 91.1% of valid meteorological data was recorded for August 2025

Approximately 86.8% of valid TEOM data was available for August 2025.

Please note: A loss of meteorological and TEOM data was observed between **21st and 25th August 2025**, likely due to a power outage caused by a storm-related rain event affecting the monitoring equipment during this period.

Additionally, the automatic data reset for rainfall at 00:00 hr:min was disrupted from 22nd to 25th August. Manual intervention was required to reset and adjust the rainfall data entries in the monitoring spreadsheet at 00:00 hr:min on each affected day to ensure data continuity and accuracy.

2.0 Sampling Programme

The TEOM is sited and operated to the applicable Australian Standard and/or NSW EPA approved methods. The following Australian Standards were used:

- AS3580.9.8 - "*Methods for Sampling and Analysis of Ambient Air. Determination of Suspended Particulates—PM_{10} continuous direct mass method using a tapered element oscillating microbalance analyser*"; and
- AS/NZS 3580.1.1 - "*Methods for Sampling and Analysis of Ambient Air Part 1.1 Guide to Siting Air Monitoring Equipment*".

TEOM PM_{10} results are 24-hour averages at midnight and are reported as µg/m^3 corrected to 0 degrees C and 101.3kPa.

All laboratory analysis was conducted by a National Association of Testing Authorities (NATA) accredited laboratory.

Air Quality monitoring site descriptions and locations are provided in **Table 1**.

Table 1: Dixon Sand Air Quality Monitoring Description and Locations

Monitor	Site Code	Location Description
TEOM PM_{10}	TEOM	Old North Road, Maroota NSW
Meteorological Station	MET	Old North Road, Maroota NSW

3.0 Results

3.1 TEOM PM_{10}

24-hour average TEOM PM_{10} results from the AQMS data collection software are provided in **Table 2** and a chart of the data is provided in **Figure 1**.

During the August 2025 monitoring period, individual 24-hour TEOM PM_{10} results were below the National Environmental Protection Measure (NEPM) short-term (24hr) impact criteria of 50ug/m3 and the Dixon Sand Quarry EPL limit of 42ug/m3.

Approximately 86.8% of valid TEOM data was available for August 2025.

At present, the current TEOM PM_{10} annual average is below the Dixon Sand Quarry annual average PM_{10} criteria of 30ug/m^3. The current annual average for calculated Total Suspended Particulates (TSP) is below the annual average criterion of 90ug/m^3. The TSP is calculated by multiplying the PM_{10} by 2.5. Note: the annual average is calculated from 1 July 2025 and therefore an annual amount of data has not been collected.

The quarterly TEOM calibration was conducted in July 2025 (for June). The next calibration is due to be completed in September 2025. The calibration certificate is provided in **Appendix 1** (when required).

Table 2: Average Daily 24-hr TEOM PM_{10} and TSP Results for August 2025 from AQMS and Annual Average PM_{10} calculated from 1 July 2025.

Date	PM_{10} 24-hr Average ($\mu g/m^3$)	PM_{10} Annual Average ($\mu g/m^3$)	24-hr Average TSP* ($\mu g/m^3$)	Annual Average TSP** ($\mu g/m^3$)
1/08/2025	7.1	10.0	17.8	25.1
2/08/2025	6.6	9.9	16.5	24.8
3/08/2025	8.5	9.9	21.3	24.7
4/08/2025	10.2	9.9	25.5	24.7
5/08/2025	9.8	9.9	24.5	24.7
6/08/2025	12.1	9.9	30.3	24.9
7/08/2025	15.3	10.1	38.3	25.3
8/08/2025	16.5	10.3	41.3	25.8
9/08/2025	8.0	10.2	20.0	25.6
10/08/2025	6.3	10.1	15.8	25.3
11/08/2025	8.2	10.1	20.5	25.2
12/08/2025	7.8	10.0	19.5	25.0
13/08/2025	14.2	10.1	35.5	25.3
14/08/2025	10.7	10.1	26.8	25.3
15/08/2025	9.3	10.1	23.3	25.3
16/08/2025	7.4	10.0	18.5	25.1
17/08/2025	8.4	10.0	21.0	25.0
18/08/2025	10.9	10.0	27.3	25.1
19/08/2025	10.0	10.0	25.0	25.1
20/08/2025	5.7	9.9	14.3	24.8
21/08/2025	6.5	9.9	16.2	24.6
22/08/2025	ND	9.9	ND	24.6
23/08/2025	ND	9.9	ND	24.6
24/08/2025	ND	9.9	ND	24.6
25/08/2025	ND	9.9	ND	24.6
26/08/2025	10.5	9.9	26.3	24.7
27/08/2025	9.2	9.9	23.0	24.6
28/08/2025	14.1	9.9	35.3	24.9
29/08/2025	15.4	10.1	38.5	25.1
30/08/2025	10.2	10.1	25.5	25.1
31/08/2025	8.0	10.0	20.0	25.0

*Calculated from PM10

**Calculated from PM10 Annual Average

Note: results above the Dixon Sand EPL criteria limit of 42 ug/m^3 are highlighted in yellow

No Data (ND) - <18hrs hour of valid data to calculate a 24hr average

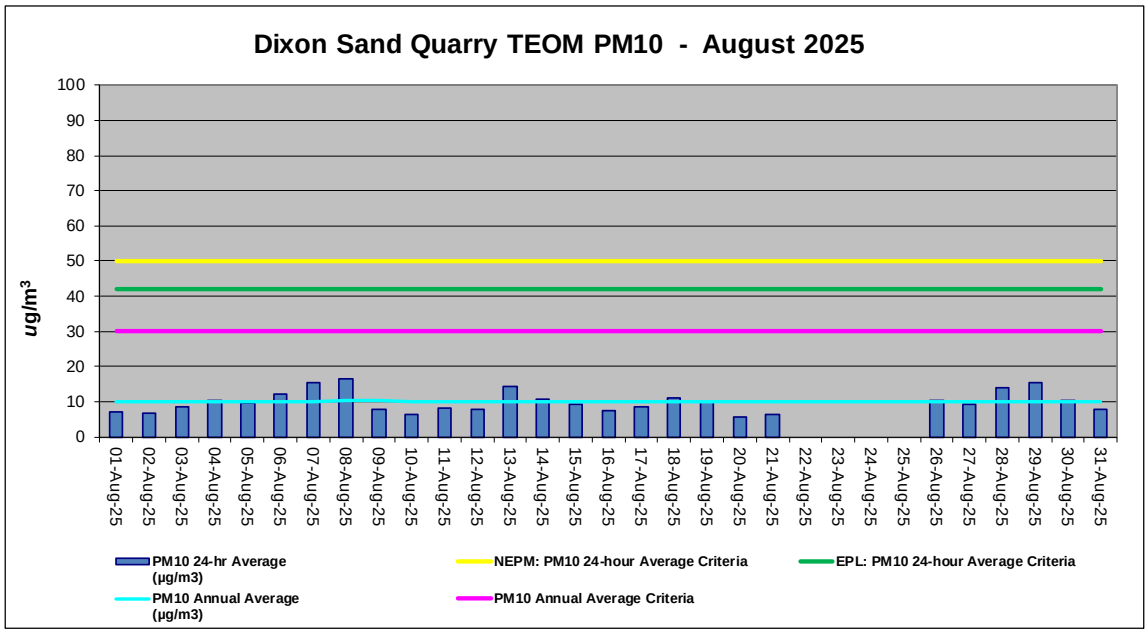


Figure 1: *TEOM PM_{10} 24 hr, Annual Average and Criteria*

3.2 Meteorological Data

The weather station logs data at 5-minute intervals and sends the data to a web database by NextG telemetry. The data is accessible from the web site http://console.teledata.com.au/index.html.

A summary of monthly results is presented in **Table 3**. Charts of meteorological parameters are presented in **Figures 2** and **3**. A Windrose is provided in **Figure 4**.

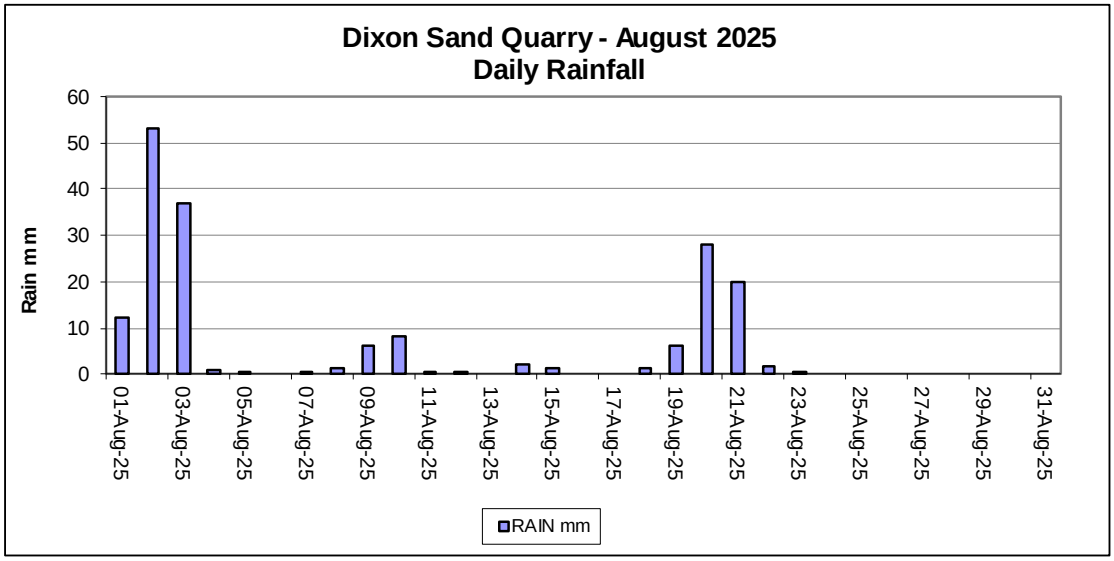
A 6-monthly physical screening and system check of the meteorological station was conducted in July 2025 (for June). The next physical screening and system check is currently scheduled for December 2025. The screening and system check certificates are provided in **Appendix 1** (when required).

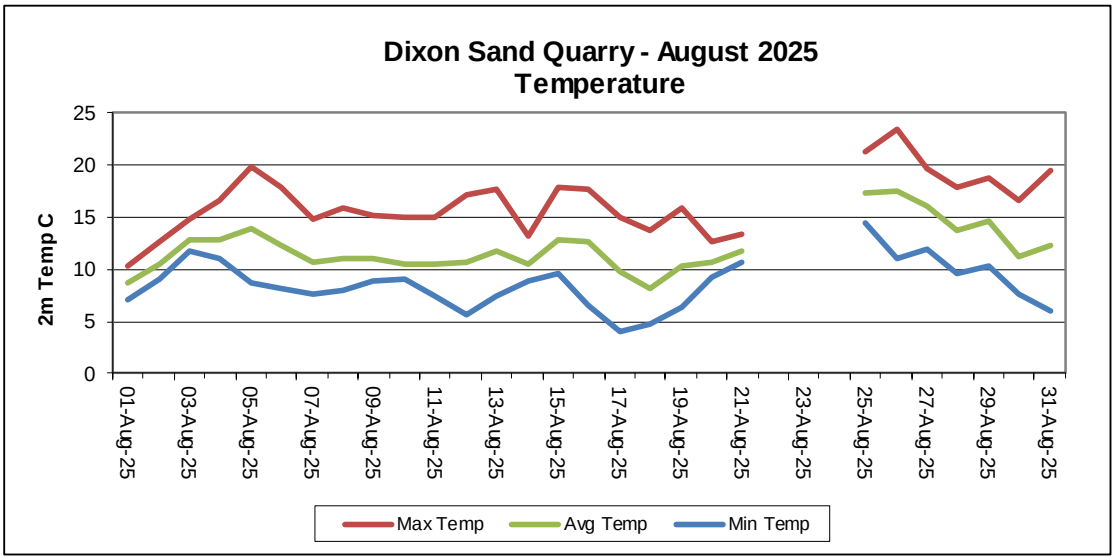
Approximately 91.1% of valid meteorological data was recorded for August 2025.

Table 3: Meteorological Data Summary for August 2025

Date	Min Temp	Avg Temp	Max Temp	RAIN mm	Min WS	Avg WS	Max WS	Min Humidity	Avg Humidity	Max Humidity	Min Pressure	Avg Pressure	Max Pressure
1/08/2025	7.0	8.7	10.3	12.4	0.4	4.6	11.7	80.0	88.9	95.9	992.7	994.3	996.2
2/08/2025	9.1	10.6	12.7	53.0	0.6	5.0	16.0	85.1	93.8	96.5	988.5	990.9	992.6
3/08/2025	11.7	12.8	14.8	36.8	0.4	5.4	16.8	90.5	94.3	96.9	990.5	993.2	995.4
4/08/2025	11.1	12.8	16.6	0.8	0.0	3.5	10.4	78.8	92.2	97.1	992.0	994.0	996.0
5/08/2025	8.7	13.9	19.8	0.2	0.2	3.5	13.0	55.3	78.3	96.5	988.1	990.3	992.1
6/08/2025	8.2	12.3	17.9	0.0	0.2	3.1	10.8	43.5	62.7	81.8	990.8	993.1	996.4
7/08/2025	7.7	10.6	14.8	0.2	0.3	4.2	11.1	60.6	75.7	92.7	996.3	1000.1	1003.7
8/08/2025	8.0	11.0	15.9	1.2	1.0	4.6	9.8	56.2	77.8	92.0	1002.9	1003.9	1005.4
9/08/2025	8.8	10.9	15.1	6.0	0.7	4.7	19.1	73.4	91.3	95.6	1000.9	1003.1	1005.2
10/08/2025	9.0	10.5	14.9	8.4	0.4	4.5	14.2	73.3	92.7	96.4	999.0	1000.6	1002.2
11/08/2025	7.4	10.4	14.9	0.2	0.4	4.2	11.6	65.0	84.9	95.8	997.5	999.1	1000.7
12/08/2025	5.6	10.7	17.1	0.2	0.1	2.5	8.2	47.4	79.0	96.1	995.9	997.8	999.2
13/08/2025	7.5	11.8	17.6	0.0	0.0	2.8	10.9	46.7	74.3	90.6	995.5	996.9	998.1
14/08/2025	8.8	10.5	13.2	2.0	0.3	4.7	12.0	71.9	86.1	94.8	996.7	997.6	998.5
15/08/2025	9.6	12.9	17.8	1.2	0.0	3.2	13.6	59.9	80.6	95.5	987.7	991.8	996.8
16/08/2025	6.5	12.7	17.6	0.0	0.2	4.5	16.1	36.9	58.8	73.5	983.0	985.9	988.8
17/08/2025	4.0	9.7	14.9	0.0	0.2	3.0	11.8	36.2	56.0	79.9	988.5	990.8	994.2
18/08/2025	4.8	8.1	13.8	1.4	0.1	4.9	16.1	55.6	75.1	95.2	994.0	998.2	1001.8
19/08/2025	6.4	10.3	15.9	6.2	0.0	4.0	13.0	61.9	86.7	95.4	1000.6	1002.3	1004.0
20/08/2025	9.2	10.6	12.6	28.0	0.0	3.1	15.0	83.7	93.6	96.0	1000.1	1002.1	1004.4
21/08/2025	10.7	11.8	13.4	20.0	0.2	3.6	22.9	88.3	93.4	96.3	996.1	998.5	1000.4
22/08/2025				1.6									
23/08/2025				0.2									
24/08/2025				0.0									
25/08/2025	14.4	17.2	21.2	0.0	0.5	3.7	11.5	55.2	70.0	83.0	989.2	990.8	992.4
26/08/2025	11.1	17.6	23.5	0.0	0.5	6.0	24.3	41.1	67.1	92.5	979.5	986.1	991.5
27/08/2025	12.0	16.0	19.7	0.0	0.7	7.3	24.8	45.0	58.3	65.5	974.7	977.0	979.6
28/08/2025	9.5	13.8	17.9	0.0	0.2	6.2	21.9	33.7	46.8	65.7	977.4	979.6	982.5
29/08/2025	10.3	14.6	18.7	0.0	0.2	6.6	25.3	33.7	45.0	63.5	976.9	980.2	982.9
30/08/2025	7.6	11.2	16.6	0.0	0.2	5.8	18.5	37.8	53.5	69.9	977.6	985.0	995.5
31/08/2025	6.0	12.3	19.4	0.0	0.1	2.7	12.1	38.4	56.8	75.7	994.2	996.1	998.5
Monthly	**4.0**	**12.0**	**23.5**	**180.0**	**0.0**	**4.4**	**25.3**	**33.7**	**75.5**	**97.1**	**974.7**	**993.5**	**1005.4**

No data available likely due to power outage from storm-related rain event resulting in data loss





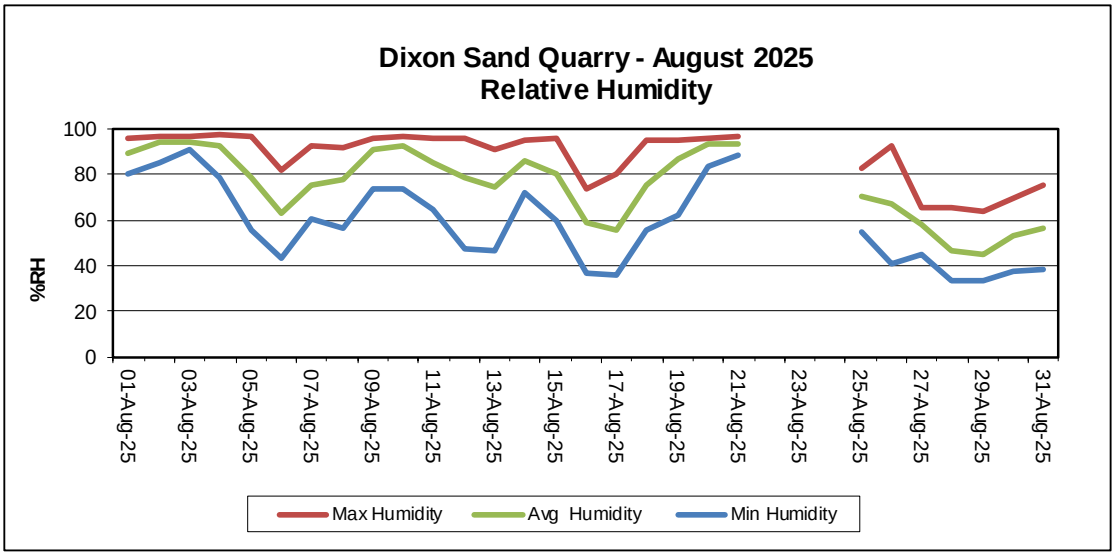


Figure 2: *Daily Rainfall, Temperature and Relative Humidity Charts*

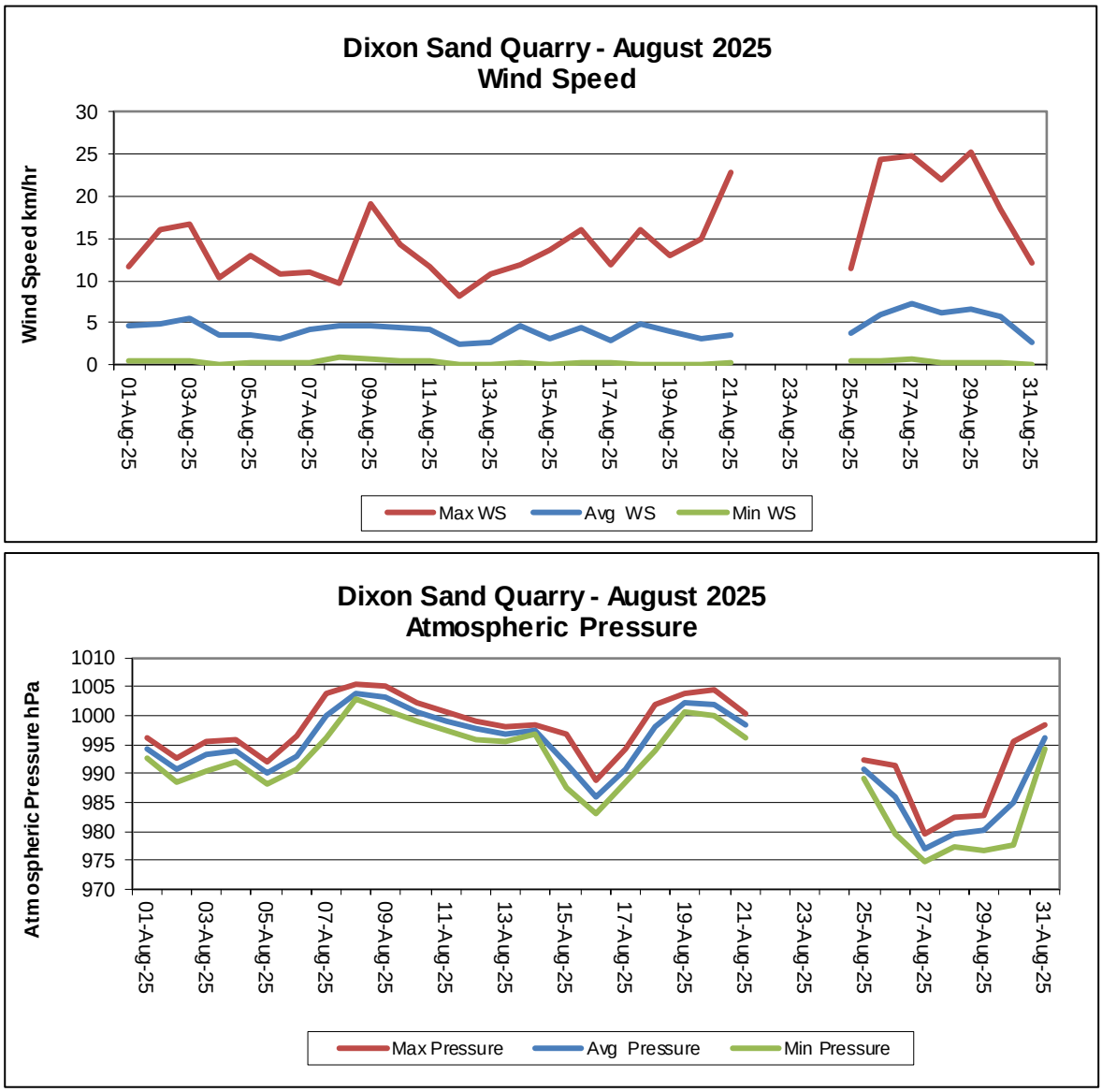


Figure 3: *Wind Speed and Atmospheric Pressure Chart*

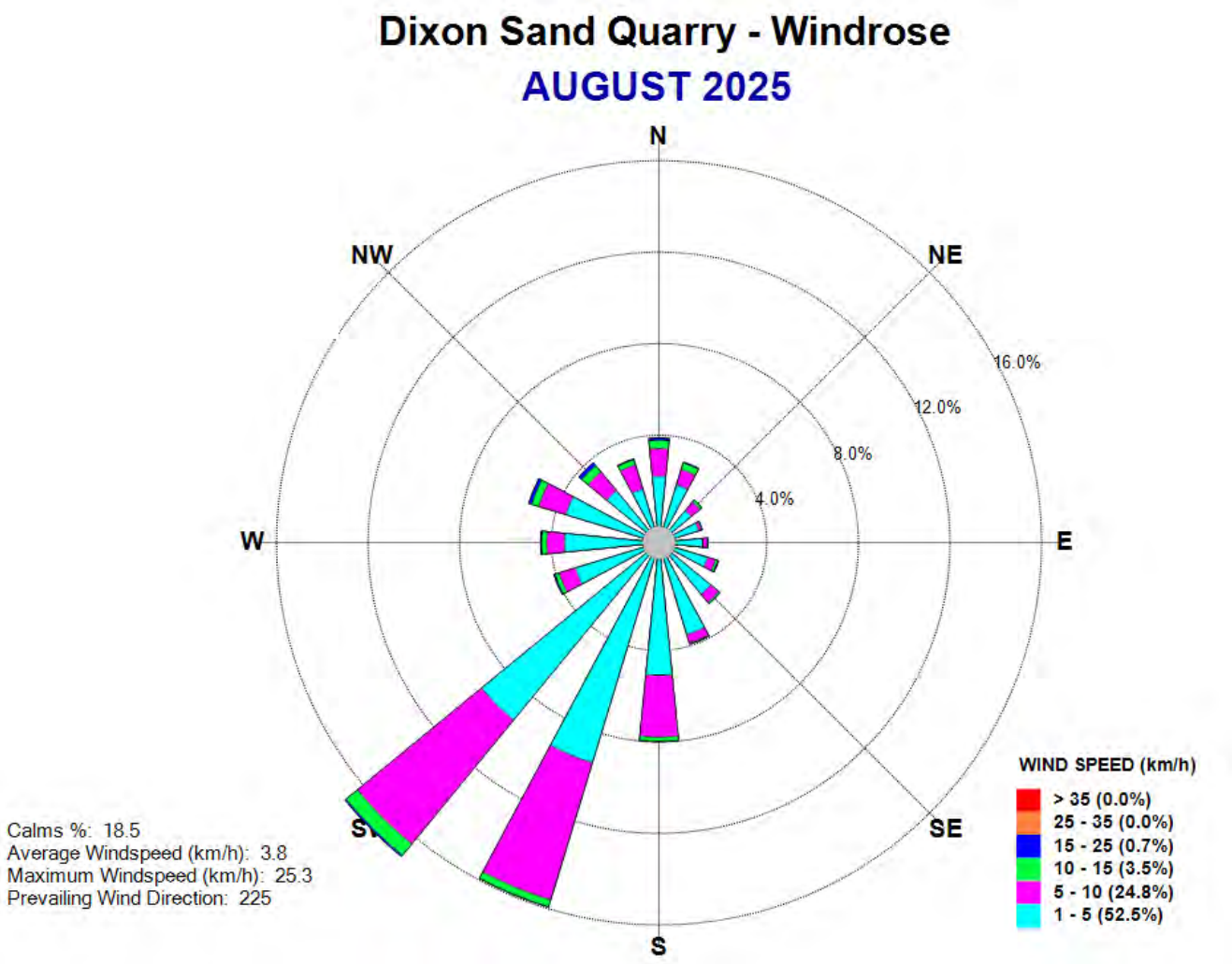


Figure 4: *Windrose*

Appendix 1

Calibration Documents (when required)

CARBON BASED ENVIRONMENTAL

Continuous Air Quality Monthly/Quarterly/Six Monthly/Annual TEOM Maintenance and Calibration – 1400AB

teledata

TEOM Client/Site: Dixon Street TEOM1 **Date:** 15.9.25

1. TEOM Data Screen

SERIAL No: 25570 **Firmware:** AB.

Condition	Current Data	Acceptable Data	Pass (Tick)	Fail (Tick)
Operating Condition	4	Green - Normal	✓	
Date/time	TEOM: 15.9.25 13.26 Actual: 15.9.25 13.27	Current Date/time correct within 5 minutes	✓	
PM-10 24hr av	18.90	Positive values	✓	
Filter loading PM10	44	<80 %	✓	
Frequency PM-10	255.47622	200-300 Hz	✓	
Noise PM-10	0.042	<0.100ug	✓	

Comment: If filter load >80% but <90% and if flows Ok then data is OK

Comments:

2. System Status

Condition	Current Data	Acceptable Data	Pass (Tick)	Fail (Tick)
Vacuum pump pressure	0.35	<0.50 atm	✓	
Warnings	NIL	No Warnings	✓	
If any warnings list:				

Comments:

Data Downloaded: YES/NO (circle)

Technician Name : COLIN DAVIES **Signed**

3. Instrument Conditions Ambient Conditions and Temperatures

Condition	Current Data	Acceptable Data	Pass (Tick)	Fail (Tick)
Ambient Temperature	26.2	-10 to 50 C	✓	
Ambient Dew Point	~~0.969~~ NA	-10 to 50 C	NA	
Ambient Pressure	0-969	0.9-1.1 atm	✓	
Ambient Relative Humidity	NA	10-100 %RH	NA	
Cap temperature	50.00	50.00 +/- 0.10 C	✓	
Case temperature	50.00	50.00 +/- 0.10 C	✓	
Main (PM-10) Air Tube temp	50.00	50.00 +/- 0.10 C	✓	

Comments:

4. Instrument Conditions – Flows

Condition	Current Data	Acceptable Data	Pass (Tick)	Fail (Tick)
Main (PM-10) Flow rate	3.00	2.82 – 3.18 lpm	✓	
Bypass Flow rate	13.67	12.95 – 14.39 lpm	✓	
Total Flow rate	16.67	15.67 – 17.67 lpm	✓	

Comments:

Results: (Tick box)

☑ **There were NO equipment faults found. No action required – (file report)**

☐ **There were faults found (Fails) – Were these fixed on site: YES/NO (circle)**
Any Fails that cannot be repaired on site must be reported to CBased:
Office: 65713334 or email cbased@bigpond.com
Date faults notified to CBased: _____

Comments/Action Required:

Calibration/Maintenance

1. 1405A: Were Filters replaced (YES/NO)
2. PM10 Inlet head cleaned (YES/NO)
3. If measurement filters were replaced, confirm stable results after change. Stable particulate results confirmed (YES/NO)

Channel	Filter Load %	Frequency Hz initial	Frequency check 1min	Frequency check 3min	Frequency check 5min
PM10	19	255.82081	255.82095	255.82125	255.82130

✓OK

Frequency should not drift by more than 0.0010 between readings (if instrument is thermodynamically stable) Pass/Fail – if Fail – install new filter and redo stability test.

Noise: 0.073 ✓ok

4. Instrument clock verified (Refer Section 1) (YES/NO.
If Time changed – clock reset OK YES/NO or (NA) (not changed)
Comments:

decided later and all OK.

5. Were TEOM in line and rear TEOM filters checked for cleanliness and replaced if necessary. (YES/NO.
Comments if changed:

6. TEOM Cleaned and Air Conditioner checked (YES/NO. Air Conditioner settings or operational status: as left ✓

Tetracal Flow/Temp/Pressure Calibrator Serial No: TET005 **Refer to calibration corrections for Temperature/Pressure and Flows and apply to all readings.**

Quarterly or Six Monthly Calibration

1. Flow Verification – Conducted (YES/NO

PM10 Flow verified Flow l/min 2.95 Error % 1.7 (allowed error <6%) (PASS/FAIL

Bypass Flow verified Flow l/min 13.65 Error % 0.1 (allowed error <6%) (PASS/FAIL
If fail then complete a full multipoint recalibration and review previous data from last good flow check. **Comments if Flows recalibrated:** Recalibrated final PM10 Main 3.01 C/min Bypass 13.68 L/min

2. Leak Check – Conducted YES/NO

PM10 actual 0.14 < Limit 0.15

Bypass actual 0.12 < Limit 0.60

Leak check (PASS/FAIL – If fail then find leak and retest.
Comments:
Slight leak in Mass transducer OK for now.

Annual Calibration/Maintenance

1. Temperature and Pressure Calibration – Conducted YES/NO
Reference Temperature: _____C TEOM Temperature_____C
if difference +/- 1 C recalibrate sensor. Sensor recalibrated YES/NO

Reference Pressure: _____atm TEOM Pressure_____atm
if difference +/- 0.010 atm recalibrate sensor. Sensor recalibrated YES/NO

Note: Tetracal measures Atmospheric Pressure in mm Hg or mb or hPa
For mb or hPa divide tetracal result by 1013.25 to change units to atm.
For mmHg divide tetracal result by 760 to change units to atm.

2. Flow Calibration – Conducted YES/NO
PM10
Set point 2.4 Actual:_____
Set point 3.6 Actual:_____
Set point 3.0 Actual:_____ After calibration Final:_____l/min

BYPASS
Set point 10.9 Actual:_____
Set point 16.4 Actual:_____
Set point 13.67 Actual:_____ After calibration Final:_____l/min

3. Mass calibration (K0) Verification – Conducted YES/NO
Actual measured KO = _____ TEOM stated K0_____ Error %:_____
Allowed Error +/- 2.5%. PASS/FAIL
If Error +/- 2.5% repeat. If confirmed consult manufacturer.
Second Error % =_____ PASS/FAIL. Comments:
If second test fails consult manufacturer.

4. Annual Noise check - Conducted YES/NO
Zero filter applied to TEOM and TEOM operated for at least 12 hours:
Start date/time: _____Finish date/time:_____
Standard deviation of all recorded data (min 30 min averages) = _____ug/m^3
Noise was less than 5ug/m^3 YES/NO

5. Maintenance
Air Inlet system cleaned YES/NO
Pump Reconditioned YES/NO
Check Waterproofing YES/NO
Comments:

CBased Environmental Pty Limited
ABN 62 611 924 264

Dixon Sand Quarry

Environmental Monitoring
Air Quality

Tapered Element Oscillating Microbalance (TEOM) (PM_{10}) and Meteorological Data

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September 2025

Colin Davies BSc MEIA CENVP
Environmental Scientist
Date 21 October 2025

CBased Environmental Pty Ltd
Unit 3, 2 Enterprise Crescent SINGLETON NSW 2330
☎ (02) 65713334

1.0 Summary

CBased Environmental Pty Limited is contracted by Dixon Sand to conduct continuous Tapered Element Oscillating Microbalance (TEOM) for fine particulates (PM_{10}) and meteorological monitoring for the Dixon Sand Quarry. The information is required to assess air quality levels. The results for the TEOM and meteorological site are included in this report.

The monitoring programme includes:

- One continuous TEOM PM_{10} monitor; and
- One continuous meteorological station.

This monthly report for September 2025 was prepared by CBased Environmental and includes the following:

- TEOM (PM_{10}) monitoring results; and
- Meteorological results.

In accordance with Schedule 3, Condition 7 of the Dixon Sand development Consent and the Dixon Sand EPL;

- 24-hour average PM_{10} results were below the NEPM 24-hour maximum criteria of 50ug/m^3;
- 24-hour average PM_{10} results were below the Dixon Sand Quarry EPL limit of 42ug/m^3
- The PM_{10} annual average is below the Dixon Sand Quarry consent annual average criteria of 30ug/m^3; and
- The calculated TSP is below the Dixon Sand Quarry annual average criteria of 90ug/m^3.

Note: Based on the available data, statements in green indicate current conformance to Dixon Sand Quarry Air Quality Impact Assessment criteria, statements in red indicate possible non-conformance. Year to date annual average for PM_{10} is calculated from 1 July 2024 for TEOM's coinciding with the Dixon Sand project year.

Approximately 100% of valid meteorological data was recorded for September 2025

Approximately 99.7% of valid TEOM data was available for September 2025.

2.0 Sampling Programme

The TEOM is sited and operated to the applicable Australian Standard and/or NSW EPA approved methods. The following Australian Standards were used:

- AS3580.9.8 - "*Methods for Sampling and Analysis of Ambient Air. Determination of Suspended Particulates—PM_{10} continuous direct mass method using a tapered element oscillating microbalance analyser*"; and
- AS/NZS 3580.1.1 - "*Methods for Sampling and Analysis of Ambient Air Part 1.1 Guide to Siting Air Monitoring Equipment*".

TEOM PM_{10} results are 24-hour averages at midnight and are reported as $\mu g/m^3$ corrected to 0 degrees C and 101.3kPa.

All laboratory analysis was conducted by a National Association of Testing Authorities (NATA) accredited laboratory.

Air Quality monitoring site descriptions and locations are provided in **Table 1**.

Table 1: Dixon Sand Air Quality Monitoring Description and Locations

Monitor	Site Code	Location Description
TEOM PM_{10}	TEOM	Old North Road, Maroota NSW
Meteorological Station	MET	Old North Road, Maroota NSW

3.0 Results

3.1 TEOM PM_{10}

24-hour average TEOM PM_{10} results from the AQMS data collection software are provided in **Table 2** and a chart of the data is provided in **Figure 1**.

During the September 2025 monitoring period, individual 24-hour TEOM PM_{10} results were below the National Environmental Protection Measure (NEPM) short-term (24hr) impact criteria of 50ug/m3 and the Dixon Sand Quarry EPL limit of 42ug/m3.

Approximately 99.7% of valid TEOM data was available for September 2025.

At present, the current TEOM PM_{10} annual average is below the Dixon Sand Quarry annual average PM_{10} criteria of 30ug/m^3. The current annual average for calculated Total Suspended Particulates (TSP) is below the annual average criterion of 90ug/m^3. The TSP is calculated by multiplying the PM_{10} by 2.5. Note: the annual average is calculated from 1 July 2025 and therefore an annual amount of data has not been collected.

The quarterly TEOM calibration was conducted on the 16th September 2025. The next calibration is due to be completed in December 2025. The calibration certificate is provided in **Appendix 1** (when required).

Table 2: Average Daily 24-hr TEOM PM_{10} and TSP Results for September 2025 from AQMS and Annual Average PM_{10} calculated from 1 July 2025.

Date	PM_{10} 24-hr Average ($\mu g/m^3$)	PM_{10} Annual Average ($\mu g/m^3$)	24-hr Average TSP* ($\mu g/m^3$)	Annual Average TSP** ($\mu g/m^3$)
1/09/2025	16.9	10.1	42.3	25.4
2/09/2025	16.8	10.3	42.0	25.7
3/09/2025	15.3	10.4	38.3	25.9
4/09/2025	15.0	10.4	37.5	26.1
5/09/2025	17.8	10.6	44.5	26.4
6/09/2025	19.2	10.7	48.0	26.8
7/09/2025	14.2	10.8	35.5	27.0
8/09/2025	25.0	11.0	62.5	27.5
9/09/2025	20.2	11.2	50.5	27.9
10/09/2025	7.8	11.1	19.5	27.8
11/09/2025	8.2	11.1	20.5	27.7
12/09/2025	10.7	11.1	26.8	27.7
13/09/2025	13.9	11.1	34.8	27.8
14/09/2025	8.1	11.1	20.3	27.6
15/09/2025	15.8	11.1	39.5	27.8
16/09/2025	24.8	11.3	61.9	28.3
17/09/2025	14.5	11.4	36.3	28.4
18/09/2025	16.0	11.4	40.0	28.6
19/09/2025	15.6	11.5	39.0	28.8
20/09/2025	9.9	11.5	24.8	28.7
21/09/2025	9.6	11.5	24.0	28.6
22/09/2025	12.7	11.5	31.8	28.7
23/09/2025	10.9	11.5	27.3	28.7
24/09/2025	12.1	11.5	30.3	28.7
25/09/2025	20.0	11.6	50.0	29.0
26/09/2025	28.7	11.8	71.8	29.5
27/09/2025	18.9	11.9	47.3	29.7
28/09/2025	27.4	12.1	68.5	30.2
29/09/2025	13.7	12.1	34.3	30.3
30/09/2025	21.8	12.2	54.5	30.6

*Calculated from PM10

**Calculated from PM10 Annual Average

Note: results above the Dixon Sand EPL criteria limit of 42 ug/m^3 are highlighted in yellow

No Data (ND) - <18hrs hour of valid data to calculate a 24hr average

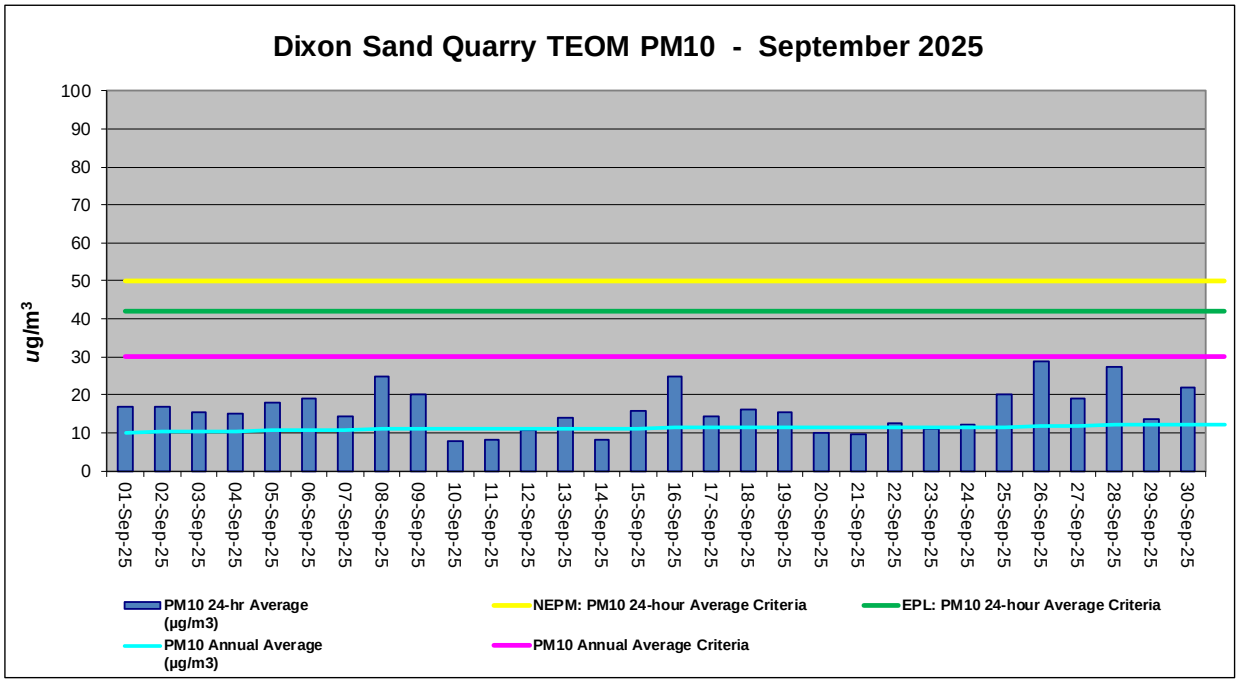


Figure 1: *TEOM PM_{10} 24 hr, Annual Average and Criteria*

3.2 Meteorological Data

The weather station logs data at 5-minute intervals and sends the data to a web database by NextG telemetry. The data is accessible from the web site http://console.teledata.com.au/index.html.

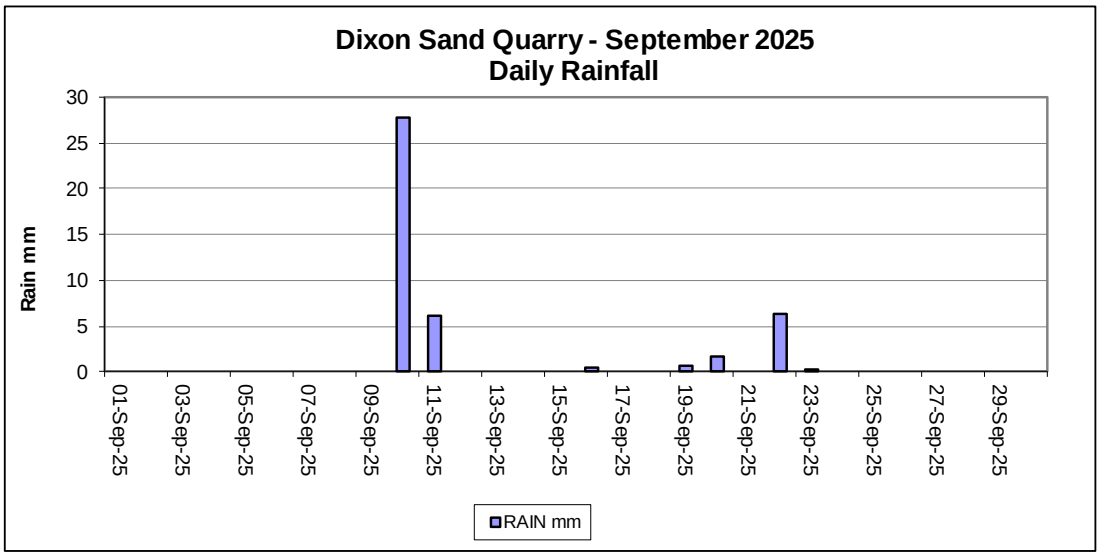
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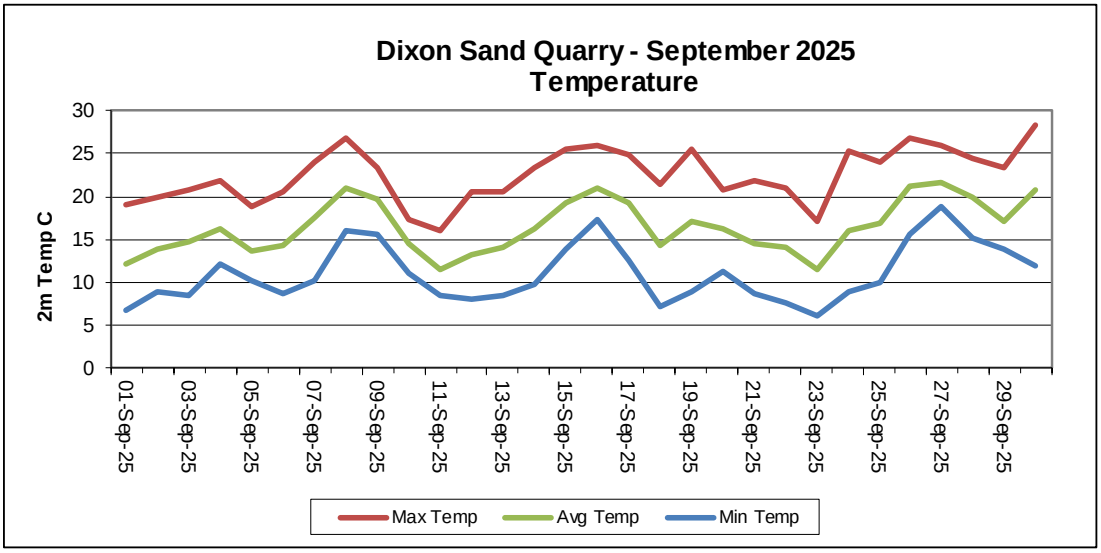
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Approximately 100% of valid meteorological data was recorded for September 2025.

Table 3: Meteorological Data Summary for September 2025

Date	Min Temp	Avg Temp	Max Temp	RAIN mm	Min WS	Avg WS	Max WS	Min Humidity	Avg Humidity	Max Humidity	Min Pressure	Avg Pressure	Max Pressure
1/09/2025	6.8	12.1	19.0	0.0	0.0	2.4	11.2	31.6	65.5	81.2	992.7	995.1	996.8
2/09/2025	9.0	13.8	20.0	0.0	0.1	3.4	16.7	43.4	72.4	87.6	992.1	994.6	997.2
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5/09/2025	10.2	13.6	18.8	0.0	0.2	4.9	16.8	40.4	62.5	77.9	993.5	999.1	1003.9
6/09/2025	8.8	14.3	20.5	0.0	0.0	3.4	16.8	43.5	67.1	83.7	999.0	1001.8	1004.3
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10/09/2025	11.1	14.6	17.4	27.8	0.2	3.4	12.1	71.7	90.8	95.9	974.8	979.7	984.8
11/09/2025	8.4	11.5	16.1	6.2	0.1	4.7	16.5	53.7	75.5	93.1	974.3	983.6	992.2
12/09/2025	8.0	13.2	20.5	0.0	0.2	3.3	15.9	38.0	66.2	84.9	991.9	994.4	997.5
13/09/2025	8.4	14.1	20.6	0.0	0.1	3.5	13.7	37.7	69.1	91.2	995.6	997.6	999.4
14/09/2025	9.8	16.3	23.3	0.0	0.1	3.8	18.6	26.5	58.0	90.2	992.2	995.4	998.2
15/09/2025	13.8	19.3	25.5	0.0	0.1	5.7	24.3	30.6	43.2	54.6	989.1	991.7	994.5
16/09/2025	17.3	21.0	25.9	0.4	0.3	8.0	23.1	40.7	49.8	56.7	984.4	987.3	990.2
17/09/2025	12.6	19.3	24.9	0.0	0.0	4.3	25.7	25.6	49.6	76.9	984.9	988.5	994.8
18/09/2025	7.3	14.3	21.4	0.0	0.0	3.9	11.9	35.3	59.7	87.2	993.0	995.1	997.5
19/09/2025	8.9	17.2	25.5	0.6	0.2	4.1	21.3	29.4	59.8	93.0	983.5	989.4	993.8
20/09/2025	11.2	16.3	20.7	1.6	0.2	5.5	18.7	28.6	55.7	87.9	979.8	982.8	988.3
21/09/2025	8.7	14.5	21.8	0.0	0.1	3.7	12.5	35.0	50.7	64.2	985.9	988.4	990.4
22/09/2025	7.7	14.2	20.9	6.4	0.1	4.9	18.5	36.9	62.7	92.3	988.4	991.2	996.7
23/09/2025	6.2	11.4	17.2	0.2	0.2	4.9	17.5	35.3	61.0	80.1	994.8	996.6	998.9
24/09/2025	8.9	16.1	25.3	0.0	0.2	3.9	10.4	20.6	51.3	73.0	987.0	990.8	994.8
25/09/2025	10.0	16.9	24.0	0.0	0.1	4.4	19.5	23.8	47.5	69.1	985.8	988.4	991.4
26/09/2025	15.5	21.2	26.9	0.0	0.5	6.4	31.5	21.1	34.6	53.1	983.8	986.0	988.1
27/09/2025	18.9	21.7	25.9	0.0	0.8	8.6	24.5	30.2	35.3	43.3	984.2	986.2	988.4
28/09/2025	15.1	19.8	24.4	0.0	0.0	6.3	21.7	40.8	59.7	84.1	984.2	986.4	990.4
29/09/2025	13.9	17.1	23.4	0.0	0.0	3.4	17.2	41.1	77.9	93.8	987.4	989.9	992.4
30/09/2025	11.9	20.7	28.4	0.0	0.2	5.8	23.7	29.0	61.9	96.3	976.5	983.1	989.2
Monthly	**6.2**	**16.4**	**28.4**	**43.2**	**0.0**	**4.8**	**32.9**	**20.6**	**58.5**	**96.3**	**974.3**	**990.7**	**1004.3**





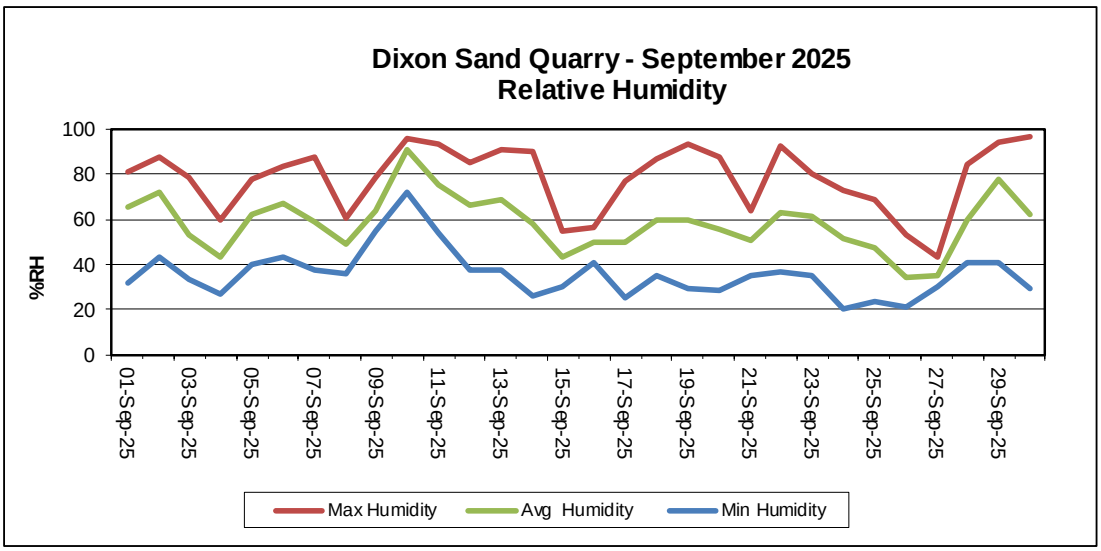


Figure 2: *Daily Rainfall, Temperature and Relative Humidity Charts*

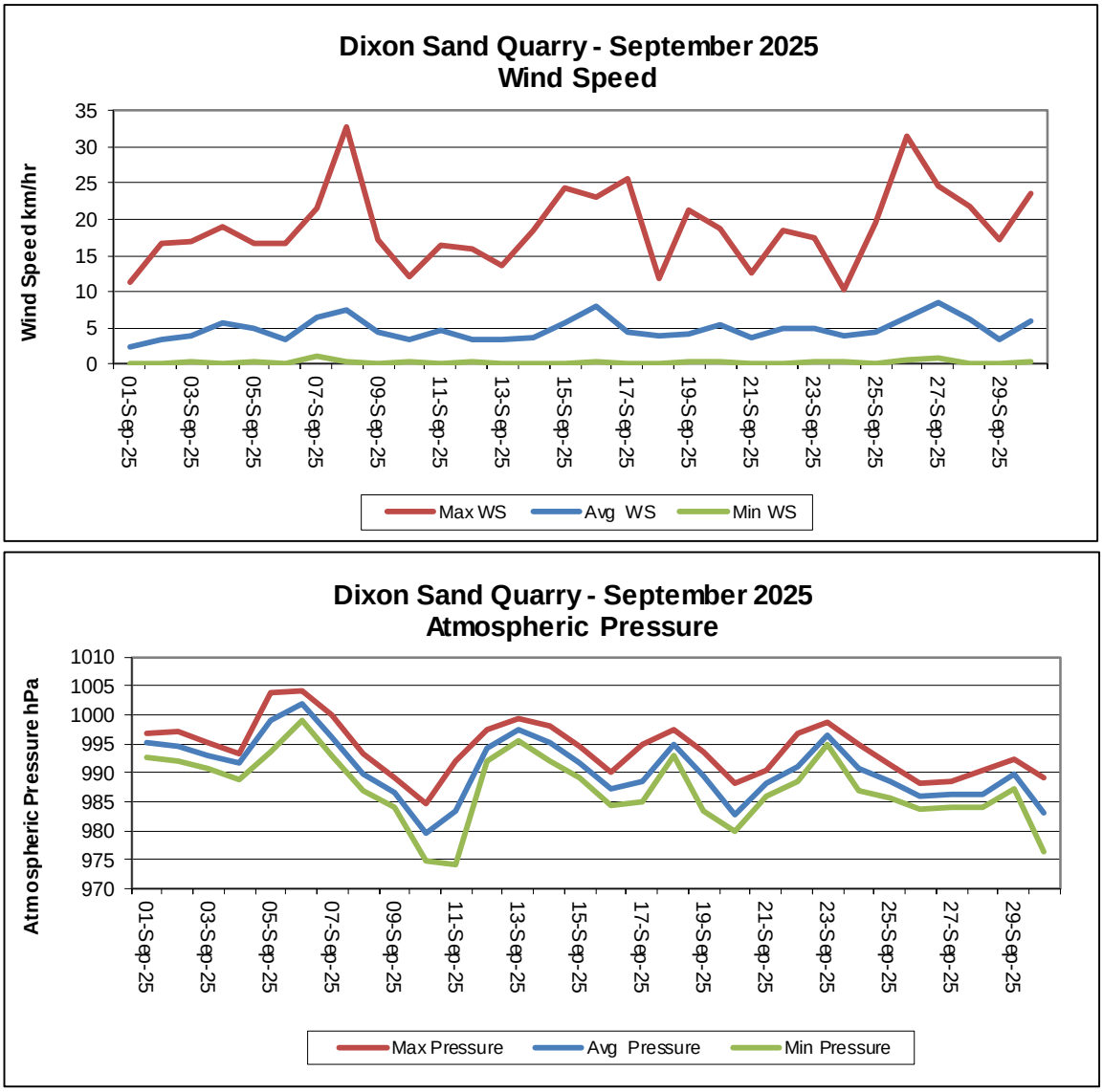


Figure 3: *Wind Speed and Atmospheric Pressure Chart*

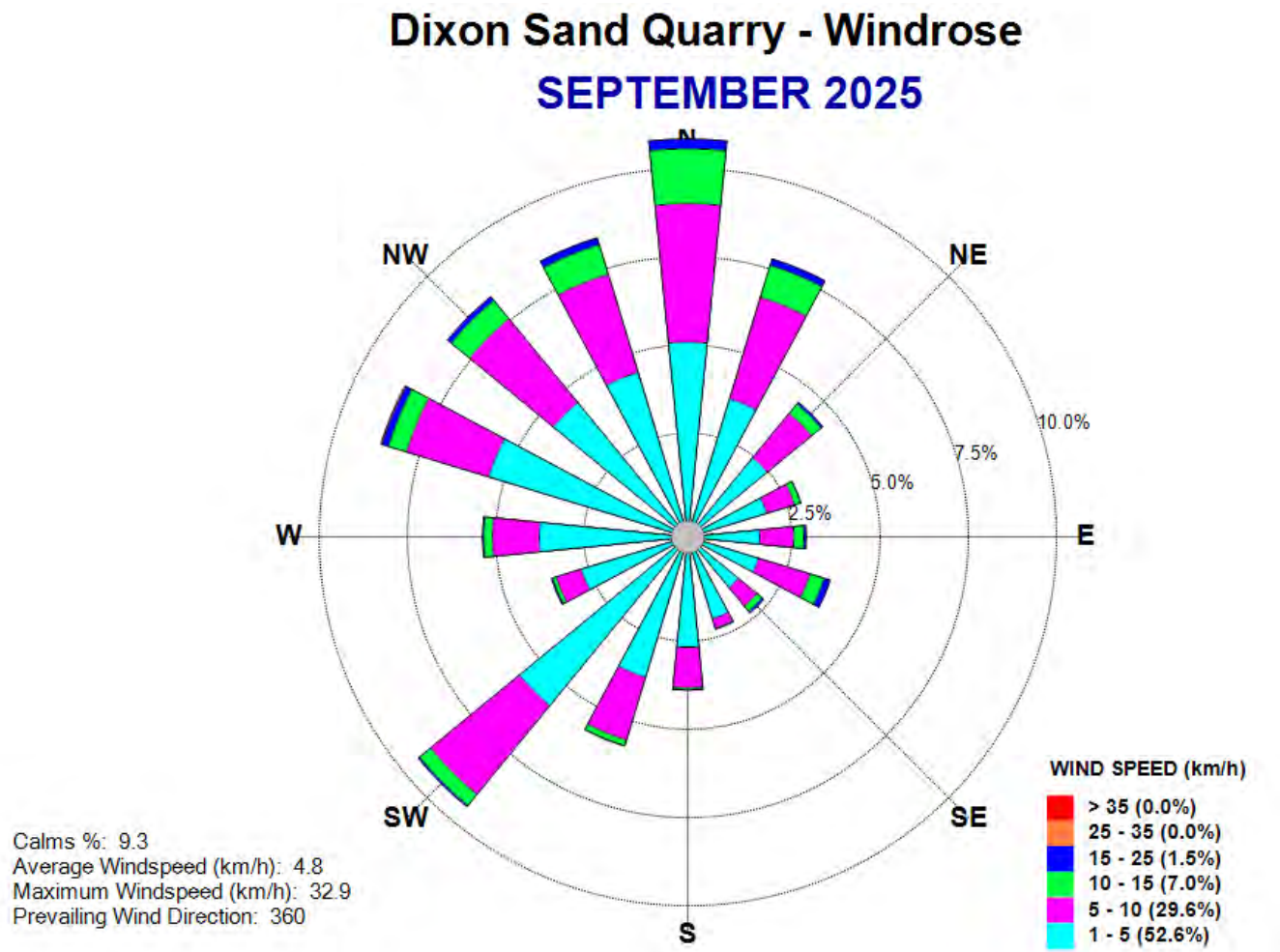


Figure 4: *Windrose*

Appendix 1

Calibration Documents (when required)

CARBON BASED ENVIRONMENTAL

Continuous Air Quality Monthly/Quarterly/Six Monthly/Annual TEOM Maintenance and Calibration – 1400AB

teledata

TEOM Client/Site: Dixon Street TEOM1 **Date:** 15.9.25

1. TEOM Data Screen

SERIAL No: 25570 **Firmware:** AB.

Condition	Current Data	Acceptable Data	Pass (Tick)	Fail (Tick)
Operating Condition	4	Green - Normal	✓	
Date/time	TEOM: 15.9.25 13.26 Actual: 16.9.25 13.27	Current Date/time correct within 5 minutes	✓	
PM-10 24hr av	18.90	Positive values	✓	
Filter loading PM10	44	<80 %	✓	
Frequency PM-10	255.47622	200-300 Hz	✓	
Noise PM-10	0.042	<0.100ug	✓	

Comment: If filter load >80% but <90% and if flows Ok then data is OK

Comments:

2. System Status

Condition	Current Data	Acceptable Data	Pass (Tick)	Fail (Tick)
Vacuum pump pressure	0.35	<0.50 atm	✓	
Warnings	NIL	No Warnings	✓	
If any warnings list:				

Comments:

Data Downloaded: YES/NO (circle)

Technician Name : COLIN DAVIES **Signed**

3. Instrument Conditions Ambient Conditions and Temperatures

Condition	Current Data	Acceptable Data	Pass (Tick)	Fail (Tick)
Ambient Temperature	26.2	-10 to 50 C	✓	
Ambient Dew Point	~~0.969~~ NA	-10 to 50 C	NA	
Ambient Pressure	0-969	0.9-1.1 atm	✓	
Ambient Relative Humidity	NA	10-100 %RH	NA	
Cap temperature	50.00	50.00 +/- 0.10 C	✓	
Case temperature	50.00	50.00 +/- 0.10 C	✓	
Main (PM-10) Air Tube temp	50.00	50.00 +/- 0.10 C	✓	

Comments:

4. Instrument Conditions – Flows

Condition	Current Data	Acceptable Data	Pass (Tick)	Fail (Tick)
Main (PM-10) Flow rate	3.00	2.82 – 3.18 lpm	✓	
Bypass Flow rate	13.67	12.95 – 14.39 lpm	✓	
Total Flow rate	16.67	15.67 – 17.67 lpm	✓	

Comments:

Results: (Tick box)

☑ **There were NO equipment faults found. No action required – (file report)**

☐ **There were faults found (Fails) – Were these fixed on site: YES/NO (circle)**
Any Fails that cannot be repaired on site must be reported to CBased:
Office: 65713334 or email cbased@bigpond.com
Date faults notified to CBased: _____

Comments/Action Required:

Calibration/Maintenance

1. 1405A: Were Filters replaced (YES/NO)
2. PM10 Inlet head cleaned (YES/NO)
3. If measurement filters were replaced, confirm stable results after change. Stable particulate results confirmed (YES/NO)

Channel	Filter Load %	Frequency Hz initial	Frequency check 1min	Frequency check 3min	Frequency check 5min
PM10	19	255.82081	255.82095	255.82125	255.82130

✓OK

Frequency should not drift by more than 0.0010 between readings (if instrument is thermodynamically stable) Pass/Fail – if Fail – install new filter and redo stability test.

Noise: 0.073 ✓ok

4. Instrument clock verified (Refer Section 1) (YES/NO.
If Time changed – clock reset OK YES/NO or (NA) (not changed)
Comments:

decided later and all OK.

5. Were TEOM in line and rear TEOM filters checked for cleanliness and replaced if necessary. (YES/NO.
Comments if changed:

6. TEOM Cleaned and Air Conditioner checked (YES/NO. Air Conditioner settings or operational status: as left ✓

Tetracal Flow/Temp/Pressure Calibrator Serial No: TET005 **Refer to calibration corrections for Temperature/Pressure and Flows and apply to all readings.**

Quarterly or Six Monthly Calibration

1. Flow Verification – Conducted (YES/NO

PM10 Flow verified Flow l/min 2.95 Error % 1.7 (allowed error <6%) (PASS/FAIL

Bypass Flow verified Flow l/min 13.65 Error % 0.1 (allowed error <6%) (PASS/FAIL
If fail then complete a full multipoint recalibration and review previous data from last good flow check. **Comments if Flows recalibrated:** Recalibrated final PM10 Main 3.01 C/min Bypass 13.68 L/min

2. Leak Check – Conducted YES/NO

PM10 actual 0.14 < Limit 0.15

Bypass actual 0.12 < Limit 0.60

Leak check (PASS/FAIL – If fail then find leak and retest.
Comments:
Slight leak in Mass transducer OK for now.

Annual Calibration/Maintenance

1. Temperature and Pressure Calibration – Conducted YES/NO
Reference Temperature: _____C TEOM Temperature_____C
if difference +/- 1 C recalibrate sensor. Sensor recalibrated YES/NO

Reference Pressure: _____atm TEOM Pressure_____atm
if difference +/- 0.010 atm recalibrate sensor. Sensor recalibrated YES/NO

Note: Tetracal measures Atmospheric Pressure in mm Hg or mb or hPa
For mb or hPa divide tetracal result by 1013.25 to change units to atm.
For mmHg divide tetracal result by 760 to change units to atm.

2. Flow Calibration – Conducted YES/NO
PM10
Set point 2.4 Actual:_____
Set point 3.6 Actual:_____
Set point 3.0 Actual:_____ After calibration Final:_____l/min

BYPASS
Set point 10.9 Actual:_____
Set point 16.4 Actual:_____
Set point 13.67 Actual:_____ After calibration Final:_____l/min

3. Mass calibration (K0) Verification – Conducted YES/NO
Actual measured KO = _____ TEOM stated K0_____ Error %:_____
Allowed Error +/- 2.5%. PASS/FAIL
If Error +/- 2.5% repeat. If confirmed consult manufacturer.
Second Error % =_____ PASS/FAIL. Comments:
If second test fails consult manufacturer.

4. Annual Noise check - Conducted YES/NO
Zero filter applied to TEOM and TEOM operated for at least 12 hours:
Start date/time: _____Finish date/time:_____
Standard deviation of all recorded data (min 30 min averages) = _____ug/m^3
Noise was less than 5ug/m^3 YES/NO

5. Maintenance
Air Inlet system cleaned YES/NO
Pump Reconditioned YES/NO
Check Waterproofing YES/NO
Comments:

CBased Environmental Pty Limited
ABN 62 611 924 264

Dixon Sand Quarry

Environmental Monitoring
Air Quality

Tapered Element Oscillating Microbalance (TEOM) (PM_{10}) and Meteorological Data

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October 2025

Colin Davies BSc MEIA CENVP
Environmental Scientist
Date 27 November 2025

CBased Environmental Pty Ltd
Unit 3, 2 Enterprise Crescent SINGLETON NSW 2330
☎ (02) 65713334

1.0 Summary

CBased Environmental Pty Limited is contracted by Dixon Sand to conduct continuous Tapered Element Oscillating Microbalance (TEOM) for fine particulates (PM_{10}) and meteorological monitoring for the Dixon Sand Quarry. The information is required to assess air quality levels. The results for the TEOM and meteorological site are included in this report.

The monitoring programme includes:

- One continuous TEOM PM_{10} monitor; and
- One continuous meteorological station.

This monthly report for October 2025 was prepared by CBased Environmental and includes the following:

- TEOM (PM_{10}) monitoring results; and
- Meteorological results.

In accordance with Schedule 3, Condition 7 of the Dixon Sand development Consent and the Dixon Sand EPL;

- 24-hour average PM_{10} results were below the NEPM 24-hour maximum criteria of 50ug/m^3;
- 24-hour average PM_{10} results were below the Dixon Sand Quarry EPL limit of 42ug/m^3, with the exception of one occurrence on the 22 October 2025 (47.1 ug/m^3)
- The PM_{10} annual average is below the Dixon Sand Quarry consent annual average criteria of 30ug/m^3; and
- The calculated TSP is below the Dixon Sand Quarry annual average criteria of 90ug/m^3.

Note: Based on the available data, statements in green indicate current conformance to Dixon Sand Quarry Air Quality Impact Assessment criteria, statements in red indicate possible non-conformance. Year to date annual average for PM_{10} is calculated from 1 July 2024 for TEOM's coinciding with the Dixon Sand project year.

Approximately 100% of valid meteorological data was recorded for October 2025

Approximately 99.9% of valid TEOM data was available for October 2025.

2.0 Sampling Programme

The TEOM is sited and operated to the applicable Australian Standard and/or NSW EPA approved methods. The following Australian Standards were used:

- AS3580.9.8 - "*Methods for Sampling and Analysis of Ambient Air. Determination of Suspended Particulates—PM_{10} continuous direct mass method using a tapered element oscillating microbalance analyser*"; and
- AS/NZS 3580.1.1 - "*Methods for Sampling and Analysis of Ambient Air Part 1.1 Guide to Siting Air Monitoring Equipment*".

TEOM PM_{10} results are 24-hour averages at midnight and are reported as $\mu g/m^3$ corrected to 0 degrees C and 101.3kPa.

All laboratory analysis was conducted by a National Association of Testing Authorities (NATA) accredited laboratory.

Air Quality monitoring site descriptions and locations are provided in **Table 1**.

Table 1: Dixon Sand Air Quality Monitoring Description and Locations

Monitor	Site Code	Location Description
TEOM PM_{10}	TEOM	Old North Road, Maroota NSW
Meteorological Station	MET	Old North Road, Maroota NSW

3.0 Results

3.1 TEOM PM_{10}

24-hour average TEOM PM_{10} results from the AQMS data collection software are provided in **Table 2** and a chart of the data is provided in **Figure 1**.

During the October 2025 monitoring period, individual 24-hour TEOM PM_{10} results were below the National Environmental Protection Measure (NEPM) short-term (24hr) impact criteria of 50ug/m^3.

During the October 2025 monitoring period, individual 24-hour TEOM PM_{10} results were below the Dixon Sand Quarry EPL limit of 42ug/m3 with exception of one occurrence on 22 October 2025 (47.1ug/m^3) highlighted in yellow in **Table 2.**

Please Note: On 22 October 2025, the Greater Sydney Region experienced extreme weather conditions and fire activity which could have contributed to the Dixon Sand Quarry EPL TEOM PM_{10} exceedance on this day.

Approximately 99.9% of valid TEOM data was available for October 2025.

At present, the current TEOM PM_{10} annual average is below the Dixon Sand Quarry annual average PM_{10} criteria of 30ug/m^3. The current annual average for calculated Total Suspended Particulates (TSP) is below the annual average criterion of 90ug/m^3. The TSP is calculated by multiplying the PM_{10} by 2.5. Note: the annual average is calculated from 1 July 2025 and therefore an annual amount of data has not been collected.

The quarterly TEOM calibration was conducted in September 2025. The next calibration is due to be completed in December 2025. The calibration certificate is provided in **Appendix 1** (when required).

Table 2: Average Daily 24-hr TEOM PM_{10} and TSP Results for October 2025 from AQMS and Annual Average PM_{10} calculated from 1 July 2025.

Date	PM_{10} 24-hr Average ($\mu g/m^3$)	PM_{10} Annual Average ($\mu g/m^3$)	24-hr Average TSP* ($\mu g/m^3$)	Annual Average TSP** ($\mu g/m^3$)
1/10/2025	23.8	12.4	59.5	30.9
2/10/2025	25.0	12.5	62.5	31.3
3/10/2025	21.2	12.6	53.0	31.5
4/10/2025	13.1	12.6	32.8	31.6
5/10/2025	10.0	12.6	25.0	31.5
6/10/2025	20.8	12.7	52.0	31.7
7/10/2025	18.2	12.7	45.5	31.9
8/10/2025	20.4	12.8	51.0	32.1
9/10/2025	18.8	12.9	47.0	32.2
10/10/2025	18.0	13.0	45.0	32.4
11/10/2025	16.5	13.0	41.3	32.5
12/10/2025	19.0	13.1	47.5	32.6
13/10/2025	23.1	13.2	57.8	32.9
14/10/2025	17.9	13.2	44.8	33.0
15/10/2025	25.0	13.3	62.5	33.3
16/10/2025	30.4	13.5	76.0	33.8
17/10/2025	24.1	13.6	60.3	34.0
18/10/2025	20.0	13.7	50.0	34.2
19/10/2025	19.0	13.7	47.5	34.3
20/10/2025	22.9	13.8	57.3	34.5
21/10/2025	28.1	14.0	70.3	34.9
22/10/2025	**47.1**	14.3	117.8	35.7
23/10/2025	33.9	14.5	84.8	36.2
24/10/2025	24.9	14.6	62.3	36.4
25/10/2025	19.7	14.6	49.3	36.5
26/10/2025	17.2	14.6	43.0	36.6
27/10/2025	22.5	14.7	56.3	36.8
28/10/2025	12.7	14.7	31.8	36.7
29/10/2025	9.1	14.6	22.8	36.6
30/10/2025	11.6	14.6	29.0	36.5
31/10/2025	15.1	14.6	37.8	36.5

*Calculated from PM10

**Calculated from PM10 Annual Average

Note: results above the Dixon Sand EPL criteria limit of 42 ug/m^3 are highlighted in yellow

No Data (ND) - <18hrs hour of valid data to calculate a 24hr average

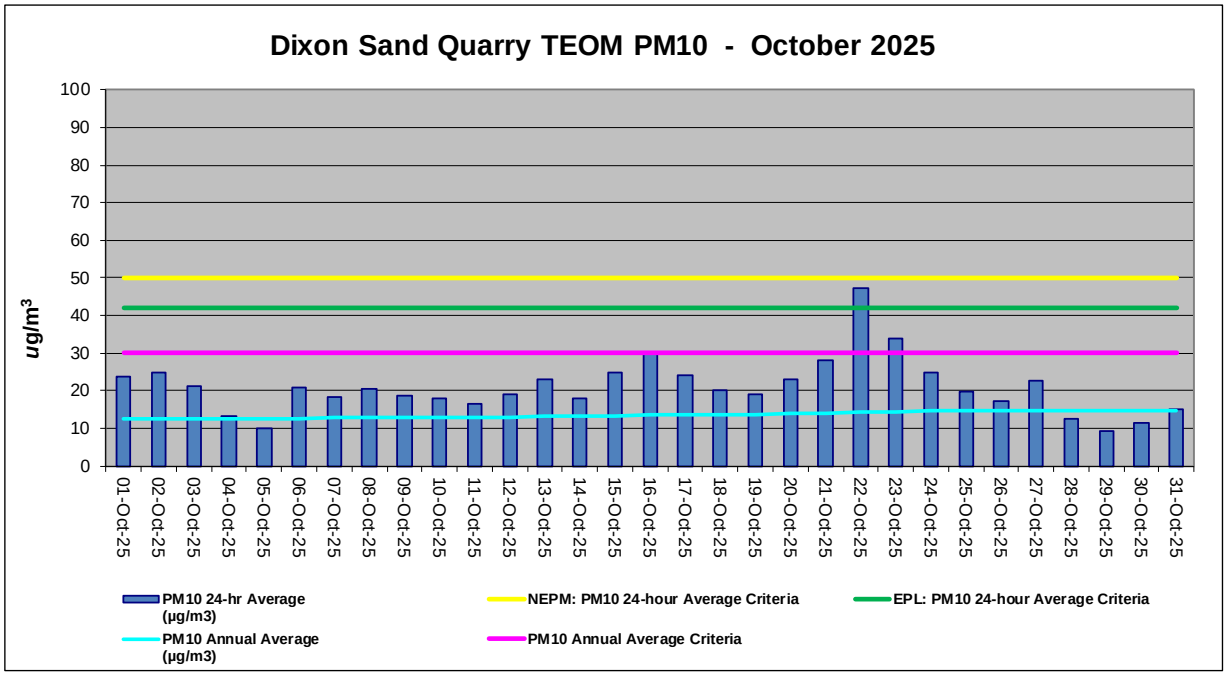


Figure 1: *TEOM PM_{10} 24 hr, Annual Average and Criteria*

3.2 Meteorological Data

The weather station logs data at 5-minute intervals and sends the data to a web database by NextG telemetry. The data is accessible from the web site http://console.teledata.com.au/index.html.

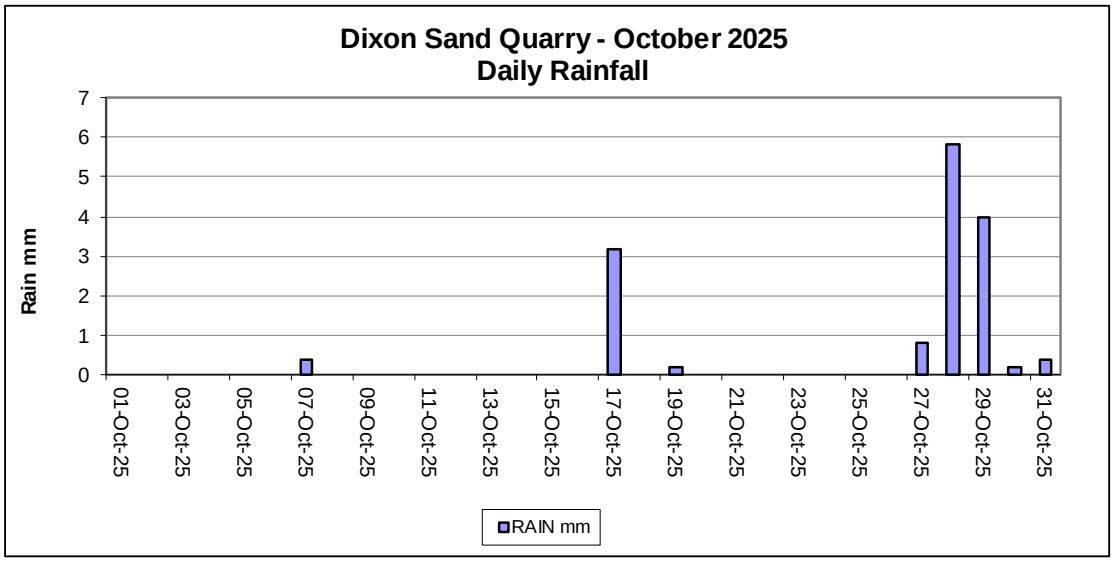
A summary of monthly results is presented in **Table 3**. Charts of meteorological parameters are presented in **Figures 2** and **3**. A Windrose is provided in **Figure 4**.

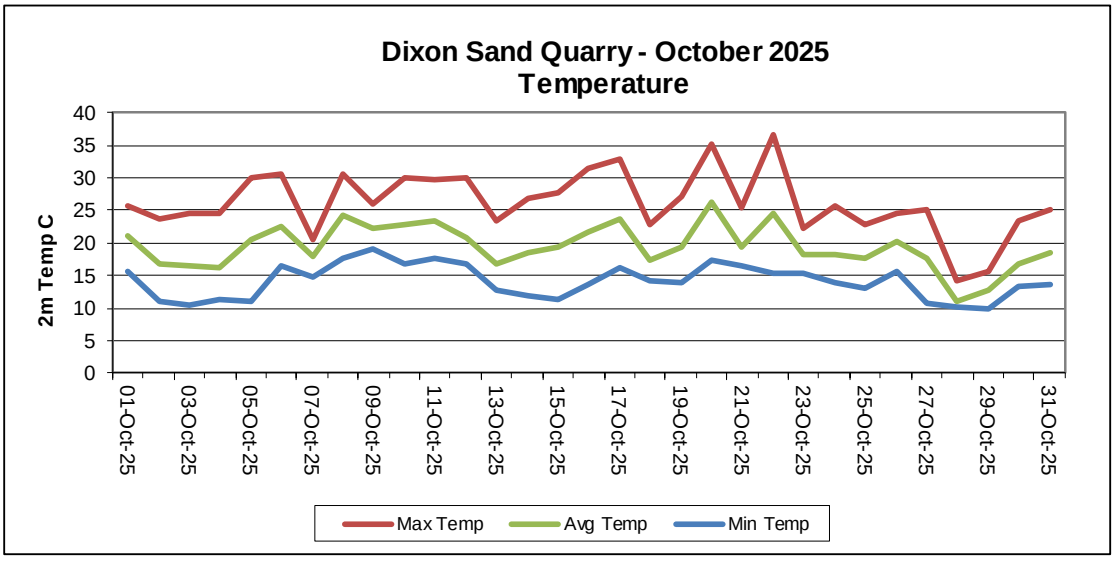
A 6-monthly physical screening and system check of the meteorological station was conducted in July 2025 (for June). The next physical screening and system check is currently scheduled for December 2025. The screening and system check certificates are provided in **Appendix 1** (when required).

