

GERROA SAND RESOURCE

ANNUAL REVIEW

Period 01 July 2025 – 30 June 2026



Title Block

Name of operation	Gerroa Sand Resource
Name of operator	Regional Quarries & Concrete Pty Ltd
Development consent #	05/0099
Name of holder of development consent	Regional Quarries & Concrete Pty Ltd
Annual Review start date	1/7/2025
Annual Review end date	30/6/2026
I, Mark Hammond, certify that this audit report is a true and accurate record of the compliance status of the Gerroa Sand Resource for the period 1 July 2025 to 30 June 2026 and that I am authorised to make this statement on behalf of Regional Quarries & Concrete Pty Ltd. Note a) The Annual Review is an 'environmental audit' for the purposes of section 122B(2) of the Environmental Planning and Assessment Act 1979. Section 122E provides that a person must not include false or misleading information (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. The maximum penalty is, in the case of a corporation, \$1 million and for an individual, \$250,000. b) The Crimes Act 1900 contains other offences relating to false and misleading information: section 192G (Intention to defraud by false or misleading statement—maximum penalty 5 years imprisonment); sections 307A, 307B and 307C (False or misleading applications/information/documents—maximum penalty 2 years imprisonment or \$22,000, or both).	
Name of authorised reporting officer	Mark Hammond
Title of authorised reporting officer	Head of Sustainability
Signature of authorised reporting officer	
Date	24/8/2026

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Abbreviations

CB	Regional Quarries & Concrete Pty Ltd trading as Cleary Bros
DC	Development Consent (PA 05/0099) Modification 2
EPA	Environmental Protection Authority
DP	Deposited Plan
DPHI	Department of Planning, Housing and Infrastructure (formerly Department of Planning and Environment)
EPL	Environmental Protection Licence
LEC	Land & Environment Court
MW	Monitoring Well
QEMP	Quarry Environmental Management Plan

Internal Document Control

Version	Description	Prepared By	Approved By	Prepared Date
1	Initial Draft	C Conway		4/08/2026
2	Final for distribution	M Hammond	M Hammond	24/8/2026

1. Introduction

1.1. Statement of Compliance

Were all conditions of the relevant approvals complied with?	
Development consent #05/0099	No
Environmental Protection Licence #4146	Yes
Water Licences (WAL43271, WAL43272, WAL45890)	Yes

1.2. Background

Sand has been extracted from Cleary Bros (CB) sand quarry at Gerroa for approximately 60 years. The works have been authorised by a succession of development approvals. On the 30th January 2025, the Gerroa Sand Resource and the Cleary Bros name were acquired by the Maas Group Holdings (MGH), a listed Australian company (ASX: MGH). Following the acquisition, the Gerroa Sand Resource is operated by Regional Quarries & Concrete Pty Ltd, a wholly owned subsidiary of MGH, and continues to trade under the Cleary Bros name. To support the acquisition, Cleary Bros have secured consent for the subdivision of the Gerroa landholdings, which once completed will transfer all land used for sand quarrying and conservation associated with the Gerroa Sand Resource to be transferred to MGH. The approved subdivision is expected to be registered with the Land Registry Services in the 2nd half of 2026.

On 10 June 2022 the Minister for Planning and Public Spaces approved Modification 1 (Development Consent) for the continuation of sand extraction from the Modification 1 area on the northwestern side of Blue Angle Creek. Modification 1 amends the original approval by the Land and Environment Court dated 2 September 2008 for the “Extension and Continuation of Gerroa Sand Quarry”.

On the 30th of April 2026 the Director of energy and resource assessments as delegate for the planning secretary approved Modification 2 (Production Increase) for the increase of the production and transportation limit of sand exported from 80,000 tonnes per annum (tpa) to 120,000 tpa. Modification 2 amends the original approval by the Land and Environmental Court, 2 September 2008 for the “Extension and Continuation of Gerroa Sand Quarry” and the more recent Modification 1 approval by the Department of Planning, Housing and Infrastructure (DPHI, formerly Department of Planning and Environment)

Sand extraction by dredging on the property is licensed by the Environment Protection Authority (EPA) under EPL4146. CB currently operates in accordance with the site’s Quarry Environmental Management Plan (QEMP) in accordance with the requirements of the EPL and Development Consent (DC). The QEMP was most recently approved by the DPHI on the 29th of April 2023.

The location of the property is shown in



Figure 1.

1.3. Objectives of the Annual Review

Condition 4 of Schedule 5 of the Development Consent (DC) requires CB to submit an Annual Review. The condition requires the Annual Review to:

- a) describe the activities associated with the project (including rehabilitation) that was carried out in the previous financial year, and the activities that are proposed to be carried out over the current financial year.
- b) include a comprehensive review of the monitoring results and complaints records of the project over the previous financial year, which includes a comparison of these results against:
 - the relevant statutory requirements, limits or performance measures/criteria;
 - requirements of any plan or program required under this approval;
 - the monitoring results of previous years; and
 - the relevant predictions in the documents listed in condition 2(a) of Schedule 2;
- c) identify any non-compliance or incident which occurred in the previous financial year, and describe what actions were (or are being) taken to rectify the non-compliance and avoid recurrence;
- d) evaluate and report on:
 - the effectiveness of the acid sulfate soils, noise amenity and water quality management and mitigation; and
 - compliance with the performance measures, criteria and operating conditions of this approval;
- e) identify any trends in the monitoring data over the life of the project;
- f) identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and
- g) describe what measures will be implemented over the current financial year to improve the environmental performance of the project.

This Annual Review has been prepared to meet the requirements of Condition 4 of Schedule 5 of the Development Consent.

