JANDRA QUARRY

2025 Annual Review

Site Details

Name of operation	Jandra Quarry
Name of operator	Holcim (Australia) Pty Ltd
Development consent / project approval #	DA 213-10-99 (Modification 5)
Name of holder of development consent / project approval	Holcim (Australia) Pty Ltd
Document Title	Annual Review 2025
Document Revision	A
Annual Review start date	January 1, 2025
Annual Review end date	December 31, 2025

I, David Saville, certify that this audit report is a true and accurate record of the compliance status of Jandra Quarry for the period of January 1, 2025 - December 31, 2025 and that I am authorised to make this statement on behalf of Holcim (Australia) Pty Ltd.

Note.

a) _ *The Annual Review is an 'environmental audit' for the purposes of section 9.42 of the Environmental Planning and Assessment Act 1979 (NSW). Section 9.42(1) provides that a person must not include false or misleading information in, or provide information for inclusion in, an audit report produced to the Minister in connection with an environmental audit if the person knows that the information is false or misleading in a material respect. A contravention of this provision constitutes a Tier 3 offence under the Act (a maximum penalty: in the case of a corporation is $1 million; and for an individual is $250,000).*

b) *The Crimes Act 1900 (NSW) contains other offences relating to false and misleading information: Section 192G (Intention to defraud by false or misleading statement—maximum penalty 5 years imprisonment); and Sections 307A, 307B and 307C (False or misleading applications/information/documents—maximum penalty 2 years imprisonment or 200 penalty units, or both).*

Name of authorised reporting officer	David Saville
Title of authorised reporting officer	Quarry Manager
Signature of authorised reporting officer	
Date	27/03/2026

Table of Contents

1 Statement of Compliance 1
2 Introduction 2
2.1 Contact Details 6
3 Approvals 7
4 Operations Summary 8
4.1 Exploration 8
4.2 Land Preparation 8
4.3 Construction Activities 8
4.4 Quarry Operations 8
4.5 Next Reporting Period 10
5 Actions Required from the Previous Annual Review 11
5.1 Actions from 2024 Annual Review 11
5.2 Actions from the 2024 Annual Review – Holcim Proposed Actions 11
6 Environmental Performance 12
6.1 Meteorological Monitoring 12
6.2 Noise 13
6.2.1 Environmental Assessment Predictions 13
6.2.2 Approved Criteria 14
6.2.3 Key Environmental Performance 14
6.2.4 Management Measures 15
6.2.5 Proposed Improvements 15
6.3 Air Quality 16
6.3.1 Environmental Assessment Predictions 16
6.3.2 Approved Criteria 17
6.3.3 Key Environmental Performance 17
6.3.4 Management Measures 20
6.3.5 Proposed Improvements 20
6.4 Blasting 21
6.4.1 Environmental Assessment Predictions 21

6.4.2 Approved Criteria 21
6.4.3 Key Environmental Performance 21
6.4.4 Management Measures 23
6.4.5 Proposed Improvement 23
6.5 Traffic Management 24
6.5.1 Environmental Assessment Predictions 24
6.5.2 Approved Criteria 24
6.5.3 Key Environmental Performance 24
6.5.4 Management Measures 25
6.5.5 Proposed Improvements 25
6.6 Biodiversity 26
6.6.1 Environmental Assessment Predictions 26
6.6.2 Approved Criteria 26
6.6.3 Key Environmental Performance 26
6.6.4 Management Measures 27
6.6.5 Proposed Improvements 27
6.7 Heritage 28
6.7.1 Environmental Assessment Predictions 28
6.7.2 Approved Criteria 28
6.7.3 Key Environmental Performance 28
6.7.4 Management Measures 28
6.7.5 Proposed Improvements 28
6.8 Waste Minimisation 29
6.8.1 Key Environmental Performance 29
6.8.2 Management Measures 29
6.8.3 Proposed Improvements 29
7 Water Management 30
7.1 Environmental Assessment Predictions 30
7.2 Approved Criteria 30
7.3 Surface Water Results 31
7.4 Groundwater Results 33

7.4.1 Water Take 33
7.5 Water Use and Storage 33
8 Rehabilitation 34
8.1 Rehabilitation Performance 34
8.2 Summary of Current Rehabilitation and Disturbance 35
9 Summary of Environmental Performance 38
10 Community 40
10.1 Community Engagement Activities 40
10.2 Community Contributions 40
10.3 Complaints 40
11 Independent Environmental Audit 41
12 Incidents and Non-Compliances 45
13 Activities to be Completed in the Next Reporting Period 46

Tables

Table 1: Statement of Compliance 1
Table 2: Compliance Status Key 1
Table 3: Annual Review Requirement 5
Table 4: Contact Details for Jandra Quarry 6
Table 5: Approvals for Jandra Quarry Operations 7
Table 6: EPL Fee-Based Activity at Jandra Quarry 7
Table 7: Total Product Distributed 8
Table 8: Extractive Data (2024-2025 reporting period) 9
Table 9: Cumulative Production for Development Consent 10
Table 10: Proposed Actions from Holcim 11
Table 11: Meteorological Monitoring Results from 2025 12
Table 12: Stage 1 Assessment Without Asphalt Plant Operating 13
Table 13: Noise Criteria - Quarrying Operations Only dB(A) 14
Table 14: Noise Criteria - Quarrying Activities & Asphalt Plant Production Combined dB(A) 14
Table 15: Predicted Incremental & Cumulative Annual Average TSP Concentrations (µg/m3) 16
Table 16: Long-term impact assessment criteria for particulate matter 17
Table 17: Short-term impact assessment criteria for particulate matter 17
Table 18: PM_{10} and TSP Monitoring – 2025 18
Table 19: PM_{10} Monitoring Trends 20
Table 20: Blasting Criteria for Jandra Quarry 21

Table 21: Blast Monitoring Results for Jandra Quarry 21
Table 22 Long Term Blasting Trends 22
Table 23: Waste Summary....29
Table 24: Water Balance Results for Varying Stages of Quarry Development 30
Table 25: EPL Discharge Monitoring Requirements....31
Table 26: Surface Water Discharge Monitoring....31
Table 27: Rehabilitation Performance 34
Table 28: Rehabilitation and Disturbance Status....35
Table 29: Rehabilitation and Closure Actions for the Next Reporting Period 36
Table 30: Summary of Environmental Performance 38
Table 31: Response to Audit Recommendations....41
Table 32: Proposed Improvement Measures 2026....46

Figures

Figure 1: Jandra Quarry Site Location.... 3
Figure 2: Jandra Quarry Project Approval Area.... 4
Figure 3: Jandra Quarry Rehabilitation and Disturbance 37

Appendices

Appendix A – Truck Transport Summary for 2025
Appendix B – Quarterly Biodiversity Monitoring Reports (Kleinfelder, 2025)

1 Statement of Compliance

See **Table 1** for the statement of commitments for the reporting period (1 January to 31 December 2025) for Jandra Quarry. **Table 2** displays the DPHI compliance status key. Error! Reference source not found. details the non-compliances identified within the reporting period.

Table 1: Statement of Compliance

Were all conditions of the relevant approval(s) complied with?	
DA 213-10-99 (Mod 5)	No
EPL No. 2796	Yes

Table 2: 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-compliance	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)

2 Introduction

Holcim (Australia) Pty Ltd (Holcim) operates Jandra Quarry, a hard rock quarry located on the Pacific Highway, Possum Brush, approximately 300 kilometres (km) north of Sydney in the Mid Coast Council Local Government Area. The quarry supplies construction materials used to make concrete, roads, bridges, and asphalt across the Mid North Coast.

Development Consent for Jandra Quarry was granted on 30 March 2000 (DA 231-10-99). Jandra Quarry have sought five modifications to the Development Consent since that time under Section 75W of the Environmental Planning and Assessment Act 1979 (EP&A Act). The Jandra Quarry Intensification in Production Development Consent was the most recent modification, granted on 13 March 2015 by the NSW Minister for Planning (DA 231-10-99 MOD 5).

The site also operates in accordance with Environment Protection License (EPL) No. 2796 issued by the Environmental Protection Authority (EPA).

The regional locality and project approval area are outlined in **Figure 1** and **Figure 2** below.



Figure 1: Jandra Quarry Site Location



Figure 2: Jandra Quarry Project Approval Area

In accordance with Schedule 5, Condition 4 of the modified Development Consent, Holcim is required to undertake an Annual Review of the site. This Annual Review has been prepared in accordance with Schedule 5 Condition 4 (Annual Performance Monitoring) of the Development Consent and in accordance with the *Annual Review Guideline: Post Approvals Requirements for State Significance Mining Developments* (October 2015). The Annual Review requirements and the section where they have been addressed in this document have been provided in **Table 3:** .

Table 3: Annual Review Requirement

Condition	Section addressed in Annual Review
4. Annual Review Annual Review by the end of March each year, the Applicant shall review the environmental performance of the development to the satisfaction of the Secretary. This review must: a) describe the development (including 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;	**Sections 4, 6 and 8**
(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. - the monitoring results of previous years, and - the relevant predictions in the documents listed in condition 2 of Schedule 2	**Sections 6 and 7**
(c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;	**Sections 1 and 12**
(d) identify any trends in the monitoring data over the life of the development;	**Sections 6 and 7**
(e) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and	**Sections 6 and 9**
(f) describe what measures will be implemented over the current calendar year to improve the environmental performance of the development	**Section 13**

2.1 Contact Details

Table 4 details the names and contact details of key Holcim staff.

Table 4: Contact Details for Jandra Quarry

Staff Member and Position	Contact Details
Quarry Manager David Saville	Work:(02) 6554 3358 Mob: 0429 760 983 Email: david.saville@holcim.com
Production Supervisor Peter Wilson	Work:(02) 6554 3358 Mob: 0429 790 926 Email: peter.wilson@holcim.com
Environment Manager - NSW Dozie Egeonu	Mob: 0429 557 493 Email: dozie.egeonu@holcim.com

3 Approvals

The site operates under the approvals listed in **Table 5**.

Table 5: Approvals for Jandra Quarry Operations

Approval	Regulatory Authority
DA 213-10-99 (Modification No. 5)	NSW Department of Planning, Housing, and Infrastructure (DPHI)
EPL No. 2796	NSW Environmental Protection Authority (EPA)

Holcim holds EPL 2796 which covers its activities at Jandra Quarry. **Table 6** outlines the EPL licensing limits.

Table 6: EPL Fee-Based Activity at Jandra Quarry

Scheduled Activity	Fee Based Activity	Scale
Crushing, grinding or separating	Crushing, grinding or separating	> 100,000 – 500,000 T processed
Extractive activities	Extractive activity	>100,000 – 500,000 T extracted or processed
Resource recovery	Recovery of general waste	Any general waste recovered
Waste storage	Waste storage – other types of waste	Any other types of waste stored

Schedule 2 Condition 8 of DA 213-10-99 outlines the approved extraction limit is 490,000 tonnes of quarry products from the site in any calendar year. An outline of 2025 production is outlined in **Section 4.4**.

4 Operations Summary

4.1 Exploration

No exploration activities were completed during the Annual Review period.

4.2 Land Preparation

No land clearing occurred during the Annual Review period.

4.3 Construction Activities

There was no construction undertaken during the Annual Review period.

4.4 Quarry Operations

Development activities undertaken at Jandra Quarry in 2025 included:

- Stripping of topsoil and overburden within the existing extraction limit boundary;
- Drill, blast, load and haul activities; and
- Crushing, screening and stockpiling of product.

Extraction and processing operations in 2025 were undertaken between 6am and 10pm, Monday to Friday and between 6am and 6pm on Saturdays.

Table 7 includes a summary of the operations undertaken during the reporting period against the development consent conditions regarding product transported from Jandra Quarry.

Table 7: Total Product Distributed

Material	Approved Limit	Product Distributed (T)					
		2021	2022	2023	2024	2025	2026 (forecast)
Product Extracted Total Schedule 2, Condition 8	490 000 T	328,114	465,466	461,521	417,269	482,895	483,339
Product Sales Total Schedule 2, Condition 9	475 000 T	310,759	325,414	412,909	380,550	453,798	464,707

Schedule 2 Condition 18 states that Holcim must provide production data to DPHI and include this data in the Annual Review. Note that Holcim submits this data on a financial year (July-June), therefore production data will not align completely with this report**. Table 8** details the extractive data for the 2025 period.

Table 8: Extractive Data (2024-2025 reporting period)

Material	Material Type	Tonnes[1]
Construction Sand (Filling/Packing Sand)	Construction sand	0
Fill & Crusher Fines (under 5mm)	Construction sand	122,501
Other Unprocessed Materials	Virgin materials - Crushed coarse aggregates	44,184
Over 30mm-70mm (Railway Ballast)	Virgin materials - Crushed coarse aggregates	617
Over 5mm-30mm Concrete Aggregates	Virgin materials - Crushed coarse aggregates	189,511
Over 75mm (Rock broken)	Virgin materials - Crushed coarse aggregates	13,706
Prepared Road Base & Sub-base & Drainage Filter	Virgin materials - Crushed coarse aggregates	112,376
Total		482,895

Note: [1] Values rounded.

Schedule 2 Condition 7 outlines the applicant shall not extract more than 16.5 million tonnes of quarry product under the Development Consent. From the start of 2015 to the end of 2025, the site has extracted approximately 3,056,977 tonnes which is well within the limits of the Development Consent. The cumulative production is shown in **Table 9**.

Table 9: Cumulative Production for Development Consent

Year	Extraction Tonnage
2015	232,028
2016	315,205
2017	335,705
2018	252,165
2019	323,930
2020	328,114
2021	325,414
2022	415,433
2023	461,521
2024	443,485
2025	482,895
TOTAL	3,915,895

4.5 Next Reporting Period

Operational activities proposed to be carried out at Jandra Quarry in 2026, include:

- Stripping of topsoil and overburden within the existing extraction limit boundary;
- Drill, blast, load and haul activities;
- Crushing, screening and stockpiling of product; and
- Progressive maintenance of rehabilitation.

5 Actions Required from the Previous Annual Review

5.1 Actions from 2024 Annual Review

Jandra Quarry's 2024 Annual Review was submitted on 30 June 2025. On 11 April, DPHI confirmed that the Annual Review generally met the reporting requirements of the consent and the NSW Planning *Annual Review Guideline* (October 2015).

5.2 Actions from the 2024 Annual Review – Holcim Proposed Actions

Table 10 outlines an update on the proposed actions from the previous Annual Review.

Table 10: Proposed Actions from Holcim

Improvement Measure	Activities	Works Undertaken in 2025
Management Plan Review	All environmental management plans will be reviewed in 2025 to determine the need for updates in accordance with the DA conditions.	All relevant environmental management plans were reviewed. The Noise and Blast Management Plan was updated and approved by DPHI on 19 September 2025.
Progressive Rehabilitation	The site will continue to progressively rehabilitate areas	Refer to **Section 8** for more details.
Noise and Blasting	Pending approval of the updated Noise and Blast Management Plan, Jandra Quarry will relocate location R2 due to access issues. Noise and blast monitoring will continue in 2025.	Under the approved plan (4 July 2025), Holcim commenced monitoring at the boundary during the 2025 reporting period. Refer to **Section 6.2** for more details.

6 Environmental Performance

6.1 Meteorological Monitoring

Weather conditions for 2025 are summarised in **Table 11**.

Table 11: Meteorological Monitoring Results from 2025

Month	Total Rainfall (mm)	Minimum Temperature (°C)	Maximum Temperature (°C)
January	212	14.7	36.3
February	90	13.8	33.3
March	162	15.7	34.2
April	97	10.6	29.3
May	747	8.6	25.4
June	12	2.2	25.4
July	70	2.2	24.1
August	234	4.7	29.2
September	40	6.1	32
October	36	8.7	41.2
November	23	6.5	37.5
December	32	9.3	37.7
Annual TOTAL	1754		

Total annual rainfall during the 2025 reporting period was 1,754 millimetres (mm), an increase of 554 mm from 2024.

6.2 Noise

6.2.1 Environmental Assessment Predictions

The noise and blasting impact assessment in the Environmental Assessment (2014)[1] considered the potential impacts of the proposed modification on nearby sensitive residential receivers.

Noise levels (without asphalt production) below the early morning shoulder project criteria are predicted at all private residential receiver locations and for all stages of the quarry life, provided that operations are restricted during this time including:

- No works in the approved overburden emplacement area;
- No works above RL50; and
- No operation of the mobile processing plant.

Noise levels (without asphalt production) above the day / evening criteria are predicted at three private residential receivers and range from a marginal 2 decibels A-weighted (dBA) to 5 dBA above the criteria. Holcim is confident that these noise levels will not be perceived as a nuisance and has negotiated agreements with the potentially affected property owners.