Approximately 100% of valid meteorological data was recorded for October 2025.

Table 3: Meteorological Data Summary for October 2025

Date	Min Temp	Avg Temp	Max Temp	RAIN mm	Min WS	Avg WS	Max WS	Min Humidity	Avg Humidity	Max Humidity	Min Pressure	Avg Pressure	Max Pressure
1/10/2025	15.6	21.0	25.8	0.0	0.0	4.9	18.2	19.5	33.7	49.5	975.8	980.3	983.8
2/10/2025	10.9	16.8	23.8	0.0	0.5	6.6	23.6	24.9	38.3	52.0	979.5	983.0	988.0
3/10/2025	10.4	16.6	24.5	0.0	0.2	4.1	20.6	23.8	42.3	59.3	986.7	989.4	994.1
4/10/2025	11.2	16.2	24.5	0.0	0.3	4.0	22.1	30.3	62.9	89.5	993.9	995.5	997.9
5/10/2025	11.1	20.6	30.1	0.0	0.1	4.6	19.8	23.2	55.9	95.9	987.2	991.0	995.7
6/10/2025	16.6	22.4	30.6	0.0	0.2	6.0	22.7	23.7	45.3	83.9	982.4	985.6	990.2
7/10/2025	14.7	17.8	20.6	0.4	0.4	4.4	13.6	61.6	80.5	93.6	984.8	988.1	990.6
8/10/2025	17.6	24.3	30.7	0.0	0.2	6.0	25.1	26.0	44.6	63.1	979.5	983.9	987.5
9/10/2025	19.2	22.4	25.9	0.0	0.3	5.7	23.5	32.6	52.0	67.1	982.9	984.7	987.4
10/10/2025	16.7	22.7	29.9	0.0	0.7	5.5	18.8	19.8	46.6	77.1	984.1	986.0	988.1
11/10/2025	17.5	23.3	29.6	0.0	0.3	4.8	17.4	15.2	29.0	42.3	982.8	985.0	986.9
12/10/2025	16.7	20.8	30.1	0.0	0.3	7.1	26.9	21.1	39.5	67.2	981.4	985.0	987.2
13/10/2025	12.7	16.7	23.3	0.0	0.4	5.5	34.6	29.2	57.3	74.3	986.0	989.5	993.8
14/10/2025	11.8	18.5	26.9	0.0	0.0	3.5	13.5	21.1	52.3	80.6	987.9	991.2	993.8
15/10/2025	11.2	19.3	27.8	0.0	0.0	3.7	20.2	23.8	56.5	82.4	990.4	993.0	995.8
16/10/2025	13.5	21.8	31.3	0.0	0.2	4.4	20.3	26.6	62.0	90.4	987.0	990.5	993.7
17/10/2025	16.3	23.7	32.8	3.2	0.1	6.2	32.6	30.4	57.6	84.8	980.7	985.3	988.1
18/10/2025	14.2	17.5	22.9	0.0	0.4	5.7	23.5	51.7	73.1	93.7	986.2	988.3	991.7
19/10/2025	13.8	19.4	27.2	0.2	0.0	4.4	18.2	35.1	63.9	81.2	984.0	988.2	991.8
20/10/2025	17.3	26.3	35.2	0.0	0.4	5.2	18.3	23.2	47.4	79.8	979.8	983.0	986.6
21/10/2025	16.6	19.4	25.4	0.0	0.1	5.6	26.3	44.5	70.2	83.9	983.3	985.7	989.1
22/10/2025	15.3	24.6	36.5	0.0	0.5	6.6	39.2	26.7	58.8	93.4	970.1	976.4	983.2
23/10/2025	15.2	18.2	22.1	0.0	0.1	5.5	23.3	37.7	54.9	75.1	979.2	985.4	988.5
24/10/2025	13.9	18.2	25.8	0.0	0.0	3.5	21.4	29.3	64.5	79.3	984.0	986.6	990.8
25/10/2025	13.0	17.5	22.9	0.0	0.1	4.3	16.2	40.7	63.2	86.0	984.8	987.8	990.4
26/10/2025	15.5	20.3	24.5	0.0	0.1	5.1	18.3	35.9	49.3	64.0	973.3	978.4	985.2
27/10/2025	10.6	17.7	25.2	0.8	0.0	5.0	14.7	29.8	63.9	91.1	973.1	979.0	991.0
28/10/2025	10.2	11.1	14.1	5.8	0.0	2.7	13.6	54.9	81.5	94.6	990.3	992.2	993.7
29/10/2025	9.9	12.7	15.5	4.0	0.0	2.5	9.0	82.2	92.5	96.5	988.3	990.1	992.4
30/10/2025	13.3	16.8	23.3	0.2	0.1	3.5	15.7	49.5	79.2	96.1	987.1	989.2	992.0
31/10/2025	13.5	18.6	25.2	0.4	0.0	4.0	20.8	49.7	78.2	94.6	987.5	990.5	992.5
Monthly	**9.9**	**19.5**	**36.5**	**15.0**	**0.0**	**4.9**	**39.2**	**15.2**	**58.0**	**96.5**	**970.1**	**986.7**	**997.9**





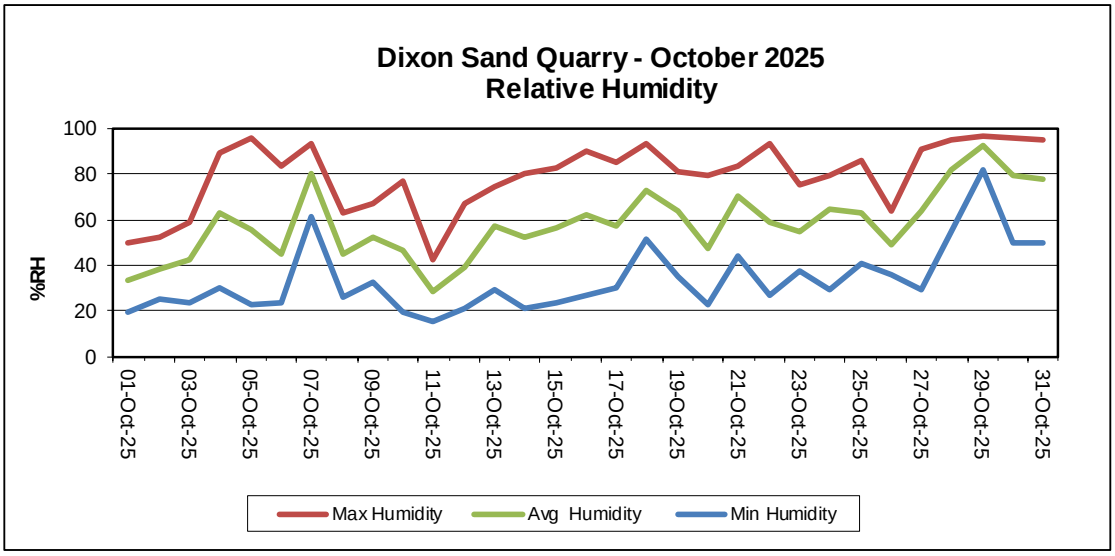


Figure 2: *Daily Rainfall, Temperature and Relative Humidity Charts*

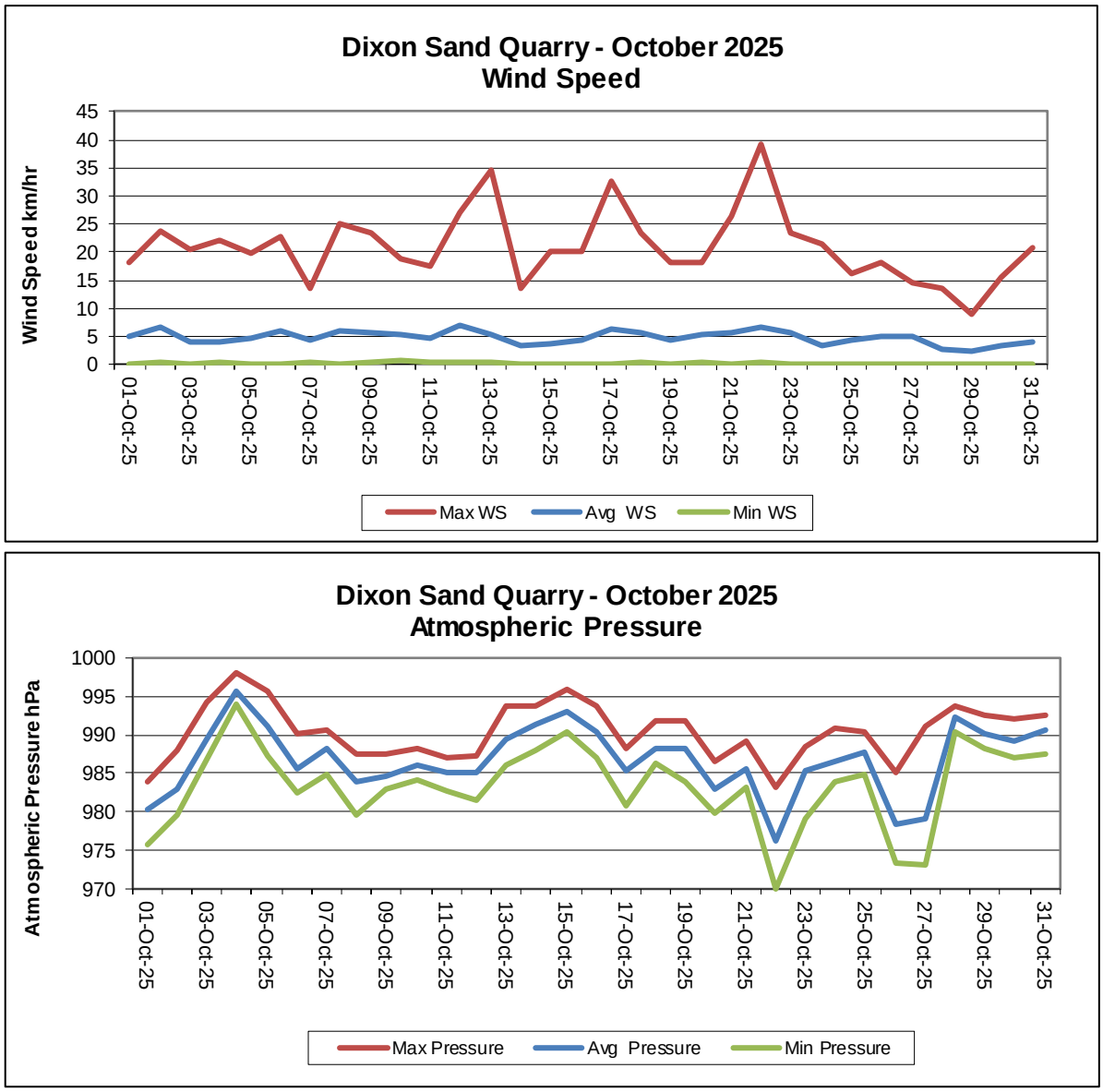


Figure 3: *Wind Speed and Atmospheric Pressure Char*

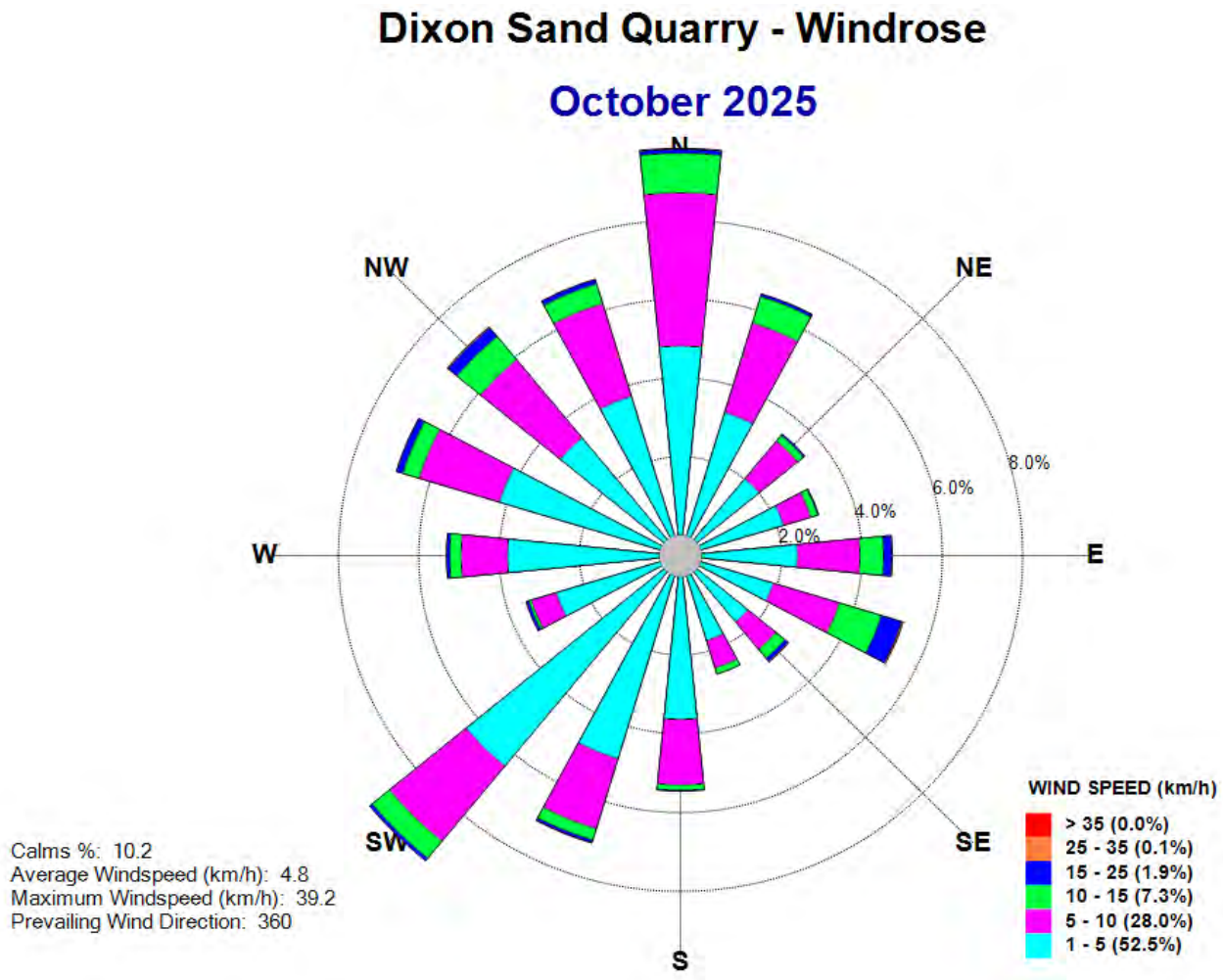


Figure 4: *Windrose*

Appendix 1

Calibration Documents (when required)

CBased Environmental Pty Limited
ABN 62 611 924 264

Dixon Sand Quarry

Environmental Monitoring
Air Quality

Tapered Element Oscillating Microbalance (TEOM) (PM_{10}) and Meteorological Data

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November 2025

Colin Davies BSc MEIA CENVP
Environmental Scientist
Date 30 December 2025

CBased Environmental Pty Ltd
Unit 3, 2 Enterprise Crescent SINGLETON NSW 2330
☎ (02) 65713334

1.0 Summary

CBased Environmental Pty Limited is contracted by Dixon Sand to conduct continuous Tapered Element Oscillating Microbalance (TEOM) for fine particulates (PM_{10}) and meteorological monitoring for the Dixon Sand Quarry. The information is required to assess air quality levels. The results for the TEOM and meteorological site are included in this report.

The monitoring programme includes:

- One continuous TEOM PM_{10} monitor; and
- One continuous meteorological station.

This monthly report for November 2025 was prepared by CBased Environmental and includes the following:

- TEOM (PM_{10}) monitoring results; and
- Meteorological results.

In accordance with Schedule 3, Condition 7 of the Dixon Sand development Consent and the Dixon Sand EPL;

- 24-hour average PM_{10} results were below the NEPM 24-hour maximum criteria of 50ug/m^3; with the exception of one occurrence on the 29th November 2025 (59.5ug/m^3)
- 24-hour average PM_{10} results were below the Dixon Sand Quarry EPL limit of 42ug/m^3, with the exception of one occurrence on the 29 November 2025 (59.5ug/m^3)
- The PM_{10} annual average is below the Dixon Sand Quarry consent annual average criteria of 30ug/m^3; and
- The calculated TSP is below the Dixon Sand Quarry annual average criteria of 90ug/m^3.

Note: Based on the available data, statements in green indicate current conformance to Dixon Sand Quarry Air Quality Impact Assessment criteria, statements in red indicate possible non-conformance. Year to date annual average for PM_{10} is calculated from 1 July 2025 for TEOM's coinciding with the Dixon Sand project year.

Approximately 96.7% of valid meteorological data was recorded for November 2025

Approximately 88.9% of valid TEOM data was available for November 2025.

2.0 Sampling Programme

The TEOM is sited and operated to the applicable Australian Standard and/or NSW EPA approved methods. The following Australian Standards were used:

- AS3580.9.8 - "*Methods for Sampling and Analysis of Ambient Air. Determination of Suspended Particulates—PM_{10} continuous direct mass method using a tapered element oscillating microbalance analyser*"; and
- AS/NZS 3580.1.1 - "*Methods for Sampling and Analysis of Ambient Air Part 1.1 Guide to Siting Air Monitoring Equipment*".

TEOM PM_{10} results are 24-hour averages at midnight and are reported as $\mu g/m^3$ corrected to 0 degrees C and 101.3kPa.

All laboratory analysis was conducted by a National Association of Testing Authorities (NATA) accredited laboratory.

Air Quality monitoring site descriptions and locations are provided in **Table 1**.

Table 1: Dixon Sand Air Quality Monitoring Description and Locations

Monitor	Site Code	Location Description
TEOM PM_{10}	TEOM	Old North Road, Maroota NSW
Meteorological Station	MET	Old North Road, Maroota NSW

3.0 Results

3.1 TEOM PM_{10}

24-hour average TEOM PM_{10} results from the AQMS data collection software are provided in **Table 2** and a chart of the data is provided in **Figure 1**.

During the November 2025 monitoring period, individual 24-hour TEOM PM_{10} results were below the National Environmental Protection Measure (NEPM) short-term (24hr) impact criteria of 50ug/m^3 with the exception of one occurrence on 29th November 2025 (59.5ug/m^3) highlighted in yellow in **Table 2**.

During the November 2025 monitoring period, individual 24-hour TEOM PM_{10} results were below the Dixon Sand Quarry EPL limit of 42ug/m3 with exception of one occurrence on 29th November 2025 (59.5ug/m^3) highlighted in yellow in **Table 2.**

Two fire events occurred in close proximity to the quarry during the monitoring period: a grass fire on 27 November 2025 at 4547 Old Northern Road and a bushfire on 29 November 2025 at 4567 Old Northern Road. In addition, farming activities exposing dust and uncovered soil were also noted near the quarry and TEOM, along with windy conditions on 29 November 2025. The cumulative impact of these events, combined with predominant winds, could have contributed to the elevated PM_{10} levels observed on 29–30 November 2025.This information was provided by the client and has not been validated by Cbased Environmental Pty Ltd.

Approximately 88.9% of valid TEOM data was available for November 2025.

At present, the current TEOM PM_{10} annual average is below the Dixon Sand Quarry annual average PM_{10} criteria of 30ug/m^3. The current annual average for calculated Total Suspended Particulates (TSP) is below the annual average criterion of 90ug/m^3. The TSP is calculated by multiplying the PM_{10} by 2.5. Note: the annual average is calculated from 1 July 2025 and therefore an annual amount of data has not been collected.

The quarterly TEOM calibration was conducted in September 2025. The next calibration is due to be completed in December 2025. The calibration certificate is provided in **Appendix 1** (when required).

Table 2: Average Daily 24-hr TEOM PM_{10} and TSP Results for November 2025 from AQMS and Annual Average PM_{10} calculated from 1 July 2025.

Date	PM_{10} 24-hr Average ($\mu g/m^3$)	PM_{10} Annual Average ($\mu g/m^3$)	24-hr Average TSP* ($\mu g/m^3$)	Annual Average TSP** ($\mu g/m^3$)
1/11/2025	11.2	14.6	28.0	36.5
2/11/2025	13.1	14.6	32.8	36.4
3/11/2025	23.8	14.7	59.6	36.6
4/11/2025	22.1	14.7	55.3	36.8
5/11/2025	16.1	14.7	40.3	36.8
6/11/2025	23.1	14.8	57.8	37.0
7/11/2025	23.0	14.9	57.5	37.2
8/11/2025	21.8	14.9	54.5	37.3
9/11/2025	13.0	14.9	32.5	37.3
10/11/2025	22.5	15.0	56.3	37.4
11/11/2025	22.6	15.0	56.5	37.6
12/11/2025	22.5	15.1	56.3	37.7
13/11/2025	26.9	15.2	67.2	38.0
14/11/2025	34.5	15.3	86.3	38.3
15/11/2025	33.3	15.5	83.3	38.7
16/11/2025	10.2	15.4	25.5	38.6
17/11/2025	21.9	15.5	54.8	38.7
18/11/2025	20.3	15.5	50.8	38.8
19/11/2025	30.1	15.6	75.3	39.1
20/11/2025	32.7	15.8	81.8	39.4
21/11/2025	9.7	15.7	24.3	39.3
22/11/2025	13.1	15.7	32.8	39.2
23/11/2025	9.3	15.6	23.2	39.1
24/11/2025	12.8	15.6	32.0	39.1
25/11/2025	22.7	15.7	56.9	39.2
26/11/2025	ND	15.7	ND	39.2
27/11/2025	ND	15.7	ND	39.2
28/11/2025	ND	15.7	ND	39.2
29/11/2025	**59.5**	16.0	148.7	40.0
30/11/2025	13.2	16.0	33.0	39.9

*Calculated from PM10

**Calculated from PM10 Annual Average

Note: results above the Dixon Sand EPL criteria limit of 42 ug/m^3 are highlighted in yellow

No Data (ND) - <18hrs hour of valid data to calculate a 24hr average

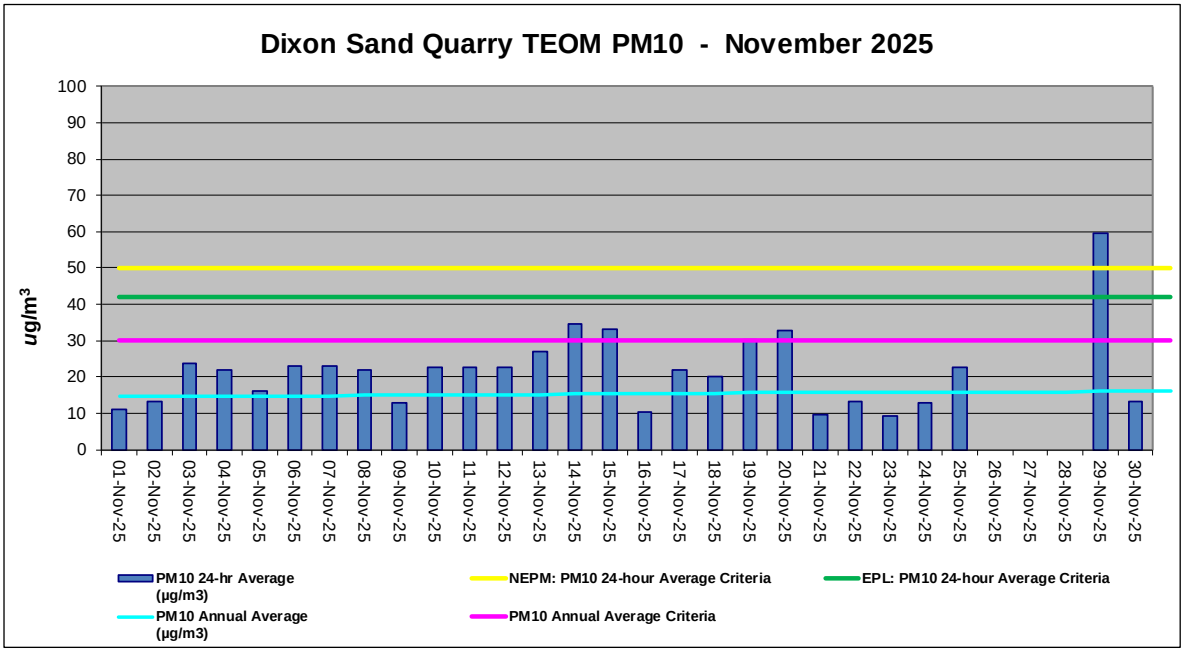


Figure 1: *TEOM PM_{10} 24 hr, Annual Average and Criteria*

3.2 Meteorological Data

The weather station logs data at 5-minute intervals and sends the data to a web database by NextG telemetry. The data is accessible from the web site http://console.teledata.com.au/index.html.

A summary of monthly results is presented in **Table 3**. Charts of meteorological parameters are presented in **Figures 2** and **3**. A Windrose is provided in **Figure 4**.

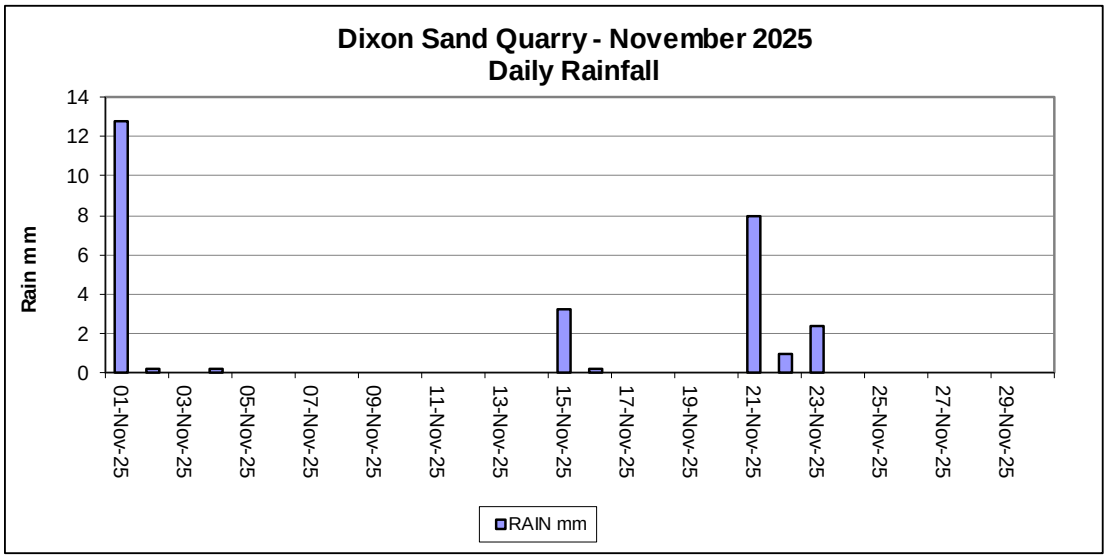
A 6-monthly physical screening and system check of the meteorological station was conducted in July 2025 (for June). The next physical screening and system check is currently scheduled for December 2025. The screening and system check certificates are provided in **Appendix 1** (when required).

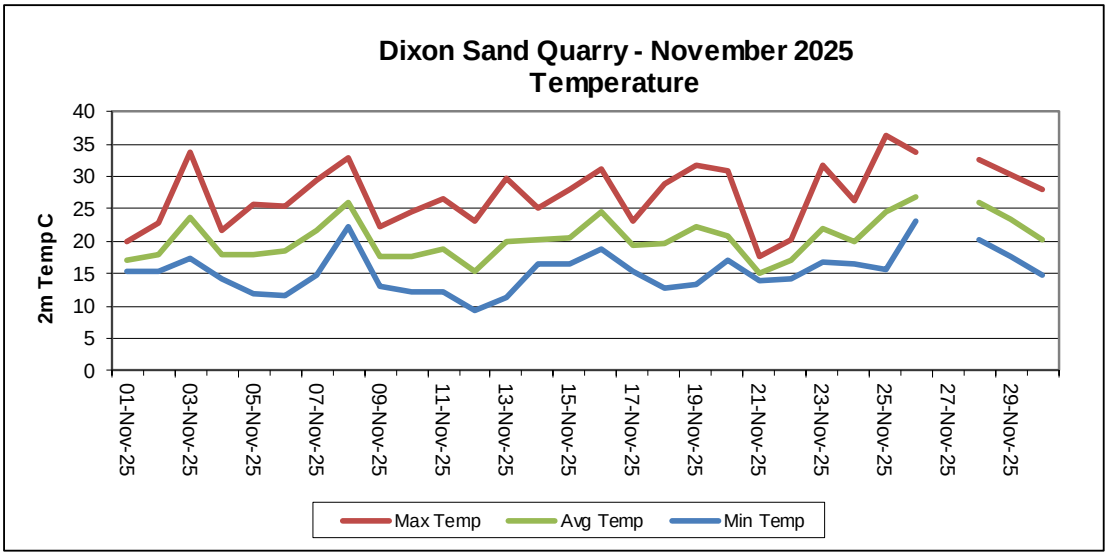
Approximately 96.7% of valid meteorological data was recorded for November 2025.

Table 3: Meteorological Data Summary for November 2025

Date	Min Temp	Avg Temp	Max Temp	RAIN mm	Min WS	Avg WS	Max WS	Min Humidity	Avg Humidity	Max Humidity	Min Pressure	Avg Pressure	Max Pressure
1/11/2025	15.2	17.2	20.0	12.8	0.1	3.4	22.3	80.1	91.1	95.6	985.9	988.2	990.1
2/11/2025	15.3	18.0	22.9	0.2	0.2	3.5	14.2	72.9	89.7	96.8	982.9	985.7	988.2
3/11/2025	17.4	23.6	33.7	0.0	0.3	4.6	14.4	33.8	70.6	95.5	972.4	977.4	982.9
4/11/2025	14.1	18.0	21.8	0.2	0.4	6.0	34.1	26.1	44.7	65.3	976.9	980.3	985.4
5/11/2025	11.8	18.0	25.6	0.0	0.2	4.3	17.5	23.7	42.8	63.8	983.8	986.1	989.6
6/11/2025	11.6	18.6	25.5	0.0	0.1	5.0	31.4	33.5	58.2	79.9	986.2	989.1	992.0
7/11/2025	14.9	21.6	29.4	0.0	0.2	4.6	16.4	33.9	64.1	86.9	980.5	984.2	988.4
8/11/2025	22.3	26.0	32.8	0.0	0.4	7.8	29.2	32.1	49.5	60.5	972.2	976.8	981.0
9/11/2025	12.9	17.6	22.1	0.0	0.1	4.5	21.8	37.9	52.7	73.2	977.8	982.9	988.2
10/11/2025	12.2	17.6	24.6	0.0	0.0	3.7	25.0	32.2	61.3	78.4	984.0	986.6	988.9
11/11/2025	12.1	18.8	26.5	0.0	0.3	4.6	24.0	19.0	47.2	89.1	980.4	984.7	989.5
12/11/2025	9.2	15.3	23.1	0.0	0.4	4.6	26.2	20.3	40.0	63.8	987.1	989.7	992.5
13/11/2025	11.2	20.0	29.6	0.0	0.2	4.9	19.1	14.6	42.3	69.0	979.5	984.2	989.4
14/11/2025	16.6	20.2	25.0	0.0	0.1	6.0	33.1	19.0	53.7	84.8	979.6	982.1	985.1
15/11/2025	16.4	20.4	28.1	3.2	0.0	4.5	31.5	45.3	76.0	88.0	976.7	981.0	985.1
16/11/2025	18.8	24.5	31.0	0.2	0.0	3.6	15.7	18.5	44.8	82.6	972.7	975.5	977.5
17/11/2025	15.2	19.3	23.1	0.0	0.0	4.2	20.8	25.2	36.2	53.9	973.4	976.1	981.0
18/11/2025	12.8	19.6	28.7	0.0	0.1	4.7	25.1	26.1	44.7	60.4	978.9	981.4	983.4
19/11/2025	13.3	22.3	31.8	0.0	0.0	3.8	25.5	24.5	51.3	80.9	979.2	982.2	984.5
20/11/2025	17.0	20.9	30.8	0.0	0.0	4.5	30.6	35.0	67.3	85.1	981.0	984.1	990.1
21/11/2025	13.9	15.0	17.6	8.0	0.4	4.8	17.7	77.4	91.9	96.4	989.4	991.9	993.6
22/11/2025	14.2	17.0	20.3	1.0	0.2	2.8	11.4	80.9	92.4	96.6	986.2	989.9	992.9
23/11/2025	16.9	21.9	31.7	2.4	0.2	3.4	26.7	28.3	76.5	96.5	976.2	980.5	986.1
24/11/2025	16.5	20.0	26.3	0.0	0.2	4.5	17.8	49.8	74.9	94.5	978.6	980.1	981.4
25/11/2025	15.7	24.5	36.3	0.0	0.2	5.4	26.4	26.7	59.8	87.6	970.3	974.7	981.6
26/11/2025	23.2	26.7	33.6	0.0	0.7	6.9	26.2	33.3	48.4	58.6	969.7	973.1	974.8
27/11/2025													
28/11/2025	20.2	25.9	32.6	0.0	0.4	6.4	27.4	15.6	48.5	77.1	976.5	978.1	982.2
29/11/2025	17.7	23.4	30.4	0.0	0.2	6.1	37.5	24.3	53.4	78.9	970.1	974.6	980.0
30/11/2025	14.9	20.3	28.0	0.0	0.2	4.3	23.5	21.9	51.0	85.1	975.3	979.0	981.5
Monthly	**9.2**	**20.4**	**36.3**	**28.0**	**0.0**	**4.7**	**37.5**	**14.6**	**59.5**	**96.8**	**969.7**	**982.1**	**993.6**

No Data due to power outage





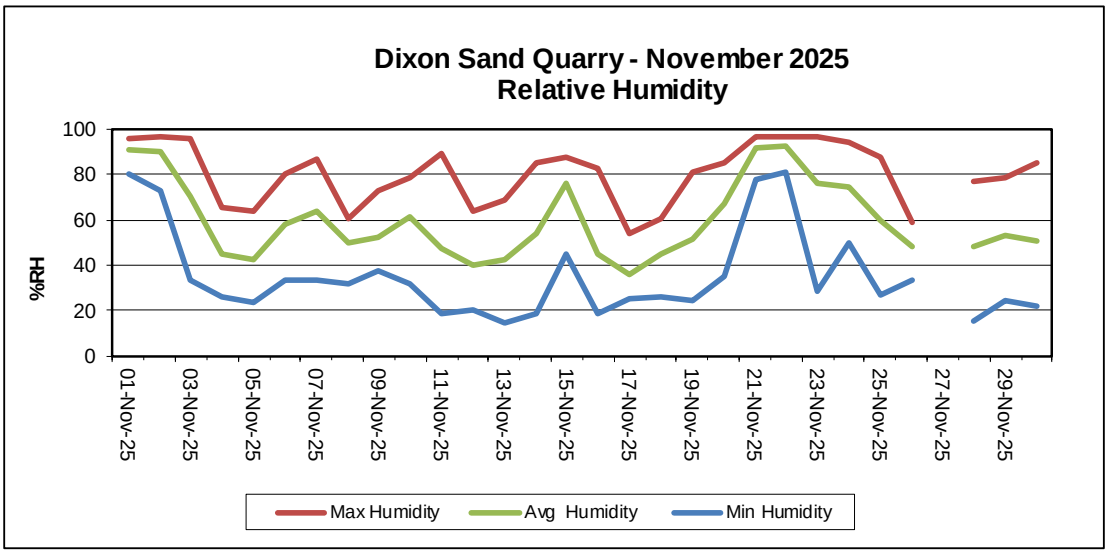


Figure 2: *Daily Rainfall, Temperature and Relative Humidity Charts*

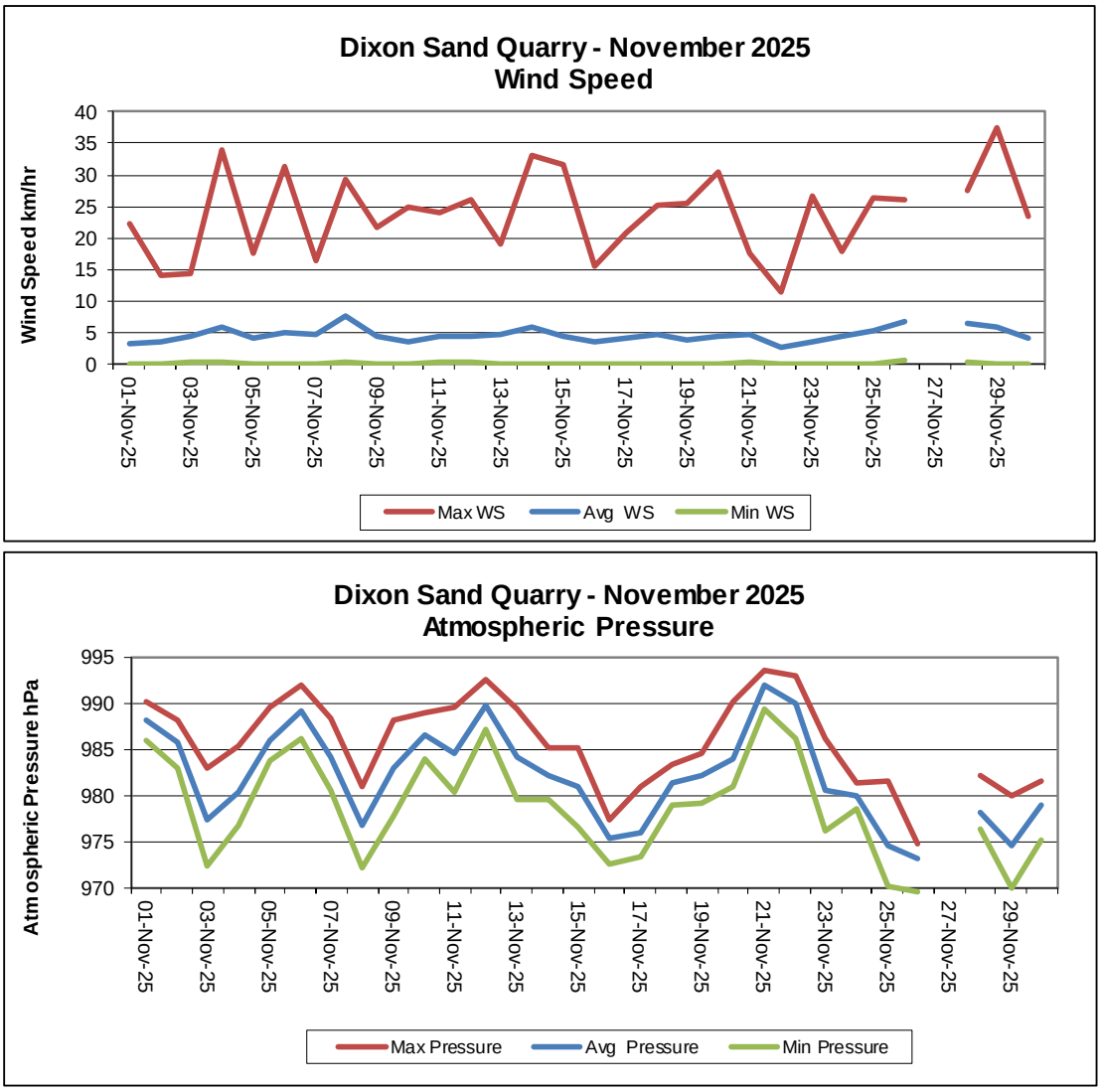


Figure 3: *Wind Speed and Atmospheric Pressure Chart*

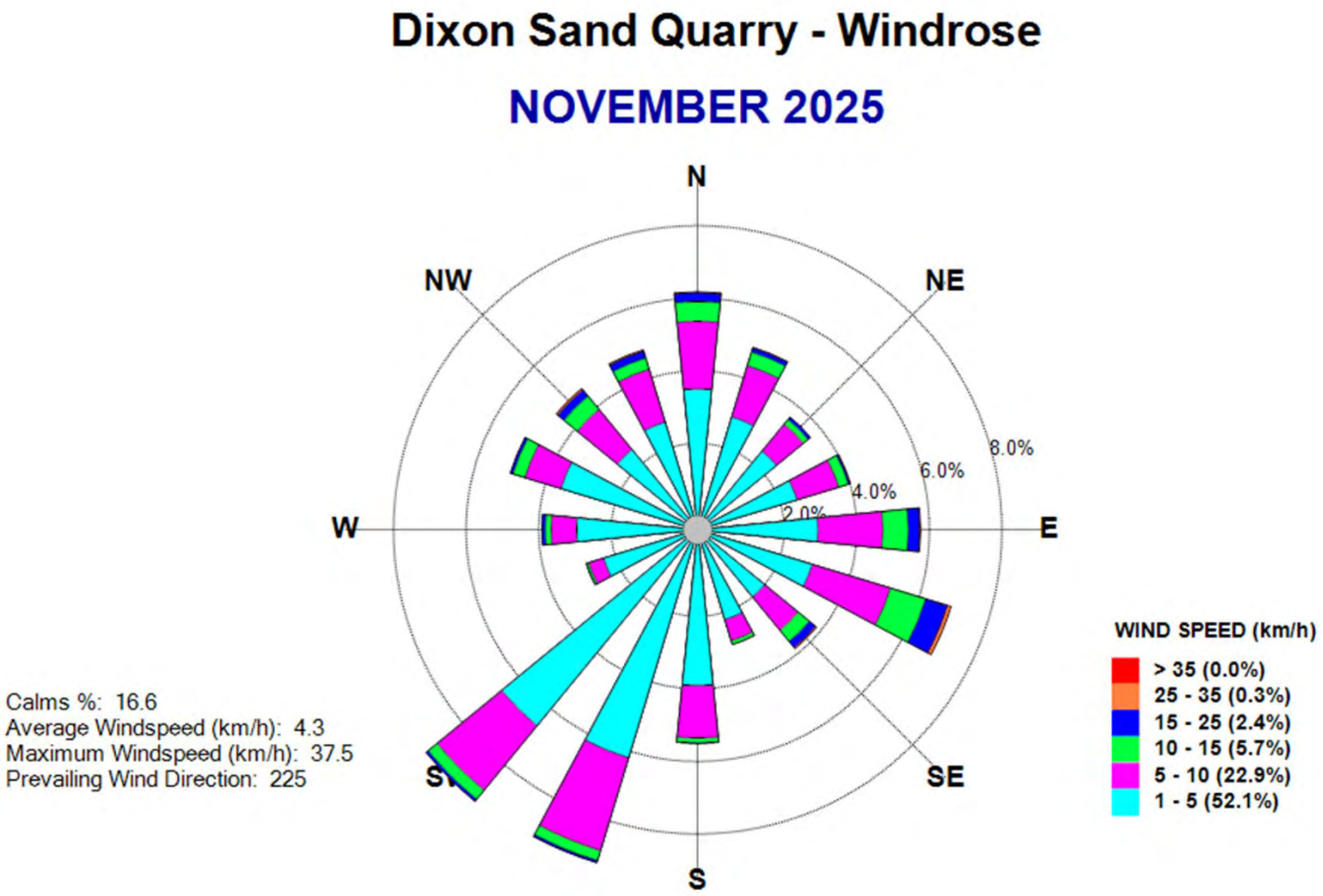


Figure 4: *Windrose*

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CBased Environmental Pty Limited
ABN 62 611 924 264

Dixon Sand Quarry

Environmental Monitoring
Air Quality

Tapered Element Oscillating Microbalance (TEOM) (PM_{10}) and Meteorological Data

---

December 2025

Colin Davies BSc MEIA CENVP
Environmental Scientist
Date 13 January 2026

CBased Environmental Pty Ltd
Unit 3, 2 Enterprise Crescent SINGLETON NSW 2330
☎ (02) 65713334

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- 24-hour average PM_{10} results were below the NEPM 24-hour maximum criteria of 50ug/m^3.
- 24-hour average PM_{10} results were below the Dixon Sand Quarry EPL limit of 42ug/m^3, with the exception of one occurrence on 19 December 2025 (49.7ug/m^3)
- The PM_{10} annual average is below the Dixon Sand Quarry consent annual average criteria of 30ug/m^3; and
- The calculated TSP is below the Dixon Sand Quarry annual average criteria of 90ug/m^3.

Note: Based on the available data, statements in green indicate current conformance to Dixon Sand Quarry Air Quality Impact Assessment criteria, statements in red indicate possible non-conformance. Year to date annual average for PM_{10} is calculated from 1 July 2025 for TEOM's coinciding with the Dixon Sand project year.

Approximately 100% of valid meteorological data was recorded for December 2025

Approximately 99.4% of valid TEOM data was available for December 2025.

2.0 Sampling Programme

The TEOM is sited and operated to the applicable Australian Standard and/or NSW EPA approved methods. The following Australian Standards were used:

- AS3580.9.8 - "*Methods for Sampling and Analysis of Ambient Air. Determination of Suspended Particulates—PM_{10} continuous direct mass method using a tapered element oscillating microbalance analyser*"; and
- AS/NZS 3580.1.1 - "*Methods for Sampling and Analysis of Ambient Air Part 1.1 Guide to Siting Air Monitoring Equipment*".

TEOM PM_{10} results are 24-hour averages at midnight and are reported as $\mu g/m^3$ corrected to 0 degrees C and 101.3kPa.

All laboratory analysis was conducted by a National Association of Testing Authorities (NATA) accredited laboratory.

Air Quality monitoring site descriptions and locations are provided in **Table 1**.

Table 1: Dixon Sand Air Quality Monitoring Description and Locations

Monitor	Site Code	Location Description
TEOM PM_{10}	TEOM	Old North Road, Maroota NSW
Meteorological Station	MET	Old North Road, Maroota NSW

3.0 Results

3.1 TEOM PM_{10}

24-hour average TEOM PM_{10} results from the AQMS data collection software are provided in **Table 2** and a chart of the data is provided in **Figure 1**.

During the December 2025 monitoring period, individual 24-hour TEOM PM_{10} results were below the National Environmental Protection Measure (NEPM) short-term (24hr) impact criteria of 50ug/m^3.

During the December 2025 monitoring period, individual 24-hour TEOM PM_{10} results were below the Dixon Sand Quarry EPL limit of 42ug/m3 with exception of one occurrence on 19th December 2025 (49.7ug/m^3) highlighted in yellow in **Table 2.**

Approximately 99.4% of valid TEOM data was available for December 2025.

At present, the current TEOM PM_{10} annual average is below the Dixon Sand Quarry annual average PM_{10} criteria of 30ug/m^3. The current annual average for calculated Total Suspended Particulates (TSP) is below the annual average criterion of 90ug/m^3. The TSP is calculated by multiplying the PM_{10} by 2.5. Note: the annual average is calculated from 1 July 2025 and therefore an annual amount of data has not been collected.

The quarterly TEOM calibration was conducted the 5th January 2026 (for December 2025). The next calibration is due to be completed in March 2026. The calibration certificate is provided in **Appendix 1** (when required).

Table 2: Average Daily 24-hr TEOM PM_{10} and TSP Results for December 2025 from AQMS and Annual Average PM_{10} calculated from 1 July 2025.

Date	**PM_{10} 24-hr Average** ($\mu g/m^3$)	**PM_{10} Annual Average** ($\mu g/m^3$)	**24-hr Average TSP*** ($\mu g/m^3$)	**Annual Average TSP**** ($\mu g/m^3$)
1/12/2025	23.6	16.0	59.0	40.1
2/12/2025	12.1	16.0	30.3	40.0
3/12/2025	21.6	16.0	54.0	40.1
4/12/2025	30.3	16.1	75.8	40.3
5/12/2025	27.4	16.2	68.5	40.5
6/12/2025	34.6	16.3	86.5	40.9
7/12/2025	26.8	16.4	67.0	41.0
8/12/2025	29.5	16.5	73.8	41.3
9/12/2025	37.3	16.6	93.2	41.6
10/12/2025	30.6	16.7	76.5	41.8
11/12/2025	18.4	16.7	46.0	41.9
12/12/2025	7.2	16.7	18.0	41.7
13/12/2025	11.3	16.6	28.3	41.6
14/12/2025	11.5	16.6	28.8	41.5
15/12/2025	39.8	16.8	99.5	41.9
16/12/2025	19.1	16.8	47.8	41.9
17/12/2025	22.4	16.8	56.0	42.0
18/12/2025	23.3	16.9	58.3	42.1
19/12/2025	**49.7**	17.1	124.3	42.7
20/12/2025	20.6	17.1	51.5	42.7
21/12/2025	22.3	17.1	55.8	42.8
22/12/2025	19.8	17.1	49.5	42.8
23/12/2025	18.6	17.1	46.5	42.9
24/12/2025	25.1	17.2	62.8	43.0
25/12/2025	23.3	17.2	58.3	43.1
26/12/2025	12.0	17.2	30.0	43.0
27/12/2025	14.8	17.2	37.0	43.0
28/12/2025	15.8	17.2	39.5	42.9
29/12/2025	12.0	17.1	30.0	42.9
30/12/2025	13.4	17.1	33.5	42.8
31/12/2025	15.4	17.1	38.5	42.8

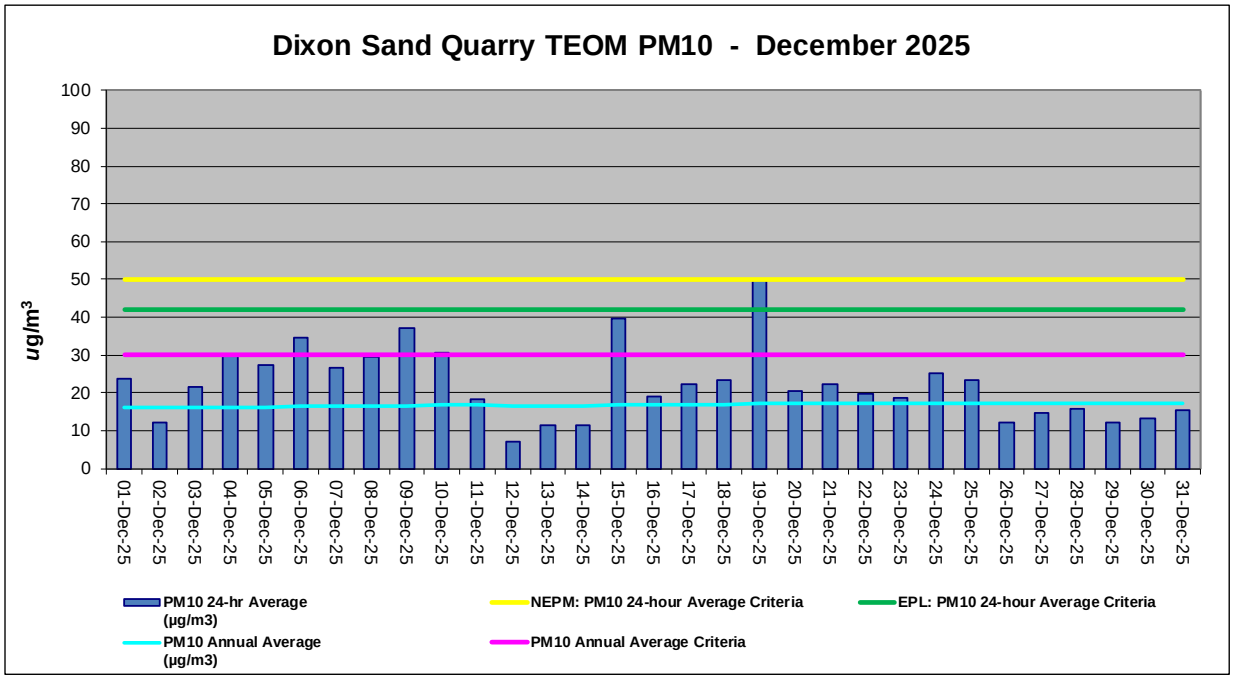


Figure 1: *TEOM PM_{10} 24 hr, Annual Average and Criteria*

3.2 Meteorological Data

The weather station logs data at 5-minute intervals and sends the data to a web database by NextG telemetry. The data is accessible from the web site http://console.teledata.com.au/index.html.

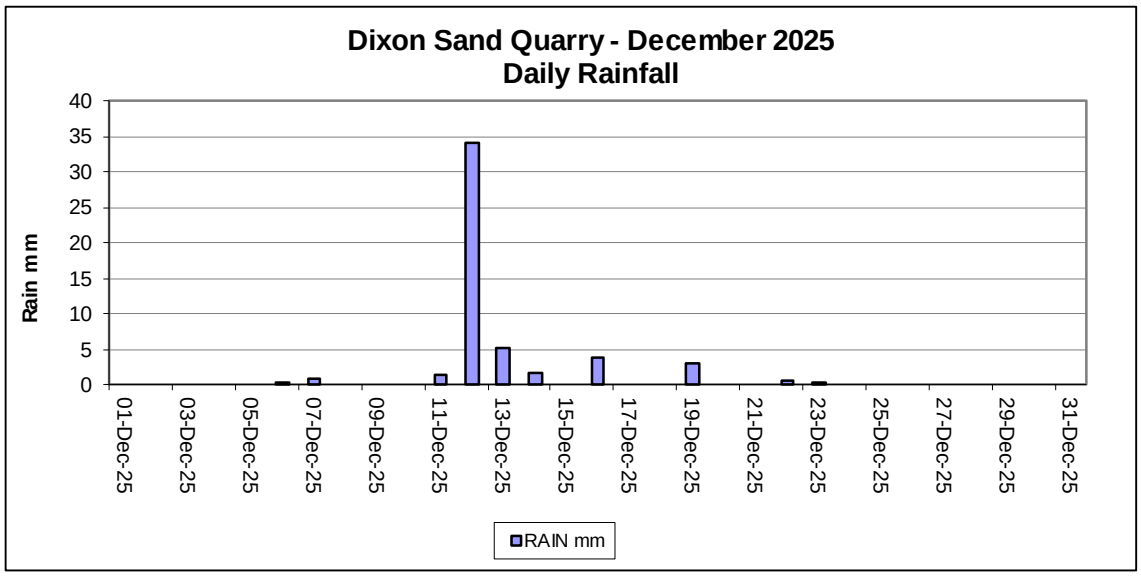
A summary of monthly results is presented in **Table 3**. Charts of meteorological parameters are presented in **Figures 2** and **3**. A Windrose is provided in **Figure 4**.

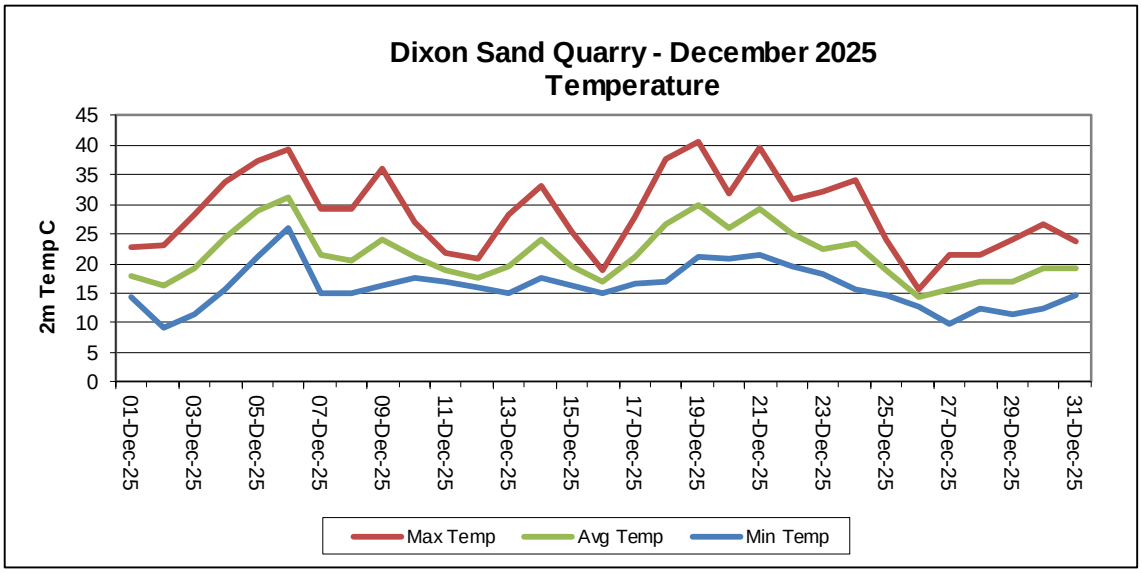
A 6-monthly physical screening and system check of the meteorological station was conducted on the 6th January 2026 (for December 2025). The next physical screening and system check is currently scheduled for June 2026. The screening and system check certificates are provided in **Appendix 1** (when required).

Approximately 100% of valid meteorological data was recorded for December 2025.

Table 3: Meteorological Data Summary for December 2025

Date	Min Temp	Avg Temp	Max Temp	RAIN mm	Min WS	Avg WS	Max WS	Min Humidity	Avg Humidity	Max Humidity	Min Pressure	Avg Pressure	Max Pressure
1/12/2025	14.2	17.8	22.9	0.0	0.2	3.8	21.9	27.6	40.9	62.2	976.3	979.0	981.5
2/12/2025	9.2	16.2	23.1	0.0	0.1	4.0	18.1	26.7	50.1	73.8	978.6	984.2	991.3
3/12/2025	11.3	19.1	28.4	0.0	0.0	4.4	23.8	24.8	56.9	82.2	988.0	990.7	993.1
4/12/2025	15.8	24.4	33.8	0.0	0.3	4.5	22.5	17.3	44.1	74.8	985.2	989.0	992.1
5/12/2025	21.2	28.9	37.2	0.0	0.2	5.1	27.9	13.0	26.4	40.9	981.9	985.0	987.9
6/12/2025	26.0	31.1	39.1	0.2	1.2	8.1	28.3	14.5	28.2	39.1	974.1	979.0	982.7
7/12/2025	14.9	21.5	29.2	0.8	0.1	5.4	19.0	34.0	61.7	93.0	976.7	982.7	988.7
8/12/2025	15.0	20.4	29.1	0.0	0.2	4.7	21.5	39.1	74.0	93.9	981.8	985.8	988.4
9/12/2025	16.2	24.1	35.9	0.0	0.0	5.2	25.1	17.5	61.2	94.0	983.7	986.4	992.6
10/12/2025	17.6	21.2	27.0	0.0	0.6	5.6	20.1	53.5	73.7	85.9	987.9	991.6	993.9
11/12/2025	16.9	18.9	21.9	1.4	0.1	4.0	15.7	59.4	78.2	93.3	990.7	992.7	994.0
12/12/2025	16.0	17.7	20.8	34.2	0.1	3.5	17.0	77.2	90.0	95.3	987.1	989.6	992.8
13/12/2025	14.9	19.6	28.2	5.2	0.0	4.1	18.6	49.2	83.6	96.4	979.6	983.6	986.9
14/12/2025	17.5	24.1	33.0	1.6	0.1	3.6	15.5	29.7	63.8	94.4	975.4	978.8	983.3
15/12/2025	16.3	19.6	25.4	0.0	0.0	5.6	25.6	51.9	71.6	87.5	983.4	986.6	992.2
16/12/2025	15.0	17.0	19.0	3.8	0.0	4.2	14.0	74.2	83.9	93.7	991.6	994.4	997.2
17/12/2025	16.6	21.3	27.9	0.0	0.0	4.2	19.0	50.3	72.3	91.1	991.2	994.6	997.3
18/12/2025	16.8	26.8	37.5	0.0	0.2	4.6	16.8	26.6	57.2	89.4	983.4	987.9	992.5
19/12/2025	21.1	30.0	40.5	3.0	0.1	4.3	16.9	16.9	44.8	84.0	979.2	982.7	984.9
20/12/2025	20.8	25.9	31.8	0.0	0.0	3.3	14.4	49.6	64.8	86.0	977.7	980.9	984.4
21/12/2025	21.5	29.3	39.4	0.0	0.1	4.4	21.8	22.0	54.0	80.8	971.7	976.7	979.9
22/12/2025	19.6	25.0	30.7	0.6	0.3	5.1	35.7	43.5	64.3	89.3	973.9	978.7	983.6
23/12/2025	18.3	22.5	32.2	0.4	0.0	4.0	32.4	19.8	68.3	93.9	980.3	982.7	987.8
24/12/2025	15.5	23.4	33.9	0.0	0.0	3.6	13.8	15.5	61.7	87.5	978.4	982.8	987.4
25/12/2025	14.6	18.7	24.0	0.0	0.2	5.5	22.5	48.2	71.2	89.0	982.0	983.8	987.1
26/12/2025	12.7	14.3	15.5	0.0	0.0	3.2	14.8	63.8	72.0	85.7	985.6	987.8	990.0
27/12/2025	9.9	15.7	21.5	0.0	0.1	4.5	24.7	45.1	65.5	89.8	987.5	989.3	990.8
28/12/2025	12.4	16.8	21.4	0.0	0.1	4.3	16.1	45.5	61.7	76.8	989.8	992.5	995.1
29/12/2025	11.3	17.0	24.1	0.0	0.1	4.6	23.0	41.2	65.5	84.9	989.8	992.2	994.7
30/12/2025	12.4	19.2	26.7	0.0	0.0	5.0	27.0	30.7	62.4	83.1	981.4	985.8	990.5
31/12/2025	14.8	19.1	23.7	0.0	0.3	4.5	19.3	42.4	70.4	83.0	980.3	983.1	986.4
Monthly	**9.2**	**21.5**	**40.5**	**51.2**	**0.0**	**4.5**	**35.7**	**13.0**	**62.7**	**96.4**	**971.7**	**985.8**	**997.3**





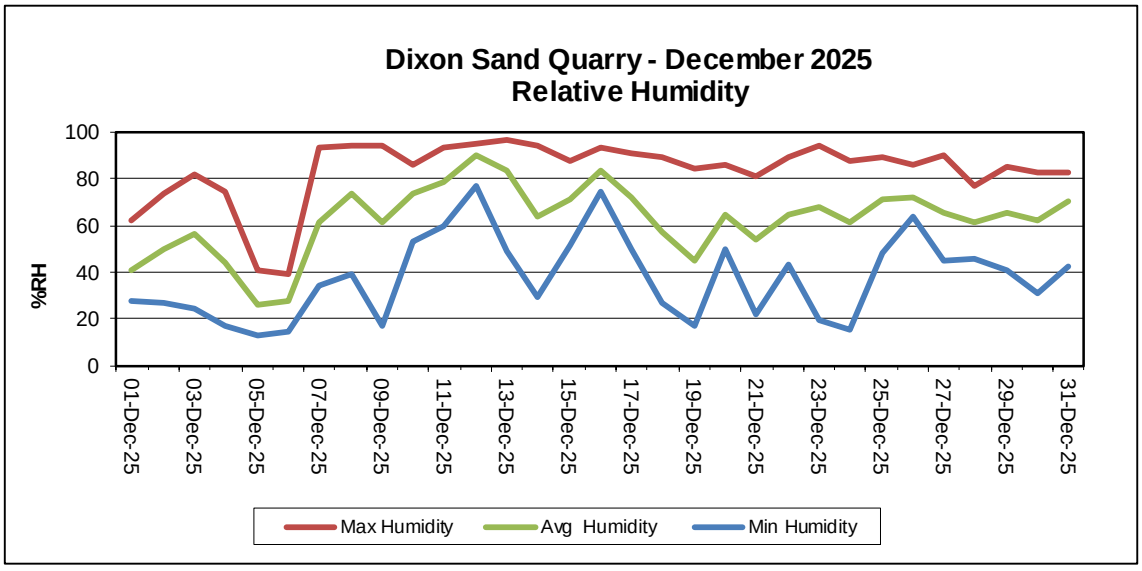


Figure 2: *Daily Rainfall, Temperature and Relative Humidity Charts*

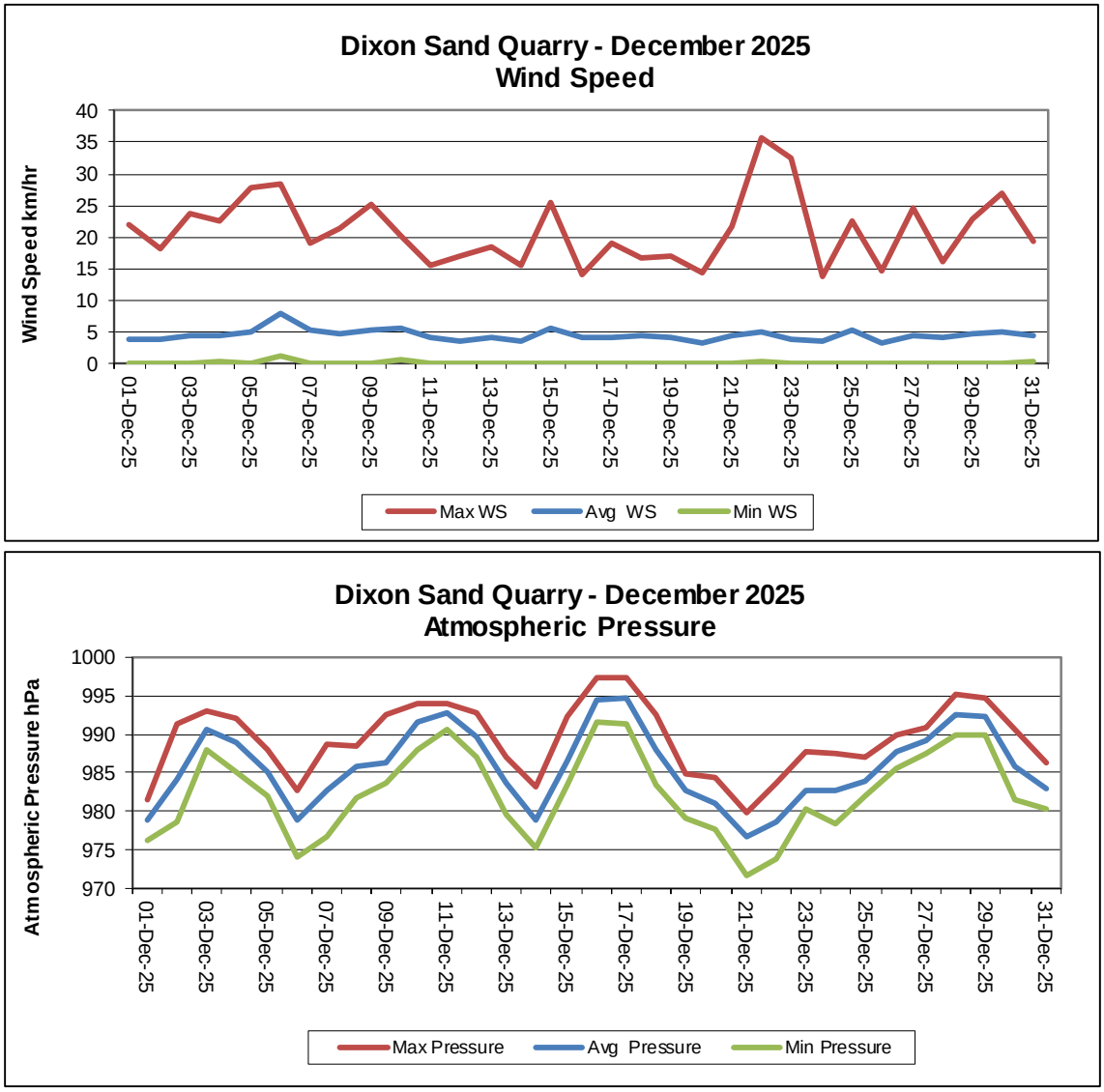


Figure 3: *Wind Speed and Atmospheric Pressure Chart*

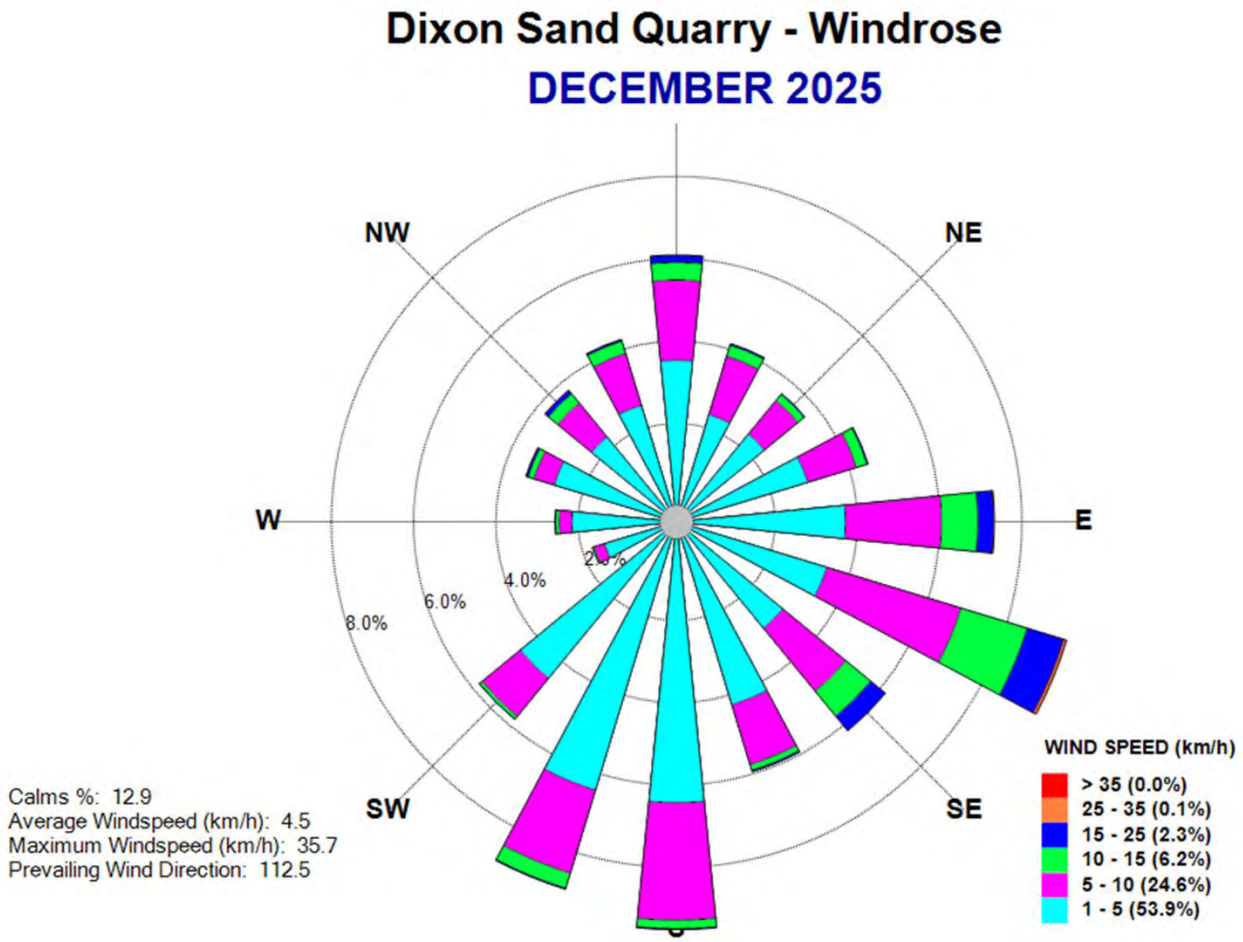


Figure 4: *Windrose*

Appendix 1

Calibration Documents (when required)

CARBON BASED ENVIRONMENTAL

Continuous Air Quality Monthly/Quarterly/Six Monthly/Annual TEOM Maintenance and Calibration – 1400AB

teledata

TEOM Client/Site: Dixon Sandy TEOM **Date:** 5/1/26 + 6/1/26

1. TEOM Data Screen **SERIAL No:** 1400AB255T00503

Condition	Current Data	Acceptable Data	Pass (Tick)	Fail (Tick)
Operating Condition	4 OK	Green - Normal	✓	
Date/time	TEOM: 5-1-26 13:50 Actual: 5-1-26 14.52	Current Date/time correct within 5 minutes EST/DST ✓	✓	
PM-10 24hr av	17.2	Positive values	✓	
Filter loading PM10	54	<80 %	✓	
Frequency PM-10	251.5989	200-300 Hz	✓	
Noise PM-10	0.07	<0.100ug	✓	

Comment: If filter load >80% but <90% and if flows Ok then data is OK

Comments: Note 24h AV zero → Power outage used 12hr av.

2. System Status

Condition	Current Data	Acceptable Data	Pass (Tick)	Fail (Tick)
Vacuum pump pressure	-0.8	<0.50 atm	✓	
Warnings	NIL	No Warnings	✓	
If any warnings list:				

Comments:

Data Downloaded: YES/NO (circle)

Technician Name : COLIN JAMES **Signed**

3. Instrument Conditions Ambient Conditions and Temperatures

Condition	Current Data	Acceptable Data	Pass (Tick)	Fail (Tick)
Ambient Temperature	30.1	-10 to 50 C	✓	
Ambient Dew Point	NA	-10 to 50 C	NA	
Ambient Pressure	0.967	0.9-1.1 atm	✓	
Ambient Relative Humidity	NA	10-100 %RH	NA	
Cap temperature	50.00	50.00 +/- 0.10 C	✓	
Case temperature	50.00	50.00 +/- 0.10 C	✓	
Main (PM-10) Air Tube temp	50.00	50.00 +/- 0.10 C	✓	

Comments:

Adj Main 1.15 adj → ~~1.10~~ 1.055 cb.

Adj aux 1.00 ok ✓ 1.000

4. Instrument Conditions – Flows

Condition	Current Data	Acceptable Data	Pass (Tick)	Fail (Tick)
Main (PM-10) Flow rate	3.08	2.82 – 3.18 lpm	✓	
Bypass Flow rate	13.57	12.95 – 14.39 lpm	✓	
Total Flow rate	16.65	15.67 – 17.67 lpm	✓	

Comments:

Results: (Tick box)

☑ **There were NO equipment faults found. No action required – (file report)**

☐ **There were faults found (Fails) – Were these fixed on site: YES/NO (circle)**
Any Fails that cannot be repaired on site must be reported to CBased:
Office: 65713334 or email cbased@bigpond.com
Date faults notified to CBased: _____

Comments/Action Required:

Calibration/Maintenance

1. 1405A: Were Filters replaced YES/NO
2. PM10 Inlet head cleaned YES/NO
3. If measurement filters were replaced, confirm stable results after change. Stable particulate results confirmed YES/NO

Channel	Filter Load %	Frequency Hz initial	Frequency check 1min	Frequency check 3min	Frequency check 5min
PM10	26	255.92489	255.92485	255.92480	255.92479

Frequency should not drift by more than 0.0010 between readings (if instrument is thermodynamically stable)
Pass/Fail – if Fail – install new filter and redo stability test.

Noise 0.041 ✓ OK

4. Instrument clock verified (Refer Section 1) (YES)/NO.
If Time changed – clock reset OK YES/NO or (NA) (not changed)
Comments:

5. Were TEOM in line and rear TEOM filters checked for cleanliness and replaced if necessary. (YES)/NO.
Comments if changed:

6. TEOM Cleaned and Air Conditioner checked (YES)/NO. Air Conditioner settings or operational status: low cool 6

Tetracal Flow/Temp/Pressure Calibrator Serial No: Tet005 **Refer to calibration corrections for Temperature/Pressure and Flows and apply to all readings.**

Quarterly or Six Monthly Calibration

1. Flow Verification – Conducted (YES)/NO

PM10 Flow verified Flow l/min 3.08 Error % 2.7 (allowed error <6%) (PASS)/FAIL

Bypass Flow verified Flow l/min 13.57 Error % 0.7 (allowed error <6%) (PASS)/FAIL
If fail then complete a full multipoint recalibration and review previous data from last good flow check. **Comments if Flows recalibrated:**

2. Leak Check – Conducted (YES)/NO

PM10 actual 0.14 < Limit 0.15

Bypass actual 0.46 < Limit 0.60

Leak check (PASS)/FAIL – If fail then find leak and retest.
Comments:
leak but OK ✓

Annual Calibration/Maintenance

1. Temperature and Pressure Calibration – Conducted YES/NO
Reference Temperature: 30.4 C TEOM Temperature 30.1 C
if difference +/- 1 C recalibrate sensor. Sensor recalibrated YES/NO

Reference Pressure: 0.970 atm TEOM Pressure 0.967 atm
if difference +/- 0.010 atm recalibrate sensor. Sensor recalibrated YES/NO

Note: Tetracal measures Atmospheric Pressure in mm Hg or mb or hPa
For mb or hPa divide tetracal result by 1013.25 to change units to atm.
For mmHg divide tetracal result by 760 to change units to atm.

2. Flow Calibration – Conducted YES/NO
PM10
Set point 2.4 Actual:_____
Set point 3.6 Actual:_____
Set point 3.0 Actual:_____ After calibration Final:_____l/min
NA

BYPASS
Set point 10.9 Actual:_____
Set point 16.4 Actual:_____
Set point 13.67 Actual:_____ After calibration Final:_____l/min

Initial		l/m
Adj Main	1.15	3.08
Adj Aux	1.00	13.57

Final			
	Adj Main	1.055	3.00
	Adj Aux	1.000	13.63

Hardware reset OK ✓ OK.

3. Post Cal Leak Check – Conducted YES/NO ~~(use leak check wizard~~. Actual = channel flow-zero flow) NA for 1400AB Model
NA of
PM2.5 Base actual_____ < Limit 0.15 Reference actual_____< Limit 0.15
BYPASS Base actual_____ < Limit 0.60 Reference actual_____< Limit 0.60
Leak checks PASS/FAIL – If fails, find leak and retest.
Note that a big FAIL here will need the leak resolved and go back to Step 2 as the flow has been calibrated with a leak.

4. Mass calibration (K0) Verification – Conducted YES/NO
Audit Filter Serial Number: 6734-3
Audit Filter Average Weight: 0.09705 grams

Channel	TEOM stated KO	Audit KO	% Error	PASS/FAIL
PM10	13748	14005	1.8	PASS

Allowed Error +/- 2.5%. If Error > +/- 2.5% then repeat measurement.
Second Error % =PM10_____ PASS/FAIL NA
If FAIL confirmed then consult Lear Siegler or manufacturer.
Comments:

5. Prepare for Noise Check – Conducted YES/NO

Channel	Filter Load %	Frequency Hz initial (Time= 0 min)	Frequency check Time= 1 min	Frequency check Time= 3 min	Frequency check Time = 5 min
PM2.5	26	255.92489	255.92485	255.92480	255.92479

PASS/FAIL – If stability test fails, use change filter wizard to reseat the filter.
The next step will not pass until this test passes

6. Annual Noise check - Conducted YES/NO

Zero filter applied to TEOM and TEOM operated for at least 12 hours:

Start date/time: 5/1/26 19:00 Finish date/time: 6/1/26 09:55

Standard deviation of all recorded data (min 30 min averages) = 2.8 ug/m^3

Noise was less than 5ug/m^3 (YES)/NO

7. Maintenance

Air Inlet system cleaned (YES)/NO

Pump Reconditioned (YES)/NO

Check Waterproofing (YES)/NO OK

Comments:

Meteorological Monitoring Maintenance and Calibration

Maintenance and Calibration as per CBased Environmental Method M202

Client: Dixon Sands	Site Name: Dixon Sands
Date: 5/1/26	Time: 15:15
General Climatic Conditions: Very light winds. Sunny, warm. Thunderstorm building up from west. Possible rain later.	
Latitude: 33 ° 27 ' 16 "	Longitude: 150 °59 '37 "
Note: Contact office to confirm coordinates if required. Coordinates required to determine magnetic declination.	