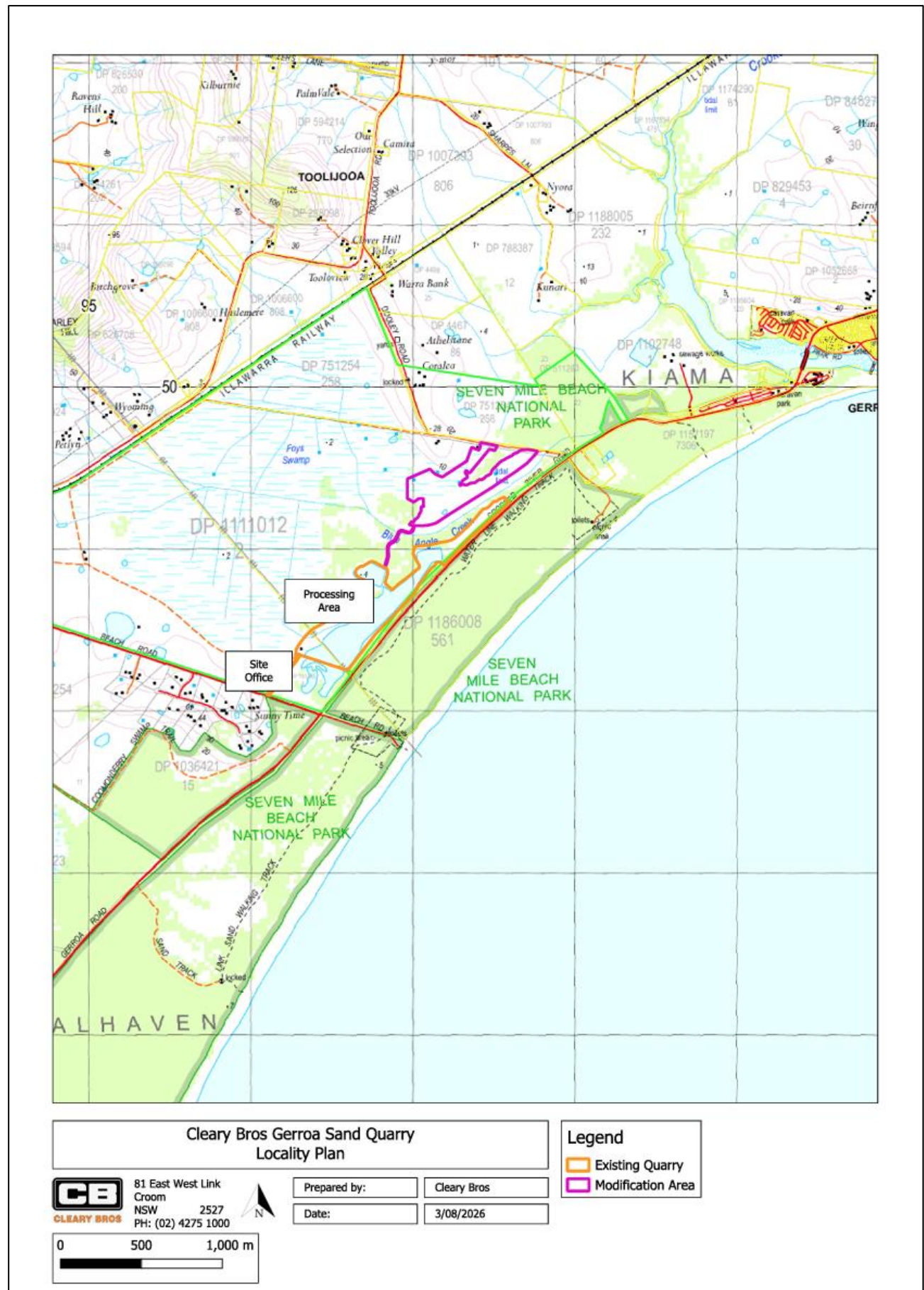


Figure 1 - Locality Plan

2. Site Description and Activities

2.1. Site Identification

The site comprises all of Lot A DP 185785 and part of Lot 2 DP 1111012. The property is currently owned by Bridon Pty Ltd and leased to Regional Quarries & Concrete Pty Ltd until the registration of the approved subdivision for the broader Cleary Bros Gerroa landholdings.

The site straddles the boundary of the Kiama and Shoalhaven Local Government Areas. The operational area is contained within two portions of the site separated by Blue Angle Creek, with an area totalling approximately 42.5 hectares. The operational area fronts Crooked River Road and Berry Beach Road. The remainder of the property is used for agricultural activities.

The quarrying process involves dredging the sand mixed with water by suction based on a barge and piped back to the wet sorter located on the western edge of the existing dredge pond. In the wet sorter the gravel and larger materials such as shells are removed from the sand before the sand is sent to the cyclone which removes any remaining silt. From here the sand is deposited into a stockpile and the removed silt and excess water are returned to the existing dredge pond. When the sand stockpile is of sufficient size, it is re-stockpiled away from the wet sorter and cyclone systems to dry. The sand is then loaded on to road-going trucks for delivery to customers, primarily Cleary Bros concrete plants.

3. Key Licence Issues

3.1. Environmental Protection Licence

The Environment Protection Authority (EPA) has issued an Environmental Protection Licence (Licence No. 4146) for the dredging works on site, which was most recently amended on 25 June 2026, to permit the increased activity limit approved under the Modification 2 approval. Under recent changes to

The licence, issued under s55 of the Protection of the Environment Operations Act 1997, previously required the submission on an annual return for the reporting period of 1st February to 31st January. However this requirement was discontinued for most licence holders following legislative changes in 2025. Nevertheless, Cleary Bros provided one Annual Return for the period 1/2/2025 to 31/1/2026, which recorded nil pollution complaints in the reporting period, and compliance with all licence conditions in the reporting period.

3.2. Development Consent

The Development Consent (DC) was modified by the DPHI on 30th April 2026 and is the primary consent relevant to sand quarrying operations. As a requirement of the DC an Annual Review must be completed annually.

3.3. Standards and Performance Measures that apply

The Environmental Assessment dated February 2018 and Modification Report dated August 2025 outline the predicted impacts of the Project as modified. The Gerroa Sand Resource is also licenced by the Environmental Protection Authority under Environmental Protection License 4146. These documents contain the standards and performance measures for the Gerroa Sand Resource, which are identified separately in Section 4.

3.4. Works Carried Out in Reporting Period

The total sand transported from site during the 2025/2026 reporting year was 96,428 tonnes. In the current reporting period, sand was extracted from the northeastern part of the Modification 1 area ("CP" area). The Annual Return for the 2025/2026 period was submitted to the Department of Regional NSW via their portal on 30th July 2026 (ref: ROY0010250), and has been included in Annexure A.

In the past 12 months, dredging has continued in the CP area of the site, following on from the previous period. In addition, the following works have been undertaken:

- Relocation of weather station and dust gauge DDG4 to within the approved subdivision boundaries.
- Topsoil stripping and stockpiling ahead of dredging.
- Continuation of construction of flood bunds.
- Operation of environmental monitoring equipment including water monitoring stations, depositional dust gauges, and weather station.
- Classification and interpretation of archaeological material recovered during test pit investigations.
- Weed and feral animal (deer) control across the Project Area.

3.5. Works to be Carried Out in the Next Period

The dredge will continue extracting sand from the CP area of the Modification 1 area slowly tracking towards the south. The approximate area planned for extraction in 2026/2027 is shown in Figure 2.

Other works planned for the 2026/2027 period include:

- Completion of classification and interpretation of archaeological material recovered during test pit investigations.
- Review of flood bund adequacy in accordance with the Water Management Plan.

- Calculation of site specific trigger values for surface and groundwater monitoring sites.
- Maintenance of tree screen including replacement of lost plants.
- Continued control of weeds and feral animals in line with the Landscape and Rehabilitation Management Plan.
- Operation of environmental monitoring equipment including water monitoring stations, depositional dust gauges, and weather station.