Predicted noise levels from the Environmental Assessment (2014) from asphalt production were up to 7 dBA above the criteria at one private residential receiver R1 during all periods and all stages of the quarry development, as this receiver has a line of sight to the asphalt plant. Holcim has a negotiated agreement with the property holder of R1. It is noted, asphalt campaigns at Jandra Quarry are sporadic, however when the asphalt plant does operate it can operate for 24 hours a day.

Table 12 details the noise modelling for stage 1 of the development plan as described in the Noise and Blasting Impact Assessment detailed within the Environmental Assessment (2014). All results have been below that modelled within the Environmental Assessment (2014).

Table 12: Stage 1 Assessment Without Asphalt Plant Operating

Receptor	Day / Evening (dBA L_{eq}) 7am to 10pm		Early morning shoulder (dBA L_{eq}) 6am to 7 am		
	Project Criteria	Predicted Level	Project Criteria	Predicted level	
		Neutral		Neutral	Worst Case
R1	41	41	40	41	46
R2	38	30	38	30	35
R3	51	<30	50	<30	30
R4	41	34	40	33	38
R5	41	40	40	38	43
R6	38	32	38	32	37

[1] Jandra Quarry, Intensification in Production Environmental Assessment, 22 July 2014, prepared by Element Environment for Holcim (Australia) Pty Ltd. Source: https://www.holcim.com.au/sites/australia/files/docs/au-abt-comm-jandra-environmentalassessment-mainreport.pdf[1]

Receptor	Day / Evening (dBA L_{eq}) 7am to 10pm		Early morning shoulder (dBA L_{eq}) 6am to 7 am		
	Project Criteria	Predicted Level	Project Criteria	Predicted level	
		Neutral		Neutral	Worst Case
R7	38	<30	38	<30	<30
R8 (Holcim)	41	33	40	32	36
R9 (Holcim)	41	38	40	36	40
R10 (Holcim)	38	44	38	43	47

6.2.2 Approved Criteria

Criteria for each of the receivers as outlined in Schedule 3 Condition 1 of the Development Consent for quarry operation only as well as combined quarry and asphalt production operations are provided in **Table 13** and **Table 14**.

Table 13: Noise Criteria - Quarrying Operations Only dB(A)

Location	6am-10pm ($LA_{eq(15min)}$)
R1[1]	46
R5	40
R2, R4, R6	36
R7	35

Table 14: Noise Criteria - Quarrying Activities & Asphalt Plant Production Combined dB(A)

Location	6am-10pm ($LA_{eq(15min)}$)	Night (10pm – 6am Monday to Saturday)	
		($LA_{eq(15min)}$)	($LA_{eq(1min)}$)
R1[1]	48	46	51
R5	41	39	51
R4	40	39	51
R2, R6	40	35	48
R7	36	35	48

Note: [1]Holcim have a negotiated agreement with the property owner of R1 which excludes this receptor from the approved noise criteria.

As per EPL 2796 and the approved Noise and Blast Management Plan, Jandra Quarry is required to conduct noise monitoring annually within the EPL reporting period (1 May to 30 April).

6.2.3 Key Environmental Performance

For the EPL reporting period of 1 May 2025 to 30 April 2026, a Noise Monitoring Assessment (NMA) was completed by Ramboll between 13 and 14 February 2026. At the time of writing the 2025/2026 final report was unavailable, however conclusion states:

This NMA was completed by Ramboll at the Holcim Jandra Quarry, Possum Brush, NSW as an annual requirement of the NBMP. Monitoring was carried out on Thursday 13 and Friday 14 February 2025 at four locations selected as representative to the sensitive receptors at the surroundings to Jandra Quarry. No audible noise from quarry operations was observed at any of the four locations during the morning shoulder and day periods. The results presented in this NMA show compliance with the relevant noise criteria at the Holcim Jandra Quarry, NSW.

Long-term Trends

The noise monitoring results for the EPL reporting period of 1 May 2025 to 30 April 2026 were consistent with previous noise monitoring results. All available noise results were compliant.

No noise complaints were received in 2025.

Comparison to EA Predictions

Noise monitoring results generally remained consistent with EA predictions. The well-established vegetative buffer and distance between the operations and the sensitive receivers assists the Quarry in meeting these predictions.

6.2.4 Management Measures

Management measures relating to noise are outlined within the Jandra Quarry Noise and Blast Management Plan. These include:

- Defined operating hours as per Schedule 2 Condition 10 of the Development Consent;
- Work restrictions during the early morning shoulder period;
- Monitoring for noise and meteorological conditions;
- Broadband reversing beepers;
- Staff and contractors inductions; and
- Controlled blasting activities.

6.2.5 Proposed Improvements

Jandra Quarry will continue to perform noise monitoring in accordance with the approved Noise and Blast Management Plan. Any exceedance or noise-related incident will be investigated with appropriate corrective actions implemented and documented.

6.3 Air Quality

6.3.1 Environmental Assessment Predictions

Table 15 displays the modelled dust contributions expected from Jandra Quarry from the Air Quality Impact Assessment detailed within the Environmental Assessment (2014). The air quality impact assessment concluded that with the implementation of existing and additional feasible management measures, all relevant air quality criteria could be met at all identified sensitive residential receivers for all stages of the quarry development.

Table 15: Predicted Incremental & Cumulative Annual Average TSP Concentrations (µg/m3)

Receptor ID	Increment			Cumulative		
	Stage 1	Stage 2	Stage 3	Stage 1	Stage 2	Stage 3
Privately Owned Receptors						
R1	2.5	2.6	2.8	48.5	48.6	48.8
R2	0.3	0.3	0.4	46.3	46.3	46.4
R3	0.8	0.7	0.6	46.8	46.7	46.6
R4	0.9	0.8	0.7	46.9	46.8	46.7
R5	0.6	0.5	0.5	46.6	46.5	46.5
R6	0.4	0.4	0.5	46.4	46.4	46.5
R7	0.1	0.1	0.2	46.1	46.1	46.2
R11	0.4	0.4	0.3	46.4	46.4	46.3
R12	0.3	0.3	0.3	46.3	46.3	46.3
R13	0.3	0.3	0.3	46.3	46.3	46.3
R14	0.3	0.3	0.3	46.3	46.3	46.3
R15	0.2	0.2	0.2	46.2	46.2	46.2
R16	0.3	0.2	0.2	46.3	46.2	46.2
R17	<0.1	<0.1	0.1	<46.1	<46.1	46.1
R18	<0.1	<0.1	<0.1	<46.1	<46.1	<46.1
R19	0.4	0.4	0.5	46.4	46.4	46.5

Receptor ID	Increment			Cumulative		
	Stage 1	Stage 2	Stage 3	Stage 1	Stage 2	Stage 3
Quarry Owned Receptors						
R8	1.3	1.1	1	47.3	47.1	47
R9	1.7	1.7	1.7	47.7	47.7	47.7
R10	1.5	1.5	4.6	47.5	47.5	50.6
Criteria					**90**	

6.3.2 Approved Criteria

Air quality monitoring is required to be undertaken in accordance with Schedule 3 Condition 10 of the Development Consent. These criteria are presented in **Table 16** and **Table 17**.

Table 16: Long-term impact assessment criteria for particulate matter

Pollutant	Averaging Period	[d] Criterion
Total suspended particulate (TSP) matter	Annual	[a] 90 µg/m^3
Particulate matter <10 µm (PM_{10})	Annual	[a] 30 µg/m^3

Notes: [a] Total impact (ie incremental increase in concentrations due to the development plus background concentrations due to all other sources);
[d] Excludes extraordinary events such as bushfires, prescribed burning, dust storms, sea fog, fire incidents, illegal activities or any other activity agreed by the Secretary in consultation with EPA.

Table 17: Short-term impact assessment criteria for particulate matter

Pollutant	Averaging Period	[d] Criterion
Particulate matter <10 µm (PM_{10})	24 hour	[a] 50 µg/m^3

Notes: [a] Total impact (ie incremental increase in concentrations due to the development plus background concentrations due to all other sources);
[d] Excludes extraordinary events such as bushfires, prescribed burning, dust storms, sea fog, fire incidents, illegal activities or any other activity agreed by the Secretary in consultation with EPA.

6.3.3 Key Environmental Performance

PM10 Monitoring

Monitoring for PM_{10} first commenced in May 2017 and has continued into the 2025 reporting period. Results are provided in **Table *18*Table *18***. Throughout the 2025 reporting period, all samples were compliant against performance criteria this report period. There were no exceedances in the PM10 short-term criteria value of 50 micrograms per cubic meter (µg/m^3). The annual average for TSP was 21.24 µg/m^3 which is less than the criteria value of 90 µg/m^3.

Table 18: PM_{10} and TSP Monitoring – 2025

Sampling Date	PM_{10} (µg/m^3)	TSP[1] (µg/m^3)	Compliance Status
6-Jan-25	12.16	20.19	Within Criteria
12-Jan-25	23.34	38.74	Within Criteria
18-Jan-25	16.85	27.97	Within Criteria
24-Jan-25	11.52	19.12	Within Criteria
30-Jan-25	12.91	21.43	Within Criteria
5-Feb-25	17.69	29.37	Within Criteria
11-Feb-25	20.53	34.08	Within Criteria
17-Feb-25	11.62	19.29	Within Criteria
23-Feb-25	12.53	20.80	Within Criteria
1-Mar-25	12.08	20.05	Within Criteria
7-Mar-25	20.13	33.42	Within Criteria
13-Mar-25	20.16	33.47	Within Criteria
19-Mar-25	10.03	16.65	Within Criteria
25-Mar-25	20.79	34.51	Within Criteria
31-Mar-25	6.09	10.11	Within Criteria
6-Apr-25	17.74	29.45	Within Criteria
12-Apr-25	10.74	17.83	Within Criteria
18-Apr-25	18.35	30.46	Within Criteria
24-Apr-25	16.73	27.77	Within Criteria
30-Apr-25	9.1	15.11	Within Criteria
6-May-25	17.74	29.45	Within Criteria
12-May-25	10.74	17.83	Within Criteria
18-May-25	18.35	30.46	Within Criteria
24-May-25	16.73	27.77	Within Criteria
30-May-25	9.1	15.11	Within Criteria
5-Jun-25	7.97	13.23	Within Criteria
11-Jun-25	4.37	7.25	Within Criteria
17-Jun-25	7.11	11.80	Within Criteria
23-Jun-25	8.77	14.56	Within Criteria
29-Jun-25	3.23	5.36	Within Criteria
5-Jul-25	5.31	8.81	Within Criteria
11-Jul-25	6.89	11.44	Within Criteria
17-Jul-25	15.36	25.50	Within Criteria
23-Jul-25	5.02	8.33	Within Criteria
29-Jul-25	4.8	7.97	Within Criteria
4-Aug-25	12.15	20.17	Within Criteria
10-Aug-25	4.26	7.07	Within Criteria
16-Aug-25	4.72	7.84	Within Criteria

Sampling Date	PM_{10} (µg/m^3)	TSP[1] (µg/m^3)	Compliance Status
22-Aug-25	4.43	7.35	Within Criteria
28-Aug-25	3.81	6.32	Within Criteria
3-Sep-25	7.65	12.70	Within Criteria
9-Sep-25	13.79	22.89	Within Criteria
15-Sep-25	8.85	14.69	Within Criteria
21-Sep-25	6.88	11.42	Within Criteria
27-Sep-25	13.37	22.19	Within Criteria
3-Oct-25	13.28	22.04	Within Criteria
9-Oct-25	21.49	35.67	Within Criteria
15-Oct-25	15.42	25.60	Within Criteria
21-Oct-25	20.94	34.76	Within Criteria
27-Oct-25	11.44	18.99	Within Criteria
2-Nov-25	14.73	24.45	Within Criteria
8-Nov-25	14.58	24.20	Within Criteria
14-Nov-25	30.2	50.13	Within Criteria
20-Nov-25	18.96	31.47	Within Criteria
26-Nov-25	15.57	25.85	Within Criteria
2-Dec-25	9.2	15.27	Within Criteria
8-Dec-25	23.07	38.30	Within Criteria
14-Dec-25	13.56	22.51	Within Criteria
20-Dec-25	11.87	19.70	Within Criteria
26-Dec-25	10.93	18.14	Within Criteria
Annual Average	**12.80**	**21.24**	**Within Annual Average Criteria**

Note:

[1] TSP calculated based on PM_{10} results (1.66 x PM_{10}).

Long-term Trends

Table 19 compares PM_{10} results for the last 5 years, which were all within the impact assessment criteria. PM_{10} and TSP levels showed a slight increase compared to 2024 results, but remain generally consistent with long term data.

Table 19: PM_{10} Monitoring Trends

Monitoring Summary for Annual Review Period	2019	2020	2021	2022	2023	2024	2025
PM_{10} Average ($\mu g/m^3$)	20	17.3	14.4	12.04	8.41	10.79	12.8
Max. PM_{10} ($\mu g/m^3$)	94	102	39.3	26.4	26.5	39.77	30.20
Min. PM_{10} ($\mu g/m^3$)	0.1	5.9	2.9	3.27	0.07	0.87	3.23

Comparison to EA Predictions:

The results for PM_{10} and TSP were within the predicted limits of the EA predictions.

6.3.4 Management Measures

Dust minimisation and control measures implemented on site include:

- The use of a watercart that follows specified procedures to achieve the most optimal dust control measures;
- The use of installed sprinkler systems along primary haul road;
- Sprays throughout the plant;
- Speed limits across the site;
- Dust covers in place across the screening building;
- Daily inspections;
- Monitoring for air quality and meteorological conditions; and
- Training of staff and contractors.

6.3.5 Proposed Improvements

Holcim will continue to implement and document corrective actions when exceedances or incidents are detected.

6.4 Blasting

6.4.1 Environmental Assessment Predictions

The Noise and Blasting Impact Assessment (SLR, 2014) identified the Maximum Instantaneous Charge (MIC) for the ANZECC Guidelines for human comfort to be met, at the closest private (non-Holcim owned) residences, during all stages of the quarry development.

The design of blasts will then be optimized to limit the possibility of EPA criteria exceedances, when blast locations are closer to residences and preferred blast designs can be used for blast locations with adequate distances to residences.

6.4.2 Approved Criteria

Blasting was performed at Jandra Quarry throughout the reporting period in accordance with Schedule 3 Condition 5 of the Development Consent. The criterion for blasting is detailed in **Table 20**, and is consistent with the approved Noise and Blast Management Plan. Monitoring for receiver R2 is managed using the approved alternative boundary monitoring location (in lieu of on-property monitoring at R2).

Table 20: Blasting Criteria for Jandra Quarry

Location	Airblast overpressure (dB(Lin Peak))	Ground vibration (mm/s)	Allowable exceedance
Any residence on privately owned land, or any public infrastructure	120	10	0%
	115	5	5% of the total number of blasts over a period of 12 months

6.4.3 Key Environmental Performance

Results of blast monitoring undertaken during the reporting period are shown in **Table 21**.

Table 21: Blast Monitoring Results for Jandra Quarry

Blast Number	Date	Boundary of Location R2		Location R4	
		Vibration (mm/s)	Overpressure (dBL)	Vibration (mm/s)	Overpressure (dBL)
1	31/01/2025	2.3	104.3	0.5	111.4
2	12/03/2025	2.0	81.9	0.1	112
3	12/05/2025	1.7	100.3	0.6	113.6
4	02/06/2025	DNT	DNT	0.5	100.0

Blast Number	Date	Boundary of Location R2		Location R4	
		Vibration (mm/s)	Overpressure (dBL)	Vibration (mm/s)	Overpressure (dBL)
5	14/07/2025	1.8	102.3	0.3	102.0
6	27/08/2025	0.5	114.0	0.1	102.8
7	12/09/2025	3.1	110.6	0.5	112.8
8	04/11/2025	0.9	111.3	0.1	97.4
9	13/11/2025	1.0	103.8	0.5	114.2
10	09/12/2025	0.98	103.8	0.16	**115.1**

Notes: DNT – Did Not Trigger.

***Bold** indicates an exceedance.*

There was a total of 10 blasts recorded in 2025. A minor overpressure exceedance was measured at R4 on 9 December 2025 when blast was recorded at 115.1 dB, an exceedance of 0.1 dB. The exceedance was reported to the EPA and DPHI as required, with no further actions found necessary.

Sensitive receivers near the quarry are notified prior to blasting as per the Noise and Blast Management Plan. This process is managed by the weighbridge staff who send a text message to the tenants the day before a blast is planned.

Long-term Trends

Blast data from 2015 to 2025 is displayed in **Table 22**.

Table 22 Long Term Blasting Trends

Year	Number of Blasts	Max. Overpressure (dBL)	Average Overpressure (dBL)	Max Vibration (mm/s)	Average Vibration (mm/s)
2015	10	114.9	109.8	2.48	1.58
2016	9	116	107.8	1.3	0.84
2017	16	113.2	105.7	3.1	1.02
2018	11	111.0	99.8	1.52	0.85
2019	10	109.9	86.2	4.3	1.3
2020	11	111.9	104.5	2.4	1.5
2021	13	109.1	105.7	1.4	0.7
2022	14	119.1	102.21	2.4	0.91
2023	16	115.4	103.3	1.65*	1.15
2024	7	112.8	101.2	1.9	0.95
2025	10	**115.1**	105.8	2.3	0.96

***Bold** indicates an exceedance.*

Comparison to EA Predictions

The results for vibration and overpressure were within the predicted limits of the EA predictions.