1. Physical Maintenance

Item	Yes (Pass)	No (Fail)	Comments
Grass / Vegetation Impacts			
Compound Grass height <10cm	✓		
Ground Anchor / Guy Wires / Mast Condition			
Bottom guy wires tight (correct tension = 35-50mm deflection, with only moderate hand force at 1.5 metres up the guy wire)	NA		Pole no guy wires
Top Guy wires tensioned (correct tension = 60-75mm deflection, with only moderate hand force at 1.5 metres up the guy wire)	NA		" " "
Mast Vertical and in good condition	✓		Some Corrosion
Ground anchors/star pickets tight in ground	✓		No star pickets
Guy Wires insignificant corrosion	NA		No guy wires
Ground anchors/D shackles/ winders insignificant corrosion	NA		No Winder - winch is rusty
Bolts/hinge points in mast are secure	NA		Solid Pole
Cables / Connectors / Logger Cabinet / Solar Panel			
Cables attached to mast/guy wires via ties are secure	✓		as allowed by pole
Insignificant corrosion to plugs/connectors	✓		
No water ingress in logger/battery cabinet	✓		
Wiring/plugs in cabinet OK, Logger OK	✓		
Battery terminals and condition OK	~~NA~~		Battery Volts = NA No battery
Battery volts (charging>13V, not charging >12V)	NA		240V/12V System
Solar panel undamaged and clean	NA		No sl
Check for ants/insects and install new ant bait station in enclosure	NA		OK

Item	Yes (Pass)	No (Fail)	Comments
Sensor Maintenance / Checks			
Recent data checked and OK / Logging data OK, review sensor data and station battery voltage.	✓		
Wind Speed/Direction			
Wind direction aligned to ±3 degrees of: True North/Magnetic North (strike out N/A) Refer: https://geomagnetism.ga.gov.au/agrf-calculations/agrf-form#magfield	✓		Magnetic Declination: ~~348~~ cm 12° Compass Bearing: 348 ° Looking: North / South
Anemometer/wind vane moving freely (analogue sensors)	NA		Gill Ultrasonic
Mechanical sensors are inaudible (audible bearing noises may indicate sensor issues)	NA		" "
Temperature			
Temperature sensor(s), and associated radiation shield(s) inspected and cleaned	✓		
Fan(s) on aspirated radiation shields confirmed running	NA		No fans
Sensor shields cleaned	✓		
Humidity			
Humidity sensor, and associated radiation shield inspected and cleaned	✓		
Barometric Pressure			
Barometric sensor inspected, and any vents for sensor checked and cleared	✓		
Solar Radiation			
Solar radiation sensor inspected	NA		No Solar Rad Sensor
Solar radiation sensor cleaned	NA		" " " "
Solar radiation sensor alignment OK	NA		" " " "
Rainfall/Precipitation			
Rain gauge checked for blockages and cleaned if required	✓		Cleaned + cal
Rain gauge level on arrival	✓		
Rain gauge re-levelled			NA.

2. Calibration Equipment / Transfer Standard Details

Wind Speed, Wind Direction		*Temperature, Humidity & Pressure*	
Manufacturer:	Vaisala	Manufacturer:	Vaisala
Model:	WXT536	Model:	WXT536 (PTU Module)
Serial Number:	W4710639	Serial Number:	T1910754
Calibration Date:	17/12/2024	Calibration Date:	18/3/2025
Calibration Expires:	17/12/2026	Calibration Expires:	18/3/2027

Precipitation		*Solar Radiation*	
Manufacturer:	Hydrological Services	Manufacturer:	EKO Instruments
Model:	FCD	Model:	MS-80SH
Serial Number:	FCD001	Serial Number:	S24083856
Calibration Date:	7/3/2025	Calibration Date:	23/1/2025
Calibration Expires:	7/3/2030	Calibration Expires:	23/1/2030

1. Wind Sensor Precision Check

Sensor mounting height: 10m or Other (specify): 10 m (Pole hight not measured but historically at same point.)

Wind Speed Sensor

Calibration Point	**Transfer Standard, km/hr or _____**	**Sensor under test, km/hr or _____**	**Difference, km/hr or _____**
1	4.2	4.1	-0.1
2	4.0	3.9	-0.1
3	3.0	2.5	-0.5
4	3.5	3.3	-0.2
5	4.5	4.4	-0.1
6	5.0	4.9	-0.1
Average	4.0		-0.2
Determination of Result Allowable accuracy (average of difference) ± (0.72km/hr + 5% of observed) i.e. ± (0.2m/s + 5% of observed) (*Refer Section 5-1 of USEPA 454/R-99-005*)			Calculate Allowable: -0.2 Result: PASS / FAIL

Wind Direction Sensor

Calibration Point	**Transfer Standard, degrees**	**Sensor under test, degrees**	**Difference, degrees**
1	100	96	-4
2	96	94	-2
3	86	84	-2
4	86	84	-2
5	87	85	-2
6	83	81	-2
Average			-2
Determination of Result Allowable accuracy (average of difference) ± 5 degrees (*Refer Section 5-1 of USEPA 454/R-99-005*)			Result: PASS / FAIL

2. Temperature Sensor Precision Check

Temperature Sensor # 1

Sensor mounting height: 2m, 10m or Other (specify): 10m

Operational Precision Check

Time Interval	Calibration Point	Transfer Standard, °C	Sensor under test, °C	Difference, °C
1 min	1	26.0	25.8	-0.2
2 min	2	26.0	25.8	-0.2
3 min	3	25.9	25.7	-0.2
4 min	4	25.9	25.7	-0.2
5 min	5	25.8	25.6	-0.2
Average				-0.2
Determination of Result Acceptable tolerance is ± 0.5°C (*Refer Section 5-1 of USEPA 454/R-99-005*)				Result: (PASS) / FAIL

Temperature Sensor # 2 (If Present)

Sensor mounting height: 2m, 10m or Other (specify):

Operational Precision Check

Time Interval	Calibration Point	Transfer Standard, °C	Sensor under test, °C	Difference, °C
1 min	1		NA	
2 min	2			
3 min	3			
4 min	4			
5 min	5			
Average				
Determination of Result Acceptable tolerance is ± 0.5°C (*Refer Section 5-1 of USEPA 454/R-99-005*)				Result: PASS / FAIL

3. Humidity Sensor Precision Check

Operational Precision Check

Precision Test Start Time:				
Time Interval	**Calibration Point**	**Transfer Standard, % RH**	**Sensor under test, % RH**	**Difference, % RH**
5 min	1	67.1	66.2	0.9
10 min	2	67.2	66.3	0.9
15 min	3	66.8	65.7	1.1
Average				1.0
Determination of Result Allowable Relative Humidity (average of difference) not specified in *USEPA 454/R-99-005. Using AS3580.14:2014 which specifies* ±5% (when RH <35%) and ±7% (when RH ≥35%),				Result: (PASS) / FAIL

4. Solar Radiation Sensor Precision Check

Operational Precision Check

Calibration Point	**Transfer Standard, W/m²**	**Sensor under test, W/m²**	**Difference, W/m²**
1			
2		NA.	
3			
4			
5			
6			
Average			
Determination of Result Allowable Solar Radiation (average of difference) ±5% of observed (*Refer Section 5-1 of USEPA 454/R-99-005*) or ±50W/m² (*Refer Section 5.5.2.3 of AS/NZS 3580.14*)			Calculate Allowable:_____ Result: PASS / FAIL

5. Barometric Pressure Operational Precision Check

Operational Precision Check

Time Interval	**Calibration Point**	**Transfer Standard, hPa**	**Sensor under test, hPa**	**Difference, hPa**
0 min	1	984.7	983.6	1.1
15 min	2	984.8	983.7	1.1
30 min	3	984.8	983.7	1.1
45 min	4	984.3	983.4	1.0
60 min	5	984.7	983.6	1.1
Average				1.1
Determination of Result Allowable difference: ±3mb (±3hPa) (average difference) (*Refer Section 5-1 of USEPA 454/R-99-005*)				Result: (PASS) / FAIL

6. Precipitation/Rainfall Operational Precision Check – In Situ

Sensor Under Test

Manufacturer:	Hyqvest
Model:	TBT
Resolution / Tipping bucket size:	(circle) 0.2mm / 0.5mm or Other (specify):
Catch diameter:	200mm or Other (specify):

Maintenance

Item	Completed
Record "As Found" details of rain gauge, are any conditions present that would affect data integrity? Comments:	Some debris in screen but water passing OK
Disassemble the rain gauge and clean thoroughly	✓ OK
Check rain gauge is level	✓ OK
Re-level if needed Comments if unable to re-level:	NA.
Reassemble the rain gauge and check to confirm no leaks through funnel mechanism	✓ cleaned OK

Operational Precision Check

Precision Test Start Time: 15:20		
Expected	**Recorded**	**Difference**
104 tips 20.8 mm	100 tips 20.0 mm	0.8 mm
Determination of Result Allowable difference: ±10% or 0.5mm 10% = 2.1 mm		Result: (PASS) / FAIL
Comments: Tips/mm added during cleaning/test preparation: Nil Total rainfall volume to be removed from daily rain records due to maintenance and precision test completed: 20.0 mm Note → It did rain after test and 1.2mm is correct for rain event.		

Maintenance Summary	Yes	No	Comments
There were NO equipment faults found. No action required – (file report)	✓		
There were faults found (Fails) – Were these fixed on site?			NA

Any Faults / Fails that cannot be repaired on site must be reported to CBased:
Office: (02) 65713334 or email support@cbased.com.au
Date faults notified to CBased: NA
Comments/Action Taken/Action Recommended:
(If sensors are replaced - record serial numbers and details of both the removed and installed sensors and attach calibration certificates)

Specific Comments on equipment "as found":

OK

Specific Comments on equipment "as left":

OK

NB: CBased Environmental completes maintenance, calibration and diagnostic checks on a six monthly basis as per Section 8.3.5 of USEPA 454/R-99-005, it is the Clients responsibility to complete daily remote operational checks and weekly onsite inspections/maintenance of the meteorological station.

Completed By:

Technician Name(s):	COLIN DAVIES	Signed:	

CBased Environmental Pty Limited
ABN 62 611 924 264

Dixon Sand Quarry

Environmental Monitoring
Air Quality

Tapered Element Oscillating Microbalance (TEOM) (PM_{10}) and Meteorological Data

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January 2026

Colin Davies BSc MEIA CENVP
Environmental Scientist
Date 26 February 2026

CBased Environmental Pty Ltd
Unit 3, 2 Enterprise Crescent SINGLETON NSW 2330
☎ (02) 65713334

1.0 Summary

CBased Environmental Pty Limited is contracted by Dixon Sand to conduct continuous Tapered Element Oscillating Microbalance (TEOM) for fine particulates (PM_{10}) and meteorological monitoring for the Dixon Sand Quarry. The information is required to assess air quality levels. The results for the TEOM and meteorological site are included in this report.

The monitoring programme includes:

- One continuous TEOM PM_{10} monitor; and
- One continuous meteorological station.

This monthly report for January 2026 was prepared by CBased Environmental and includes the following:

- TEOM (PM_{10}) monitoring results; and
- Meteorological results.

In accordance with Schedule 3, Condition 7 of the Dixon Sand development Consent and the Dixon Sand EPL;

- 24-hour average PM_{10} results were below the NEPM 24-hour maximum criteria of 50ug/m^3.
- 24-hour average PM_{10} results were below the Dixon Sand Quarry EPL limit of 42ug/m^3.
- The PM_{10} annual average is below the Dixon Sand Quarry consent annual average criteria of 30ug/m^3; and
- The calculated TSP is below the Dixon Sand Quarry annual average criteria of 90ug/m^3.

Note: Based on the available data, statements in green indicate current conformance to Dixon Sand Quarry Air Quality Impact Assessment criteria, statements in red indicate possible non-conformance. Year to date annual average for PM_{10} is calculated from 1 July 2025 for TEOM's coinciding with the Dixon Sand project year.

Approximately 100% of valid meteorological data was recorded for January 2026

Approximately 96.03% of valid TEOM data was available for January 2026.

2.0 Sampling Programme

The TEOM is sited and operated to the applicable Australian Standard and/or NSW EPA approved methods. The following Australian Standards were used:

- AS3580.9.8 - "*Methods for Sampling and Analysis of Ambient Air. Determination of Suspended Particulates—PM_{10} continuous direct mass method using a tapered element oscillating microbalance analyser*"; and
- AS/NZS 3580.1.1 - "*Methods for Sampling and Analysis of Ambient Air Part 1.1 Guide to Siting Air Monitoring Equipment*".

TEOM PM_{10} results are 24-hour averages at midnight and are reported as $\mu g/m^3$ corrected to 0 degrees C and 101.3kPa.

All laboratory analysis was conducted by a National Association of Testing Authorities (NATA) accredited laboratory.

Air Quality monitoring site descriptions and locations are provided in **Table 1**.

Table 1: Dixon Sand Air Quality Monitoring Description and Locations

Monitor	Site Code	Location Description
TEOM PM_{10}	TEOM	Old North Road, Maroota NSW
Meteorological Station	MET	Old North Road, Maroota NSW

3.0 Results

3.1 TEOM PM_{10}

24-hour average TEOM PM_{10} results from the AQMS data collection software are provided in **Table 2** and a chart of the data is provided in **Figure 1**.

During the January 2026 monitoring period, individual 24-hour TEOM PM_{10} results were below the National Environmental Protection Measure (NEPM) short-term (24hr) impact criteria of 50ug/m^3.

During the January 2026 monitoring period, individual 24-hour TEOM PM_{10} results were below the Dixon Sand Quarry EPL limit of 42ug/m3 **Table 2.**

Approximately 96.03% of valid TEOM data was available for January 2026.

At present, the current TEOM PM_{10} annual average is below the Dixon Sand Quarry annual average PM_{10} criteria of 30ug/m^3. The current annual average for calculated Total Suspended Particulates (TSP) is below the annual average criterion of 90ug/m^3. The TSP is calculated by multiplying the PM_{10} by 2.5. Note: the annual average is calculated from 1 July 2025 and therefore an annual amount of data has not been collected.

The quarterly TEOM calibration was conducted in January 2026 (for December 2025). The next calibration is due to be completed in March 2026. The calibration certificate is provided in **Appendix 1** (when required).

Table 2: Average Daily 24-hr TEOM PM_{10} and TSP Results for January 2026 from AQMS and Annual Average PM_{10} calculated from 1 July 2025.

Date	PM_{10} 24-hr Average ($\mu g/m^3$)	PM_{10} Annual Average ($\mu g/m^3$)	24-hr Average TSP* ($\mu g/m^3$)	Annual Average TSP** ($\mu g/m^3$)
1/01/2026	13.3	17.1	33.3	42.7
2/01/2026	12.1	17.1	30.3	42.7
3/01/2026	10.5	17.0	26.3	42.6
4/01/2026	13.4	17.0	33.6	42.5
5/01/2026	ND	17.0	ND	42.5
6/01/2026	ND	17.0	ND	42.5
7/01/2026	18.2	17.0	45.5	42.5
8/01/2026	18.1	17.0	45.3	42.5
9/01/2026	20.6	17.0	51.5	42.6
10/01/2026	18.9	17.0	47.3	42.6
11/01/2026	36.4	17.2	91.0	42.9
12/01/2026	15.9	17.1	39.8	42.9
13/01/2026	20.3	17.2	50.8	42.9
14/01/2026	15.8	17.2	39.5	42.9
15/01/2026	20.0	17.2	50.0	42.9
16/01/2026	13.4	17.2	33.5	42.9
17/01/2026	10.2	17.1	25.5	42.8
18/01/2026	10.9	17.1	27.3	42.7
19/01/2026	11.7	17.1	29.3	42.6
20/01/2026	12.0	17.0	30.0	42.6
21/01/2026	14.7	17.0	36.8	42.5
22/01/2026	23.1	17.0	57.7	42.6
23/01/2026	20.7	17.1	51.8	42.7
24/01/2026	16.0	17.1	40.0	42.6
25/01/2026	17.1	17.1	42.8	42.6
26/01/2026	26.5	17.1	66.3	42.8
27/01/2026	19.1	17.1	47.8	42.8
28/01/2026	22.0	17.1	55.0	42.9
29/01/2026	21.2	17.2	53.0	42.9
30/01/2026	21.7	17.2	54.3	43.0
31/01/2026	37.2	17.3	93.0	43.2

*Calculated from PM10

**Calculated from PM10 Annual Average

Note: results above the Dixon Sand EPL criteria limit of 42 ug/m^3 are highlighted in yellow

No Data (ND) - <18hrs hour of valid data to calculate a 24hr average

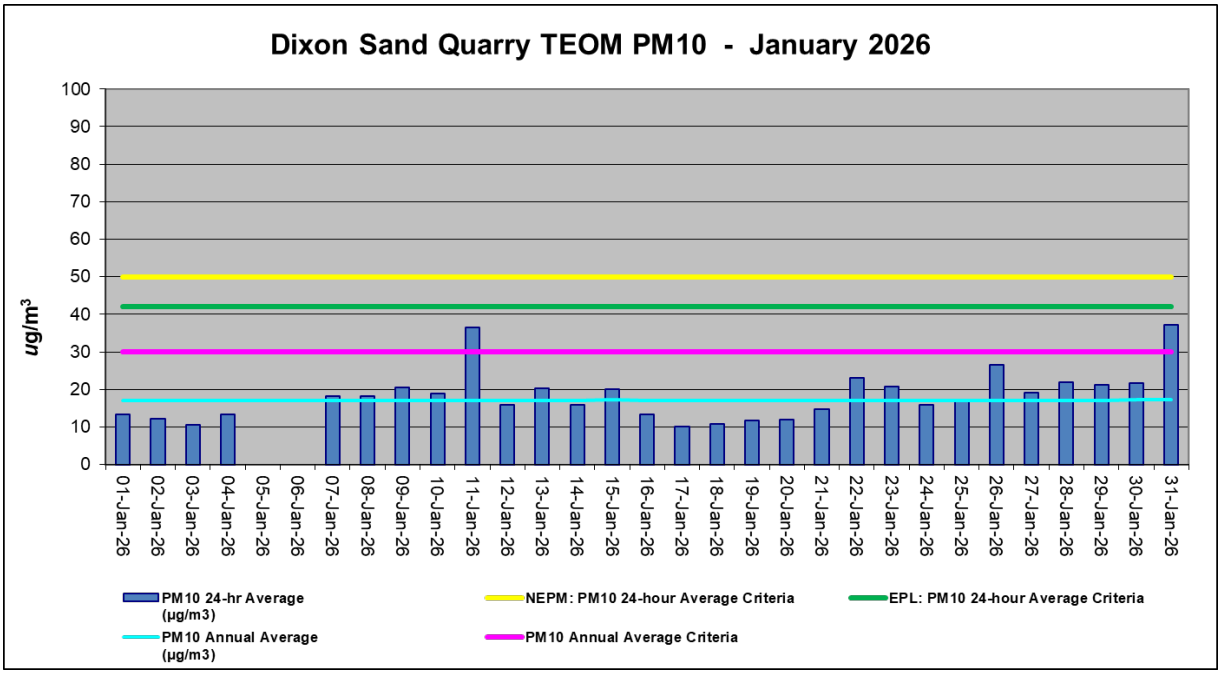


Figure 1: *TEOM PM_{10} 24 hr, Annual Average and Criteria*

3.2 Meteorological Data

The weather station logs data at 5-minute intervals and sends the data to a web database by NextG telemetry. The data is accessible from the web site http://console.teledata.com.au/index.html.

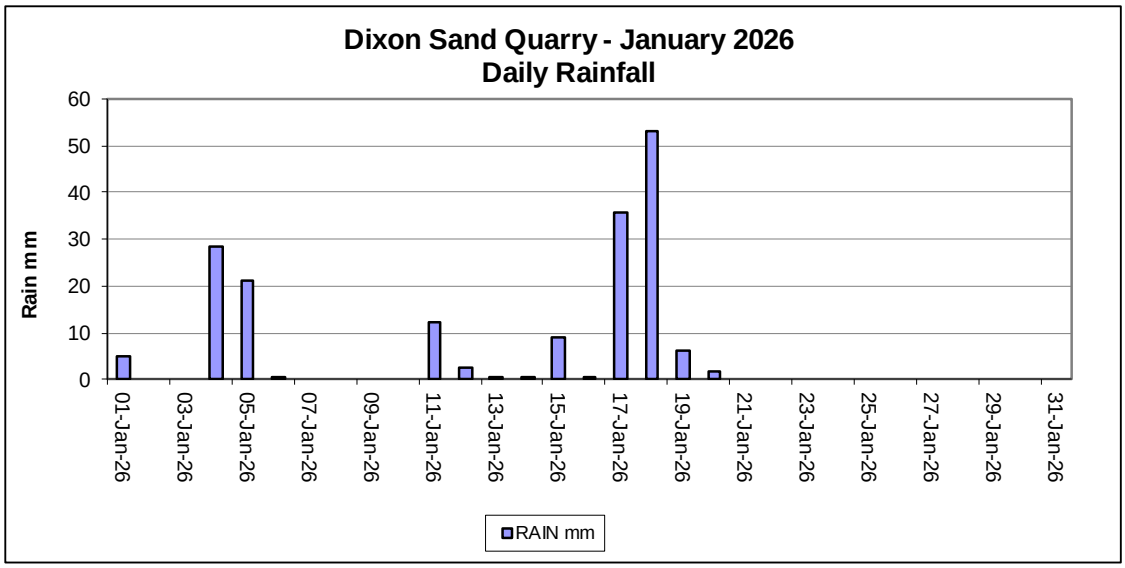
A summary of monthly results is presented in **Table 3**. Charts of meteorological parameters are presented in **Figures 2** and **3**. A Windrose is provided in **Figure 4**.

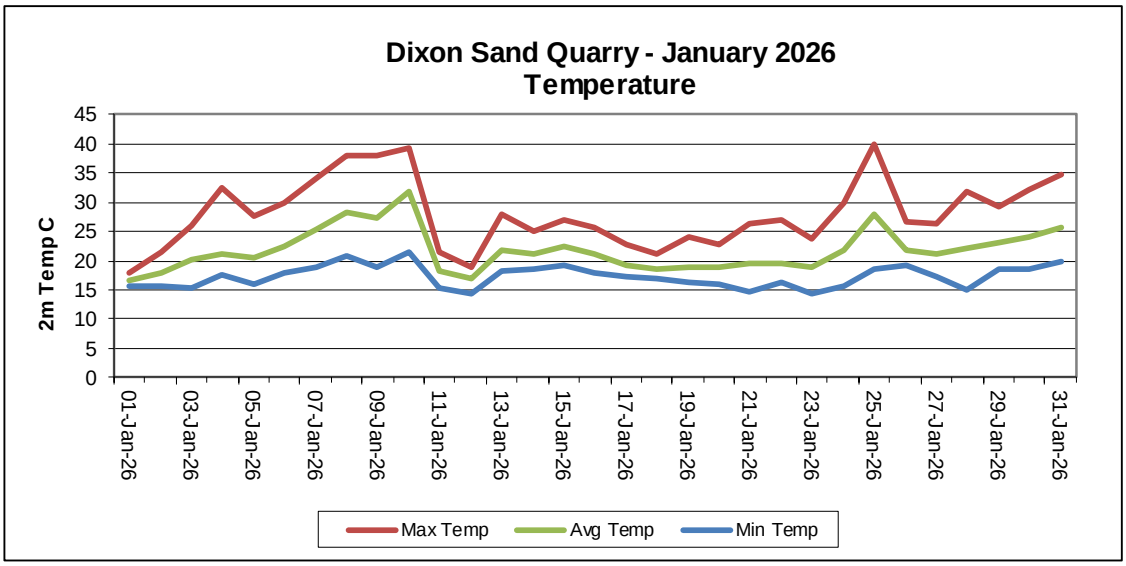
A 6-monthly physical screening and system check of the meteorological station was conducted in January 2026 (for December 2025). The next physical screening and system check is currently scheduled for June 2026. The screening and system check certificates are provided in **Appendix 1** (when required).

Approximately 100% of valid meteorological data was recorded for January 2026.

Table 3: Meteorological Data Summary for January 2026

Date	Min Temp	Avg Temp	Max Temp	RAIN mm	Min WS	Avg WS	Max WS	Min Humidity	Avg Humidity	Max Humidity	Min Pressure	Avg Pressure	Max Pressure
1/01/2026	15.6	16.5	17.9	4.8	0.0	3.7	18.1	68.3	83.9	94.4	984.5	987.8	991.4
2/01/2026	15.5	17.9	21.4	0.0	0.0	4.5	19.7	60.1	73.3	88.4	988.8	990.3	991.8
3/01/2026	15.4	20.3	25.9	0.0	0.1	5.2	25.5	59.9	76.0	93.2	982.6	987.1	990.5
4/01/2026	17.6	21.2	32.5	28.4	0.0	4.4	30.7	40.7	78.4	94.5	979.2	984.0	987.0
5/01/2026	15.9	20.6	27.6	21.2	0.2	4.2	19.0	53.0	80.2	94.1	982.9	985.2	988.7
6/01/2026	18.0	22.4	30.0	0.2	0.3	4.1	23.2	48.5	76.3	94.8	987.0	988.9	991.2
7/01/2026	18.9	25.3	34.0	0.0	0.2	3.9	22.2	34.1	67.0	93.3	988.2	990.6	993.0
8/01/2026	20.8	28.2	38.0	0.0	0.2	4.7	13.8	20.0	51.4	79.9	985.6	988.0	990.1
9/01/2026	18.8	27.4	38.0	0.0	0.2	5.6	24.5	23.0	57.2	94.1	979.4	983.7	987.5
10/01/2026	21.4	31.9	39.1	0.0	0.4	6.5	37.8	21.8	35.3	75.8	975.5	978.7	981.0
11/01/2026	15.3	18.3	21.3	12.2	0.3	3.7	16.1	70.9	81.3	94.4	981.1	987.9	993.9
12/01/2026	14.4	16.8	19.0	2.4	0.1	3.2	9.9	84.3	91.2	94.8	987.5	990.5	993.1
13/01/2026	18.1	21.8	27.9	0.4	0.0	4.2	23.9	56.9	80.9	95.2	982.0	984.5	987.4
14/01/2026	18.5	21.0	25.0	0.2	0.0	4.5	17.7	64.8	80.2	92.1	980.9	983.9	985.7
15/01/2026	19.3	22.3	27.1	9.0	0.1	4.2	16.4	62.3	79.1	92.5	974.3	979.5	983.5
16/01/2026	17.8	21.3	25.8	0.4	0.1	3.3	10.6	59.4	77.4	93.4	975.4	977.5	980.3
17/01/2026	17.4	19.3	22.6	35.8	0.1	4.3	17.0	74.2	88.1	95.0	979.8	981.8	984.9
18/01/2026	16.9	18.5	21.0	53.0	0.2	5.2	27.2	71.8	89.0	94.0	983.7	986.2	988.5
19/01/2026	16.4	19.0	24.1	6.2	0.2	4.7	22.9	58.6	82.4	95.6	985.2	986.8	988.4
20/01/2026	16.0	18.7	22.9	1.6	0.1	3.7	15.0	59.7	81.2	95.1	981.1	983.6	986.4
21/01/2026	14.6	19.6	26.3	0.0	0.0	4.0	26.6	46.1	72.8	94.4	976.8	979.6	982.0
22/01/2026	16.2	19.6	27.0	0.0	0.0	3.0	17.0	48.6	69.5	83.0	977.4	981.9	989.7
23/01/2026	14.4	18.7	23.6	0.0	0.0	3.6	16.1	52.3	67.8	85.4	988.4	990.0	991.8
24/01/2026	15.7	21.6	29.8	0.0	0.0	3.7	18.0	47.1	70.7	90.0	980.9	985.6	990.3
25/01/2026	18.4	28.0	40.0	0.0	0.0	3.1	14.4	18.4	60.1	94.6	978.0	980.8	984.0
26/01/2026	19.3	21.8	26.6	0.0	0.2	3.2	15.3	56.7	69.5	83.0	980.9	985.6	988.6
27/01/2026	17.2	21.1	26.4	0.0	0.0	4.1	14.3	50.3	70.2	86.4	984.2	986.9	988.7
28/01/2026	15.1	22.2	31.9	0.0	0.0	4.8	16.8	39.9	70.1	91.5	983.9	985.9	990.3
29/01/2026	18.6	23.0	29.1	0.0	0.0	4.3	22.6	50.7	72.1	89.7	989.3	991.1	993.2
30/01/2026	18.7	24.2	32.0	0.0	0.1	4.0	13.2	44.5	69.1	86.2	982.9	988.1	992.8
31/01/2026	19.8	25.6	34.6	0.0	0.2	5.2	18.8	39.5	72.4	91.9	976.9	981.0	985.2
Monthly	**14.4**	**21.7**	**40.0**	**175.8**	**0.0**	**4.2**	**37.8**	**18.4**	**73.4**	**95.6**	**974.3**	**985.3**	**993.9**





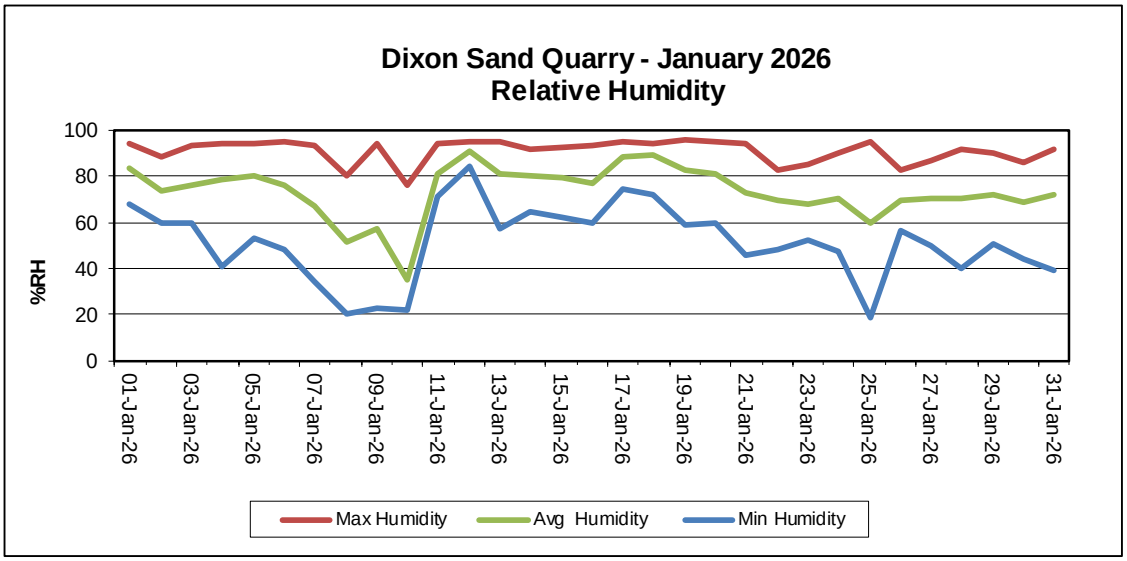


Figure 2: *Daily Rainfall, Temperature and Relative Humidity Charts*

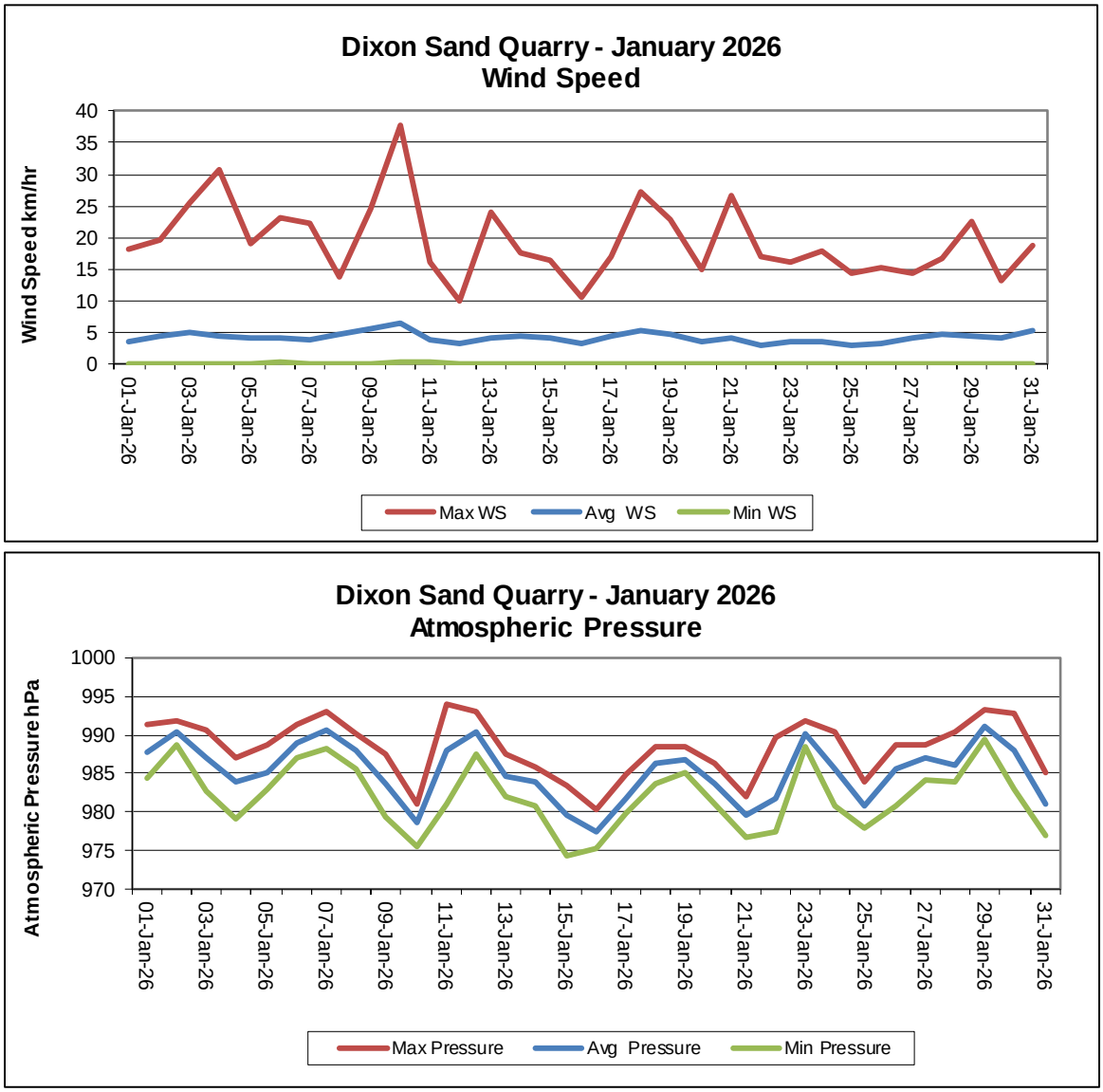


Figure 3: *Wind Speed and Atmospheric Pressure Chart*

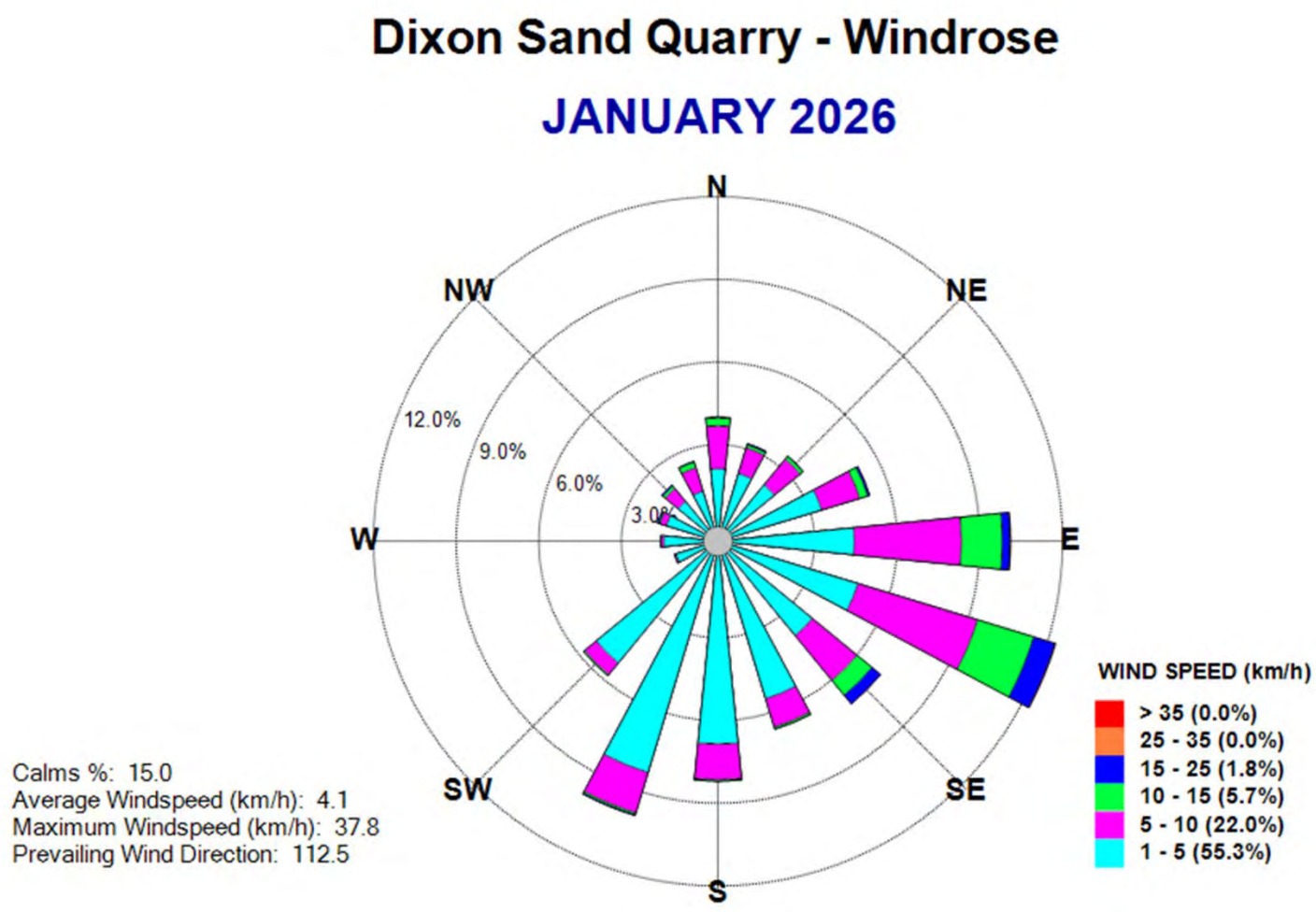


Figure 4: *Windrose*

Appendix 1

Calibration Documents (when required)

CBased Environmental Pty Limited
ABN 62 611 924 264

Dixon Sand Quarry

Environmental Monitoring
Air Quality

Tapered Element Oscillating Microbalance (TEOM) (PM_{10}) and Meteorological Data

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February 2026

Colin Davies BSc MEIA CENVP
Environmental Scientist
Date 17 March 2026

CBased Environmental Pty Ltd
Unit 3, 2 Enterprise Crescent SINGLETON NSW 2330
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In accordance with Schedule 3, Condition 7 of the Dixon Sand development Consent and the Dixon Sand EPL;

- 24-hour average PM_{10} results were below the NEPM 24-hour maximum criteria of 50ug/m^3.
- 24-hour average PM_{10} results were below the Dixon Sand Quarry EPL limit of 42ug/m^3.
- The PM_{10} annual average is below the Dixon Sand Quarry consent annual average criteria of 30ug/m^3; and
- The calculated TSP is below the Dixon Sand Quarry annual average criteria of 90ug/m^3.

Note: Based on the available data, statements in green indicate current conformance to Dixon Sand Quarry Air Quality Impact Assessment criteria, statements in red indicate possible non-conformance. Year to date annual average for PM_{10} is calculated from 1 July 2025 for TEOM's coinciding with the Dixon Sand project year.

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Meteorological Station	MET	Old North Road, Maroota NSW

3.0 Results

3.1 TEOM PM_{10}

24-hour average TEOM PM_{10} results from the AQMS data collection software are provided in **Table 2** and a chart of the data is provided in **Figure 1**.

During the February 2026 monitoring period, individual 24-hour TEOM PM_{10} results were below the National Environmental Protection Measure (NEPM) short-term (24hr) impact criteria of 50ug/m^3.

During the February 2026 monitoring period, individual 24-hour TEOM PM_{10} results were below the Dixon Sand Quarry EPL limit of 42ug/m3 **Table 2.**

Approximately 99.93% of valid TEOM data was available for February 2026.

At present, the current TEOM PM_{10} annual average is below the Dixon Sand Quarry annual average PM_{10} criteria of 30ug/m^3. The current annual average for calculated Total Suspended Particulates (TSP) is below the annual average criterion of 90ug/m^3. The TSP is calculated by multiplying the PM_{10} by 2.5. Note: the annual average is calculated from 1 July 2025 and therefore an annual amount of data has not been collected.

The quarterly TEOM calibration was conducted in January 2026 (for December 2025). The next calibration is due to be completed in March 2026. The calibration certificate is provided in **Appendix 1** (when required).

Table 2: Average Daily 24-hr TEOM PM_{10} and TSP Results for February 2026 from AQMS and Annual Average PM_{10} calculated from 1 July 2025.

Date	PM_{10} 24-hr Average ($\mu g/m^3$)	PM_{10} Annual Average ($\mu g/m^3$)	24-hr Average TSP* ($\mu g/m^3$)	Annual Average TSP** ($\mu g/m^3$)
1/02/2026	37.0	17.4	92.5	43.5
2/02/2026	16.0	17.4	40.0	43.4
3/02/2026	16.4	17.4	41.0	43.4
4/02/2026	20.2	17.4	50.5	43.5
5/02/2026	34.2	17.5	85.5	43.7
6/02/2026	28.3	17.5	70.8	43.8
7/02/2026	17.7	17.5	44.3	43.8
8/02/2026	15.9	17.5	39.8	43.8
9/02/2026	17.3	17.5	43.3	43.8
10/02/2026	21.2	17.5	53.0	43.8
11/02/2026	21.1	17.5	52.8	43.9
12/02/2026	20.0	17.6	50.0	43.9
13/02/2026	19.1	17.6	47.8	43.9
14/02/2026	10.9	17.5	27.3	43.8
15/02/2026	8.4	17.5	21.0	43.7
16/02/2026	11.6	17.5	29.0	43.7
17/02/2026	15.2	17.5	38.0	43.6
18/02/2026	25.5	17.5	63.8	43.7
19/02/2026	28.6	17.5	71.5	43.9
20/02/2026	22.8	17.6	57.0	43.9
21/02/2026	18.7	17.6	46.8	43.9
22/02/2026	15.5	17.6	38.8	43.9
23/02/2026	21.5	17.6	53.8	43.9
24/02/2026	23.5	17.6	58.8	44.0
25/02/2026	23.2	17.6	58.0	44.1
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28/02/2026	11.6	17.5	29.0	43.8

*Calculated from PM10

**Calculated from PM10 Annual Average

Note: results above the Dixon Sand EPL criteria limit of 42 ug/m^3 are highlighted in yellow

No Data (ND) - <18hrs hour of valid data to calculate a 24hr average

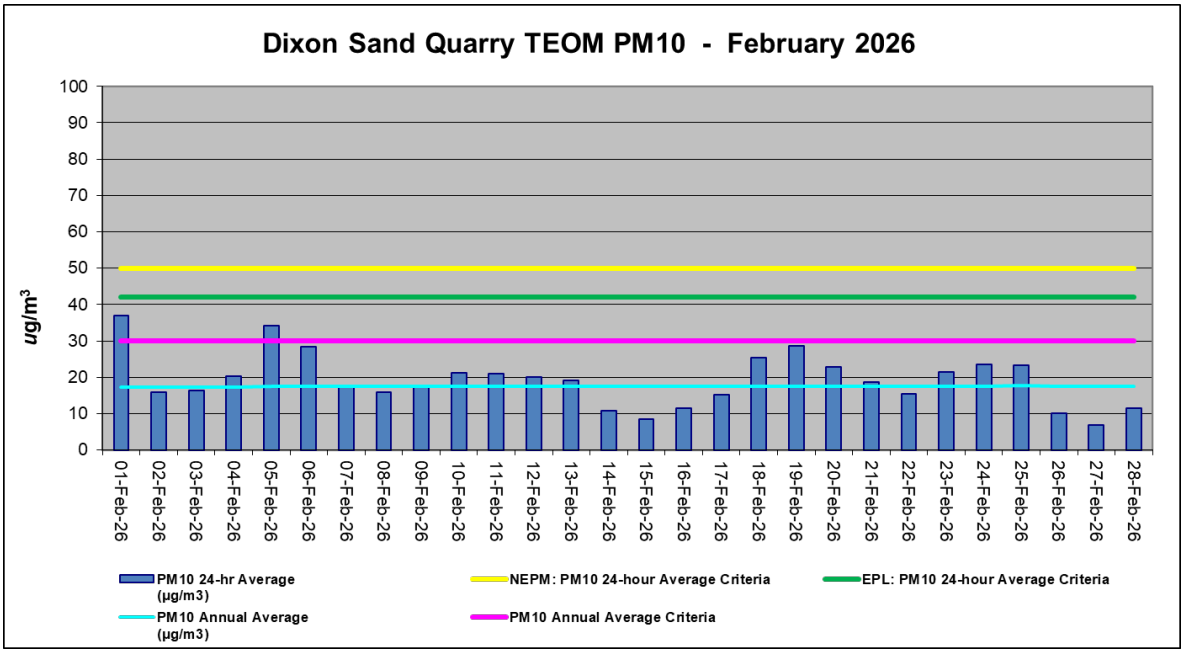


Figure 1: *TEOM PM_{10} 24 hr, Annual Average and Criteria*

3.2 Meteorological Data

The weather station logs data at 5-minute intervals and sends the data to a web database by NextG telemetry. The data is accessible from the web site http://console.teledata.com.au/index.html.

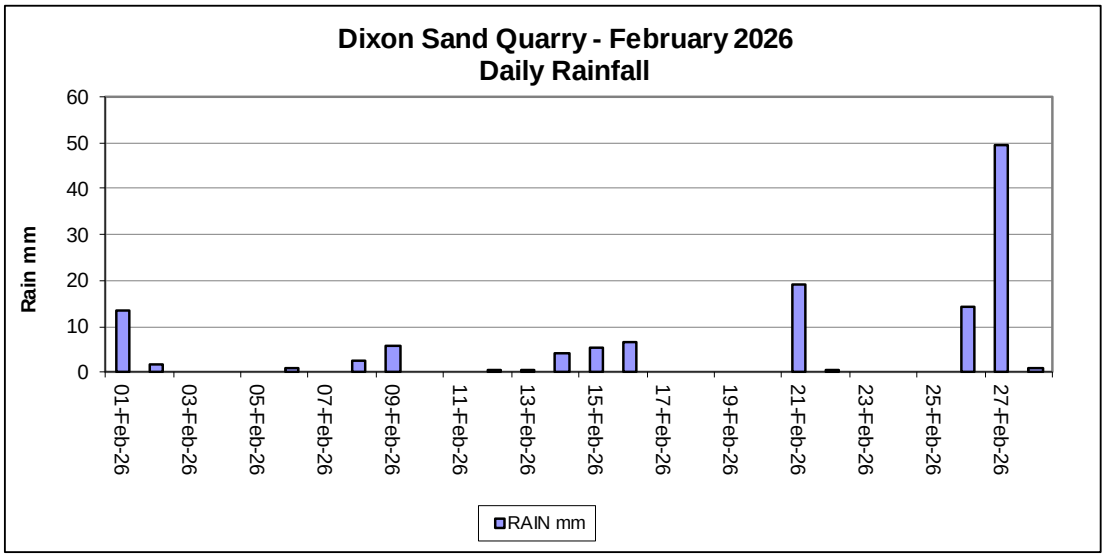
A summary of monthly results is presented in **Table 3**. Charts of meteorological parameters are presented in **Figures 2** and **3**. A Windrose is provided in **Figure 4**.

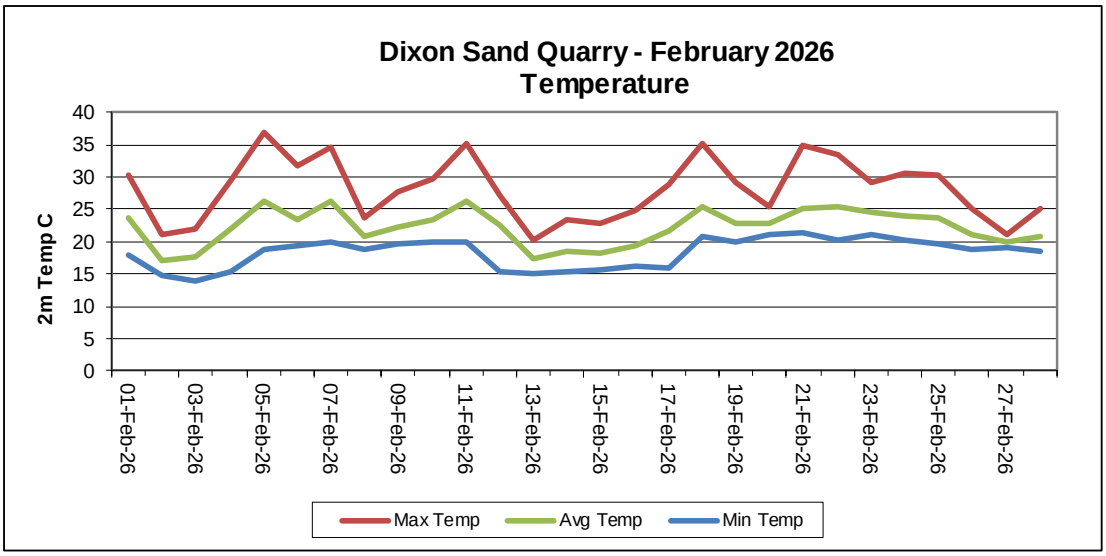
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Approximately 100% of valid meteorological data was recorded for February 2026.

Table 3: Meteorological Data Summary for February 2026

Date	Min Temp	Avg Temp	Max Temp	RAIN mm	Min WS	Avg WS	Max WS	Min Humidity	Avg Humidity	Max Humidity	Min Pressure	Avg Pressure	Max Pressure
1/02/2026	17.9	23.6	30.2	13.6	0.2	3.5	16.1	57.1	80.3	92.9	977.3	979.6	985.6
2/02/2026	14.9	17.2	21.0	1.6	0.0	4.5	16.3	49.0	69.2	93.5	985.3	993.0	998.2
3/02/2026	13.8	17.7	21.9	0.0	0.0	2.9	19.4	59.9	77.0	90.6	995.1	996.9	998.7
4/02/2026	15.3	21.9	29.4	0.0	0.0	3.9	18.9	46.4	68.1	88.8	988.1	991.8	995.7
5/02/2026	18.7	26.4	37.0	0.0	0.2	3.0	16.4	17.7	58.0	86.5	987.0	989.3	992.4
6/02/2026	19.5	23.5	31.8	1.0	0.0	3.2	14.1	47.3	68.3	84.8	989.0	991.6	993.6
7/02/2026	19.8	26.4	34.5	0.0	0.2	3.6	16.7	33.6	58.2	78.0	987.6	989.7	991.7
8/02/2026	18.7	20.9	23.6	2.4	0.0	2.8	17.0	64.8	86.9	93.2	987.0	989.1	991.6
9/02/2026	19.6	22.2	27.8	5.6	0.0	3.0	15.2	60.4	83.9	95.0	983.9	985.8	987.9
10/02/2026	19.9	23.5	29.6	0.0	0.1	3.1	10.2	52.0	78.0	90.5	986.1	987.8	990.4
11/02/2026	19.9	26.4	35.1	0.0	0.0	3.7	14.4	36.4	68.0	94.1	977.0	982.8	987.0
12/02/2026	15.3	22.6	27.2	0.2	0.4	4.0	16.6	46.4	68.8	89.8	973.6	979.0	987.4
13/02/2026	15.1	17.3	20.3	0.2	0.0	2.2	8.6	64.5	76.4	89.6	987.0	989.6	992.9
14/02/2026	15.4	18.4	23.4	4.2	0.0	4.2	19.4	54.8	76.2	93.5	991.5	993.0	994.7
15/02/2026	15.6	18.3	22.7	5.4	0.0	2.8	14.5	68.8	84.6	94.0	989.7	991.7	993.5
16/02/2026	16.2	19.2	24.9	6.6	0.0	3.9	24.5	56.5	81.6	94.9	987.7	989.6	991.4
17/02/2026	15.9	21.5	28.8	0.0	0.0	3.4	17.1	42.8	71.0	91.3	980.6	984.5	989.1
18/02/2026	20.9	25.5	35.2	0.0	0.1	4.5	18.6	35.0	62.2	85.7	978.3	980.9	985.3
19/02/2026	19.9	22.9	29.2	0.0	0.2	5.5	24.6	61.1	80.4	90.1	984.9	987.3	991.3
20/02/2026	21.2	22.8	25.3	0.0	0.1	4.8	20.8	70.4	79.0	88.1	985.7	989.1	991.5
21/02/2026	21.3	25.0	34.8	19.0	0.0	3.4	22.5	43.6	76.0	93.3	980.9	984.1	986.1
22/02/2026	20.2	25.3	33.3	0.2	0.1	3.4	13.6	47.9	77.1	95.0	979.3	982.6	985.1
23/02/2026	21.0	24.5	29.1	0.0	0.0	3.2	23.1	59.9	76.6	88.2	979.9	984.9	990.1
24/02/2026	20.1	23.8	30.7	0.0	0.0	4.0	21.9	53.6	77.3	93.5	986.9	989.1	991.6
25/02/2026	19.6	23.6	30.4	0.0	0.2	2.9	17.4	54.3	76.0	89.2	985.7	987.7	990.6
26/02/2026	18.8	21.1	25.2	14.4	0.1	2.8	9.0	72.1	86.8	93.0	988.9	990.4	992.1
27/02/2026	19.0	20.0	21.1	49.4	0.0	3.0	16.4	89.9	92.9	94.8	989.0	990.8	992.7
28/02/2026	18.4	20.9	25.1	0.8	0.0	4.3	18.6	61.8	81.4	94.7	989.5	991.2	992.7
Monthly	**13.8**	**22.2**	**37.0**	**124.6**	**0.0**	**3.5**	**24.6**	**17.7**	**75.7**	**95.0**	**973.6**	**988.0**	**998.7**





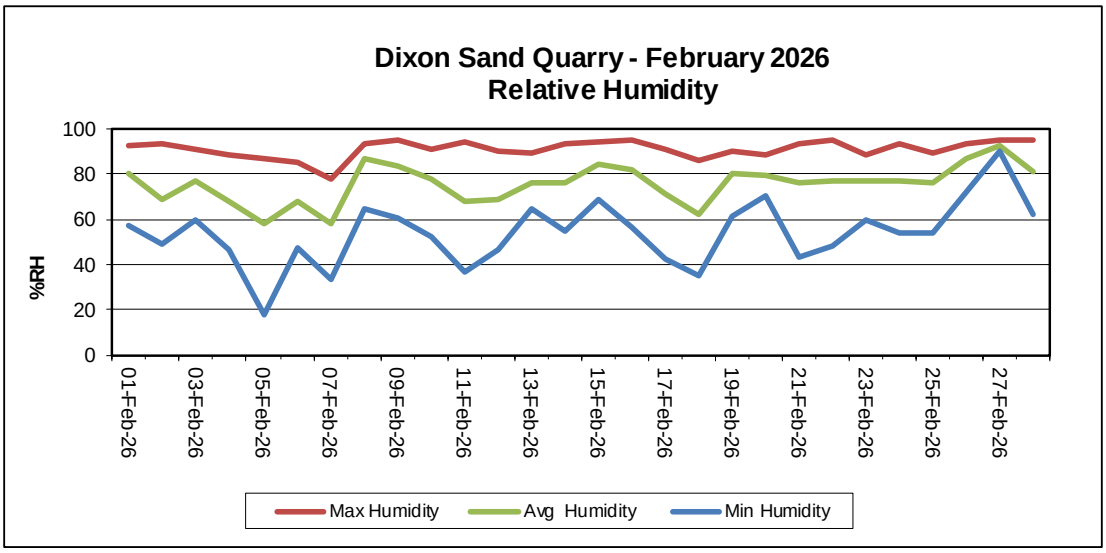


Figure 2: *Daily Rainfall, Temperature and Relative Humidity Charts*

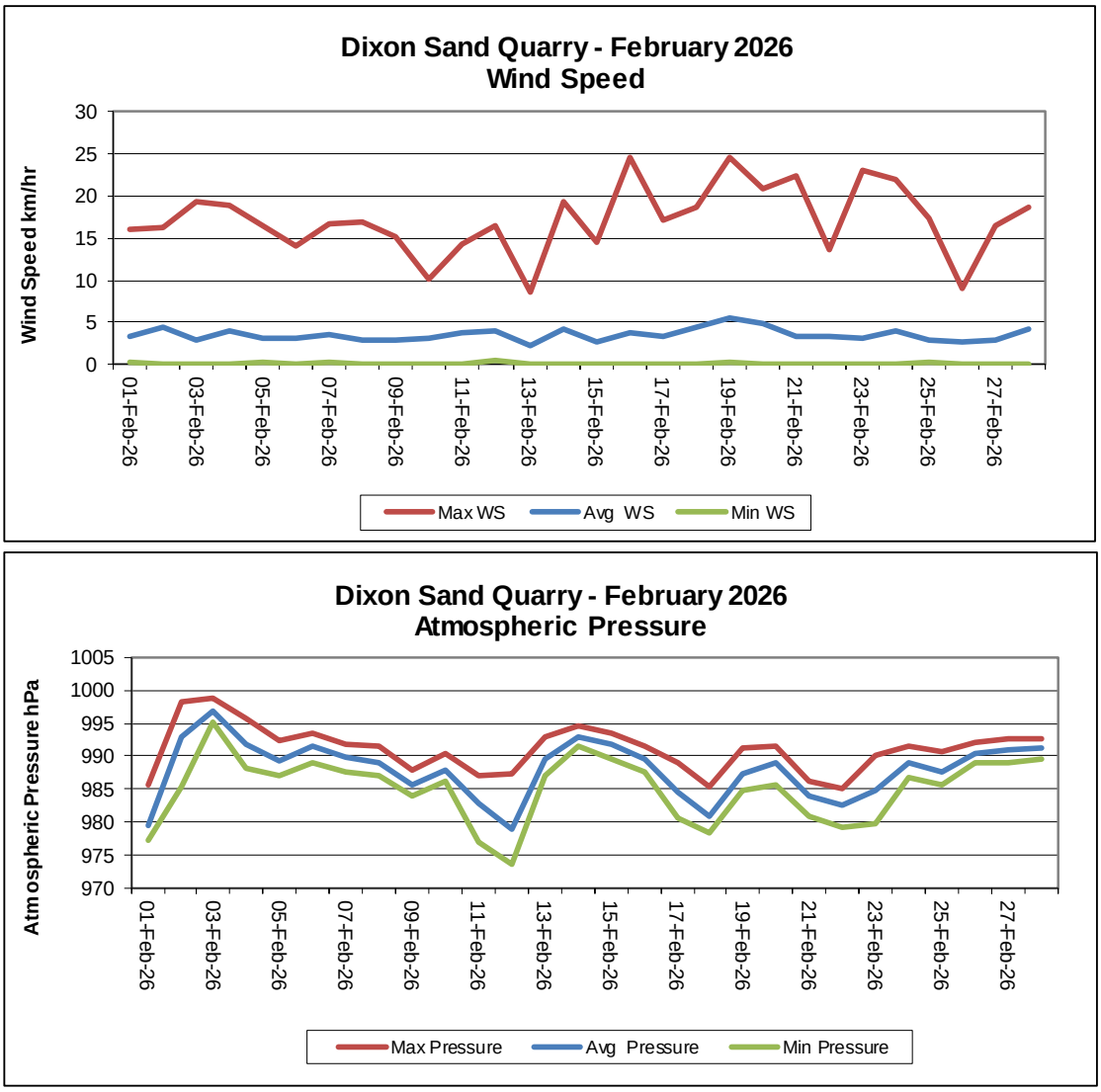


Figure 3: *Wind Speed and Atmospheric Pressure Cha*

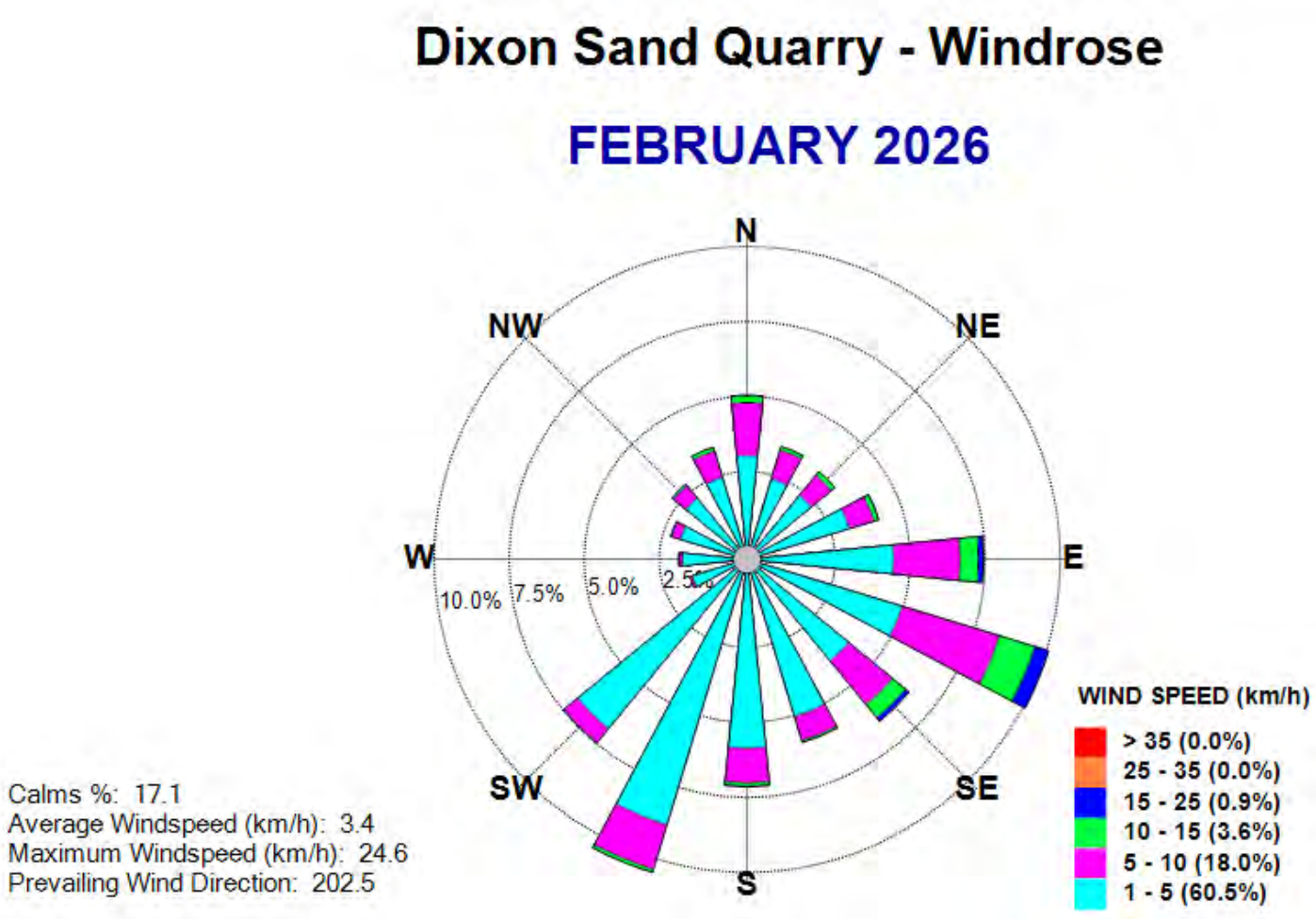


Figure 4: *Windrose*

Appendix 1

Calibration Documents (when required)

CBased Environmental Pty Limited
ABN 62 611 924 264

Dixon Sand Quarry

Environmental Monitoring
Air Quality

Tapered Element Oscillating Microbalance (TEOM) (PM_{10}) and Meteorological Data

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March 2026

Colin Davies BSc MEIA CENVP
Environmental Scientist
Date 10 April 2026

CBased Environmental Pty Ltd
Unit 3, 2 Enterprise Crescent SINGLETON NSW 2330
☎ (02) 65713334

1.0 Summary

CBased Environmental Pty Limited is contracted by Dixon Sand to conduct continuous Tapered Element Oscillating Microbalance (TEOM) for fine particulates (PM_{10}) and meteorological monitoring for the Dixon Sand Quarries. The information is required to assess air quality levels. The results for the TEOM and meteorological site are included in this report.

The monitoring programme includes:

- One continuous TEOM PM_{10} monitor; and
- One continuous meteorological station.

This monthly report for March 2026 was prepared by CBased Environmental and includes the following:

- TEOM (PM_{10}) monitoring results; and
- Meteorological results.

In accordance with Dixon Sand Development Consents (DA250-09-01 and DA165-7-2005) and Environmental Protection Licences (EPL3916 and EPL12513)

- 24-hour average PM_{10} results were below the 24-hour maximum criteria of 50ug/m^3.
- The PM_{10} rolling annual average is below the annual average criteria of 30ug/m^3; and
- The calculated TSP is below the annual average criteria of 90ug/m^3.

Note: Based on the available data, statements in green indicate current conformance to Dixon Sand Quarry Air Quality Impact Assessment criteria, statements in red indicate possible non-conformance. Year to date annual average for PM_{10} is calculated from 1 April 2025 to 31 March 2026.

Approximately 97.0% of valid meteorological data was recorded for March 2026

Approximately 91.5% of valid TEOM data was available for March 2026.

2.0 Sampling Programme

The TEOM is sited and operated to the applicable Australian Standard and/or NSW EPA approved methods. The following Australian Standards were used:

- AS3580.9.8 - "*Methods for Sampling and Analysis of Ambient Air. Determination of Suspended Particulates—PM_{10} continuous direct mass method using a tapered element oscillating microbalance analyser*"; and
- AS/NZS 3580.1.1 - "*Methods for Sampling and Analysis of Ambient Air Part 1.1 Guide to Siting Air Monitoring Equipment*".

TEOM PM_{10} results are 24-hour averages at midnight and are reported as $\mu g/m^3$ corrected to 0 degrees C and 101.3kPa.

All laboratory analysis was conducted by a National Association of Testing Authorities (NATA) accredited laboratory.

Air Quality monitoring site descriptions and locations are provided in **Table 1**.

Table 1: Dixon Sand Air Quality Monitoring Description and Locations

Monitor	Site Code	Location Description
TEOM PM_{10}	TEOM	Old Northern Road, Maroota NSW
Meteorological Station	MET	Old Northern Road, Maroota NSW

3.0 Results

3.1 TEOM PM_{10}

24-hour average TEOM PM_{10} results from the AQMS data collection software are provided in **Table 2** and a chart of the data is provided in **Figure 1**.

During the March 2026 monitoring period, individual 24-hour TEOM PM_{10} results were below the DA/EPL short-term (24hr) impact criteria of 50ug/m^3.

Approximately 91.5% of valid TEOM data was available for March 2026.

At present, the current TEOM PM_{10} rolling annual average is below the Dixon Sand Quarry annual average PM_{10} criteria of 30ug/m^3. The current annual average for calculated Total Suspended Particulates (TSP) is below the rolling annual average criterion of 90ug/m^3. The TSP is calculated by multiplying the PM_{10} by 2.5. Note: the rolling annual average is calculated from 1 April 2025 to 31 March 2026.

The quarterly TEOM calibration was conducted on 10 March 2026. The next calibration is due to be completed in June 2026. The calibration certificate is provided in **Appendix 1** (when required).

Table 2: Average Daily 24-hr TEOM PM_{10} and TSP Results for March 2026 from AQMS and Rolling Annual Average PM_{10}.

Date	PM_{10} 24-hr Average ($\mu g/m^3$)	PM_{10} Rolling Annual Average (µg/m3)	TSP 24hr Average* ($\mu g/m^3$)	TSP Rolling Annual Average ($\mu g/m^3$)
1/03/2026	10.5	16.2	26.3	40.5
2/03/2026	16.0	16.2	40.0	40.4
3/03/2026	17.2	16.2	43.0	40.4
4/03/2026	18.3	16.2	45.8	40.5
5/03/2026	24.2	16.2	60.5	40.5
6/03/2026	27.3	16.2	68.3	40.6
7/03/2026	20.1	16.3	50.3	40.7
8/03/2026	12.7	16.3	31.9	40.7
9/03/2026	ND	16.3	ND	40.7
10/03/2026	ND	16.3	ND	40.8
11/03/2026	17.7	16.3	44.3	40.8
12/03/2026	26.2	16.4	65.5	40.9
13/03/2026	20.4	16.4	51.0	41.0
14/03/2026	23.9	16.4	59.8	41.0
15/03/2026	12.8	16.4	32.0	41.0
16/03/2026	26.2	16.4	65.5	41.1
17/03/2026	29.8	16.5	74.5	41.2
18/03/2026	11.2	16.4	28.0	41.1
19/03/2026	13.7	16.4	34.3	41.1
20/03/2026	ND	16.4	ND	41.1
21/03/2026	12.8	16.4	32.0	41.1
22/03/2026	10.1	16.4	25.3	41.0
23/03/2026	12.5	16.4	31.3	41.1
24/03/2026	18.9	16.4	47.3	41.1
25/03/2026	15.5	16.4	38.8	41.1
26/03/2026	18.7	16.5	46.7	41.1
27/03/2026	10.8	16.4	27.0	41.1
28/03/2026	12.1	16.4	30.3	41.1
29/03/2026	11.2	16.5	28.0	41.1
30/03/2026	14.3	16.5	35.8	41.2
31/03/2026	24.4	16.5	61.0	41.3

*Calculated from PM10

**Calculated from PM10 Annual Average

Note: results above the Dixon Sand EPL criteria limit of 42 ug/m^3 are highlighted in yellow

No Data (ND) - <18hrs hour of valid data to calculate a 24hr average

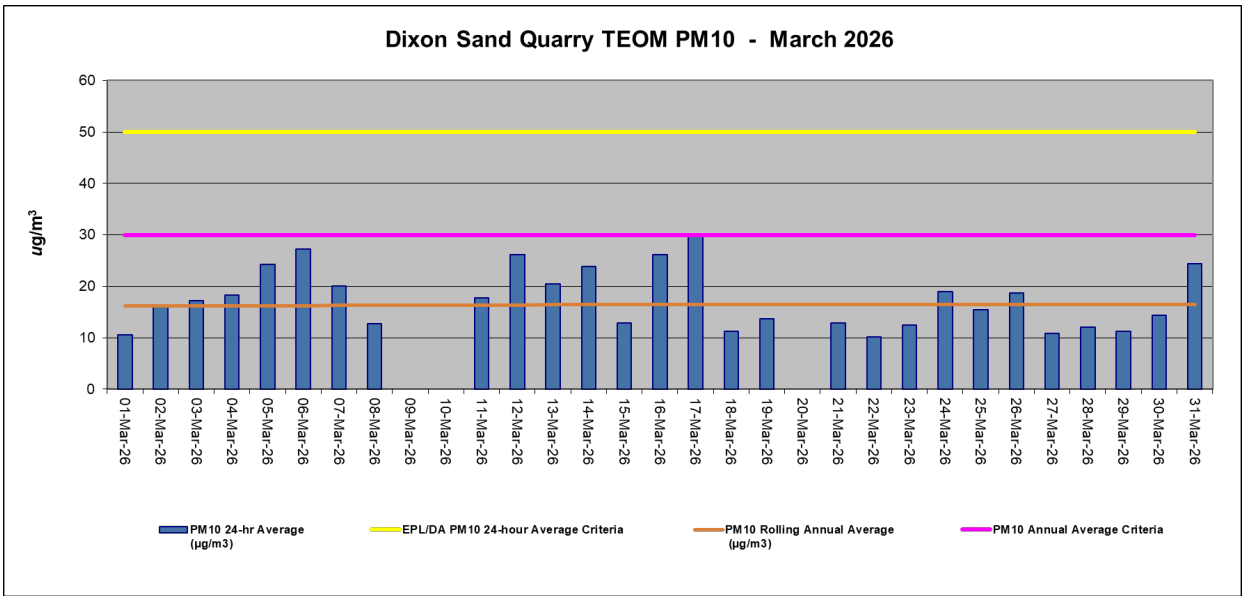


Figure 1: *TEOM PM_{10} 24 hr, Annual Rolling Average and Criteria*

3.2 EPL Reporting Conditions

Dixon Sand is required to comply with the Environmental Protection Licence (EPL) 3916 Condition M2.4 and EPL 12513 Condition M2.3.

During the reporting period Dixon Sand triggered reporting under these conditions on zero occasion(s). Details are listed below (if required):

Details are listed below (if required):

Old Northern Road Quarry - EPL 3916*

Date/Time	24hr Rolling Average (µg/m³)	Prevailing Wind Direction (°)

**Condition M2.4 - Any rolling 24-hour average PM10 result measured at Point 2 in licence condition M2.2 is greater than 42µg/m3 and the prevailing wind at the site is north-westerly (between 270 degrees and 315 degrees as measured at Point 3).*

Haerses Road Quarry - EPL 12513*

Date/Time	24hr Rolling Average (µg/m³)	Prevailing Wind Direction (°)

**Condition M2.3 - Any rolling 24-hour average PM10 result measured at Point 1 in licence condition M2.2 IS greater than 42µg/m3 and the prevailing wind at the site is north-westerly (between 270 degrees and 315 degrees as measured at Point 2).*

3.3 Meteorological Data

The weather station logs data at 5-minute intervals and sends the data to a web database by NextG telemetry. The data is accessible from the web site http://console.teledata.com.au/index.html.

A summary of monthly results is presented in **Table 3**. Charts of meteorological parameters are presented in **Figures 2** and **3**. A Windrose is provided in **Figure 4**.

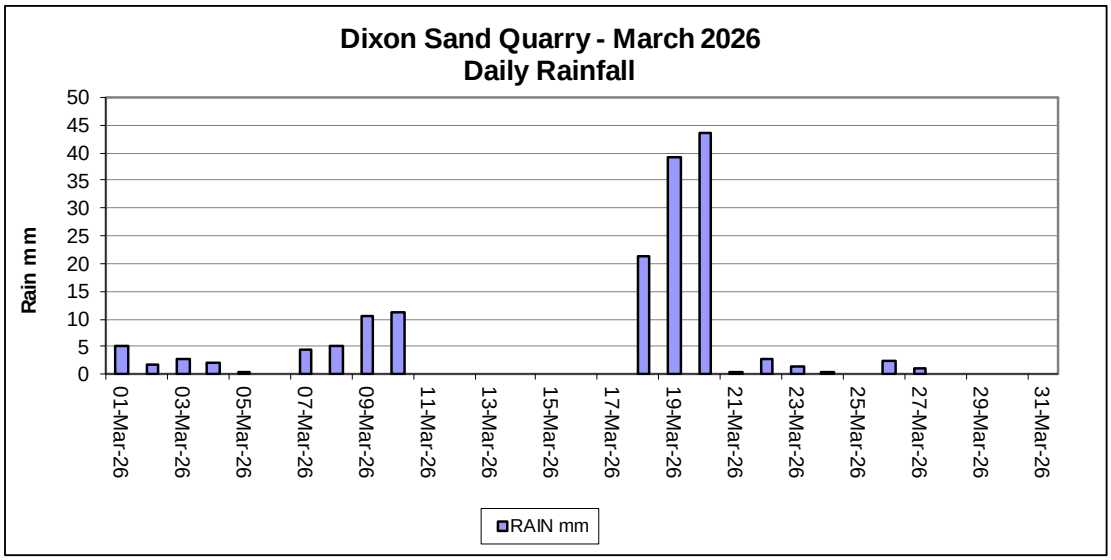
A 6-monthly physical screening and system check of the meteorological station was conducted in January 2026 (for December 2025). The next physical screening and system check is currently scheduled for June 2026. The screening and system check certificates are provided in **Appendix 1** (when required).

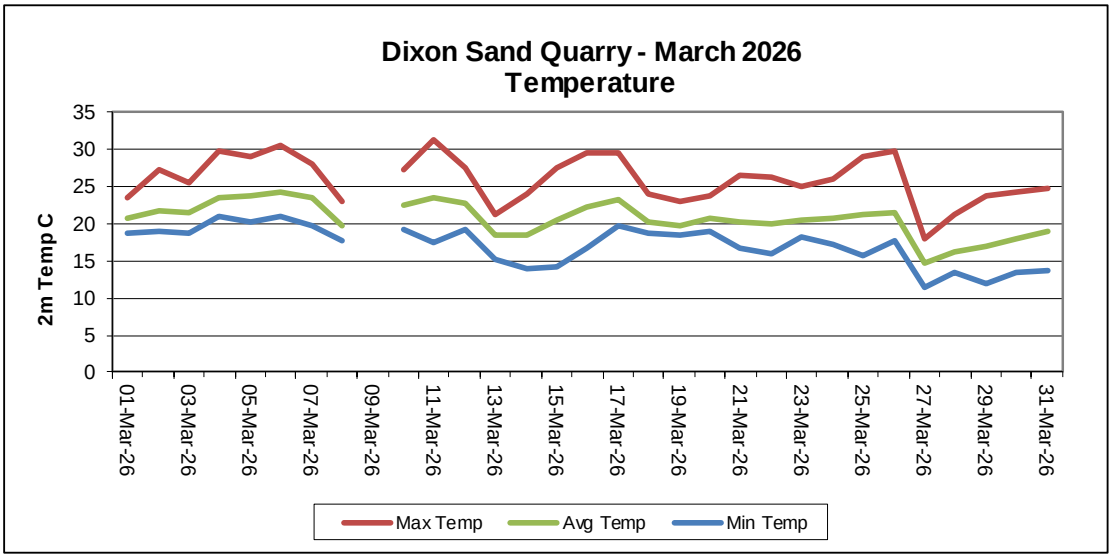
Approximately 97% of valid meteorological data was recorded for March 2026.