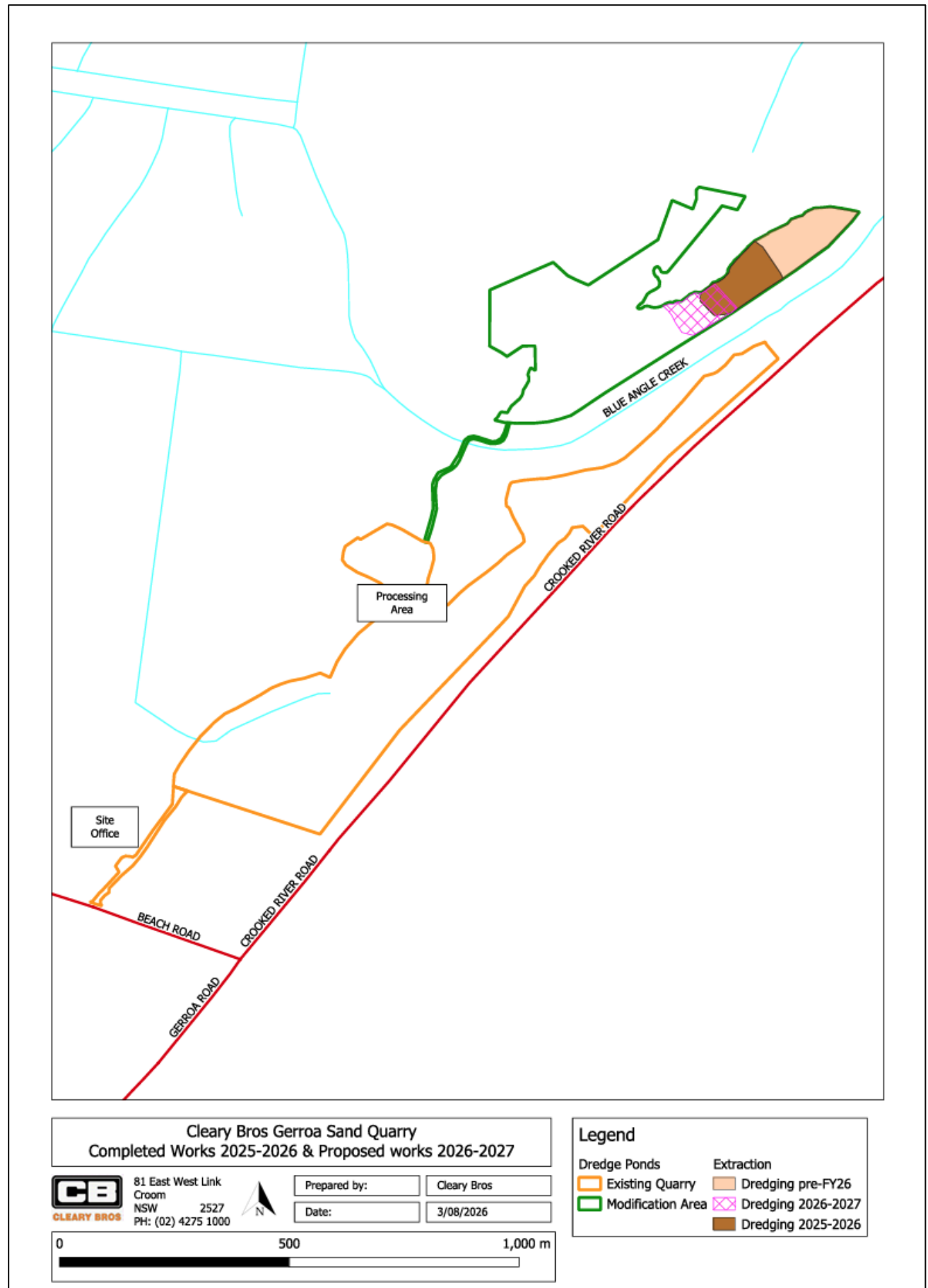


Figure 2 – Description of works

4. Review of Environmental Performance

4.1. Meteorological Monitoring

4.1.1. Licence Requirements

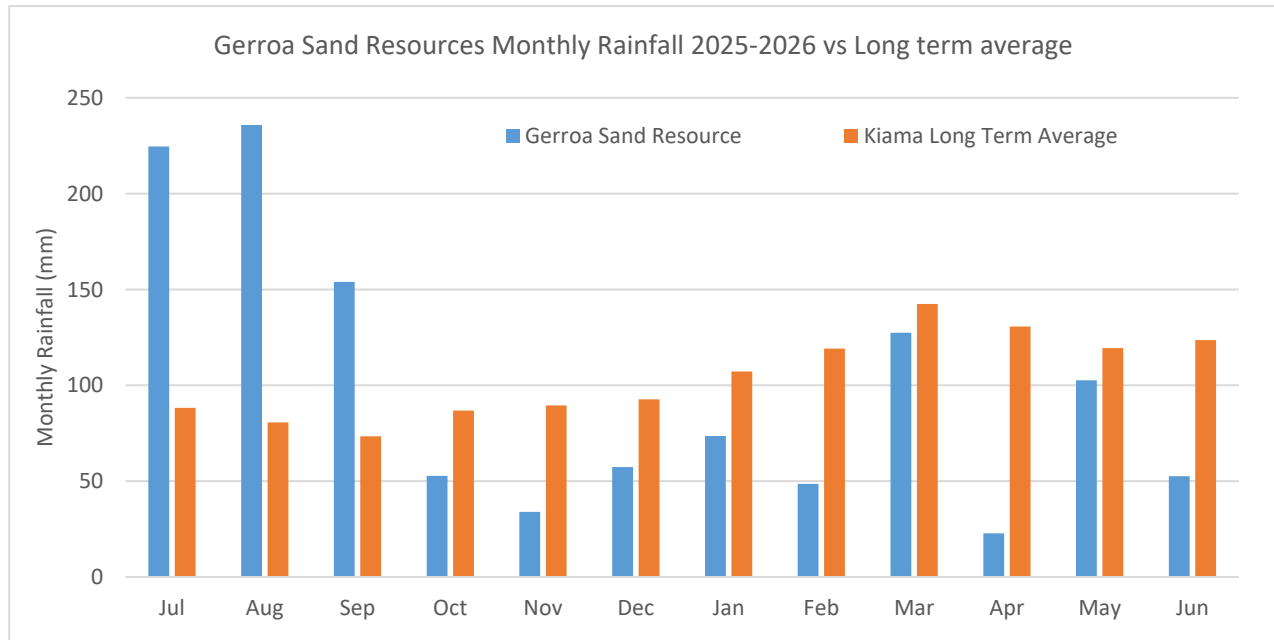
The DC requires Cleary Bros to maintain a meteorological station on site.

4.1.2. Compliance Assessment

A meteorological station is maintained onsite that provides information on rainfall, air temperature, solar radiation and wind speed and direction via mobile telemetry to an online portal. The current weather station was installed in September 2016. The station was most recently upgraded in early 2024 to ensure reliability, and has generally operated well throughout the reporting period, although some internal condensation issues have caused some data loss of the lower temperature and solar radiation sensors. Improvements have been made to the station to try and overcome these issues, with replacement sensors installed.

4.1.3. Meteorological Monitoring

Rainfall in the current reporting period has been below average, with 1186.2 mm recorded on the site compared with the long-term average of 1254 mm (based on data sourced from the Kiama Bowling Club BOM station). Rainfall was considerably above average during the early part of the reporting period, with July, August and September 2025 recording substantially higher rainfall than the long-term average. Conditions then became notably drier from October 2025 through February 2026, with monthly rainfall consistently below average during this period. Rainfall returned to near average levels in March 2026 before declining again in April and June, while May recorded rainfall closer to the long-term average. These rainfall patterns followed a series of wetter years across the region and, despite the drier conditions experienced through much of the reporting period, groundwater levels and the surrounding floodplain water table remained elevated relative to historical conditions.



4.2. Groundwater Management

4.2.1. Standards and Performance Measures

There are no specific criteria for groundwater quality in the sites EPL.

The current groundwater monitoring requirements from the DC are described in the QEMP. Section 8.6 of the current QEMP details the groundwater testing requirements and specifies that 9 boreholes on site require monthly water level readings and quarterly analyte testing. The tabulated results of groundwater monitoring are

included in Annex B. The EA predicted that the project is not expected to result in variations in the range of groundwater levels outside that previously experienced in the monitoring bores on the site. Furthermore, the EA identified that existing low pH levels in groundwater bores to be relatively benign, signifying natural impacts from naturally occurring pyrites and organic acids, with sand extraction not predicted to lead to any deterioration of the groundwater quality.