6.4.4 Management Measures

Management measures relating to blasting are outlined within the Jandra Quarry Noise and Blast Management Plan, which includes a Drill and Blast Procedure. This procedure outlines the key steps of the blasting process including design, drilling, loading, and firing.

6.4.5 Proposed Improvement

Holcim will continue to perform blast monitoring in accordance with the approved Noise and Blast Management Plan. This includes the use of the approved alternative boundary monitoring location for assessing performance at receiver R2. Monitoring results will be reviewed. Identified exceedances will be investigated to inform any required corrective actions.

6.5 Traffic Management

6.5.1 Environmental Assessment Predictions

Section 3.5.6 of the Environmental Assessment (2014) stated that at peak demand, the maximum number of heavy vehicles leaving the site to deliver product to customers would reach approximately 12 (24 truck movements) per hour. This has been calculated based on a minimum loading time of approximately 5 minutes per truck. It is unlikely that, on a typical day, these peaks in demand will occur for more than a few hours at a time. A detailed assessment of traffic and transport is outlined within Section 6.2 of the Environmental Assessment (2014).

6.5.2 Approved Criteria

The site is required to operate traffic and manage transport through compliance with the requirements of the conditions listed below:

Pacific Highway Intersection

31. The Applicant shall maintain the intersection of the Pacific Highway and the Jandra Quarry Access Road, for the duration of product transport from the site, to the satisfaction of the RMS.

32. The Applicant shall install and subsequently maintain street lighting at the intersection of the Pacific Highway and the Jandra Quarry Access Road, to the satisfaction of the RMS, prior to transporting quarry products from the site outside of the hours 7 am to 6 pm. Any works affecting the Pacific Highway must not take place without the prior approval of the RMS.

Monitoring of Product Transport

33. The Applicant shall keep accurate records of:
    (a) the amount of quarry products, including asphalt, transported from the site (calendar month and year);
    (b) the number of laden vehicle movements to and from the site (day, calendar month and year); and
    (c) publish these records on its website at the end of each calendar quarter.

6.5.3 Key Environmental Performance

The site has maintained the intersection at the Pacific Highway and Quarry Access Road in accordance with the conditions in the Development Consent. No impacts to the intersection have been identified during the reporting period.

All truck movements and quarry product volumes are published on the Holcim (Jandra Quarry) webpage in accordance with Schedule 3, Condition 33 of the Development Consent. A summary of transport data for 2025 is appended to this Annual Review as **Appendix A**.

In summary:

- There were 15,039 truck movements; and
- There were 453,798 tonnes of material taken offsite as a product.

Truck movements and materials taken offsite have increased marginally on 2024 but remain within the approved criteria.

6.5.4 Management Measures

Management measures relating to traffic include:

- Defined haulage times.
- Covered loads leaving site.
- Defined haulage limits; and
- Trained transport operators.

6.5.5 Proposed Improvements

Truck movements will continue to be monitored and recorded in the oncoming reporting period to ensure that they remain within the approved criteria.

There are no proposed improvements relating to traffic management for 2025.

6.6 Biodiversity

6.6.1 Environmental Assessment Predictions

The Environmental Assessment (2014) assessed the biodiversity impacts associated with clearing an additional 1.284 hectares of native vegetation. The Flora and Fauna Assessment accompanying the EA stated: "With the implementation of flora and fauna management measures included in the Flora and Fauna Management Plan and this Environmental Assessment (2014), (depending on the outcome of the targeted surveys for the Eastern Underground Orchid) the proposed modification would not result in any significant impacts on biodiversity on site and in surrounding bushland".

6.6.2 Approved Criteria

There are no specific criteria relating to biodiversity within the Development Consent. Schedule 3 Condition 25 outlines the requirement to complete a Biodiversity and Rehabilitation Management Plan (BRMP). Jandra Quarry completes weed management as per the Weed Management Plan.

6.6.3 Key Environmental Performance

Weed control was completed routinely in 2025, and spraying targeted Lantana (*Lantana sp*.) and Tobacco weed (*Solanum mauritianum*).

No feral animals were noted during this reporting period, with minimal issues reported in the past, however, feral dog or fox tracks were identified in quarter one at the top of the overburden stockpile area. Feral animal control programs are implemented on an as-needs basis due to the infrequent sightings and issues.

Biodiversity monitoring was conducted quarterly in 2025 to meet requirements of the approved BRMP (2018). The inspections assessed parameters including but not limited to stability and condition of soil, success of nest boxes, and presence of weeds. The quarterly monitoring was undertaken on the following dates:

- 14 March 2025
- 16 June 2025
- 22 September 2025
- 15 December 2025.

The quarterly biodiversity monitoring reports by Kleinfelder are attached to this Annual Review in **Appendix B**. The main findings of monitoring include:

- The upper benches have been previously revegetated with tubestock and *Eucalyptus spp*. which are now several meters in height. These upper benches have been more successful compared to natural regeneration areas in terms of exotic species cover (mainly Lantana).
- While much of the rehabilitated areas are dominated by exotic species, there appears to be soil stability with minimal areas of erosion.
- No areas of poor water quality, or dieback of vegetation from surface water runoff, were observed. The Settlement Dam had no algal cover and was vegetated with native aquatic vegetation and minor areas of lantana along its margins.

- Topsoil stockpiles have seen exotic vegetation growth. Long lead-in times for rehabilitation of benches in hard-rock quarries requires consistent maintenance of topsoil stockpiles.
- Nest boxes within the Biodiversity Offset Area were inspected during the 22 September 2025 field visit. No nestboxes were occupied by fauna, but there was evidence of past use including dry leaves, bark, and old scat.

Comparison to EA Predictions

There were limited impacts to biodiversity within the Annual Review period. This is consistent with the EA predictions.

6.6.4 Management Measures

Management measures relating to biodiversity are outlined within the Jandra Quarry BRMP. These include:

- Weed and feral animal management;
- Pre-clearance surveys and tree felling procedures;
- Salvaging habitat resources;
- Nest box installation;
- Erosion and sedimentation control;
- Bushfire management; and
- Rehabilitation and biodiversity offset area monitoring.

6.6.5 Proposed Improvements

Holcim will continue to execute management measures and monitoring as per the approved plans.

6.7 Heritage

6.7.1 Environmental Assessment Predictions

An extensive AHIMS search was conducted on 5 February 2014 for the purposes of an Aboriginal Heritage Due Diligence Assessment for the Environmental Assessment (2014). The search covered an area of approximately 10 square kilometers, which encompassed the disturbance area of the new heavy vehicle access road and expansion of the existing finished product stockpile area. Seven recorded sites are within the Jandra Quarry Development Consent boundary. All seven of these sites were determined to be of low or medium significance. No Aboriginal archaeological sites registered on AHIMS are located within the disturbance area of the new heavy vehicle access road and expansion of the existing finished product stockpile area. There are no predicted detrimental impacts to Aboriginal and cultural heritage.

6.7.2 Approved Criteria

There are no specific criteria relating to Aboriginal and Cultural Heritage within the Development Consent. Jandra Quarry has an Aboriginal Cultural Heritage Management Plan in accordance with Schedule 3 Condition 29.

6.7.3 Key Environmental Performance

There were no issues relating to Aboriginal and Cultural Heritage in 2025. No clearing activities were completed in 2025.

6.7.4 Management Measures

Management measures relating to heritage are outlined within the Jandra Quarry Aboriginal Cultural Heritage Management Plan. These include:

- Consultation with Aboriginal stakeholders during the preparation of the Jandra Quarry Aboriginal Cultural Heritage Management Plan*;*
- Records of known sites of Aboriginal heritage significance;
- The Quarry Manager or delegate will undertake monthly inspections of the known Aboriginal and cultural heritage sites;
- Training of staff and contractors; and
- Procedure for impacts of unexpected finds.

6.7.5 Proposed Improvements

No further improvements are proposed for 2025.

6.8 Waste Minimisation

6.8.1 Key Environmental Performance

Waste management at Jandra Quarry continued in 2025 with this including recycling and general waste. A summary of the waste generated by Jandra Quarry is shown in **Table 23**. These volumes are an approximate value based on the number of times the contractor collects waste from the site and the volume of the waste containers. Waste is routinely collected and is managed as part of Jandra Quarry's Environmental Management Strategy, as discussed in the following section.

Table 23: Waste Summary

Waste Source	2022	2023	2024	2025
Scrap Steel (kg)	11,402	26,680	12,420	17,400
General Waste – Rubbish (kg)	12,471	12,471	12,471	12,500
General Waste – Cardboard (kg)	9,977	9,977	9,977	10,000
Industrial Waste (kg)	3,200	3,200	3,200	3,500
Waste Oil (L)	8,000	8,000	5 650	7,500
Septic (L)	-	7,000	2,500	2,500
Oily Water (L)	-	8,900	0	0

The results show that waste generated by the site in 2025 is generally consistent with recent years.

6.8.2 Management Measures

Wherever possible, Jandra Quarry implements initiatives to minimise the waste generated from operations. General waste is minimised, and all oil, cardboard, paper and steel are sorted on site and sent to recycling facilities in the region. This significantly reduces the amount of waste going to landfill.

Tyres from machinery are used for traffic management, garden edging and signage stabilisers. This reduces the use of raw materials as well as diverting rubber from landfill.

General waste and recycling are separated into different streams and stored in separate 3 cubic metres (m^3) bins. These bins are collected fortnightly.

6.8.3 Proposed Improvements

There are no proposed improvements to waste management for 2025, however Jandra Quarry will continue to look for opportunities to reduce waste where possible.

7 Water Management

7.1 Environmental Assessment Predictions

The predictive modelling within the Environmental Assessment (July 2014) pertains to the water balance for Jandra Quarry (refer to **Table 24**). The Environmental Assessment (2014) stated "with the implementation of surface water management measures included in the Soil and Water Management Plan, the EPL and this EA, the proposed modification would not result in any significant impacts on the downstream environments."

Table 24: Water Balance Results for Varying Stages of Quarry Development

	Current			Stage 1		
Summary Results	**Dry Year**	**Mean Year**	**Wet Year**	**Dry Year**	**Mean Year**	**Wet Year**
Total Runoff (ML/yr)	35	98	165	34	97	164
Total Demands (ML/yr)[1]	25.60	24.88	24.11	36.60	35.64	34.63
Stormwater Supplied (ML/yr)[2]	25.46	24.88	24.11	32.13	35.45	34.63
Total Storage Top Up (ML/yr)	0.13	0.00	0.00	4.46	0.19	0.00
% Demand Met	99%	100%	100%	88%	99%	100%
Spill Volume (ML/yr)	4	68	131	3	57	112

	Stage 2			Stage 3		
Summary Results	**Dry Year**	**Mean Year**	**Wet Year**	**Dry Year**	**Mean Year**	**Wet Year**
Total Runoff (ML/yr)	39	110	186	45	129	219
Total Demands (ML/yr)	36.42	35.47	34.46	34.60	33.74	32.82
Stormwater Supplied (ML/yr)	32.32	35.34	34.46	31.85	33.74	32.82
Total Storage Top Up (ML/yr)	4.09	0.13	0.00	2.75	0.00	0.00
% Demand Met	89%	100%	100%	92%	100%	100%
Spill Volume (ML/yr)	4	70	139	9	90	174

7.2 Approved Criteria

The site is required to monitor and record discharge events from the Main Dam off site in accordance with the requirements listed in **Table 25** from the EPL.

Table 25: EPL Discharge Monitoring Requirements

POINT 1

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
pH	pH				6.5-8.5
Total suspended solids	milligrams per litre				50

Water and land

EPA Identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
1	Discharge quality monitoring	Discharge quality monitoring	Discharge from final sediment dam as shown in the CSR Readymix Site Photo - Jandra Quarry Water Monitoring Location Figure 1 provided to the EPA 13 May 2002

7.3 Surface Water Results

Discharges from Point 1 occurred in 2025, in March, April, May, June, and July. Monitoring data from daily sampling is provided in **Table 26**. There were no exceedances in pH or TSS during these discharges.

Table 26: Surface Water Discharge Monitoring

Sample Date	pH	Total Suspended Solids (mg/L)
25-March-2025	7.77	22
25-March-2025	7.86	33
26-March-2025	8.38	17
26-March-2025	8.38	28
27-March-2025	8.29	20
27-March-2025	8.4	22
28-March-2025	8.44	24
28-March-2025	8.43	22
31-March-2025	8.42	23
31-March-2025	8.44	25
1-April-2025	8.44	22
1-April-2025	8.43	40
2-April-2025	8.4	34
2-April-2025	8.44	33
3-April-2025	8.42	42
3-April-2025	8.48	39

Sample Date	pH	Total Suspended Solids (mg/L)
4-April-2025	7.63	33
4-April-2025	7.96	15
26-May-2025	8.36	4.1
26-May-2025	8.13	23
27-May-2025	8.18	4
27-May-2025	8.09	13
28-May-2025	8.15	9.4
28-May-2025	8.12	20
29-May-2025	7.96	5.5
29-May-2025	8	3.6
30-May-2025	8.02	12
30-May-2025	8.02	20
24-June-2025	8.25	14
24-June-2025	8.11	37
25-June-2025	8.14	8.8
25-June-2025	8.12	0.2
1-July-2025	8.16	12
1-July-2025	8.15	17
2-July-2025	8.16	31
2-July-2025	8.11	14
3-July-2025	8.2	1
3-July-2025	8.21	10
Minimum	**7.63**	**0.9**
Maximum	**8.48**	**42**
Average	**8.2**	**19.8**

The discharges that occurred in 2025 were within the concentration limits specified in the EPL. Jandra Quarry has implemented a system at the site where samples are collected before a discharge event. This system aims to contain water onsite if the water quality parameters do not meet the EPL requirements.

Comparison to EA Predictions

The Environmental Assessment (2014) stated the increase in scale of the operations would not result in any significant impacts on the downstream environments. Jandra Quarry is operating in accordance with the SWMP, and maintains a monitoring system to ensure compliant water quality prior to discharge events. Therefore, Holcim considers EA predictions have been met.

7.4 Groundwater Results

Jandra Quarry is unlikely to experience groundwater inflow and highly unlikely to impact groundwater (Soil and Water Management Plan, 2015). No groundwater monitoring program was implemented at Jandra during the Annual Review period.

7.4.1 Water Take

There are no groundwater extraction licenses for Jandra Quarry. There was no water take in 2025.

7.5 Water Use and Storage

Effective control of erosion and sediment movement at the site is currently achieved via the following measures:

- Sedimentation basins;
- Wash off water collection and primary treatment systems;
- Minimisation of disturbed areas;
- Diversion of clean water from undisturbed areas around working areas;
- Temporary erosion and sediment controls prior to commencement of topsoil and overburden removal;
- Sequential clearing and rehabilitation of the quarry as extraction of material proceeds; and
- Twice yearly maintenance of erosion and sediment control structures to ensure their efficiency.

8 Rehabilitation

8.1 Rehabilitation Performance

Holcim performed management measures outlined in the Biodiversity and Rehabilitation Management Plan in this report period in order to fully comply with Schedule 3 Condition 27 of the Development Consent.

The Rehabilitation and Conservation Bond value was established in consultation with external advisors and DPHI as per the requirements of Schedule 3 Condition 27. Instruments regarding the security of the Biodiversity Offset Area were closed out in discussion with authorities and established in 2020.

A summary of rehabilitation at Jandra Quarry is outlined in **Table 27**.

Table 27: Rehabilitation Performance

Guideline Requirement	Site Comment
Extent of the operations and rehabilitation at completion of the reporting period	The upper benches have been previously revegetated with tubestock and *Eucalyptus spp.* which are now several meters in height. The lower benches have been left to revegetate naturally due to safety issues.
Agreed post-rehabilitation land use	The Biodiversity and Rehabilitation Management Plan outlines the proposed rehabilitation at the site. The proposed final land use is native woodland.
Key rehabilitation performance indicators	Key performance indicators are outlined within the Biodiversity and Rehabilitation Management Plan. Rehabilitation inspections are completed by Holcim. Results of biodiversity monitoring and inspections by contractors enhance data collection on performance indicators.
Renovation or removal of buildings	There was no renovation or removal of buildings in 2025.
Any other Rehabilitation including: • Exploration activities; • Infrastructure; • Dams; and • The installation or maintenance of fences, bunds and any other works.	No new rehabilitation of exploration, infrastructure or dams was undertaken during the Annual Review period.
Any rehabilitation areas which have received formal sign off from the Resources Regulator	None.
Variations to activities undertaken to those proposed (including why there were variations and whether Resource Regulator	No rehabilitation was completed in 2025.