Table 3: Meteorological Data Summary for March 2026

Date	Min Temp	Avg Temp	Max Temp	RAIN mm	Min WS	Avg WS	Max WS	Min Humidity	Avg Humidity	Max Humidity	Min Pressure	Avg Pressure	Max Pressure
1/03/2026	18.8	20.8	23.4	5.2	0.0	2.3	9.5	70.4	84.6	93.6	986.7	989.2	991.2
2/03/2026	19.0	21.8	27.3	1.8	0.0	3.3	13.7	62.4	83.5	93.3	982.5	985.3	988.0
3/03/2026	18.8	21.4	25.4	2.8	0.0	3.3	12.2	71.4	87.6	93.5	982.4	984.8	986.3
4/03/2026	21.0	23.6	29.8	2.2	0.0	2.7	12.6	59.7	84.0	94.6	983.1	985.5	987.5
5/03/2026	20.2	23.7	29.1	0.2	0.0	3.0	14.2	66.7	83.3	94.2	983.4	985.3	987.7
6/03/2026	21.0	24.2	30.6	0.0	0.0	2.9	18.6	62.0	82.6	93.5	985.0	986.2	987.7
7/03/2026	19.8	23.4	28.0	4.4	0.0	2.0	8.5	67.2	84.4	93.7	982.9	985.1	987.3
8/03/2026	17.8	19.6	22.9	5.0	0.4	4.3	13.8	76.3	89.1	94.0	984.6	986.3	987.8
9/03/2026				10.6									
10/03/2026	19.3	22.4	27.2	11.2	0.2	4.7	18.1	59.8	78.6	88.5	984.6	985.7	987.0
11/03/2026	17.5	23.4	31.3	0.0	0.2	4.1	16.1	47.3	74.4	93.5	977.9	982.3	986.8
12/03/2026	19.1	22.6	27.6	0.0	0.0	4.0	21.1	46.3	65.7	76.9	976.9	981.1	987.5
13/03/2026	15.2	18.4	21.3	0.0	0.0	2.7	12.0	59.4	73.0	91.0	986.9	992.6	999.3
14/03/2026	13.8	18.5	24.1	0.0	0.2	3.2	13.4	46.3	65.0	79.4	998.2	999.7	1002.0
15/03/2026	14.3	20.4	27.5	0.0	0.0	2.6	16.6	45.5	67.8	86.2	992.3	995.8	999.4
16/03/2026	16.7	22.2	29.6	0.0	0.0	3.3	17.1	41.0	68.9	91.0	988.1	990.9	993.5
17/03/2026	19.8	23.3	29.6	0.0	0.1	2.7	11.9	46.3	67.0	83.6	986.7	989.6	993.2
18/03/2026	18.6	20.3	24.1	21.2	0.0	2.7	15.7	73.3	87.7	93.3	991.6	993.4	995.4
19/03/2026	18.5	19.6	23.0	39.2	0.0	1.4	6.7	74.5	91.4	94.1	988.7	990.8	992.5
20/03/2026	18.9	20.7	23.8	43.6	0.0	2.9	12.7	76.6	87.2	93.4	990.2	991.5	992.7
21/03/2026	16.8	20.2	26.4	0.4	0.0	2.2	14.9	59.6	86.7	95.0	990.8	992.6	994.9
22/03/2026	15.9	19.9	26.3	2.8	0.0	3.2	15.3	49.7	82.3	94.7	992.8	994.1	995.8
23/03/2026	18.1	20.4	25.0	1.6	0.0	3.6	20.5	65.7	85.2	94.6	992.2	993.7	994.9
24/03/2026	17.2	20.7	26.1	0.2	0.0	3.0	15.0	50.5	79.1	94.1	989.8	991.9	994.0
25/03/2026	15.7	21.3	29.0	0.0	0.0	2.2	12.3	46.0	75.2	93.7	985.1	987.9	990.5
26/03/2026	17.6	21.5	29.8	2.4	0.0	2.6	16.2	47.3	75.8	91.6	975.0	981.7	986.5
27/03/2026	11.4	14.6	18.0	1.2	0.2	4.1	22.2	50.4	63.4	83.2	975.7	978.1	983.0
28/03/2026	13.3	16.3	21.3	0.0	0.3	3.5	14.1	42.1	56.0	70.7	982.9	987.8	991.4
29/03/2026	11.8	17.0	23.7	0.0	0.0	3.0	15.2	48.2	70.1	85.5	991.2	994.0	997.0
30/03/2026	13.5	17.9	24.2	0.0	0.0	2.7	16.7	52.1	73.4	91.4	995.0	996.8	998.5
31/03/2026	13.6	18.9	24.7	0.0	0.0	2.9	15.5	52.4	71.0	86.3	994.7	997.0	999.3
Monthly	**11.4**	**20.6**	**31.3**	**156.0**	**0.0**	**3.0**	**22.2**	**41.0**	**77.5**	**95.0**	**975.0**	**989.2**	**1002.0**

No Data due to Communications fault





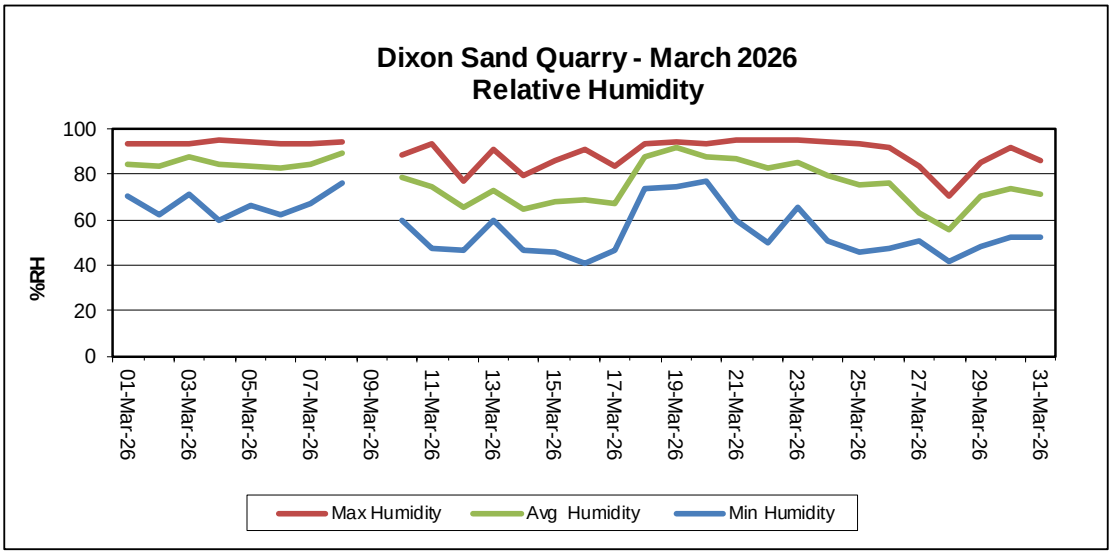


Figure 2: *Daily Rainfall, Temperature and Relative Humidity Charts*

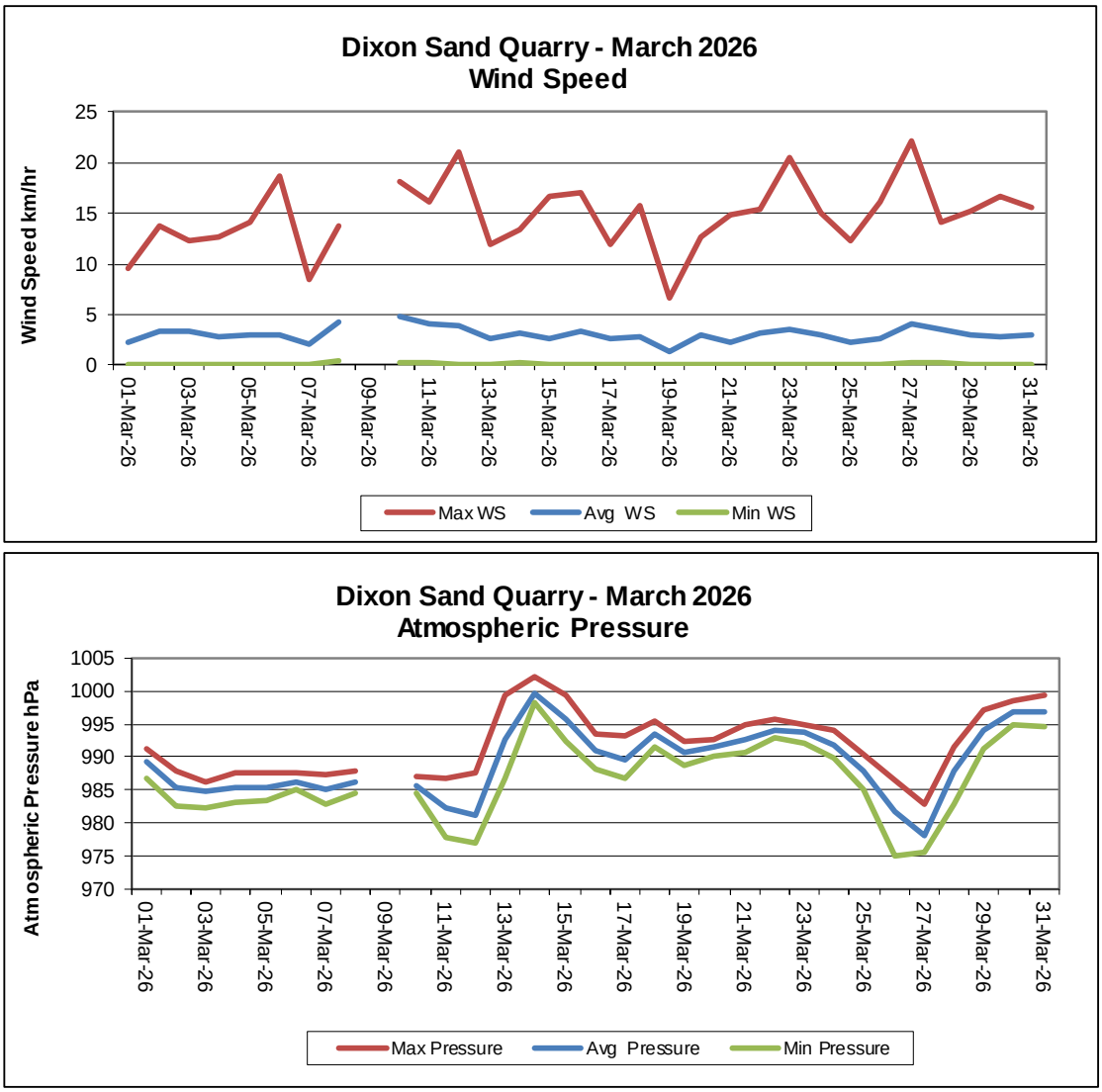


Figure 3: *Wind Speed and Atmospheric Pressure Cha*

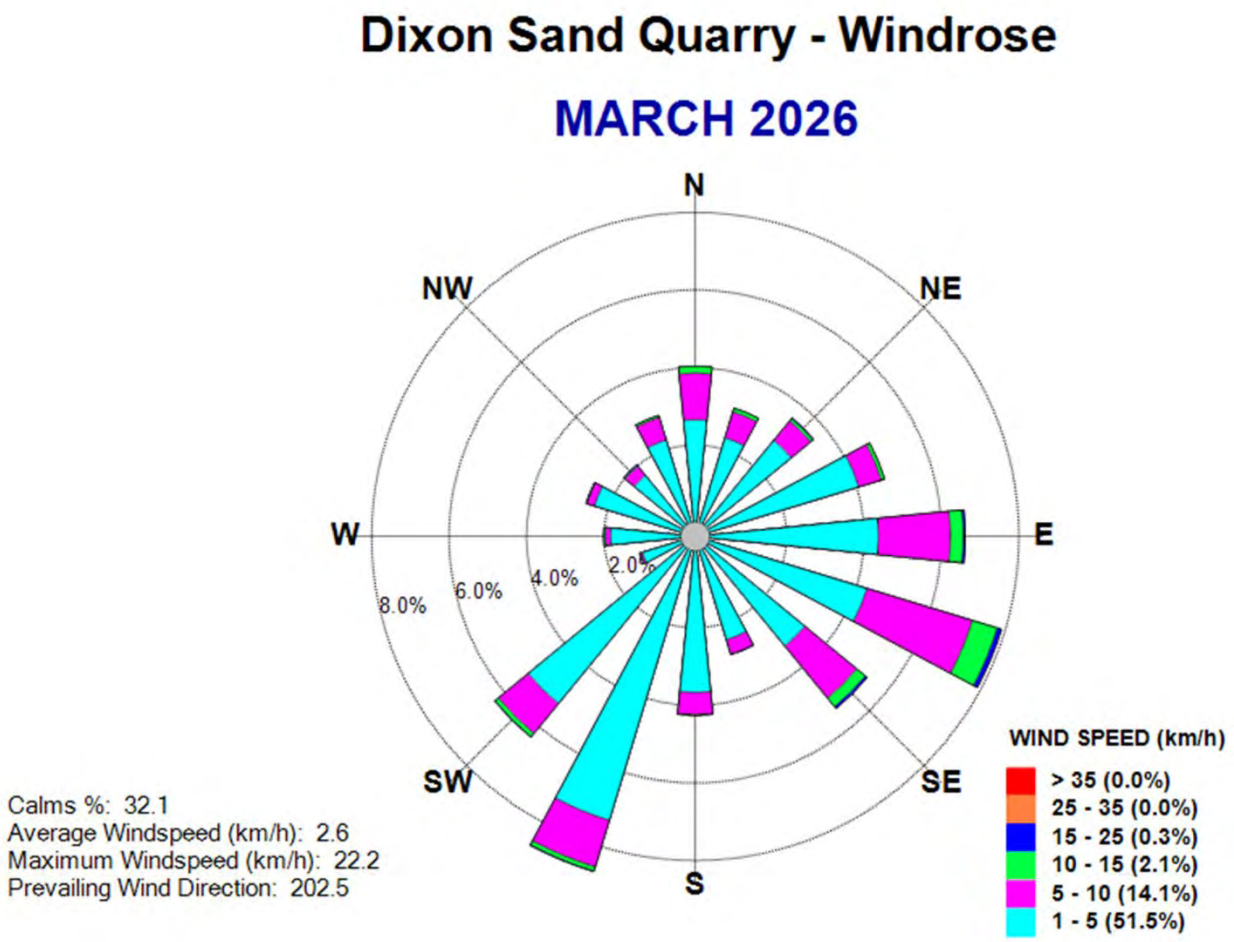


Figure 4: *Windrose*

Appendix 1

Calibration Documents (when required)

Continuous Air Quality Monthly/Quarterly/Six Monthly/Annual TEOM Maintenance and Calibration – 1400AB

CARBON BASED ENVIRONMENTAL

teledata

TEOM Client/Site: Dixon Intl / PM10 TEOM **Date:** 10/3/2026

1. TEOM Data Screen **SERIAL No:** 140AB255700503

Condition	Current Data	Acceptable Data	Pass (Tick)	Fail (Tick)
Operating Condition	Full 4	Green - Normal	✓	
Date/time	TEOM: 1210 Actual: 1313	Current Date/time correct within 5 minutes	✓	
PM-10 24hr av	14.3	Positive values	✓	
Filter loading PM10	38.0	<80 %	✓	
Frequency PM-10	251.11840	200-300 Hz	✓	
Noise PM-10	0.098	<0.100ug	✓	

Comment: If filter load >80% but <90% and if flows Ok then data is OK

Comments:

2. System Status

Condition	Current Data	Acceptable Data	Pass (Tick)	Fail (Tick)
Vacuum pump pressure	No filter pressure sensor	<0.50 atm	✓	
Warnings	0.44	No Warnings	✓	
If any warnings list:	with gauge			

Comments:

Data Downloaded: YES/NO (circle) Not possible

Technician Name : Conrad Neilan **Signed** _____

3. Instrument Conditions Ambient Conditions and Temperatures

Condition	Current Data	Acceptable Data	Pass (Tick)	Fail (Tick)
Ambient Temperature	34.2	-10 to 50 C	✓	
Ambient Dew Point	—	-10 to 50 C	✓	
Ambient Pressure	0.969	0.9-1.1 atm	✓	
Ambient Relative Humidity	—	10-100 %RH	/	
Cap temperature	50.00	50.00 +/- 0.10 C	✓	
Case temperature	50.00	50.00 +/- 0.10 C	/	
Main (PM-10) Air Tube temp	50.00	50.00 +/- 0.10 C	/	

Comments:

4. Instrument Conditions – Flows

Condition	Current Data	Acceptable Data	Pass (Tick)	Fail (Tick)
Main (PM-10) Flow rate	3.00	2.82 – 3.18 lpm	✓	
Bypass Flow rate	13.68	12.95 – 14.39 lpm	/	
Total Flow rate	16.68	15.67 – 17.67 lpm	/	

Comments:

Results: (Tick box)

☑ **There were NO equipment faults found. No action required – (file report)**

☐ **There were faults found (Fails) – Were these fixed on site: YES/NO (circle)**
Any Fails that cannot be repaired on site must be reported to CBased:
Office: 65713334 or email cbased@bigpond.com
Date faults notified to CBased: _____

Comments/Action Required:

Calibration/Maintenance

1. 1405A: Were Filters replaced YES/NO
2. PM10 Inlet head cleaned YES/NO
3. If measurement filters were replaced, confirm stable results after change. Stable particulate results confirmed YES/NO

Channel	Filter Load %	Frequency Hz initial	Frequency check 1min	Frequency check 3min	Frequency check 5min
PM10	17.0	256.18151	256.18151	256.18164	256.18173

Frequency should not drift by more than 0.0010 between readings (if instrument is thermodynamically stable)
Pass/Fail – if Fail – install new filter and redo stability test.

4. Instrument clock verified (Refer Section 1) YES/NO.
If Time changed – clock reset OK YES/NO or NA (not changed)
Comments: 1220 → 1223

5. Were TEOM in line and rear TEOM filters checked for cleanliness and replaced if necessary. YES/NO.

Comments if changed:

6. TEOM Cleaned and Air Conditioner checked YES/NO. Air Conditioner settings or operational status: "6" Low Cool

Tetracal Flow/Temp/Pressure Calibrator Serial No: 172357 **Refer to calibration corrections for Temperature/Pressure and Flows and apply to all readings.**

Quarterly or Six Monthly Calibration

1. Flow Verification – Conducted YES/NO

PM10 Flow verified Flow l/min 2.88 Error % 4 (allowed error <6%) PASS/FAIL
Fddy 1.056 → 1.095
Bypass Flow verified Flow l/min 13.67 Error % 0 (allowed error <6%) PASS/FAIL
If fail then complete a full multipoint recalibration and review previous data from last good flow check. **Comments if Flows recalibrated:**
Yes Main adjust 1.055 → 1.095

2. Leak Check – Conducted YES/NO

	M	B
Zero	0.08	1.24
MC	0.22	1.34
=	0.14	0.10

PM10 actual 0.14 < Limit 0.15
0.10
Bypass actual ~~0.50~~ < Limit 0.60

Leak check PASS/FAIL – If fail then find leak and retest.
Comments:
Unable to resolve small leak in Main flow recommend retiring machine install used 1405

Annual Calibration/Maintenance

1. Temperature and Pressure Calibration – Conducted YES/NO
Reference Temperature: _____C TEOM Temperature_____C
if difference +/- 1 C recalibrate sensor. Sensor recalibrated YES/NO

Reference Pressure: _____atm TEOM Pressure_____atm
if difference +/- 0.010 atm recalibrate sensor. Sensor recalibrated YES/NO

Note: Tetracal measures Atmospheric Pressure in mm Hg or mb or hPa
For mb or hPa divide tetracal result by 1013.25 to change units to atm.
For mmHg divide tetracal result by 760 to change units to atm.

2. Flow Calibration – Conducted YES/NO
PM10
Set point 2.4 Actual:_____
Set point 3.6 Actual:_____
Set point 3.0 Actual:_____ After calibration Final:_____l/min

BYPASS
Set point 10.9 Actual:_____
Set point 16.4 Actual:_____
Set point 13.67 Actual:_____ After calibration Final:_____l/min

3. Post Cal Leak Check – Conducted YES/NO (use leak check wizard. Actual = channel flow-zero flow)
PM2.5 Base actual_____ < Limit 0.15 Reference actual_____< Limit 0.15
BYPASS Base actual_____ < Limit 0.60 Reference actual_____< Limit 0.60
Leak checks PASS/FAIL – If fails, find leak and retest.
Note that a big FAIL here will need the leak resolved and go back to Step 2 as the flow has been calibrated with a leak.

4. Mass calibration (K0) Verification – Conducted YES/NO
Audit Filter Serial Number: _____
Audit Filter Average Weight: _____grams

Channel	TEOM stated KO	Audit KO	% Error	PASS/FAIL
PM10				

Allowed Error +/- 2.5%. If Error > +/- 2.5% then repeat measurement.
Second Error % =PM10_____ PASS/FAIL.
If FAIL confirmed then consult Lear Siegler or manufacturer.
Comments:

5. Prepare for Noise Check – Conducted YES/NO

Channel	Filter Load %	Frequency Hz initial (Time= 0 min)	Frequency check Time= 1 min	Frequency check Time= 3 min	Frequency check Time = 5 min
PM2.5					

PASS/FAIL – If stability test fails, use change filter wizard to reseat the filter.
The next step will not pass until this test passes

6. Annual Noise check - Conducted YES/NO

Zero filter applied to TEOM and TEOM operated for at least 12 hours:

Start date/time: _____Finish date/time:_____

Standard deviation of all recorded data (min 30 min averages) = _____ug/m^3

Noise was less than 5ug/m^3 YES/NO

7. Maintenance

Air Inlet system cleaned YES/NO

Pump Reconditioned YES/NO

Check Waterproofing YES/NO

Comments:

CBased Environmental Pty Limited
ABN 62 611 924 264

Dixon Sand Quarry

Environmental Monitoring
Air Quality

Tapered Element Oscillating Microbalance (TEOM) (PM_{10}) and Meteorological Data

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April 2026

Colin Davies BSc MEIA CENVP
Environmental Scientist
Date 8 May 2026

CBased Environmental Pty Ltd
Unit 3, 2 Enterprise Crescent SINGLETON NSW 2330
☎ (02) 65713334

1.0 Summary

CBased Environmental Pty Limited is contracted by Dixon Sand to conduct continuous Tapered Element Oscillating Microbalance (TEOM) for fine particulates (PM_{10}) and meteorological monitoring for the Dixon Sand Quarries. The information is required to assess air quality levels. The results for the TEOM and meteorological site are included in this report.

The monitoring programme includes:

- One continuous TEOM PM_{10} monitor; and
- One continuous meteorological station.

This monthly report for April 2026 was prepared by CBased Environmental and includes the following:

- TEOM (PM_{10}) monitoring results; and
- Meteorological results.

In accordance with Dixon Sand Development Consents (DA250-09-01 and DA165-7-2005) and Environmental Protection Licences (EPL3916 and EPL12513)

- 24-hour average PM_{10} results were below the 24-hour maximum criteria of 50ug/m^3.
- The PM_{10} rolling annual average is below the annual average criteria of 30ug/m^3; and
- The calculated TSP is below the annual average criteria of 90ug/m^3.

Note: Based on the available data, statements in green indicate current conformance to Dixon Sand Quarry Air Quality Impact Assessment criteria, statements in red indicate possible non-conformance. Year to date annual average for PM_{10} is calculated from 1 May 2025 to 30 April 2026.

Approximately 83.3% of valid meteorological data was recorded for April 2026

Approximately 79.9% of valid TEOM data was available for April 2026.

Please note: The CellVisor logger was replaced on 8 April 2026. A communication error in the original logger resulted in data loss from 3 April 2026. Further data loss was observed during and immediately after installation of the replacement logger, impacting 8–9 April 2026 inclusive.

2.0 Sampling Programme

The TEOM is sited and operated to the applicable Australian Standard and/or NSW EPA approved methods. The following Australian Standards were used:

- AS3580.9.8 - "*Methods for Sampling and Analysis of Ambient Air. Determination of Suspended Particulates—PM_{10} continuous direct mass method using a tapered element oscillating microbalance analyser*"; and
- AS/NZS 3580.1.1 - "*Methods for Sampling and Analysis of Ambient Air Part 1.1 Guide to Siting Air Monitoring Equipment*".

TEOM PM_{10} results are 24-hour averages at midnight and are reported as $\mu g/m^3$ corrected to 0 degrees C and 101.3kPa.

All laboratory analysis was conducted by a National Association of Testing Authorities (NATA) accredited laboratory.

Air Quality monitoring site descriptions and locations are provided in **Table 1**.

Table 1: Dixon Sand Air Quality Monitoring Description and Locations

Monitor	Site Code	Location Description
TEOM PM_{10}	TEOM	Old Northern Road, Maroota NSW
Meteorological Station	MET	Old Northern Road, Maroota NSW

3.0 Results

3.1 TEOM PM_{10}

24-hour average TEOM PM_{10} results from the AQMS data collection software are provided in **Table 2** and a chart of the data is provided in **Figure 1**.

During the April 2026 monitoring period, individual 24-hour TEOM PM_{10} results were below the DA/EPL short-term (24hr) impact criteria of 50ug/m^3.

Approximately 79.9% of valid TEOM data was available for April 2026.

At present, the current TEOM PM_{10} rolling annual average is below the Dixon Sand Quarry annual average PM_{10} criteria of 30ug/m^3. The current annual average for calculated Total Suspended Particulates (TSP) is below the rolling annual average criterion of 90ug/m^3. The TSP is calculated by multiplying the PM_{10} by 2.5. Note: the rolling annual average is calculated from 1 May 2025 to 30 April 2026.

The quarterly TEOM calibration was conducted on 10 March 2026. The next calibration is due to be completed in June 2026. The calibration certificate is provided in **Appendix 1** (when required).

Table 2: Average Daily 24-hr TEOM PM_{10} and TSP Results for April 2026 from AQMS and Rolling Annual Average PM_{10}.

Date	PM_{10} 24-hr Average ($\mu g/m^3$)	PM_{10} Rolling Annual Average (µg/m3)	TSP 24hr Average* ($\mu g/m^3$)	TSP Rolling Annual Average ($\mu g/m^3$)
1/04/2026	18.3	16.5	45.8	41.3
2/04/2026	18.3	16.5	45.8	41.3
3/04/2026	ND	16.5	ND	41.3
4/04/2026	ND	16.5	ND	41.2
5/04/2026	ND	16.5	ND	41.2
6/04/2026	ND	16.5	ND	41.3
7/04/2026	ND	16.5	ND	41.3
8/04/2026	ND	16.5	ND	41.2
9/04/2026	ND	16.5	ND	41.3
10/04/2026	31.8	16.6	79.5	41.4
11/04/2026	15.6	16.5	39.0	41.3
12/04/2026	18.1	16.5	45.3	41.3
13/04/2026	16.0	16.5	40.0	41.3
14/04/2026	17.3	16.5	43.3	41.3
15/04/2026	17.7	16.5	44.3	41.3
16/04/2026	21.8	16.6	54.5	41.4
17/04/2026	21.2	16.6	53.0	41.4
18/04/2026	12.3	16.6	30.8	41.4
19/04/2026	15.0	16.6	37.5	41.4
20/04/2026	18.8	16.6	47.0	41.5
21/04/2026	15.5	16.6	38.8	41.5
22/04/2026	12.7	16.6	31.8	41.4
23/04/2026	20.7	16.6	51.8	41.5
24/04/2026	16.8	16.6	42.0	41.5
25/04/2026	13.1	16.6	32.8	41.5
26/04/2026	11.9	16.6	29.8	41.5
27/04/2026	16.5	16.6	41.3	41.6
28/04/2026	16.5	16.7	41.3	41.6
29/04/2026	21.8	16.7	54.5	41.7
30/04/2026	13.2	16.7	33.0	41.7

*Calculated from PM10

**Calculated from PM10 Annual Average

Note: results above the Dixon Sand EPL criteria limit of 42 ug/m^3 are highlighted in yellow

No Data (ND) - <18hrs hour of valid data to calculate a 24hr average

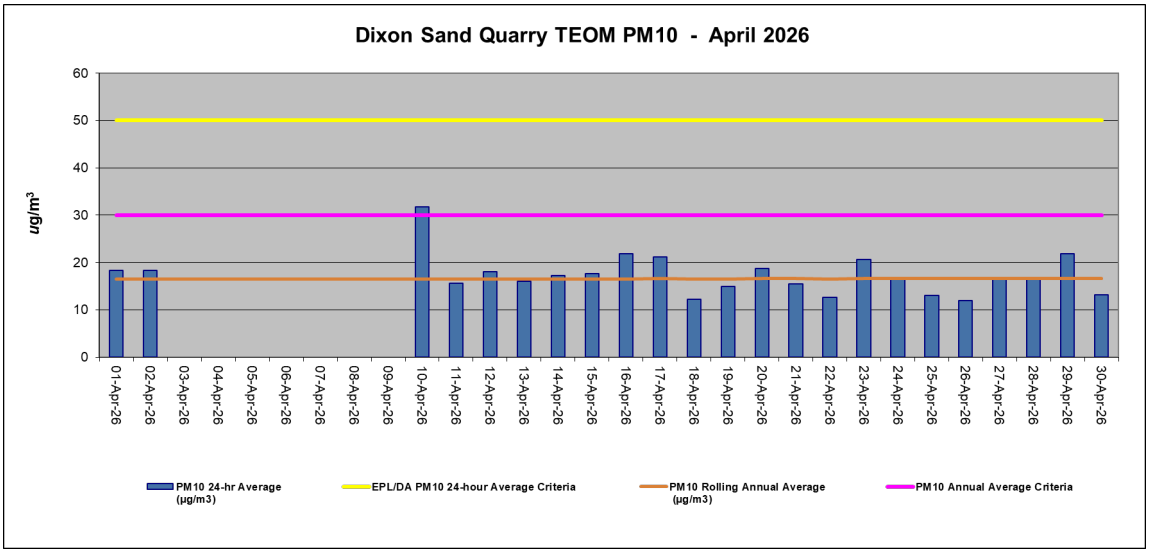


Figure 1: *TEOM PM_{10} 24 hr, Annual Rolling Average and Criteria*

3.2 EPL Reporting Conditions

Dixon Sand is required to comply with the Environmental Protection Licence (EPL) 3916 Condition M2.4 and EPL 12513 Condition M2.3.

During the reporting period Dixon Sand triggered reporting under these conditions on zero occasion(s). Details are listed below (if required):

Details are listed below (if required):

Old Northern Road Quarry - EPL 3916*

Date/Time	24hr Rolling Average (µg/m³)	Prevailing Wind Direction (°)

**Condition M2.4 - Any rolling 24-hour average PM10 result measured at Point 2 in licence condition M2.2 is greater than 42µg/m3 and the prevailing wind at the site is north-westerly (between 270 degrees and 315 degrees as measured at Point 3).*

Haerses Road Quarry - EPL 12513*

Date/Time	24hr Rolling Average (µg/m³)	Prevailing Wind Direction (°)

**Condition M2.3 - Any rolling 24-hour average PM10 result measured at Point 1 in licence condition M2.2 IS greater than 42µg/m3 and the prevailing wind at the site is north-westerly (between 270 degrees and 315 degrees as measured at Point 2).*

3.3 Meteorological Data

The weather station logs data at 5-minute intervals and sends the data to a web database by NextG telemetry. The data is accessible from the web site http://console.teledata.com.au/index.html.

A summary of monthly results is presented in **Table 3**. Charts of meteorological parameters are presented in **Figures 2** and **3**. A Windrose is provided in **Figure 4**.

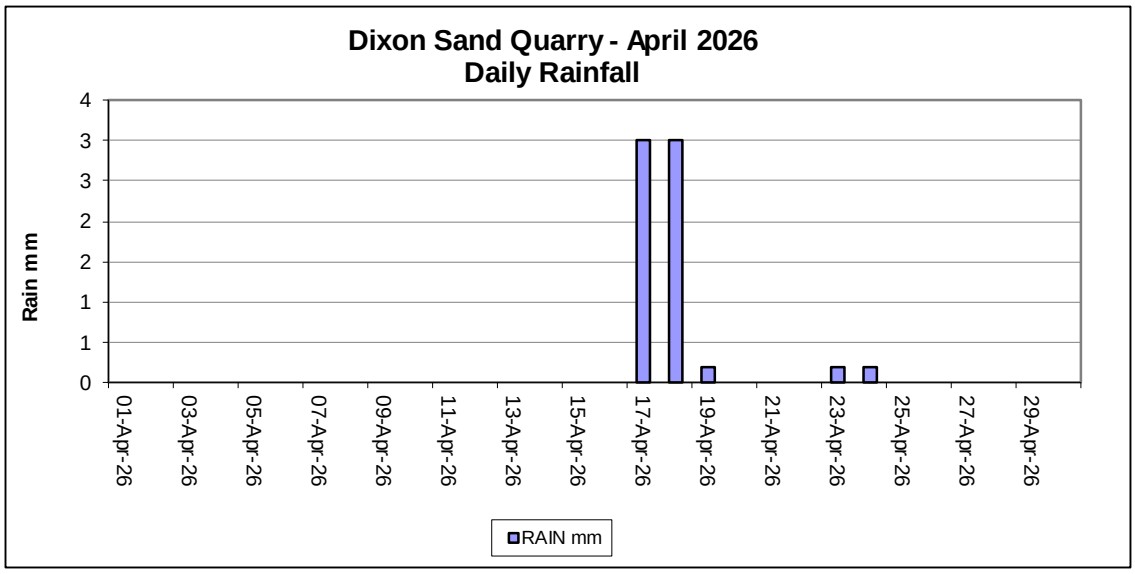
A 6-monthly physical screening and system check of the meteorological station was conducted in January 2026 (for December 2025). The next physical screening and system check is currently scheduled for June 2026. The screening and system check certificates are provided in **Appendix 1** (when required).

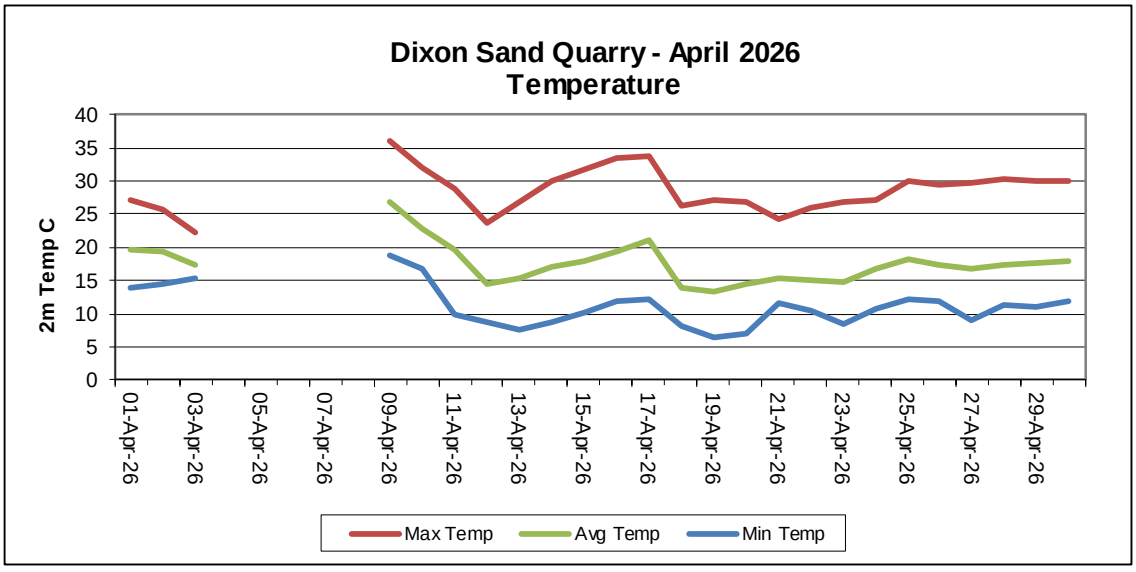
Approximately 83.3% of valid meteorological data was recorded for April 2026.

Table 3: Meteorological Data Summary for April 2026

Date	Min Temp	Avg Temp	Max Temp	RAIN mm	Min WS	Avg WS	Max WS	Min Humidity	Avg Humidity	Max Humidity	Min Pressure	Avg Pressure	Max Pressure
1/04/2026	14.0	19.7	27.0	0.0	0.0	2.7	14.0	45.6	75.9	93.3	994.0	996.0	997.8
2/04/2026	14.4	19.5	25.7	0.0	0.0	2.5	11.8	47.2	80.7	94.1	993.6	995.6	997.7
3/04/2026	15.2	17.3	22.3	0.0	0.1	1.8	5.7	78.9	91.8	94.6	993.0	994.6	996.5
4/04/2026													
5/04/2026													
6/04/2026													
7/04/2026													
8/04/2026													
9/04/2026	18.9	26.7	36.0	0.0	0.7	3.2	7.1	39.0	57.6	73.5	986.0	987.7	991.0
10/04/2026	16.7	22.9	32.0	0.0	0.2	2.1	6.6	53.7	69.0	82.1	981.0	984.3	987.0
11/04/2026	9.8	19.6	28.9	0.0	0.2	2.1	6.1	33.7	55.3	86.9	980.0	981.6	985.0
12/04/2026	8.7	14.5	23.7	0.0	0.5	2.7	6.1	38.0	50.3	64.5	982.0	984.3	988.0
13/04/2026	7.5	15.5	26.7	0.0	0.3	1.9	5.2	39.2	55.8	68.1	987.0	990.1	992.0
14/04/2026	8.6	17.2	30.0	0.0	0.2	2.1	6.4	32.7	64.1	87.4	991.0	992.5	994.0
15/04/2026	10.1	18.0	31.8	0.0	0.1	2.1	8.2	32.2	65.4	89.2	990.0	991.7	993.0
16/04/2026	11.9	19.5	33.4	0.0	0.1	2.2	8.5	33.2	66.7	89.1	987.0	989.8	993.0
17/04/2026	12.3	21.1	33.6	3.0	0.6	2.6	5.5	28.6	51.6	88.8	983.0	986.2	990.0
18/04/2026	8.1	13.9	26.3	3.0	0.1	2.1	8.8	32.2	69.6	94.7	989.0	991.2	994.0
19/04/2026	6.3	13.3	27.0	0.2	0.1	2.0	6.6	42.0	69.9	92.2	993.0	994.0	996.0
20/04/2026	7.1	14.4	26.8	0.0	0.1	2.0	6.3	46.9	71.0	90.3	995.0	996.8	999.0
21/04/2026	11.6	15.4	24.2	0.0	0.9	2.8	5.8	60.9	74.7	87.9	998.0	999.1	1001.0
22/04/2026	10.4	15.0	26.0	0.0	0.2	2.4	6.4	50.8	76.9	92.5	998.0	999.1	1001.0
23/04/2026	8.5	14.6	26.9	0.2	0.3	2.2	5.9	54.7	73.8	91.6	999.0	1001.3	1003.0
24/04/2026	10.6	16.7	27.1	0.2	0.2	2.2	7.7	57.3	74.2	90.1	1002.0	1003.8	1005.0
25/04/2026	12.3	18.2	30.1	0.0	0.1	2.5	9.3	51.5	77.8	92.6	999.0	1002.0	1005.0
26/04/2026	11.8	17.4	29.3	0.0	0.2	2.4	7.4	42.5	70.3	89.0	995.0	997.4	1000.0
27/04/2026	9.0	16.7	29.7	0.0	0.1	2.4	8.8	51.0	73.1	92.3	996.0	997.0	999.0
28/04/2026	11.3	17.4	30.3	0.0	0.1	2.4	9.0	49.1	75.6	93.5	997.0	998.6	1001.0
29/04/2026	10.9	17.7	30.1	0.0	0.1	2.6	9.7	52.8	77.6	91.3	999.0	1000.8	1003.0
30/04/2026	12.0	17.9	30.0	0.0	0.1	2.5	11.0	53.2	82.1	94.8	1001.0	1002.5	1004.0
Monthly	**6.3**	**17.6**	**36.0**	**6.6**	**0.0**	**2.3**	**14.0**	**28.6**	**70.0**	**94.8**	**980.0**	**994.3**	**1005.0**

No Data due to Communications fault and Calibration/Maintenance





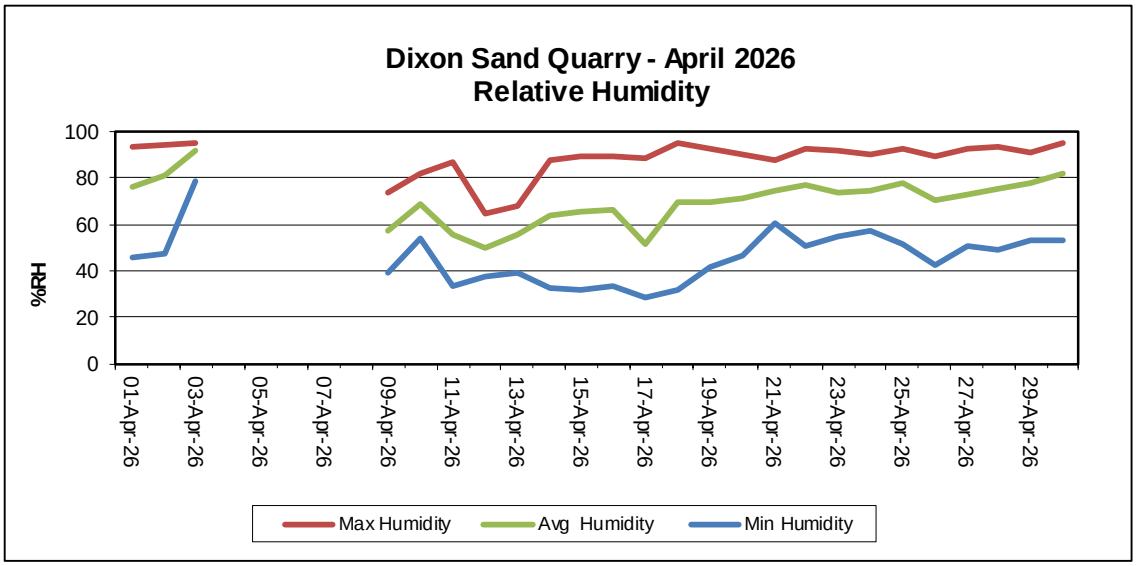


Figure 2: *Daily Rainfall, Temperature and Relative Humidity Charts*

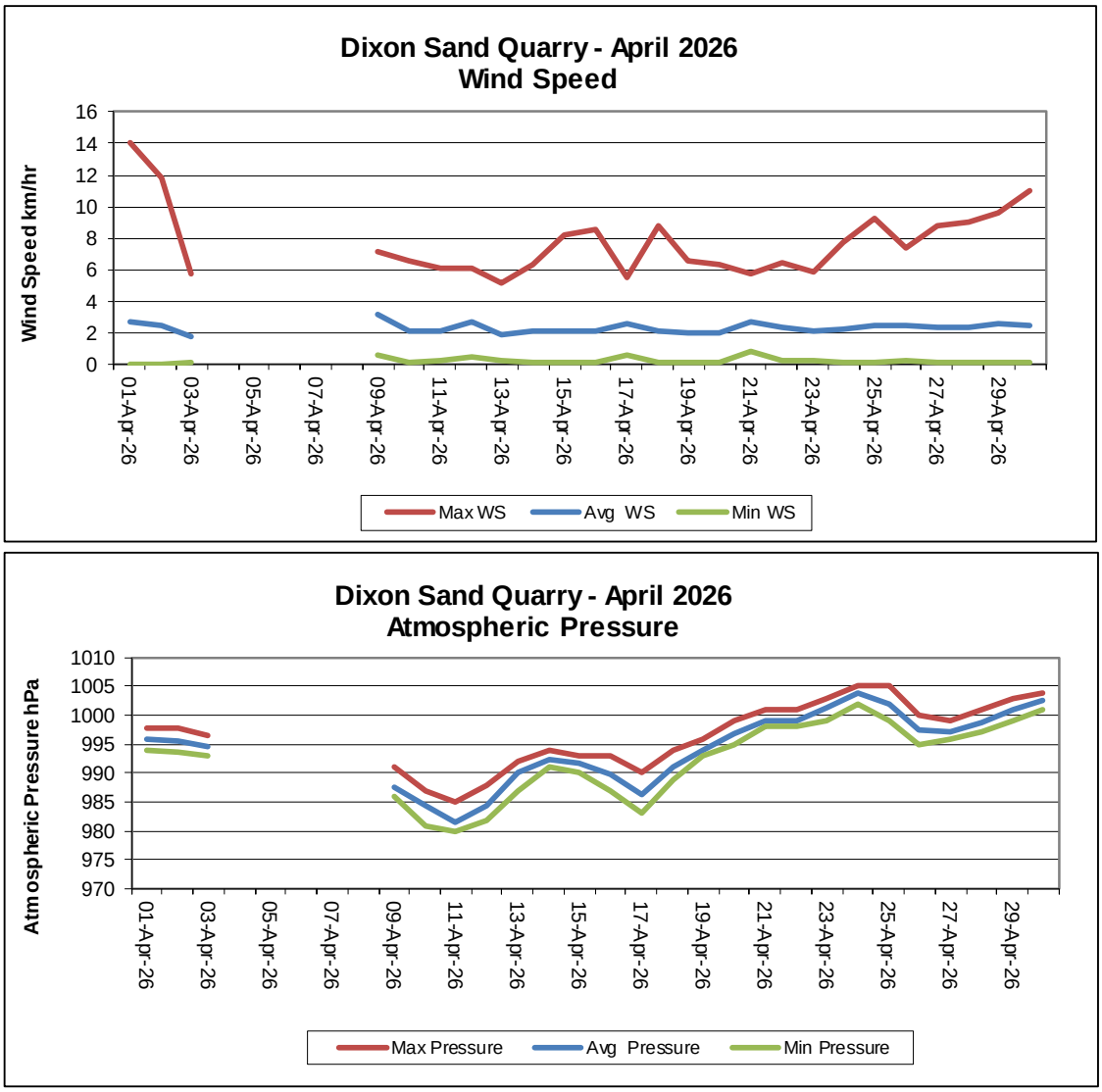


Figure 3: *Wind Speed and Atmospheric Pressure Charts*

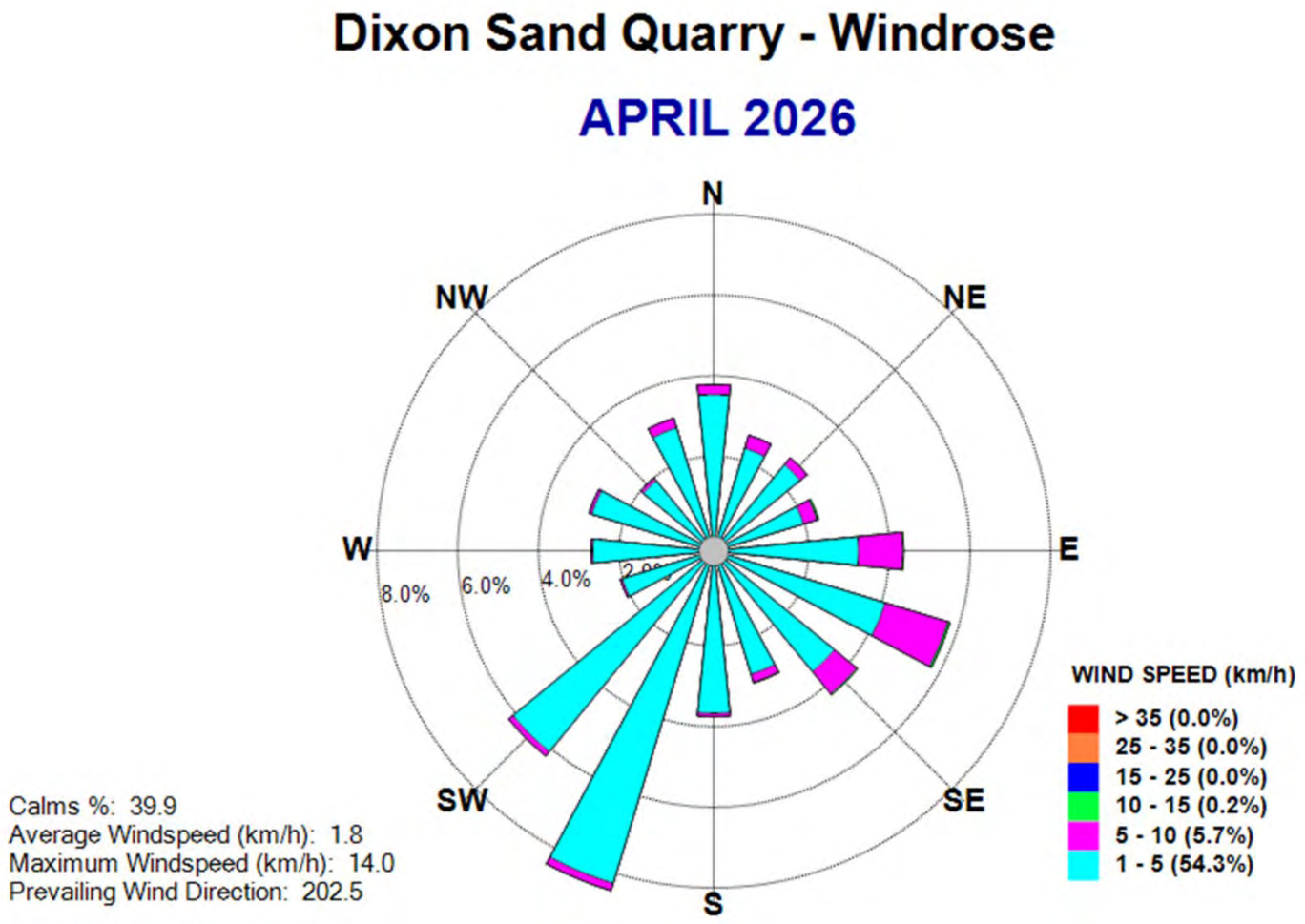


Figure 4: *Windrose*

Appendix 1

Calibration Documents (when required)

CBased Environmental Pty Limited
ABN 62 611 924 264

Dixon Sand Quarry

Environmental Monitoring
Air Quality

Tapered Element Oscillating Microbalance (TEOM) (PM_{10}) and Meteorological Data

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May 2026

Colin Davies BSc MEIA CENVP
Environmental Scientist
Date 5 June 2026

CBased Environmental Pty Ltd
Unit 3, 2 Enterprise Crescent SINGLETON NSW 2330
☎ (02) 65713334

1.0 Summary

CBased Environmental Pty Limited is contracted by Dixon Sand to conduct continuous Tapered Element Oscillating Microbalance (TEOM) for fine particulates (PM_{10}) and meteorological monitoring for the Dixon Sand Quarries. The information is required to assess air quality levels. The results for the TEOM and meteorological site are included in this report.

The monitoring programme includes:

- One continuous TEOM PM_{10} monitor; and
- One continuous meteorological station.

This monthly report for May 2026 was prepared by CBased Environmental and includes the following:

- TEOM (PM_{10}) monitoring results; and
- Meteorological results.

In accordance with Dixon Sand Development Consents (DA250-09-01 and DA165-7-2005) and Environmental Protection Licences (EPL3916 and EPL12513)

- 24-hour average PM_{10} results were below the 24-hour maximum criteria of 50ug/m^3.
- The PM_{10} rolling annual average is below the annual average criteria of 30ug/m^3; and
- The calculated TSP is below the annual average criteria of 90ug/m^3.

Note: Based on the available data, statements in green indicate current conformance to Dixon Sand Quarry Air Quality Impact Assessment criteria, statements in red indicate possible non-conformance. Year to date annual average for PM_{10} is calculated from 1 June 2025 to 31 May 2026.

Approximately 100% of valid meteorological data was recorded for May 2026

Approximately 100% of valid TEOM data was available for May 2026.

2.0 Sampling Programme

The TEOM is sited and operated to the applicable Australian Standard and/or NSW EPA approved methods. The following Australian Standards were used:

- AS3580.9.8 - "*Methods for Sampling and Analysis of Ambient Air. Determination of Suspended Particulates—PM_{10} continuous direct mass method using a tapered element oscillating microbalance analyser*"; and
- AS/NZS 3580.1.1 - "*Methods for Sampling and Analysis of Ambient Air Part 1.1 Guide to Siting Air Monitoring Equipment*".

TEOM PM_{10} results are 24-hour averages at midnight and are reported as $\mu g/m^3$ corrected to 0 degrees C and 101.3kPa.

All laboratory analysis was conducted by a National Association of Testing Authorities (NATA) accredited laboratory.

Air Quality monitoring site descriptions and locations are provided in **Table 1**.

Table 1: Dixon Sand Air Quality Monitoring Description and Locations

Monitor	Site Code	Location Description
TEOM PM_{10}	TEOM	Old Northern Road, Maroota NSW
Meteorological Station	MET	Old Northern Road, Maroota NSW

3.0 Results

3.1 TEOM PM_{10}

24-hour average TEOM PM_{10} results from the AQMS data collection software are provided in **Table 2** and a chart of the data is provided in **Figure 1**.

During the 2026 monitoring period, individual 24-hour TEOM PM_{10} results were below the DA/EPL short-term (24hr) impact criteria of 50ug/m^3.

Approximately 100% of valid TEOM data was available for May 2026.

At present, the current TEOM PM_{10} rolling annual average is below the Dixon Sand Quarry annual average PM_{10} criteria of 30ug/m^3. The current annual average for calculated Total Suspended Particulates (TSP) is below the rolling annual average criterion of 90ug/m^3. The TSP is calculated by multiplying the PM_{10} by 2.5. Note: the rolling annual average is calculated from 1 June 2025 to 31 May 2026.

The quarterly TEOM calibration was conducted in March 2026. The next calibration is due to be completed in June 2026. The calibration certificate is provided in **Appendix 1** (when required).

Table 2: Average Daily 24-hr TEOM PM_{10} and TSP Results for May 2026 from AQMS and Rolling Annual Average PM_{10}.

Date	PM_{10} 24-hr Average ($\mu g/m^3$)	PM_{10} Rolling Annual Average (µg/m3)	TSP 24hr Average* ($\mu g/m^3$)	TSP Rolling Annual Average ($\mu g/m^3$)
1/05/2026	20.8	16.7	52.0	41.7
2/05/2026	25.0	16.7	62.5	41.9
3/05/2026	15.6	16.8	39.0	41.9
4/05/2026	13.6	16.8	34.0	41.9
5/05/2026	13.2	16.8	33.0	42.0
6/05/2026	14.7	16.8	36.8	41.9
7/05/2026	12.2	16.8	30.5	41.9
8/05/2026	12.6	16.8	31.5	41.9
9/05/2026	17.1	16.8	42.8	41.9
10/05/2026	22.3	16.8	55.8	42.0
11/05/2026	15.7	16.8	39.3	42.1
12/05/2026	17.9	16.9	44.8	42.2
13/05/2026	10.2	16.9	25.5	42.2
14/05/2026	10.0	16.9	25.0	42.2
15/05/2026	8.9	16.8	22.3	42.1
16/05/2026	9.6	16.8	24.0	42.1
17/05/2026	10.1	16.8	25.3	42.1
18/05/2026	16.4	16.8	41.0	42.1
19/05/2026	7.1	16.8	17.8	42.1
20/05/2026	10.8	16.8	27.0	42.0
21/05/2026	15.5	16.8	38.8	42.1
22/05/2026	8.9	16.8	22.3	42.1
23/05/2026	8.9	16.8	22.3	42.1
24/05/2026	9.5	16.8	23.8	42.1
25/05/2026	14.3	16.9	35.8	42.1
26/05/2026	11.6	16.8	29.0	42.1
27/05/2026	11.5	16.7	28.8	41.7
28/05/2026	10.2	16.7	25.5	41.7
29/05/2026	9.4	16.6	23.5	41.6
30/05/2026	6.4	16.6	16.0	41.6
31/05/2026	5.9	16.6	14.8	41.5

*Calculated from PM10

**Calculated from PM10 Annual Average

Note: results above the Dixon Sand EPL criteria limit of 42 ug/m^3 are highlighted in yellow

No Data (ND) - <18hrs hour of valid data to calculate a 24hr average

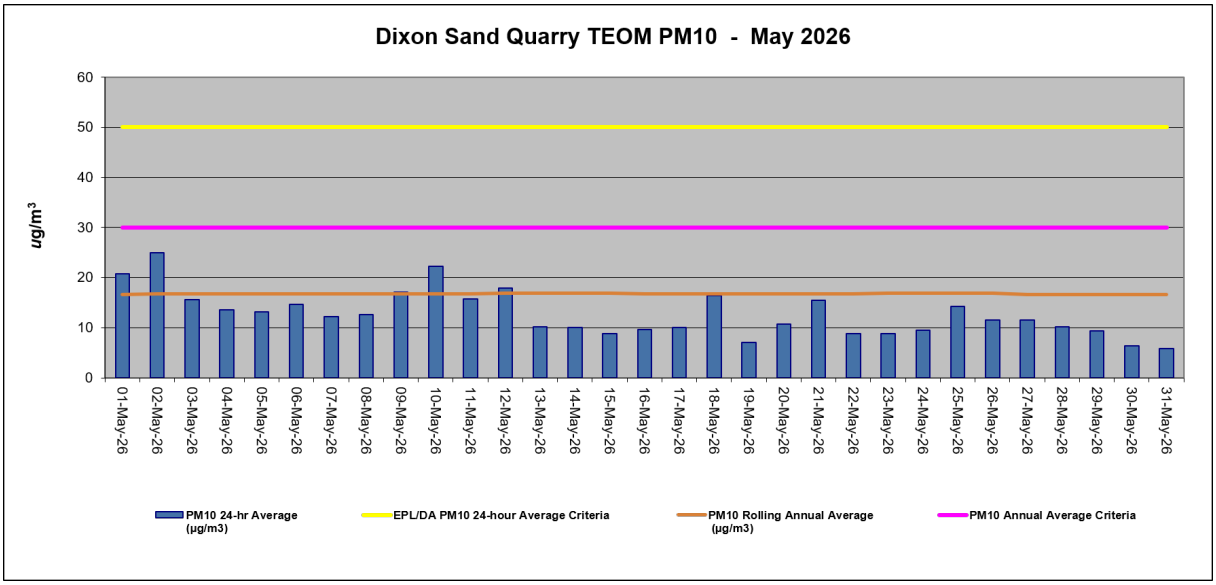


Figure 1: *TEOM PM_{10} 24 hr, Annual Rolling Average and Criteria*

3.2 EPL Reporting Conditions

Dixon Sand is required to comply with the Environmental Protection Licence (EPL) 3916 Condition M2.4 and EPL 12513 Condition M2.3.

During the reporting period Dixon Sand triggered reporting under these conditions on zero occasion(s). Details are listed below (if required):

Details are listed below (if required):

Old Northern Road Quarry - EPL 3916*

Date/Time	24hr Rolling Average (µg/m³)	Prevailing Wind Direction (°)

**Condition M2.4 - Any rolling 24-hour average PM10 result measured at Point 2 in licence condition M2.2 is greater than 42µg/m3 and the prevailing wind at the site is north-westerly (between 270 degrees and 315 degrees as measured at Point 3).*

Haerses Road Quarry - EPL 12513*

Date/Time	24hr Rolling Average (µg/m³)	Prevailing Wind Direction (°)

**Condition M2.3 - Any rolling 24-hour average PM10 result measured at Point 1 in licence condition M2.2 IS greater than 42µg/m3 and the prevailing wind at the site is north-westerly (between 270 degrees and 315 degrees as measured at Point 2).*

3.3 Meteorological Data

The weather station logs data at 5-minute intervals and sends the data to a web database by NextG telemetry. The data is accessible from the web site http://console.teledata.com.au/index.html.

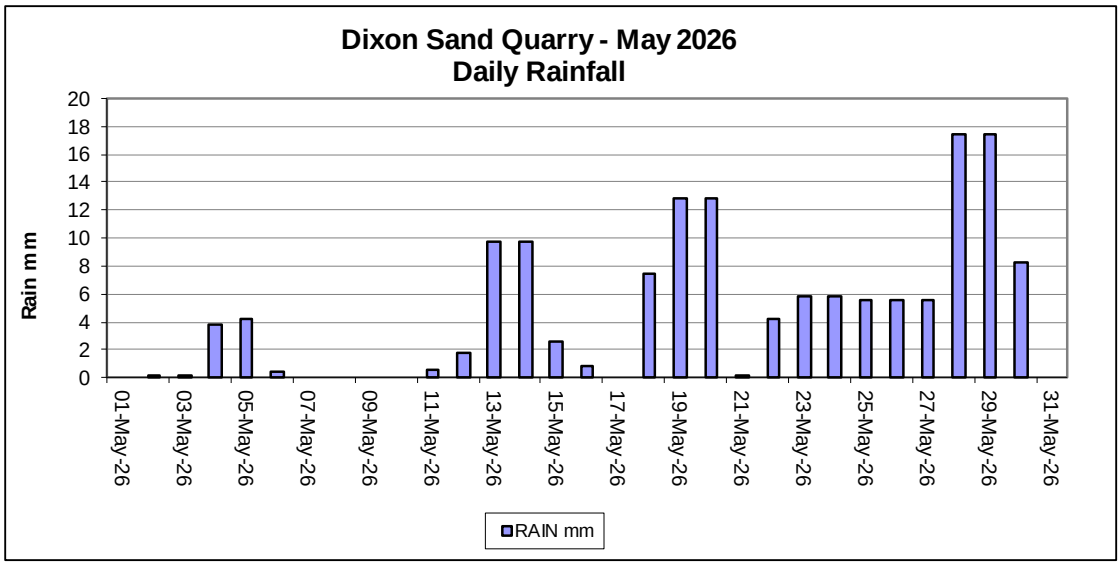
A summary of monthly results is presented in **Table 3**. Charts of meteorological parameters are presented in **Figures 2** and **3**. A Windrose is provided in **Figure 4**.

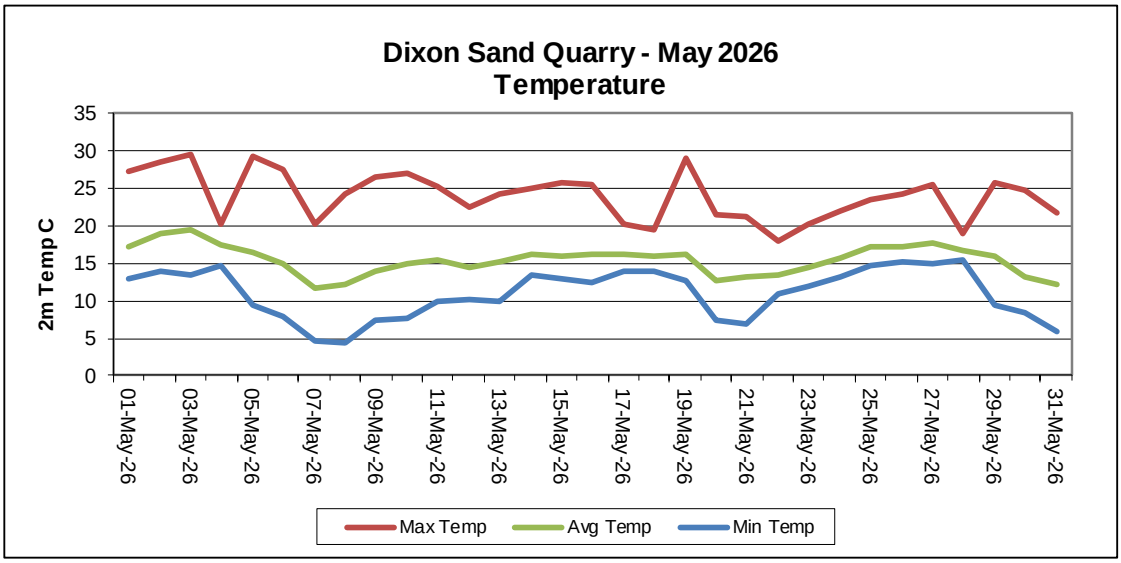
A 6-monthly physical screening and system check of the meteorological station was conducted in January 2026 (for December 2025). The next physical screening and system check is currently scheduled for June 2026. The screening and system check certificates are provided in **Appendix 1** (when required).

Approximately 100% of valid meteorological data was recorded for May 2026.

Table 3: Meteorological Data Summary for May 2026

Date	Min Temp	Avg Temp	Max Temp	RAIN mm	Min WS	Avg WS	Max WS	Min Humidity	Avg Humidity	Max Humidity	Min Pressure	Avg Pressure	Max Pressure
1/05/2026	12.8	17.1	27.3	0.0	0.1	1.6	6.6	58.8	82.2	93.6	999.0	1000.9	1003.0
2/05/2026	13.9	19.0	28.6	0.2	0.1	3.3	8.2	63.3	78.2	89.9	995.0	997.1	1000.0
3/05/2026	13.3	19.4	29.4	0.2	0.2	3.0	7.7	54.0	75.8	92.7	991.0	993.3	996.0
4/05/2026	14.6	17.4	20.1	3.8	0.8	4.8	11.3	69.5	80.4	88.9	988.0	989.2	991.0
5/05/2026	9.4	16.5	29.2	4.2	0.4	2.0	5.4	41.0	68.5	93.8	989.0	991.2	994.0
6/05/2026	7.9	15.0	27.6	0.4	0.1	1.9	6.8	54.0	74.4	90.2	987.0	991.3	994.0
7/05/2026	4.7	11.7	20.2	0.0	0.4	3.4	8.7	28.7	59.0	88.2	986.0	988.4	993.0
8/05/2026	4.3	12.1	24.2	0.0	0.4	2.3	5.9	43.2	61.2	75.3	989.0	991.6	995.0
9/05/2026	7.3	13.9	26.5	0.0	0.2	1.8	6.4	42.0	67.5	85.9	995.0	996.8	999.0
10/05/2026	7.7	15.0	27.0	0.0	0.2	2.3	6.6	53.7	77.2	91.9	999.0	1001.2	1004.0
11/05/2026	9.8	15.5	25.2	0.6	0.4	3.7	11.6	64.6	81.7	90.8	1003.0	1004.9	1007.0
12/05/2026	10.1	14.5	22.5	1.8	0.3	2.5	6.1	74.6	87.0	94.9	1005.0	1006.3	1008.0
13/05/2026	10.0	15.1	24.2	9.8	0.2	2.4	6.4	73.2	87.2	94.2	1004.0	1005.2	1007.0
14/05/2026	13.4	16.2	24.9	9.8	0.4	2.4	10.0	69.0	89.4	95.1	1002.0	1004.1	1006.0
15/05/2026	12.9	15.9	25.8	2.6	0.2	2.1	8.7	70.7	89.7	95.3	999.0	1001.1	1003.0
16/05/2026	12.3	16.2	25.4	0.8	0.2	1.6	6.5	67.9	89.5	95.2	996.0	997.4	1000.0
17/05/2026	13.8	16.2	20.2	0.0	0.2	1.2	3.9	80.5	90.6	94.6	992.0	993.6	996.0
18/05/2026	13.9	15.9	19.4	7.4	0.3	2.0	5.7	84.8	93.1	95.5	985.0	990.0	993.0
19/05/2026	12.7	16.3	28.9	12.8	0.4	2.2	9.9	69.6	89.6	95.3	980.0	982.5	986.0
20/05/2026	7.4	12.8	21.5	12.8	0.2	2.3	11.9	52.9	77.0	94.8	986.0	991.0	996.0
21/05/2026	6.9	13.3	21.1	0.2	0.2	5.0	8.5	57.6	75.6	92.4	996.0	999.0	1001.0
22/05/2026	10.8	13.4	17.9	4.2	1.3	4.1	7.5	81.3	92.0	95.5	998.0	999.4	1001.0
23/05/2026	11.9	14.5	20.2	5.8	0.5	3.3	6.0	79.7	93.3	95.9	998.0	999.1	1001.0
24/05/2026	13.1	15.8	21.9	5.8	0.4	1.5	4.3	78.6	91.4	96.0	995.0	997.0	999.0
25/05/2026	14.8	17.1	23.6	5.6	0.2	2.2	7.8	80.7	92.0	95.1	992.0	993.8	995.0
26/05/2026	15.1	17.3	24.3	5.6	0.4	1.9	6.3	71.2	91.8	95.6	990.0	991.5	993.0
27/05/2026	15.0	17.8	25.5	5.6	0.5	2.5	6.7	73.8	90.4	95.8	989.0	990.8	993.0
28/05/2026	15.4	16.7	19.0	17.4	0.5	3.6	7.8	87.2	94.1	96.0	978.0	983.6	989.0
29/05/2026	9.4	15.9	25.7	17.4	0.4	5.2	11.3	63.3	85.6	96.2	976.0	977.7	980.0
30/05/2026	8.3	13.2	24.7	8.2	0.5	2.4	5.7	48.5	67.2	82.4	979.0	980.2	982.0
31/05/2026	5.8	12.2	21.7	0.0	0.5	3.1	6.7	48.4	68.0	79.1	981.0	982.7	986.0
Monthly	**4.3**	**15.6**	**29.4**	**143.0**	**0.1**	**2.7**	**11.9**	**28.7**	**82.4**	**96.2**	**976.0**	**994.3**	**1008.0**





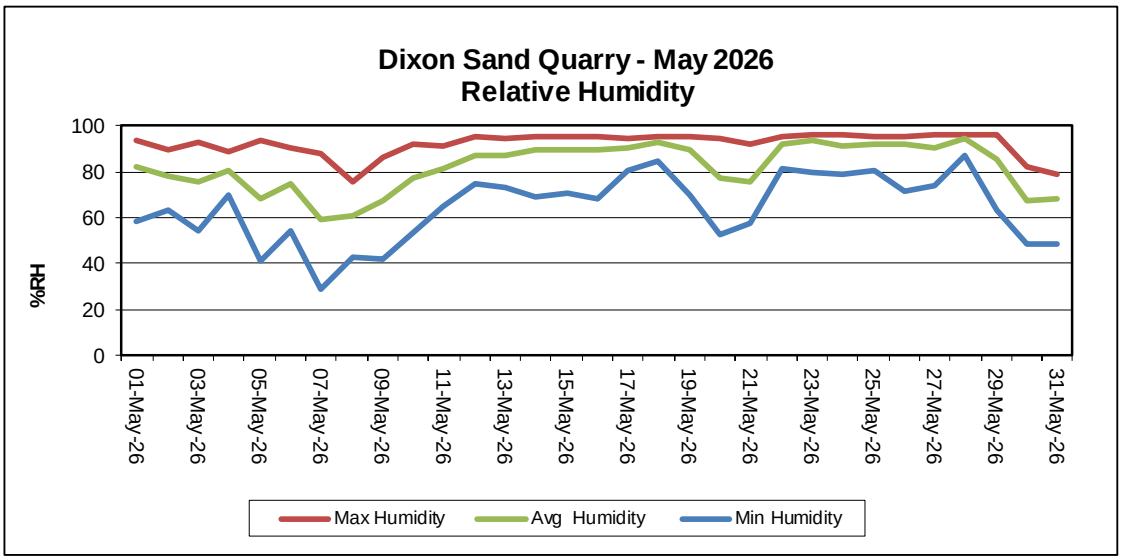


Figure 2: *Daily Rainfall, Temperature and Relative Humidity Charts*

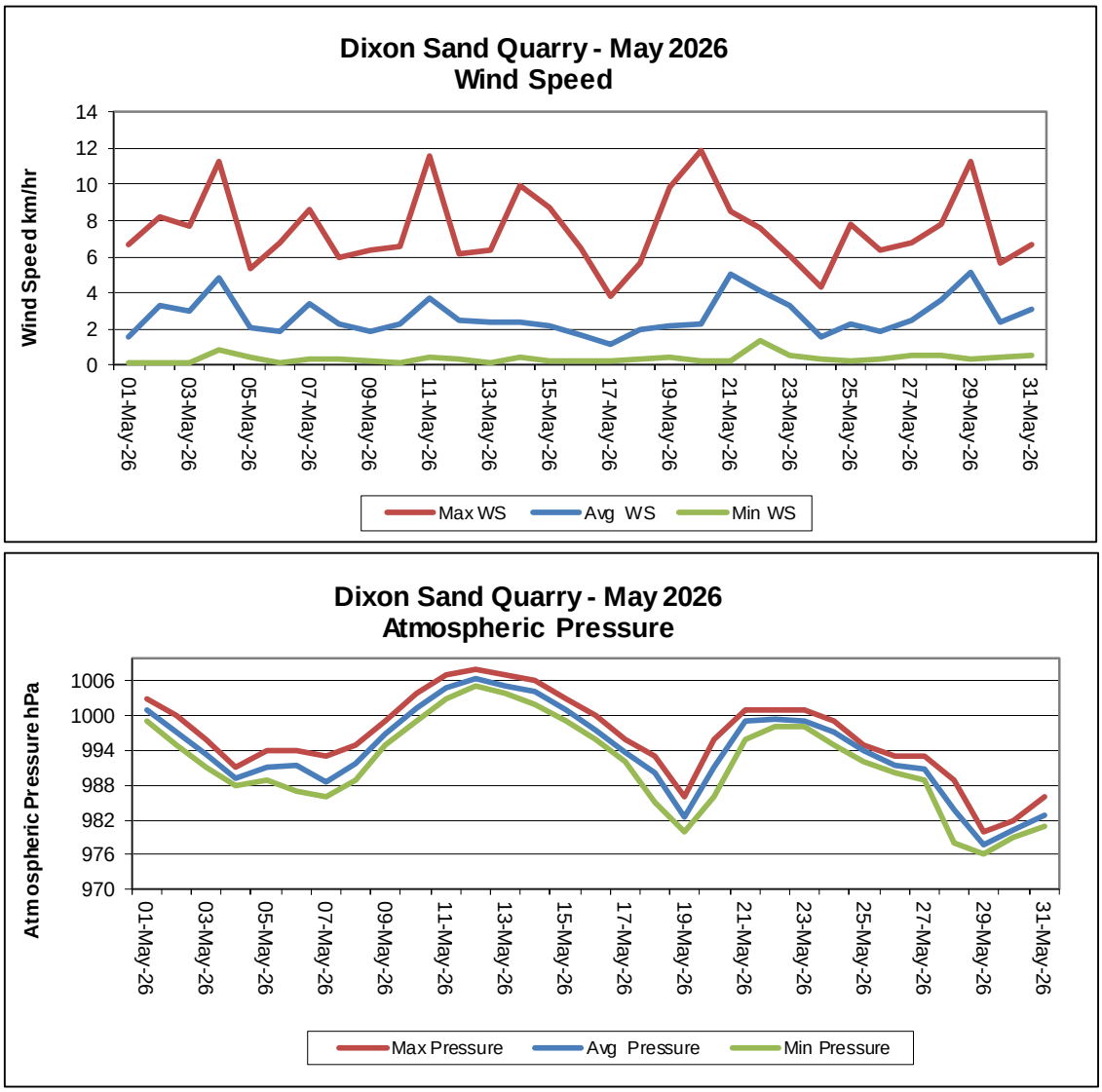


Figure 3: *Wind Speed and Atmospheric Pressure Charts*

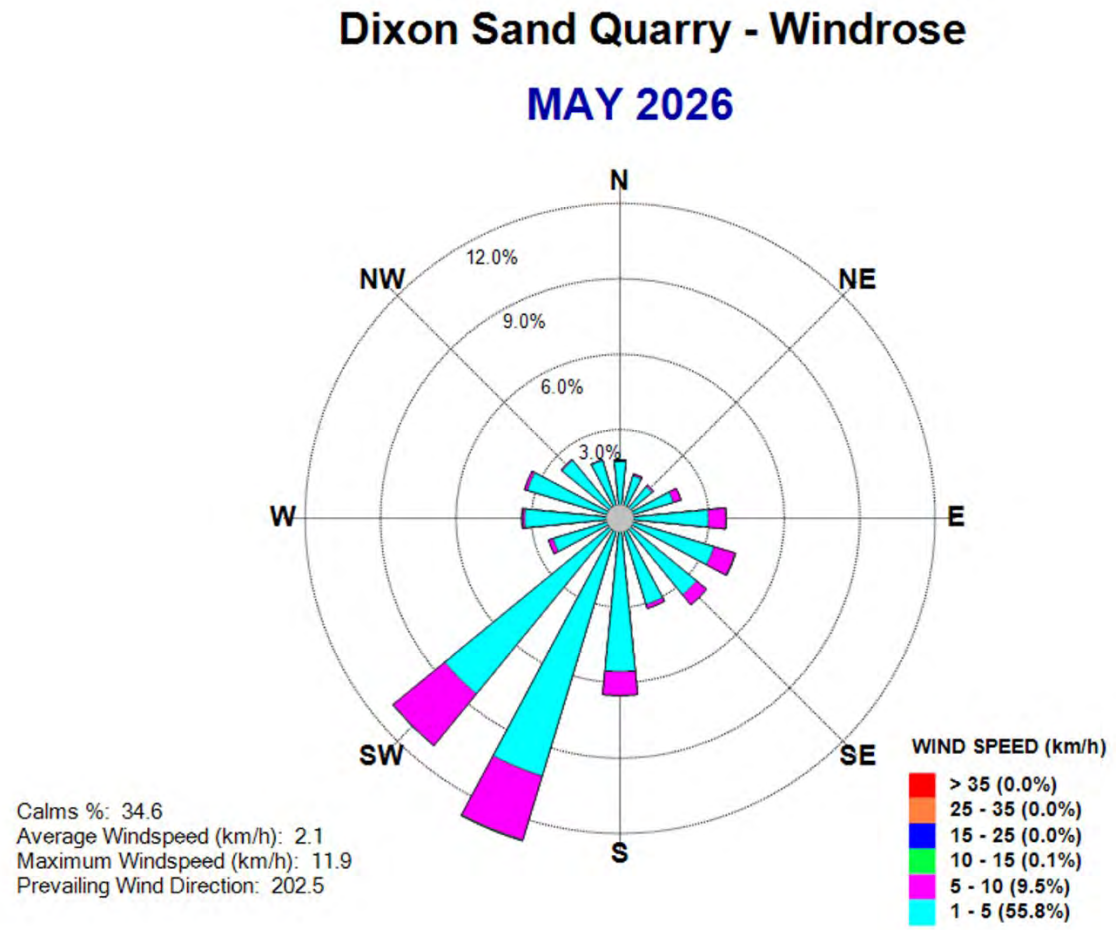


Figure 4: *Windrose*

Appendix 1

Calibration Documents (when required)

CBased Environmental Pty Limited
ABN 62 611 924 264

Dixon Sand Quarry

Environmental Monitoring
Air Quality

Tapered Element Oscillating Microbalance (TEOM) (PM_{10}) and Meteorological Data

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June 2026

Colin Davies BSc MEIA CENVP
Environmental Scientist
Date 10 July 2026

CBased Environmental Pty Ltd
Unit 3, 2 Enterprise Crescent SINGLETON NSW 2330
☎ (02) 65713334

1.0 Summary

CBased Environmental Pty Limited is contracted by Dixon Sand to conduct continuous Tapered Element Oscillating Microbalance (TEOM) for fine particulates (PM_{10}) and meteorological monitoring for the Dixon Sand Quarries. The information is required to assess air quality levels. The results for the TEOM and meteorological site are included in this report.

The monitoring programme includes:

- One continuous TEOM PM_{10} monitor; and
- One continuous meteorological station.

This monthly report for June 2026 was prepared by CBased Environmental and includes the following:

- TEOM (PM_{10}) monitoring results; and
- Meteorological results.

In accordance with Dixon Sand Development Consents (DA250-09-01 and DA165-7-2005) and Environmental Protection Licences (EPL3916 and EPL12513)

- 24-hour average PM_{10} results were below the 24-hour maximum criteria of 50ug/m^3.
- The PM_{10} rolling annual average is below the annual average criteria of 30ug/m^3; and
- The calculated TSP is below the annual average criteria of 90ug/m^3.

Note: Based on the available data, statements in green indicate current conformance to Dixon Sand Quarry Air Quality Impact Assessment criteria, statements in red indicate possible non-conformance. Year to date annual average for PM_{10} is calculated from 1 July 2025 to 30 June 2026.