The groundwater quality objectives which CB should “aim to meet” from the DC (and adopted in the QEMP) are as follows:

Analyte	Units	Objective
pH	pH	6.0 – 8.5
Electrical Conductivity	µS/cm	<1,500
Total Phosphorus	µg/L	<30
2612Total Nitrogen	µg/L	<350
Chlorophyll-A	µg/L	<5
Faecal Coliforms	Median No./100 mL	<1,000
Enterococci	Median No./100 mL	<230
Sodium	mg/L	<400
Potassium Ion	mg/L	<50
Magnesium Ion	mg/L	<50
Chloride Ion	mg/L	<300
Sulphate Ion	mg/L	<250
Bicarbonate Ion	mg/L	<750
Soluble Iron Ion	mg/L	<6
Ammonium Ion	µg/L*	<20

* amended from mg/L to µg/L as part of Modification 1

The QEMP target for groundwater dependent ecosystems is for no discernible deterioration of ecosystems or vegetation, attributable to measured changes in groundwater levels or quality as a result of quarrying operations.

Additional monitoring of groundwater bores to assess potential impacts from acid sulphate soils are detailed in Section 4.4.

4.2.2.Environmental Performance

CB has implemented the Groundwater Monitoring Program to meet the requirements of the DC. ALS Laboratory Group were engaged during the reporting period to conduct quarterly sampling and testing of the groundwater monitoring sites and monthly monitoring of groundwater levels.

4.2.3.Groundwater Monitoring

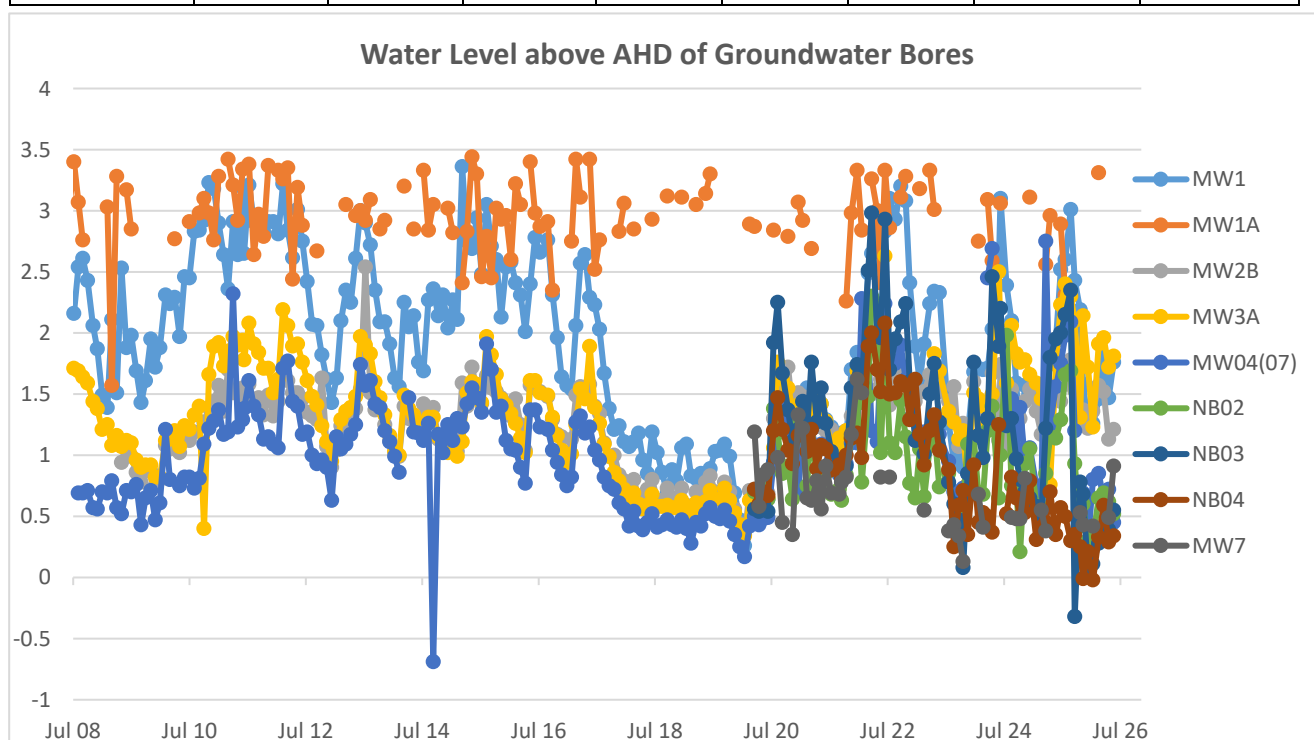
A summary of groundwater monitoring results for the period is displayed in this section, separated into the different analytes required to be monitored as per the DC. For each analyte, the range and average of the current period's monitoring are displayed, alongside the historical range and average, objectives as described in the DC, and any EA predictions. Where groundwater monitoring results trend outside of the historical range or DC objectives, these are identified in the summary with discussion into these results below. For each analyte, a historical graph is also included showing the variations in measurements for each groundwater bore throughout the historical monitoring period. It should also be noted that monitoring bore MW07 represents a reference site located approximately 1km west of the Modification 1 area in Foys Swamp and is outside the influence of any sand extraction activities. During wetter months, some bores could not be safely accessed for monitoring

(particularly MW07). Meanwhile, the shallow bore MW1A was recorded as dry for three of the four quarterly monitoring rounds.

Depth (m)

The depths of the borehole are reported as metres above the Australian Height Datum