Guideline Requirement	Site Comment
was notified).	
Outcomes of trials, research projects and other initiatives	No trials.
Key issues that may affect successful rehabilitation	Several issues have the potential to affect rehabilitation. Some of these are availability of material, seed stock, climatic events and rehabilitation methodology. A major bushfire event occurred in 2019 which resulted in all rehabilitation areas being burnt. Assessment of the recovery of these areas has been undertaken through quarterly biodiversity inspections. A Weed Management Plan is in place at Jandra Quarry to manage exotic species at the site.

8.2 Summary of Current Rehabilitation and Disturbance

A summary of the rehabilitation and disturbance status is outlined in **Table 28**.

Table 28: Rehabilitation and Disturbance Status

Quarry Area Type	2019 (ha)	2020 (ha)*	2021 (ha)*	2022 (ha)*	2023 (ha)*	2024 (ha)	2025 (ha)	2026 (Predicted)
A. Total Quarry Footprint[1]	25.7	25.1	25.1	25.1	25.1	25.1	25.1	25.1
B. Total Active Disturbance[2]	22.9	19.2	17.7	19.5	19.7	19.7	19.7	19.7
C. Land Being Prepared for Rehabilitation[3]	3.1	1.50	0.11	0	0	0	0.2	0
D. Land Under Active Rehabilitation[4]	2.8	5.9	7.4	7.55	7.55	7.55	7.55	7.75
E. Completed Rehabilitation[5]	0	0	0	0	0	0	0	0

Note: *areas updated based on a review of GIS.

[1] *Total disturbance and rehabilitation.*

[2] *Total disturbance within the Development Consent boundary*

[3] *Rehabilitation being shaped in a phase of decommissioning, landform establishment and growth medium development.*

[4] *Rehabilitation under a phase of ecosystem and land use establishment or ecosystem and land use sustainability*

[5] *This refers to rehabilitation that has been signed off from the Resources Regulator.*

Actions for the Next Reporting Period

The DPHI 2015 Annual Review Guidelines require the Annual Review to outline the rehabilitation actions proposed during the next reporting period. These actions are detailed in **Table 29**.

Table 29: Rehabilitation and Closure Actions for the Next Reporting Period

Requirement	Site Comment
Describe the steps to be undertaken to progress agreement during next reporting period, where final rehabilitation outcomes have not yet been agreed between stakeholders	Rehabilitation to continue as per the Biodiversity and Rehabilitation Management Plan.
Outline proposed rehabilitation trials, research projects and other initiatives to be undertaken during next reporting period	No proposed rehabilitation trials. It should be noted Holcim is investigating the use of drones on short benches which are difficult to access.
Summary of rehabilitation activities proposed for next report period	Maintenance of rehabilitation on bench RL50 will continue. Rehabilitation preparation will continue on the eastern side of this area in 2026 (see **Figure 3**). Jandra Quarry is considering laying topsoil down on some benches, however the scoping of this project has not yet been completed.

The current rehabilitation and disturbance areas at Jandra Quarry are outlined in **Figure 3**.

Jandra Quarry Current Rehabilitation - RL50, RL62, RL74 & RL86 - Source: Propellor - Date: December 2025



Figure 3: Jandra Quarry Rehabilitation and Disturbance

9 Summary of Environmental Performance

A summary of the performance of environmental management measures and sampling results are detailed in **Table 30**.

Table 30: Summary of Environmental Performance

Aspect	Approval Criteria/EA Prediction	Performance During the Reporting Period	Trend/Key Management Implications	Implemented / Proposed Management Actions
Noise	Majority of EA predictions are below development consent criteria.	Noise monitoring results for the most recent period were within criteria.	Noise monitoring results continue to be within criteria and consistent with EIS predictions.	Holcim updated and submitted the Noise and Blast Management Plan to DPHI in 2025 with new proposed monitoring location The updated plan was approved by DPHI on 19 September 2025.
Air Quality	EA predictions are all below development consent criteria.	Throughout the 2025 reporting period, all samples were compliant against performance criteria this report period. There were no exceedances in the short-term criteria value of 50 µg/m^3.	PM10 and TSP results were consistent with previous Annual Review findings. In 2025, continuous monitoring demonstrated compliance with approval criteria.	Holcim will continue to monitor Air Quality as per the AQMP.

Aspect	Approval Criteria/EA Prediction	Performance During the Reporting Period	Trend/Key Management Implications	Implemented / Proposed Management Actions
Blasting	EA predictions are all below development consent criteria.	An exceedance of the overpressure blasting criteria was recorded at R2 on 9 December 2025 when 115.1 dB was recorded, an exceedance of 0.1 dB. All other blasts were compliant with the relevant criteria.	Blast results continue to remain within approved criteria and EIS predictions.	Updated Noise and Blast Management Plan approved in 2025 to reflect new monitoring location for R2. Holcim will continue to implement management measures outlined in the Noise and Blast Management Plan.
Water Management	EA predictions are all below development consent criteria.	Discharges in 2025 were monitored and were within approval criteria.	Discharges were compliant with the relevant criteria for the second consecutive year.	Continue to monitor as per the SWMP.
Biodiversity	2014 EA Mod – The proposed modification would not result in any significant impacts on biodiversity on site and in surrounding bushland.	Biodiversity and rehabilitation monitoring was undertaken in 2025. No clearing was undertaken in 2025.	Biodiversity and rehabilitation monitoring continued as per the BRMP.	Continue to monitor as per the BRMP and manage weeds in accordance with the Weed Management Plan.
Heritage	No predictions.	No impacts.	Continued to be no impacts.	None required.

10 Community

10.1 Community Engagement Activities

Holcim has maintained community engagement measures during the reporting period by undertaking the following activities in accordance with Schedule 5, Condition 7 and 10 of the Development Consent:

- Maintenance of a website (containing publicly available documents);
- A telephone number, email and postal address (on the website) for community complaints and feedback;
- A copy of the Complaints Register is maintained on the company website; and
- All documents and items displayed on the website are regularly updated by Holcim staff.

10.2 Community Contributions

There were no community contributions during the 2025 reporting period.

10.3 Complaints

A review of the Holcim Safety, Health & Environment reporting database did not identify any complaints from external stakeholders during the reporting period. This has been the case since 2020. The quarterly reports for the complaints register are available to the public on the Jandra Quarry webpage. Information on how to contact the site or lodge a complaint is also available on this webpage. The link to this webpage is: http://www.holcim.com.au/about-us/community-link/jandra-quarry-possum-brush-taree-nsw.html

11 Independent Environmental Audit

4Pillars Environmental Consulting was engaged by Holcim to conduct their Independent Environmental Audit (IEA), which was held on 7 July 2025. The IEA assessed the period starting 13 July 2022 and ending 7 July 2025.

The IEA found that:

In total, 155 conditions of the Consent and EPL were assessed as part of this IEA. Of the 155 conditions, 108 were found to be compliant, 10 were non-compliant, and 37 were not triggered. Based on this audit, the Site has a 94% compliance rating.

Eight (8) recommendations have been raised to address non-compliances and five (5) observations and opportunities for improvement have also been identified.

And concluded:

The Holcim Jandra Quarry project is being implemented with a good standard of environmental management. The project is compliant with the vast majority of its approval and operational requirements, and the project has a good standing with regulators and the community. The Proponent is resourcing the project well and has highly capable personnel overseeing operations and environmental management.

Recommendations were made by the IEA team against identified non-compliances. **Table *31*** provides the IEA recommendations against each non-compliance and Holcim's response.

Table 31: Response to Audit Recommendations

Cond. (Aspect)	Recommendation	Holcim Response
DA 231-10-99 MOD 5		
Schedule 3 Condition 5 (Blasting)	<u>Recommendation 1</u> Continue monitoring blasts and follow blasting contractor recommendations for location of blast holes and sequence timing. Continue monitoring and if further exceedances occur, consider the need to modify blasting methodology.	Holcim to continue blasting in accordance to schedule 3, condition 5 and will ensure to follow best practice. Any exceedances will follow through investigation and relevant authorities notified.

Cond. (Aspect)	Recommendation	Holcim Response
Schedule 3 Condition 14 (Air Quality)	Recommendation 2 The Proponent must implement a procedure whereby any breakdown or failure of the continuous monitoring device is checked on a weekly basis at a minimum. A contingency must be in place so that any equipment breakdown can be rectified, either with a replacement monitoring device or similar action.	Broken equipment has been replaced. Holcim to complete routine checks on equipment and weekly review of data to mitigate any gaps.
Schedule 3 Condition 28 (Rehabilitation bond)	Recommendation 3 Within 3 months of the next IEA, Proponent may seek an extension of time from the Department to submit the review, due to the amount of time necessary to prepare it.	Holcim to ensure the bond review and submission triggered by this IEA will be submitted to the DPHI on time. Any delays, Holcim will seek extension as recommended.
Schedule 5 Condition 2 (Reporting)	Recommendation 4 The Proponent is to assess its internal procedures for the identification and notification of exceedances of environmental performance criteria, to ensure they are fit for purpose. Notifications of exceedances should occur, regardless of whether the Proponent disputes the veracity of the exceedance. Any dispute or mitigating circumstances can simply be discussed in the notification.	Noted. Holcim has systems to notify of any exceedances – this includes the ArcGis electronic dashboards and monitoring sheets. Holcim to notify relevant authorities of all exceedances.
Schedule 5 Condition 6	Refer to Recommendation 4.	As above.

Cond. (Aspect)	Recommendation	Holcim Response
Schedule 5 Condition 9	Recommendation 5 Future IEAs to be prepared and submitted within the 3 month timeframe, or the audit team is to write to the Department and seek an extension, setting out the reasons as to why an extension should be granted.	Holcim has implemented an audit register to track and plan audits. All future audits will be submitted on time per this condition.
EPL 2796		
L5.2	Recommendation 6 Continue monitoring blasts and follow blasting contractor recommendations for location of blast holes and sequence timing. Continue monitoring and if further exceedances occur, consider the need to modify blasting methodology.	Holcim to continue blasting in accordance to schedule 3, condition 5 and will ensure to follow best practice. Any exceedances will follow through investigation and relevant authorities notified.
M8.1	Recommendation 7 Holcim should review options for relocation of the monitoring location which will be updated in the Noise Management Plan. Holcim to seek approval for the updated monitoring location with DPHI and EPA. The audit team is advised this process is already underway at the time of finalising this IEA.	Alternative location has been identified. Holcim has submitted revised NBMP to the DPHI for approval following consultations with EPA.
R4.2	Recommendation 8 Ensure that a Blast Monitoring Report is provided to the EPA with each Annual Return. Ensure documentary evidence is saved to fi le and made available for future IEAs.	Noted. Holcim to submit blast report to the EPA on each annual return.

Cond. (Aspect)	Recommendation	Holcim Response
R4.3	Refer to Recommendation 4.	Holcim to continue blasting in accordance to schedule 3, condition 5 and will ensure to follow best practice. Any exceedances will follow through investigation and relevant authorities notified.

It is noted that the only non-compliance relevant to the 2025 reporting period was regarding a recommended change to a noise monitoring location to address access issues. This was addressed in the updated Noise and Blast Management Plan approved by DPHI on 19 September 2025.

The next IEA is due in July 2028.

12 Incidents and Non-Compliances

There were no incidents or non-compliances at Jandra Quarry in 2025.

13 Activities to be Completed in the Next Reporting Period

Holcim staff will undertake the following works and improvement measures and projects in 2026 to ensure that effective environmental management controls are operating in accordance with the requirements of the consent. Proposed improvements for 2026 are summarised in **Table 32**.

Table 32: Proposed Improvement Measures 2026

Improvement Measure	Activities
Progressive Rehabilitation	The site will continue to progressively rehabilitate available areas.
Noise and Blasting	Noise and blast monitoring will continue in accordance with the approved Noise and Blast Management Plan.

Appendix A –
Truck Transport Summary for 2025

JANDRA QUARRY TRANSPORT 2025

2025	January		February		March		April		May		June		July		August		September		October		November		December	
	Truck Movements	Volume (T)	Truck Movements	Volume (T)	Truck Movements	Volume (T)	Truck Movements	Volume (T)	Truck Movements	Volume (T)	Truck Movements	Volume (T)	Truck Movements	Volume (T)	Truck Movements	Volume (T)	Truck Movements	Volume (T)	Truck Movements	Volume (T)	Truck Movements	Volume (T)	Truck Movements	Volume (T)
Day 1		0		0		0	72	1893.46	26	667.02		0	46	1547.33	15	397.4	71	2045.56	114	3561.99		0	57	1689.47
Day 2		0		0		0	49	1101.86	31	879.02	59	1641.72	24	747.24		0	66	2145.85	101	3230.85		0	41	1298.5
Day 3		0	49	1439.13	43	1207.44	41	1012.94		0	58	1781.58	46	1498.82		0	48	1541.08	91	2912.72	63	1928.2	48	1317.04
Day 4		0	81	2597.84	33	1030.26	36	1143.54		0	44	1396.78	71	2165.32	75	2095.4	76	2360.96		0	76	2444.96	70	2312
Day 5		0	75	2398.2	19	637.22		0	76	2280.26	45	1515.73		0	51	1429.14	70	1995.9		0	87	2972.33	61	1984.9
Day 6		0	73	2143.6	15	447.29		0	74	2326.12	30	1043.29		0	43	1233.9		0		0	96	3121.18		0
Day 7		0	51	1434.29	14	393.24	72	2177.04	76	2238.7		0	76	2456.54	45	1319.64		0	102	3247.95	52	1809.64		0
Day 8		0		0		0	63	1901.74	70	1958.69		0	73	2189.73	25	724.1	125	3973.46	92	2834.54		0	57	1342.71
Day 9		0		0		0	67	2022.13	51	1398.36		0	69	1902.42		0	94	3106.78	120	3638.38		0	63	1909.19
Day 10		0	80	2276.08	32	1007.81	85	2448.54		0	65	1958.42	69	1917.99		0	95	2824	66	2286.82	117	3904.95	70	2065.54
Day 11		0	47	1497.58	19	601.88	78	2244.93		0	61	1728.46	53	1604.9	50	1378.94	80	2338.57		0	134	3423.45	45	1335.18
Day 12		0	50	1424.84	36	1033.22		0	83	2182.02	92	2605.45		0	65	2065.71	63	2028.53		0	102	3030.52	27	840.58
Day 13	61	1674.19	34	1020.56	42	1282		0	53	1766.44	64	2103.1		0	49	1380.83	26	824.17	122	3644.3	85	2402.64		0
Day 14	43	1297.9	44	1376.95	53	1582.56	57	1616.98	63	1674.63	5	87.06	64	1874.29	77	2204.73		0	111	3406.8	87	2688.02		0
Day 15	50	1257.51		0		0	45	1483.29	42	859.36		0	73	2498.99	57	1536.22	101	3091.76	150	4503.66		0	114	3780.64
Day 16	40	955.29		0		0	57	1761.38	19	456.5	101	3075.86	78	2161.86		0	119	3982.42	109	3448.31		0	50	1773.92
Day 17	14	354.82	72	1888.55	71	2400.79	37	1167.04		0	124	3748.07	78	2207.29		0	93	3408.3	79	2359.16	73	2377.36	82	2824.88
Day 18		0	57	1526.95	56	1657.38		0		0	96	3073.76	61	1789.26	65	1798.34	78	2556.46		0	88	2821.55	94	3590.3
Day 19		0	58	1593.83	71	2397.95		0	20	609.32	78	2668.08		0	36	916.32	82	2465.59		0	72	2398.51	26	854.19
Day 20	25	634.37	77	1911.07	66	1993.69		0		0	72	2312.56		0	24	799.94		0	71	2121.04	76	2229.44		0
Day 21	45	1346.83	33	950.93	72	2218.76		0		0		0	87	2454.9	10	375.58		0	68	2034.92	65	1820.95		0
Day 22	57	1602.15		0	4	151.9	49	1350.32		0		0	70	1927.8	10	361.76	115	3514.52	90	2620.49	5	189.7		0
Day 23	51	1523.38		0		0	51	1445.3	5	186.07	118	3376.68	74	2300.31		0	75	2204.42	76	2313.52		0		0
Day 24	54	1706.03	68	2204.47	64	2115.4	9	199.03		0	91	1344.05	71	2222.53		0	109	3278.2	68	2211.92	82	2399.16		0
Day 25		0	41	1221.6	61	1763.45		0		0	67	1972.37	46	1341.93	47	1361.09	102	3397.68		0	66	2057.9		0
Day 26		0	53	1624.73	75	2180.76		0	31	982.6	69	2227.1		0	48	1431.25	70	2234.39		0	70	2182.8		0
Day 27		0	53	1742.81	69	1936.93		0	52	1712.55	44	1319.99		0	64	1932.32		0	63	2033.32	73	2303.68		0
Day 28	50	1496.77	36	1170.39	43	1235.5	33	943.46	58	1621.26		0	105	3275.89	46	1512.04		0	63	2200.65	50	1600.78		0
Day 29	44	1346.53		0		0	41	1001.42	62	1609.14		0	79	2208.72	53	1503.1	87	2958.65	42	1487.43	3	113.92		0
Day 30	66	1833.9				0	46	1319.19	64	1373.64	57	1763.55	97	2690.12		0	103	3143.92	56	1826.39		0		0
Day 31	50	1556.64			43	1133.94				0			19	556.96		0			59	1812.84				0
TOTAL	650	18586.31	1132	33444.40	1001	30409.37	988	28233.59	956	26781.70	1440	42743.66	1529	45541.14	955	27757.75	1948	61421.17	1913	59738.00	1622	50221.64	905	28919.04
TOTAL VOLUME	453,798	(Q1 = 82,440 T Q2 = 97,759 T Q3 = 134,720 T Q4 = 138,879 T)																						
TOTAL TRUCK MOVEMENTS	15,039																							

Appendix B – Quarterly Biodiversity Monitoring Reports (Kleinfelder, 2025)

Jandra Quarry Quarterly Monitoring, March 2025

15284 Pacific Highway, Possum Brush NSW 2430

25004176.001A

28/05/2025







KLEINFELDER
Bright People. Right Solutions.