Approximately 100% of valid meteorological data was recorded for June 2026

Approximately 99.5% of valid TEOM data was available for June 2026.

2.0 Sampling Programme

The TEOM is sited and operated to the applicable Australian Standard and/or NSW EPA approved methods. The following Australian Standards were used:

- AS3580.9.8 - "*Methods for Sampling and Analysis of Ambient Air. Determination of Suspended Particulates—PM_{10} continuous direct mass method using a tapered element oscillating microbalance analyser*"; and
- AS/NZS 3580.1.1 - "*Methods for Sampling and Analysis of Ambient Air Part 1.1 Guide to Siting Air Monitoring Equipment*".

TEOM PM_{10} results are 24-hour averages at midnight and are reported as $\mu g/m^3$ corrected to 0 degrees C and 101.3kPa.

All laboratory analysis was conducted by a National Association of Testing Authorities (NATA) accredited laboratory.

Air Quality monitoring site descriptions and locations are provided in **Table 1**.

Table 1: Dixon Sand Air Quality Monitoring Description and Locations

Monitor	Site Code	Location Description
TEOM PM_{10}	TEOM	Old Northern Road, Maroota NSW
Meteorological Station	MET	Old Northern Road, Maroota NSW

3.0 Results

3.1 TEOM PM_{10}

24-hour average TEOM PM_{10} results from the AQMS data collection software are provided in **Table 2** and a chart of the data is provided in **Figure 1**.

During the 2026 monitoring period, individual 24-hour TEOM PM_{10} results were below the DA/EPL short-term (24hr) impact criteria of 50ug/m^3.

Approximately 99.5% of valid TEOM data was available for June 2026.

At present, the current TEOM PM_{10} rolling annual average is below the Dixon Sand Quarry annual average PM_{10} criteria of 30ug/m^3. The current annual average for calculated Total Suspended Particulates (TSP) is below the rolling annual average criterion of 90ug/m^3. The TSP is calculated by multiplying the PM_{10} by 2.5. Note: the rolling annual average is calculated from 1 July 2025 to 30 June 2026.

The quarterly TEOM calibration was conducted on 2 June 2026. The next calibration is due to be completed in September 2026. The calibration certificate is provided in **Appendix 1** (when required).

Table 2: Average Daily 24-hr TEOM PM_{10} and TSP Results for June 2026 from AQMS and Rolling Annual Average PM_{10}.

Date	PM_{10} 24-hr Average ($\mu g/m^3$)	PM_{10} Rolling Annual Average (µg/m3)	TSP 24hr Average* ($\mu g/m^3$)	TSP Rolling Annual Average ($\mu g/m^3$)
1/06/2026	13.7	16.6	34.3	41.5
2/06/2026	5.2	16.6	12.9	41.5
3/06/2026	7.6	16.6	19.0	41.4
4/06/2026	7.4	16.6	18.5	41.4
5/06/2026	9.2	16.5	23.0	41.3
6/06/2026	8.6	16.5	21.5	41.3
7/06/2026	10.0	16.5	25.0	41.4
8/06/2026	12.0	16.6	30.0	41.4
9/06/2026	17.9	16.6	44.8	41.5
10/06/2026	11.6	16.6	29.0	41.5
11/06/2026	15.4	16.6	38.5	41.6
12/06/2026	17.0	16.6	42.5	41.6
13/06/2026	8.4	16.6	21.0	41.6
14/06/2026	8.9	16.6	22.3	41.6
15/06/2026	14.1	16.7	35.3	41.6
16/06/2026	12.5	16.7	31.3	41.7
17/06/2026	15.8	16.7	39.5	41.7
18/06/2026	11.5	16.7	28.8	41.7
19/06/2026	8.5	16.6	21.3	41.6
20/06/2026	5.6	16.6	14.0	41.5
21/06/2026	6.6	16.6	16.5	41.5
22/06/2026	16.5	16.6	41.3	41.5
23/06/2026	15.7	16.6	39.3	41.5
24/06/2026	17.8	16.6	44.5	41.6
25/06/2026	12.0	16.6	30.0	41.5
26/06/2026	8.1	16.6	20.3	41.5
27/06/2026	7.9	16.6	19.8	41.4
28/06/2026	8.7	16.5	21.8	41.4
29/06/2026	17.0	16.6	42.5	41.4
30/06/2026	11.0	16.6	27.5	41.4

*Calculated from PM10

**Calculated from PM10 Annual Average

Note: results above the Dixon Sand EPL criteria limit of 42 ug/m^3 are highlighted in yellow

No Data (ND) - <18hrs hour of valid data to calculate a 24hr average

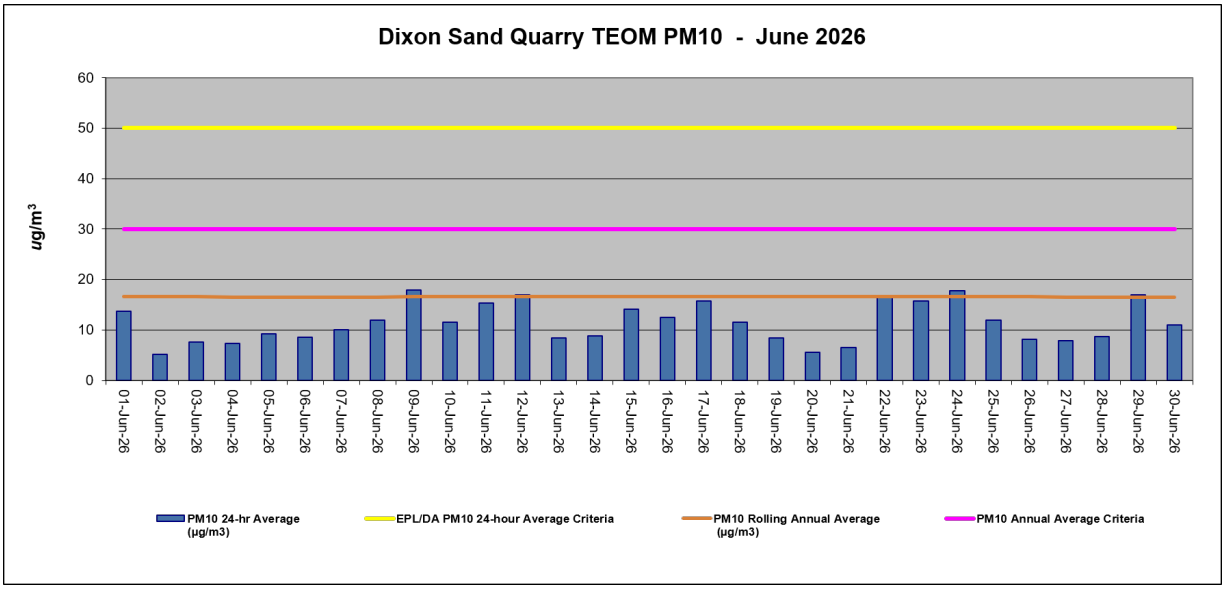


Figure 1: *TEOM PM_{10} 24 hr, Annual Rolling Average and Criteria*

3.2 EPL Reporting Conditions

Dixon Sand is required to comply with the Environmental Protection Licence (EPL) 3916 Condition M2.4 and EPL 12513 Condition M2.3.

During the reporting period Dixon Sand triggered reporting under these conditions on zero occasion(s). Details are listed below (if required):

Details are listed below (if required):

Old Northern Road Quarry - EPL 3916*

Date/Time	24hr Rolling Average (µg/m³)	Prevailing Wind Direction (°)

**Condition M2.4 - Any rolling 24-hour average PM10 result measured at Point 2 in licence condition M2.2 is greater than 42µg/m3 and the prevailing wind at the site is north-westerly (between 270 degrees and 315 degrees as measured at Point 3).*

Haerses Road Quarry - EPL 12513*

Date/Time	24hr Rolling Average (µg/m³)	Prevailing Wind Direction (°)

**Condition M2.3 - Any rolling 24-hour average PM10 result measured at Point 1 in licence condition M2.2 IS greater than 42µg/m3 and the prevailing wind at the site is north-westerly (between 270 degrees and 315 degrees as measured at Point 2).*

3.3 Meteorological Data

The weather station logs data at 5-minute intervals and sends the data to a web database by NextG telemetry. The data is accessible from the web site http://console.teledata.com.au/index.html.

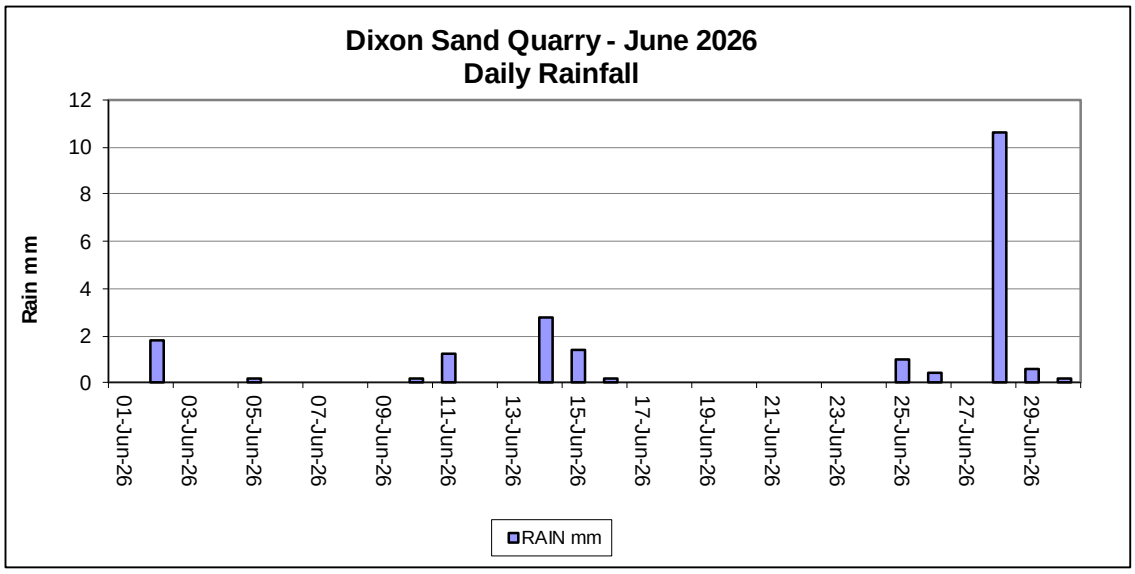
A summary of monthly results is presented in **Table 3**. Charts of meteorological parameters are presented in **Figures 2** and **3**. A Windrose is provided in **Figure 4**.

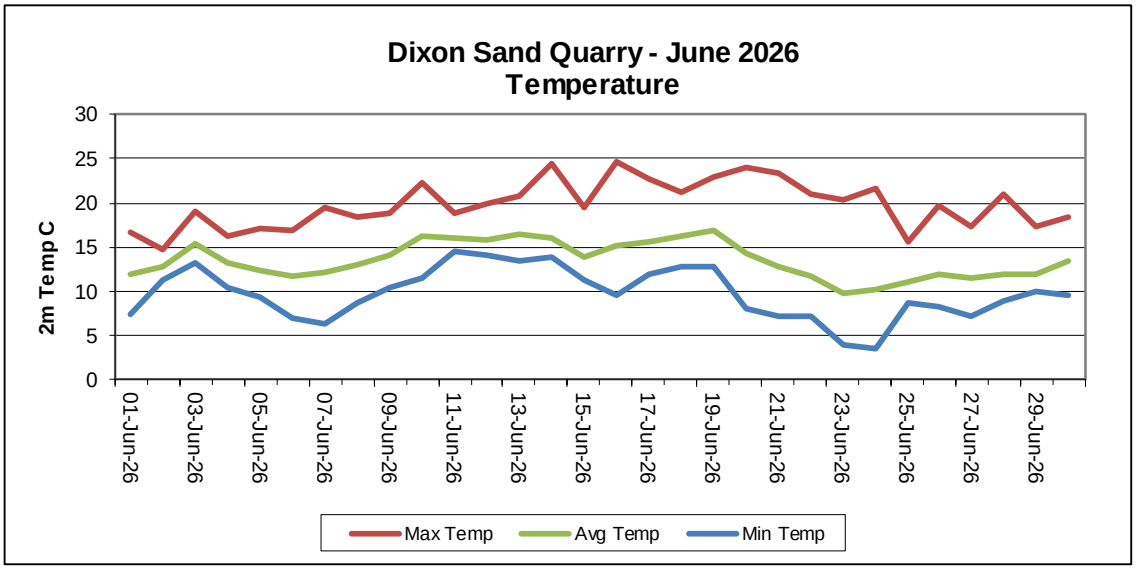
A 6-monthly physical screening and system check of the meteorological station was conducted on 2 June 2026. The next physical screening and system check is currently scheduled for December 2026. The screening and system check certificates are provided in **Appendix 1** (when required).

Approximately 100% of valid meteorological data was recorded for June 2026.

Table 3: Meteorological Data Summary for June 2026

Date	Min Temp	Avg Temp	Max Temp	RAIN mm	Min WS	Avg WS	Max WS	Min Humidity	Avg Humidity	Max Humidity	Min Pressure	Avg Pressure	Max Pressure
1/06/2026	7.5	11.8	16.7	0.0	0.8	3.5	9.2	48.2	61.7	75.9	983.0	985.7	988.0
2/06/2026	11.2	12.9	14.7	1.8	2.2	6.6	20.3	54.8	68.2	88.5	973.0	978.0	983.0
3/06/2026	13.2	15.4	19.1	0.0	1.0	5.8	12.1	43.2	60.7	72.7	975.0	976.5	979.0
4/06/2026	10.5	13.2	16.2	0.0	1.7	5.8	11.2	56.0	63.3	77.6	974.0	976.0	979.0
5/06/2026	9.3	12.4	17.1	0.2	1.1	3.8	10.7	49.1	62.4	76.0	977.0	984.7	994.0
6/06/2026	6.9	11.6	16.9	0.0	0.4	2.3	5.5	45.7	63.9	82.4	993.0	997.3	1001.0
7/06/2026	6.4	12.1	19.4	0.0	0.3	2.1	6.0	52.6	75.2	91.2	1001.0	1002.5	1004.0
8/06/2026	8.7	13.1	18.4	0.0	0.2	1.8	5.9	68.2	83.8	93.9	1003.0	1004.2	1006.0
9/06/2026	10.4	14.2	18.8	0.0	0.3	2.2	7.9	59.6	83.6	94.9	1000.0	1002.1	1004.0
10/06/2026	11.6	16.3	22.3	0.2	0.7	3.9	10.9	57.8	76.6	90.6	999.0	1000.4	1002.0
11/06/2026	14.6	16.0	18.8	1.2	0.4	2.6	6.9	73.0	84.4	90.1	1001.0	1003.1	1005.0
12/06/2026	14.1	15.9	19.9	0.0	0.4	2.8	6.6	68.5	84.7	94.0	1003.0	1004.3	1006.0
13/06/2026	13.4	16.5	20.7	0.0	0.4	3.9	8.4	68.2	83.7	94.8	998.0	1000.7	1004.0
14/06/2026	13.8	16.1	24.4	2.8	0.6	3.3	7.4	71.4	84.1	93.9	998.0	1000.9	1005.0
15/06/2026	11.2	13.8	19.5	1.4	0.2	2.9	7.2	74.5	89.3	94.6	1004.0	1004.9	1007.0
16/06/2026	9.6	15.1	24.6	0.2	0.3	3.5	9.9	62.9	81.3	93.1	1000.0	1002.2	1004.0
17/06/2026	12.0	15.5	22.8	0.0	0.3	2.7	7.6	68.1	81.1	91.0	996.0	998.8	1001.0
18/06/2026	12.9	16.2	21.3	0.0	1.5	5.6	10.7	66.5	75.1	87.9	989.0	992.3	996.0
19/06/2026	12.8	16.9	22.9	0.0	2.0	7.2	12.4	58.6	65.8	74.7	984.0	986.4	989.0
20/06/2026	8.0	14.3	24.0	0.0	0.8	4.1	8.1	50.9	64.8	75.7	988.0	993.6	998.0
21/06/2026	7.3	12.8	23.3	0.0	0.3	2.4	5.0	50.9	69.3	81.5	998.0	999.1	1001.0
22/06/2026	7.2	11.6	20.9	0.0	0.3	1.7	5.9	51.0	72.5	85.2	996.0	998.3	1000.0
23/06/2026	4.0	9.9	20.3	0.0	0.3	1.9	5.2	55.1	74.7	92.7	997.0	998.9	1001.0
24/06/2026	3.6	10.3	21.6	0.0	0.5	2.6	7.3	54.6	75.2	92.7	1000.0	1001.7	1004.0
25/06/2026	8.6	11.0	15.6	1.0	0.9	3.7	7.0	79.0	88.9	94.6	1003.0	1005.3	1007.0
26/06/2026	8.3	11.9	19.7	0.4	0.4	2.7	5.7	70.8	90.1	95.5	1002.0	1003.7	1006.0
27/06/2026	7.2	11.5	17.3	0.0	0.4	2.3	6.1	77.5	89.0	95.4	1000.0	1001.8	1003.0
28/06/2026	8.9	11.9	20.9	10.6	0.4	2.2	6.2	73.9	91.9	95.2	1001.0	1002.6	1004.0
29/06/2026	10.1	11.8	17.4	0.6	0.2	1.5	4.2	82.0	93.0	95.6	997.0	1000.6	1003.0
30/06/2026	9.6	13.5	18.5	0.2	0.3	4.3	9.5	71.4	84.7	94.8	991.0	993.5	997.0
Monthly	**3.6**	**13.5**	**24.6**	**20.6**	**0.2**	**3.4**	**20.3**	**43.2**	**77.4**	**95.6**	**973.0**	**996.7**	**1007.0**





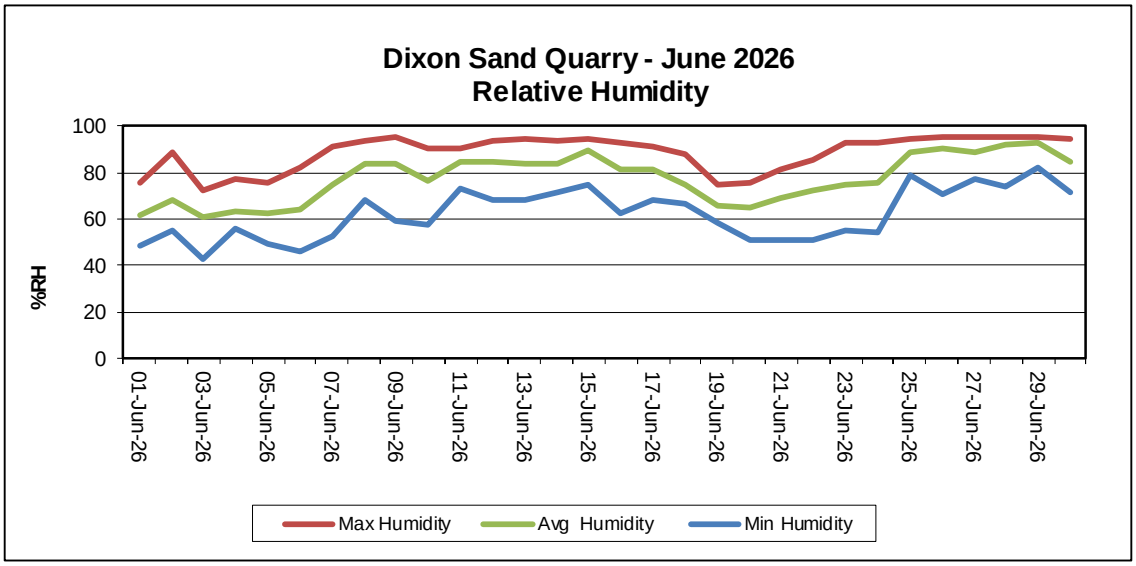


Figure 2: *Daily Rainfall, Temperature and Relative Humidity Charts*

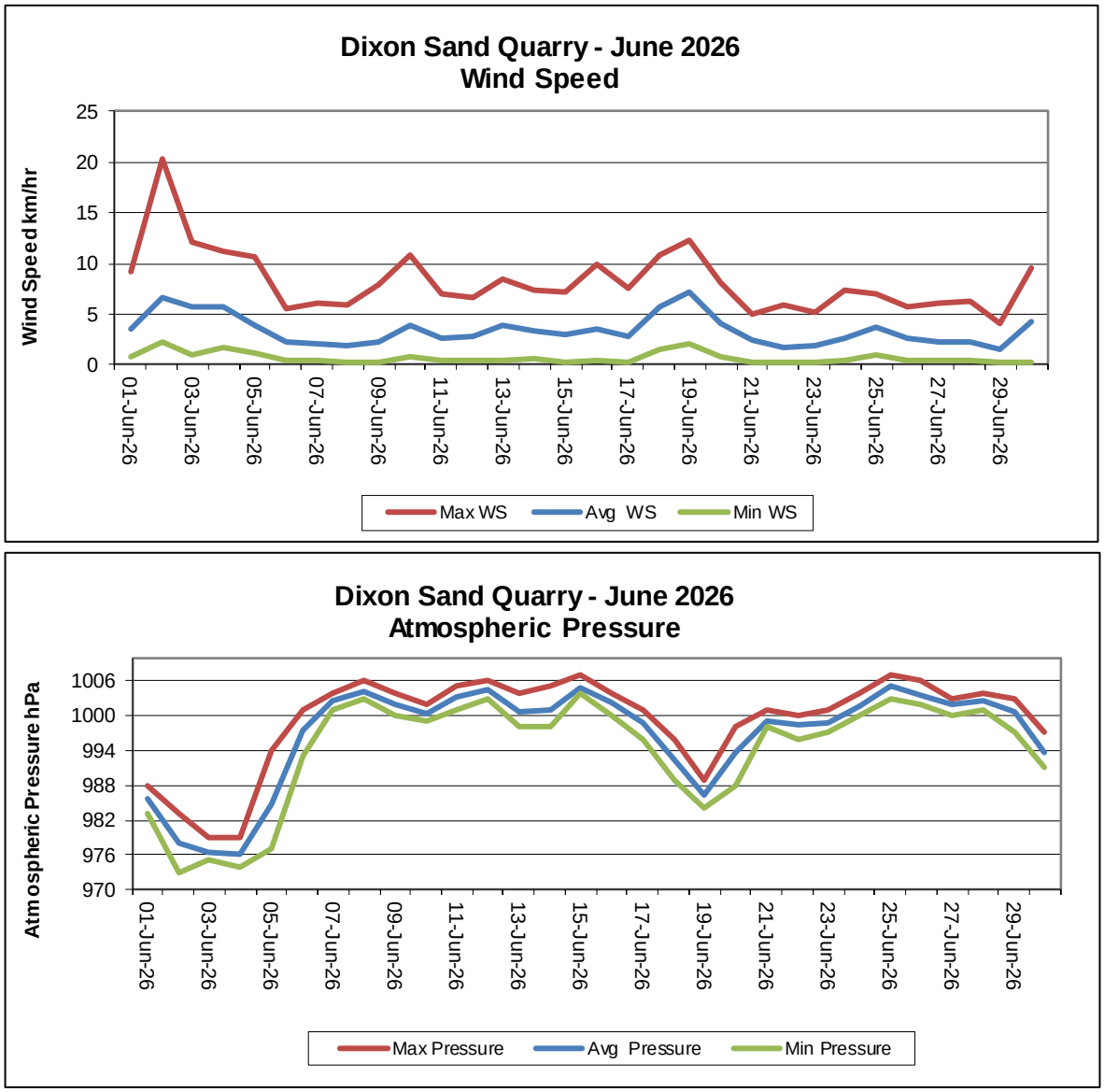


Figure 3: *Wind Speed and Atmospheric Pressure Charts*

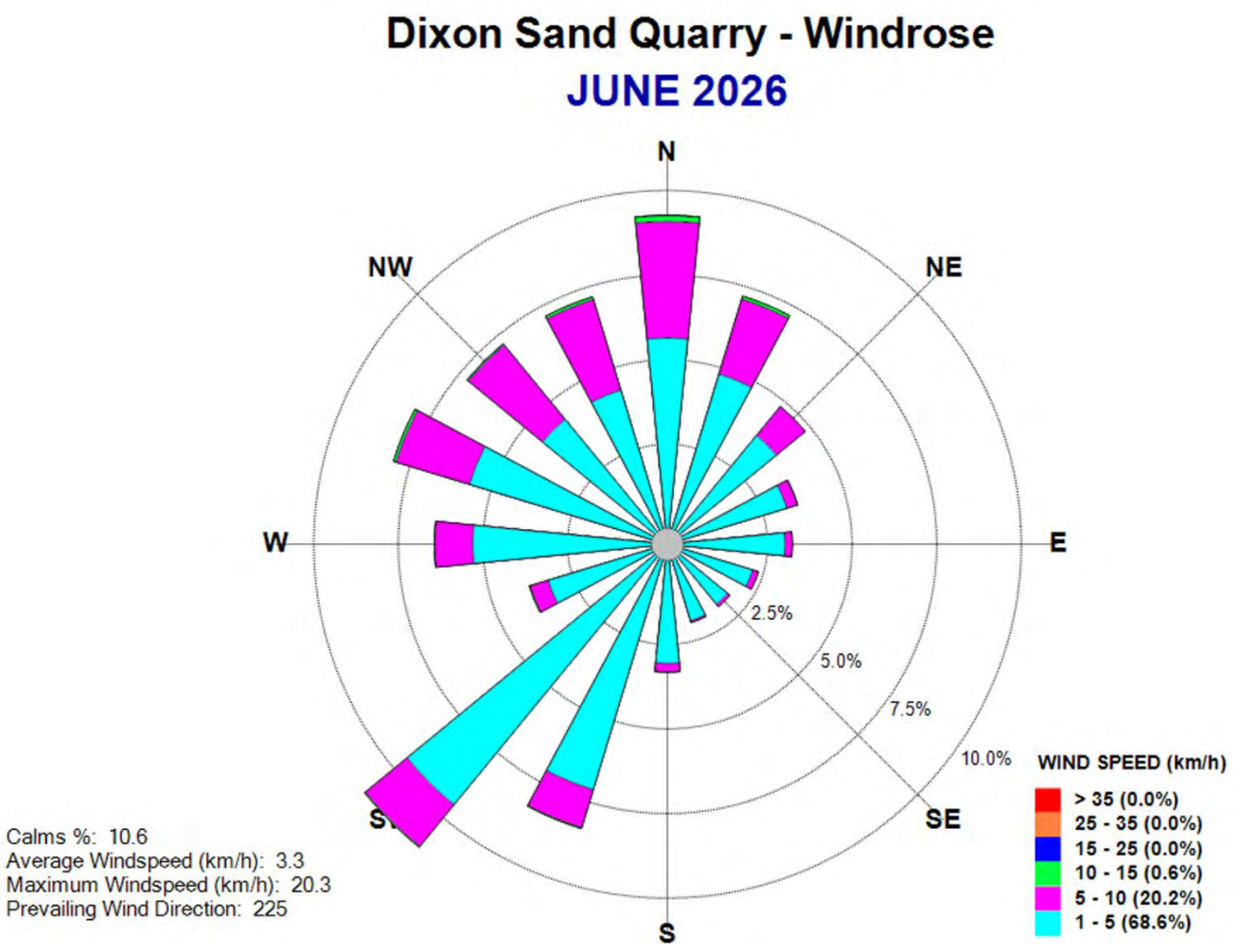


Figure 4: *Windrose*

Appendix 1

Meteorological Monitoring Report

Ambient Air Quality Monitoring Report

Calibration Documents (when required)

CARBON BASED ENVIRONMENTAL

Continuous Air Quality Monthly/Quarterly/Six Monthly/Annual TEOM Maintenance and Calibration – 1400AB

teledata

TEOM Client/Site: Dixon / TEOM Sondic **Date:** 2/6/2026

1. TEOM Data Screen **SERIAL No:**

Condition	Current Data	Acceptable Data	Pass (Tick)	Fail (Tick)
Operating Condition	Full	Green - Normal		
Date/time	TEOM: 951 Actual: 1001	Current Date/time correct within 5 minutes		✓
PM-10 24hr av		Positive values		
Filter loading PM10	58	<80 %	✓	
Frequency PM-10	253,803 19	200-300 Hz	✓	
Noise PM-10		<0.100ug		

Comment: If filter load >80% but <90% and if flows Ok then data is OK

Comments:

2. System Status

Condition	Current Data	Acceptable Data	Pass (Tick)	Fail (Tick)
Vacuum pump pressure	0.49	<0.50 atm	✓	
Warnings		No Warnings	✓	
If any warnings list:				

Comments:

Data Downloaded: YES/NO (circle)

Technician Name : Conrad Mulady **Signed**

3. Instrument Conditions Ambient Conditions and Temperatures

Condition	Current Data	Acceptable Data	Pass (Tick)	Fail (Tick)
Ambient Temperature	15.4	-10 to 50 C	✓	
Ambient Dew Point	—	-10 to 50 C		
Ambient Pressure	0.958	0.9-1.1 atm	✓	
Ambient Relative Humidity	—	10-100 %RH		
Cap temperature	50.00	50.00 +/- 0.10 C	✓	
Case temperature	50.00	50.00 +/- 0.10 C	✓	
Main (PM-10) Air Tube temp	50.00	50.00 +/- 0.10 C	✓	

Comments:

4. Instrument Conditions – Flows

Condition	Current Data	Acceptable Data	Pass (Tick)	Fail (Tick)
Main (PM-10) Flow rate	3.00	2.82 – 3.18 lpm	✓	
Bypass Flow rate	13.67	12.95 – 14.39 lpm	✓	
Total Flow rate	16.67	15.67 – 17.67 lpm	✓	

Comments:

Results: (Tick box)

☑ **There were NO equipment faults found. No action required – (file report)**

☐ **There were faults found (Fails) – Were these fixed on site: YES/NO (circle)**
Any Fails that cannot be repaired on site must be reported to CBased:
Office: 65713334 or email cbased@bigpond.com
Date faults notified to CBased: _____

Comments/Action Required:

Calibration/Maintenance

1. 1405A: Were Filters replaced YES/NO
2. PM10 Inlet head cleaned YES/NO
3. If measurement filters were replaced, confirm stable results after change. Stable particulate results confirmed YES/NO

Channel	Filter Load %	Frequency Hz initial	Frequency check 1min	Frequency check 3min	Frequency check 5min
PM10	20.0	256.08514	256.08514	256.08523	256.08526

Frequency should not drift by more than 0.0010 between readings (if instrument is thermodynamically stable)
Pass/Fail – if Fail – install new filter and redo stability test.

4. Instrument clock verified (Refer Section 1) YES/NO.
If Time changed – clock reset OK YES/NO or NA (not changed)
Comments:
+ a few minutes

5. Were TEOM in line and rear TEOM filters checked for cleanliness and replaced if necessary. YES/NO.

Comments if changed:

6. TEOM Cleaned and Air Conditioner checked YES/NO. Air Conditioner settings or operational status: "6" Low Cool

Tetracal Flow/Temp/Pressure Calibrator Serial No: 1006 **Refer to calibration corrections for Temperature/Pressure and Flows and apply to all readings.**

Quarterly or Six Monthly Calibration

1. Flow Verification – Conducted YES/NO

PM10 Flow verified Flow l/min 2.98 Error % 0.7 (allowed error <6%) PASS/FAIL

Bypass Flow verified Flow l/min 13.85 Error % 2.3 (allowed error <6%) PASS/FAIL
If fail then complete a full multipoint recalibration and review previous data from last good flow check. **Comments if Flows recalibrated:** 3.00 and 13.67

1.095 ↓ 1.000
1.000 ↓ 0.990 ↓ 0.988

2. Leak Check – Conducted YES/NO

PM10 actual 0.10 < Limit 0.15

Bypass actual 0.09 < Limit 0.60

Leak check PASS/FAIL – If fail then find leak and retest.
Comments:

Zero A 2 0.07 0.17
B 1.17 1.25

Annual Calibration/Maintenance

1. Temperature and Pressure Calibration – Conducted YES/NO
Reference Temperature: _____C TEOM Temperature_____C
if difference +/- 1 C recalibrate sensor. Sensor recalibrated YES/NO

Reference Pressure: _____atm TEOM Pressure_____atm
if difference +/- 0.010 atm recalibrate sensor. Sensor recalibrated YES/NO

Note: Tetracal measures Atmospheric Pressure in mm Hg or mb or hPa
For mb or hPa divide tetracal result by 1013.25 to change units to atm.
For mmHg divide tetracal result by 760 to change units to atm.

2. Flow Calibration – Conducted YES/NO
PM10
Set point 2.4 Actual:_____
Set point 3.6 Actual:_____
Set point 3.0 Actual:_____ After calibration Final:_____l/min

BYPASS
Set point 10.9 Actual:_____
Set point 16.4 Actual:_____
Set point 13.67 Actual:_____ After calibration Final:_____l/min

3. Post Cal Leak Check – Conducted YES/NO (use leak check wizard. Actual = channel flow-zero flow)
PM2.5 Base actual_____ < Limit 0.15 Reference actual_____< Limit 0.15
BYPASS Base actual_____ < Limit 0.60 Reference actual_____< Limit 0.60
Leak checks PASS/FAIL – If fails, find leak and retest.
Note that a big FAIL here will need the leak resolved and go back to Step 2 as the flow has been calibrated with a leak.

4. Mass calibration (K0) Verification – Conducted YES/NO
Audit Filter Serial Number: _____
Audit Filter Average Weight: _____grams

Channel	TEOM stated KO	Audit KO	% Error	PASS/FAIL
PM10				

Allowed Error +/- 2.5%. If Error > +/- 2.5% then repeat measurement.
Second Error % =PM10_____ PASS/FAIL.
If FAIL confirmed then consult Lear Siegler or manufacturer.
Comments:

5. Prepare for Noise Check – Conducted YES/NO

Channel	Filter Load %	Frequency Hz initial (Time= 0 min)	Frequency check Time= 1 min	Frequency check Time= 3 min	Frequency check Time = 5 min
PM2.5					

PASS/FAIL – If stability test fails, use change filter wizard to reseat the filter.
The next step will not pass until this test passes

6. Annual Noise check - Conducted YES/NO

Zero filter applied to TEOM and TEOM operated for at least 12 hours:

Start date/time: _____ Finish date/time: _____

Standard deviation of all recorded data (min 30 min averages) = _____ ug/m^3

Noise was less than $5ug/m^3$ YES/NO

7. Maintenance

Air Inlet system cleaned YES/NO

Pump Reconditioned YES/NO

Check Waterproofing YES/NO

Comments:

Meteorological Monitoring Maintenance and Calibration

Maintenance and Calibration as per CBased Environmental Method M202

Client: Dixon Sands	Site Name: AWS
Date: 2/6/2026	Time: 10am
General Climatic Conditions: Cloudy Some gust	
Latitude: 33 ° 27 ' 15.8"	Longitude: 150 ° 59 ' 36.4"
Note: Contact office to confirm coordinates if required. Coordinates required to determine magnetic declination.	

1. Physical Maintenance

Item	Yes (Pass)	No (Fail)	Comments
Grass / Vegetation Impacts			
Compound Grass height <10cm	✓		
Ground Anchor / Guy Wires / Mast Condition			
Bottom guy wires tight (correct tension = 35-50mm deflection, with only moderate hand force at 1.5 metres up the guy wire)	—		
Top Guy wires tensioned (correct tension = 60-75mm deflection, with only moderate hand force at 1.5 metres up the guy wire)	—		
Mast Vertical and in good condition	✓		
Ground anchors/star pickets tight in ground	—		
Guy Wires insignificant corrosion	—		
Ground anchors/D shackles/ winders insignificant corrosion	—		
Bolts/hinge points in mast are secure	✓		
Cables / Connectors / Logger Cabinet / Solar Panel			
Cables attached to mast/guy wires via ties are secure	✓		
Insignificant corrosion to plugs/connectors	✓		
No water ingress in logger/battery cabinet	✓		
Wiring/plugs in cabinet OK, Logger OK	✓		
Battery terminals and condition OK	—		Battery Volts =
Battery volts (charging>13V, not charging >12V)	—		
Solar panel undamaged and clean	✓		
Check for ants/insects and install new ant bait station in enclosure	✓		Sprayed

Item	Yes (Pass)	No (Fail)	Comments
Sensor Maintenance / Checks			
Recent data checked and OK / Logging data OK, review sensor data and station battery voltage.	✓		
Wind Speed/Direction			
Wind direction aligned to ±3 degrees of: True North/Magnetic North (strike out N/A) Refer: https://geomagnetism.ga.gov.au/agrf-calculations/agrf-form#magfield	✓		Magnetic Declination: 12 ° Compass Bearing: 348 ° Looking: North / South
Anemometer/wind vane moving freely (analogue sensors)	—	—	
Mechanical sensors are inaudible (audible bearing noises may indicate sensor issues)	—	—	
Temperature			
Temperature sensor(s), and associated radiation shield(s) inspected and cleaned	✓		
Fan(s) on aspirated radiation shields confirmed running	—	—	
Sensor shields cleaned	✓		
Humidity			
Humidity sensor, and associated radiation shield inspected and cleaned	✓		
Barometric Pressure			
Barometric sensor inspected, and any vents for sensor checked and cleared	✓		
Solar Radiation			
Solar radiation sensor inspected	—	—	
Solar radiation sensor cleaned	—	—	
Solar radiation sensor alignment OK	—	—	
Rainfall/Precipitation			
Rain gauge checked for blockages and cleaned if required	✓		
Rain gauge level on arrival	✓		
Rain gauge re-levelled	—	—	

2. Calibration Equipment / Transfer Standard Details

Wind Speed, Wind Direction		*Temperature, Humidity & Pressure*	
Manufacturer:	Vaisala	Manufacturer:	Vaisala
Model:	WXT536	Model:	WXT536 (PTU Module)
Serial Number:	W4710639	Serial Number:	T1910754
Calibration Date:	17/12/2024	Calibration Date:	18/3/2025
Calibration Expires:	17/12/2026	Calibration Expires:	18/3/2027

Precipitation		*Solar Radiation*	
Manufacturer:	Hydrological Services	Manufacturer:	EKO Instruments
Model:	FCD	Model:	MS-80SH
Serial Number:	FCD001	Serial Number:	S24083856
Calibration Date:	7/3/2025	Calibration Date:	23/1/2025
Calibration Expires:	7/3/2030	Calibration Expires:	23/1/2030

1. Wind Sensor Precision Check

Sensor mounting height: 10m or Other (specify):

Wind Speed Sensor

Calibration Point	**Transfer Standard, km/hr or _____**	**Sensor under test, km/hr or _____**	**Difference, km/hr or _____**
1	9.33	9.21	0.12
2	4.0	4.1	-0.10
3	3.0	3.17	-0.17
4	3.7	3.74	-0.04
5	6.5	6.58	-0.08
6	9.0	9.1	0.1
Average	5.922		-0.062
Determination of Result 5%			Calculate -0.782
Allowable accuracy (average of difference) ± (0.72km/hr + 5% of observed) -0.062 + (0.72 + 0.296) = 0.658			Allowable: 0.658
i.e. ± (0.2m/s + 5% of observed) -0.062 - (0.72 + 0.296) = -0.78			Result: PASS / FAIL
(Refer Section 5-1 of USEPA 454/R-99-005)			

Wind Direction Sensor

Calibration Point	**Transfer Standard, degrees**	**Sensor under test, degrees**	**Difference, degrees**
1	28	26	2
2	325	328	-3
3	318	315	3
4	353	354	-1
5	349	347	2
6	344	343	1
Average			0.667
Determination of Result			Result: PASS / FAIL
Allowable accuracy (average of difference) ± 5 degrees			
(Refer Section 5-1 of USEPA 454/R-99-005)			

2. Temperature Sensor Precision Check

Temperature Sensor # 1

Sensor mounting height: 2m, (10m) or Other (specify):

Operational Precision Check

Time Interval	Calibration Point	Transfer Standard, °C	Sensor under test, °C	Difference, °C
1 min	1	14.0	14.1	-0.1
2 min	2	13.9	14.2	-0.3
3 min	3	14.2	14.5	-0.3
4 min	4	14.2	14.4	-0.2
5 min	5	14.2	14.4	-0.2
Average				-0.220
Determination of Result Acceptable tolerance is ± 0.5°C (*Refer Section 5-1 of USEPA 454/R-99-005*)				Result: (PASS) / FAIL

Temperature Sensor # 2 (If Present)

Sensor mounting height: ~~2m~~, 10m or Other (specify): TEOM Ambient 2m

Operational Precision Check

Time Interval	Calibration Point	Transfer Standard, °C	Sensor under test, °C	Difference, °C
1 min	1	~~14.0~~ 14.2	14. [redacted] 15.4	-1.2
2 min	2	14.1	15.4	-1.3
3 min	3	14.2	15.3	-1.1
4 min	4	14.2	15.3	-1.1
5 min	5	14.1	15.2	-1.1
Average				-1.166
Determination of Result Acceptable tolerance is ± 0.5°C (*Refer Section 5-1 of USEPA 454/R-99-005*)				Result: PASS / (FAIL)

3. Humidity Sensor Precision Check

Operational Precision Check

Precision Test Start Time:

Time Interval	Calibration Point	Transfer Standard, % RH	Sensor under test, % RH	Difference, % RH
5 min	1	60.0	60.7	-0.7
10 min	2	60.3	61.2	-0.9
15 min	3	60.6	62.0	-1.4
Average				-1.0

Determination of Result
Allowable Relative Humidity (average of difference) not specified in *USEPA 454/R-99-005. Using AS3580.14:2014 which specifies* ±5% (when RH <35%) and ±7% (when RH ≥35%),

Result: PASS / FAIL

4. Solar Radiation Sensor Precision Check

Operational Precision Check

Calibration Point	Transfer Standard, W/m²	Sensor under test, W/m²	Difference, W/m²
1			
2			
3			
4			
5			
6			
Average			

Determination of Result
Allowable Solar Radiation (average of difference) ±5% of observed (*Refer Section 5-1 of USEPA 454/R-99-005*) or ±50W/m² (*Refer Section 5.5.2.3 of AS/NZS 3580.14*)

Calculate Allowable:_____
Result: PASS / FAIL

5. Barometric Pressure Operational Precision Check

Operational Precision Check

Time Interval	Calibration Point	Transfer Standard, hPa	Sensor under test, hPa	Difference, hPa
0 min	1	978.10	977.7	0.4
15 min	2	978.30	977.7	0.6
30 min	3	978.10	977.5	0.6
45 min	4	978.10	977.6	0.5
60 min	5	978.10	977.6	0.5
Average				

Determination of Result
Allowable difference: ±3mb (±3hPa) (average difference) (*Refer Section 5-1 of USEPA 454/R-99-005*)

Result: PASS / FAIL

6. Precipitation/Rainfall Operational Precision Check – In Situ

Sensor Under Test

Manufacturer:	Kistler TB4 0.2
Model:	
Resolution / Tipping bucket size:	(circle) 0.2mm , 0.5mm or Other (specify):
Catch diameter:	200mm or Other (specify):

Maintenance

Item	Completed
Record "As Found" details of rain gauge, are any conditions present that would affect data integrity? Comments:	✓
Disassemble the rain gauge and clean thoroughly	✓
Check rain gauge is level	✓
Re-level if needed Comments if unable to re-level:	—
Reassemble the rain gauge and check to confirm no leaks through funnel mechanism	✓

Operational Precision Check

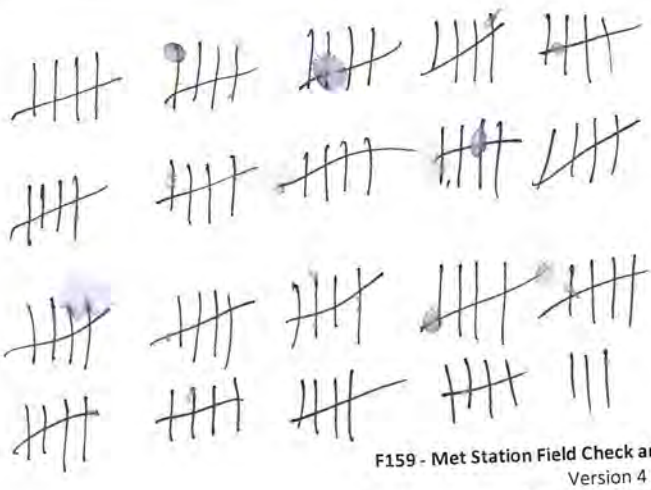
Precision Test Start Time: 1552

Expected	Recorded	Difference
104 tips 20.8 mm	98 tips 19.6 mm	1.2m 6 tips
Determination of Result Allowable difference: ±10% or 0.5mm		Result: (PASS) / FAIL

Comments:

Tips/mm added during cleaning/test preparation: 0.2

Total rainfall volume to be removed from daily rain records due to maintenance and precision test completed: 19.8 mm



Maintenance Summary	Yes	No	Comments
There were NO equipment faults found. No action required – (file report)	✓	X	
There were faults found (Fails) – Were these fixed on site?			

Any Faults / Fails that cannot be repaired on site must be reported to CBased:
Office: (02) 65713334 or email support@cbased.com.au
Date faults notified to CBased: _____
Comments/Action Taken/Action Recommended:
(If sensors are replaced - record serial numbers and details of both the removed and installed sensors and attach calibration certificates)

Lower ~~sensor~~ temp sensor should not be used for compliance monitoring at 2m any more as is now out of spec and not calibratable

Specific Comments on equipment "as found":

Specific Comments on equipment "as left":

NB: CBased Environmental completes maintenance, calibration and diagnostic checks on a six monthly basis as per Section 8.3.5 of USEPA 454/R-99-005, it is the Clients responsibility to complete daily remote operational checks and weekly onsite inspections/maintenance of the meteorological station.

Completed By:

Technician Name(s)	Signed:
Conrad Neland	

CBased Environmental Pty Ltd

Unit 3, 2 Enterprise Crescent, Singleton, NSW 2330

Ambient Air Quality Monitoring

Validated Data Report

Report Number: DIX2607061315
Report Date: 6/07/2026
Client: DIXON SAND
Data Period: 01/06/2026 – 30/06/2026

Reported By:	SUSAN DOOLEY
Authorised By:	SUSAN DOOLEY

Accredited for compliance with ISO/IEC 17025 - Testing
Accreditation Number: 21337

CBased Environmental Pty Ltd
ABN: 62 611 924 264
Phone: (02) 6571 3334
Email: monitoringresults@cbased.com.au
Web: www.cbased.com.au

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1 AMENDMENT HISTORY

Amendment Number	Amendment Date	Reason for Amendment

2 CLIENT DETAILS

Contact Name	Hunny Churcher
Project Address	MAROOTA NSW 2756
Email	environment@dixonsand.com.au
Phone	0405844207

3 INTRODUCTION

CBased Environmental Pty Ltd have been commissioned by the client (detailed in Section 2) to provide validated ambient air quality monitoring data.

Siting details of the monitoring sites are given in Section 4.

The data presented in this report:

- Identifies 24hr average air quality measurements;
- Has been validated;
- Conforms with NATA accreditation criteria, where applicable

4 SITING

Site Details	
Site Name	Dixon Sands
Latitude	33° 27’ 16”
Longitude	150° 59’ 37”
Height (above sea level)	Unknown
Siting	Unless detailed below, the siting of these stations is in accordance with the guidelines *AS/NZS 3580.1.1:2016 Methods for sampling and analysis of ambient air – guide to siting air monitoring equipment* *Site Classification:* Neighbourhood Site - No assessment undertaken

5 MONITORED PARAMETERS

Site Name	Parameter Measured	Instrument	Sampling Method
TEOM 1	PM_{10}	Thermo-Scientific TEOM 1400AB	M101

6 RESULTS

6.1 DATA AVAILABILITY

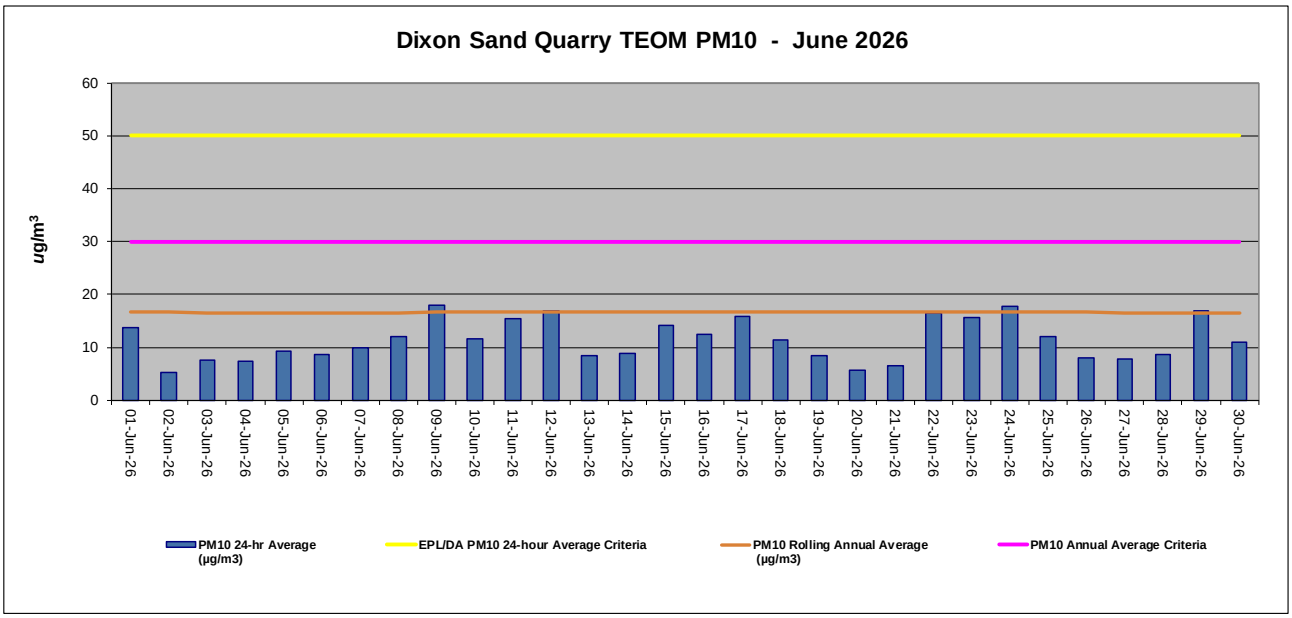
Site Name	Parameter Measured	Data Availability for Report Period – 24hr Average Data	Comment
TEOM 1	PM_{10}	99.5%	3 hours of data removed on 2/06/2026 due to Calibration/Maintenance

6.2 DATA SUMMARY – 24HR AVERAGE DATA

PM10	
Dixon Sands	
Date	ES01 PM10 - 24hr Average (µg/m3)
1/06/2026	13.7
2/06/2026	5.2
3/06/2026	7.6
4/06/2026	7.4
5/06/2026	9.2
6/06/2026	8.6
7/06/2026	10.0
8/06/2026	12.0
9/06/2026	17.9
10/06/2026	11.6
11/06/2026	15.4
12/06/2026	17.0
13/06/2026	8.4
14/06/2026	8.9
15/06/2026	14.1
16/06/2026	12.5
17/06/2026	15.8
18/06/2026	11.5
19/06/2026	8.5
20/06/2026	5.6
21/06/2026	6.6
22/06/2026	16.5
23/06/2026	15.7
24/06/2026	17.8
25/06/2026	12.0
26/06/2026	8.1
27/06/2026	7.9
28/06/2026	8.7
29/06/2026	17.0
30/06/2026	11.0

Days	30
Results	30
Data Availability	99.5%

6.3 DATA SUMMARY – GRAPHS



----------END OF REPORT----------

CBased Environmental Pty Ltd

Unit 3, 2 Enterprise Crescent, Singleton, NSW 2330

Meteorological Monitoring

Validated Data Report

Report Number: DIX2607061340
Report Date: 6/07/2026
Client: DIXON SAND
Data Period: 01/06/2026 – 30/06/2026

Reported By:	Susan Dooley
Authorised By:	Susan Dooley

Accredited for compliance with ISO/IEC 17025 - Testing
Accreditation Number: 21337

CBased Environmental Pty Ltd
ABN: 62 611 924 264
Phone: (02) 6571 3334
Email: monitoringresults@cbased.com.au
Web: www.cbased.com.au

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1 AMENDMENT HISTORY

Amendment Number	Amendment Date	Reason for Amendment

2 CLIENT DETAILS

Contact Name	Hunny Churcher
Project Address	MAROOTA NSW 2756
Email	environment@dixonsand.com.au
Phone	0405844207

3 INTRODUCTION

CBased Environmental Pty Ltd have been commissioned by the client (detailed in Section 2) to provide validated meteorological monitoring data.

Siting details of the monitoring sites are given in Section 4.

The data presented in this report:

- Identifies daily summary meteorological measurements;
- Has been validated;
- Conforms with NATA accreditation criteria, where applicable.

4 SITING

Site Details	
Site Name	Dixon Sands
Latitude	33° 27’ 16”
Longitude	150° 59’ 37”
Height (above sea level)	Unknown
Height of anemometer	- 10m above ground level
Time zone	Data timestamps are adjusted for Daylight Saving Time (DST). Daily data reported will be to AEST when applicable or AEDT when Daylight Saving Time is applicable.
Siting	Unless detailed below, the siting of these stations is in accordance with the guidelines *AS/NZS 3580.1.1 Methods for sampling and analysis of ambient air. Part 1.1 Guide to siting air monitoring equipment* and *AS/NZS 3580.14 Methods for sampling and analysis of ambient air – meteorological monitoring for ambient air quality monitoring applications* Non-Compliances with *AS/NZS 35801.1* and/or *AS/NZS 3580.14* - No assessment undertaken

5 MONITORED PARAMETERS

Site Name	Parameter Measured	Instrument Details	Sampling Method
Dixon Sands	Wind Speed	Vaisala - WXT530. Measurement Range: 0 to 60 m/s Response Time 0.25 s Accuracy ±3% at 10 m/s" Measurement Height: 10m	M202
Dixon Sands	Wind Direction	Vaisala - WXT530 Measurement Range 0° to 360° Response Time 0.25 s Accuracy ±3° at 10 m/s Output Resolution 1° Measurement Height: 10 m	M202
Dixon Sands	Barometric Pressure	Vaisala - WXT530 GMX500s. Range: 500-1100hPa Accuracy: ±0.5 hPa Resolution: 0.1 hPa Measurement Height:10 m	M202

Site Name	Parameter Measured	Instrument Details	Sampling Method
Dixon Sands	Relative Humidity	Vaisala - WXT530 Range: 0 to 100% RH Accuracy 0 to 90% RH: "±3% RH Accuracy 90 to 100% RH: ±5% RH Output Resolution 0.1% RH Measurement Height: 10m	M202
Dixon Sands	Temperature	Vaisala - WXT530 Range: -52- +60 °C Accuracy at +20 °C: ±0.3 °C Resolution: 0.1 °C Measurement Height: 10m	M202
Dixon Sands	Rainfall	Hyquest Solutions TB-4 Mounting Height: >300mm from ground level Resolution: 0.2mm Accuracy: 0-250 mm/hr: ±2% 250-500 mm/hr: ±3% Range: 700 mm/hr	M202

6 RESULTS

6.1 DATA AVAILABILITY

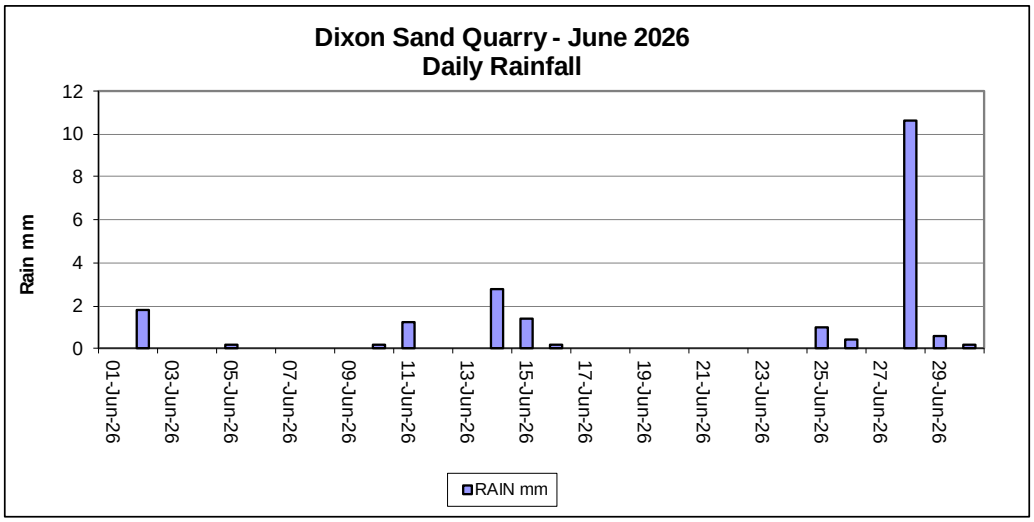
Site Name	Parameter Measured	Data Availability for Report Period – Daily Data	Comment
Dixon Sands	Wind Speed	100%	
Dixon Sands	Wind Direction	100%	
Dixon Sands	Barometric Pressure	100%	
Dixon Sands	Relative Humidity	100%	
Dixon Sands	Temperature	100%	
Dixon Sands	Rainfall	100%	

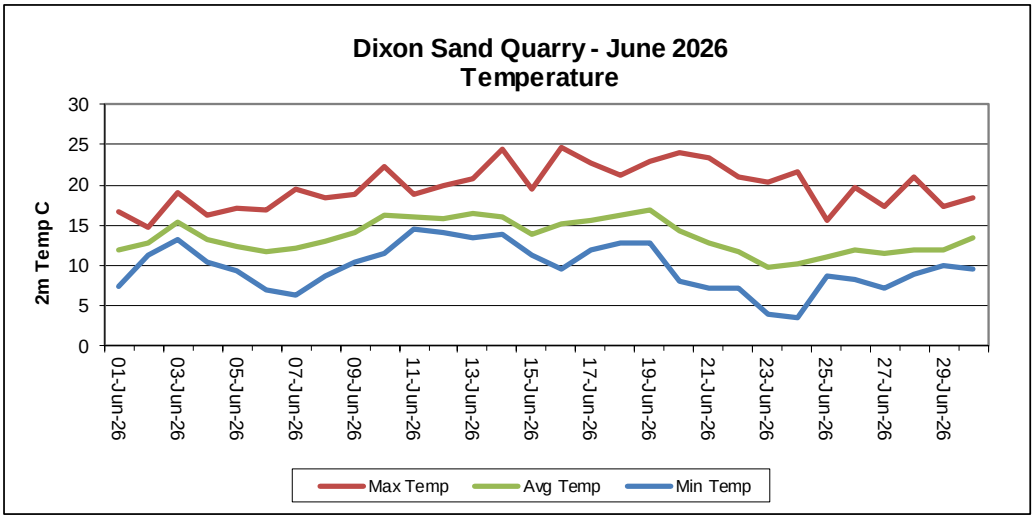
6.2 DATA SUMMARY – DAILY DATA

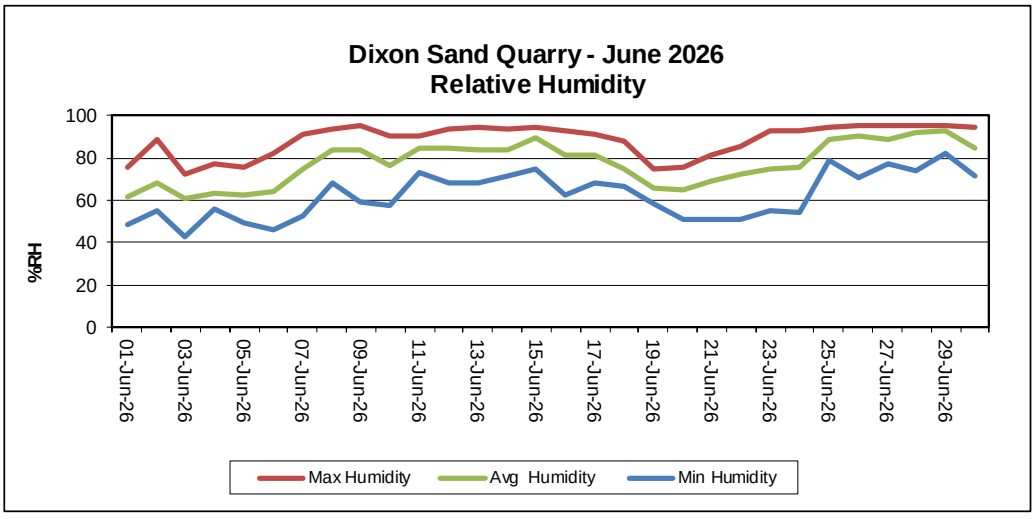
Site Name: Dixon Sand

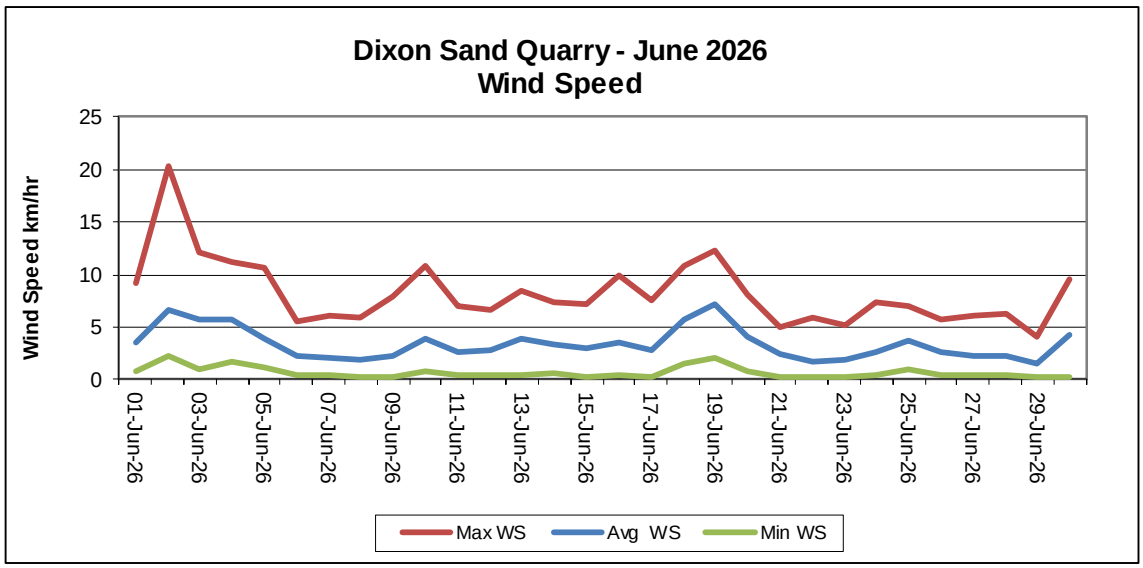
Date	Min Temp	Avg Temp	Max Temp	RAIN mm	Min WS	Avg WS	Max WS	Min Humidity	Avg Humidity	Max Humidity	Min Pressure	Avg Pressure	Max Pressure
1/06/2026	7.5	11.8	16.7	0.0	0.8	3.5	9.2	48.2	61.7	75.9	983.0	985.7	988.0
2/06/2026	11.2	12.9	14.7	1.8	2.2	6.6	20.3	54.8	68.2	88.5	973.0	978.0	983.0
3/06/2026	13.2	15.4	19.1	0.0	1.0	5.8	12.1	43.2	60.7	72.7	975.0	976.5	979.0
4/06/2026	10.5	13.2	16.2	0.0	1.7	5.8	11.2	56.0	63.3	77.6	974.0	976.0	979.0
5/06/2026	9.3	12.4	17.1	0.2	1.1	3.8	10.7	49.1	62.4	76.0	977.0	984.7	994.0
6/06/2026	6.9	11.6	16.9	0.0	0.4	2.3	5.5	45.7	63.9	82.4	993.0	997.3	1001.0
7/06/2026	6.4	12.1	19.4	0.0	0.3	2.1	6.0	52.6	75.2	91.2	1001.0	1002.5	1004.0
8/06/2026	8.7	13.1	18.4	0.0	0.2	1.8	5.9	68.2	83.8	93.9	1003.0	1004.2	1006.0
9/06/2026	10.4	14.2	18.8	0.0	0.3	2.2	7.9	59.6	83.6	94.9	1000.0	1002.1	1004.0
10/06/2026	11.6	16.3	22.3	0.2	0.7	3.9	10.9	57.8	76.6	90.6	999.0	1000.4	1002.0
11/06/2026	14.6	16.0	18.8	1.2	0.4	2.6	6.9	73.0	84.4	90.1	1001.0	1003.1	1005.0
12/06/2026	14.1	15.9	19.9	0.0	0.4	2.8	6.6	68.5	84.7	94.0	1003.0	1004.3	1006.0
13/06/2026	13.4	16.5	20.7	0.0	0.4	3.9	8.4	68.2	83.7	94.8	998.0	1000.7	1004.0
14/06/2026	13.8	16.1	24.4	2.8	0.6	3.3	7.4	71.4	84.1	93.9	998.0	1000.9	1005.0
15/06/2026	11.2	13.8	19.5	1.4	0.2	2.9	7.2	74.5	89.3	94.6	1004.0	1004.9	1007.0
16/06/2026	9.6	15.1	24.6	0.2	0.3	3.5	9.9	62.9	81.3	93.1	1000.0	1002.2	1004.0
17/06/2026	12.0	15.5	22.8	0.0	0.3	2.7	7.6	68.1	81.1	91.0	996.0	998.8	1001.0
18/06/2026	12.9	16.2	21.3	0.0	1.5	5.6	10.7	66.5	75.1	87.9	989.0	992.3	996.0
19/06/2026	12.8	16.9	22.9	0.0	2.0	7.2	12.4	58.6	65.8	74.7	984.0	986.4	989.0
20/06/2026	8.0	14.3	24.0	0.0	0.8	4.1	8.1	50.9	64.8	75.7	988.0	993.6	998.0
21/06/2026	7.3	12.8	23.3	0.0	0.3	2.4	5.0	50.9	69.3	81.5	998.0	999.1	1001.0
22/06/2026	7.2	11.6	20.9	0.0	0.3	1.7	5.9	51.0	72.5	85.2	996.0	998.3	1000.0
23/06/2026	4.0	9.9	20.3	0.0	0.3	1.9	5.2	55.1	74.7	92.7	997.0	998.9	1001.0
24/06/2026	3.6	10.3	21.6	0.0	0.5	2.6	7.3	54.6	75.2	92.7	1000.0	1001.7	1004.0
25/06/2026	8.6	11.0	15.6	1.0	0.9	3.7	7.0	79.0	88.9	94.6	1003.0	1005.3	1007.0
26/06/2026	8.3	11.9	19.7	0.4	0.4	2.7	5.7	70.8	90.1	95.5	1002.0	1003.7	1006.0
27/06/2026	7.2	11.5	17.3	0.0	0.4	2.3	6.1	77.5	89.0	95.4	1000.0	1001.8	1003.0
28/06/2026	8.9	11.9	20.9	10.6	0.4	2.2	6.2	73.9	91.9	95.2	1001.0	1002.6	1004.0
29/06/2026	10.1	11.8	17.4	0.6	0.2	1.5	4.2	82.0	93.0	95.6	997.0	1000.6	1003.0
30/06/2026	9.6	13.5	18.5	0.2	0.3	4.3	9.5	71.4	84.7	94.8	991.0	993.5	997.0
Monthly	**3.6**	**13.5**	**24.6**	**20.6**	**0.2**	**3.4**	**20.3**	**43.2**	**77.4**	**95.6**	**973.0**	**996.7**	**1007.0**

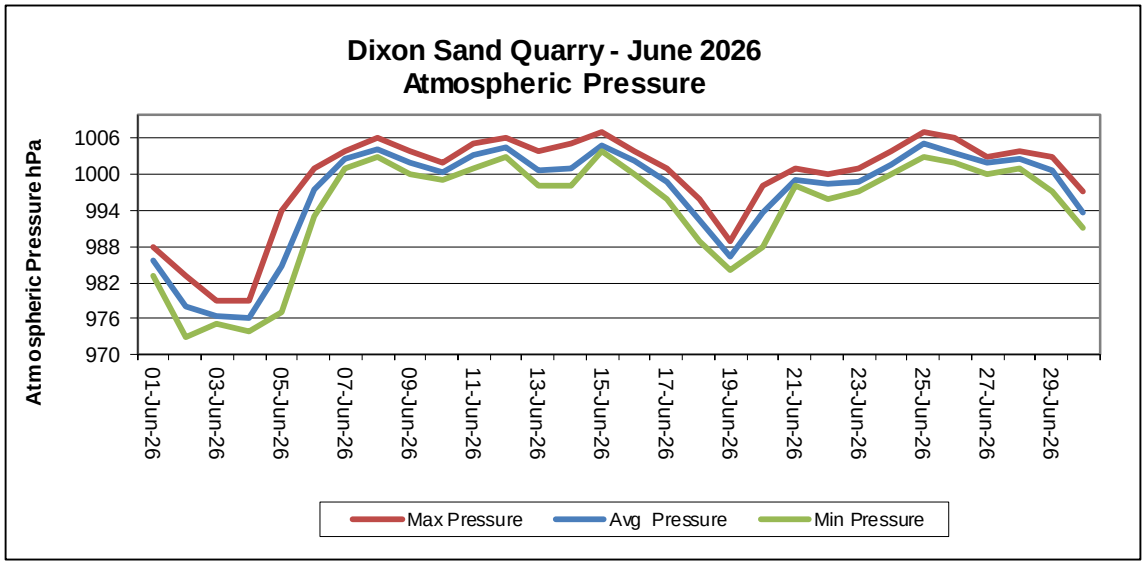
6.3 DATA SUMMARY – GRAPHS

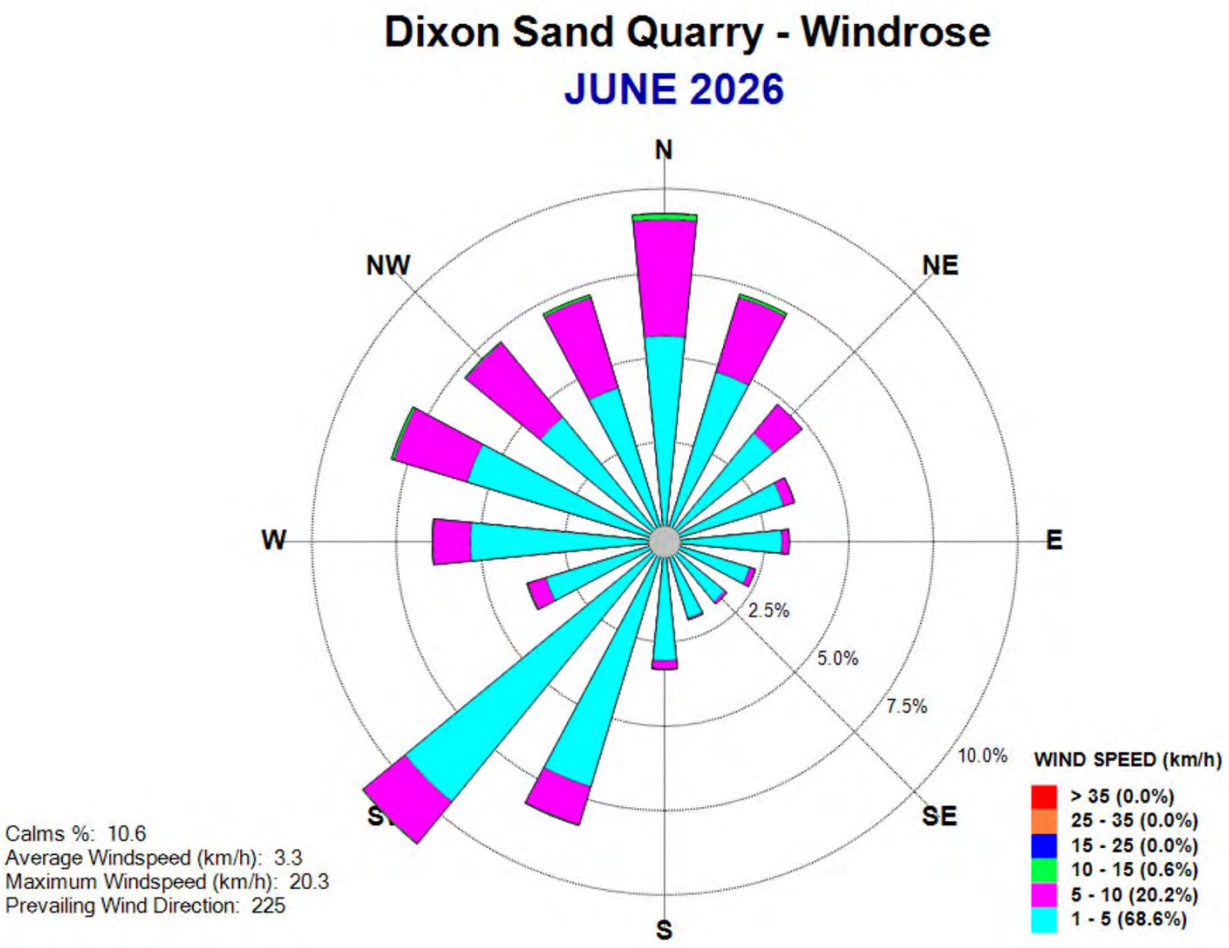







Dixon Sand Quarry - June 2026
Wind Speed
Wind Speed km/hr
25
20
15
10
5
0
01-Jun-26
03-Jun-26
05-Jun-26
07-Jun-26
09-Jun-26
11-Jun-26
13-Jun-26
15-Jun-26
17-Jun-26
19-Jun-26
21-Jun-26
23-Jun-26
25-Jun-26
27-Jun-26
29-Jun-26
Max WS
Avg WS
Min WS


Dixon Sand Quarry - June 2026
Atmospheric Pressure
Atmospheric Pressure hPa
1006
1000
994
988
982
976
970
01-Jun-26
03-Jun-26
05-Jun-26
07-Jun-26
09-Jun-26
11-Jun-26
13-Jun-26
15-Jun-26
17-Jun-26
19-Jun-26
21-Jun-26
23-Jun-26
25-Jun-26
27-Jun-26
29-Jun-26
Max Pressure
Avg Pressure
Min Pressure



----------END OF REPORT----------

Appendix C – Groundwater and Surface Water Monitoring Data

Groundwater Monitoring Data

VGT Laboratories Pty Ltd.
ABN 77 621 943 600
NATA Accreditation 20375
Unit 4, 30 Glenwood Drive Thornton NSW 2322
P: (02) 4028 6412 | **E:** lab@vgt.com.au | **www.vgt.com.au**

Report Number: 19190

Date Issued: 16/12/2025 Revision Number: 00

Site/Job: Haerses Rd Groundwater - 6 Monthly

Client: Dixon Sand (No.1) Pty Ltd
Address PO Box 4019
PITT TOWN NSW 2756
Contact David Dixon

The following groundwater sample(s) were received on 9/12/2025

Client Sample Reference	Date Sampled	Lab ID	Matrix	General Comments
BH01A	9/12/2025	19190/1	Water	
BH01B	9/12/2025	19190/2	Water	
BH01C	9/12/2025	19190/3	Water	
BH02A	9/12/2025	19190/4	Water	
BH02B	9/12/2025	19190/5	Water	
BH02C	9/12/2025	19190/6	Water	
BH05B	9/12/2025	19190/7	Water	
BH05	9/12/2025	19190/8	Water	
BH07	9/12/2025	19190/9	Water	

The sample(s) have been tested as received and results relate specifically to the samples tested.
The following reports are included:

- Test Report
- Sampling Report
- Chain of Custody (if available)

Authorised by:

Anthony Crane
Laboratory Manager

Results have been approved and report finalised on 16/12/2025.

Test Report Number: 19190

Date Issued: 16/12/2025 Revision No: 00

Results

Well Parameters	Method	Lab ID Sample Date Sample ID Units	19190/1 9/12/2025 BH01A	19190/2 9/12/2025 BH01B	19190/3 9/12/2025 BH01C	19190/4 9/12/2025 BH02A	19190/5 9/12/2025 BH02B
Depth Reference Point		TORef	TOM	TOM	TOM	TOM	TOM
Depth to Water	AS5667.11	m(bTORef)	9.27	16.81	5.60	23.15	18.96

Well Parameters	Method	Lab ID Sample Date Sample ID Units	19190/6 9/12/2025 BH02C	19190/7 9/12/2025 BH05B	19190/8 9/12/2025 BH05	19190/9 9/12/2025 BH07
Depth Reference Point		TORef	TOM	TOM	TOM	TOM
Depth to Water	AS5667.11	m(bTORef)	15.32	19.11	30.38	52.17

Field Analysis	Method	Lab ID Sample Date Sample ID Units	19190/1 9/12/2025 BH01A	19190/2 9/12/2025 BH01B	19190/3 9/12/2025 BH01C	19190/4 9/12/2025 BH02A	19190/5 9/12/2025 BH02B
Temperature	Temp	°C	18.9	19.5	18.4	19.4	20.0
pH	APHA 4500-H B	pH Units	5.5	4.4	4.8	4.2	4.3
Electrical Conductivity	APHA 2510 B	µS/cm 25°C	166	154	157	166	170

Field Analysis	Method	Lab ID Sample Date Sample ID Units	19190/6 9/12/2025 BH02C	19190/7 9/12/2025 BH05B	19190/8 9/12/2025 BH05	19190/9 9/12/2025 BH07
Temperature	Temp	°C	19.6	19.6	19.9	20.9
pH	APHA 4500-H B	pH Units	4.7	4.2	4.6	7.0
Electrical Conductivity	APHA 2510 B	µS/cm 25°C	160	203	183	252

Solids	Method	Lab ID Sample Date Sample ID Units	19190/1 9/12/2025 BH01A	19190/2 9/12/2025 BH01B	19190/3 9/12/2025 BH01C	19190/4 9/12/2025 BH02A	19190/5 9/12/2025 BH02B
Total Dissolved Solids	AS3550.4	mg/L	130	110	100	98	84

Solids	Method	Lab ID Sample Date Sample ID Units	19190/6 9/12/2025 BH02C	19190/7 9/12/2025 BH05B	19190/8 9/12/2025 BH05	19190/9 9/12/2025 BH07
Total Dissolved Solids	AS3550.4	mg/L	90	100	56	130

Date Tested	Method	Lab ID Sample Date Sample ID Units	19190/1 9/12/2025 BH01A	19190/2 9/12/2025 BH01B	19190/3 9/12/2025 BH01C	19190/4 9/12/2025 BH02A	19190/5 9/12/2025 BH02B
Date Tested - Field	--	--	09/12/2025	09/12/2025	09/12/2025	09/12/2025	09/12/2025
Date Tested - TDS	AS3550.4	--	11/12/2025	11/12/2025	11/12/2025	11/12/2025	11/12/2025

Date Tested	Method	Lab ID Sample Date Sample ID Units	19190/6 9/12/2025 BH02C	19190/7 9/12/2025 BH05B	19190/8 9/12/2025 BH05	19190/9 9/12/2025 BH07
Date Tested - Field	--	--	09/12/2025	09/12/2025	09/12/2025	09/12/2025
Date Tested - TDS	AS3550.4	--	11/12/2025	11/12/2025	11/12/2025	11/12/2025

Report Comments:

Guideline applied - **No Limits**.

Results in **bold** indicate an exceedance of the applied guideline.