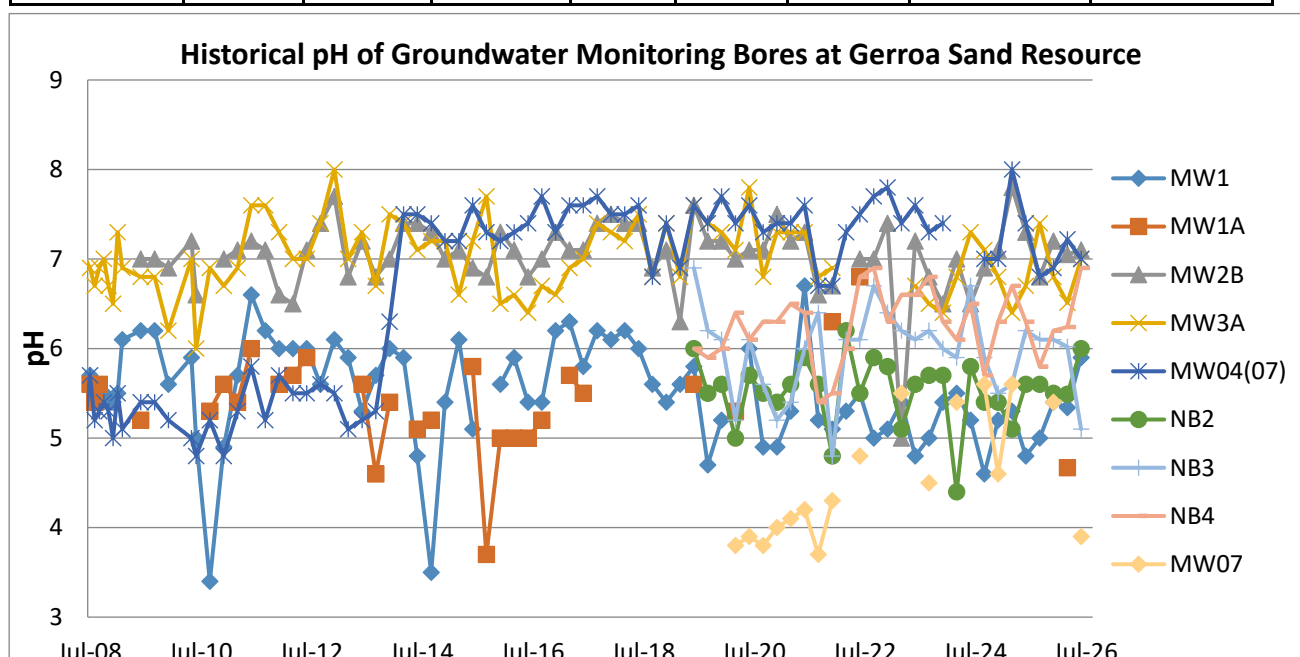
Borehole	2025/26 Reporting Period			Historical Results			DC Objectives	EA Predictions
	Min	Ave	Max	Min	Ave	Max		
MW1	1.26	1.95	3.01	0.26	1.93	3.36	N/A	N/A
MW1A	2.31	2.84	3.31	1.57	2.97	3.44	N/A	N/A
MW2B	1.13	1.42	1.78	0.35	1.23	2.54	N/A	N/A
MW3A	1.23	1.90	2.40	0.34	1.29	2.63	N/A	N/A
MW04(07)	0.30	1.04	2.09	-0.69	1.03	2.75	N/A	N/A
NB2	0.30	0.81	1.69	0.21	0.98	2.3	N/A	N/A
NB3	-0.32	0.78	2.35	0.08	1.37	2.98	N/A	N/A
NB4	-0.02	0.31	0.59	0.25	0.98	2.08	N/A	N/A
MW7	0.42	0.56	0.91	0.13	0.73	1.62	N/A	N/A



Groundwater levels across the monitoring network varied throughout the reporting period. Following the elevated rainfall at the start of the reporting period, groundwater levels generally declined through late 2025 as drier conditions prevailed. Water levels then stabilised or increased in many bores during early 2026, corresponding with periods of higher rainfall. The overall patterns were consistent with historical monitoring records and reflective of natural variability. These results indicate that climatic conditions remain the primary driver of groundwater level variations across the site. Groundwater levels recorded during the reporting period were generally within the historical ranges for each bore, with the exception of NB3 and NB4, which recorded minimum levels marginally below their historical ranges, likely reflecting the extended dry conditions experienced prior to the wetter period, combined with the shorter period of historical monitoring which commenced in 2020, the period since having generally above average rainfall. No trends were identified that suggest quarrying activities are having a measurable influence on groundwater levels.

pH (pH units)

Borehole	2025/26 Reporting Period			Historical Results			DC Objectives	EA Predictions
	Min	Ave	Max	Min	Ave	Max		
MW1	5.0	5.4	5.9	3.4	5.6	7.0	6.0 - 8.5	N/A
MW1A	4.7	4.7	4.7	3.7	5.4	6.8	6.0 - 8.5	N/A
MW2B	6.8	7.0	7.2	5.0	7.0	7.8	6.0 - 8.5	N/A
MW3A	6.5	6.9	7.4	6.0	7.0	8.0	6.0 - 8.5	N/A
MW04(07)	6.8	7.0	7.2	4.5	6.5	8.0	6.0 - 8.5	N/A
NB2	5.5	5.6	6.0	4.4	5.5	6.2	6.0 - 8.5	N/A
NB3	5.1	5.8	6.1	4.8	6.0	6.9	6.0 - 8.5	N/A
NB4	5.8	6.3	6.9	5.4	6.3	6.9	6.0 - 8.5	N/A
MW07	3.9	4.7	5.4	3.7	4.5	5.6	6.0 - 8.5	N/A



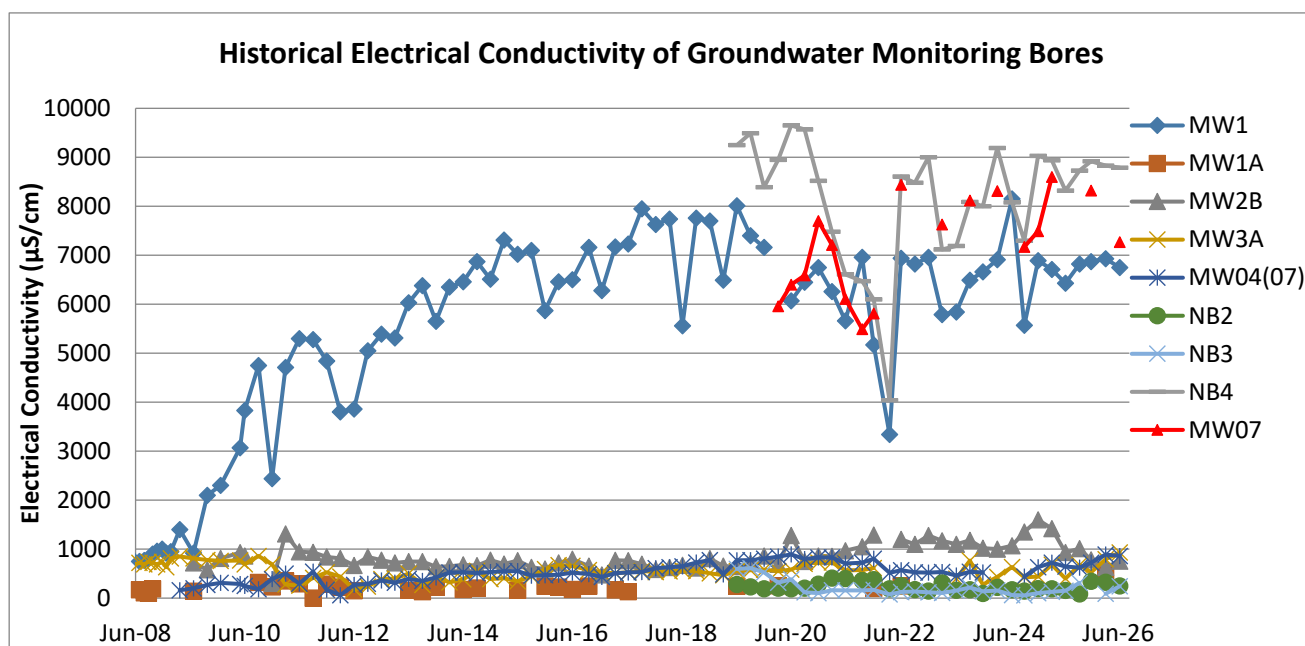
The pH values over the past 12 months have exhibited variability similar to that observed across the historical record. All groundwater bores recorded pH levels within historical ranges, with site averages closely aligned with historical averages. Several bores, including MW1, MW1A, NB2 and MW07, continued to exhibit acidic conditions with average pH values below the DC objective range of 6.0 to 8.5, reflecting naturally occurring groundwater conditions observed historically at the site.