Suite 3, 240-244 Pacific Highway,
Charlestown, NSW 2290
Phone: +61 2 4949 5200

Kleinfelder Australia Pty Ltd
ABN: 23 146 082 500
Suite 3, 240-244 Pacific Highway, Charlestown, NSW 2290
Phone: +61 2 4949 5200
www.kleinfelder.com.au

28/05/2025
25004176.001A

Holcim Pty Ltd
Jandra Quarry
15284 Pacific Highway
Possum Brush NSW 2430

Attention: Holcim Environmental Coordinator

Subject: Jandra Quarry Quarterly Monitoring, March 2025
15284 Pacific Highway, Possum Brush NSW 2430

1 INTRODUCTION

Holcim (Australia) operates the Jandra Quarry, a hard quarry located approximately 18 kilometres south of Taree, New South Wales. The original development proposal for the quarry was granted on March 30, 2000 (DA231-1-99). A modification to the consent (MOD) was granted on March 13, 2015 (DA231-101-99 Mod 5) allowing for an increase in production and transportation of quarry products to maximum limit of 475,000 tonnes per annum.

Kleinfelder have been engaged to conduct biodiversity monitoring of the Jandra Quarry rehabilitation areas on a quarterly basis, as stipulated in Section 6.1.1 of the Biodiversity Rehabilitation and Management Plan (BRMP) (Umwelt, 2018). Monitoring has previously been undertaken by Umwelt, until 2021. The outcomes of the quarterly monitoring will be included as part of the annual biodiversity monitoring report (Kleinfelder) for Jandra Quarry.

2 SCOPE

On 14th of March 2025, a Kleinfelder ecologist attended Jandra Quarry to conduct a site-based inspection. Survey methodology was conducted in accordance with the BRMP and included an inspection of the rehabilitated areas to assess the following parameters:

- Stability and condition of the soil,
- Drainage and sediment control structures,
- Runoff water quality,
- Germination rates,
- Plant health,
- Natural regeneration, and
- Weed infestations.

Each rehabilitated area, where accessible, was inspected on foot and observational data collected by a hand-held GPS and photographed. Two (2) photo monitoring points, one at the corner of Blackbutts Road and the Pacific Highway and one along Winmurra Drive, were established in 2021. Photos are taken at each location during each monitoring round as a means of visually comparing the aesthetics of the quarry over time.

Due to operational restrictions of the open pit, the eastern, southern, and western benches could not be inspected on foot. Consequently, monitoring of these areas is conducted from vantage points using binoculars and photography.

3 RESULTS

Rehabilitated areas adjacent to the Overburden Stockpiling Area (OSA), the Active Pit (AP) and the Settlement Dam near the site office were inspected. All observations refer to **Figure 1**. Observations are labelled "W" for weeds and "O" for erosion and other observations or photos for discussion.

3.1 VISUAL AMENITY PHOTO MONITORING

There are no visible changes compared to previous quarters' monitoring photos (**Plate 1** and **Plate 2**).

3.2 OVERBURDEN STOCKPILE AREA (OSA)

Dense thickets of *Lantana camara* (lantana) were observed at W1 (**Plate 3**), with dense thickets of *Solanum mauritianum* (wild tobacco) co-occurring with *Araujia sericifera* (moth vine), *Phytolacca octandra* (Inkweed) and *Ageratina adenophora* (Crofton weed)] in W2, W3, and W4.

The "central island" or eastern side of the OSA consists of wooded native vegetation but also has infestations of lantana and wild tobacco as observed at W5 (**Plate 7**). Moth vine and crofton weed were also observed here. This side of the OSA stockpile also had an erosion flume bunded (O1) (**Plate 9**).

Minor rilling was observed at O11 on the access track that runs north`-east from the OSA downhill to the settlement dam (**Plate 20)**. Being an opening in otherwise dense vegetation, the track facilitates the spread of fast-growing weeds such as Crofton weed and exotic grasses.

There was evidence of feral dog or fox tracks at the top of the OSA.

3.3 SECONDARY AND MAIN SETTLEMENT DAM

The main settlement dam has a combination of native and exotic vegetation colonising the banks/edges with Crofton weed, lantana and grass species, but also good native regeneration **(Plate 19**).

The top of the dam access road is infested with Crofton and Lantana (**Plate 8**).

3.4 TOP OF ACTIVE PIT AREA

During the walkover of the top of the pit area a substantial area of erosion was still observed at O1 where bare soil is eroding downslope (**Plate 9**). The topsoil stockpile at O2 still has a substantial infestation of lantana, wild tobacco and exotic grasses (**Plate 10**). The house had an open dog door that may be facilitating feral animal access at O5 (**Plate 13**). This door will be required to be inspected and blocked to prevent feral animal inhabitation.

3.5 ACTIVE PIT AREA

Inspection of the revegetation of the benches was made by visual inspection from a safe distance, and via photos.

The southern benches viewed from the top of the quarry looking west (O3) shows a mix of native vegetation with canopy species and some *Acacias*, but also a considerable coverage of lantana and presumably exotic grasses (**Plate 11**). The same benches viewed from the north (O8) shows the nature of the native vegetation and the decreasing size of the vegetation from top to bottom of the quarry due to decreasing age (**Plate 16**).

The northern benches were observed from O4 and O9 and show a mix of native vegetation *Eucalyptus spp., Acacia spp.,* and lantana and wild tobacco as the main woody weeds at O4 (**Plate 12**). Looking down on these benches from O9 continues to show successful establishment of native species, and dieback of some of the older *Acacias* as well as the continued growth of wild tobacco (**Plate 17**).

3.6 WHITESIDE

This area runs along the north-west side of the active pit and includes the powerline easement. Lantana infestation is still evident here and will need to be controlled to prevent further infestation and slowing down of native regeneration. Lantana was also observed along the track nearby the powerline easement at O10 (**Plate 18**).

3.7 TRUCK PARK UP AREA AND TOPSOIL STOCKPILE

This area of the Jandra quarry was briefly observed this monitoring event and remains unchanged from the Q4 monitoring.

The topsoil stockpile silt fence was observed as requiring replacement at O12 **(Plate 21**).

4 DISCUSSION

The rehabilitation of the benches in the AP area continues to progress well. Growth of the remaining native trees and shrubs appears to be healthy, whilst woody weed species such as wild tobacco and lantana appear to have expanded.

The OSA remains heavily infested with lantana and wild tobacco around the steep slope as it drops off into the surrounding vegetation. This was noted on all sides of the OSA including the “central island”. Moth vine was also noted. Ongoing weed control will help to reduce the weed load within the boundary of the quarry which should improve the biodiversity values of the buffer area while also helping with eventual release and/or surrender in the future.

The Whiteside track is still heavily infested with wild tobacco and lantana as a weed control campaign has not yet commenced.

No areas of poor water quality or dieback of vegetation from surface water runoff were observed. The Settlement Dam had no algal cover and was vegetated with native and exotic vegetation along its margins. Some minor areas of lantana were observed on the banks.

Obvious minor rilling and some gullying was observed on the access track, points of the OSA and at the pit top. The OSA bunding remains intact.

The topsoil stockpiles remain overgrown with exotic vegetation. It is recognised that there are long lead-in times for rehabilitation of benches with hard rock quarries, but the prevalence of these weeds limits the effectiveness of the topsoil for rehabilitation.

No evidence of feral animals was observed during the walkover, but it can be assumed they are present within the buffer zone and wider surrounding areas. Attempts to control feral pests as an isolated property owner are of limited value. If undertaken as part of a wider, coordinated campaign, they can prove beneficial in reducing overall numbers.

5 RECOMMENDATIONS

Recommendations have been developed based on the outcome of the site-based quarterly inspection of the OSA, AP and Settlement Pond areas. The following items are recommended.

- Weed control along areas of high woody weed cover, i.e., powerline easement and slopes of the OSA where there is high cover of lantana and wild tobacco.
- Weed control should be structured so that methods are appropriate:
    - backpack spraying and hand removal of weeds should be prioritised in areas accessible on foot and which contain a mix of native and exotic species.
    - Quick spray and/or splatter gun of areas of dense woody weed infestations with little native species mix.
- Weed control should be conducted systematically to avoid large-scale initial removal of weeds, resulting in open areas of bare soil, leading to erosion.
- High-threat woody weeds should be prioritised for control before non-woody and annual weeds. Weeds such as lantana and wild tobacco are a high priority.
- Intensive weed control targeting exotic grasses is not recommended, as exotic grasses are currently helping stabilise the benches. This approach should be staged over time and should be supported by additional native species plantings.
- Erosion control structures such as sediment fences, coir logs and bunding could be installed on access tracks and below the topsoil stockpiles.

If you require additional information or clarification, please contact the undersigned.

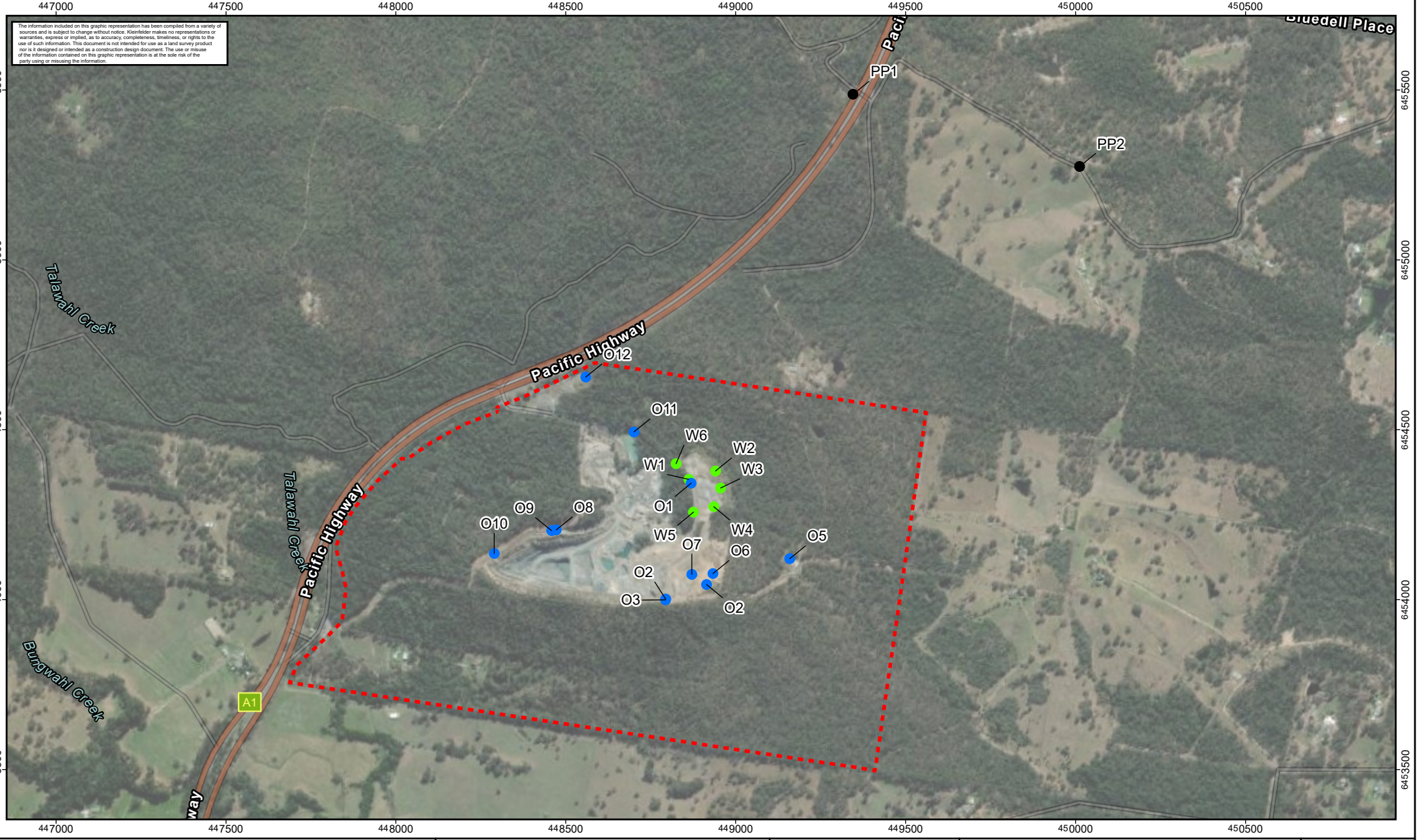
Sincerely,

Kleinfelder Australia Pty Ltd



Nigel Fisher BSc (Hons) PhD

Senior Ecologist
nfisher@kleinfelder.com
Mobile: 0407 657 583



Legend

- Jandra Quarry Boundary
- Weed Observation
- Other Observation
- Photo Point

0 75 150 300 450 600 750

Scale @ A4 1:15,000 Metres

N

GDA2020 MGA Zone 56

KLEINFELDER
Bright People. Right Solutions.
www.kleinfelder.com

PROJECT REFERENCE:	25004176	
DATE DRAWN: 28/05/2025	Version 1	
DRAWN BY:	RHourigan	
DATA SOURCE: Esri - 2025		

Q1 BIODIVERSITY MONITORING

2025 JANDRA QUARTERLY MONITORING AND BOA
JANDRA QUARRY Q1 MONITORING REPORT
HOLCIM (AUSTRALIA) PTY LTD
POSSUM BRUSH, NSW 2430

FIGURE:

1

Path: J:\00 CLIENT FILES\131942_Holcim\25004176_2025JandraQuarterly\MonitoringandBOA\250526_2025JandraQuarterlyMonitoringandBOA.aprx (1)

APPENDIX 1: SITE PHOTOS









Plate 1: View of Jandra Quarry from photo point 1 – cnr of Blackbutts Rd and Pacific Hwy.



Plate 2: View of Jandra Quarry from photo point 2, Winmurra Dr.



Plate 3: Lantana and Moth vine thicket on the OSA at W1.



Plate 4: Inkweed at W2



Plate 5: Wild Tobacco at W3



Plate 6: Wild Tobacco at W4



Plate 7: Dense Lantana and Wild Tobacco in central island at W5



Plate 8: Top of dam access road- Crofton and Lantana at W6



Plate 9: Erosion bund for water draining off OSA at O1.



Plate 10: Topsoil stockpile at O2 still has a heavy infestation of lantana and wild tobacco.



Plate 11: View of the southern benches from O3 in the active pit area showing extent of revegetation with a combination of exotic woody and grassy weeds and native vegetation.



Plate 12: View of northern benches from O4 showing extent of revegetation.



Plate 13: O5 Open dog door that may be facilitating feral animal access



Plate 14: O6 showing gullying and rilling on edge of stockpile.