When considering the pass or fail of tests the measurement of uncertainty of each parameter must be considered.

https://www.vgt.com.au/measurement-uncertainty

Field Analysis conducted onsite at Haerses Rd Quarry

[NT]: Not tested

Where present, indicates NATA accreditation does not cover the performance of this service.

Sampling Report Number: 19190

Date Issued: 16/12/2025 Revision No: 00

Sampling Conditions: Fine, 22 - 37 °C

Lab ID	Client Sample Reference	Licence/ Reference	Sampler	Date Sampled	Method of Sampling	Pre-treatment / Preservation
19190/1	BH01A		T & D.Walker	9/12/2025 1:21 PM	AS5667.11, Pump	AS5667.1
19190/2	BH01B		T & D.Walker	9/12/2025 1:50 PM	AS5667.11, Pump	AS5667.1
19190/3	BH01C		T & D.Walker	9/12/2025 1:36 PM	AS5667.11, Bail	AS5667.1
19190/4	BH02A		T & D.Walker	9/12/2025 12:03 PM	AS5667.11, Pump	AS5667.1
19190/5	BH02B		T & D.Walker	9/12/2025 12:30 PM	AS5667.11, Pump	AS5667.1
19190/6	BH02C		T & D.Walker	9/12/2025 12:16 PM	AS5667.11, Bail	AS5667.1
19190/7	BH05B		T & D.Walker	9/12/2025 11:32 AM	AS5667.11, Pump	AS5667.1
19190/8	BH05		T & D.Walker	9/12/2025 11:45 AM	AS5667.11, Pump	AS5667.1
19190/9	BH07		T & D.Walker	9/12/2025 10:43 AM	AS5667.11, Bail	AS5667.1

Lab ID	Client Sample Reference	Sampling Observations
19190/1	BH01A	
19190/2	BH01B	
19190/3	BH01C	
19190/4	BH02A	Knot in logger string - 2.57m
19190/5	BH02B	
19190/6	BH02C	
19190/7	BH05B	
19190/8	BH05	
19190/9	BH07	Unable to purge well due to depth

Sampling procedures have been approved and report finalised on 16/12/2025.
Where method is "unknown" sampling procedures are not endorsed

Well Parameters:

Client: Dixon Sand (No.1) Pty Ltd

Site/Job: Haerses Rd Groundwater - 6 Monthly

Well ID	GPS-Easting	GPS-Northing	Reference Point	Reference point AHD (m)*	Depth to Screen (m)
BH01A	312186	6293968	TOM		
BH01B	312190	6293971	TOM		
BH01C	312184	6293972	TOM		
BH02A	312305	6293793	TOM		
BH02B	312315	6293800	TOM		
BH02C	312303	6293801	TOM		
BH05B	312160	6293752	TOM		
BH05	312159	6293753	TOM		
BH07	312139	6293374	TOM		

Well ID	Date Well Measured	Reference Point Height to GL (m)	Depth to Bottom (m)	Recharge Rate	Approximate Volume (L)
BH01A	28/10/2019	1.05	>60	Slow	>100
BH01B	28/10/2019	0.92	40.92	Slow	50
BH01C	28/10/2019	1.01	11.02	Medium	6
BH02A	28/10/2019	0.81	>60	Slow	>65
BH02B	28/10/2019	0.77	42.57	Slow	30
BH02C	28/10/2019	0.98	16.12	Slow	<1
BH05B	28/10/2019	0.97	33.87	Medium	27
BH05	28/10/2019	0.57	>60	Fast	>60
BH07					>60

Note: NATA accreditation does not cover information provided in this section

*Reference Point AHD may differ from survey data provided due to the differences in where field measurements taken from when compared to surveyed point (TOC/TOM/GL).

VGT Laboratories Pty Ltd.
ABN 77 621 943 600
NATA Accreditation 20375
Unit 4, 30 Glenwood Drive Thornton NSW 2322
P: (02) 4028 6412 | **E:** lab@vgt.com.au | **www.vgt.com.au**

Report Number: 19189

Date Issued: 16/12/2025 Revision Number: 00

Site/Job: Haerses Rd H Groundwater- 6 Monthly

Client: Dixon Sand (No.1) Pty Ltd
Address PO Box 4019
PITT TOWN NSW 2756
Contact David Dixon

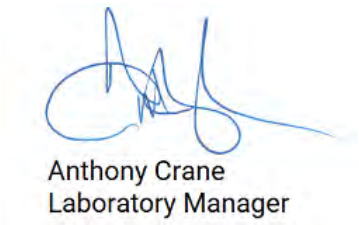
The following groundwater sample(s) were received on 9/12/2025

Client Sample Reference	Date Sampled	Lab ID	Matrix	General Comments
H6	9/12/2025	19189/1	Water	
H7	9/12/2025	19189/2	Water	
H9	9/12/2025	19189/3	Water	
H12	9/12/2025	19189/4	Water	
BH4	9/12/2025	19189/5	Water	
H14	9/12/2025	19189/6	Water	
H2	9/12/2025	19189/7	Water	

The sample(s) have been tested as received and results relate specifically to the samples tested.
The following reports are included:

- Test Report
- Sampling Report
- Chain of Custody (if available)

Authorised by:



Anthony Crane
Laboratory Manager

Results have been approved and report finalised on 16/12/2025.

Test Report Number: 19189

Date Issued: 16/12/2025 Revision No: 00

Results

Well Parameters	Method	Lab ID Sample Date Sample ID Units	19189/1 9/12/2025 H6	19189/2 9/12/2025 H7	19189/3 9/12/2025 H9	19189/4 9/12/2025 H12	19189/5 9/12/2025 BH4
Depth Reference Point		TORef	TOM	TOM	TOM	TOM	TOM
Depth to Water	AS5667.11	m(bTORef)	11.37	12.50	8.18	11.15	37.40

Well Parameters	Method	Lab ID Sample Date Sample ID Units	19189/6 9/12/2025 H14	19189/7 9/12/2025 H2
Depth Reference Point		TORef	TOM	TOM
Depth to Water	AS5667.11	m(bTORef)	7.36	3.51

Field Analysis	Method	Lab ID Sample Date Sample ID Units	19189/1 9/12/2025 H6	19189/2 9/12/2025 H7	19189/3 9/12/2025 H9	19189/4 9/12/2025 H12	19189/5 9/12/2025 BH4
Temperature	Temp	°C	18.1	18.9	18.4	19.4	19.4
pH	APHA 4500-H B	pH Units	4.6	4.7	4.6	4.7	5.3
Electrical Conductivity	APHA 2510 B	µS/cm 25°C	134	101	90.0	165	103

Field Analysis	Method	Lab ID Sample Date Sample ID Units	19189/6 9/12/2025 H14	19189/7 9/12/2025 H2
Temperature	Temp	°C	18.0	18.9
pH	APHA 4500-H B	pH Units	4.5	4.4
Electrical Conductivity	APHA 2510 B	µS/cm 25°C	90.0	108

Solids	Method	Lab ID Sample Date Sample ID Units	19189/1 9/12/2025 H6	19189/2 9/12/2025 H7	19189/3 9/12/2025 H9	19189/4 9/12/2025 H12	19189/5 9/12/2025 BH4
Total Dissolved Solids	AS3550.4	mg/L	96	96	84	130	82

Solids	Method	Lab ID Sample Date Sample ID Units	19189/6 9/12/2025 H14	19189/7 9/12/2025 H2
Total Dissolved Solids	AS3550.4	mg/L	88	72

Date Tested	Method	Lab ID Sample Date Sample ID Units	19189/1 9/12/2025 H6	19189/2 9/12/2025 H7	19189/3 9/12/2025 H9	19189/4 9/12/2025 H12	19189/5 9/12/2025 BH4
Date Tested - Field	--	--	09/12/2025	09/12/2025	09/12/2025	09/12/2025	09/12/2025
Date Tested - TDS	AS3550.4	--	11/12/2025	11/12/2025	11/12/2025	11/12/2025	11/12/2025

Date Tested	Method	Lab ID Sample Date Sample ID Units	19189/6 9/12/2025 H14	19189/7 9/12/2025 H2
Date Tested - Field	--	--	09/12/2025	09/12/2025
Date Tested - TDS	AS3550.4	--	11/12/2025	11/12/2025

Report Comments:

Guideline applied - **No Limits**.

Results in **bold** indicate an exceedance of the applied guideline.

When considering the pass or fail of tests the measurement of uncertainty of each parameter must be considered.

https://www.vgt.com.au/measurement-uncertainty

Field Analysis conducted onsite at Haerses Rd Quarry

[NT]: Not tested

Where present, indicates NATA accreditation does not cover the performance of this service.

Sampling Report Number: 19189

Date Issued: 16/12/2025 Revision No: 00

Sampling Conditions: Fine, 22 - 37 °C

Lab ID	Client Sample Reference	Licence/ Reference	Sampler	Date Sampled	Method of Sampling	Pre-treatment / Preservation
19189/1	H6		T & D.Walker	9/12/2025 8:12 AM	AS5667.11, Pump	AS5667.1
19189/2	H7		T & D.Walker	9/12/2025 8:33 AM	AS5667.11, Pump	AS5667.1
19189/3	H9		T & D.Walker	9/12/2025 9:07 AM	AS5667.11, Pump	AS5667.1
19189/4	H12		T & D.Walker	9/12/2025 9:49 AM	AS5667.11, Pump	AS5667.1
19189/5	BH4		T & D.Walker	9/12/2025 9:23 AM	AS5667.11, Pump	AS5667.1
19189/6	H14		T & D.Walker	9/12/2025 10:14 AM	AS5667.11, Bail	AS5667.1
19189/7	H2		T & D.Walker	9/12/2025 2:20 PM	AS5667.11, Pump	AS5667.1

Lab ID	Client Sample Reference	Sampling Observations
19189/1	H6	
19189/2	H7	
19189/3	H9	
19189/4	H12	
19189/5	BH4	
19189/6	H14	
19189/7	H2	

Sampling procedures have been approved and report finalised on 16/12/2025.
Where method is "unknown" sampling procedures are not endorsed

Well Parameters:

Client: Dixon Sand (No.1) Pty Ltd

Site/Job: Haerses Rd H Groundwater- 6 Monthly

Well ID	GPS-Easting	GPS-Northing	Reference Point	Reference point AHD (m)*	Depth to Screen (m)
H6	312989	6295066	TOM		
H7	312855	6294643	TOM		
H9	312796	6294232	TOM		
H12	312709	6294090	TOM		
BH4	312843	6293870	TOM		
H14	312659	6293363	TOM		
H2	312515	6294585	TOM		

Well ID	Date Well Measured	Reference Point Height to GL (m)	Depth to Bottom (m)	Recharge Rate	Approximate Volume (L)
H6	28/10/2019	0.78	15.75	Slow	3
H7	28/10/2019	0.81	16.67	Fast	5
H9	28/10/2019	0.78	16.23	Slow	14
H12	28/10/2019	0.86	17.04	Fast	9.62
BH4	28/10/2019	0.64	>60	Moderate	>45
H14	28/10/2019	0.84	13.97	Fast	7
H2	28/10/2019	0.69	5.79	Slow	5

Note: NATA accreditation does not cover information provided in this section

*Reference Point AHD may differ from survey data provided due to the differences in where field measurements taken from when compared to surveyed point (TOC/TOM/GL).

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Report Number: 19980

Date Issued: 3/06/2026 Revision Number: 00

Site/Job: Haerses Rd Groundwater - 6 Monthly

Client: Dixon Sand (No.1) Pty Ltd
Address PO Box 4019
PITT TOWN NSW 2756
Contact David Dixon

The following groundwater sample(s) were received on 26/05/2026

Client Sample Reference	Date Sampled	Lab ID	Matrix	General Comments
BH01A	26/05/2026	19980/1	Water	
BH01B	26/05/2026	19980/2	Water	
BH01C	26/05/2026	19980/3	Water	
BH02A	26/05/2026	19980/4	Water	
BH02B	26/05/2026	19980/5	Water	
BH02C	26/05/2026	19980/6	Water	
BH05B	26/05/2026	19980/7	Water	
BH5	26/05/2026	19980/8	Water	
BH07	26/05/2026	19980/9	Water	

The sample(s) have been tested as received and results relate specifically to the samples tested.
The following reports are included:

- Test Report
- Sampling Report
- Chain of Custody (if available)

Authorised by:

Anthony Crane
Laboratory Manager

Liane Peyra
Technical Officer

Results have been approved and report finalised on 3/06/2026.

Test Report Number: 19980

Date Issued: 3/06/2026 Revision No: 00

Results

Well Parameters	Method	Lab ID Sample Date Sample ID Units	19980/1 26/05/2026 BH01A	19980/2 26/05/2026 BH01B	19980/3 26/05/2026 BH01C	19980/4 26/05/2026 BH02A	19980/5 26/05/2026 BH02B
Depth Reference Point		TORef	TOM	TOM	TOM	TOM	TOM
Depth to Water	AS5667.11	m(bTORef)	9.54	16.76	5.49	23.34	18.95

Well Parameters	Method	Lab ID Sample Date Sample ID Units	19980/6 26/05/2026 BH02C	19980/7 26/05/2026 BH05B	19980/8 26/05/2026 BH5	19980/9 26/05/2026 BH07
Depth Reference Point		TORef	TOM	TOM	TOM	TOM
Depth to Water	AS5667.11	m(bTORef)	15.32	19.22	30.49	51.97

Field Analysis	Method	Lab ID Sample Date Sample ID Units	19980/1 26/05/2026 BH01A	19980/2 26/05/2026 BH01B	19980/3 26/05/2026 BH01C	19980/4 26/05/2026 BH02A	19980/5 26/05/2026 BH02B
Temperature	Temp	°C	17.6	17.7	18.4	18.0	18.1
pH	APHA 4500-H B	pH Units	5.4	4.7	4.6	4.3	4.4
Electrical Conductivity	APHA 2510 B	µS/cm 25°C	169	156	168	163	163

Field Analysis	Method	Lab ID Sample Date Sample ID Units	19980/6 26/05/2026 BH02C	19980/7 26/05/2026 BH05B	19980/8 26/05/2026 BH5	19980/9 26/05/2026 BH07
Temperature	Temp	°C	17.8	17.9	18.1	18.5
pH	APHA 4500-H B	pH Units	4.4	4.3	4.6	6.5
Electrical Conductivity	APHA 2510 B	µS/cm 25°C	165	168	189	198

Solids	Method	Lab ID Sample Date Sample ID Units	19980/1 26/05/2026 BH01A	19980/2 26/05/2026 BH01B	19980/3 26/05/2026 BH01C	19980/4 26/05/2026 BH02A	19980/5 26/05/2026 BH02B
Total Dissolved Solids	AS3550.4	mg/L	120	90	70	60	84

Solids	Method	Lab ID Sample Date Sample ID Units	19980/6 26/05/2026 BH02C	19980/7 26/05/2026 BH05B	19980/8 26/05/2026 BH5	19980/9 26/05/2026 BH07
Total Dissolved Solids	AS3550.4	mg/L	88	60	98	130

Date Tested	Method	Lab ID Sample Date Sample ID Units	19980/1 26/05/2026 BH01A	19980/2 26/05/2026 BH01B	19980/3 26/05/2026 BH01C	19980/4 26/05/2026 BH02A	19980/5 26/05/2026 BH02B
Date Tested - Field	--	--	25/05/2026	25/05/2026	25/05/2026	25/05/2026	25/05/2026
Date Tested - TDS	AS3550.4	--	2/06/2026	2/06/2026	2/06/2026	2/06/2026	2/06/2026

Date Tested	Method	Lab ID Sample Date Sample ID Units	19980/6 26/05/2026 BH02C	19980/7 26/05/2026 BH05B	19980/8 26/05/2026 BH5	19980/9 26/05/2026 BH07
Date Tested - Field	--	--	25/05/2026	25/05/2026	25/05/2026	25/05/2026
Date Tested - TDS	AS3550.4	--	2/06/2026	2/06/2026	2/06/2026	2/06/2026

Report Comments:

Guideline applied - **No Limits**.

Results in **bold** indicate an exceedance of the applied guideline.

When considering the pass or fail of tests the measurement of uncertainty of each parameter must be considered.

https://www.vgt.com.au/measurement-uncertainty

Field Analysis conducted onsite at Haerses Rd Quarry

[NT]: Not tested

Where present, indicates NATA accreditation does not cover the performance of this service.

Sampling Report Number: 19980

Date Issued: 3/06/2026 Revision No: 00

Sampling Conditions: Rain, 18 - 21 °C

Lab ID	Client Sample Reference	Licence/ Reference	Sampler	Date Sampled	Method of Sampling	Pre-treatment / Preservation
19980/1	BH01A		T & D.Walker	26/05/2026 1:59 PM	AS5667.11, Pump	AS5667.1
19980/2	BH01B		T & D.Walker	26/05/2026 2:31 PM	AS5667.11, Pump	AS5667.1
19980/3	BH01C		T & D.Walker	26/05/2026 2:13 PM	AS5667.11, Bail	AS5667.1
19980/4	BH02A		T & D.Walker	26/05/2026 12:39 PM	AS5667.11, Pump	AS5667.1
19980/5	BH02B		T & D.Walker	26/05/2026 1:03 PM	AS5667.11, Pump	AS5667.1
19980/6	BH02C		T & D.Walker	26/05/2026 12:53 PM	AS5667.11, Bail	AS5667.1
19980/7	BH05B		T & D.Walker	26/05/2026 12:05 PM	AS5667.11, Pump	AS5667.1
19980/8	BH5		T & D.Walker	26/05/2026 12:20 PM	AS5667.11, Pump	AS5667.1
19980/9	BH07		T & D.Walker	26/05/2026 11:07 AM	AS5667.11, Bail	AS5667.1

Lab ID	Client Sample Reference	Sampling Observations
19980/1	BH01A	
19980/2	BH01B	
19980/3	BH01C	
19980/4	BH02A	
19980/5	BH02B	
19980/6	BH02C	
19980/7	BH05B	
19980/8	BH5	
19980/9	BH07	Minimal quantity purged due to bailing depth

Sampling procedures have been approved and report finalised on 3/06/2026.
Where method is "unknown" sampling procedures are not endorsed

Well Parameters:

Client: Dixon Sand (No.1) Pty Ltd

Site/Job: Haerses Rd Groundwater - 6 Monthly

Well ID	GPS-Easting	GPS-Northing	Reference Point	Reference point AHD (m)*	Depth to Screen (m)
BH01A	312186	6293968	TOM		
BH01B	312190	6293971	TOM		
BH01C	312184	6293972	TOM		
BH02A	312305	6293793	TOM		
BH02B	312315	6293800	TOM		
BH02C	312303	6293801	TOM		
BH05B	312160	6293752	TOM		
BH5	312159	6293753	TOM		
BH07	312139	6293374	TOM		

Well ID	Date Well Measured	Reference Point Height to GL (m)	Depth to Bottom (m)	Recharge Rate	Approximate Volume (L)
BH01A	28/10/2019	1.05	>60	Slow	>100
BH01B	28/10/2019	0.92	40.92	Slow	50
BH01C	28/10/2019	1.01	11.02	Medium	6
BH02A	28/10/2019	0.81	>60	Slow	>65
BH02B	28/10/2019	0.77	42.57	Slow	30
BH02C	28/10/2019	0.98	16.12	Slow	<1
BH05B	28/10/2019	0.97	33.87	Medium	27
BH5	28/10/2019	0.57	>60	Fast	>60
BH07					>60

Note: NATA accreditation does not cover information provided in this section

*Reference Point AHD may differ from survey data provided due to the differences in where field measurements taken from when compared to surveyed point (TOC/TOM/GL).

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Report Number: 19979

Date Issued: 3/06/2026 Revision Number: 00

Site/Job: Haerses Rd H Groundwater- 6 Monthly

Client: Dixon Sand (No.1) Pty Ltd
Address PO Box 4019
PITT TOWN NSW 2756
Contact David Dixon

The following groundwater sample(s) were received on 26/05/2026

Client Sample Reference	Date Sampled	Lab ID	Matrix	General Comments
H6	26/05/2026	19979/1	Water	
H7	26/05/2026	19979/2	Water	
H9	26/05/2026	19979/3	Water	
H12	26/05/2026	19979/4	Water	
BH4	26/05/2026	19979/5	Water	
H14	26/05/2026	19979/6	Water	
H2	26/05/2026	19979/7	Water	

The sample(s) have been tested as received and results relate specifically to the samples tested.
The following reports are included:

- Test Report
- Sampling Report
- Chain of Custody (if available)

Authorised by:

Anthony Crane
Laboratory Manager

Liane Peyra
Technical Officer

Results have been approved and report finalised on 3/06/2026.

Test Report Number: 19979

Date Issued: 3/06/2026 Revision No: 00

Results

Well Parameters	Method	Lab ID Sample Date Sample ID Units	19979/1 26/05/2026 H6	19979/2 26/05/2026 H7	19979/3 26/05/2026 H9	19979/4 26/05/2026 H12	19979/5 26/05/2026 BH4
Depth Reference Point		TORef	TOM	TOM	TOM	TOM	TOM
Depth to Water	AS5667.11	m(bTORef)	12.01	13.01	8.52	11.97	37.38

Well Parameters	Method	Lab ID Sample Date Sample ID Units	19979/6 26/05/2026 H14	19979/7 26/05/2026 H2
Depth Reference Point		TORef	TOM	TOM
Depth to Water	AS5667.11	m(bTORef)	7.71	2.54

Field Analysis	Method	Lab ID Sample Date Sample ID Units	19979/1 26/05/2026 H6	19979/2 26/05/2026 H7	19979/3 26/05/2026 H9	19979/4 26/05/2026 H12	19979/5 26/05/2026 BH4
Temperature	Temp	°C	17.8	18.1	18.1	18.4	17.6
pH	APHA 4500-H B	pH Units	4.9	4.7	4.7	4.8	5.3
Electrical Conductivity	APHA 2510 B	µS/cm 25°C	121	124	93.0	168	104

Field Analysis	Method	Lab ID Sample Date Sample ID Units	19979/6 26/05/2026 H14	19979/7 26/05/2026 H2
Temperature	Temp	°C	18.7	18.5
pH	APHA 4500-H B	pH Units	4.5	4.4
Electrical Conductivity	APHA 2510 B	µS/cm 25°C	95.0	63.0

Solids	Method	Lab ID Sample Date Sample ID Units	19979/1 26/05/2026 H6	19979/2 26/05/2026 H7	19979/3 26/05/2026 H9	19979/4 26/05/2026 H12	19979/5 26/05/2026 BH4
Total Dissolved Solids	AS3550.4	mg/L	<20	<20	<20	48	<20

Solids	Method	Lab ID Sample Date Sample ID Units	19979/6 26/05/2026 H14	19979/7 26/05/2026 H2
Total Dissolved Solids	AS3550.4	mg/L	<20	<20

Date Tested	Method	Lab ID Sample Date Sample ID Units	19979/1 26/05/2026 H6	19979/2 26/05/2026 H7	19979/3 26/05/2026 H9	19979/4 26/05/2026 H12	19979/5 26/05/2026 BH4
Date Tested - Field	--	--	25/05/2026	25/05/2026	25/05/2026	25/05/2026	25/05/2026
Date Tested - TDS	AS3550.4	--	2/06/2026	2/06/2026	2/06/2026	2/06/2026	2/06/2026

Date Tested	Method	Lab ID Sample Date Sample ID Units	19979/6 26/05/2026 H14	19979/7 26/05/2026 H2
Date Tested - Field	--	--	25/05/2026	25/05/2026
Date Tested - TDS	AS3550.4	--	2/06/2026	2/06/2026

Report Comments:

Guideline applied - **No Limits**.

Results in **bold** indicate an exceedance of the applied guideline.

When considering the pass or fail of tests the measurement of uncertainty of each parameter must be considered.

https://www.vgt.com.au/measurement-uncertainty

Field Analysis conducted onsite at Haerses Rd Quarry

[NT]: Not tested

Where present, indicates NATA accreditation does not cover the performance of this service.

Sampling Report Number: 19979

Date Issued: 3/06/2026 Revision No: 00

Sampling Conditions: Rain, 18 - 21 °C

Lab ID	Client Sample Reference	Licence/ Reference	Sampler	Date Sampled	Method of Sampling	Pre-treatment / Preservation
19979/1	H6		T & D.Walker	26/05/2026 8:27 AM	AS5667.11, Pump	AS5667.1
19979/2	H7		T & D.Walker	26/05/2026 8:51 AM	AS5667.11, Pump	AS5667.1
19979/3	H9		T & D.Walker	26/05/2026 9:27 AM	AS5667.11, Pump	AS5667.1
19979/4	H12		T & D.Walker	26/05/2026 10:15 AM	AS5667.11, Pump	AS5667.1
19979/5	BH4		T & D.Walker	26/05/2026 9:44 AM	AS5667.11, Pump	AS5667.1
19979/6	H14		T & D.Walker	26/05/2026 10:38 AM	AS5667.11, Bail	AS5667.1
19979/7	H2		T & D.Walker	26/05/2026 3:01 PM	AS5667.11, Pump	AS5667.1

Lab ID	Client Sample Reference	Sampling Observations
19979/1	H6	
19979/2	H7	Ants
19979/3	H9	Ants
19979/4	H12	
19979/5	BH4	Logger has not fully submerged due to wet string sticking on well casing when redeployed
19979/6	H14	
19979/7	H2	

Sampling procedures have been approved and report finalised on 3/06/2026.
Where method is "unknown" sampling procedures are not endorsed

Well Parameters:

Client: Dixon Sand (No.1) Pty Ltd

Site/Job: Haerses Rd H Groundwater- 6 Monthly

Well ID	GPS-Easting	GPS-Northing	Reference Point	Reference point AHD (m)*	Depth to Screen (m)
H6	312989	6295066	TOM		
H7	312855	6294643	TOM		
H9	312796	6294232	TOM		
H12	312709	6294090	TOM		
BH4	312843	6293870	TOM		
H14	312659	6293363	TOM		
H2	312515	6294585	TOM		

Well ID	Date Well Measured	Reference Point Height to GL (m)	Depth to Bottom (m)	Recharge Rate	Approximate Volume (L)
H6	28/10/2019	0.78	15.75	Slow	3
H7	28/10/2019	0.81	16.67	Fast	5
H9	28/10/2019	0.78	16.23	Slow	14
H12	28/10/2019	0.86	17.04	Fast	9.62
BH4	28/10/2019	0.64	>60	Moderate	>45
H14	28/10/2019	0.84	13.97	Fast	7
H2	28/10/2019	0.69	5.79	Slow	5

Note: NATA accreditation does not cover information provided in this section

*Reference Point AHD may differ from survey data provided due to the differences in where field measurements taken from when compared to surveyed point (TOC/TOM/GL).

Surface water Monitoring Data

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NATA Accreditation 20375
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Report Number: 18446

Date Issued: 24/07/2025 Revision Number: 00

Site/Job: Haerses Rd - Monthly Surface water

Client: Dixon Sand (No.1) Pty Ltd
Address PO Box 4019
PITT TOWN NSW 2756
Contact David Dixon

The following water sample(s) were received on 23/07/2025

Client Sample Reference	Date Sampled	Lab ID	Matrix	General Comments
Basin 1 - Mod 1	23/07/2025	18446/1	Water	

The sample(s) have been tested as received and results relate specifically to the samples tested.
The following reports are included:

- Test Report
- Sampling Report
- Chain of Custody (if available)

Authorised by:
Anthony Crane
Laboratory Manager

Results have been approved and report finalised on 24/07/2025.

Test Report Number: 18446

Date Issued: 24/07/2025 Revision No: 00

Results

Field Analysis	Method	Lab ID Sample Date Sample ID Units	18446/1 23/07/2025 Basin 1 - Mod 1
Temperature	Temp	°C	14.5
pH	APHA 4500-H B	pH Units	4.9
Turbidity	APHA 2130 B	NTU	8.9

Solids	Method	Lab ID Sample Date Sample ID Units	18446/1 23/07/2025 Basin 1 - Mod 1
Total Suspended Solids	AS3550.4	mg/L	7

Date Tested	Method	Lab ID Sample Date Sample ID Units	18446/1 23/07/2025 Basin 1 - Mod 1
Date Tested - Field	--	--	23/07/2025
Date Tested - TSS	AS3550.4	--	24/07/2025

Report Comments:

Where present, indicates NATA accreditation does not cover the performance of this service.

Guideline applied - No Limits.
Results in **bold** indicate an exceedance of the applied guideline.
When considering the pass or fail of tests the measurement of uncertainty of each parameter must be considered.
https://www.vgt.com.au/measurement-uncertainty

[NT]: Not tested

Field Analysis conducted onsite at Haerses Rd Quarry

Location Analysed : Field and 4/30 Glenwood Dr Thornton NSW 2322.

Sampling Report Number: 18446

Date Issued: 24/07/2025 Revision No: 00

Sampling Conditions: Cloudy, 20 °C

Lab ID	Client Sample Reference	Licence/ Reference	Sampler	Date Sampled	Method of Sampling	Pre-treatment / Preservation
18446/1	Basin 1 - Mod 1		T & D.Walker	23/07/2025 1:32 PM	AS5667.4 Lake, Grab	AS5667.1

Lab ID	Client Sample Reference	GPS-Easting	GPS-Northing	Sampling Observations
18446/1	Basin 1 - Mod 1	312148	6293404	Clear, no flow

Sampling procedures have been approved and report finalised on 24/07/2025.
Where method is "unknown" sampling procedures are not endorsed

VGT Laboratories Pty Ltd.
ABN 77 621 943 600
NATA Accreditation 20375
Unit 4, 30 Glenwood Drive Thornton NSW 2322|
P: (02) 4028 6412 | **E:** lab@vgt.com.au | **www.vgt.com.au**

Report Number: 18704

Date Issued: 27/08/2025 Revision Number: 00

Site/Job: Haerses Rd - Monthly Surface water

Client: Dixon Sand (No.1) Pty Ltd
Address PO Box 4019
PITT TOWN NSW 2756
Contact David Dixon

The following water sample(s) were received on 20/08/2025

Client Sample Reference	Date Sampled	Lab ID	Matrix	General Comments
Basin 1 - Mod 1	20/08/2025	18704/1	Water	

The sample(s) have been tested as received and results relate specifically to the samples tested.
The following reports are included:

- Test Report
- Sampling Report
- Chain of Custody (if available)

Authorised by:

Liane Peyra
Technical Officer

Anthony Crane
Laboratory Manager

Results have been approved and report finalised on 27/08/2025.

Test Report Number: 18704

Date Issued: 27/08/2025 Revision No: 00

Results

Field Analysis	Method	Lab ID Sample Date Sample ID Units	18704/1 20/08/2025 Basin 1 - Mod 1
Temperature	Temp	°C	12.4
pH	APHA 4500-H B	pH Units	6.3
Turbidity	APHA 2130 B	NTU	26

Solids	Method	Lab ID Sample Date Sample ID Units	18704/1 20/08/2025 Basin 1 - Mod 1
Total Suspended Solids	AS3550.4	mg/L	22

Date Tested	Method	Lab ID Sample Date Sample ID Units	18704/1 20/08/2025 Basin 1 - Mod 1
Date Tested - Field	--	--	20/08/2025
Date Tested - TSS	AS3550.4	--	21/08/2025

Report Comments:

Where present, indicates NATA accreditation does not cover the performance of this service.

Guideline applied - No Limits.
Results in **bold** indicate an exceedance of the applied guideline.
When considering the pass or fail of tests the measurement of uncertainty of each parameter must be considered.
https://www.vgt.com.au/measurement-uncertainty

[NT]: Not tested

Field Analysis conducted onsite at Haerses Rd Quarry

Location Analysed : Field and 4/30 Glenwood Dr Thornton NSW 2322.

Sampling Report Number: 18704

Date Issued: 27/08/2025 Revision No: 00

Sampling Conditions: Rain, 13 °C. Recent heavy rain.

Lab ID	Client Sample Reference	Licence/ Reference	Sampler	Date Sampled	Method of Sampling	Pre-treatment / Preservation
18704/1	Basin 1 - Mod 1		T & D.Walker	20/08/2025 12:45 PM	AS5667.4 Lake, Grab	AS5667.1

Lab ID	Client Sample Reference	GPS-Easting	GPS-Northing	Sampling Observations
18704/1	Basin 1 - Mod 1	312148	6293404	No flow

Sampling procedures have been approved and report finalised on 27/08/2025.
Where method is "unknown" sampling procedures are not endorsed

VGT Laboratories Pty Ltd.
ABN 77 621 943 600
NATA Accreditation 20375
Unit 4, 30 Glenwood Drive Thornton NSW 2322|
P: (02) 4028 6412 | **E:** lab@vgt.com.au | **www.vgt.com.au**

Report Number: 18850

Date Issued: 18/09/2025 Revision Number: 00

Site/Job: Haerses Rd - Monthly Surface water

Client: Dixon Sand (No.1) Pty Ltd
Address PO Box 4019
PITT TOWN NSW 2756
Contact David Dixon

The following water sample(s) were received on 17/09/2025

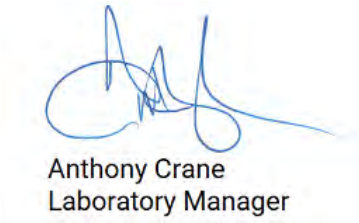
Client Sample Reference	Date Sampled	Lab ID	Matrix	General Comments
Basin 1 - Mod 1	17/09/2025	18850/1	Water	

The sample(s) have been tested as received and results relate specifically to the samples tested.

The following reports are included:

- Test Report
- Sampling Report
- Chain of Custody (if available)

Authorised by:



Anthony Crane
Laboratory Manager

Results have been approved and report finalised on 18/09/2025.

Test Report Number: 18850

Date Issued: 18/09/2025 Revision No: 00

Results

Field Analysis	Method	Lab ID Sample Date Sample ID Units	18850/1 17/09/2025 Basin 1 - Mod 1
Temperature	Temp	°C	21.9
pH	APHA 4500-H B	pH Units	5.2
Turbidity	APHA 2130 B	NTU	12

Solids	Method	Lab ID Sample Date Sample ID Units	18850/1 17/09/2025 Basin 1 - Mod 1
Total Suspended Solids	AS3550.4	mg/L	10

Date Tested	Method	Lab ID Sample Date Sample ID Units	18850/1 17/09/2025 Basin 1 - Mod 1
Date Tested - Field	--	--	17/09/2025
Date Tested - TSS	AS3550.4	--	18/09/2025

Report Comments:

Guideline applied - **No Limits**.

Results in **bold** indicate an exceedance of the applied guideline.

When considering the pass or fail of tests the measurement of uncertainty of each parameter must be considered.

https://www.vgt.com.au/measurement-uncertainty

Field Analysis conducted onsite at Haerses Rd Quarry

[NT]: Not tested

Where present, indicates NATA accreditation does not cover the performance of this service.

Sampling Report Number: 18850

Date Issued: 18/09/2025 Revision No: 00

Sampling Conditions: Fine, 26 °C

Lab ID	Client Sample Reference	Licence/ Reference	Sampler	Date Sampled	Method of Sampling	Pre-treatment / Preservation
18850/1	Basin 1 - Mod 1		T & D.Walker	17/09/2025 12:51 PM	AS5667.4 Lake, Grab	AS5667.1

Lab ID	Client Sample Reference	GPS-Easting	GPS-Northing	Sampling Observations
18850/1	Basin 1 - Mod 1	312148	6293404	Clear, no flow

Sampling procedures have been approved and report finalised on 18/09/2025.
Where method is "unknown" sampling procedures are not endorsed

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NATA Accreditation 20375
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P: (02) 4028 6412 | **E:** lab@vgt.com.au | **www.vgt.com.au**

Report Number: 18994

Date Issued: 16/10/2025 Revision Number: 00

Site/Job: Haerses Rd - Monthly Surface water

Client: Dixon Sand (No.1) Pty Ltd
Address PO Box 4019
PITT TOWN NSW 2756
Contact David Dixon

The following water sample(s) were received on 15/10/2025

Client Sample Reference	Date Sampled	Lab ID	Matrix	General Comments
Basin 1 - Mod 1	15/10/2025	18994/1	Water	

The sample(s) have been tested as received and results relate specifically to the samples tested.

The following reports are included:

- Test Report
- Sampling Report
- Chain of Custody (if available)

Authorised by:

Liane Peyra
Technical Officer

Results have been approved and report finalised on 16/10/2025.

Test Report Number: 18994

Date Issued: 16/10/2025 Revision No: 00

Results

Field Analysis	Method	Lab ID Sample Date Sample ID Units	18994/1 15/10/2025 Basin 1 - Mod 1
Temperature	Temp	°C	21.8
pH	APHA 4500-H B	pH Units	4.8
Turbidity	APHA 2130 B	NTU	5.1

Solids	Method	Lab ID Sample Date Sample ID Units	18994/1 15/10/2025 Basin 1 - Mod 1
Total Suspended Solids	AS3550.4	mg/L	5

Date Tested	Method	Lab ID Sample Date Sample ID Units	18994/1 15/10/2025 Basin 1 - Mod 1
Date Tested - Field	--	--	15/10/2025
Date Tested - TSS	AS3550.4	--	16/10/2025

Report Comments:

Guideline applied - **No Limits**.

Results in **bold** indicate an exceedance of the applied guideline.

When considering the pass or fail of tests the measurement of uncertainty of each parameter must be considered.

https://www.vgt.com.au/measurement-uncertainty

Field Analysis conducted onsite at Haerses Rd Quarry

[NT]: Not tested

Where present, indicates NATA accreditation does not cover the performance of this service.

Sampling Report Number: 18994

Date Issued: 16/10/2025 Revision No: 00

Sampling Conditions: Fine, 26°c

Lab ID	Client Sample Reference	Licence/ Reference	Sampler	Date Sampled	Method of Sampling	Pre-treatment / Preservation
18994/1	Basin 1 - Mod 1		T & D.Walker	15/10/2025 12:33 PM	AS5667.4 Lake, Grab	AS5667.1

Lab ID	Client Sample Reference	GPS-Easting	GPS-Northing	Sampling Observations
18994/1	Basin 1 - Mod 1	312148	6293404	Clear. No flow.

Sampling procedures have been approved and report finalised on 16/10/2025.
Where method is "unknown" sampling procedures are not endorsed

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Report Number: 19063

Date Issued: 14/11/2025 Revision Number: 00

Site/Job: Haerses Rd - Monthly Surface water

Client: Dixon Sand (No.1) Pty Ltd
Address PO Box 4019
PITT TOWN NSW 2756
Contact David Dixon

The following water sample(s) were received on 12/11/2025

Client Sample Reference	Date Sampled	Lab ID	Matrix	General Comments
Basin 1 - Mod 1	12/11/2025	19063/1	Water	

The sample(s) have been tested as received and results relate specifically to the samples tested.

The following reports are included:

- Test Report
- Sampling Report
- Chain of Custody (if available)

Authorised by:

Liane Peyra
Technical Officer

Results have been approved and report finalised on 14/11/2025.

Test Report Number: 19063

Date Issued: 14/11/2025 Revision No: 00

Results

Field Analysis	Method	Lab ID Sample Date Sample ID Units	19063/1 12/11/2025 Basin 1 - Mod 1
Temperature	Temp	°C	21.1
pH	APHA 4500-H B	pH Units	5.0
Turbidity	APHA 2130 B	NTU	5.4

Solids	Method	Lab ID Sample Date Sample ID Units	19063/1 12/11/2025 Basin 1 - Mod 1
Total Suspended Solids	AS3550.4	mg/L	<5

Date Tested	Method	Lab ID Sample Date Sample ID Units	19063/1 12/11/2025 Basin 1 - Mod 1
Date Tested - Field	--	--	12/11/2025
Date Tested - TSS	AS3550.4	--	13/11/2025

Report Comments:

Guideline applied - **No Limits**.

Results in **bold** indicate an exceedance of the applied guideline.

When considering the pass or fail of tests the measurement of uncertainty of each parameter must be considered.

https://www.vgt.com.au/measurement-uncertainty

Field Analysis conducted onsite at Hodgson Quarries

[NT]: Not tested

Where present, indicates NATA accreditation does not cover the performance of this service.

Sampling Report Number: 19063

Date Issued: 14/11/2025 Revision No: 00

Sampling Conditions: Fine, 22 °C

Lab ID	Client Sample Reference	Licence/ Reference	Sampler	Date Sampled	Method of Sampling	Pre-treatment / Preservation
19063/1	Basin 1 - Mod 1		T & D.Walker	12/11/2025 12:50 PM	AS5667.4 Lake, Grab	AS5667.1

Lab ID	Client Sample Reference	GPS-Easting	GPS-Northing	Sampling Observations
19063/1	Basin 1 - Mod 1	312148	6293404	Clear, no flow

Sampling procedures have been approved and report finalised on 14/11/2025.
Where method is "unknown" sampling procedures are not endorsed

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Report Number: 19191

Date Issued: 16/12/2025 Revision Number: 00

Site/Job: Haerses Rd 6 Monthly Surface water

Client: Dixon Sand (No.1) Pty Ltd
Address PO Box 4019
PITT TOWN NSW 2756
Contact David Dixon

The following water sample(s) were received on 9/12/2025

Client Sample Reference	Date Sampled	Lab ID	Matrix	General Comments
Stage 1 Pit Sump	9/12/2025	19191/1	Water	
Stage 2 West Sediment	9/12/2025	19191/2	Water	
Stage 2 West Pit Sump	9/12/2025	19191/3	Water	
Stage 2 East Sediment Dam	9/12/2025	19191/4	Water	
Basin 1 - Mod 1	9/12/2025	19191/5	Water	
Basin 4	9/12/2025	19191/6	Water	

The sample(s) have been tested as received and results relate specifically to the samples tested.

The following reports are included:

- Test Report
- Sampling Report
- Chain of Custody (if available)

Authorised by:

Anthony Crane
Laboratory Manager

Results have been approved and report finalised on 16/12/2025.

Test Report Number: 19191

Date Issued: 16/12/2025 Revision No: 00

Results

Field Analysis	Method	Lab ID Sample Date Sample ID Units	19191/1 9/12/2025 Stage 1 Pit Sump	19191/2 9/12/2025 Stage 2 West Sediment	19191/3 9/12/2025 Stage 2 West Pit Sump	19191/4 9/12/2025 Stage 2 East Sediment Dam	19191/5 9/12/2025 Basin 1 - Mod 1
Temperature	Temp	°C	24.6	27.3	27.9	24.2	26.6
pH	APHA 4500-H B	pH Units	5.5	5.2	4.7	5.5	5.4
Electrical Conductivity	APHA 2510 B	µS/cm 25°C	55.0	83.0	134	109	172
Turbidity	APHA 2130 B	NTU	5.6	2.1	4.8	6.6	5.1

Field Analysis	Method	Lab ID Sample Date Sample ID Units	19191/6 9/12/2025 Basin 4
Temperature	Temp	°C	25.6
pH	APHA 4500-H B	pH Units	4.4
Electrical Conductivity	APHA 2510 B	µS/cm 25°C	175
Turbidity	APHA 2130 B	NTU	2.7

Solids	Method	Lab ID Sample Date Sample ID Units	19191/1 9/12/2025 Stage 1 Pit Sump	19191/2 9/12/2025 Stage 2 West Sediment	19191/3 9/12/2025 Stage 2 West Pit Sump	19191/4 9/12/2025 Stage 2 East Sediment Dam	19191/5 9/12/2025 Basin 1 - Mod 1
Total Suspended Solids	AS3550.4	mg/L	<5	<5	<5	<5	<5

Solids	Method	Lab ID Sample Date Sample ID Units	19191/6 9/12/2025 Basin 4
Total Suspended Solids	AS3550.4	mg/L	<5

Date Tested	Method	Lab ID Sample Date Sample ID Units	19191/1 9/12/2025 Stage 1 Pit Sump	19191/2 9/12/2025 Stage 2 West Sediment	19191/3 9/12/2025 Stage 2 West Pit Sump	19191/4 9/12/2025 Stage 2 East Sediment Dam	19191/5 9/12/2025 Basin 1 - Mod 1
Date Tested - Field	--	--	09/12/2025	09/12/2025	09/12/2025	09/12/2025	09/12/2025
Date Tested - TSS	AS3550.4	--	10/12/2025	10/12/2025	10/12/2025	10/12/2025	10/12/2025

Date Tested	Method	Lab ID Sample Date Sample ID Units	19191/6 9/12/2025 Basin 4
Date Tested - Field	--	--	09/12/2025
Date Tested - TSS	AS3550.4	--	10/12/2025

Report Comments:

Guideline applied - **No Limits**.

Results in **bold** indicate an exceedance of the applied guideline.

When considering the pass or fail of tests the measurement of uncertainty of each parameter must be considered.

https://www.vgt.com.au/measurement-uncertainty

Field Analysis conducted onsite at Haerses Rd Quarry

[NT]: Not tested

Where present, indicates NATA accreditation does not cover the performance of this service.

Sampling Report Number: 19191

Date Issued: 16/12/2025 Revision No: 00

Sampling Conditions: Fine, 22 - 37 °C

Lab ID	Client Sample Reference	Licence/ Reference	Sampler	Date Sampled	Method of Sampling	Pre-treatment / Preservation
19191/1	Stage 1 Pit Sump		T & D.Walker	9/12/2025 8:54 AM	AS5667.4 Lake, Grab	AS5667.1
19191/2	Stage 2 West Sediment		T & D.Walker	9/12/2025 12:43 PM	AS5667.4 Lake, Grab	AS5667.1
19191/3	Stage 2 West Pit Sump		T & D.Walker	9/12/2025 12:58 PM	AS5667.4 Lake, Grab	AS5667.1
19191/4	Stage 2 East Sediment Dam		T & D.Walker	9/12/2025 9:35 AM	AS5667.4 Lake, Grab	AS5667.1
19191/5	Basin 1 - Mod 1		T & D.Walker	9/12/2025 11:10 AM	AS5667.4 Lake, Grab	AS5667.1
19191/6	Basin 4		T & D.Walker	9/12/2025 10:20 AM	AS5667.4 Lake, Grab	AS5667.1

Lab ID	Client Sample Reference	GPS-Easting	GPS-Northing	Sampling Observations
19191/1	Stage 1 Pit Sump	312739	6294472	Clear, no flow
19191/2	Stage 2 West Sediment	312403	6293815	Clear, no flow
19191/3	Stage 2 West Pit Sump	312612	6293745	Clear, no flow
19191/4	Stage 2 East Sediment Dam	312770	6293687	
19191/5	Basin 1 - Mod 1	312148	6293404	Clear. No flow
19191/6	Basin 4	312576	6293303	Clear, very shallow. No flow

Sampling procedures have been approved and report finalised on 16/12/2025.
Where method is "unknown" sampling procedures are not endorsed

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Report Number: 19293

Date Issued: 8/01/2026 Revision Number: 00

Site/Job: Haerses Rd - Monthly Surface water

Client: Dixon Sand (No.1) Pty Ltd
Address PO Box 4019
PITT TOWN NSW 2756
Contact David Dixon

The following water sample(s) were received on 7/01/2026

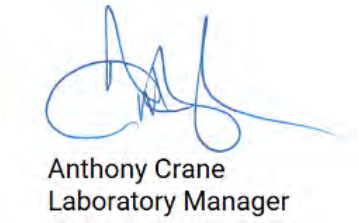
Client Sample Reference	Date Sampled	Lab ID	Matrix	General Comments
Basin 1 - Mod 1	7/01/2026	19293/1	Water	

The sample(s) have been tested as received and results relate specifically to the samples tested.

The following reports are included:

- Test Report
- Sampling Report
- Chain of Custody (if available)

Authorised by:



Anthony Crane
Laboratory Manager

Results have been approved and report finalised on 8/01/2026.

Test Report Number: 19293

Date Issued: 8/01/2026 Revision No: 00

Results

Field Analysis	Method	Lab ID Sample Date Sample ID Units	19293/1 7/01/2026 Basin 1 - Mod 1
Temperature	Temp	°C	26.9
pH	APHA 4500-H B	pH Units	4.8
Turbidity	APHA 2130 B	NTU	2.7

Solids	Method	Lab ID Sample Date Sample ID Units	19293/1 7/01/2026 Basin 1 - Mod 1
Total Suspended Solids	AS3550.4	mg/L	<5

Date Tested	Method	Lab ID Sample Date Sample ID Units	19293/1 7/01/2026 Basin 1 - Mod 1
Date Tested - Field	--	--	7/01/2026
Date Tested - TSS	AS3550.4	--	8/01/2026

Report Comments:

Guideline applied - **No Limits**.

Results in **bold** indicate an exceedance of the applied guideline.

When considering the pass or fail of tests the measurement of uncertainty of each parameter must be considered.

https://www.vgt.com.au/measurement-uncertainty

Field Analysis conducted onsite at Haerses Rd Quarry

[NT]: Not tested

Where present, indicates NATA accreditation does not cover the performance of this service.

Sampling Report Number: 19293

Date Issued: 8/01/2026 Revision No: 00

Sampling Conditions: Fine, 33 °C

Lab ID	Client Sample Reference	Licence/ Reference	Sampler	Date Sampled	Method of Sampling	Pre-treatment / Preservation
19293/1	Basin 1 - Mod 1		T & D.Walker	7/01/2026 12:35 PM	AS5667.4 Lake, Grab	AS5667.1

Lab ID	Client Sample Reference	GPS-Easting	GPS-Northing	Sampling Observations
19293/1	Basin 1 - Mod 1	312148	6293404	Clear. No flow.

Sampling procedures have been approved and report finalised on 8/01/2026.
Where method is "unknown" sampling procedures are not endorsed

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Report Number: 19468

Date Issued: 5/02/2026 Revision Number: 00

Site/Job: Haerses Rd - Monthly Surface water

Client: Dixon Sand (No.1) Pty Ltd
Address PO Box 4019
PITT TOWN NSW 2756
Contact David Dixon

The following water sample(s) were received on 4/02/2026

Client Sample Reference	Date Sampled	Lab ID	Matrix	General Comments
Basin 1 - Mod 1	4/02/2026	19468/1	Water	

The sample(s) have been tested as received and results relate specifically to the samples tested.

The following reports are included:

- Test Report
- Sampling Report
- Chain of Custody (if available)

Authorised by:

Liane Peyra
Technical Officer

Anthony Crane
Laboratory Manager

Results have been approved and report finalised on 5/02/2026.

Test Report Number: 19468

Date Issued: 5/02/2026 Revision No: 00

Results

Field Analysis	Method	Lab ID Sample Date Sample ID Units	19468/1 4/02/2026 Basin 1 - Mod 1
Temperature	Temp	°C	24.9
pH	APHA 4500-H B	pH Units	5.1
Turbidity	APHA 2130 B	NTU	2.4

Solids	Method	Lab ID Sample Date Sample ID Units	19468/1 4/02/2026 Basin 1 - Mod 1
Total Suspended Solids	AS3550.4	mg/L	<5

Date Tested	Method	Lab ID Sample Date Sample ID Units	19468/1 4/02/2026 Basin 1 - Mod 1
Date Tested - Field	--	--	4/02/2026
Date Tested - TSS	AS3550.4	--	5/02/2026

Report Comments:

Guideline applied - **No Limits**.

Results in **bold** indicate an exceedance of the applied guideline.

When considering the pass or fail of tests the measurement of uncertainty of each parameter must be considered.

https://www.vgt.com.au/measurement-uncertainty

Field Analysis conducted onsite at Haerses Rd Quarry

[NT]: Not tested

Where present, indicates NATA accreditation does not cover the performance of this service.

Sampling Report Number: 19468

Date Issued: 5/02/2026 Revision No: 00

Sampling Conditions: Fine, 27 °C

Lab ID	Client Sample Reference	Licence/ Reference	Sampler	Date Sampled	Method of Sampling	Pre-treatment / Preservation
19468/1	Basin 1 - Mod 1		T & D.Walker	4/02/2026 12:40 PM	AS5667.4 Lake, Grab	AS5667.1

Lab ID	Client Sample Reference	GPS-Easting	GPS-Northing	Sampling Observations
19468/1	Basin 1 - Mod 1	312148	6293404	

Sampling procedures have been approved and report finalised on 5/02/2026.
Where method is "unknown" sampling procedures are not endorsed

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Report Number: 19565

Date Issued: 6/03/2026 Revision Number: 00

Site/Job: Haerses Rd - Monthly Surface water

Client: Dixon Sand (No.1) Pty Ltd
Address PO Box 4019
PITT TOWN NSW 2756
Contact David Dixon

The following water sample(s) were received on 4/03/2026

Client Sample Reference	Date Sampled	Lab ID	Matrix	General Comments
Basin 1 - Mod 1	4/03/2026	19565/1	Water	

The sample(s) have been tested as received and results relate specifically to the samples tested.

The following reports are included:

- Test Report
- Sampling Report
- Chain of Custody (if available)

Authorised by:

Liane Peyra
Technical Officer

Results have been approved and report finalised on 6/03/2026.

Test Report Number: 19565

Date Issued: 6/03/2026 Revision No: 00

Results

Field Analysis	Method	Lab ID Sample Date Sample ID Units	19565/1 4/03/2026 Basin 1 - Mod 1
Temperature	Temp	°C	24.3
pH	APHA 4500-H B	pH Units	5.5
Turbidity	APHA 2130 B	NTU	5.9

Solids	Method	Lab ID Sample Date Sample ID Units	19565/1 4/03/2026 Basin 1 - Mod 1
Total Suspended Solids	AS3550.4	mg/L	6

Date Tested	Method	Lab ID Sample Date Sample ID Units	19565/1 4/03/2026 Basin 1 - Mod 1
Date Tested - Field	--	--	4/03/2026
Date Tested - TSS	AS3550.4	--	5/03/2026

Report Comments:

Guideline applied - **No Limits**.

Results in **bold** indicate an exceedance of the applied guideline.

When considering the pass or fail of tests the measurement of uncertainty of each parameter must be considered.

https://www.vgt.com.au/measurement-uncertainty

Field Analysis conducted onsite at Haerses Rd Quarry

[NT]: Not tested

Where present, indicates NATA accreditation does not cover the performance of this service.

Sampling Report Number: 19565

Date Issued: 6/03/2026 Revision No: 00

Sampling Conditions: Cloudy, 29 °C

Lab ID	Client Sample Reference	Licence/ Reference	Sampler	Date Sampled	Method of Sampling	Pre-treatment / Preservation
19565/1	Basin 1 - Mod 1		T & D.Walker	4/03/2026 1:02 PM	AS5667.4 Lake, Grab	AS5667.1

Lab ID	Client Sample Reference	GPS-Easting	GPS-Northing	Sampling Observations
19565/1	Basin 1 - Mod 1	312148	6293404	Clear, no flow

Sampling procedures have been approved and report finalised on 6/03/2026.
Where method is "unknown" sampling procedures are not endorsed

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Report Number: 19898

Date Issued: 7/05/2026 Revision Number: 00

Site/Job: Haerses Rd - Monthly Surface water

Client: Dixon Sand (No.1) Pty Ltd
Address PO Box 4019
PITT TOWN NSW 2756
Contact David Dixon

The following water sample(s) were received on 29/04/2026

Client Sample Reference	Date Sampled	Lab ID	Matrix	General Comments
Basin 1 - Mod 1	29/04/2026	19898/1	Water	

The sample(s) have been tested as received and results relate specifically to the samples tested.

The following reports are included:

- Test Report
- Sampling Report
- Chain of Custody (if available)

Authorised by:

Anthony Crane
Laboratory Manager

Liane Peyra
Technical Officer

Results have been approved and report finalised on 7/05/2026.

Test Report Number: 19898

Date Issued: 7/05/2026 Revision No: 00

Results

Field Analysis	Method	Lab ID Sample Date Sample ID Units	19898/1 29/04/2026 Basin 1 - Mod 1
Temperature	Temp	°C	21.5
pH	APHA 4500-H B	pH Units	5.7
Turbidity	APHA 2130 B	NTU	3.7

Solids	Method	Lab ID Sample Date Sample ID Units	19898/1 29/04/2026 Basin 1 - Mod 1
Total Suspended Solids	AS3550.4	mg/L	<5

Date Tested	Method	Lab ID Sample Date Sample ID Units	19898/1 29/04/2026 Basin 1 - Mod 1
Date Tested - Field	--	--	29/04/2026
Date Tested - TSS	AS3550.4	--	30/04/2026

Report Comments:

Guideline applied - **No Limits**.

Results in **bold** indicate an exceedance of the applied guideline.

When considering the pass or fail of tests the measurement of uncertainty of each parameter must be considered.

https://www.vgt.com.au/measurement-uncertainty

Field Analysis conducted onsite at Haerses Rd Quarry

[NT]: Not tested

Where present, indicates NATA accreditation does not cover the performance of this service.

Sampling Report Number: 19898

Date Issued: 7/05/2026 Revision No: 00

Sampling Conditions: Cloudy, 24 °C

Lab ID	Client Sample Reference	Licence/ Reference	Sampler	Date Sampled	Method of Sampling	Pre-treatment / Preservation
19898/1	Basin 1 - Mod 1		T & D.Walker	29/04/2026 12:42 PM	AS5667.4 Lake, Grab	AS5667.1

Lab ID	Client Sample Reference	GPS-Easting	GPS-Northing	Sampling Observations
19898/1	Basin 1 - Mod 1	312148	6293404	Clear, no flow

Sampling procedures have been approved and report finalised on 7/05/2026.
Where method is "unknown" sampling procedures are not endorsed

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Report Number: 19981

Date Issued: 1/06/2026 Revision Number: 00

Site/Job: Haerses Rd 6 Monthly Surface water

Client: Dixon Sand (No.1) Pty Ltd
Address PO Box 4019
PITT TOWN NSW 2756
Contact David Dixon

The following water sample(s) were received on 26/05/2026

Client Sample Reference	Date Sampled	Lab ID	Matrix	General Comments
Stage 1 Pit Sump	26/05/2026	19981/1	Water	
Stage 2 West Sediment	26/05/2026	19981/2	Water	
Stage 2 West Pit Sump	26/05/2026	19981/3	Water	
Stage 2 East Sediment Dam	26/05/2026	19981/4	Water	
Basin 1 - Mod 1	26/05/2026	19981/5	Water	
Basin 4	26/05/2026	19981/6	Water	

The sample(s) have been tested as received and results relate specifically to the samples tested.

The following reports are included:

- Test Report
- Sampling Report
- Chain of Custody (if available)

Authorised by:

Liane Peyra
Technical Officer

Results have been approved and report finalised on 1/06/2026.

Test Report Number: 19981

Date Issued: 1/06/2026 Revision No: 00

Results

Field Analysis	Method	Lab ID Sample Date Sample ID Units	19981/1 26/05/2026 Stage 1 Pit Sump	19981/2 26/05/2026 Stage 2 West Sediment	19981/3 26/05/2026 Stage 2 West Pit Sump	19981/4 26/05/2026 Stage 2 East Sediment Dam	19981/5 26/05/2026 Basin 1 - Mod 1
Temperature	Temp	°C	16.7	18.2	19.2	17.5	17.6
pH	APHA 4500-H B	pH Units	5.4	5.2	5.7	5.9	4.8
Electrical Conductivity	APHA 2510 B	µS/cm 25°C	<50.0	60.0	103	114	91.0
Turbidity	APHA 2130 B	NTU	55	12	30	16	19

Field Analysis	Method	Lab ID Sample Date Sample ID Units	19981/6 26/05/2026 Basin 4
Temperature	Temp	°C	17.8
pH	APHA 4500-H B	pH Units	4.8
Electrical Conductivity	APHA 2510 B	µS/cm 25°C	86.0
Turbidity	APHA 2130 B	NTU	4.5

Solids	Method	Lab ID Sample Date Sample ID Units	19981/1 26/05/2026 Stage 1 Pit Sump	19981/2 26/05/2026 Stage 2 West Sediment	19981/3 26/05/2026 Stage 2 West Pit Sump	19981/4 26/05/2026 Stage 2 East Sediment Dam	19981/5 26/05/2026 Basin 1 - Mod 1
Total Suspended Solids	AS3550.4	mg/L	36	9	20	12	20

Solids	Method	Lab ID Sample Date Sample ID Units	19981/6 26/05/2026 Basin 4
Total Suspended Solids	AS3550.4	mg/L	<5

Date Tested	Method	Lab ID Sample Date Sample ID Units	19981/1 26/05/2026 Stage 1 Pit Sump	19981/2 26/05/2026 Stage 2 West Sediment	19981/3 26/05/2026 Stage 2 West Pit Sump	19981/4 26/05/2026 Stage 2 East Sediment Dam	19981/5 26/05/2026 Basin 1 - Mod 1
Date Tested - Field	--	--	25/05/2026	25/05/2026	25/05/2026	25/05/2026	25/05/2026
Date Tested - TSS	AS3550.4	--	27/05/2026	27/05/2026	27/05/2026	27/05/2026	27/05/2026

Date Tested	Method	Lab ID Sample Date Sample ID Units	19981/6 26/05/2026 Basin 4
Date Tested - Field	--	--	25/05/2026
Date Tested - TSS	AS3550.4	--	27/05/2026

Report Comments:

Guideline applied - **No Limits**.

Results in **bold** indicate an exceedance of the applied guideline.

When considering the pass or fail of tests the measurement of uncertainty of each parameter must be considered.

https://www.vgt.com.au/measurement-uncertainty

Field Analysis conducted onsite at Haerses Rd Quarry

[NT]: Not tested

Where present, indicates NATA accreditation does not cover the performance of this service.

Sampling Report Number: 19981

Date Issued: 1/06/2026 Revision No: 00

Sampling Conditions: Rain, 18 - 21 °C

Lab ID	Client Sample Reference	Licence/ Reference	Sampler	Date Sampled	Method of Sampling	Pre-treatment / Preservation
19981/1	Stage 1 Pit Sump		T & D.Walker	26/05/2026 9:08 AM	AS5667.4 Lake, Grab	AS5667.1
19981/2	Stage 2 West Sediment		T & D.Walker	26/05/2026 1:19 PM	AS5667.4 Lake, Grab	AS5667.1
19981/3	Stage 2 West Pit Sump		T & D.Walker	26/05/2026 1:31 PM	AS5667.4 Lake, Grab	AS5667.1
19981/4	Stage 2 East Sediment Dam		T & D.Walker	26/05/2026 9:58 AM	AS5667.4 Lake, Grab	AS5667.1
19981/5	Basin 1 - Mod 1		T & D.Walker	26/05/2026 11:35 AM	AS5667.4 Lake, Grab	AS5667.1
19981/6	Basin 4		T & D.Walker	26/05/2026 10:43 AM	AS5667.4 Lake, Grab	AS5667.1

Lab ID	Client Sample Reference	GPS-Easting	GPS-Northing	Sampling Observations
19981/1	Stage 1 Pit Sump	312739	6294472	No flow
19981/2	Stage 2 West Sediment	312403	6293815	
19981/3	Stage 2 West Pit Sump	312612	6293745	
19981/4	Stage 2 East Sediment Dam	312770	6293687	No flow
19981/5	Basin 1 - Mod 1	312148	6293404	Strong flow - pumping out
19981/6	Basin 4	312576	6293303	

Sampling procedures have been approved and report finalised on 1/06/2026.
Where method is "unknown" sampling procedures are not endorsed

VGT Laboratories Pty Ltd.
ABN 77 621 943 600
NATA Accreditation 20375
Unit 4, 30 Glenwood Drive Thornton NSW 2322|
P: (02) 4028 6412 | **E:** lab@vgt.com.au | **www.vgt.com.au**

Report Number: 20215

Date Issued: 25/06/2026 Revision Number: 00

Site/Job: Haerses Rd - Monthly Surface water

Client: Dixon Sand (No.1) Pty Ltd
Address PO Box 4019
PITT TOWN NSW 2756
Contact David Dixon

The following water sample(s) were received on 24/06/2026

Client Sample Reference	Date Sampled	Lab ID	Matrix	General Comments
Basin 1 - Mod 1	24/06/2024	20215/1	Water	

The sample(s) have been tested as received and results relate specifically to the samples tested.

The following reports are included:

- Test Report
- Sampling Report
- Chain of Custody (if available)

Authorised by:

Liane Peyra
Technical Officer

Anthony Crane
Laboratory Manager

Results have been approved and report finalised on 25/06/2026.

Test Report Number: 20215

Date Issued: 25/06/2026 Revision No: 00

Results

Field Analysis	Method	Lab ID Sample Date Sample ID Units	20215/1 24/06/2024 Basin 1 - Mod 1
Temperature	Temp	°C	14.2
pH	APHA 4500-H B	pH Units	4.5
Turbidity	APHA 2130 B	NTU	2.3

Solids	Method	Lab ID Sample Date Sample ID Units	20215/1 24/06/2024 Basin 1 - Mod 1
Total Suspended Solids	AS3550.4	mg/L	<5

Date Tested	Method	Lab ID Sample Date Sample ID Units	20215/1 24/06/2024 Basin 1 - Mod 1
Date Tested - Field	--	--	24/06/2026
Date Tested - TSS	AS3550.4	--	25/06/2026

Report Comments:

Guideline applied - **No Limits**.

Results in **bold** indicate an exceedance of the applied guideline.

When considering the pass or fail of tests the measurement of uncertainty of each parameter must be considered.

https://www.vgt.com.au/measurement-uncertainty

Field Analysis conducted onsite at Haerses Rd Quarry

[NT]: Not tested

Where present, indicates NATA accreditation does not cover the performance of this service.

Sampling Report Number: 20215

Date Issued: 25/06/2026 Revision No: 00

Sampling Conditions: Fine, 18 °C

Lab ID	Client Sample Reference	Licence/ Reference	Sampler	Date Sampled	Method of Sampling	Pre-treatment / Preservation
20215/1	Basin 1 - Mod 1		T & D.Walker	24/06/2024 1:10 PM	AS5667.4 Lake, Grab	AS5667.1

Lab ID	Client Sample Reference	GPS-Easting	GPS-Northing	Sampling Observations
20215/1	Basin 1 - Mod 1	312148	6293404	Clear. No flow

Sampling procedures have been approved and report finalised on 25/06/2026.
Where method is "unknown" sampling procedures are not endorsed

Appendix D – Noise Compliance Reports

Dixon Sand (No.1) Pty Ltd

Haerses Road Quarry, Maroota

Noise monitoring report
December 2025

Doc no. 19020-NV-RP-23-1



Dixon Sand (No.1) Pty Ltd
Haerses Road Quarry, Maroota

Title	Noise monitoring report
Document no.	19020-NV-RP-23-2
Revision	2
Date	16 September 2026
Author	John Hutchison
Reviewer	Scott Hughes

Hutchison Weller Pty Ltd
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Revision history

0	21 April 2016	Draft report to client
1	16 September 2026	Update for client comments

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Definition of terms

Background noise	The underlying level of noise present in the ambient noise, excluding the noise source under investigation.
Decibel (dB)	A measure of sound equivalent to 20 times the logarithm (to base 10) of the ratio of a given sound pressure to a reference pressure, and 10 times the logarithm (to base 10) of the ratio of a given sound power to a reference power.
dB(A)	Unit used to measure 'A-weighted' sound pressure levels. A-weighting is an adjustment made to sound-level measurement to approximate the response of the human ear.
dB(C)	Unit used to measure 'C-weighted' sound pressure levels, an adjustment made to sound level to approximate low frequency noise between 10 Hz and 200 Hz.
EPA	Environment Protection Authority
Extraneous noise	Noise resulting from activities that are not typical of the area such as construction, and traffic generated by holiday periods or special events such as concerts or sporting events. Normal daily traffic is not considered to be extraneous.
Noise level statistics	L_{A90} – The A-weighted sound pressure level exceeded 90% of the monitoring period. This is considered to represent the background noise. L_{Aeq} – The equivalent continuous A-weighted noise level—the level of noise equivalent to the energy average of noise levels occurring over a measurement period. L_{A1} – The A-weighted sound pressure level exceeded 1% of the monitoring period. L_{Amax} – The maximum A-weighted noise level associated with the measurement period. 
RBL	The Rating Background Level for each period is the medium value of the ABL values for the period over all the days measured. There is therefore an RBL value for each period (day, evening and night)
Receiver	The land use at which noise is heard
SLM	Sound Level Meter
Sound Power Level (SWL)	The A-weighted sound power level is a logarithmic ratio of the acoustic power output of a source relative to 10^{-12} watts and expressed in decibels. Sound power level is calculated from measured sound pressure levels and represents the level of total sound power radiated by a sound source.
Sound Pressure Level (SPL)	This is the level of noise, usually expressed in dB(A), as measured by a standard sound level meter (SLM) with a pressure microphone. The sound pressure level in dB(A) gives a close indication of the subjective loudness of noise. A technical definition for the sound pressure level, in decibels, is 20 times the logarithm (base 10) of the ratio of any two quantities related to a given sound pressure to a reference pressure (typically 20 µPa equivalent to 0 dB).
Tonal noise	Noise with perceptible and definite pitch or tone

1. Introduction

Dixon Sand (No.1) Pty Ltd operates the Haerses Road Quarry in Maroota, NSW (the Quarry). The Quarry is located off Wisemans Ferry Road, as illustrated in Figure 1.

Operations at the Quarry include extraction of sand and sandstone blocks, processing by screening and grading and loading of trucks for shipment.

The Quarry operates under Development Consent DA 165-7-2005 and Environment Protection Licence (EPL) 12513, which set noise limits for its operation. Extraction in the areas described in Modification 1 of the development consent and utilisation of the processing plant area commenced in December 2019 and require attended noise monitoring on a six-monthly basis to ensure compliance with the conditions.

Hutchison Weller was commissioned by Dixon Sand to undertake the six-monthly noise monitoring in accordance with the conditions of consent, EPL and requirements of the Noise Management Plan.

This document outlines the consent conditions, monitoring methodology and results of the monitoring undertaken on 2 December 2025.

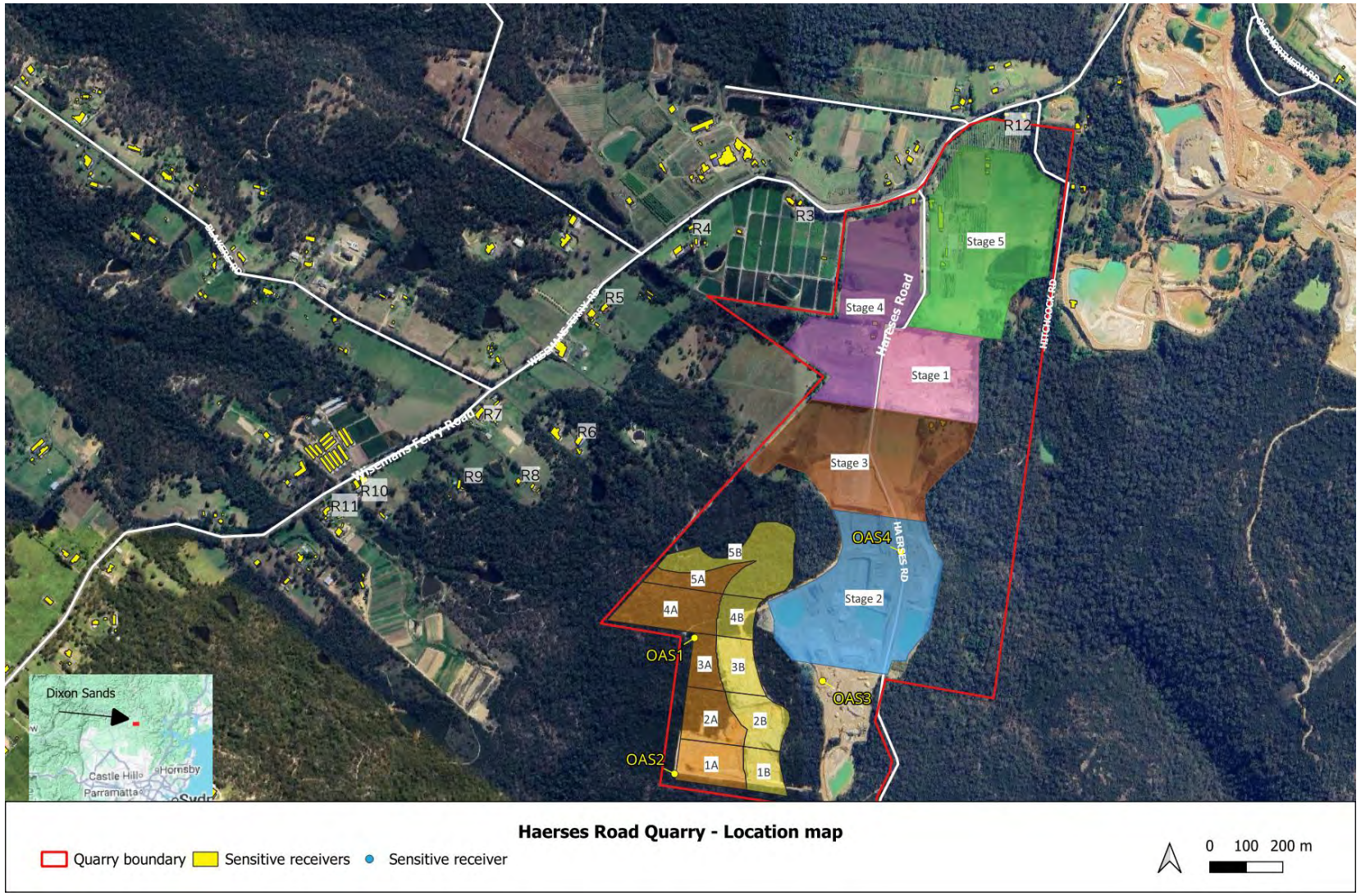


Figure 1 Location of the Quarry

2. Noise compliance criteria

Conditions 1 and 2 of Schedule 3 of development consent DA 165-7-2005 outline the Quarry operating hours and condition 3 defines the noise criteria for compliance.

1. The Applicant must comply with the operating hours set out in Table 1.

Table 1 Operating hours

Activity	Permissible hours
Quarrying operations (excluding truck arrival, loading and dispatch)	7.00 am to 6.00 pm Monday to Saturday At no time on Sundays or public holidays
Truck arrival, loading and dispatch	6.00 am to 6.00 pm Monday to Saturday At no time on Sundays or public holidays
Acoustic bund construction and road and intersection works on Haerses Road and Wisemans Ferry Road	8.00 am to 5.00 pm Monday to Friday. At no time on Saturdays, Sundays, or public holidays
Maintenance	At any time, provided that these activities are not audible at any privately-owned residence outside of permissible hours for quarrying operations.

2. The following activities may be carried out outside the hours specified in condition 1 above:

(a) delivery or dispatch of materials as requested by the NSW Police Force or other public authorities; and
(b) emergency work to avoid the loss of lives, property or to prevent environmental harm.

In such circumstances, the Applicant must notify the Secretary and affected residents prior to undertaking the activities, or as soon as is practical thereafter.

3. The Applicant must ensure that the noise generated by the development (excluding acoustic bund construction) does not exceed the criteria in Table 2 at any residence on privately-owned land.

Table 2 Noise criteria dB(A)

Receiver	Day	Shoulder (6.00 am to 7.00 am)	
	LAeq (15 minute)	LAeq (15 minute)	LAmax
R05, R06	41	35	52
R03	40	37	
R13, R14	40	36	
All other receivers	40	35	

Noise generated by the development must be measured in accordance with the relevant requirements and exemptions (including certain meteorological conditions) of the NSW Noise Policy for Industry.

However, the noise criteria in Table 2 do not apply if the Applicant has an agreement with the relevant landowner to exceed the noise criteria, and the Applicant has advised the Department in writing of the terms of this agreement.

Agreements are currently in place between Dixon Sand and adjacent private landowners including:

- Residential receivers identified as R2 and R12 in the planning consent and
- All identified receivers to the east of Haerses Road quarry on Hitchcock Road

3. Monitoring methodology

Operator-attended noise monitoring was undertaken on 2 December 2025 by John Hutchison of Hutchison Weller, an independent acoustic specialist. Monitoring locations were selected in line with the Haerses Road Quarry Noise Management Plan (Jan 2024), which addresses specific stages of quarry development, as outlined in Section 2. Monitoring locations are illustrated in Figure 1 and specific addresses are summarised in Table 4.

Table 3 Noise monitoring locations for each stage and extraction cell (from Noise and Vibration Management Plan, 2024)

Location	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Mod 1, Extraction cells 1A to 5B
R1	-	-	-	-		-
R3	✓	✓	✓	✓	✓	-
R4	✓	✓	✓	✓	✓	-
R6	-	-	-	-	-	✓
R8	-	-	-	-	-	✓

Table 4 Monitoring locations

Receiver	Address	Description
R3	1643 Wisemans Ferry Road	Private residence adjacent to plant nursery
R4	1617 Wisemans Ferry Road	No access granted – levels extrapolated from site measurements
R6	1543 Wisemans Ferry Road	Private residence. Monitoring conducted on the southeastern side of the residence facing the quarry.
R8	1521 Wisemans Ferry Road	Private residence. Monitoring conducted at boundary between R7 and R8 since no access granted to R8.
HAS1	Haerses Road Quarry	Close to equipment within Haerses Road boundary

Monitoring was conducted in general accordance with the Noise Policy for Industry and Section 6 of the Noise Management Plan. At-receiver monitoring locations were within 30 metres of residential dwellings, whilst onsite measurement locations were selected for safe access and to be representative of the operations, without extraneous noise from sources such as traffic and insects.

Instrumentation was a Bruel & Kjaer Class 1 sound level meter (SLM), serial no. 3008237, field-calibrated prior to and following monitoring. The SLM was within current calibration, next due September 2027.

Monitoring was undertaken with the SLM set on a tripod at 1.5 metres above ground and measuring A-weighted sound pressure levels under fast response. Each measurement period was 15 minutes and recorded the L_{Aeq}, L_{A90} and L_{Amax} statistics.

Meteorological data was recorded during each monitoring period adjacent to the Maroota public school, including wind speed, direction, temperature, relative humidity, and sigma-theta (to establish the Pascall-Guifford stability category). This data was used to establish whether meteorological conditions were suitable for monitoring.

Where extraneous noise such as road traffic or insects were the dominant noise sources, making it impractical to discern the contribution of the Quarry to ambient noise levels, noise levels measured at alternative locations closer to the Quarry were utilised, in line with procedures outlines in *Noise Policy for Industry*. This involved extrapolation from the near-distance location to the sensitive receiver location.

4. Monitoring results

4.1 Attended measurements

Results of noise monitoring for each location are presented in Table 5.

Quarry operations were inaudible at all monitoring locations prior to 7am, with traffic noise on Wisemans Ferry Road in all cases the dominant source of noise. No L_{Amax} noise levels were attributable to the quarry in the shoulder period.

During the day period, quarry noise was inaudible or just audible at monitoring locations. Again, ambient noise masked noise from the quarry.

Based on measured noise at each location, the Haerses Road quarry was compliant with the project noise objectives.

On-site measurements were taken to determine the noise level of various noise sources without the influence of traffic noise. Measurements were undertaken to establish representative sound pressure levels of the operation to allow extrapolation to receiver locations where background noise was too high to discern quarry noise contributions. This is discussed further in Section 4.3.

4.2 Modifying factors

No tonal, impulsive, or low frequency noise characteristics were observed at any residential monitoring location during the monitoring period. Therefore, application of modifying factors is not appropriate in this instance.