The monitoring results suggest pH is close to neutral in the close vicinity of the dredge pond and in the lower reach of Blue Angle Creek (such as around NB4), with pH declining further from these moderating influences, including for bores MW1, MW07, and to a lesser extent NB2.

Electrical Conductivity ($\mu\text{S/cm}$)

BORE HOLE	2025/26 Reporting Period			Historical Results			DC Objectives	EA Predictions
	Min	Ave	Max	Min	Ave	Max		
MW1	6750	6843	6930	260	4876	8150	< 1,500	n/a
MW1A	545	545	545	90	200	350	< 1500	n/a
MW2B	629	794	1010	300	855	1600	< 1,500	n/a
MW3A	528	733	933	176	581	1030	< 1,500	n/a

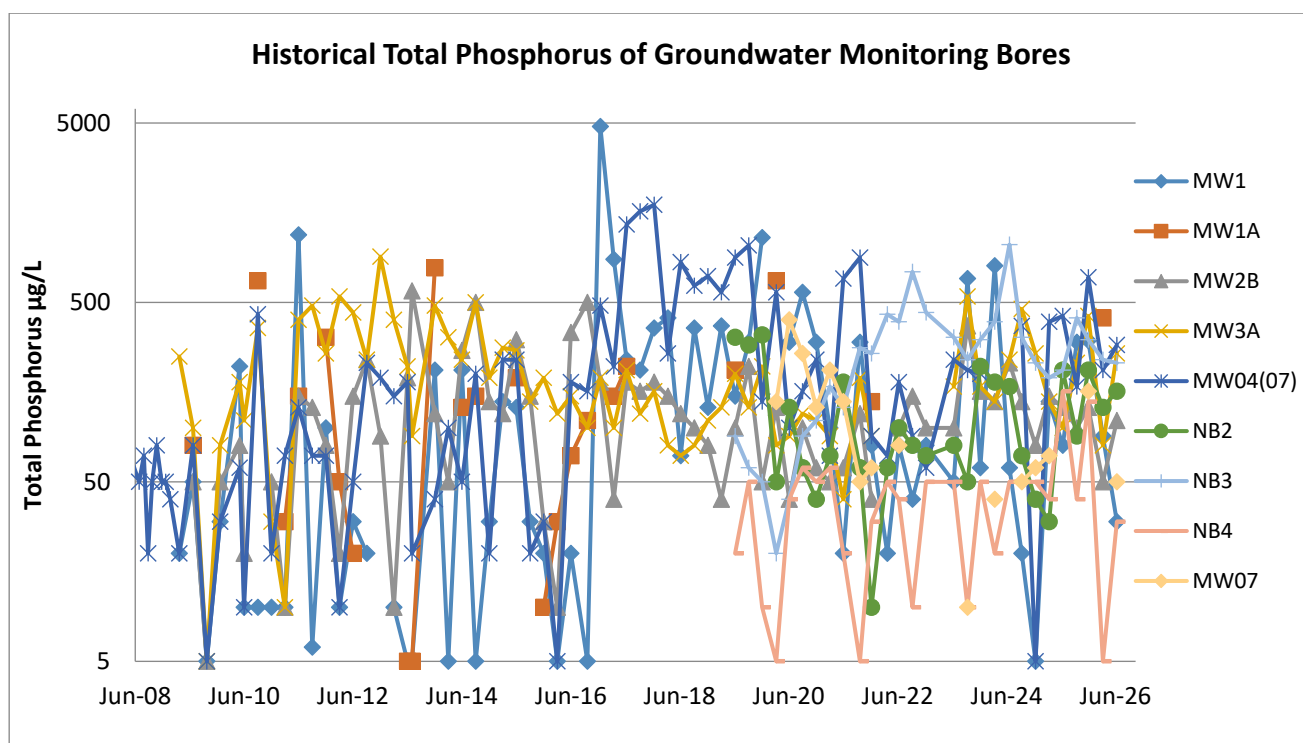
BORE HOLE	2025/26 Reporting Period			Historical Results			DC Objectives	EA Predictions
	Min	Ave	Max	Min	Ave	Max		
MW04(07)	623	774	889	60	514	892	< 1,500	n/a
NB2	86	251	343	97	228	408	< 1,500	n/a
NB3	89	215	311	56	201	613	< 1,500	n/a
NB4	8730	8818	8920	4040	8075	9650	< 1,500	n/a
MW07	7270	7795	8320	5490	7135	8600	< 1,500	n/a



The results over the 12-month period show variability in the Electrical Conductivity (EC) of the groundwater in the boreholes which is consistent with the long term pattern. Brackish groundwater in MW1 has been attributed to the Berry Siltstone aquifer to the southwest which continues to influence the groundwater quality in this bore. Meanwhile, brackish groundwater in bores NB4 and MW07, are influenced by tidal exchanges with the Crooked River estuary. With the exception of MW1, NB4, MW07, the EC of all bores remained below the development consent objective of 1,500 $\mu\text{S}/\text{cm}$ and within historical ranges. The overall distribution of EC across the monitoring network remains generally consistent with historical monitoring results and does not indicate a broader change in groundwater conditions.

Total Phosphorus ($\mu\text{g}/\text{L}$)

BORE HOLE	2025/26 Reporting Period			Historical Results			DC Objectives	EA Predictions
	Min	Ave	Max	Min	Ave	Max		
MW1	30	182	306	<10	251	4780	< 30	n/a
MW1A	410	410	410	<10	190	780	< 30	n/a
MW2B	50	98	130	<10	136	580	< 30	n/a
MW3A	80	248	420	<10	212	900	< 30	n/a
MW04(07)	170	340	690	<10	256	1750	< 30	n/a
NB2	90	148	210	10	120	330	< 30	n/a
NB3	230	298	410	20	279	1050	< 30	n/a
NB4	5	54	140	<10	41	160	< 30	n/a
MW07	50	105	160	10	121	400	< 30	n/a