Plate 15: Southern benches from blast pad (O7)

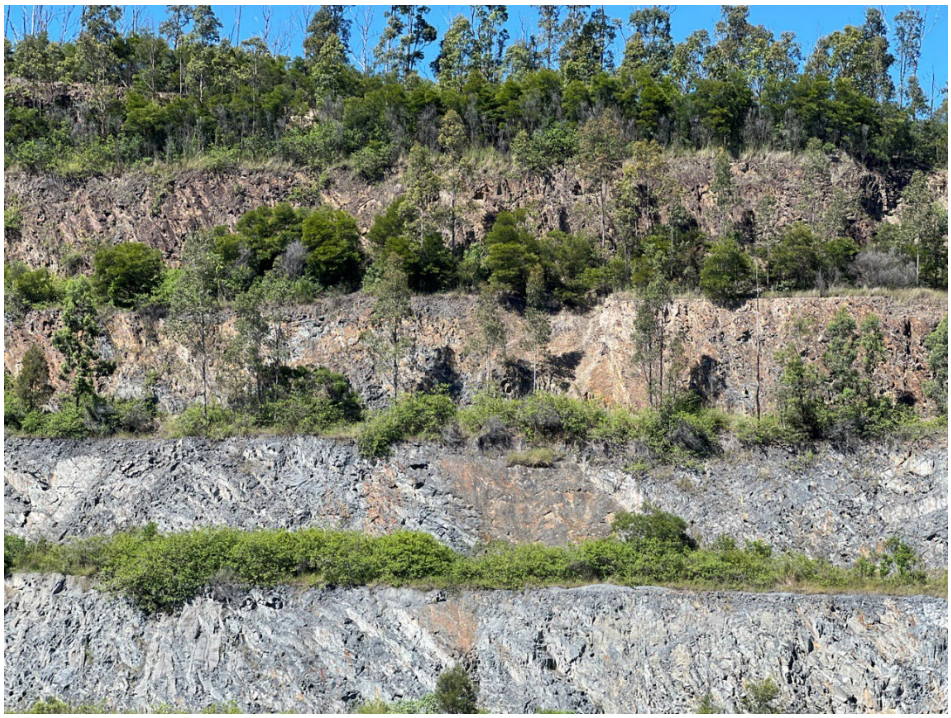


Plate 16: View of southern benches from Whiteside (O8) showing the development of the revegetation with age – oldest revegetation at the upper benches, youngest at the lower benches. Lower benches are generally more weedy than older, upper benches.



Plate 17: View of northern benches looking down from the Whiteside track at O9 showing native species, die back of *Acacia* species., and woody weed species.



Plate 18: View of southern benches from O10 Whiteside showing track overgrown with Lantana.



Plate 19: Vegetation on Settlement dam wall - mixture of natives and exotics (O11).



Plate 20: Looking down the track towards the settlement dam, rilling at the bottom of the track from the OSA to the settlement dam (O11).



Plate 21: Topsoil stockpile silt fence needing replacement at O12.

Jandra Quarry Quarterly Monitoring, March 2025

15284 Pacific Highway, Possum Brush NSW 2430

25004176.001A

10/07/2025







KLEINFELDER
Bright People. Right Solutions.

Suite 3, 240-244 Pacific Highway,
Charlestown, NSW 2290
Phone: +61 2 4949 5200

Kleinfelder Australia Pty Ltd
ABN: 23 146 082 500
Suite 3, 240-244 Pacific Highway, Charlestown, NSW 2290
Phone: +61 2 4949 5200
www.kleinfelder.com.au

10/07/2025
25004176.001A

Holcim Pty Ltd
Jandra Quarry
15284 Pacific Highway
Possum Brush NSW 2430

Attention: Holcim Environmental Coordinator

Subject: Jandra Quarry Quarterly Monitoring, March 2025
15284 Pacific Highway, Possum Brush NSW 2430

1 INTRODUCTION

Holcim (Australia) operates the Jandra Quarry, a hard quarry located approximately 18 kilometres south of Taree, New South Wales. The original development proposal for the quarry was granted on March 30, 2000 (DA231-1-99). A modification to the consent (MOD) was granted on March 13, 2015 (DA231-101-99 Mod 5) allowing for an increase in production and transportation of quarry products to maximum limit of 475,000 tonnes per annum.

Kleinfelder have been engaged to conduct biodiversity monitoring of the Jandra Quarry rehabilitation areas on a quarterly basis, as stipulated in Section 6.1.1 of the Biodiversity Rehabilitation and Management Plan (BRMP) (Umwelt, 2018). Monitoring has previously been undertaken by Umwelt, until 2021. The outcomes of the quarterly monitoring will be included as part of the annual biodiversity monitoring report (Kleinfelder) for Jandra Quarry.

2 SCOPE

On 16th of June 2025, a Kleinfelder ecologist attended Jandra Quarry to conduct a site-based inspection. Survey methodology was conducted in accordance with the BRMP and included an inspection of the rehabilitated areas to assess the following parameters:

- Stability and condition of the soil,
- Drainage and sediment control structures,
- Runoff water quality,
- Germination rates,
- Plant health,
- Natural regeneration, and
- Weed infestations.

Each rehabilitated area, where accessible, was inspected on foot and observational data collected by a hand-held GPS and photographed. Two (2) photo monitoring points, one at the corner of Blackbutts Road and the Pacific Highway and one along Winmurra Drive, were established in 2021. Photos are taken at each location during each monitoring round as a means of visually comparing the aesthetics of the quarry over time.

Due to operational restrictions of the open pit, the eastern, southern, and western benches could not be inspected on foot. Consequently, monitoring of these areas is conducted from vantage points using binoculars and photography.

3 RESULTS

Rehabilitated areas adjacent to the Overburden Stockpiling Area (OSA), the Active Pit (AP) and the Settlement Dam near the site office were inspected. All observations refer to **Figure 1**. Observations are labelled "W" for weeds and "O" for erosion and other observations or photos for discussion.

3.1 VISUAL AMENITY PHOTO MONITORING

There are no visible changes compared to previous quarters' monitoring photos (**Plate 1** and **Plate 2**).

3.2 OVERBURDEN STOCKPILE AREA (OSA)

Dense thickets of South African pigeon grass (*Setaria sphacelata*), Rhodes grass, Wild tobacco, and Lantana were observed at O3 (**Plate 7**).

3.3 SECONDARY AND MAIN SETTLEMENT DAM

The main settlement dam has a combination of native and exotic vegetation colonising the banks/edges with exotic species such as Rhodes grass, Whiskey grass and Crofton weed, but also good native regeneration observed at O2 (**Plate 4**).

Minor rilling has increasingly eroded near O2 on the access track that runs north-east from the OSA downhill to the settlement dam **(Plate 5** and **Plate 6)**. Being an opening in otherwise dense vegetation, the track facilitates the spread of fast-growing weeds such as Crofton weed and exotic grasses.

3.4 TOP OF ACTIVE PIT AREA

The topsoil stockpile at O4 still has a substantial infestation of Lantana, Wild tobacco and exotic grasses (**Plate 7**).

3.5 ACTIVE PIT AREA

Inspection of the revegetation of the benches was made by visual inspection from a safe distance, and via photos.

The southern and western benches viewed from the top of the quarry looking west (O5 and O6) still show a mix of native vegetation with canopy species and some Acacias and a considerable coverage of Lantana and exotic grasses **(Plate 9** and **Plate 10).**

The northern benches were observed from O9 and show a mix of native vegetation *Eucalyptus spp., Acacia spp.,* and Lantana and Wild tobacco as the main woody weeds (**Plate 11**). Looking behind O9 shows the continued growth of Lantana and Wild tobacco, as well as exotic species Rhodes grass (*Chloris gayana*) and Red Natal Grass (*Melinis repens*) (**Plate 12**).

3.6 WHITESIDE

This area runs along the north-west side of the active pit and includes the powerline easement. Lantana infestation is still evident here and will need to be controlled to prevent further infestation and slowing down of native regeneration.

3.7 TRUCK PARK UP AREA AND TOPSOIL STOCKPILE

This area of the Jandra quarry was briefly observed this monitoring event and remains unchanged from the Q4 monitoring. Exotic grasses and annuals such as Red natal grass (*Melinis repens*), Rhodes grass (*Chloris gayana*), Wild tobacco (*Solanum mauritianum*) and Crofton weed (*Ageratina adenophora*) were observed at O1 **(Plate 3**).

4 DISCUSSION

The rehabilitation of the benches in the AP area are at the same growth stage as the previous monitoring in March (Q1). Growth of the remaining native trees and shrubs appears to be healthy and woody weed species such as wild tobacco and lantana still exist in the area.

The OSA remains heavily infested with lantana and wild tobacco around the steep slope as it drops off into the surrounding vegetation. Ongoing weed control will help to reduce the weed load within the boundary of the quarry which should improve the biodiversity values of the buffer area while also helping with eventual release and/or surrender in the future.

The Whiteside track is still heavily infested with wild tobacco and lantana as a weed control campaign has not yet commenced.

No areas of poor water quality or dieback of vegetation from surface water runoff were observed. The Settlement Dam had no algal cover and was vegetated with native and exotic vegetation along its margins. Some minor areas of lantana were observed on the banks.

Obvious minor rilling and some gullying was observed on the access track, points of the OSA and at the pit top.

The topsoil stockpiles remain overgrown with exotic vegetation. It is recognised that there are long lead-in times for rehabilitation of benches with hard rock quarries, but the prevalence of these weeds limits the effectiveness of the topsoil for rehabilitation.

No evidence of feral animals was observed during the walkover, but it can be assumed they are present within the buffer zone and wider surrounding areas. Attempts to control feral pests as an isolated property owner are of limited value. If undertaken as part of a wider, coordinated campaign, they can prove beneficial in reducing overall numbers.

5 RECOMMENDATIONS

Recommendations have been developed based on the outcome of the site-based quarterly inspection of the OSA, AP and Settlement Pond areas. The following items are recommended.

- Weed control along areas of high woody weed cover, i.e., powerline easement and slopes of the OSA where there is high cover of lantana and wild tobacco.
- Weed control should be structured so that methods are appropriate:
    - backpack spraying and hand removal of weeds should be prioritised in areas accessible on foot and which contain a mix of native and exotic species.
    - Quick spray and/or splatter gun of areas of dense woody weed infestations with little native species mix.
- Weed control should be conducted systematically to avoid large-scale initial removal of weeds, resulting in open areas of bare soil, leading to erosion.
- High-threat woody weeds should be prioritised for control before non-woody and annual weeds. Weeds such as lantana and wild tobacco are a high priority.
- Intensive weed control targeting exotic grasses is not recommended, as exotic grasses are currently helping stabilise the benches. This approach should be staged over time and should be supported by additional native species plantings.
- Erosion control structures such as sediment fences, coir logs and bunding could be installed on access tracks and below the topsoil stockpiles.

If you require additional information or clarification, please contact the undersigned.

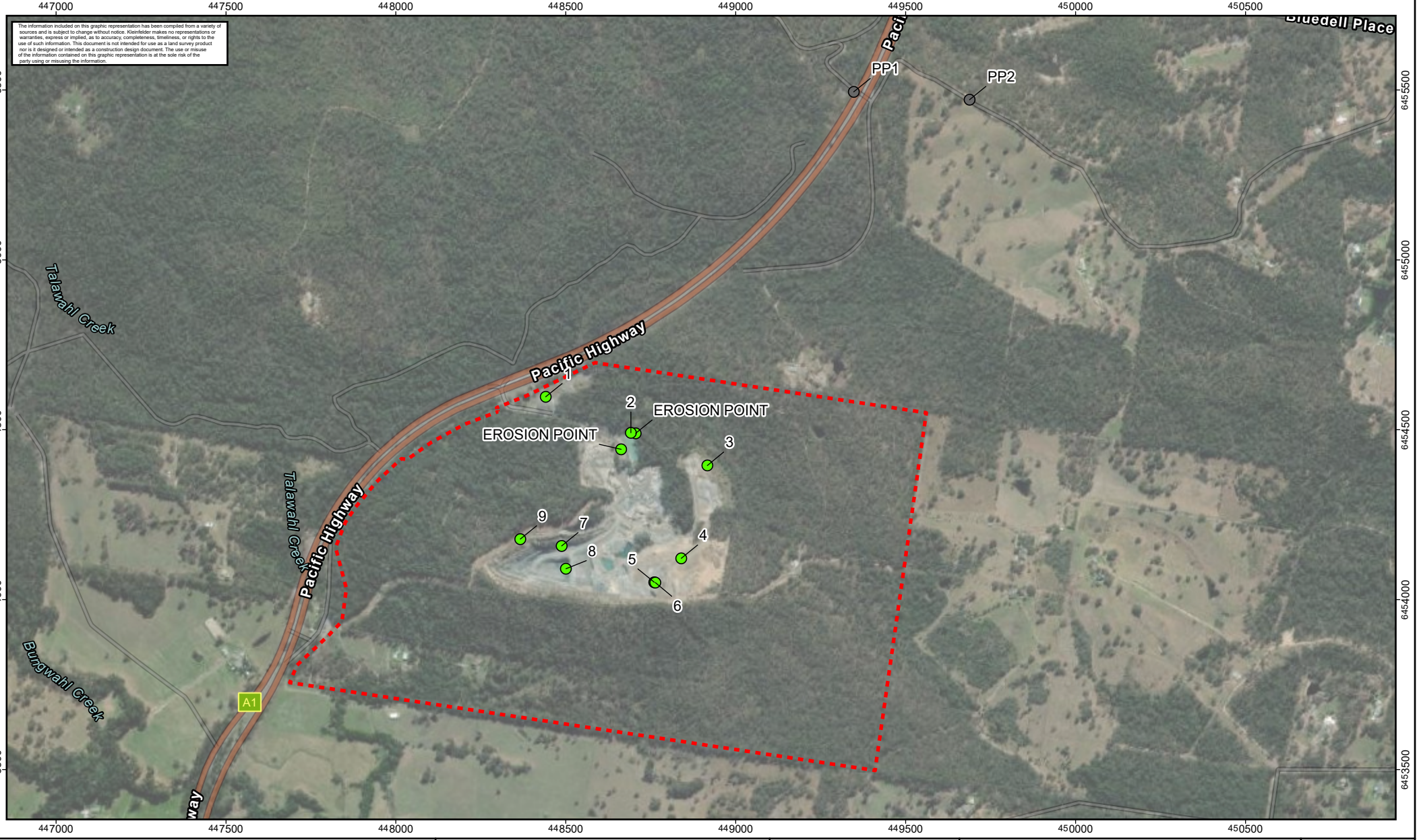
Sincerely,

Kleinfelder Australia Pty Ltd



Nigel Fisher BSc (Hons) PhD

Senior Ecologist
nfisher@kleinfelder.com
Mobile: 0407 657 583



Legend

- Jandra Quarry Boundary
- Observation Point
- Photo Point

Scale @ A4 1:15,000

0 75 150 300 450 600 750 Metres

GDA2020 MGA Zone 56

N

KLEINFELDER
Bright People. Right Solutions.
www.kleinfelder.com

PROJECT REFERENCE:	25004176
DATE DRAWN: 9/07/2025	Version 1
DRAWN BY:	RHourigan

DATA SOURCE:
Esri - 2025

Q2 BIODIVERSITY MONITORING

2025 JANDRA QUARTERLY MONITORING AND BOA
JANDRA QUARRY Q2 MONITORING REPORT
HOLCIM (AUSTRALIA) PTY LTD
POSSUM BRUSH, NSW 2430

FIGURE:

1

Path: J:\00 CLIENT FILES\131942_Holcim\25004176_2025JandraQuarterly\MonitoringandBOA\250701_2025JandraQuarterly\MonitoringandBOA.aprx (1)

APPENDIX 1: SITE PHOTOS









Plate 1: View of Jandra Quarry from photo point 1 – cnr of Blackbutts Rd and Pacific Hwy.



Plate 2: View of Jandra Quarry from photo point 2, Winmurra Dr.



Plate 3: Exotic grasses and annuals at O1.



Plate 4: Vegetation on Settlement dam wall - mixture of natives and exotics, Whiskey grass (*Andropogon virginicus*) at O2.



Plate 5: Looking down the track towards the settlement dam, rilling at the bottom of the track from the OSA to the settlement dam (near O2). The erosion has increased since the previous monitoring in March 2025.



Plate 6: Erosion near settlement dam, O2 and access road into quarry.



Plate 7: Topsoil stockpile in OSA at O3 still has a heavy infestation of lantana and wild tobacco.



Plate 8: Weeds observed in topsoil stockpile area at O4.



Plate 9: Southern benches from blast pad (O5).



Plate 10: Western benches in active pit area from O7.



Plate 11: View of northern benches from O9 (Whiteside track) showing extent of revegetation.



Plate 12: O9 looking away from northern benches – exotic species Lantana and Wild tobacco prevalent.

Jandra Quarry Quarterly Monitoring and Nestbox Inspections, September 2025

15284 Pacific Highway, Possum Brush NSW 2430

25004176.001A

29/10/2025







KLEINFELDER
Bright People. Right Solutions.

Suite 3, 240-244 Pacific Highway,
Charlestown, NSW 2290
Phone: +61 2 4949 5200

Kleinfelder Australia Pty Ltd
ABN: 23 146 082 500
Suite 3, 240-244 Pacific Highway, Charlestown, NSW 2290
Phone: +61 2 4949 5200
www.kleinfelder.com.au

29/10/2025
25004176.001A

Holcim Pty Ltd
Jandra Quarry
15284 Pacific Highway
Possum Brush NSW 2430

Attention: David Saville Quarry Manager

Subject: Jandra Quarry Quarterly Monitoring and Nestbox Inspections, September 2025
15284 Pacific Highway, Possum Brush NSW 2430

1 INTRODUCTION

Holcim (Australia) operates the Jandra Quarry, a hard quarry located approximately 18 kilometres south of Taree, New South Wales. The original development proposal for the quarry was granted on March 30, 2000 (DA231-1-99). A modification to the consent (MOD) was granted on March 13, 2015 (DA231-101-99 Mod 5) allowing for an increase in production and transportation of quarry products to maximum limit of 475,000 tonnes per annum.