Table 5 Monitoring results

Monitoring period	Time	Location	Noise criterion	Measured 15-minute noise level			Estimated $L_{Aeq,\ 15\ min}$ quarry contribution	Observations	Meteorological conditions
				L_{Aeq}	L_{A90}	L_{Amax}			
At-receiver measurements									
Shoulder (6.00am to 7.00am)	6:01 AM	R3	37	49	40	71	<40	**Quarry Inaudible** Dominant noise: Road traffic noise on Wiseman Ferry Road (WFR) • Trucks 54-59 dBA • Light vehicles 46-49 dBA Other noise: birds Ambient noise level 35-36 dBA during lulls in road traffic noise.	Clear skies NNW to W 0 - 3km/h. Extremely unstable conditions, (A class), 9-13 C
	6:19 AM	R6	35	61	39	81	<39	**Quarry Inaudible** Dominant noise: Road traffic noise WFR • Trucks up to 75 dBA • Light vehicles 57-62 dBA • Scooter 52 dBA Other noise: Lorikeets (birds) up to 78.9dBA (max) Ambient noise level 37-38 dBA during lulls in road traffic noise.	
	6.43 AM	R8	35	53	37	77	<37	**Quarry Inaudible** Dominant noise: Road traffic noise WFR 46 to 50 dBA Other noise: birds 63-67 Ambient noise level 34-36 dBA during lulls in road traffic noise.	

Monitoring period	Time	Location	Noise criterion	Measured 15-minute noise level			Estimated $L_{Aeq,\ 15\ min}$ quarry contribution	Observations	Meteorological conditions
				L_{Aeq}	L_{A90}	L_{Amax}			
Onsite measurements									
Onsite	7:47 AM	OAS1	N/A	60	50	76	60	Audible site noise: Site 3B operations • Triple saw (cutting) 60-63 dBA (69 dBA max) at 320m away from the SLM. • Single saw 340m away from the SLM. • Excavator pop rock 50dBA and FEL • Excavator dropping rocks into Moxy 2 times 70 and 63 dBA, 250m away from the SLM. • Moxy 51-54 dBA, 250m away from the SLM.	Clear skies SSW 2 - 14km/h. Extremely unstable to neutral conditions, (A – d class), 14-17 C
	8:19 AM	OAS2	N/A	72	62	84	72	Audible site noise: • Quad saw (cutting) 72 dBA. • Ripping 70-72 dBA (for 5 mins), then bucket scrape 75-84 dBA maxes • Quad saw stops – decrease to 61 dBA • Pineapple 170m away • FEL loading Moxy 130m away • Double saw 160m away • Rock saw on Blocks 70 dBA, 90m away	
	8:53 AM	OAS3	N/A	71	69	84	71	Audible site noise: • Bucket shake rocks 82 dBA • Crusher 70 dBA, steady at 55m • Wash plant ~ 92 metres • Additional crusher/screen at 103 metres. Inaudible over nearest.	
	9:36 AM	OAS4	N/A	68	65	78	-	Audible noise: • Crusher/excavator dominant at 88m away • FEL/truck loading intermittent above 70 dB, 37 – 46m away. • FEL unloading Moxy (60m) barely audible	

Monitoring period	Time	Location	Noise criterion	Measured 15-minute noise level			Estimated $L_{Aeq,\ 15\ min}$ quarry contribution	Observations	Meteorological conditions
				L_{Aeq}	L_{A90}	L_{Amax}			
At-receiver measurements									
Day (7.00am to 6.00pm)	9:56 AM	R3	40	47	40	66	<38 (See Section 4.3)	Quarry generally inaudible but at times just audible when traffic and ambient noise drops to 38 dBA Dominant noise: Road traffic WFR 52-54 dBA. Other noise: • Distant traffic 41 dBA • breeze (trees) 47 dBA • Ambient noise level 39 dBA during lulls in road traffic noise.	Clear skies SSW-WSW 1 - 13km/h. Extremely unstable conditions (A class), 18-19 C
	10:17 AM	R6	41	55	40	74	<41 (See Section 4.3)	Quarry faintly audible at times with engine noise <40 dBA and some short duration intermittent noises from quarry ~ 41 dBA Dominant noise road traffic WFR. Light vehicles up to 67 dBA. Heavy vehicles up to 74 dBA. Other noise: • Dog barking up to 57 dBA • Ambient noise level 35-37 dBA during lulls in road traffic noise. • Quarry noise: distant reverse alarm (cat excavator), and intermittent impacts potentially from Moxy loading. Access restricted. Measurements completed at the gate.	
	10:38 AM	R8	40	44	40	62	<40 (See Section 4.3)	Road noise influence 43-44 LV and 46 HV Quarry intermittently audible for a few seconds, around equivalent to ambient at 43-44 dBA (quarry <41 dBA) Lmax from snuffling horses in the paddock. udible equally with ambient 43-44 dBA for a few seconds. So quarry approx. <41dBA.	
	10:58	R8	40	44	40	66	<40 (See Section 4.3)	Equipment turned off and on again. When off: Quarry inaudible, with background sources (trees, traffic, birds) dominant. L90 during this time 37-39 dBA. When back on: top saws back on, not much change in noise levels ~ 40-41 dBA saws just audible.Period of around 10 seconds saws increased to 43-45 dBA.	

4.3 Extrapolated measurements

A conclusive noise level attributable to the Quarry was not possible in all locations due to ambient noise levels affected by other ambient sounds including road traffic. Therefore, measurements captured on-site without substantial influence from traffic were used to calculate sound pressure levels at each receiver.

Based on observations close to the quarry and processing area, the following plant and equipment was in use during the monitoring period.

Measurements close to these plant items established a representative noise model of the operations:

OAS1

- Triple saw (cutting)
- Single saw (cutting)
- Grinder
- Excavator popping rocks
- Front end loader (FEL) loading rocks to moxy

OAS2

- Quad saw (cutting)
- Double saw (cutting)
- Excavator (ripper)
- FEL loading moxy
- Double Saw
- Grinder

OAS3

- FEL
- Crusher x 2
- Washplant

OAS4

- Excavator loading crusher
- FEL loading trucks

A summary of noise emission data for these items is presented in Appendix A. See Figure 2 for work locations. Measurements close to these plant items established a representative noise model of the operations. A summary of noise emission data for these items is presented in Appendix A. See Figure 2 for work locations.



Figure 2 Work areas and noise sources included in the model

Predictions of noise at nearby receivers were based on measured onsite noise levels and propagation methods described in ISO 9613-2:1996 *Acoustics — Attenuation of sound during propagation outdoors — Part 2: General method of calculation,* which accounts for geometric spreading, air and ground absorption as well as barrier effects, assuming worst case meteorology of a gentle breeze from source to receiver and stable conditions.

Based on the above, modelled noise levels for each monitoring location are presented in Table 6. Results are shown for equipment operating in each quarry area and processing plant. Modelled noise levels are within 2 dB of measured values indicating the model is sufficiently accurate to represent operating conditions.

Table 6 Extrapolated monitoring results to intermediate measurement locations

Location	Modelled noise level, dBA	Measured noise level, LAeq, 15 minute, dBA
OAS1	60	59
OAS2	72	71
OAS3	71	71
OAS4	68	67

Based on measurements described in Table 5, extrapolated noise results for each receiver are presented in Table 7. Results are shown for all equipment operating. Extrapolated results demonstrate the Quarry is compliant with the criteria for shoulder and daytime operations (within 2 dB) when all observed equipment is operating. Extrapolated contours are shown in Figure 3.

Table 7 Extrapolated monitoring results

Receiver	Noise criteria	Extrapolated noise level, LAeq, 15 minute
R3	40	38
R4	40	39
R6	41	40
R8	40	40
All other receivers	40	See Figure 3

4.4 Compliance summary

Results of attended monitoring and extrapolated noise levels demonstrate observed operations during shoulder and day periods were compliant with the noise criteria at each receiver under the meteorological conditions at the time.

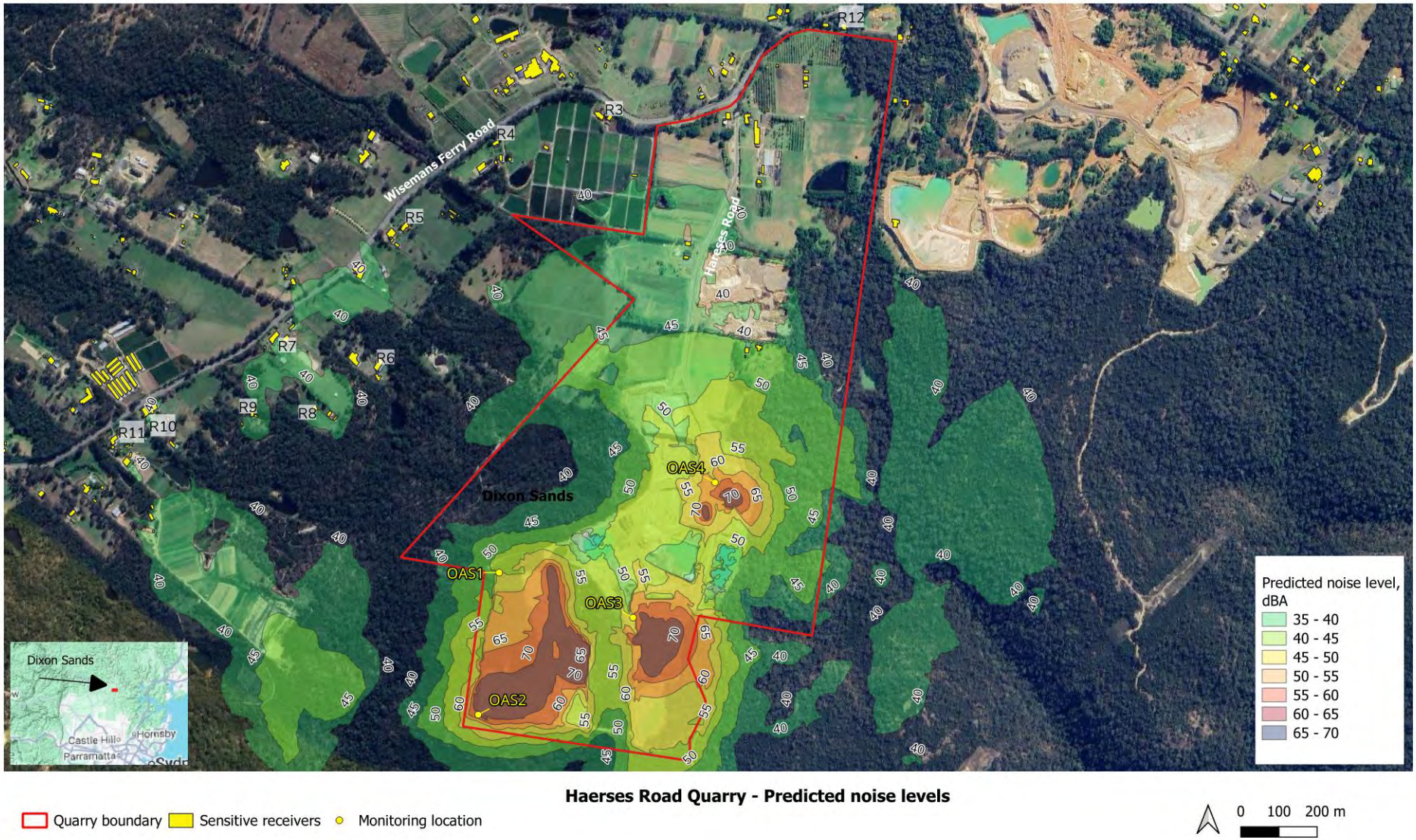


Figure 3 Extrapolated noise levels from Haerses Road quarry based on on-site measurements.

Appendix A. On-site measurements

Plant item	Height, m	Sound Power Level, (third octave, Hz), dBA																														
		Sum	12.5	16	20	25	31.5	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1k	1.25k	1.6k	2k	2.5k	3.15k	4k	5k	6.3k	8k
Exc with hammer	1.5	120	52	58	58	65	74	83	88	92	95	101	99	104	96	99	102	100	105	110	107	109	112	110	111	109	108	104	100	94	88
Excavator loading moxy	2	109	38	43	47	54	58	64	81	78	80	87	86	88	85	86	90	97	100	99	98	99	99	100	99	98	97	94	90	87	82
Excavator with grinder	1.5	109	38	43	47	54	58	64	81	78	80	87	86	88	85	86	90	97	100	99	98	99	99	100	99	98	97	94	90	87	82
Excavator ripping	1.5	115	40	47	53	59	70	80	86	91	95	99	101	103	98	97	102	102	102	105	105	105	104	104	106	104	101	99	95	92	89
Rock saw stage 1	1	118	29	38	44	50	61	74	78	84	87	92	88	91	101	103	105	109	111	111	108	104	105	105	104	101	98	95	92	87	82
Screen loaded by excavator Processing	2	118	46	63	56	59	71	82	86	90	95	97	98	100	100	105	111	108	108	106	103	105	108	109	107	103	100	97	94	90	83
Rock saw 3 blade	1	119	95	105	101	102	105	110	105	111	116	110	120	114	105	104	105	107	108	108	111	110	110	106	105	104	102	97	92	90	95
Rock saw quad	1	116	24	30	37	46	55	65	72	76	83	87	87	91	92	92	93	99	101	96	97	102	105	110	111	106	100	96	93	91	57
Screen loaded by excavator Stage 2	2	116	43	47	51	61	76	80	87	87	92	105	96	98	101	101	107	109	104	106	104	104	104	105	101	102	102	98	93	90	86
Crusher and excavator	2	115	40	46	53	61	74	80	87	91	96	110	94	98	101	99	98	105	103	103	103	103	102	101	102	100	99	97	93	88	84
Washplant	1.5	105	27	37	53	48	56	62	67	74	90	92	84	89	82	92	90	90	92	93	95	93	94	95	94	93	92	93	88	86	82

Dixon Sand (No.1) Pty Ltd

Haerses Road Quarry, Maroota

Noise monitoring report
June 2026

Doc no. 19020-NV-RP-25-2



Dixon Sand (No.1) Pty Ltd
Haerses Road Quarry, Maroota

Title	Noise Monitoring Report
Document no.	19020-NV-RP-25-1
Revision	2
Date	11 September 2026
Author	George Kinezos
Reviewer	John Hutchison

Hutchison Weller Pty Ltd
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Revision history

0	03/08/2026	Draft

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Definition of terms

Background noise	The underlying level of noise present in the ambient noise, excluding the noise source under investigation.
Decibel (dB)	A measure of sound equivalent to 20 times the logarithm (to base 10) of the ratio of a given sound pressure to a reference pressure, and 10 times the logarithm (to base 10) of the ratio of a given sound power to a reference power.
dB(A)	Unit used to measure 'A-weighted' sound pressure levels. A-weighting is an adjustment made to sound-level measurement to approximate the response of the human ear.
dB(C)	Unit used to measure 'C-weighted' sound pressure levels, an adjustment made to sound level to approximate low frequency noise between 10 Hz and 200 Hz.
EPA	Environment Protection Authority
Extraneous noise	Noise resulting from activities that are not typical of the area such as construction, and traffic generated by holiday periods or special events such as concerts or sporting events. Normal daily traffic is not considered to be extraneous.
Noise level statistics	L_{A90} – The A-weighted sound pressure level exceeded 90% of the monitoring period. This is considered to represent the background noise. L_{Aeq} – The equivalent continuous A-weighted noise level—the level of noise equivalent to the energy average of noise levels occurring over a measurement period. L_{A1} – The A-weighted sound pressure level exceeded 1% of the monitoring period. L_{Amax} – The maximum A-weighted noise level associated with the measurement period. 
RBL	The Rating Background Level for each period is the medium value of the ABL values for the period over all the days measured. There is therefore an RBL value for each period (day, evening and night)
Receiver	The land use at which noise is heard
SLM	Sound Level Meter
Sound Power Level (SWL)	The A-weighted sound power level is a logarithmic ratio of the acoustic power output of a source relative to 10^{-12} watts and expressed in decibels. Sound power level is calculated from measured sound pressure levels and represents the level of total sound power radiated by a sound source.
Sound Pressure Level (SPL)	This is the level of noise, usually expressed in dB(A), as measured by a standard sound level meter (SLM) with a pressure microphone. The sound pressure level in dB(A) gives a close indication of the subjective loudness of noise. A technical definition for the sound pressure level, in decibels, is 20 times the logarithm (base 10) of the ratio of any two quantities related to a given sound pressure to a reference pressure (typically 20 µPa equivalent to 0 dB).
Tonal noise	Noise with perceptible and definite pitch or tone

1. Introduction

Dixon Sand (No.1) Pty Ltd operates the Haerses Road Quarry in Maroota, NSW (the Quarry). The Quarry is located off Wisemans Ferry Road, as illustrated in Figure 1.

Operations at the Quarry include extraction of sand and sandstone blocks, processing by screening and grading and loading of trucks for shipment.

The Quarry operates under Development Consent DA 165-7-2005 and Environment Protection Licence (EPL) 12513, which set noise limits for its operation. Extraction in the areas described in Modification 1 of the development consent and utilisation of the processing plant area commenced in December 2019 and require attended noise monitoring on a six-monthly basis to ensure compliance with the conditions.

Hutchison Weller was commissioned by Dixon Sand to undertake the six-monthly noise monitoring in accordance with the conditions of consent, EPL and requirements of the Noise Management Plan.

This document outlines the consent conditions, monitoring methodology and results of the monitoring undertaken on 11 June 2026.

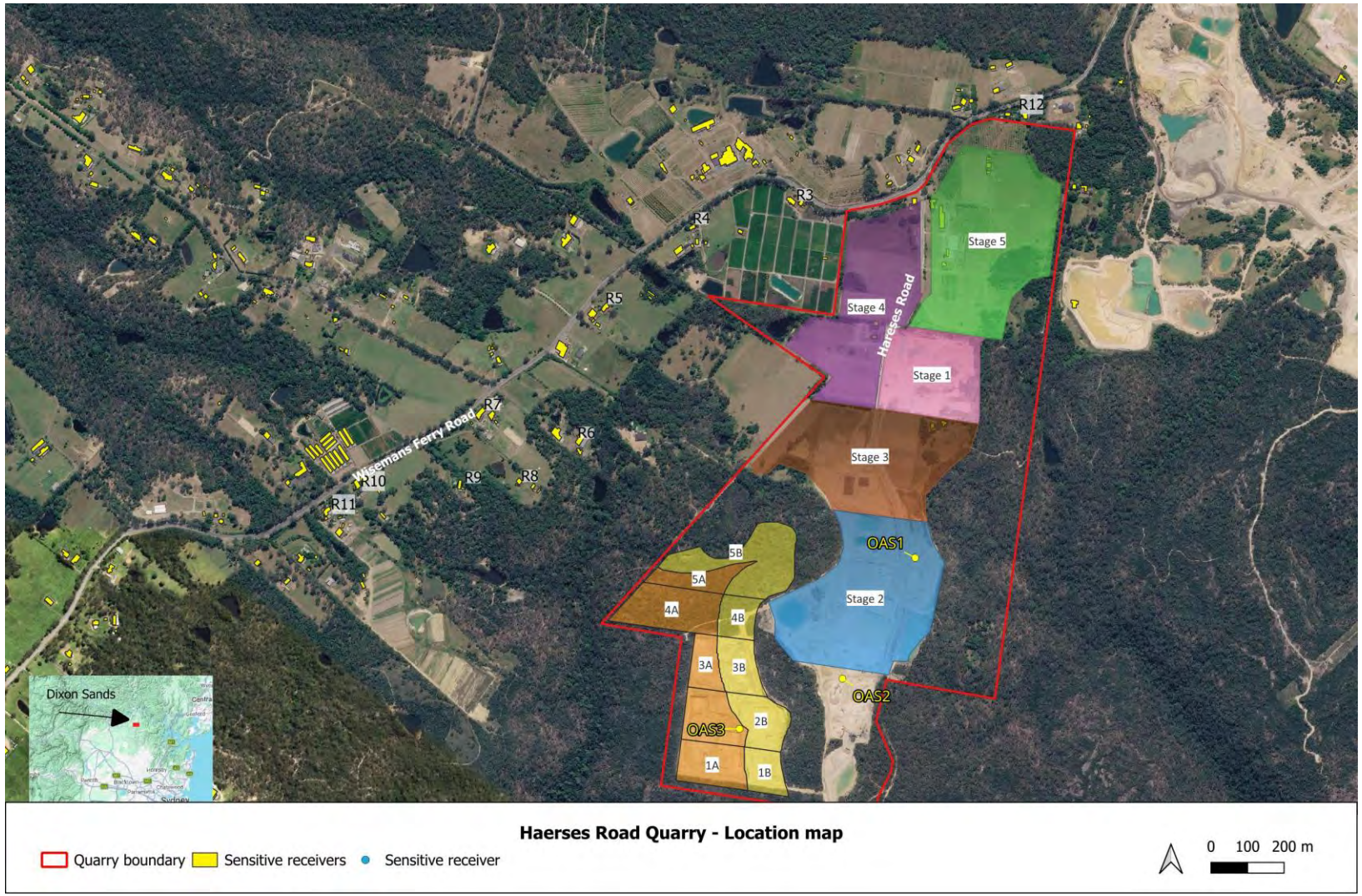


Figure 1 Location of the Quarry

2. Noise compliance criteria

Conditions 1 and 2 of Schedule 3 of development consent DA 165-7-2005 outline the Quarry operating hours and condition 3 defines the noise criteria for compliance.

1. The Applicant must comply with the operating hours set out in Table 1.

Table 1 Operating hours

Activity	Permissible hours
Quarrying operations (excluding truck arrival, loading and dispatch)	7.00 am to 6.00 pm Monday to Saturday At no time on Sundays or public holidays
Truck arrival, loading and dispatch	6.00 am to 6.00 pm Monday to Saturday At no time on Sundays or public holidays
Acoustic bund construction and road and intersection works on Haerses Road and Wisemans Ferry Road	8.00 am to 5.00 pm Monday to Friday. At no time on Saturdays, Sundays, or public holidays
Maintenance	At any time, provided that these activities are not audible at any privately-owned residence outside of permissible hours for quarrying operations.

2. The following activities may be carried out outside the hours specified in condition 1 above:

(a) delivery or dispatch of materials as requested by the NSW Police Force or other public authorities; and
(b) emergency work to avoid the loss of lives, property or to prevent environmental harm.

In such circumstances, the Applicant must notify the Secretary and affected residents prior to undertaking the activities, or as soon as is practical thereafter.

3. The Applicant must ensure that the noise generated by the development (excluding acoustic bund construction) does not exceed the criteria in Table 2 at any residence on privately-owned land.

Table 2 Noise criteria dB(A)

Receiver	Day	Shoulder (6.00 am to 7.00 am)	
	LAeq (15 minute)	LAeq (15 minute)	LAmax
R05, R06	41	35	52
R03	40	37	
R13, R14	40	36	
All other receivers	40	35	

Noise generated by the development must be measured in accordance with the relevant requirements and exemptions (including certain meteorological conditions) of the NSW Noise Policy for Industry.

However, the noise criteria in Table 2 do not apply if the Applicant has an agreement with the relevant landowner to exceed the noise criteria, and the Applicant has advised the Department in writing of the terms of this agreement.

Agreements are currently in place between Dixon Sand and adjacent private landowners including:

- Residential receivers identified as R2 and R12 in the planning consent and
- All identified receivers to the east of Haerses Road quarry on Hitchcock Road

3. Monitoring methodology

Operator-attended noise monitoring was undertaken on 11 June 2026 by George Kinezos of Hutchison Weller, an independent acoustic specialist. Monitoring locations were selected in line with the Haerses Road Quarry Noise Management Plan (Jan 2024), which addresses specific stages of quarry development, as outlined in Section 2. Monitoring locations are illustrated in Figure 1 and specific addresses are summarised in Table 4.

Table 3 Noise monitoring locations for each stage and extraction cell (from Noise and Vibration Management Plan, 2024)

Location	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Mod 1, Extraction cells 1A to 5B
R1	-	-	-	-		-
R3	✓	✓	✓	✓	✓	-
R4	✓	✓	✓	✓	✓	-
R6	-	-	-	-	-	✓
R8	-	-	-	-	-	✓

Table 4 Monitoring locations

Receiver	Address	Description
R3	1643 Wisemans Ferry Road	Private residence adjacent to plant nursery
R6	1543 Wisemans Ferry Road	Private residence. Monitoring conducted on the southeastern side of the residence facing the quarry.
R8	1521 Wisemans Ferry Road	Private residence. Monitoring conducted at boundary between R7 and R8 since no access granted to R8.

Monitoring was conducted in general accordance with the Noise Policy for Industry and Section 6 of the Noise Management Plan. At-receiver monitoring locations were within 30 metres of residential dwellings, whilst onsite measurement locations were selected for safe access and to be representative of the operations, without extraneous noise from sources such as traffic and insects.

Instrumentation was a Bruel & Kjaer Class 1 sound level meter (SLM), serial no. 3008237, field-calibrated prior to and following monitoring. The SLM was within current calibration, next due September 2027.

Monitoring was undertaken with the SLM set on a tripod at 1.5 metres above ground and measuring A-weighted sound pressure levels under fast response. Each measurement period was 15 minutes and recorded the L_{Aeq}, L_{A90} and L_{Amax} statistics.

Meteorological data was recorded during each monitoring period adjacent to the Maroota public school, including wind speed, direction, temperature, relative humidity, and sigma-theta (to establish the Pascall-Guifford stability category). This data was used to establish whether meteorological conditions were suitable for monitoring.

Where extraneous noise such as road traffic or insects were the dominant noise sources, making it impractical to discern the contribution of the Quarry to ambient noise levels, noise levels measured at alternative locations closer to the Quarry were utilised, in line with procedures outlines in *Noise Policy for Industry*. This involved extrapolation from the near-distance location to the sensitive receiver location.

4. Monitoring results

4.1 Attended measurements

Results of noise monitoring for each location are presented in Table 5.

Quarry operations were inaudible at all monitoring locations prior to 7am, with traffic noise on Wisemans Ferry Road in all cases the dominant source of noise. No L_{Amax} noise levels were attributable to the quarry in the shoulder period.

During the day period, quarry noise was inaudible or just audible at monitoring locations. Again, ambient noise masked noise from the quarry.

Based on measured noise at each location, the Haerses Road quarry was compliant with the project noise objectives.

On-site measurements were taken to determine the noise level of various noise sources without the influence of traffic noise. Measurements were undertaken to establish representative sound pressure levels of the operation to allow extrapolation to receiver locations where background noise was too high to discern quarry noise contributions. This is discussed further in Section 4.3.

4.2 Modifying factors

No tonal, impulsive, or low frequency noise characteristics were observed at any residential monitoring location during the monitoring period. Therefore, application of modifying factors is not appropriate in this instance.

Table 5 Monitoring results

Monitoring period	Time	Location	Noise criterion	Measured 15-minute noise level			Estimated $L_{Aeq,\ 15\ min}$ quarry contribution	Observations	Meteorological conditions
				L_{Aeq}	L_{A90}	L_{Amax}			
At-receiver measurements									
Shoulder (6.00am to 7.00am)	6:45 AM	R3	37	35	32	65	<40	**Quarry Inaudible** Dominant noise: Road traffic noise on Wiseman Ferry Road (WFR) • Trucks 54-59 dBA • Light vehicles 46-49 dBA Other noise: birds Ambient noise level 35-36 dBA during lulls in road traffic noise.	Clear skies NNW to W 0 - 3km/h. Stable conditions, (A class), 9-13 C
	6:18 AM	R6	35	38	27	75	<41	**Quarry Inaudible** Dominant noise: Road traffic noise WFR • Trucks up to 75 dBA • Light vehicles 57-62 dBA Other noise: birds Ambient noise level 35-37 dBA during lulls in road traffic noise.	
	6.30 AM	R8	35	35	27	65	<40	**Quarry Inaudible** Dominant noise: Road traffic noise WFR 46 to 50 dBA Other noise: birds 63-67 Ambient noise level 34-36 dBA during lulls in road traffic noise.	

Onsite measurements									
Onsite	8:27 AM	OAS1	N/A	66	63	80	66	Audible site noise: Site 3B operations • Dozer moving material at 100m from measurement location • Moxy 100m from measurement location. Both of these sources were the dominate noise source during the measurement with levels fluctuating between 63 – 75 dBA	Clear skies NNW to W 0 - 3km/h. Stable conditions, (A class), 9-13 C
	8:40 AM	OAS2	N/A	68	65	85	68	Audible site noise: • Excavator moving material into screener at 90m from measurement location • Dozer moving material also into screener at approximatly 95m from the measurement location All of these sources were the dominate noise sources during the measurement period with levels fluctuating between 70 – 77 dBA	
	9:05 AM	OAS3	N/A	67	60	83	67	Audible site noise: • 2x Excavators hammering to the east of the measurement location both of these machines were situated approximately 80m from the measurement location • 1x Excavator hammering to the north west of the measurement location at a distance of approximately 110m • Dozers and other various light vehicles were also operating and moving around the measurement location intermittently	

At-receiver measurements									
Day (7.00am to 6.00pm)	9:20 AM	R3	40	67	37	88	<40 (See Section 4.3)	Quarry inaudible, dominate noise source was traffic, when traffic was not present - ambient noise dropped to 39 dBA Dominant noise: Road traffic WFR 64-69 dBA. Other noise: • Distant traffic 41 dBA • Ambient noise level 39 dBA during lulls in road traffic noise.	Clear skies NNW to W 0 - 3km/h. Stable conditions, (A class), 9-13 C
	9:45 AM	R6	41	60	42	91	<41 (See Section 4.3)	Quarry inaudible, the dominant noise road traffic WFR. Light vehicles up to 67 dBA. Heavy vehicles up to 90 dBA. Other noise: • Ambient noise level 39-44 dBA during lulls in road traffic noise. Access restricted. Measurements completed at the gate.	
	10:38 AM	R8	40	58	44	87	<40 (See Section 4.3)	Quarry inaudible, the dominant noise road traffic WFR. Light vehicles up to 63-68 dBA. Heavy vehicles up to 87 dBA. Other noise: • Ambient noise level 39-44 dBA during lulls in road traffic noise. Access restricted. Measurements completed at the gate.	

4.3 Extrapolated measurements

Based on attended measurements, a conclusive quarry-specific noise level could not be established at all locations due to the influence of ambient noise sources. Accordingly, measurements were undertaken at locations where quarry activities were clearly audible and representative of operational noise emissions.

During the monitoring period, the dominant noise sources observed at each attended measurement location were as follows:

OAS1

- Dozer moving material (approximately 100 m from the measurement location)
- Moxy haul truck operating (approximately 100 m from the measurement location)

These sources were the dominant contributors to the measured noise environment, with noise levels fluctuating between approximately 63 and 75 dB(A).

OAS2

- Excavator loading material into a screener (approximately 90 m from the measurement location)
- Dozer moving material adjacent to the screener (approximately 95 m from the measurement location)

These activities dominated the noise environment during the measurement period, with noise levels fluctuating between approximately 70 and 77 dB(A).

OAS3

- Two excavators hammering to the east of the measurement location (approximately 80 m away)
- One excavator hammering to the north-west of the measurement location (approximately 110 m away)
- Intermittent operation of dozers and light vehicles within the surrounding work area

Noise measurements undertaken in the vicinity of these activities were used to establish a representative noise model of quarry operations.



Figure 2 Work areas and noise sources included in the model

Predictions of noise at nearby receivers were based on measured onsite noise levels and propagation methods described in ISO 9613-2:1996 *Acoustics — Attenuation of sound during propagation outdoors — Part 2: General method of calculation,* which accounts for geometric spreading, air and ground absorption as well as barrier effects, assuming worst case meteorology of a gentle breeze from source to receiver and stable conditions. The site topography was based on a recent survey undertaken by Dixon Sands.

Based on the above, modelled noise levels for each monitoring location are presented in Table 6. Results are shown for equipment operating in each quarry area and processing plant. Modelled noise levels are within 2 dB of measured values indicating the model is sufficiently accurate to represent operating conditions.

Table 6 Extrapolated monitoring results to intermediate measurement locations

Location	Modelled noise level, dBA	Measured noise level, LAeq, 15 minute, dBA
OAS1	65	66
OAS2	67	68
OAS3	68	67

Based on measurements described in Table 5, extrapolated noise results for each receiver are presented in Table 7. Results are shown for all equipment operating. Extrapolated results demonstrate the Quarry is compliant with the criteria for shoulder and daytime operations (within 2 dB) when all observed equipment is operating. Extrapolated contours are shown in Figure 3.

Table 7 Extrapolated monitoring results

Receiver	Noise criteria	Extrapolated noise level, LAeq, 15 minute
R3	40	38
R4	40	39
R6	41	40
R8	40	40
All other receivers	40	See Figure 3

4.4 Compliance summary

Results of attended monitoring and extrapolated noise levels demonstrate observed operations during shoulder and day periods were compliant with the noise criteria at each receiver under the meteorological conditions at the time.

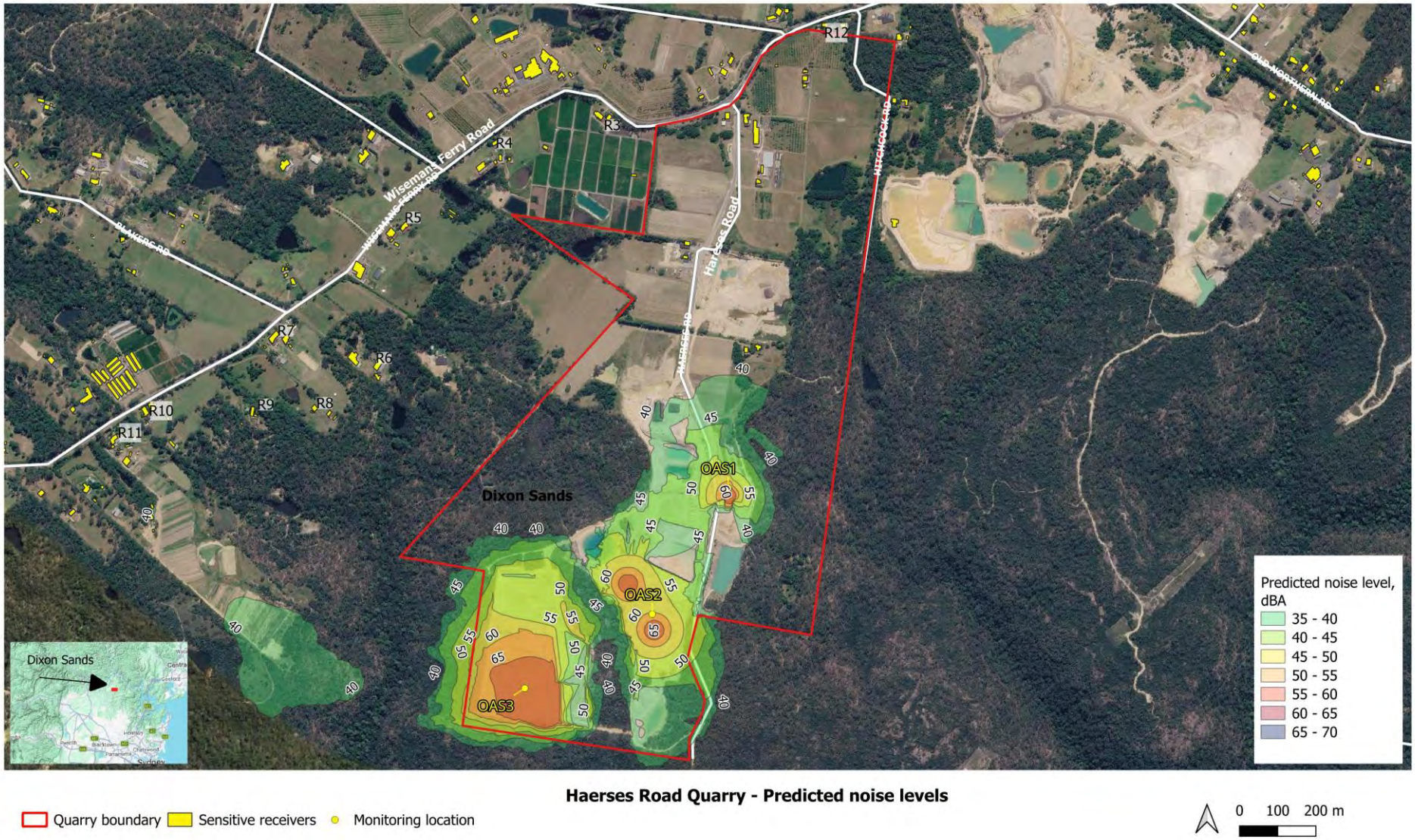


Figure 3 Extrapolated noise levels from Haerses Road quarry based on on-site measurements.

Appendix E – Monthly Site Inspection

DIXON QUARRY GROUP

HAERSES ROAD QUARRY
DIXON SAND, MAROOTA
MONTHLY SITE CONDITION CHECKLIST

This checklist is to be completed monthly by the Environmental Officer. Completed checklists are to be retained and included in the Annual Review.

Date of inspection:	27/2/2026
Inspection by:	Melissa Mass
Measured monthly rainfall (mm)	30/1/2026 – 27/2/2026 Rainfall = 123.8 mm

	Yes (✓) No (X) NA	Comments	Actions	Actions Complete (Date/Sign)
SEDIMENT CONTROLS				
Site checked for potential erosion issues or transport of sediment from batters, vehicle access points, excavations, haul roads, vegetation clearing etc.	✓	No erosion or transport of sediment noted.		
Effectiveness and capacity of Erosion and Sediment controls checked (drains, basins, filters etc.)	✓	All drains, basins, etc clear.		
Stockpiles located and maintained correctly	✓			
Tree clearance restricted to required area	N/A			
WATER QUALITY AND QUANTITY				
Monthly water quality samples collected from monitoring bores. Samples tested for pH and electrical conductivity	N/A			
Monthly surface water monitoring of the in-pit sump	N/A			
6 monthly monitoring of groundwater quality at 13 bores	✓	undertaken by UGT		
Monthly depth measurement of all groundwater bores and comparison with rainfall	✓	undertaken on 27/02/2026		
Monthly inspection of drainage & sediment controls including water storages, pumps, pipes and dams' walls	✓	undertaken on 27/02/2026		
Any Fuel or oil spills reported and maintained	✓			
Fuels/chemicals stored in bunded areas	✓	EPA approved bunding.		
AIR QUALITY				
Monitoring station (TEOM) and continuous automatic meteorological station are maintained and operating in the vicinity of the Maroota Public School	✓	TEOM and weather station managed by CBASED.		
On site dust suppression	✓	use of water cart when required.		

Loads covered entering and leaving site	✓	In compliance with TMP.		
Drop height of material minimised during truck loading and unloading	✓			
Active extraction areas minimised within the project area through progressive clearing and rehabilitation	✓			
Cessation or restriction of dust generating activities during period of high winds	✓			
NOISE				
Compliance with approved hours of operation	✓	In compliance with NMP.		
No complaints received from surrounding residences	✓			
Annual attended and unattended monitoring	✓			
Either one of a dozer or front end loader (not both) operating in Cell 4 and Cell 5 during early extraction, clearing or construction of bund walls, to minimise noise	N/A			
The use of noisy equipment scheduled at the least sensitive time of day	✓			
Plant switched off when not in use	✓	In compliance with NMP		
In the wet processing plant area, stockpiles are located along to western boundary of the area to shield loading and unloading activities	✓			
Additional noise monitoring at the potentially most affected locations near the south-western end of the site, such as Location R6 and R8, when extraction operations are being conducted in the additional extraction area	✓	undertaken by Hutchison and Weller.		
FLORA & FAUNA/ REHABILITATION				
Sightings of threatened species reported	✓			
No disturbance of buffer/conservation areas	✓			
All buffer/conservation area fencing/marking intact	✓			
Rehabilitation undertaken to schedule	✓	monthly visit by Bush-It.		
Success of rehabilitation of buffers, conservation areas & rehabilitation areas	✓			
Flora and fauna monitoring program undertaken to schedule	✓			
ARCHAEOLOGY				
Stop work if sites located – OEH notified	✓	None this period.		

Feb.

WASTE AND SITE CONDITION				
No rubbish visible or buried on site	✓			
Recyclables removed by licensed Contractors	✓	By council contractors		
Putrescible waste covered and regularly removed	✓	By council contractors		
ROADS AND TRANSPORT				
Monthly inspection of haul roads, site access road and Haerses Road/site access road intersection	✓			
Weekly inspection of Haerses Road/site access road intersection and sand/clay removed as necessary	✓			
Continuous recording of the amount of quarry products transported from the site and total truck movements	✓	Refer to Hunny to check.		
Truck movements have not exceeded 56 per day, or 20 between 6:00 am and 7:00 am	✓	Refer to Hunny to check		
Weighbridge/log book records retained and recorded	✓	Check truck records.		
At the Channelised Right Hand turning lane located at the intersection of Wisemans Ferry Road and Haerses Road, for each month, undertake 1-hour duration monitoring during each of the peak periods below: • 6:00 – 7:00 am, • 8:00 – 9:00 am, and • 3:00 – 4:00 pm Identify (when applicable) when haulage truck queuing in the right-hand turn lane into Haerses Road is exceeding the design capacity:	✓	6:00 – 7:00 am: NIL 8:00 – 9:00 am: NIL 3:00 – 4:00 pm: NIL		4/2/26 4/2/26 4/2/26
REPORTING				
Complaints register maintained	✓	updated and published monthly		
Environmental incidents reported to EPA and DPIE	✓	None this period.		
Monitoring results and statements of compliance with Development Consent and EPL conditions provided in the Annual Review and EPL Annual Return	✓			
Staff and Contractors undergo relevant environmental inductions. Sighting of training/induction records	✓			
PIRMP / SPILL KIT				
Spill kits inspected and used items replaced	✓			
A copy of PIRMP flowchart available in each Spill Kit	✓			

Signed: M. M ..... (Environmental Officer or Delegate)

Appendix F – Waste and ENM/VENM Registers

Haerses Road
Waste Tracking Register FY 2025-2026

Date	Waste Type	Amount	Measurement	Contractor	Disposal / Recycle	Receipt No
01/07/24 - 30/06/25	Genral Solid Waste - putrescible	12.48	cubic metre	Council Waste Contractor	Disposal	Council Rate
19/01/2025	Non-Putrescible skip	1	cubic metre	Asquith Mini Skips	Disposal	10001
24/07/2025	Non-Putrescible skip	1	cubic metre	Asquith Mini Skips	Disposal	9988
25/07/2025	Non-Putrescible skip	1	cubic metre	Asquith Mini Skips	Disposal	9990
14/08/2025	Non-Putrescible skip	1	cubic metre	Asquith Mini Skips	Disposal	9999
21/08/2025	Non-Putrescible skip	1	cubic metre	Asquith Mini Skips	Disposal	10002
1/09/2025	Non-Putrescible skip	1	cubic metre	Asquith Mini Skips	Disposal	10012
16/09/2025	Non-Putrescible skip	1	cubic metre	Asquith Mini Skips	Disposal	10022
29/09/2025	Non-Putrescible skip	1	cubic metre	Asquith Mini Skips	Disposal	10029
17/10/2025	Non-Putrescible skip	1	cubic metre	Asquith Mini Skips	Disposal	10035
30/10/2025	Non-Putrescible skip	1	cubic metre	Asquith Mini Skips	Disposal	10040
17/11/2025	Non-Putrescible skip	1	cubic metre	Asquith Mini Skips	Disposal	10049
19/11/2025	Non-Putrescible skip	2	cubic metre	Asquith Mini Skips	Disposal	10050
3/12/2025	Non-Putrescible skip	1	cubic metre	Asquith Mini Skips	Disposal	10058
8/12/2025	Non-Putrescible skip	1	cubic metre	Asquith Mini Skips	Disposal	10059
10/12/2025	Non-Putrescible skip	1	cubic metre	Asquith Mini Skips	Disposal	10063
11/12/2025	Non-Putrescible skip	1	cubic metre	Asquith Mini Skips	Disposal	10064
27/01/2026	Non-Putrescible skip	1	cubic metre	Asquith Mini Skips	Disposal	10075
28/01/2026	Non-Putrescible skip	1	cubic metre	Asquith Mini Skips	Disposal	10079
28/01/2026	Non-Putrescible skip	1	cubic metre	Asquith Mini Skips	Disposal	10077
11/02/2026	Non-Putrescible skip	1	cubic metre	Asquith Mini Skips	Disposal	10086
23/02/2026	Non-Putrescible skip	1	cubic metre	Asquith Mini Skips	Disposal	10090
6/03/2026	Non-Putrescible skip	1	cubic metre	Asquith Mini Skips	Disposal	10094
1/05/2026	Non-Putrescible skip	1	cubic metre	Asquith Mini Skips	Disposal	10112
11/05/2026	Non-Putrescible skip	1	cubic metre	Asquith Mini Skips	Disposal	10113
9/06/2026	Non-Putrescible skip	1	cubic metre	Asquith Mini Skips	Disposal	10127
31/03/2026	Non-Putrescible skip	2	cubic metre	Asquith Mini Skips	Disposal	10102
16/06/2026	Non-Putrescible skip	1	cubic metre	Asquith Mini Skips	Disposal	10130
01/07/24 - 30/06/25	Batteries	<0.1	cubic metre	Officeworks/Post Office	Recycle	N/A
01/07/24 - 30/06/25	General Solid Waste - recyclable	6.24	cubic metre	Council Waste Contractor	Recycle	Council Rate
01/07/24 - 30/06/25	Sewage -	As per manufacturer's specification				N/A
01/07/24 - 30/06/25	Printer Ink Catridge	0.1	cubic metre	Post Office or Officeworks	Disposal	N/A
01/07/24 - 30/06/25	Coffee Pods	<0.1	cubic metre	Return to manufacturer for recycling and composting	Recycle	N/A

Total			
	Non-Putrescible skip	29	m3
	Council Putrescible	12.48	m3
	Council Recycle	6.24	m3
	Printer Ink Catridge	0.1	m3
	Coffee Pods	<0.1	m3
	Sewage	As per manufacturer's specification	
	Batteries	<0.1	m3

HR QUARRY - MATERIAL TRANSPORT REGISTER SUMMARY

Job Name	Tonnage
Chatswood Oval Batch 1	61.52
Penrith Batch 1	4,985.43
Penrith Batch 2	2,197.82
Penrith Batch 3	426.92
Zetland Batch 1	3,658.65
Zetland Batch 2	385.56
TOTAL IMPORTED VENM/ENM FY25-26	**11,715.90**

Month	Total Monthly Tonnage		
Jul-25	-		
Aug-25	-		
Sep-25	5,800.20		
Oct-25	-		
Nov-25	3,352.88		
Dec-25	1,750.34	**10,903.42**	**Total Calendar Year 2025**
Jan-26	-		
Feb-26	426.92		
Mar-26	385.56		
Apr-26	-		
May-26	-		
Jun-26	-	**812.48**	**Total Calendar Year to June 2026**
Yearly TOTAL	**11,715.90**		

Haerses Road Quarry - Material Transport Register

Material	Source of Material	Transport Company	Registration No.	Transport Date	Tip Time	Batch No	Testing Certificate	Quantity (t)	Application
Excavated Natural Material (ENM)	CHATSWOOD OVAL	Elite	ELI737	28/11/2025	8:40AM	1	R.008.Rev0	16.96	Lot B / DP 407341 (Stage 1)
Excavated Natural Material (ENM)	CHATSWOOD OVAL	Elite	ELI709	28/11/2025	10:25AM	1	R.008.Rev0	16.88	Lot B / DP 407341 (Stage 1)
Excavated Natural Material (ENM)	CHATSWOOD OVAL	Elite	ELI 724	8/12/2025	11.37AM	1	R.008.Rev0	16.12	Lot B / DP 407341 (Stage 1)
Excavated Natural Material (ENM)	CHATSWOOD OVAL	Elite	ELI 724	8/12/2025	3.02PM	1	R.008.Rev0	11.56	Lot B / DP 407341 (Stage 1)
Excavated Natural Material (ENM)	Penrith Sportsground	Elite	ELI746	4/09/2025	8:33:00 AM	1	R.008.Rev0	42	Lot B / DP 407341 (Stage 1)
Excavated Natural Material (ENM)	Penrith Sportsground	Elite	ELIT10	4/09/2025	8:35:00 AM	1	R.008.Rev0	44	Lot B / DP 407341 (Stage 1)
Excavated Natural Material (ENM)	Penrith Sportsground	Elite	ELI728	4/09/2025	8:37:00 AM	1	R.008.Rev0	44.3	Lot B / DP 407341 (Stage 1)
Excavated Natural Material (ENM)	Penrith Sportsground	Elite	ELI739	4/09/2025	10:50:00 AM	1	R.008.Rev0	37.18	Lot B / DP 407341 (Stage 1)
Excavated Natural Material (ENM)	Penrith Sportsground	Elite	ELIT10	4/09/2025	1:00:00 PM	1	R.008.Rev0	44	Lot B / DP 407341 (Stage 1)
Excavated Natural Material (ENM)	Penrith Sportsground	Elite	ELI728	4/09/2025	1:03:00 PM	1	R.008.Rev0	44.3	Lot B / DP 407341 (Stage 1)
Excavated Natural Material (ENM)	Penrith Sportsground	Elite	ELI746	4/09/2025	1:10:00 PM	1	R.008.Rev0	40.24	Lot B / DP 407341 (Stage 1)
Excavated Natural Material (ENM)	Penrith Sportsground	Elite	ELI726	4/09/2025	1:14:00 PM	1	R.008.Rev0	40.48	Lot B / DP 407341 (Stage 1)
Excavated Natural Material (ENM)	Penrith Sportsground	Elite	ELI732	22/09/2025	8:25:00 AM	1	R.008.Rev0	38	Lot B / DP 407341 (Stage 1)
Excavated Natural Material (ENM)	Penrith Sportsground	Elite	ELI728	22/09/2025	9:34:00 AM	1	R.008.Rev0	43.2	Lot B / DP 407341 (Stage 1)
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Excavated Natural Material (ENM)	Penrith Sportsground	Elite	ELI729	22/09/2025	2:59:00 PM	1	R.008.Rev0	37.08	Lot B / DP 407341 (Stage 1)
Excavated Natural Material (ENM)	Penrith Sportsground	Elite	002ESS	23/09/2025	6:00:00 AM	1	R.008.Rev0	30.8	Lot B / DP 407341 (Stage 1)
Excavated Natural Material (ENM)	Penrith Sportsground	Elite	ELI728	23/09/2025	6:01:00 AM	1	R.008.Rev0	40.5	Lot B / DP 407341 (Stage 1)
Excavated Natural Material (ENM)	Penrith Sportsground	Elite	ELI726	23/09/2025	6:02:00 AM	1	R.008.Rev0	41.5	Lot B / DP 407341 (Stage 1)
Excavated Natural Material (ENM)	Penrith Sportsground	Elite	ELI746	23/09/2025	6:11:00 AM	1	R.008.Rev0	41	Lot B / DP 407341 (Stage 1)

Appendix G – Bush Regeneration Report

Dixon Sand (No.1) – Haerses Road

(Haerses Road DA 165-7-2005)



Annual Report

July 2025 – June 2026

Bush Regeneration Works

Author: Tim Baker

Date finalised: v1.4 9/07/2026

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INTRODUCTION

This report summarises the assisted bush regeneration work undertaken by Bush-it Pty Ltd for Dixon Sand (No.1) Pty Ltd between July 2025 and June 2026 in accordance with Haerses Road Quarry DA 165-7-2005. A total of 270.5 hours ($18,924.18 excluding GST) were worked throughout the year with an average team size of three-four per visit.

Dixon Sand (No.1) Pty Ltd operate a mineral sand quarry at Haerses Road in Maroota, NSW. Under the Haerses Road DA 165-7-2005, Bush-it manages the vegetation of approximately 8.7 ha on Haerses Road.

The Haerses Road (HR) offset is a strip of remnant native vegetation that is surrounded by the Haerses Road Biodiversity Offset Area. It is example of intact bushland with an area of rehabilitated open forest at the southern end herein referred to as the (2009) translocation area. Areas designated as Haerses Road Biobank site are managed in accordance with the Biobanking agreement.

This agreement offers permanent protection for the native vegetation and any threatened species at Haerses Road. It also enables Dixon Sand to manage and enhance the biodiversity values of this land with the help of Bush-it Pty Ltd.

Additional areas under the Haerses Road are managed by Bush-it including a 30m wide vegetation buffer adjoining Wisemans Ferry Road, a parcel of degraded bushland in the north-west of the site, and a previously cleared area abutting a Marks dam in the west of the site.

In carrying out our work for Dixon Sand, Bush-it:

- Practices low impact weed management techniques such as manual removal in plant communities containing threatened species.
- Regularly identifies and maps the density and extent of weed infestations especially those covering an area of greater than 25 m^2.
- Undertakes appropriate, targeted weed control activities to ensure minimum disturbance to natives and minimum off-target damage.
- Conducts site specific induction training for staff working at the quarry, including field identification of all threatened species.
- Routinely assesses the effectiveness of the control programs and in response makes necessary modifications.
- We undertake monthly inspections, noting the presence of weeds in drainage lines, and along access tracks.
- And we follow industry standard protocols for bushland hygiene by ensuring all our tools, boots and equipment are clean before entering the work site.

.

Overview of management zones and work areas

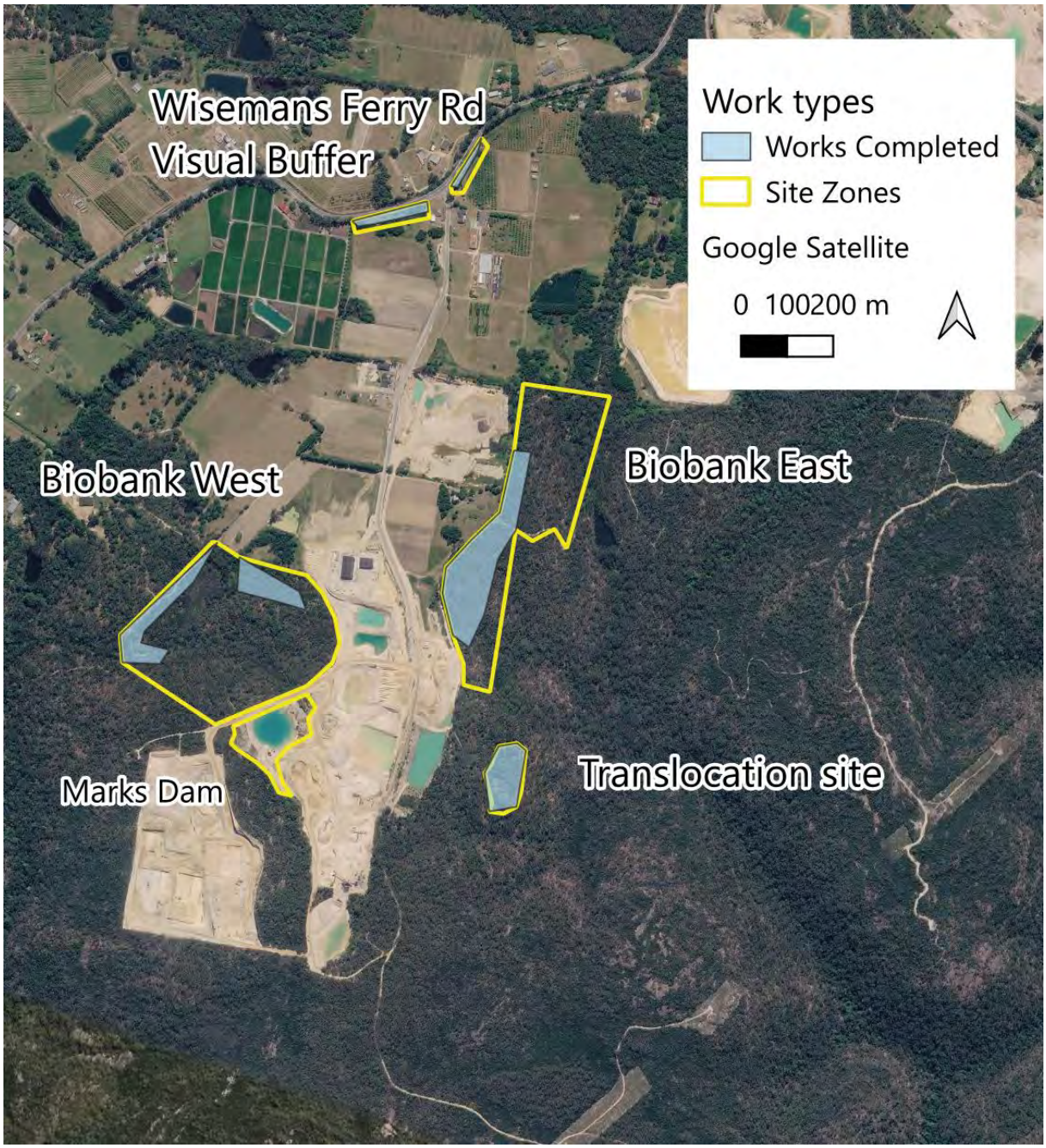


Figure 1 – Map depicting the areas worked and overall biodiversity offset boundary.

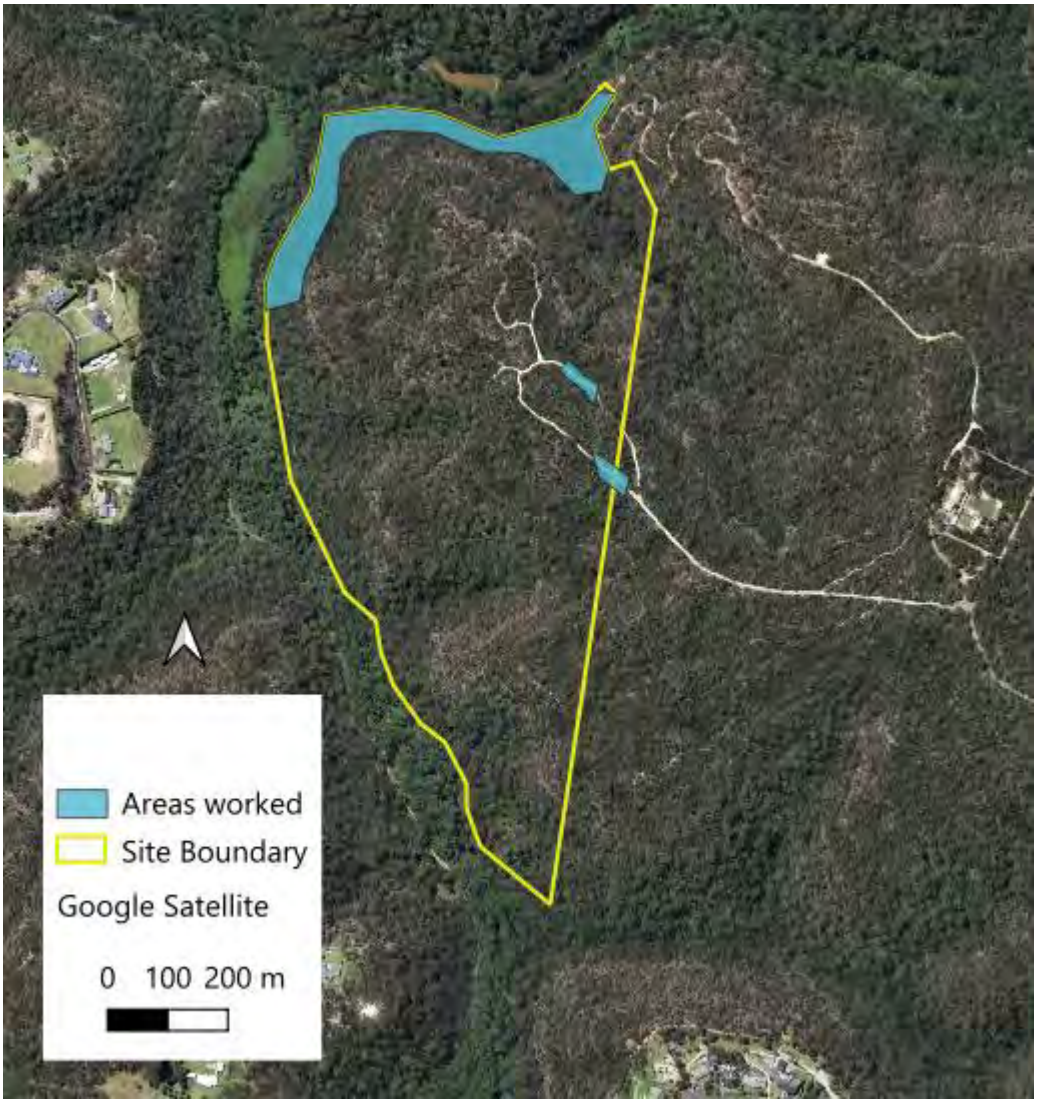


Figure 2 – Map depicting the areas worked at Porters Rd BCT offset site

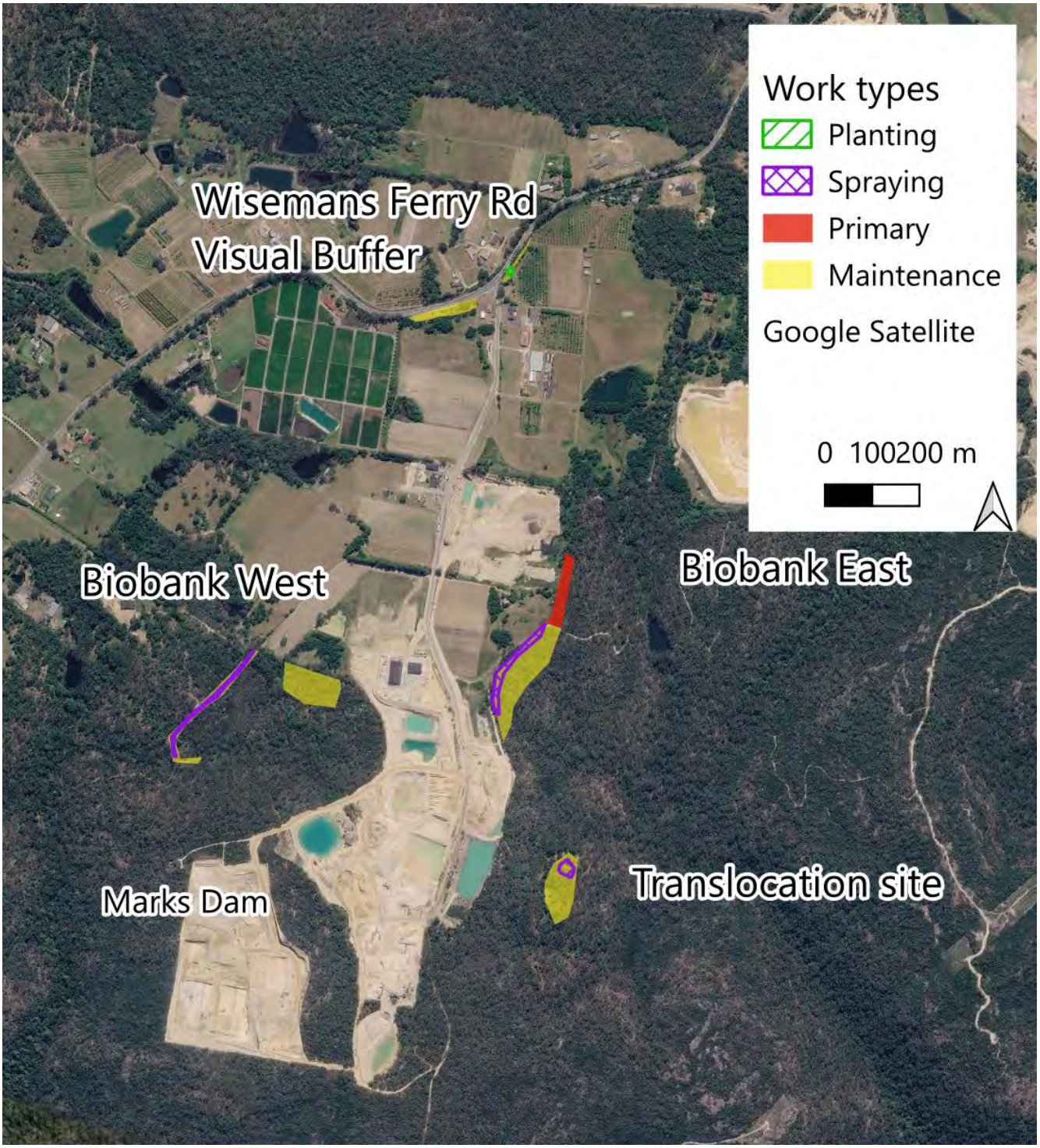


Figure 3 – Activities undertaken at Haerses Rd for 2025-2026.

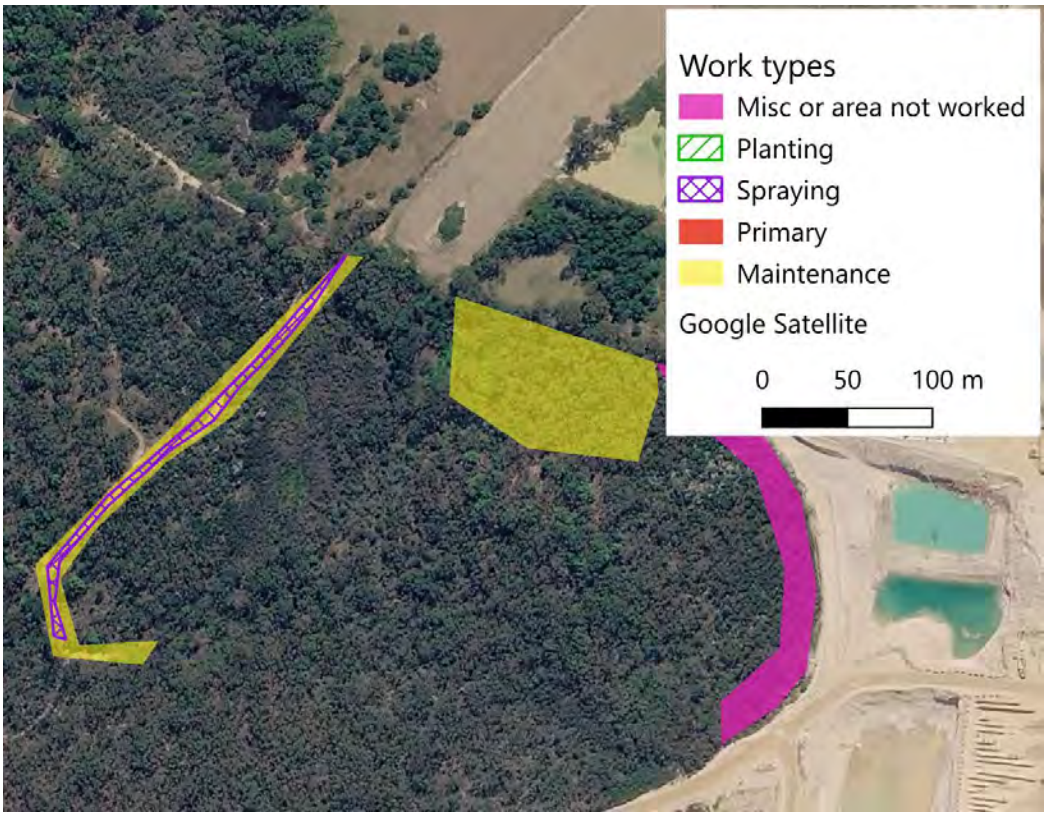


Figure 4 - Works undertaken at Biobank West site

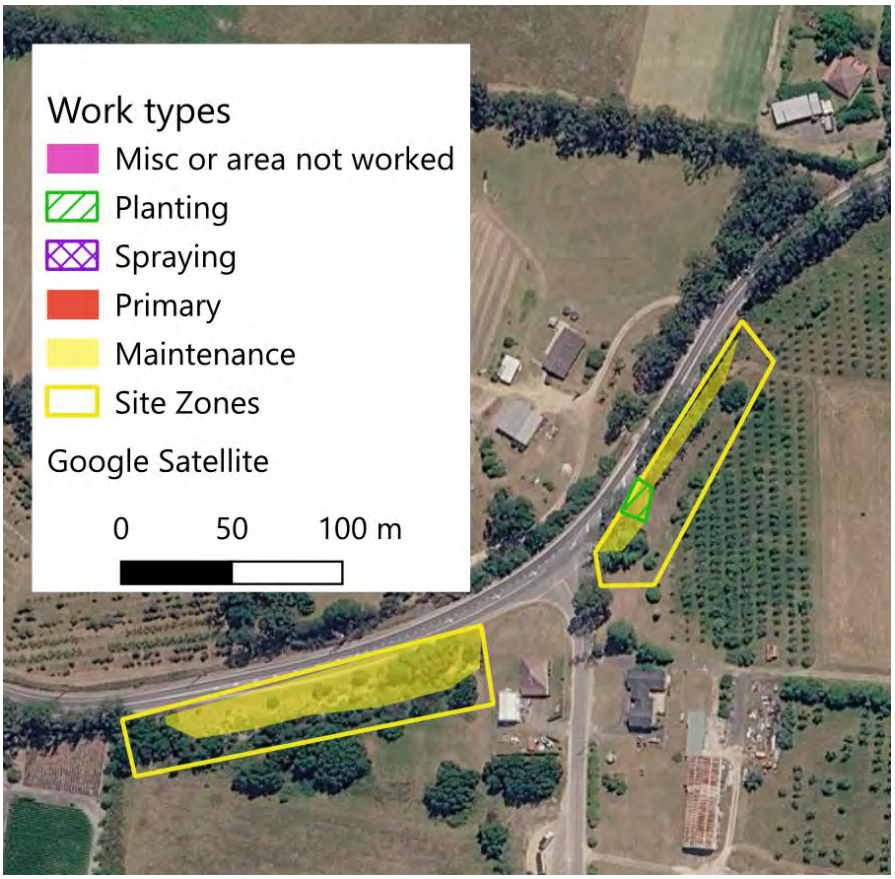


Figure 5 – Works done at WFR Visual buffer

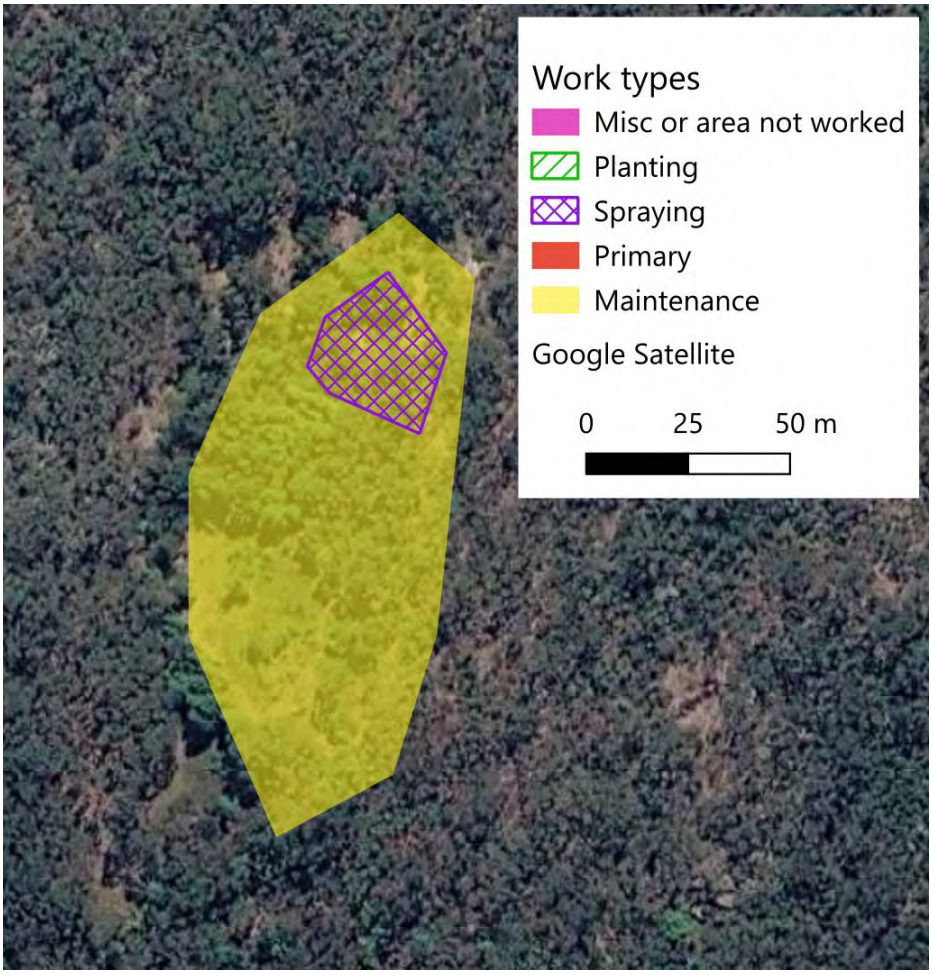


Figure 6 - Works carried out at translocation site throughout the year

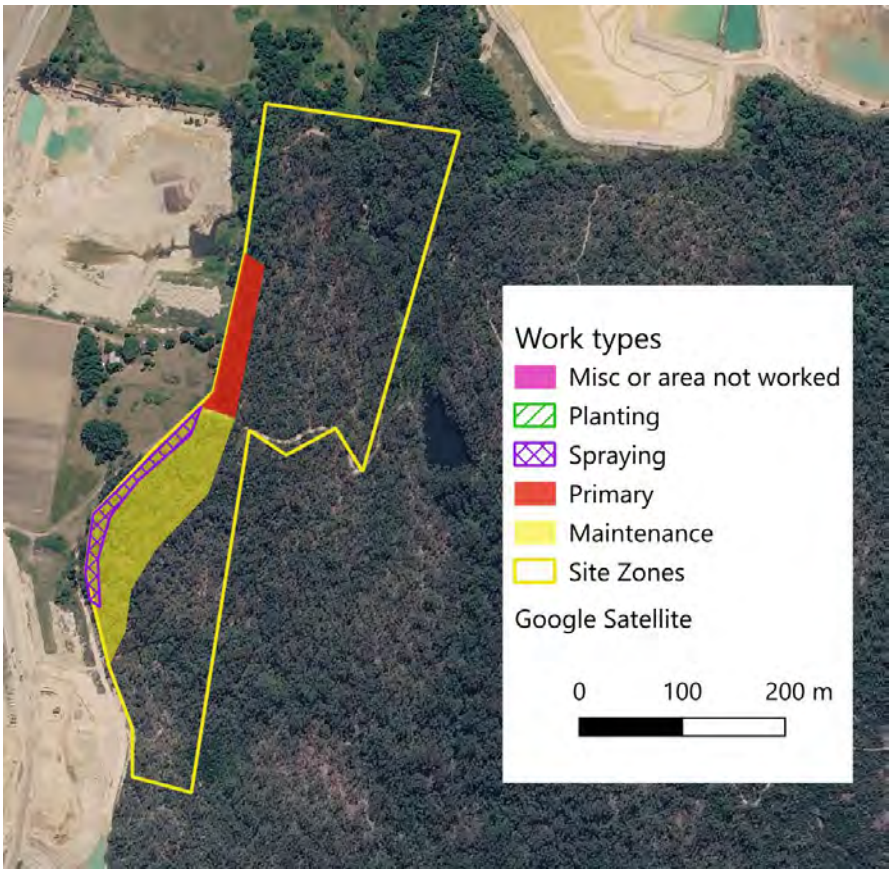


Figure 7 – Works undertaken at Biobank East site

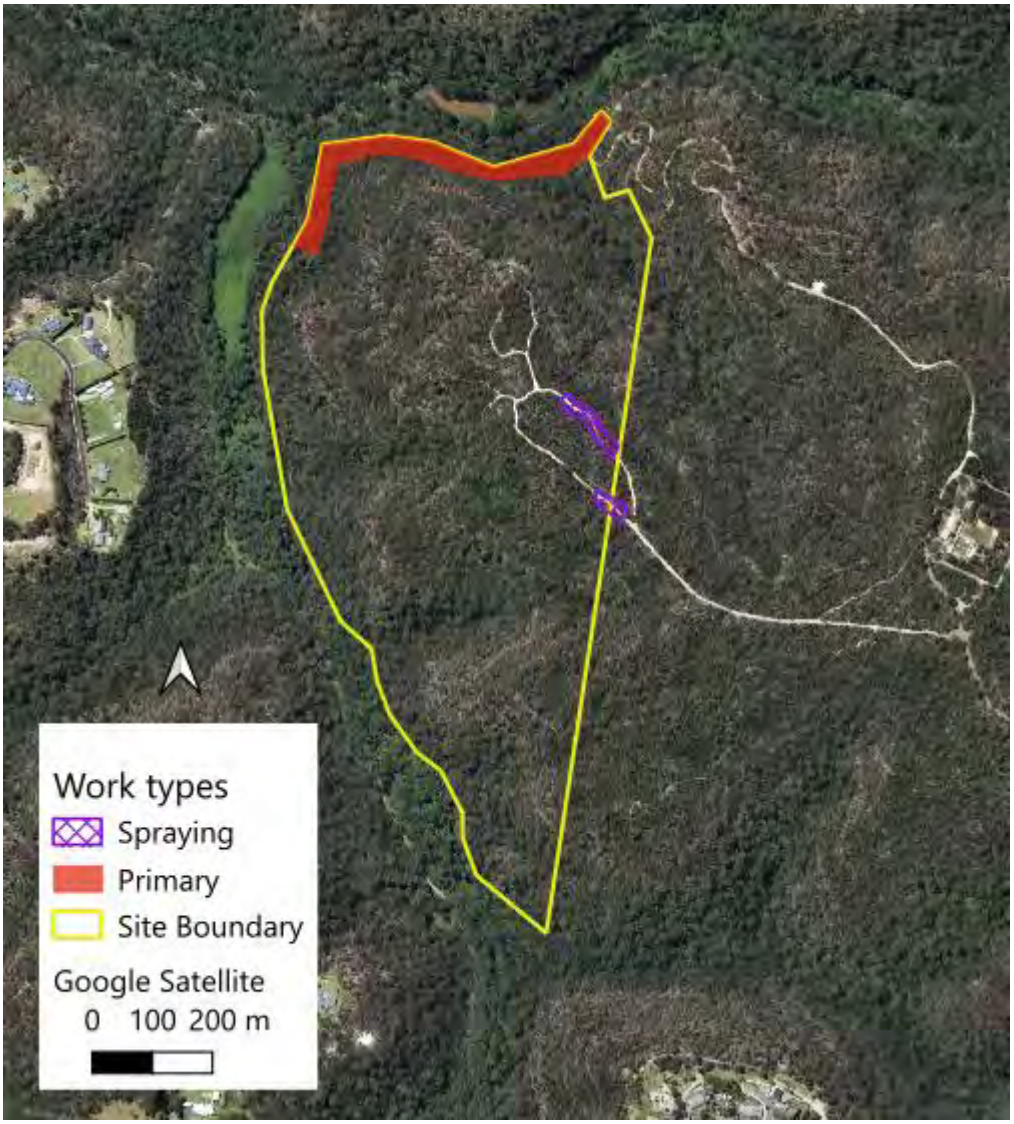


Figure 8 – Areas where different work types were undertaken at Porters Road site

Translocation Area - 2009

SCOPE

The open areas of the translocation site (see **Figure 1**) support a mix of exotic and native grasses interspersed with thickets of Pallaea fern. The forested areas are largely overgrown by *Kunzea ambigua*. Indeed, this species really dominates the translocation site. Overall, the condition in regards to weed density has steadily improved and this is reflected in the number of hours spent managing the area this year compared to last.