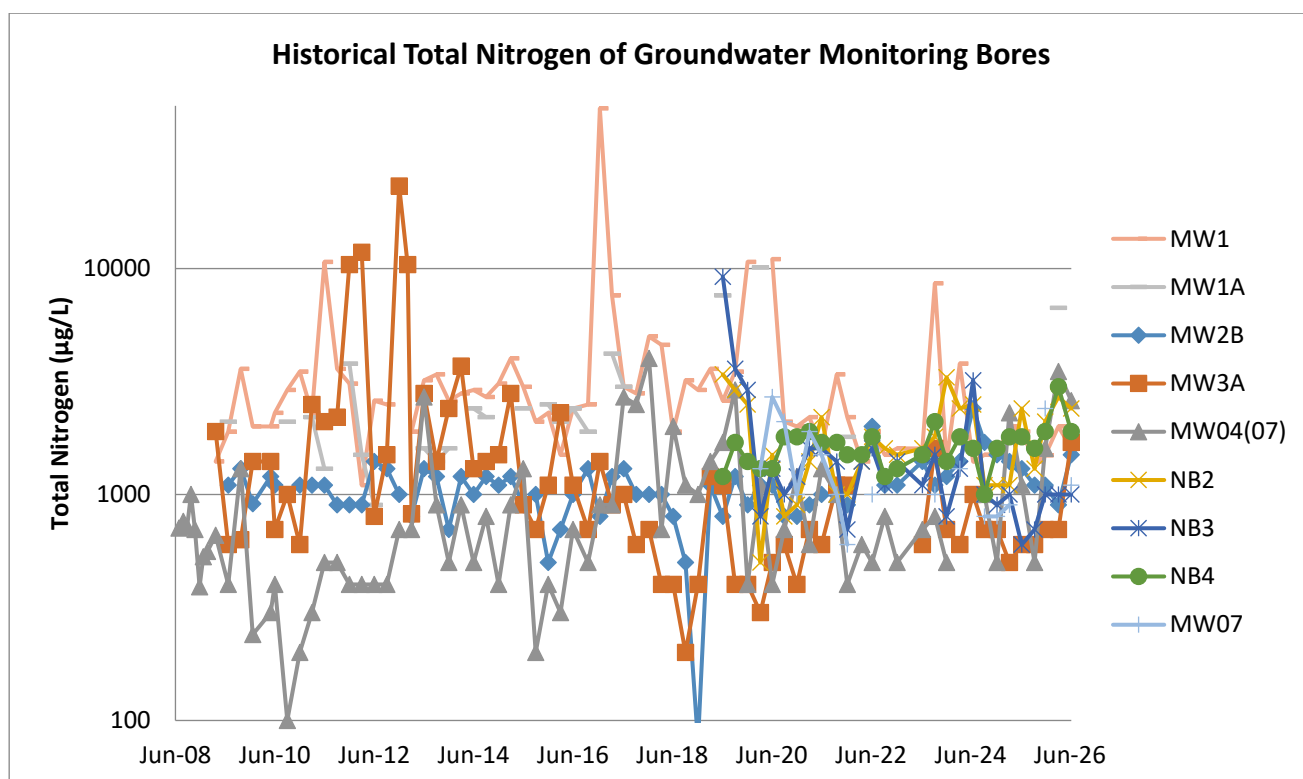


Concentrations of total phosphorus in the boreholes were generally above the groundwater quality objective; however, they were all within the historical range for their respective bores. Total phosphorus concentrations remained consistent with long-term patterns across the monitoring network, with the highest concentrations generally recorded in MW1A, MW04(07), NB3 and MW3A. During the reporting period, the concentration of total phosphorus in the groundwater monitoring network remained comparable to historical levels, suggesting the elevated concentrations reflect existing site conditions and surrounding land use influences. Note a logarithmic scale has been applied to the graph above to improve interpretation.

Total Nitrogen (µg/L)

BORE HOLE	2025/26 Reporting Period			Historical Results			DC Objectives	EA Predictions
	Min	Ave	Max	Min	Ave	Max		
MW1	1400	1623	2000	1100	3857	51100	< 350	n/a
MW1A	6700	6700	6700	900	2777	10100	< 350	n/a
MW2B	900	1150	1500	80	1085	2400	< 350	n/a
MW3A	600	925	1700	200	1927	23200	< 350	n/a
MW04(07)	500	2050	3500	100	874	4000	< 350	n/a
NB2	1300	2125	2700	500	1738	3400	< 350	n/a
NB3	700	925	1000	600	1758	9200	< 350	n/a
NB4	1600	2100	3000	1000	1571	2100	< 350	n/a
MW07	1100	1750	2400	600	1279	2700	< 350	n/a

The concentrations of Total Nitrogen in all groundwater monitoring bores continued to exceed the objective level during the reporting period, consistent with the long-term monitoring record. Nitrogen concentrations were within the historical range for all bores, except for NB4 which exceeded the historical maximum for one sample, before returning to the historical range in the following period. Recorded levels of total nitrogen in the groundwater monitoring network are likely related to agricultural activities surrounding the Gerroa Sand Resource. Overall, Total Nitrogen concentrations remain consistent with historical patterns and do not indicate a material change in groundwater quality conditions during the reporting period. Note a logarithmic scale has been applied to the graph below to improve interpretation.



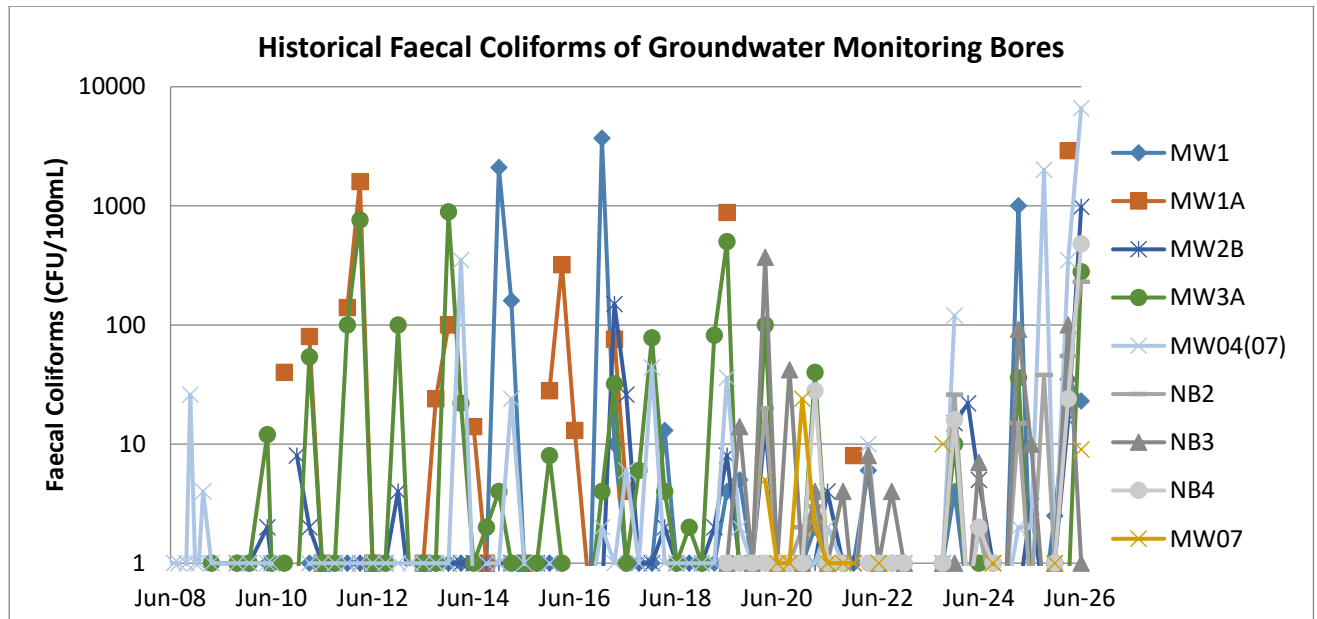
Chlorophyll A (µg/L)

Chlorophyll A concentrations were below the laboratory limit of reporting and objective level in all samples across all monitoring bores this reporting period. As such, this data cannot be meaningfully graphed.