Kleinfelder have been engaged to conduct biodiversity monitoring of the Jandra Quarry rehabilitation areas on a quarterly basis, as stipulated in Section 6.1.1 of the Biodiversity Rehabilitation and Management Plan (BRMP) (Umwelt, 2018). Monitoring has previously been undertaken by Umwelt, until 2021. The outcomes of the quarterly monitoring will be included as part of the annual biodiversity monitoring report (Kleinfelder) for Jandra Quarry.

2 SCOPE

On 22 September 2025, two Kleinfelder ecologists attended Jandra Quarry to conduct a site-based inspection of weeds, including annual nestbox inspections in the Biodiversity Offset Area (BOA). Survey methodology was conducted in accordance with the BRMP and included an inspection of the rehabilitated areas to assess the following parameters:

- Stability and condition of the soil,
- Drainage and sediment control structures,
- Runoff water quality,
- Germination rates,
- Plant health,
- Natural regeneration,
- Weed infestations, and
- Nestbox occupancy.

Each rehabilitated area, where accessible, was inspected on foot and observational data collected by a mobile device and photographed. Two (2) photo monitoring points, one at the corner of Blackbutts Road and the Pacific Highway and one along Winmurra Drive, were established in 2021. Photos are taken at each location during each monitoring round as a means of visually comparing the aesthetics of the quarry over time.

Eleven previously installed nestboxes were inspected using a GoPro device and reaching pole. Details were recorded using a mobile device and GIS program. Photos inside of each nestbox can be viewed in **Appendix B**.

3 RESULTS

3.1 REHABILITATION AREAS

Rehabilitated areas adjacent to the Overburden Stockpiling Area (OSA), the Active Pit (AP) and the Settlement Dam near the site office were inspected. All observations refer to **Figure 1**. Observations are labelled "W" for weeds and "O" for erosion and other observations or photos for discussion.

3.1.1 Visual Amenity Photo Monitoring

There are no visible changes compared to previous quarters' monitoring photos (**Plate 1** and **Plate 2**).

3.1.2 Overburden Stockpile Area (OSA)

Dense thickets of Lantana (*Lantana camara)* were again observed (W13-W14), with other exotic species such as South African pigeon grass (*Setaria sphacelata*), Rhodes grass (*Chloris gayana)*, Wild tobacco (*Solanum mauritianum)*, and Crofton weed *(Ageratina adenophora)* prevalent (**Plate 11**).

3.1.3 Secondary and Main Settlement Dam

The main settlement dam has a combination of native and exotic vegetation colonising the banks/edges with exotic species such as Lantana, Rhodes grass and Crofton weed, but also good native regeneration observed at O3 with plenty of regenerating Cheese Tree (*Glochidion ferdinandi)* (**Plate 4**).

Minor rilling has increasingly eroded (O4) on the access track that runs north-east from the OSA downhill to the settlement dam **(Plate 5)**. Being an opening in otherwise dense vegetation, the track facilitates the spread of fast-growing weeds such as Crofton weed and exotic grasses.

3.1.4 Top of Active Pit Area (Topsoil stockpile)

The topsoil stockpile at O2 still has a substantial infestation of Lantana, Wild tobacco and exotic grasses (**Plate 6** and **Plate 7**). Native regeneration was also observed with species such as *Kennedia rubicunda* (Dusky Coral Pea)*, Geranium solanderi* (Native Geranium)*,* and native shrubs *Trema tomentosa* (Native Peach)*,* and *Jacksonia scoparia* evident amongst the Lantana. Care should be taken when spraying Lantana in this vicinity, as to not mistaken the native lookalike *Trema tomentosa* for Lantana. The road from the stockpile towards the abandoned house (W11) also has above head height Lantana as well as Crofton.

3.1.5 Active Pit Area

Inspection of the revegetation of the benches was made by visual inspection from a safe distance, and via photos.

The southern and western benches viewed from the top of the quarry (viewed from O1) still show a mix of native vegetation with canopy species and some Acacias and a considerable coverage of Lantana and exotic grasses **(Plate 8)**.

The northern benches remain the same as the previous monitoring in Q3 and show a mix of native vegetation *Eucalyptus spp., Acacia spp.),* as well as the woody weeds Lantana and Wild tobacco (**Plate 10**). Looking behind (W4-W5) shows the continued growth of Lantana and Wild tobacco, as well as exotic species Rhodes grass, South African Pigeon Grass, Crofton Weed and Red Natal Grass (*Melinis repens*) (**Plate 9**).

3.1.6 Whiteside

This area runs along the north-west side of the active pit and includes the powerline easement. Dense thickets of Lantana, Wild tobacco, and numerous exotic grasses and annuals are making this track difficult to access. Lantana infestation will need to be controlled to prevent further infestation and slowing down of native regeneration.

3.1.7 Truck Park Up Area

The truck park up area towards the entry point of Jandra Quarry, as per the previous Q2 monitoring has Lantana, Wild tobacco, and exotic grasses and annuals such as Red natal grass (*Melinis repens*), Rhodes grass (*Chloris gayana*), and Crofton weed were observed at W1 (**Plate 3**). There is also an exotic Agave in the park up area (W2). The road from the truck park up area towards the OSA was observed to have above head height Lantana (W11), as well as Wild tobacco and Crofton on either side.

3.2 NESTBOX INSPECTIONS

11 nestboxes were inspected in the BOA (refer to **Figure 2**). No nestboxes were occupied by fauna, however evidence of past use such as dry leaves, bark and old scat were observed. Two of these nestboxes (#1 and #4) were nailed on the top lid and were unable to be inspected. Two of these nestboxes (#2 and #7) were fallen and will require replacement.

4 DISCUSSION

The rehabilitation of the benches in the AP area is at the same growth stage as the previous monitoring in June (Q2). Growth of the remaining native trees and shrubs appears to be healthy and woody weed species such as wild tobacco and lantana still exist in the area.

The OSA remains heavily infested with lantana and wild tobacco around the steep slope as it drops off into the surrounding vegetation. Ongoing weed control will help to reduce the weed load within the boundary of the quarry which should improve the biodiversity values of the buffer area while also helping with eventual release and/or surrender in the future.

The Whiteside track is still heavily infested with wild tobacco and lantana as a weed control campaign has not yet commenced.

No areas of poor water quality or dieback of vegetation from surface water runoff were observed. The Settlement Dam had no algal cover and was vegetated with native and exotic vegetation along its margins. Some minor areas of lantana were observed on the banks.

Obvious minor rilling and some gullying was observed on the access track, points of the OSA and at the pit top.

The topsoil stockpiles remain overgrown with exotic vegetation. It is recognised that there are long lead-in times for rehabilitation of benches with hard rock quarries, but the prevalence of these weeds limits the effectiveness of the topsoil for rehabilitation.

No evidence of feral animals was observed during the walkover, but it can be assumed they are present within the buffer zone and wider surrounding areas. Attempts to control feral pests as an isolated property owner are of limited value. If undertaken as part of a wider, coordinated campaign, they can prove beneficial in reducing overall numbers.

5 RECOMMENDATIONS

Recommendations have been developed based on the outcome of the site-based quarterly inspection of the OSA, AP, and Settlement Pond areas and nestbox inspections in the BOA. The following items are recommended.

- Weed control along areas of high woody weed cover, i.e., powerline easement and slopes of the OSA where there is high cover of lantana and wild tobacco.
- Weed control should be structured so that methods are appropriate:
    - backpack spraying and hand removal of weeds should be prioritised in areas accessible on foot and which contain a mix of native and exotic species.
    - Quick spray and/or splatter gun of areas of dense woody weed infestations with little native species mix.
- Weed control should be conducted systematically to avoid large-scale initial removal of weeds, resulting in open areas of bare soil, leading to erosion.
- High-threat woody weeds should be prioritised for control before non-woody and annual weeds. Weeds such as lantana and wild tobacco are a high priority.
- Intensive weed control targeting exotic grasses is not recommended, as exotic grasses are currently helping stabilise the benches. This approach should be staged over time and should be supported by additional native species plantings.
- Erosion control structures such as sediment fences, coir logs and bunding could be installed on access tracks and below the topsoil stockpiles.
- Fallen and old nestboxes located in the BOA should be replaced as soon as practicable.

If you require additional information or clarification, please contact the undersigned.

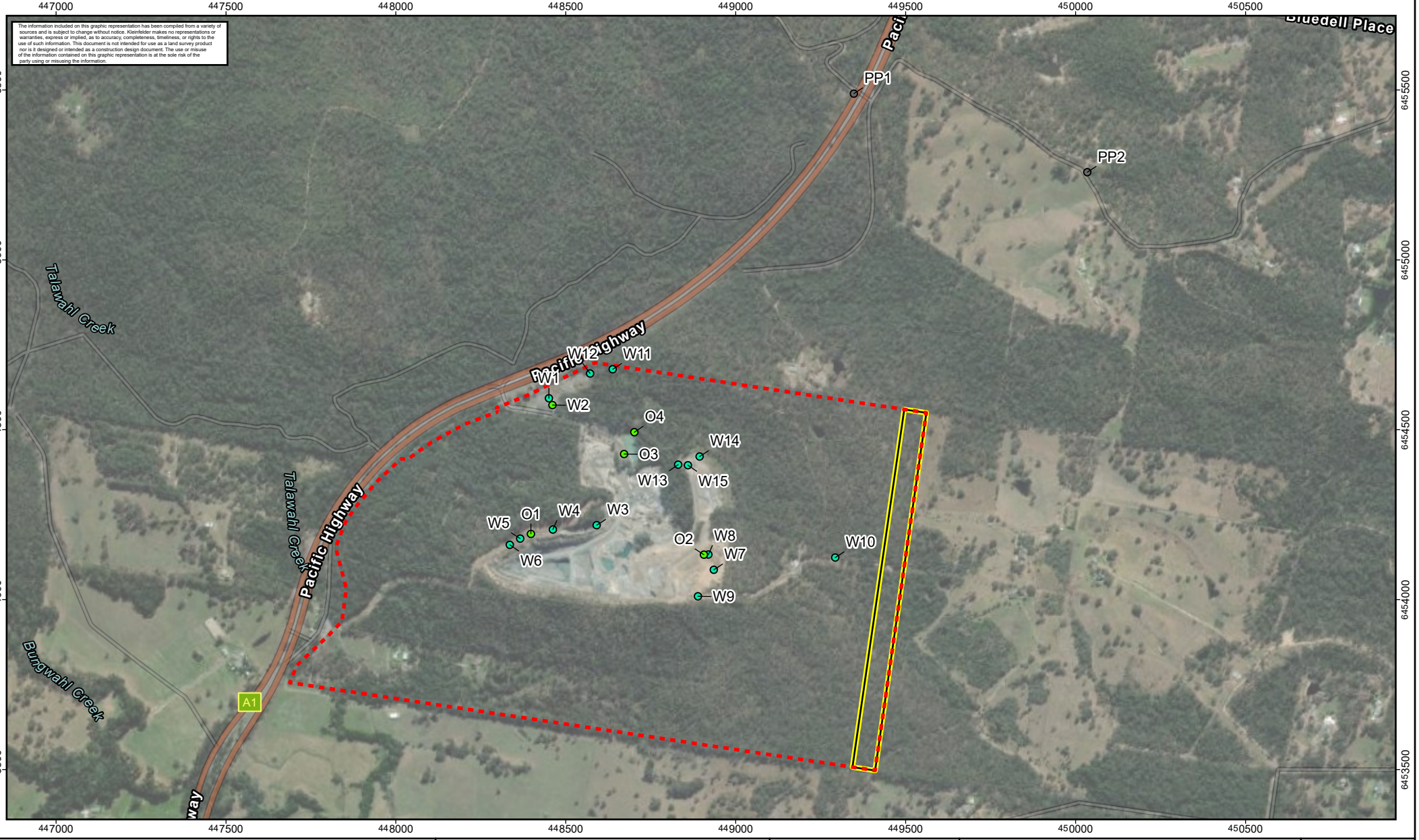
Sincerely,

Kleinfelder Australia Pty Ltd



Nigel Fisher BSc (Hons) PhD

Senior Ecologist
nfisher@kleinfelder.com
Mobile: 0407 657 583



Legend

- Jandra Quarry Boundary
- Biodiversity Offsets Area Boundary
- Observation Location
- Photo Point
- Weed Location

0 75 150 300 450 600 750

Scale @ A4 1:15,000 Metres

N

GDA2020 MGA Zone 56

KLEINFELDER
Bright People. Right Solutions.
www.kleinfelder.com

PROJECT REFERENCE:	25004176
DATE DRAWN: 10/10/2025	Version 1
DRAWN BY:	RHourigan
DATA SOURCE: Esri - 2025	

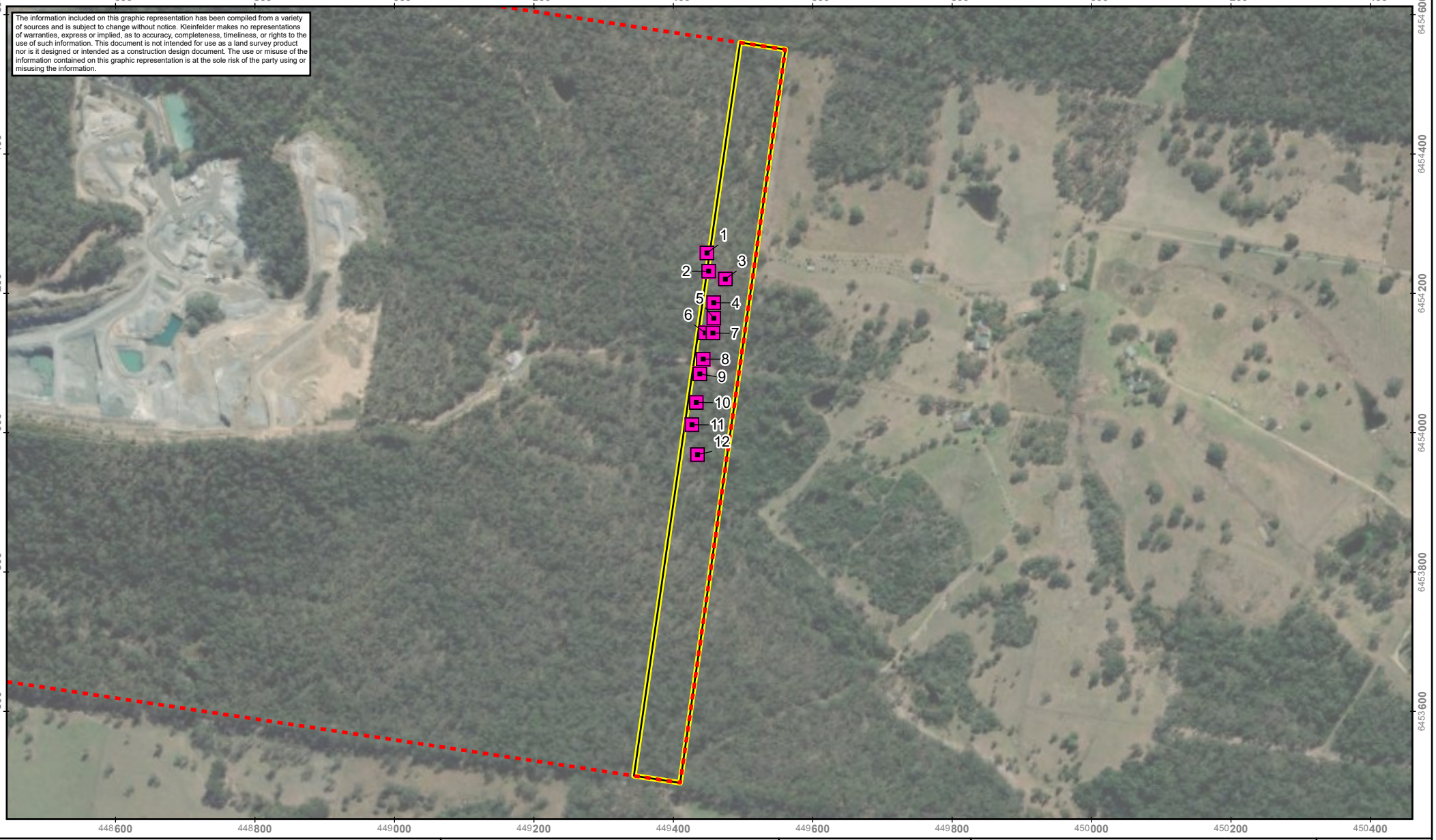
WEEDS AND OBSERVATIONS

2025 JANDRA QUARTERLY MONITORING AND BOA
HOLCIM (AUSTRALIA) PTY LTD
POSSUM BRUSH, NSW 2430

FIGURE:

1

Path: J:\00 CLIENT FILES\131942 Holcim\25004176 2025JandraQuarterly\MonitoringandBOA\251010_2025JandraQuarterlyMonitoringandBOA.aprx (1)



The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations of warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.