The maintenance work in this area is predominantly spent controlling infestations of Whiskey, African love grass and couch. A small amount of Bridal Creeper was removed also. Regeneration is assisted by managing the growth of *K. ambigua* and other canopy trees that inhibit light filtering its way to the ground. A cool ecological burn would help improve the condition of this area moving forward, as the large majority of the species richness now sits dormant in the seed bank and isn't visible.

RESOURCES – 29.5 HOURS

The majority of works were focused on controlling exotic grasses and annuals along the north-western boundary. Slashing of *Andropogon virginicus* and *Eragrostis curvula* in cleared areas. Very occasionally *Pallaea viridis* and *Asparagus asparagoides plus* other minor exotic species were also treated.

Ageratina adenophora infestation which was previously treated in the drainage line on the north-eastern boundary, follow-up treatment was undertaken in this area. Additionally, a scout for *A. adenophora* was undertaken further down the drainage line to ensure the species was not persisting into the core of the offset site and further down in the catchment. The odd specimen was also treated in the control site to the south.

Works in the translocation area continued to focus on the suppression of exotic grasses; *Andropogon virginicus, Eragrostis curvula* and *Cynodon dactylon.* Techniques included crowning/manual removal and brush cutting. Additionally, selective culling of *Kunzea ambigua* was undertaken where the specimens were growing above high-value Proteaceae species, such as *Banksia serrata, Lambertia formosa or Persoonia linearis.*

RECOMMENDATIONS

Monitor and manage competitive native shrubs and trees in the (2009) translocation area, especially *K. ambigua* where it overshadows or encroaches on ground dwelling plants. Bush-it will selectively cull or cut back growth to encourage the most diverse assemblage of plants possible.

Arrange a cool ecological burn to trigger species that are lying dormant in the seed bank.

The old steel fence remains in the lower section that was a predator free area. This could now be removed, but we need to improve the access to the area as it would require removing a significant quantity of posts and wire.



Figure 9 – The old fence could be removed from the lower section of the site



Figure 10 – African Lovegrass sprayed with 50:1 Glyphosate mix plus dye

SCOPE

Management and access of the buffer at the corner of Haerses Road and Wisemans Ferry Road (at the top of **Figure 3**) has improved since the roadwork undertaken by Roads and Maritime Services (RMS) in 2020. This is due to the western buffer strip being stripped back and capped with a sandstone crush in 2023. The plantings conducted by Bush-it in that same year have also establish well. The area is still prone to weed infestations due to exposure, high edge to core ratio and soil compaction; however, the weed density has been significantly reduced, and native competition has increased significantly since the sandstone capping conducted by Dixon Sand.

RESOURCES – 54 HOURS (75 HOURS YEAR PRIOR)

In the capped area (western portion), continued monitoring of *Cynodon dactlyon* was undertaken after the extensive spraying when the capping was freshly laid. Annuals and exotic grasses were regularly slashed along the road edge and manually removed around plantings.

In uncapped area (eastern portion), regular scans were conducted through the visual buffer targeting WONS, including the treatment and removal of significant infestations of *Asparagus aethiopicus, Asparagus asparagoides, Rumex sagittatus* and *Rubus fruticosus*.

30 plants were supplemented into the bare area on the eastern side, mostly hardy Acacia species to see whether they would take as overall the success rate in that particular spot has been very low as it is very exposed to wind and the soil moisture is very low.

RECOMENDATIONS

Regular scans of buffer zones for high priority WONS species, in particular regerminating or new infestations of *Asparagus aethiopicus, Asparagus asparagoides, Rumex sagittatus* and *Rubus fruticosus.* Ongoing maintenance of annuals and perennial grasses, including biannual targeted sprays and deseeding when required.

Regular monitoring of most recent plantings; adding mulch if required as the conditions get hotter and drier. Undertake primary works along the southern edge of western section targeting Green Cestrum (*Cestrum parqui*), Moth Vine (*Arujia sericifera*) and Turkey Rhubarb (*Rumex sagittatus)*. Prepare for further planting in April-May 2027.



Figure 11 – Planting in compacted areas



Figure 12 – Planting to enhance visual buffer screening

SCOPE

Haerses Road (HR) Biobank Sites, both East and West (Refer to **Figure 1**) were 'passively' managed under a BCT agreement according to HR DA 165-7-2005. However, this changed and has now become an 'active' management area.

The vegetation communities represented at HR offset include Sydney Sandstone Ridgetop Woodland, Maroota Sands Swamp Forest and Sydney Sandstone Gully Forest.

The dominant canopy species along the top of the site include *Corymbia gummifera* and *Eucalyptus racemosa*. While on the lower portions of the site, A*ngophora costata* and *Eucalyptus piperita* overshadow an understorey of *Syncarpia glomulifera* and *Ceratopetalum gummiferum*.

The HR Biobank East Site is bordered along its western edge by an exotic grassland containing several different species of invasive perennial grass and numerous exotic annuals. There are some high-priority weeds in along the border including Morning Glory (*ipomea indica*) and *Tecoma capensis.*

The drainage line bisecting the site is also a vector for water and wind dispersed perennial brush weeds like Crofton and Lantana.

An area first worked 2023, the relatively new addition under Haerses Rd is an area that surrounds the old dam on the western side of Haerses road (Refer to Figure 1), and is connected to the HR Biobank East Site. An established stand of Lantana camara was once established in this area. Beyond this weed incursion is core bushland that remains in excellent condition. A site inspection was undertaken in the early June and all that remains is Crofton Weed at present.

RESOURCES – 81 HOURS

Bush-it has significantly improved the condition of the area in the Biobank West site which was previously infested with Lantana camara. Only *Ageratina adenophora* remains present as the area is very boggy and fortunately native ferns are prolific. Follow-up works have been successful in eliminating regeneration of Lantana and other weed incursions. *Ageratina adenophora* is another dominant weed species in the area, efforts to reduce the cover of this species was undertaken using both manual remove and cut and paint.

Maintenance was also undertaken on the fire trail abutting the old dam area. *Andropogon virginicus* was slashed along the fire trail to prevent the species from proliferating into the pristine bushland either side of the trail, sprayed and manually removed. A site inspection was undertaken in the area highlighted in purple in Figure 3,

and there are small patches of Lantana, Crofton Weed and Whiskey Grass that are earmarked for control in July-August 2026.

Commenced primary works in the Eastern site, targeting mostly Lantana leaving the bulk of the material in-situ to break down. Used a combination of technique from the mulching brush cutter attachment to make tunnels into dense thickets, cut and paint and drilling and poisoning also. Also controlled *Senna pendula* and *Yukka* sp. as shown in Figure 12. The southern section was also scanned and we treated *Pellaea vridis, Arujia serifiera, Ageratina Adenophora* and exotic grasses.

A significant area of Lantana was cleared along the northern border with machinery as shown in Figure 13 below.

RECOMMENDATIONS

Continued maintenance of perennial grasses along boundaries of both the east and west Biobank Site.

Further works have commenced on the Lantana in the very north of the eastern zone, secondary work to follow-up and ensure all regrowth is treated. Treat with caution during nest season and avoid undertaking primary works in the warmer months. Target isolated Lantana along the edge of the western site adjoining the cutting sheds.



Figure 13 – Before and after of *Andropogon virginicus* along fire trail abutting old dam area.



Figure 14 – Yucca drilled in Biobank East site



Figure 15 – Area of Lantana cleared by machinery and quarry staff

SCOPE

Mark's Dam (**Figure 1**) is an area that is largely cleared with native regrowth emerging. The cleared area abuts a parcel a good quality Scribbly Gum – Dwarf Apple woodland to the west and a parcel of lower condition woodland to the east.

Bush-it was asked to revegetate the cleared area bordering Mark's Dam.

RESOURCES – NO HOURS

Bush-it didn't undertake any works in this zone this financial year

RECOMMENDATIONS

Continued maintenance and monitoring of plantings.

Porters Rd Offset – Kenthurst

SCOPE

Porters Rd is an offset Biobank site which has been active since last year. The vegetation communities represented at HR offset include Sydney Sandstone Ridgetop Woodland and Blue Gum Forest on the lower slopes.

The Blue Gum Forest is enriched with alluvial soils adjoining. Hence, woody weeds such as Lantana are abundant along the adjoining creek line and are encroaching up the slope and onto the BCT site.

The bulk of the Lantana controls works commenced in July 2025. However, we didn't undertake follow-up control due to the limited budget and unfortunately most of the areas that were treated regressed back to a sparse cover of Lantana.

RESOURCES – 78 HOURS

Primary works were carried out in July 2025 and although we may significant headway the Lantana quickly regrew and re-established, even though the bases were poisoned and branches rafted. We inspected the site in May 2026 and were surprised at just how much it had grown back and the extent of works to be undertaken in 2026-27. There were a few other weed species that were also treated including the odd Bridal Creeper (*Asparagus asparagoides*), *Ligustrum sinense* and annual weed species.

RECOMMMENDATIONS

Consolidate areas previously worked then target larger patches of Lantana that have never been treated. Spray or splatter Lantana on the other side of the track to prevent it from growing over the track. Ensure a follow-up visit at least one month after primary works to treat anything missed. Submit BCT report by mid-September.



Figure 16 – Before Lantana control at Porters Rd Kenthurst



Figure 17 – After Lantana was removed



Figure 18 – Before Lantana treatment in July 2025



Figure 19 – After Lantana removal at Porters Rd Kenthurst

APPENDIX

WEED SPECIES CONTROLLED AT HAERSES RD

Common name	**Scientific name**
Crofton Weed	*Ageratina adenophora*
Mistflower	*Ageratina riparia*
Whisky Grass	*Andropogon virginicus*
Moth vine	Araujia sericifera
Bridal Creeper	*Asparagus asparagoides*
Green Cestrum	*Cestrum parqui*
Fleabane	*Conyza bonariensis*
Pampas Grass	*Cortaderia selloana*
Common Couch	*Cynodon dactylon var. dactylon*
Summer Grass	*Digitaria ciliaris*
African Lovegrass	*Eragrostis curvula*
Cat's Ear	*Hypochaeris radicata*
Lantana	*Lantana camara*
Mickey Mouse Plant	*Ochna serrulata*
Paspalum	*Paspalum dilatatum*
Green Cliff Brake	*Pellaea viridis*
Blackberry	*Rubus fruticosus*
Fireweed	*Senecio madagascariensis*
Wild Tobacco	*Solanum mauritianum*
Purpletop	*Verbena bonariensis*

REGISTER OF HERBICIDE RECORDS

Date	Operator	Herbicide	Method	Neat	Volume	Start_time	End_time	Time_closest_herbicide_usage	Notes	Speed(km/h)	Direction
22/12/2025	Tim	Metsulfuron-methyl 600g/kg	15L knapsack sprayer	0.5	5	8:30:00	19:30:00	10:00:00	Targeted Blackberry and Turkey Rhubarb	20.4	SSW
1/12/2025	Pat	1:1 Glyphosate 360g/L	15L knapsack sprayer	400	20	11:00:00	13:30:00	10:00:00		33.3	WNW
23/10/2025	Pat	1:1 Glyphosate 360g/L	15L knapsack sprayer	0.2	10	11:30:00	13:30:00	12:00:00		18.5	E
10/02/2026	Pat	1:1 Glyphosate 360g/L	15L knapsack sprayer	0.2	10	7:30:00	10:30:00	8:00:00		9.3	ESE
8/04/2026	Tim	Glyphosate 360g/L	15L knapsack sprayer	140	7	14:30:00	15:30:00	14:00:00	Targeted Whiskey and African Loevgrass	9.3	NNE

DISTRIBUTION OF HOURS ACROSS MANAGEMENT ZONES

Zone	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
Admin / Reporting / Project Mgt	12	0.5	0.75	4.5	3	0.5	0.5	1.5	1	2	0.5	1.5	**28**
HR – Porters Rd Offset Site (BCT site)	74	0	0	0	0	0	0	0	0	4	0	0	**78**
HR – Biobank Site East (In/active Mgt)	0	0	0	0	0	2	0	0	0	0	21		**23**
HR – Biobank West - Old Dam Area	0	0	7	0	0	0	15	0	0	10	0	3	**58**
HR - Translocation area	0	0	12	3	8	3	3.5	0	20.5	3	0	0	**29.5**
HR - Visual Screen Buffer	0	10	2	6	5	2	0	2	0	0	19	4.5	**54**
HR – Mark's Dam	0	0	0	0	0	0	0	0	0	0	0	0	**0**
TOTAL	**84**	**10.5**	**21.75**	**13.5**	**16**	**7.5**	**19**	**3.5**	**21.5**	**19**	**40.5**	**9**	**309**

Appendix H - Annual Biodiversity & Rehabilitation Management Report

ANNUAL BIODIVERSITY & REHABILITATION MANAGEMENT REPORT HAERSES ROAD MAROOTA 2026

Prepared for Dixon Sand Pty Ltd

September 2026

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Website: www.southeastenvironmental.com.au

Annual Biodiversity

&

Rehabilitation Management

Report

Haerses Road Maroota

2026

Dixon Sand Pty Ltd

This assessment has been prepared by

Melissa Mass

24th September 2026

Date

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Abbreviations

Abbreviation	Description
BAM	Biodiversity Assessment Method
BC Act	*Biodiversity Conservation Act 2016*
BCT	Biodiversity Conservation Trust
EEC	Endangered Ecological Community
EP&A Act	*Environmental Planning and Assessment Act 1979*
EPBC Act	*Environmental Protection and Biodiversity Conservation Act 1999*
HRBOA	Haerses Road Biodiversity Offset Area
HTW	High Threat Weed
KPI	Key Performance Indicators
KTP	Key Threatening Process
LEP	Local Environmental Plan
Mod 6	Modification 6
NSW OEH	New South Wales Office of Environment and Heritage
ONR	Old Northern Road
PCT	Plant Community Type
SEPP	State Environmental Planning Policy
THSC	The Hills Shire Council
VIS	Vegetation Information System
WoNS	Weed of National Significance

1 INTRODUCTION

This report presents the findings of the annual monitoring of the biodiversity value and rehabilitation effort within the Dixon Sand operation at Haerses Road Maroota. The site contains a Biodiversity offset area which was established via the Old Northern Road Quarry consent, modification 5, in 2017. This area is addressed in detail within the Old Northern Road Annual Biodiversity and Rehabilitation Management Report. The Haerses Road site also contains a Biodiversity Biobank area which was established in 2018 to offset the quarry operations approved within modification 1. The Biobank area is not addressed in detail within this report as a separate report is submitted to the Biodiversity Conservation Trust (BCT) which provides relevant information regarding the current status of the offset area.

1.1 BACKGROUND

Dixon Sand Pty Ltd operates a sand and sandstone extraction and processing operation across 71 hectares on Lot 170 DP664766, Lot 170 DP664767, Lot A and B DP407341, Lot 176 and 177 DP752039 and Lot 216 DP752039 Haerses Road Maroota. The quarry operates in compliance to Development Consent 165-7-2005 issued by the Minister for Planning in 2006. The development consent has been modified several times since with the most recent modification (Mod 6) being approved in September 2023.

The development consent for the extraction and processing at Haerses Road permits operations to continue until 14 February 2046.

1.2 OBJECTIVES

The objectives of this Annual Biodiversity and Rehabilitation Management Report are to describe the current condition of the Haerses Road site and to advise Dixon Sand on the appropriate management measures required to be implemented in order to meet the expectations of the Haerses Road Quarry Biodiversity and Rehabilitation Management Plan V5 (2020) prepared by Umwelt (Australia) Pty Ltd.

This report will:

- identify native flora and fauna species, populations and ecological communities known to or likely to occur within the Haerses Road site;
- describe the native vegetation and habitats within the Haerses Road site;
- describe the current condition of the threatened flora and its habitat found within the Haerses Road site;
- determine the legislative and conservation significance of species, populations and ecological communities known or likely to occur within the Haerses Road site with reference to the Commonwealth *EPBC Act 1999* and the *NSW BC Act 2016*;
- recommend appropriate biodiversity and environmental management measures that should be implemented to reach criteria for monitoring success set by the Haerses Road Quarry Biodiversity and Rehabilitation Management Plan V5 (2020);
- provide an independent monitoring report for inclusion as part of the external reporting for the quarry Annual Review.

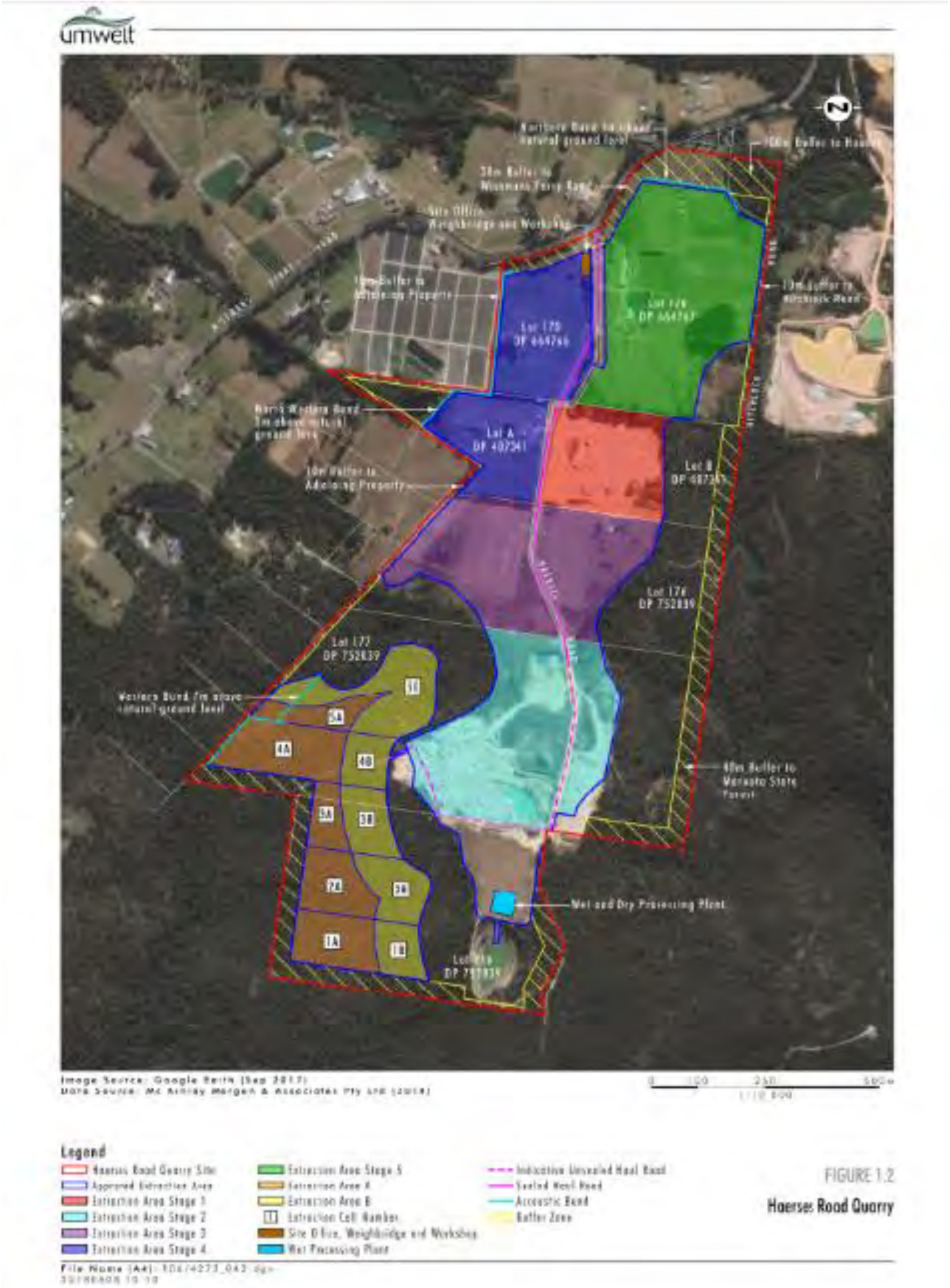


Image 1. Haerses Road Quarry site (source Umwelt Australia 2019)

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2 METHODOLOGY

2.1 SITE HISTORY

2.1.1 Extraction area stage 1

Extraction area stage 1 is Lot B of DP407341 comprising of 9.5416ha. Approximately 5.68ha have been disturbed for sand extraction while the remaining 3.86ha is remnant native vegetation. Currently 3ha are in the process of agricultural rehabilitation with work continuing into the next reporting period.

2.1.2 Extraction area stage 2

Extraction area stage 2 is within Lot 177 of DP752039, utilising approximately 14.38ha of the 39.4956ha lot. Extraction is continuing in this area however approximately 2ha of rehabilitation has begun in earnest.

2.1.3 Extraction area A and B

Extraction areas A and B extend across Lot 177 of DP752039 and Lot 216 DP752039. Current extraction is underway in Cell 1A, 1B, 2A, 2B, 3A and 3B. Rehabilitation of these areas has not taken place within this reporting period and is unlikely to take place in the next reporting period. The use and storage of soil with native seed bank and translocation of removed vegetation is worthy of discussion in this report to monitor success of the current process in use.

2.1.4 Extraction area stage 3, 4 and 5

Extraction area stage 3, 4 and 5 are currently managed as agricultural land which is expected to continue for the next reporting period. A sandstone processing facility is operational within the stage 3 land area.

2.1.5 Wisemans Ferry Road buffer area

Assisted screen planting within the Wisemans Ferry Road buffer area took place in 2016 to supplement the existing native vegetation which was present. The buffer area is to be 30m wide extending along the boundary of Wisemans Ferry Road for the purpose of providing a visual screen to motorists. During the upgrade to the Haerses Road intersection in early 2020 the buffer area was disturbed by civil contractors. This work was deemed as essential. Assisted rehabilitation was undertaken in 2023 and 2024 to aid with the restoration of the 30m buffer.

2.1.6 Maroota State Forest buffer area

The Maroota State Forest buffer area extends along the southern, eastern and western boundaries of extraction area A and B as well as the southern and eastern boundary of Lot B of DP407341, Lot 176 of DP752039 and Lot 177 of DP752039. Buffer areas are fenced along the boundary of extraction area A and B. A small area within the Maroota State Forest buffer on Lot 177 was previously disturbed and is under current active rehabilitation management to restore a Scribbly Gum, Hairpin Banksia, Dwarf Apple heathy woodland. Rehabilitation is in advanced stages with weed management continuing.

2.2 FIELD SURVEY

The Biobanking offset areas are subject to separate reporting for the BCT providing annual photo monitoring, information regarding active management actions and reporting any disturbance within the site. The Biobank site is now under active management with Lantana removal along the fringe of the Biobank site being the priority works. Work had begun during passive management to prevent

further spread of the weed into the native vegetation. The current condition of the Haeres Road Biodiversity Offset Area is detailed in the Old Northern Road Annual Biodiversity and Rehabilitation Management Report. The 2026 survey of this area found that the native vegetation continues to be resilient and self sustaining with threatened species remaining persistent.

Baseline monitoring locations within each vegetation community of Extraction Area A and B at Haerses Road have been established. Monitoring locations have been undertaken in a manner consistent with the Biodiversity Assessment Method (BAM) survey as described within Appendix 4 of the Haerses Road Quarry Biodiversity and Rehabilitation Management Plan V5 2020. These flora surveys are undertaken before extraction of each cell to determine a baseline condition of the native vegetation community present to assist with rehabilitation of the site post extraction operations. Details and results of the field survey can be found within Chapter 3 of this report.

2.3 CRITERIA TO MONITOR SUCCESS OF REHABILITATION

The Key Performance Indicators (KPI) to measure success of the biodiversity and rehabilitation effort of the Haerses Road site have been outlined by Umwelt (Australia) 2019. The following tables depict the performance and completion criteria required for both native vegetation areas and agricultural land.

Table 1. Performance and completion criteria for Haerses Road Quarry (taken from Umwelt (Australia) 2019)

Rehabilitation Performance and Completion Criteria	
Native Vegetation	Revegetation areas contain flora species assemblages characteristic and ground cover is within OEH benchmark of the target native vegetation communities
	Second generation tree seedlings are present or likely to be, based on monitoring in comparable older rehabilitation sites (i.e. evidence of fruiting of native species observed)
	More than 75 percent of trees are healthy and growing as indicated by long term monitoring
	Ground cover species are characteristic of target vegetation communities
	The presence of weeds is within OEH benchmark of the target native vegetation communities
Agricultural Land	Rehabilitated land is compatible with proposed agricultural land use as demonstrated by soil assessment
	Landform comprised broad gentle slopes between 2-5%
	Land capable of supporting suitable sterile cover crop
Weeds and Pests	Regular inspections indicate a decline in weed diversity, density and abundance and a decline in signs of feral animal activity
	The presence of weeds is within OEH benchmark of the target native vegetation communities
	There is no evidence of significant damage resulting from feral animal activity

3 RESULTS

Annual vegetation surveys were undertaken for the Haerses Road Quarry site during this reporting period. Rehabilitation work has continued in extraction area stage 2 while the rehabilitation of agricultural land in extraction area stage 1 will continue via meeting the required land form and contour during the next reporting period.

3.1 EXTRACTION AREA STAGE 1

Rehabilitation work within stage 1 has continued with clay and shale material from Extraction Areas A and B along with imported VENM and ENM being used to raise the surface level. Suitable capping material is being stockpiled for use in the final landform contouring. These works are expected to continue during the 2026-2027 reporting period with an aim at rehabilitating stage 1 to agricultural usage sometime in the next two years.



Image 2. Extraction area stage 1 with rehabilitation material raising the ground level to final contour height



Image 3. Extraction area Stage 1 active rehabilitation area (Image sourced from Google Earth Pro Oct. 2025)

3.2 Extraction area stage 2

Extraction area stage 2 is still in active operation however rehabilitation of the previous sandstone extraction area has commenced.

The construction of a water storage dam has taken place to fill the void and make the area beneficial for agricultural use. The expanse between the dam and native vegetation to the west has been spread with soil from extraction area A and B which contains native seed bank. The natural regeneration process has begun in earnest with a good diversity of ground cover species emerging. Threatened flora species *Darwinia biflora*, *Tetratheca glandulosa* and *Acacia bynoeana* have emerged with *Darwinia biflora* being prolific across the site. *Darwinia biflora, Tetratheca glandulosa, Acacia bynoeana* and *Pimelea curviflora var. curviflora* have also emerged in the compact soils immediately surrounding the dam. In total there were sixteen *Darwinia biflora*, six *Acacia bynoeana*, and one of each *Tetratheca glandulosa* and *Pimelea curviflora var. curviflora* located around the dam edge.

The dam wall which had previously sunk slightly on the western edge has undergone some remediation work to improve structural integrity. The dam had been leaking and therefore soils to the west became saturated and much of the rehabilitating vegetation was affected. Since corrective works have taken place the soil moisture has stabilised and plant recovery is evident. It is unlikely further

rehabilitation assistance will be required. Regular weed sweeps are undertaken by the Bush Regeneration contractor to prevent weed species becoming established.

A small area west of the dam which is currently under active rehabilitation is included in the Haerses Road Biobank Offset Area.

A stockpile of soil from extraction areas A and B which contains native seed bank is stored adjacent to the current rehabilitation area of Stage 2. This material will be used to spread over the final contour of extraction areas A and B during rehabilitation of those areas. Native species are currently growing from the stockpile and continually replenishing the native seed bank.



Image 4. Extraction area stage 2 dam



Image 5. Stage 2 rehabilitation area west of the dam



Image 6. *Darwinia biflora* flowering in Stage 2 rehabilitation area west of the dam



Image 7. *Acacia bynoeana* flowering in Stage 2 rehabilitation area on dam wall



Image 8. *Tetratheca glandulosa* flowering in Stage 2 rehabilitation area east of the dam



Image 9. *Pimelea curviflora var. curviflora* flowering in Stage 2 rehabilitation area east of the dam



Image 10. Stockpile of native seed bank soil



Image 11. Extraction area Stage 2 active rehabilitation area

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3.3 Extraction Area A and B

Sand and sandstone extraction is currently in active operation within Cell 1A, 1B, 2B, 2B, 3A and 3B within Lot 216 DP 752039.

Offsetting requirements for these areas incorporate vegetation conservation areas within the Biodiversity Biobank areas at Haerses Road and Porters Road at Kenthurst. The Haerses Road Biobank area has reached active management phase during the reporting period. The Porters Road site at Kenthurst has been under active management for the past two years. Separate reports for the current condition status of the Biobank sites are provided during the year to the BCT.

Baseline vegetation data within Extraction Areas A and B were obtained prior to extraction operations as outlined within the Haerses Road Quarry Biodiversity and Rehabilitation Management Plan V5 2020. The Plan outlines the annual monitoring of the extraction cells prior to disturbance for the purpose of providing baseline data for rehabilitation of the site post extraction. Each cell (A & B combined) is to have a monitoring location established within it. Extraction of sand and sandstone within Cell 1 (A & B) begun immediately following consent therefore establishing a monitoring site was not possible. The monitoring locations within cell 2 and 3 has now been disturbed for sand and sandstone extraction therefore monitoring of these sites are not able to continue. The remaining two monitoring locations, within Cells 4 – 5, were surveyed in August 2026 to collect further monitoring data which will contribute to the final rehabilitation of the site. Information collected was in line with the DPIE Biodiversity Assessment Methods as approved via the *Biodiversity Conservation Act 2016* and the *Biodiversity Conservation Regulation 2017*.

The survey sites were selected for ongoing survey monitoring to reflect upon the two dominant vegetation communities identified within the Haerses Road Quarry Biodiversity and Rehabilitation Management Plan V5 2020.

The vegetation in the surveyed area is described in the Biodiversity Rehabilitation Management Plan V5 2020 as containing the following vegetation communities:

- PCT978/HN560 – Needlebush – Banksia Wet Heath on Sandstone Plateaux of the Sydney Basin Bioregion (consistent with Coastal Upland Swamp in the Sydney Basin Bioregion EEC (BC Act and EPBC Act)) – 0.95 ha
- PCT 1083/HN566 – Red Bloodwood – Scribbly Gum Heathy Woodland on Sandstone Plateaux of the Sydney Basin Bioregion – 10.53 ha
- PCT 1134/HN852 – Scribbly Gum – Hairpin Banksia – Dwarf Apple Heathy Woodland on Hinterland Sandstone Plateaux of the Central Coast, Sydney Basin Bioregion – 12.32 ha and
- PCT 1181/HN586 – Smooth-barked Apple – Red Bloodwood – Sydney Peppermint Heathy Open Forest on Slopes of Dry Sandstone Gullies of Western and Southern Sydney, Sydney Basin Bioregion – 2.98 ha.

In 2023 the Eastern NSW PCT Classification was officially endorsed by the NSW State Government which oversaw the reclassification of all PCT's along the east coast. PCT978 was split into several PCT's which had association with the species present. The most relevant and best suited PCT for the vegetation within the Haerses Road site is now considered PCT3924 Sydney Coastal Upland Swamp Heath. PCT1083 was also split into several PCT's which had association with the species present. The most relevant and best suited PCT for the vegetation within the Haeses Road site is now considered as PCT3593 Sydney Coastal Sandstone Bloodwood Shrub Forest. PCT1134 was amalgamated into 3586 Northern Sydney Scribbly Gum Woodland due to the strong association with the new PCT. PCT 1181

was split into several PCT's which had association with the species present. The most relevant and best suited PCT for the vegetation within the Haerses Road site is now considered as PCT3617 Sydney Hinterland Peppermint-Apple Forest. Information collected during the survey period has been summarised in Table 3 while a full list of flora recorded within the survey flora survey quadrats can be found in Appendix A.

Within the three vegetation survey quadrats the following information was collected:

- Composition – native plant species richness by growth form
- Structure – foliage cover of native and exotic species by growth form
- Function –
    - Number of large trees
    - Tree stem size class
    - Canopy species regeneration
    - Length of fallen logs
    - Percentage of litter cover
    - Number of trees with hollows
    - High threat exotic cover

A photo was taken at the start of each quadrat. Each 12 month period a photo will be taken in the same location with the same aspect for comparison purposes.

Each of the current survey locations had some reduction noted in ground cover species, specifically forbs and grasses. This could be due to the variation in recent climatic conditions from drought over 2017-2020, extreme wet conditions over 2020-2023 with near average rainfall and temperatures over 2023-2025 and a slightly below average rainfall for 2025-2026. Slight fluctuations are considered normal and will be monitored over time to determine if climatic conditions are the cause of species diversity increase or reduction.

Quadrat 2 was impacted upon by the leaking dam in Stage 2 which resulted in the immediate area having continuous saturated soils over an extended period of time. This resulted in the loss of many shrubs and some trees which could not withstand the wet soils. Grasses, in particular sedges and rushes, have persisted well and dominant the overall cover of the quadrat. Recovery of the shrub stratum is has begun occur with some juvenile plants observed during the August 2026 survey period.

Threatened flora species were again identified within Quadrat 1 and 4 with *Darwinia bifora* and *Tetratheca glandulosa* abundant in both quads while *Grevillea parviflora subsp. supplicans* was located within quad 4.



Image 12. Quadrat 1 start midline point

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Table 2. Survey summary from Haerses Road monitoring survey site quadrat 1.

1083 - Red Bloodwood – Scribbly Gum heathy woodland on sandstone plateaux of the Sydney Basin, Sydney Basin Bioregion				
AGD Zone 56 Easting – 0312510 Northing – 06296390 Midline - 0°				
Vegetation Layer	**Height Range**	**Vegetation Layer**		
Trees	15 – 20m	*Corymbia gummifera, Eucalyptus haemastoma, Eucalyptus punctata, Angophora hispida, Eucalyptus oblonga*		
Shrubs	0.5 – 2m	*Grevillea buxifolia, Banksia ericifolia, Hakea dactyloides, Lambertia Formosa, Calytrix tetragona, Leptospermum trinervium, Petrophile pulchella*		
Groundcover	0.1 – 0.5m	*Lomandra multiflora, Entolasia stricta, Actinotus minor, Asplenium trichomanes, Cyathochaeta diandra*		
Stem Class			**Hollows**	
Dbh	**Eucalyptus**	**Non-Eucalypt**	<20cm	>20cm
80cm+				
50-79cm	✓		4	2
30-49cm	✓		2	
20-29cm	✓			
10-19cm	✓			
5-9cm	✓			
<5cm	✓			
Composition & Structure		**Composition Count**	**Structure cover %**	
Trees		5	40	
Shrubs		28	60	
Grasses etc		10	30	
Forbs		6	8	
Ferns		2	1	
Other		2	1	
High Threat Weeds		0	0	
Ecosystem Functions				
Length of habitat logs	25m			
Litter cover	20%			
Bare ground cover	0%			
Cryptogam cover	10%			
Rock cover	5%			
Overstorey foliage cover	40%			
Mid-storey foliage cover	60%			
Groundcover foliage cover	40%			



Image 13. Quadrat 2 centre midline point

Table 3. Survey summary from Haerses Road monitoring survey site quadrat 2.

1134 – Scribbly Gum – Hairpin Banksia – Dwarf Apple heathy woodland on sandstone plateaux of the Central Coast, Sydney Basin Bioregion				
AGD Zone 56 Easting – 0312226 Northing – 06293607 Midline - 190°				
Vegetation Layer	**Height Range**	**Vegetation Layer**		
Trees	15 – 20m	*Eucalyptus haemastoma, Angophora hispida*		
Shrubs	0.5 – 2m	*Banksia ericifolia, Grevillea buxifolia, Leptospermum trinervium, Calytrix tetragona, Dampiera stricta*		
Groundcover	0.1 – 0.5m	*Lomandra multiflora, Cyathochaeta diandra, Lepidosperma neesii, Cassytha glabella, Drosera peltata*		
Stem Class			**Hollows**	
Dbh	**Eucalyptus**	**Non-Eucalypt**	<20cm	>20cm
80cm+				
50-79cm				
30-49cm	✓		2	
20-29cm				
10-19cm	✓			
5-9cm	✓			
<5cm	✓			
Composition & Structure		**Composition Count**	**Structure cover %**	
Trees		2	5	
Shrubs		8	30	
Grasses etc		8	80	
Forbs		1	2	
Ferns		0	0	
Other		1	2	
High Threat Weeds		0	0	
Ecosystem Functions				
Length of habitat logs	23m			
Litter cover	45%			
Bare ground cover	0%			
Cryptogam cover	10%			
Rock cover	0%			
Overstorey foliage cover	5%			
Mid-storey foliage cover	30%			
Groundcover foliage cover	84%			



Image 14. Quadrat 4 centre midline point

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Table 4. Survey summary from Haerses Road monitoring survey site quadrat 4.

1083 - Red Bloodwood – Scribbly Gum heathy woodland on sandstone plateaux of the Sydney Basin, Sydney Basin Bioregion				
AGD Zone 56 Easting – 0312062 Northing – 06293587 Midline - 310°				
Vegetation Layer	**Height Range**	**Vegetation Layer**		
Trees	15 – 20m	*Corymbia gummifera, Eucalyptus haemastoma, Angophora hispida, Eucalyptus oblonga, Eucalyptus squamosa*		
Shrubs	0.5 – 2m	*Grevillea speciosa, Boronia floribunda, Banksia ericifolia, Lambertia Formosa, Isopogon anemonifolius, Leptospermum trinervium*		
Groundcover	0.1 – 0.5m	*Entolasia stricta, Lomandra obliqua, Actinotus minor, Themeda australis, Cheilanthes sieberi*		
Stem Class			**Hollows**	
Dbh	**Eucalyptus**	**Non-Eucalypt**	<20cm	>20cm
80cm+				
50-79cm	✓		1	1
30-49cm	✓		4	
20-29cm	✓			
10-19cm	✓			
5-9cm	✓			
<5cm	✓			

Composition & Structure	**Composition Count**	**Structure cover %**
Trees	5	40
Shrubs	25	60
Grasses etc	9	40
Forbs	7	5
Ferns	2	1
Other	2	1
High Threat Weeds	0	0

Ecosystem Functions	
Length of habitat logs	18 m
Litter cover	25%
Bare ground cover	0%
Cryptogam cover	0%
Rock cover	0%
Overstorey foliage cover	40%
Mid-storey foliage cover	60%
Groundcover foliage cover	47%



Image 12. *Tetratheca glandulosa* flowing in Quadrat 4



Image 13. *Darwinia bifora* flowering in Quadrat 1

3.4 Wisemans Ferry Road buffer area

An assissted buffer planting along Wisemans Ferry Road, either side of Haerses Road, commenced in 2016 with a variety of native species such as *Banksia, Melalueca, Hakea* and *Acacia* to complement the existing native vegetation which occurred within the existing vegetation in the immediate area. During early 2020 the buffer area was disturbed by civil contractors for road widening and Haerses Road intersection upgrade. Unfortunately this had resulted in much of the existing native vegetation buffer being removed and disturbance to some of the planted buffer area.

Assisted rehabilitation was undertaken in 2023 with soil and mulch containing native seed bank from Cells 2a and 2b spread on the western side of Haerses Road intersection with a diversity of *Eucalyptus, Acacia*, *Leptospermum* and native grass and forb species emerging. Further assisted planting has taken place during 2024 to complement the native species emerging from the seed bank. Ongoing weed management has been a priority in this area, particularly for exotic annual weeds which were prolific immediately following the road widening disturbance. Continued monitoring of this area will ensure the buffer meets the expectations of providing suitable vegetation screening from Wisemans Ferry Road into the Haerses Road site.

The Eastern side of the Haerses Road intersection has shown limited signs of natural regeneration due to the density of exotic pasture species which dominate the immediate area. Assisted rehabiltiation planting has taken place during 2024 and 2025 with deep rooting species, with the hope that the compacted soils will be be broken down in time so successful planting of other native species may occur.

Exotic species occur in both areas with Weeds of National Significance (WoNS) and High Threat Weeds (HTW) present. Weed density has been dramatically decreased over the reporting period from a dedicated weed management program and the rapid growth of native species out-competing the exotic species. Weed management and control will continue during the next reporting period with the WoNS and HTW being the species of targeted priority.



Image 14. Western side of Haerses Road within the Wisemans Ferry Road buffer area



Image 15. Eastern side of Haerses Road within the Wisemans Ferry Road buffer area

3.5 Maroota State Forest buffer area

There has been no further disturbance to any areas of the Maroota State Forest buffer. Disturbance did take place in 2006 of a small area in the south eastern portion of Lot 177 in DP752039. This area has been under active rehabilitation since 2015. The Bush Regeneration contractor undertake maintenance work on a regular basis in this area removing weeds and thinning recovering pioneer native species which would otherwise dominate the site. An annual report from the Bush Regeneration contractor is provided to Dixon Sand outlining the rehabilitation work undertaken with achievements outlined in detail.

4 DISCUSSION AND RECOMMENDATIONS

The rehabilitation of the Haerses Road Quarry site has continued throughout the 2025-2026 reporting period within extraction areas Stage 1 and 2, work continuing in the Maroota State Forest buffer area and within the Wisemans Ferry Road buffer area. Rehabilitation work is in the early stages and will increase with both intensity and measurable criteria over the next 5 year period.

Vegetation surveys have been undertaken within the extraction A and B areas. The data collected will serve as baseline information for measurable and quantifiable analysis for future reporting periods. The vegetation condition recorded will provide specific data on the local vegetation biometric score which will assist in rehabilitation of the quarry areas once extraction is completed. This will provide a measure in which rehabilitation success can be evaluated against via the criteria outlined within the Haerses Road Biodiversity and Rehabilitation Management Plan V5 2020.

The coming twelve months should see the following rehabilitation effort take place:

Extraction area stage 1

- Screening of stockpile material
- Continued import of VENM and ENM to assisting in filling the void
- Continued work towards final landform for active rehabilitation areas
- Stockpile material layered to create suitable agricultural terrain

Extraction area stage 2

- Native vegetation growth to the west of the dam
- Continued weed management in this area

Wisemans Ferry Road buffer area

- Continued weed management in this area

Maroota State Forest buffer area

- Continued bush regeneration maintenance work in disturbed area
- Continued weed management in this area

Extraction area A and B

- Continued monitoring of vegetation quadrats in areas 4 and 5

It is not expected any new areas of rehabilitation will take place within the next reporting period as extraction across the site continues.

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6 APPENDIX

APPENDIX A – FLORA IDENTIFIED ONSITE AT HAERSES ROAD

Status	Botanical Name	Common Name	Plot 1	Plot 2	Plot 4
	Acacia linifolia	White Wattle			
	Acacia suaveolens	Sweet Wattle			1
	Acacia ulicifolia	Prickly Moses	1		1
	Actinotus minor	Lesser Flannel Flower	4a		4a
	Allocasuarina distyla	Scrub She-oak			
	Angophora hispida	Dwarf Apple	2	1	1
	Aristida warburgii	Fine Leaf Wire Grass	3		3
	Asplenium trichomanes	Common Spleenwort	2		2
	Austrostipa pubescens	Spear Grass	3		3
	Banksia ericifolia	Heath Leaved Banksia	4a	2	4a
	Banksia serrata	Old Man Banksia			
	Banksia spinulosa	Hairpin Banksia	3		2
	Billardiera scandens	Hairy Apple Berry			
	Boronia floribunda	Pale Pink Boronia	3		4a
	Boronia ledifolia	Sydney Boronia	1	1	2
	Bossiaea obcordata	Spiny Bossiaea	3		3
	Bossiaea scolopendria	Sword Bossiaea	1		
	Calytrix tetragona	Common Fringe Myrtle	3	3	2
	Cassytha glabella	Slender Devils Twine	2	3	2
	Caustis pentandra	Thick Twist Rush	3		3
	Cheilanthes sieberi	Mulga Fern			2
	Corymbia gummifera	Red Bloodwood	2		1
	Cyathochaeta diandra	Sheath Rush	2	4a	2
	Dampiera stricta	Blue Dampiera	2	2	
V	*Darwinia biflora*		2		2
	Dillwynia retorta	Heathy Parrot Pea	2		2
	Drosera peltata	Sundew	3	3	3
	Entolasia stricta	Wiry Panic	3	3	3
	Epacris pulchella	Wallum Heath	2		
	Eucalyptus haemastoma	Scribbly Gum	1	1	1
	Eucalyptus oblonga	Narrow-leaved Stringybark	1		1
	Eucalyptus punctata	Grey Gum	1		
	Eucalyptus squamosa	Scaly Gum			1
	Gleichenia dicarpa	Pouched Coral Fern	1		
	Gonocarpus teucrioides	Raspwort	2		2
	Goodenia bellidifolia	Daisy-leaved Goodenia	1		1
	Goodenia hederacea	Forest Goodenia	1		
	Grevillea buxifolia	Grey Spider Flower	2	3	2
En	*Grevillea parviflora subsp supplicans*	Small-flowered Grevillea	1		
	Grevillea speciosa	Red Spider Flower	3	1	3
	Hakea dactyloides	Broad Leaved Hakea	1	2	1
	Hakea sericea	Needlebush			1
	Hibbertia aspera	Rough Guinea Flower			1
	Hibbertia diffusa	Wedge Guinea Flower	1		
	Hybanthus monopetalus	Slender Violet	1		2
	Isopogon anemonifolius	Broad-leaved Drumsticks	1		2

	Juncus usitatus	Common Rush		3	
	Lambertia formosa	Mountain Devil	2	1	2
	Lepidosperma laterale	Variable Swordsedge	1	3	1
	Lepidosperma neesii	Stiff Rapier-sedge		3	
	Leptospermum trinervium	Flaky-barked Tea-tree	2	2	2
	Leucopogon microphyllus	Small Leaved White Beard	1		
	Lomandra brevis	Tufted Mat-rush	1		
	Lomandra filiformis	Wattle Mat-rush		2	
	Lomandra Lomandra	Spiny-headed Mat-rush	1		
	Lomandra multiflora	Many Flowered Mat-rush	2	2	2
	Lomandra obliqua	Fish Bones	2		3
	Lomatia silaifolia	Crinkle Bush	1		1
	Micrantheum ericoides	Micrantheum	1		1
	Micromyrtus ciliata	Fringed Heath-myrtle		1	1
	Mirbelia rubiifolia	Heath Mirbelia			
	Patersonia sericea	Silky Purple Flag	1		
	Persoonia lanceolate	Lance Leaf Geebung			1
	Persoonia levis	Broad Leaved Geebung	1		1
	Petrophile pulchella	Conesticks	2		1
	Philotheca salsolifolia subsp. salsolifolia	Philotheca	1		
	Phyllanthus hirtellus	Thyme Spurge	2		2
	Pimelea linifolia	Slender Rice Flower			
	Platysace linearifolia	Carrot Tops	1		
	Pteridium esculentum	Bracken Fern			
	Rytidosperma racemosum	Wallaby Grass			
	Scaevola ramosissima	Purple Fan-flower	1		2
	Schizaea bifida	Forked Comb Fern	1		
	Schoenus ericetorum	Heath Bog Rush		3	
V	*Tetratheca glandulosa*	Glandular Pink Bells	2		3
	Themeda australis	Kangaroo Grass	2		3
	Xanthorrhoea resinosa	Grass Tree	1		1

En – Endangered species **V** – Vulnerable species

Key
Braun-Blanquet scale.

1 <5% cover & 3 or less individuals
2 <5% cover & more than 3 individuals sparsely scattered
3 <5% cover common and consistent
4a <5% cover & very abundant many individuals
4b 5 – 25% cover
5 25 – 50% cover
6 50 – 75% cover
7 75% - 100% cover

Appendix I – Section 94 Contribution

Haerses Road Quarry
Section 94 Contribution - Summary

Month	Tonnage	S94 Paid
Jul-25	21,833.51	$ 24,453.53
Aug-25	16,739.17	$ 18,915.26
Sep-25	21,046.16	$ 23,782.16
Oct-25	21,265.96	$ 24,030.53
Nov-25	18,837.10	$ 21,285.92
Dec-25	16,083.69	$ 18,174.57
Jan-26	14,949.79	$ 16,893.26
Feb-26	17,022.48	$ 19,235.40
Mar-26	18,443.82	$ 20,841.52
Apr-26	15,373.89	$ 17,372.50
May-26	17,677.86	$ 19,975.98
Jun-26	18,285.40	$ 20,662.50
TOTAL	**217,558.83**	**$ 245,623.13**

Appendix J – CCC Meeting Minutes

MINUTES OF THE BI-ANNUAL COMMUNITY CONSULTATIVE COMMITTEE WEDNESDAY 5 NOVEMBER 2025 HAERSES ROAD QUARRY, ADMINISTRATION BUILDING

	NAME	ORGANISATION
PRESENT	Lisa Andrews (LA)	Independent Chairperson
	Hunny Churcher (HC)	Environmental Officer, Dixon Quarry Group
	Jamie Baker (JB)	Dixon Quarry Group – Business Development Manager
	Melissa Mass (MM)	Dixon Quarry Group - Ecologist
	Farley Roberts (FR)	Community Representative
	Lisa Aylward (LAy)	Maroota Public School Representative
	Kristine McKenzie (KM)	The Hills Shire Council Representative
	Pat Schwartz (PS)	Community Representative
	Pat Walsh (PW)	Bush-It representative
APOLOGIES	Timothy Baker (TB)	Bush Regeneration Contractor (Bush-It)
	Jemma Roberts (JR)	Community Representative (alternate)
	David Dixon (DD)	Dixon Quarry Group – Managing Director

WELCOME & INTRODUCTION	LA opened the meeting at 1.09pm following a light luncheon. All members were welcomed.	
APOLOGIES	As listed above.	
DECLARATIONS OF INTEREST	LA declared that she is approved by the Department of Planning to chair the meeting and engaged by Dixon Quarry Group. LA advised that PW had completed the necessary governance forms.	
BUSINESS ARISING FROM PREVIOUS MEETING (6/11/24)	**NO.** / **ITEM** / **RESPONSIBILITY** 1 – Bring Dural Land Snail sample to next CCC. – MM 2 – Confirm site inspection requirements. – LA **No other business arising.**	**1 – Complete** **2 – Complete**
CORRESPONDENCE (as emailed with Meeting Notice on 7/10/25 with 1 additional item)	▪ 14/5/25 - Email to members with draft minutes for review. ▪ 26/5/25 – Email to members with the finalised minutes. ▪ 2/10/25 – Email from HC advising of Old Northern Road and Haerses Road Quarries: 2024-2025 Annual Reviews being submitted to DPHI on 30/9/25 and providing link. ▪ 7/10/25 – Email to members with meeting notice & agenda for 5/11/25.	

<table>
<tr><td></td><td>

20/10/25 – Email to members advising of IEA & requesting any feedback for inclusion by 27/10/25.
29/10/25 – Email to IEA with response.
29/10/25 – Email from IEA confirming receipt of Hills Council response.
5/11/25 - Email to members with the reminder for this meeting.

</td><td></td></tr>
<tr><td>Operation/Progress</td><td>Site operations and current project progress was presented by JB and HC, including an extraction overview.</td><td>Slides 6-8</td></tr>
<tr><td>ONR – Proposed DA Mod 6 - Extraction within existing cells to maximise resource</td><td>

Increase the depth of extraction within Lot 196 DP752025 to within 2m of the highest recorded regional wet weather groundwater level;
Import up to 250,000 tonnes per annum of virgin excavated natural material (VENM) and excavated natural material (ENM) within existing incoming trucks; and
Extend the quarry life for 30 years from the date of Mod 6 being approved.

Timeline
<table>
<tr><th>Date</th><th>Milestone</th></tr>
<tr><td>January 2023</td><td>Scoping Letter lodged with DPHI</td></tr>
<tr><td>March 2023</td><td>DPHI confirmed pathway and requests additional traffic assessment and rehabilitation and final landform assessment to be updated</td></tr>
<tr><td>September 2023</td><td>Consultation with Agencies</td></tr>
<tr><td>November 2023</td><td>Modification Report submitted to DPHI</td></tr>
<tr><td>November 2023 – April 2024</td><td>Public Exhibition, received submissions from the community and agencies, submissions report submitted to DPHI</td></tr>
<tr><td>May 2024</td><td>Received further comments from DCCEEW-Water. Submission report being prepared.</td></tr>
<tr><td>July 2024</td><td>DPHI issued an RFI</td></tr>
<tr><td>October 2025</td><td>Response to RFI submitted to DPHI</td></tr>
</table>
Additional ground water data has been provided to DPHI.

PS enquired on the type of resource to be extracted. JB responded sandstone & sand.

PS suggested that photographs be taken to document the geology of the site, ie showing layers to record the different strata as extraction occurs. JB confirmed that photos and drone footage are taken for Dixon’s records.
</td><td>Sides: 9 & 10</td></tr>
</table>

<table>
<tr><td>ENVIRONMENTAL MONITORING RESULTS</td><td>HC commenced the environmental monitoring results, by showing the locations of monitoring devices and explaining/quantifying the outcomes. Data explained.</td><td>Slides: 12 to 16</td></tr>
<tr><td>TEOM DATA</td><td>HC explained the TEOM data and measurement criteria. Commenting on the major dust storm that had occurred, causing a spike. Site operations were modified during this event in accordance with the EPA EPL requirement</td><td>Slide: 17</td></tr>
<tr><td>DEPOSITIONAL DUST DATA</td><td>Dust data for this monitoring period: May 2025 – October 2025:
<table>
<tr><th>Date</th><th>Milestone</th></tr>
<tr><td rowspan="5">Old Northern Road</td><td>D1A Access road</td></tr>
<tr><td>D4 Rehab area</td></tr>
<tr><td>D5 Bundwall</td></tr>
<tr><td>D6 School</td></tr>
<tr><td>D7 Mullock Heap</td></tr>
<tr><td rowspan="4">Haerses Road</td><td>D8 Olive Grove</td></tr>
<tr><td>D10 Haerses Road (EPL Point 3)</td></tr>
<tr><td>D11 Receiver R6</td></tr>
<tr><td>D12 Receiver R8</td></tr>
</table>
Bush fire mitigation works were undertaken by the Department of Education’s contractor, causing elevated results.

Whilst there were some higher readings, the site was still compliant.</td><td>See graphs for results. Slides: 18 - 23</td></tr>
<tr><td>NOISE MONITORING</td><td>ONR & Haerses Rd:

Tables of noise monitoring locations indicating: Receivers, property addresses, descriptions and extrapolated monitoring results.
No noise complaints have been received for quite some time.</td><td>See Slides 24-34 For location of monitoring sites and summary of data.</td></tr>
<tr><td>GROUND WATER MONITORING</td><td>GW Monitoring wells
• ONR 11 x BH
• HR 16 x BH
GW levels:
• Monthly + continuous data loggers
GW quality sampling & lab analysis:
• 6 monthly sampling and testing.</td><td>Graphs explained - See Slides 35-43 (maps)</td></tr>
<tr><td>COMPLAINT 23/10/25</td><td>The EPA received a complaint from the public regarding significant levels of dust and sand tracked from local quarries onto ONR and WFR in Maroota. Specifically, the length of ONR between the intersection of WFR and Old Telegraph Road.

HC advised that this was investigated and was not specific to Dixon Quarry, however, quarries aren’t the only</td><td></td></tr>
</table>

	contributors, given the rural area and inadequate drainage of road shoulders and gutter. LAy advised that she had emailed Transport for NSW (TfNSW), who advised that they will be cleaning road shoulders and drains on ONR. LA commented that the local quarries pay S94 contributions towards the upkeep and maintenance of local roads including Wisemans Ferry Rd and Old Northern Rd. KM advised that these roads were the responsibility of TfNSW. Discussions regarding payments made to Council and the distribution of funds from S94 plan. Link: Development Contributions | The Hills Shire Council KM explained there is a 5 year works program between Council and TfNSW for certain works to be undertaken. These works are decided by the Traffic Team. KM advised that she would take question on notice to confirm where the funds go, whether given to TfNSW or Council retain to undertaken works. **Action.** FR stated that some roads would be the responsibility of Hornsby Shire Council. KM explained the boundary – see link: https://www.thehills.nsw.gov.au/Council/Mayor-Councillors-Elections/Ward-Boundary-Maps	
BIODIVERSITY SITE – HAERSES ROAD (Passive Management)	BCT have offered fixed price credit purchase for Dixon Quarry Group in order to satisfy 80% of the Total Fund Deposit and to commence Active Management of the biobank site. Accordingly, weed management and other management actions can commence. The site is managed in accordance with the Biobanking agreement and management plans which span over a 20 year period.	**Slide 45**
BIOBANK SITE – PORTERS ROAD (Active Management)	Local Land Services have been consulted regarding the best practice for feral species control program, including signing up to the Cattai deer control program, fox baiting and ground shooting (instead of baiting). Discussion with RFS to carry out an ecological burn in the near future. PS asked where information is available on bio bank sites. HC advised that the information is on the website, under Legal. Link: Legal | Dixon Quarry Group	**Slide 46**
	MM commenced the presentation by advising that the site rehabilitation is progressing well and they are getting on top of weed management. Monitoring of fauna & flora on the site continues.	**See Slides 47 – 63 including photographs**

	Biodiversity and Rehabilitation Annual Report 2025 (AR) • The Biodiversity and Rehabilitation Annual Report identifies native flora and fauna within the Native Vegetation Corridor and the Haerses Road Biodiversity Offset Area, it monitors the success of the rehabilitation area within the NVC and describes the current condition of threatened flora and fauna and their habitats within the Old Northern Road site and the HRBOA. • The 2025 Biodiversity and Rehabilitation Annual Report was completed in August 2025 and submitted with the Annual Review on the 30th of September 2025. The data for the 2026 Biodiversity and Rehabilitation Annual Report is currently being collected. • The results of the 2025 report found the rehabilitation areas are stabilizing following the past 4 years of ideal growing conditions. Vegetation diversity and density have likely peaked and is now settling into average climatic conditions. **Native Vegetation Corridor – Old Northern Road** explained. **Biodiversity Offset Area – Haerses Road** explained. **Monitoring Fauna** Fauna monitoring is undertaken in the summer months when activity is at the highest and more likely to be observed. Fauna monitoring includes: o Recording bat calls via an Anabat sound recorder; o The use of unbaited infra-red motion detection cameras on animal trails; o Looking for scats, prints and other signs such as diggings, scratches, feed scars; o Aural survey for birds; and o Visual observation. Long-nosed Bandicoot Perameles nasuta tracks and digs HR. Observations at ONR: o Swamp Wallaby *Wallabia bicolor* o Laughing Kookaburra *Dacelo novaeguineae* **Monitoring flora** • Flora monitoring is undertaken in the winter months as many of the threatened species are flowering or budding up preparing for early spring flowering	

	• Vegetation quadrats are repeated annually in monitoring locations. Quadrats are 20m x 50m, 20m x 20m and 1m x 1m which record the following information: o Species present and percentage of cover; o Stem class including recruitments present or absent; o Number of hollow bearing trees; o Total length of coarse woody debris; o Litter cover, rock surface area, bare ground. **BCT Reporting** o Annual Passive Management Report for Haerses Road site for year 6 was completed in March 2025 o Active Management at Porters Road has commenced with the first annual report completed and submitted in September 2025.	
BUSH REGENERATION WORKS	Summary of Assisted Bush Regeneration Work for the period June 2025 to October 2025- presented by PW. **Rehabilitation of Lot 196** ➢ Continued suppression of Whisky Grass *(Andropogon virginicus)* from spreading seed. Achieved through slashing and hand weeding around native groundcover before the species flowered. ➢ Supplementary planting undertaken in May 2025 when conditions were favourable. 210 fast growing shrub species were planted among original plantings with guards preventing herbivore activity. ➢ Owing to the harsh conditions towards the end to spring, the plantings have received additional watering Assisted Regeneration - Native Vegetation Corridor (NVC) ➢ Competing shrubs and vines were thinned out around threatened species *Melaleuca deaneii*. ➢ Continued maintenance of Whisky grass in and around translocation area achieved through periodic sweeps through the area. ➢ Maintenance of stock pile mounds in preparation for new NVC area. This included general sweeps targeting exotic grasses and a follow-up spot-spray of common couch using Glyphosate 360. **Rehabilitation of Lot 2** ➢ Continued maintenance of exotic perennial grasses African Lovegrass and Paspalum. Methods included brush-cutting to prevent seeding and spot-spraying.	**See photographs in Slides: 64 - - 84**

	➢ Continued primary and maintenance works on Lantana. We have largely eradicated Lantana from the western portion of Lot 2. We have observed small birds such as the White-browed Scrubwren and Red-browed Finch frequent the area following the removal of Bell Minor habitat. ➢ Pellaea Fern is largely eradicated from the area following the new incursion of the species in April 2025. The area is continually monitored. ▪ ➢ Plantings undertaken in 2024 are continued to be maintained. They have received supplementary watering this month owing to the harsh conditions **Rehabilitation of Haerses Rd – Old Dam Area** ➢ Undertaking secondary and maintenance works of area following primary Lantana works from last year. ➢ Whisky grass along access road near the old dam is largely under control and will be continued to be monitored to ensure it does not proliferate **Assisted Regeneration - Haerses Road Biodiversity Offset** ➢ Is in good condition. ➢ Focus on monitoring edges for highly mobile weed species. Slashing of Whisky Grass in addition to occasional scans through edge was undertaken. ➢ Managing Pellaea fern and Crofton weed along edges and drainage line. **Haerses Rd - Translocation** ➢ Continued management of exotic perennial grasses Whisky grass and African Lovegrass. We are observing a reduction in exotic grass cover, especially on the north and west sides where native grass cover is outcompeting the exotic grasses. This has been achieved through brush-cutting, spot-spraying and manual removal. ➢ Continued selectively culled *Kunzea ambigua* specimens that were growing above high-value Proteaceae species, such as *Banksia serrata, Lambertia formosa or Persoonia linearis.* **Haerses Rd – Visual buffer along Wisemans Ferry Rd** ➢ Maintenance of Fleabane and perennial grasses was the focus during the summer months, undertaking slashing periodically. ➢ Maintenance of common couch continued, spot spray of the incursion was undertaken in September 2025 using Glyphosate 360.	

	➢ A further 70 tube stock of *Syncarpia glomulifera and Banksia ericifolia* were planted in May 2025 among the plantings from last year in the uncapped area. ➢ Supplementary watering of the plantings was undertaken this month to aid with the dry conditions. **Haerses Rd – Marks Dam** ➢ 36 native shrub and canopy species were planted into the cleared area of Mark's Dam, guard installation and watering of tube stock followed the plantings. ➢ Supplementary watering was undertaken this month. **Porters Road Biobank Site** Undertook primary works of Lantana in specific areas identified as high value.	
GENERAL BUSINESS	LAy thanked Dixon Quarry for the donation to the school. PS advised that monitoring has shown koalas are in the area. One was seen crossing the road at the South Maroota Hall. Have picked up scats from a disease free female. Information is being provided to the Queensland University of Technology. PS provided information on the Hills-Hornsby Rural Koala Project, which has a Facebook page – Link: (5) Facebook, as well as Flora & Fauna of the Hills/Hornsby/Hawksbury, Link: (5) Flora and fauna of Hills/Hornsby/Hawkesbury | Facebook. Links JB advised that the Christmas tree is up and donations of presents are being received. They will deliver to the Salvation Army on 5/12/25. Parents will be able to pick presents for their children.	
MEETING SCHEDULE FOR 2026	It was agreed that the meeting schedule for 2026 will be the same as previous years. Two meetings a year - in May & November. Accordingly, Wednesday 6th May 2026 and Wednesday 4th November 2026. Commencing at 12.30pm with lunch prior to the 1pm start.	**Agreed.**

The meeting was closed at 2:49pm with the chair thanking all members for their attendance and contribution throughout 2026. Wishing all a merry Christmas.

ACTION ITEMS

ITEM	ISSUE	RESPONSIBILITY
1	Confirm how S94 contributions for road maintenance are managed.	KM

MINUTES OF THE BI-ANNUAL COMMUNITY CONSULTATIVE COMMITTEE WEDNESDAY 6 MAY 2026 HAERSES ROAD QUARRY, ADMINISTRATION BUILDING

	NAME	ORGANISATION
PRESENT	Lisa Andrews (LA)	Independent Chairperson
	Hunny Churcher (HC)	Environmental Officer, Dixon Quarry Group
	Jamie Baker (JB)	Dixon Quarry Group – Business Development Manager
	Melissa Mass (MM)	Dixon Quarry Group - Ecologist
	Farley Roberts (FR)	Community Representative
	Lisa Aylward (LAy)	Maroota Public School Representative
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	Pat Schwartz (PS)	Community Representative
	Timothy Baker (TB)	Bush-It representative
APOLOGIES	David Dixon (DD)	Dixon Quarry Group – Managing Director
	Jemma Roberts (JR)	Community Representative (alternate)

<table>
<tr><td>WELCOME & INTRODUCTION</td><td>LA opened the meeting at 1.02pm following a light luncheon. All members were welcomed.</td><td></td></tr>
<tr><td>APOLOGIES</td><td>As listed above.</td><td></td></tr>
<tr><td>DECLARATIONS OF INTEREST</td><td>LA declared that she is approved by the Department of Planning to chair the meeting and engaged by Dixon Quarry Group.</td><td></td></tr>
<tr><td>BUSINESS ARISING FROM PREVIOUS MEETING (5/11/25)</td><td>
<table>
<tr><th>NO.</th><th>ITEM</th><th>RESPONSIBILITY</th></tr>
<tr><td>1</td><td>Confirm how S94 contributions for road maintenance are managed.</td><td>KM</td></tr>
</table>
No other business arising.
</td><td>1 – KM confirmed that TfNSW undertake works & funds are paid to them by Council.</td></tr>
<tr><td>CORRESPONDENCE (as emailed with Meeting Notice on 1/5/26)</td><td>• 20/11/25 - Email to members with draft minutes for review.
• 28/11/25 – Email to members with the finalised minutes.
• 24/3/26 - Email members with a “Save the Date” for 6/5/26.
• 1/5/26 – Email to members with meeting notice & agenda for this meeting.</td><td></td></tr>
<tr><td>Operation/ Progress</td><td>Site operations and current project progress were presented by JB and HC, including an extraction overview.
At ONR, JB advised that construction has occurred on the 250m school buffer bund wall during school holidays. Old Silt ponds are being consolidated in preparation for rehabilitation and new silt ponds will be established further to the east.</td><td>Slides 6 & 7</td></tr>
</table>

<table>
<tr><td></td><td>At HR, construction of the Wash Plant is still progressing, however is on hold at the moment. A new fire hydrant is to be put at the driveway to get the Occupation Certificate for Sandstone Cutting Shed.

KM asked where washing was currently being undertaken with JB responding via the Mobile Plant.</td><td></td></tr>
<tr><td>Old Northern Road (ONR) – Proposed Dam Mod 6 -</td><td>• Increase the depth of extraction within Lot 196 DP752025 to within 2m of the highest recorded regional wet weather groundwater level;
• Import up to 250,000 tonnes per annum of virgin excavated natural material (VENM) and excavated natural material (ENM) within existing incoming trucks; and
• Extend the quarry life for 30 years from the date of Mod 6 being approved.
Timeline
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<tr><td>July 2024</td><td>DPHI issued an RFI</td></tr>
<tr><td>October 2025</td><td>Response to RFI submitted to DPHI</td></tr>
<tr><td>December 2025 to May 2026</td><td>Liaised with DPHI and DCCEEW regarding the methodology to address RFI
Installed 2 additional Monitoring Bores BH11 and BH12, Collect Groundwater data
Revise Groundwater Impact Assessment as requested by DPHI and DCCEEW.</td></tr>
</table>
PS sought an explanation of the VENM & ENM definitions, which was provided by HC. JB explained the certification process that tests and identifies the type of materials, which are all undertaken under the EPA's waste classification guidelines.</td><td>Sides: 8 & 9</td></tr>
<tr><td>ENVIRONMENTAL MONITORING RESULTS</td><td>HC commenced the environmental monitoring results, by showing the locations of monitoring devices and explaining/quantifying the outcomes. Data explained.</td><td>Slides: 11 to 14</td></tr>
</table>

<table>
<tr><td>TEOM DATA</td><td>HC explained that the EPA has recently issued an EPL variation for both quarries with new conditions requiring installation of PM2.5 monitor at the current TEOM location and relocation of dust deposition gauges.
HC presented the TEOM data and measurement criteria, providing further information on the relevant graph & spikes.
A slide showing the difference between PM_{10} & $PM_{2.5}$ was shown & explained.</td><td>Slide: 15 & 16</td></tr>
<tr><td>DEPOSITIONAL DUST DATA</td><td>Dust data for this monitoring period: April 2025 – April 2026:
<table><tr><th>Date</th><th>Milestone</th></tr><tr><td rowspan="5">Old Northern Road</td><td>D1A Access road*</td></tr><tr><td>D4 Rehab area</td></tr><tr><td>D5 Bundwall*</td></tr><tr><td>D6 School</td></tr><tr><td>D7 Mullock Heap</td></tr><tr><td rowspan="4">Haerses Road</td><td>D8 Olive Grove</td></tr><tr><td>D10 Haerses Road (EPL Point 3)*</td></tr><tr><td>D11 Receiver R6</td></tr><tr><td>D12 Receiver R8</td></tr></table>
*Proposed new locations for repositioning of monitors was shown. For D1A, D5 and D10.

Whilst there were some higher readings, the site was still compliant.</td><td>See graphs for results.
Slides: 17 - 24</td></tr>
<tr><td>NOISE MONITORING</td><td>ONR & Haerses Rd:
Monitoring for December 2025

Tables of noise monitoring locations indicating:
Receivers, property addresses, descriptions and extrapolated monitoring results.
No noise complaints have been received for quite some time.</td><td>See Slides 25-34
For location of monitoring sites and summary of data.</td></tr>
<tr><td>GROUND WATER MONITORING</td><td>GW Monitoring wells
• ONR 13 x BH
• HR 16 x BH
GW levels:
• Monthly + continuous data loggers
GW quality sampling & lab analysis:
• 6 monthly sampling and testing.</td><td>Graphs explained - See Slides 35-42 (maps)</td></tr>
<tr><td>COMPLAINTS</td><td>November 2025 – April 2026:
No complaints received</td><td>Slide 43</td></tr>
<tr><td>BIODIVERSITY SITE – HAERSES ROAD (Active Management)</td><td>Map shown of area with explanation of legend (colours).</td><td>Slide 44</td></tr>
<tr><td>BIOBANK SITE – PORTERS ROAD (Active Management)</td><td>Map shown of area with explanation of legend (colours).
Fox Management Program using trapping and ground shooting method currently being undertaken, instead of using 1080 baits. This is due to the number of people that walk in the area with their dogs.
Deer management is continuing. HC explained the location of other</td><td>Slide 45</td></tr>
</table>

	areas, including the Pistol Club, Fire Trails, Crown Land and private land parallel to O'Haras Creek. Ongoing balance on how to manage vandalism in the area with recent damage to entry gates and locks. HC advised that the RFS are conducting ecological burns in the area, on top of its existing hazard reduction burns. The tracks will need to be widened and remediated so that machinery can access the area.	
Biodiversity and Rehabilitation Threatened species update	MM commenced the presentation, advising: **Biodiversity and Rehabilitation Annual Report 2025 (AR)** - The Biodiversity and Rehabilitation Annual Report identifies native flora and fauna within the Native Vegetation Corridor and the Haerses Road Biodiversity Offset Area, it monitors the success of the rehabilitation area within the NVC and describes the current condition of threatened flora and fauna and their habitats within the Old Northern Road site and the HRBOA. - The 2025 Biodiversity and Rehabilitation Annual Report was completed in August 2025 and submitted with the Annual Review on the 30th of September 2025. The data for the 2026 Biodiversity and Rehabilitation Annual Report is currently being collected. - The results of the 2025 report found the rehabilitation areas are stabilizing following the past 4 years of ideal growing conditions. Vegetation diversity and density have likely peaked and is now settling into average climatic conditions. **Native Vegetation Corridor – Old Northern Road** explained. **Biodiversity Offset Area – Haerses Road** explained. **Haerses Rd Biobank Site** – explained. **Porters Rd Biobank Site** – explained. KM enquired – with Porters Rd site, are there threatened species in this location. MM responded that both sites have identified threatened species, which both biobank sites are now in active management. Additional survey works will be undertaken to monitor biodiversity and lantana will be mitigated. PS asked if there were any Grey Gums. MM advised that there are some, as well as Bloodwoods. PS advised that there have been reports of koalas along O'Haras Creek. **Monitoring Fauna** Fauna monitoring is undertaken in the summer months when activity is at the highest and more likely to be observed. Fauna monitoring includes: o Recording bat calls via an Anabat sound recorder; o The use of unbaited infra-red motion detection cameras on animal trails; o Looking for scats, prints and other signs such as diggings, scratches, feed scars;	**See Slides 47 – 60**

	o Aural survey for birds; and o Visual observation. **Fauna observations:** Photographs shown: o Dog, Fox, Wallaby & Bandicoot paw prints shown in the same area of sand. **Monitoring flora** • Flora monitoring is undertaken in the winter months as many of the threatened species are flowering or budding up preparing for early spring flowering • Vegetation quadrats are repeated annually in monitoring locations. Quadrats are 20m x 50m, 20m x 20m and 1m x 1m which record the following information: o Species present and percentage of cover; o Stem class including recruitments present or absent; o Number of hollow bearing trees; o Total length of coarse woody debris; o Litter cover, rock surface area, and bare ground. **Vegetation Monitoring Plots** Photographs shown of: o ONR Annual Monitoring quadrant within the 200m buffer to Maroota Public School. o HR annual monitoring quadrat within the HRBOA **Threatened Fauna Monitoring ONR** Photographs shown of: o *Melaleuca deanei* – Deane's paperbark. o *Kunzea rupestris* - Rocky Kunzea **Threatened Flora Monitoring ONR** Photographs shown of: o *Pimelea curviflora var. curviflora* o *Darwinia fascicularis subsp. Oligantha* o *Tetratheca glandulosa* **Threatened Flora Species at Haerses Rd** Photographs shown of: o *Darwinia biflora* o *Grevillea Parviflora subsp supplicans* o *Acacia bynoeana* o *Tetratheca glandulosa* **BCT Reporting** o Biobank Management is now into its 7th year o Active Management at Porters Road has commenced with the first annual report completed o Active Management at Haerses Road has commenced	**Slide 61**

BUSH REGENERATION WORKS	Summary of Assisted Bush Regeneration Work for the period November 2025 to May 2026- presented by TB. **Rehabilitation of Lot 196** ➢ Continued suppression of Whisky Grass *(Andropogon virginicus)* from spreading seed. Achieved through slashing and hand weeding around native groundcover before the species flowered. ➢ Supplementary planting undertaken in May 2025 of 210 fast growing shrub species has been pretty successful, considering past failures. ➢ One more round of planting is scheduled for May-July this year. **Assisted Regeneration - Native Vegetation Corridor (NVC)** ➢ Competing shrubs and vines were thinned out around threatened species *Melaleuca deaneii*. ➢ Continued maintenance of Whisky grass in and around translocation area. ➢ Maintenance of stock pile mounds in preparation for new NVC area. This included general sweeps targeting exotic grasses and a follow-up spot-spray of common couch using Glyphosate 360. **Rehabilitation of Lot 2** ➢ Continued maintenance of exotic perennial grasses African Lovegrass and Paspalum. Also targeted *Pellaea Vridis*, which is mostly eradicated from this area. ➢ Continued primary and maintenance works on Lantana. We have largely eradicated Lantana around the dam. Bell Minors mostly no longer inhabit the areas where lantana has been effectively cleared. ➢ Plantings are doing relatively well albeit heavily grazed at the top of the guards. Perhaps some more pioneer Acacia species would do well here. **Rehabilitation of Haerses Rd – Old Dam Area** ➢ Undertaking maintenance work mostly just patches of Crofton weed remain. Dense cover of native ferns. ➢ New area towards the cutting sheds to be worked in the coming months targeting lantana. ➢ Whiskey grass along access road near old dam is largely under control. We swept through just before it seeded and removed all immature seed. **Assisted Regeneration - Haerses Road Biodiversity Offset** ➢ Is in relatively good condition with occasional weeds present across the top edge.	**See photographs in Slides: 64 - - 76**

	➢ Hasn't been worked a great deal in this area in the last 6 months. ➢ Managing *Pellaea* fern and Crofton weed along edges and drainage line. **Haerses Rd - Translocation** ➢ Continued management of exotic perennial grasses mostly Whisky grass which is almost absent now and African Lovegrass. Removed Bridal Creeper, which is a concern and will be monitored on an ongoing basis. ➢ Continued selectively culled *Kunzea ambigua* specimens that were growing above high-value Proteaceae species, such as *Banksia serrata, Lambertia formosa or Persoonia linearis.* **Haerses Rd – Visual buffer along Wisemans Ferry Rd** ➢ Maintenance of common couch contained in better areas. ➢ Supplementary planting undertaken in bare patch, where survival has been poor. ➢ Targeted priority species including blackberry and Moth Vine. ➢ We are planning to target Green Cestrum *Pellaea vrirdis* on the back edge. **Haerses Rd – Marks Dam** ➢ Most of the plantings have survived. We do very little here apart from target high priority weeds. ➢ **Porters Road Offset Site** ➢ Undertook site inspection in April and treated exotic grasses on the loop track. ➢ Lantana has grown back rapidly in the lower part of the site and will be treated next financial year. ➢ Exotic grasses also increasing along track from Pistol Club to O'Haras Creek. TB advised that it is looking like an El Nino period is coming so need to make sure that planting is done at the right time of the year for the tough conditions. FR advised that there are high levels of bell minors and lantana on Hitchock Road.	
GENERAL BUSINESS	LAy thanked Dixon Quarry for the Carols donation to the school and for helping with the tree clean up. HC commented on the road maintenance work on ONR near the school. LAy said will lodge a complaint with TfNSW about the unsatisfactory road shoulder works. HC commented that Dixon Quarry may also lodge a complaint. LA – as first meeting of 2026, time to review the Terms of Reference for this CCC to confirm they are fit for purpose. These will be sent with the minutes, for review. Requesting feedback	

	from members. An agenda item will be placed on the next meeting for discussion/ratification. - LA advised that DPHI sent an email and correspondence to all Independent Chairs in February 2026, following representations to the Secretary from some members of some CCC's. As a result, DPHI has reminded Chairs to ensure CCCs are run in accordance with the Department's Guidelines, Terms of Reference, and adherence of the Code of Conduct and update any Pecuniary Interest Declarations. - JB/HC showed members a video showing the machinery cutting the sandstone blocks: Link: https://www.instagram.com/p/DXEF7TtTkuC/	
NEXT MEETING	- Wednesday 4th November 2026. Commencing at 12.30pm with lunch prior to the 1pm start.	**Agreed.**

The meeting was closed at 3:09pm with the chair thanking all members for their attendance.

ACTION ITEMS

ITEM	ISSUE	RESPONSIBILITY
1	Send current version of Terms of Reference to CCC members for their review.	LA

Appendix K – Complaints Register

Dixon Sand (No. 1) Pty Ltd

Haerses Road Quarry

Complaints Register - Summary

Period	Number of Complaints received	Complaint Register Published on Website
Jul 2025	0	25 Aug 2025
Aug 2025	0	10 Sep 2025
Sep 2025	0	13 Oct 2025
Oct 2025	0	12 Nov 2025
Nov 2025	0	10 Dec 2025
Dec 2025	0	05 Jan 2026
Jan 2026	0	05 Feb 2026
Feb 2026	0	03 Mar 2026
Mar 2026	0	20 Apr 2026
Apr 2026	0	5 May 2026
May 2026	0	3 Jun 2026
June 2025	0	16 Jul 2026
Total No. of Complaints	**0**	

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