Legend

- Biodiversity Offsets Area Boundary
- Jandra Quarry Boundary
- Nest Box

0 35 70 140 210 280 350

Scale @ A4 1:7,400 Metres

GDA2020 MGA Zone 56

N

KLEINFELDER
Bright People. Right Solutions.
www.kleinfelder.com

PROJECT REFERENCE:	25004176
DATE DRAWN: 10/10/2025	Version 1
DRAWN BY:	RHourigan

DATA SOURCE:
Earthstar Geographics, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, Maxar

NESTBOX INSPECTIONS

2025 JANDRA QUARTERLY MONITORING AND BOA
HOLCIM (AUSTRALIA) PTY LTD
POSSUM BRUSH, NSW 2430

FIGURE:

2

Path: J:\00 CLIENT FILES\131942 Holcim\25004176 2025JandraQuarterly\MonitoringandBOA\251010_2025JandraQuarterlyMonitoringandBOA.aprx (2)

APPENDIX A: SITE PHOTOS









Plate 1: View of Jandra Quarry from photo point 1 – cnr of Blackbutts Rd and Pacific Hwy.



Plate 2: View of Jandra Quarry from photo point 2, Winmurra Dr.



Plate 3: Exotic grasses and annuals at truck park up entry point.



Plate 4: Vegetation on Settlement dam wall - mixture of natives and exotics.



Plate 5: Looking down the track towards the settlement dam, rilling at the bottom of the track from the OSA to the settlement dam.



Plate 6: Topsoil stockpile still has a heavy infestation of lantana, crofton and wild tobacco. Native species also exist.



Plate 7: More weed and natives observed in topsoil stockpile area facing towards active pit area.



Plate 8: Southern benches from Whiteside track.



Plate 9: Looking away from northern benches – exotic species Lantana, Crofton, Wild tobacco prevalent.



Plate 10: Northern benches showing landslip with exotic weeds and regenerating Eucalypts



Plate 11: Dense Lantana behind the OSA.

APPENDIX B: NESTBOX PHOTOS









Nestbox #3



Nestbox #5



Nestbox #6



Nestbox #8



Nestbox #9



Nestbox #10



Nestbox #11

Jandra Quarry Quarterly Monitoring, December 2025

15284 Pacific Highway, Possum Brush NSW 2430

25004176.001A

6/1/2026







KLEINFELDER
Bright People. Right Solutions.

Suite 3, 240-244 Pacific Highway,
Charlestown, NSW 2290
Phone: +61 2 4949 5200

Kleinfelder Australia Pty Ltd
ABN: 23 146 082 500
Suite 3, 240-244 Pacific Highway, Charlestown, NSW 2290
Phone: +61 2 4949 5200
www.kleinfelder.com.au

6/1/2026
25004176.001A

Holcim Pty Ltd
Jandra Quarry
15284 Pacific Highway
Possum Brush NSW 2430

Attention: David Saville Quarry Manager

Subject: Jandra Quarry Quarterly Monitoring, December 2025
15284 Pacific Highway, Possum Brush NSW 2430

1 INTRODUCTION

Holcim (Australia) operates the Jandra Quarry, a hard quarry located approximately 18 kilometres south of Taree, New South Wales. The original development proposal for the quarry was granted on March 30, 2000 (DA231-1-99). A modification to the consent (MOD) was granted on March 13, 2015 (DA231-101-99 Mod 5) allowing for an increase in production and transportation of quarry products to maximum limit of 475,000 tonnes per annum.

Kleinfelder have been engaged to conduct biodiversity monitoring of the Jandra Quarry rehabilitation areas on a quarterly basis, as stipulated in Section 6.1.1 of the Biodiversity Rehabilitation and Management Plan (BRMP) (Umwelt, 2018). Monitoring has previously been undertaken by Umwelt, until 2021. The outcomes of the quarterly monitoring will be included as part of the annual biodiversity monitoring report (Kleinfelder) for Jandra Quarry.

2 SCOPE

On 15 December 2025, two Kleinfelder ecologists attended Jandra Quarry to conduct a site-based inspection. Survey methodology was conducted in accordance with the BRMP and included an inspection of the rehabilitated areas to assess the following parameters:

- Stability and condition of the soil,
- Drainage and sediment control structures,
- Runoff water quality,
- Germination rates,
- Plant health,
- Natural regeneration, and
- Weed infestations.

Each rehabilitated area, where accessible, was inspected on foot and observational data collected by a mobile device and photographed. Two (2) photo monitoring points, one at the corner of Blackbutts Road and the Pacific Highway and one along Winmurra Drive, were established in 2021. Photos are taken at each location during each monitoring round as a means of visually comparing the aesthetics of the quarry over time.

3 RESULTS

3.1 REHABILITATION AREAS

Rehabilitated areas adjacent to the Overburden Stockpiling Area (OSA), the Active Pit (AP) and the Settlement Dam near the site office were inspected. All observations refer to **Figure 1**. Observations are labelled "W" for weeds and "O" for erosion and other observations or photos for discussion.

3.1.1 Visual Amenity Photo Monitoring

There are no visible changes compared to previous quarter's monitoring photos (**Plate 1** and **Plate 2**).

3.1.2 Overburden Stockpile Area (OSA)

Dense thickets of Lantana (*Lantana camara)* were again observed (W13-W14), with other exotic species such as South African pigeon grass (*Setaria sphacelata*), Rhodes grass (*Chloris gayana)*, Wild tobacco (*Solanum mauritianum)*, Fleabane (*Conyza* species), Tall flatsedge (*Cyperus eragrostis*), Milk thistle (*Silybum marianum*) and Purpletop (*Verbena bonariensis*) prevalent (**Plate 3** and **Plate** 4).

3.1.3 Secondary and Main Settlement Dam

The main settlement dam has a combination of native and exotic vegetation colonising the banks/edges with exotic species such as Lantana, Rhodes grass and Crofton weed, but also good native regeneration observed at O3 with plenty of regenerating Cheese Tree (*Glochidion ferdinandi)* (**Plate 5**).

Minor rilling has increasingly eroded (O4) on the access track that runs north-east from the OSA downhill to the settlement dam. Being an opening in otherwise dense vegetation, the track facilitates the spread of fast-growing weeds such as Crofton weed and exotic grasses.

3.1.4 Top of Active Pit Area (Topsoil stockpile)

The topsoil stockpile at O2 still supports infestations of Lantana, Wild tobacco and exotic grasses; however, Lantana density has been reduced due to manual removal, which was occurring at the time of inspection (**Plate 6** and **Plate 7**). The road from the stockpile towards the abandoned house (W11) also has above head height Lantana as well as Crofton.

3.1.5 Active Pit Area

Inspection of the revegetation of the benches was made by visual inspection from a safe distance, and via photos.

The southern and western benches viewed from the top of the quarry (viewed from O1) still show a mix of native vegetation with canopy species and some Acacias and a considerable coverage of Lantana and exotic grasses **(Plate 8** and **Plate 9)**.

The northern benches remain the same as the previous monitoring in Q3 and show a mix of native vegetation *Eucalyptus spp., Acacia spp.),* as well as the woody weeds Lantana and Wild tobacco Looking behind (W4-W5) shows the continued growth of Lantana and Wild tobacco, as well as exotic species Rhodes grass, South African Pigeon Grass, Crofton Weed and Red Natal Grass (*Melinis repens*).

3.1.6 Whiteside

This area runs along the north-west side of the active pit and includes the powerline easement. Dense thickets of Lantana, Wild tobacco, and numerous exotic grasses and annuals are making this track difficult to access **(Plate 10).** Lantana infestation will need to be controlled to prevent further infestation and slowing down of native regeneration.

3.1.7 Truck Park Up Area

The truck park up area towards the entry point of Jandra Quarry, as per the previous Q3 monitoring has Lantana, Wild tobacco, and exotic grasses and annuals such as Red natal grass (*Melinis repens*), Rhodes grass (*Chloris gayana*), and Crofton weed were observed at W1 (**Plate 11** and **Plate 12**). The road from the truck park up area towards the abandoned house was observed to have above head height Lantana, as well as Wild tobacco and Crofton on either side. Rilling was also observed along the track **(Plate 13)**.

4 DISCUSSION

The rehabilitation of the benches in the AP area is at the same growth stage as the previous monitoring in September (Q3). Growth of the remaining native trees and shrubs appears to be healthy and woody weed species such as Wild Tobacco and Lantana still exist in the area.

The OSA remains heavily infested with lantana and wild tobacco around the steep slope as it drops off into the surrounding vegetation. Ongoing weed control will help to reduce the weed load within the boundary of the quarry which should improve the biodiversity values of the buffer area while also helping with eventual release and/or surrender in the future.

The Whiteside track is still heavily infested with Wild Tobacco and Lantana as a weed control campaign has not yet commenced.

No areas of poor water quality or dieback of vegetation from surface water runoff were observed. The Settlement Dam had no algal cover and was vegetated with native and exotic vegetation along its margins. Some minor areas of lantana were observed on the banks.

Obvious minor rilling and some gullying was observed on the access track, points of the OSA and at the pit top.

The topsoil stockpiles remain infested with exotic vegetation but show improvement in lantana density secondary to manual removal. It is recognised that there are long lead-in times for rehabilitation of benches with hard rock quarries, but the prevalence of these weeds limits the effectiveness of the topsoil for rehabilitation.

No evidence of feral animals was observed during the walkover, but it can be assumed they are present within the buffer zone and wider surrounding areas. Attempts to control feral pests as an isolated property owner are of limited value. If undertaken as part of a wider, coordinated campaign, they can prove beneficial in reducing overall numbers.

5 RECOMMENDATIONS

Recommendations have been developed based on the outcome of the site-based quarterly inspection of the OSA, AP, and Settlement Pond areas. The following items are recommended.

- Weed control along areas of high woody weed cover, i.e., powerline easement and slopes of the OSA where there is high cover of Wild Tobacco and Lantana.
- Weed control should be structured so that methods are appropriate:
    - backpack spraying and hand removal of weeds should be prioritised in areas accessible on foot and which contain a mix of native and exotic species.
    - Quick spray and/or splatter gun of areas of dense woody weed infestations with little native species mix.
- Weed control should be conducted systematically to avoid large-scale initial removal of weeds, resulting in open areas of bare soil, leading to erosion.
- High-threat woody weeds should be prioritised for control before non-woody and annual weeds. Weeds such as lantana and wild tobacco are a high priority.
- Intensive weed control targeting exotic grasses is not recommended, as exotic grasses are currently helping stabilise the benches. This approach should be staged over time and should be supported by additional native species plantings.
- Erosion control structures such as sediment fences, coir logs and bunding could be installed on access tracks and below the topsoil stockpiles.

If you require additional information or clarification, please contact the undersigned.

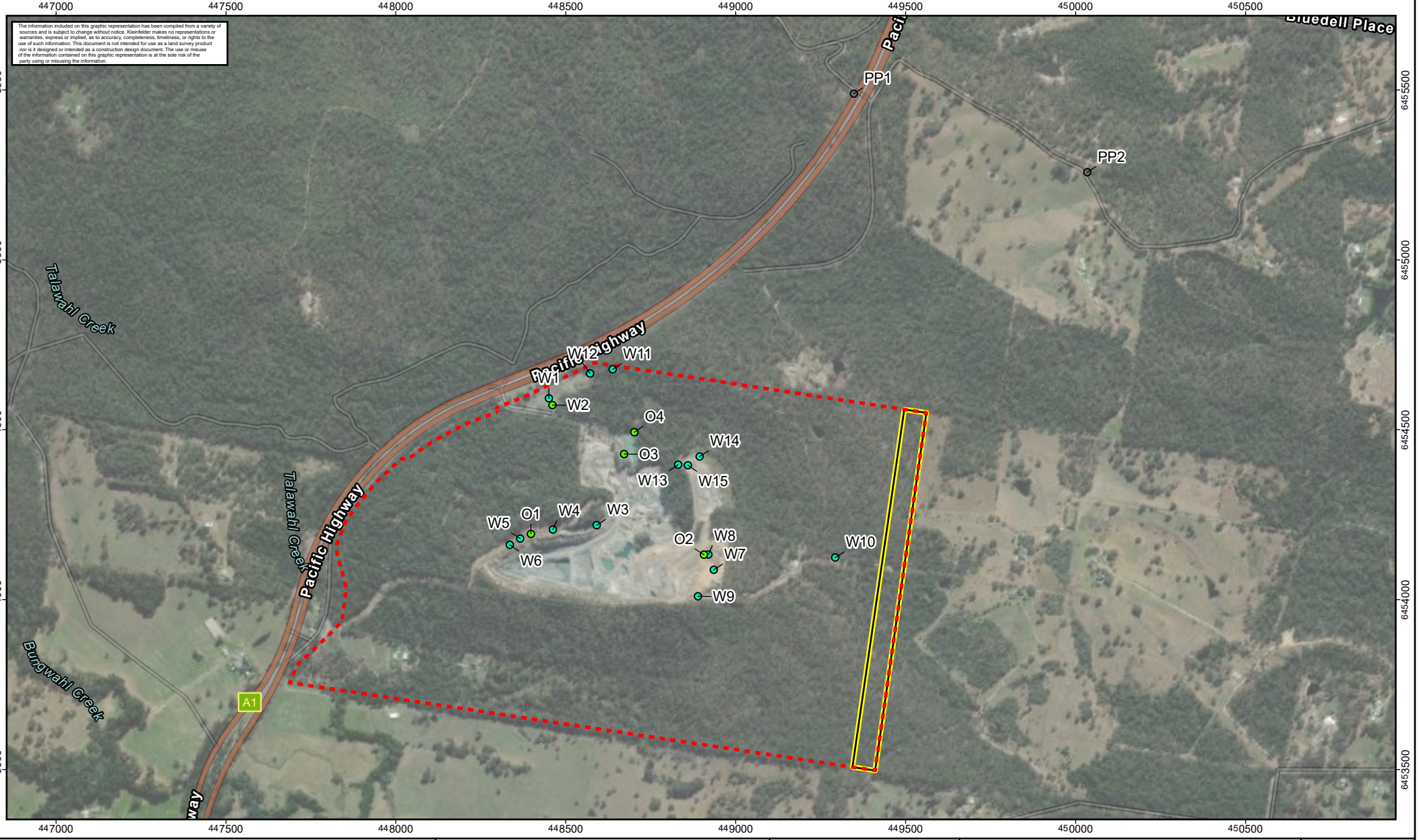
Sincerely,

Kleinfelder Australia Pty Ltd



Nigel Fisher BSc (Hons) PhD

Senior Ecologist
nfisher@kleinfelder.com
Mobile: 0407 657 583



Legend

- Jandra Quarry Boundary
- Biodiversity Offsets Area Boundary
- Observation Location
- Photo Point
- Weed Location

0 75 150 300 450 600 750

Scale @ A4 1:15,000 Metres

N

GDA2020 MGA Zone 56

KLEINFELDER
Bright People. Right Solutions.
www.kleinfelder.com

PROJECT REFERENCE:	25004176
DATE DRAWN: 10/10/2025	Version 1
DRAWN BY:	RHourigan
DATA SOURCE: Esri - 2025	

WEEDS AND OBSERVATIONS

2025 JANDRA QUARTERLY MONITORING AND BOA
HOLCIM (AUSTRALIA) PTY LTD
POSSUM BRUSH, NSW 2430

FIGURE:

1

Path: J:\00 CLIENT FILES\131942 Holcim\25004176 2025JandraQuarterly\MonitoringandBOA\251010_2025JandraQuarterlyMonitoringandBOA.aprx (1)

APPENDIX A: SITE PHOTOS









Plate 1: View of Jandra Quarry from photo point 1 – cnr of Blackbutts Rd and Pacific Hwy.



Plate 2: View of Jandra Quarry from photo point 2, Winmurra Dr.



Plate 3: Weeds observed at the OSA included verbena, setaria, fleabane, rhodes, milk thistle, and cyperus.



Plate 4: Dense Lantana behind the OSA.



Plate 5: Vegetation on Settlement dam wall - mixture of natives and exotics.



Plate 6: Topsoil stockpile has infestation of lantana, crofton and wild tobacco. Native species also exist. Manual removal occurring at time of inspection.



Plate 7: Weeds observed in topsoil stockpile area including lantana, wild tobacco, setaria and fleabane.



Plate 8: Southern benches from Whiteside track.



Plate 9: Western benches looking from track towards Whiteside



Plate 10: Looking away from northern benches – exotic species lantana, crofton, wild tobacco prevalent.



Plate 11: Exotic grasses and annuals at truck park up entry point.



Plate 12: Weeds in the stockpile in the truck park up area