Faecal Coliforms (median number/100mL)

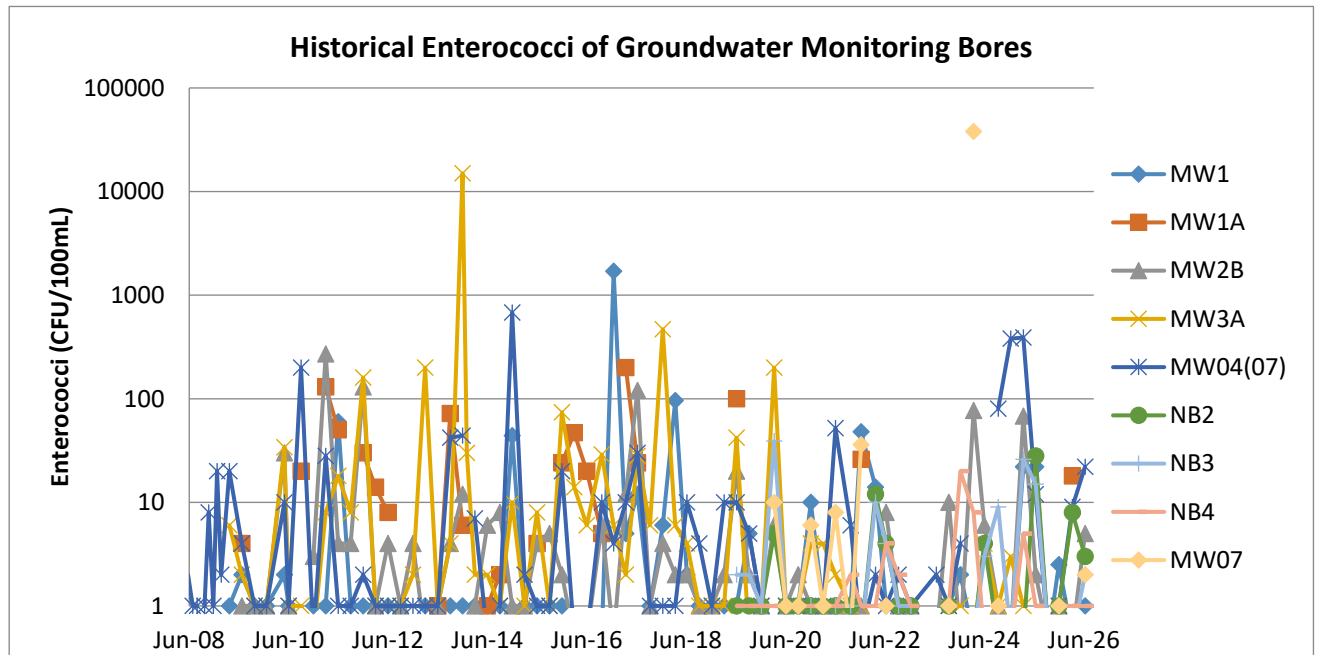
BORE HOLE	2025/26 Reporting Period			Historical Results			DC Objectives	EA Predictions
	Min	Ave	Max	Min	Ave	Max		
MW1	<1	15	35	<1	112	3700	<1000	n/a
MW1A	2900	2900	2900	<1	159	1600	<1000	n/a
MW2B	<1	249	980	<1	5	150	<1000	n/a
MW3A	<1	71	280	<1	47	890	<1000	n/a
MW04(07)	1	2238	6600	<1	9	350	<1000	n/a
NB2	1	81	230	<1	3	26	<1000	n/a
NB3	<1	26	100	<1	24	370	<1000	n/a
NB4	<1	126	480	<1	3	28	<1000	n/a
MW07	1	5	9	<1	4	24	<1000	n/a

Concentrations remained below the groundwater quality objective of 1,000 in all bores, with the exception of MW04(07), which recorded elevated concentrations during the reporting period, including a maximum concentration of 6,600, and bore MW1A which recorded a maximum concentration of 2900. While concentrations in MW3A, NB2, NB3, NB4 and MW07 remained within historical ranges and were generally comparable to long-term averages, concentrations in MW04(07), NB2 and NB4 exceeded their respective historical maximum values on at least one occasion.



Enterococci (median number/100mL)

BORE HOLE	2025/26 Reporting Period			Historical Results			DC Objectives	EA Predictions
	Min	Ave	Max	Min	Ave	Max		
MW1	<1	1	2.5	<1	33	1700	<230	n/a
MW1A	18	18	18	1	38	200	<230	n/a
MW2B	<1	2	5	<1	14	270	<230	n/a
MW3A	<1	<1	1	<1	265	15000	<230	n/a
MW04(07)	<1	8	22	<1	28	680	<230	n/a
NB2	<1	3	8	<1	3	28	<230	n/a
NB3	<1	1	2	<1	5	39	<230	n/a
NB4	<1	<1	1	<1	2	20	<230	n/a
MW07	1	2	2	<1	2719	38000	<230	n/a

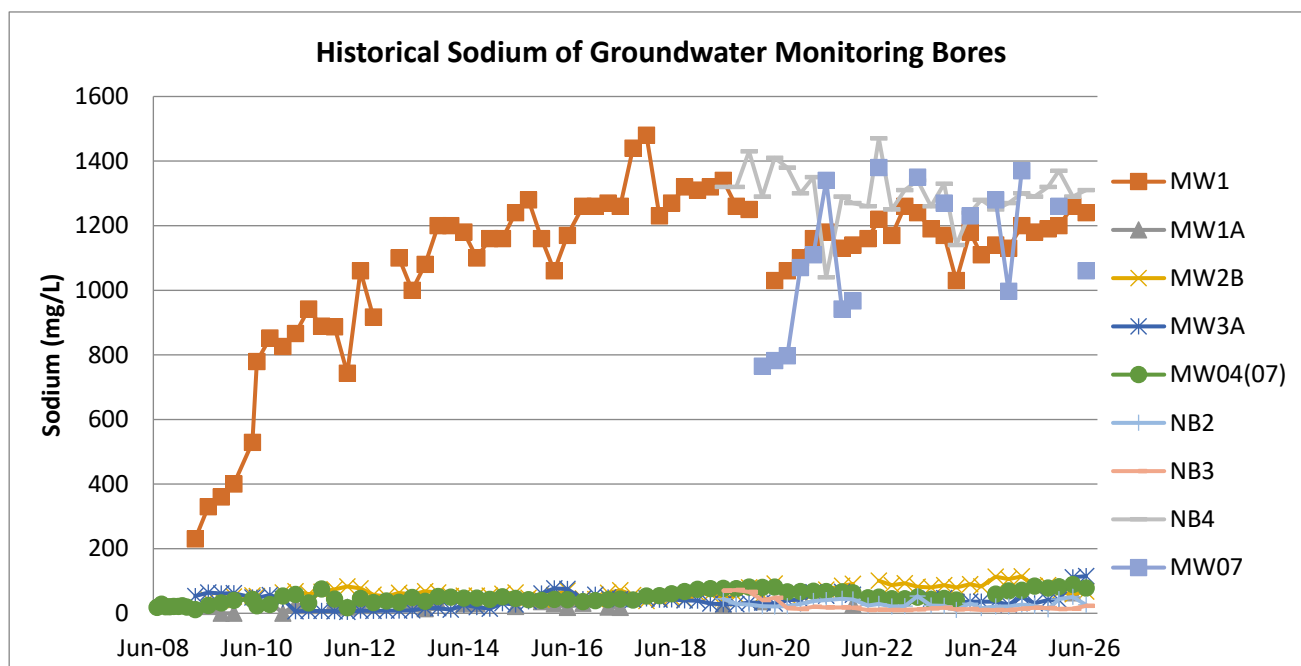


Enterococci concentrations were within the objective levels during the reporting period. All results were also within the historical ranges for their respective bores. Overall, enterococci concentrations remained low and consistent with historical groundwater quality conditions. Note a logarithmic scale has been applied to the graph below to improve interpretation.

Sodium (mg/L)

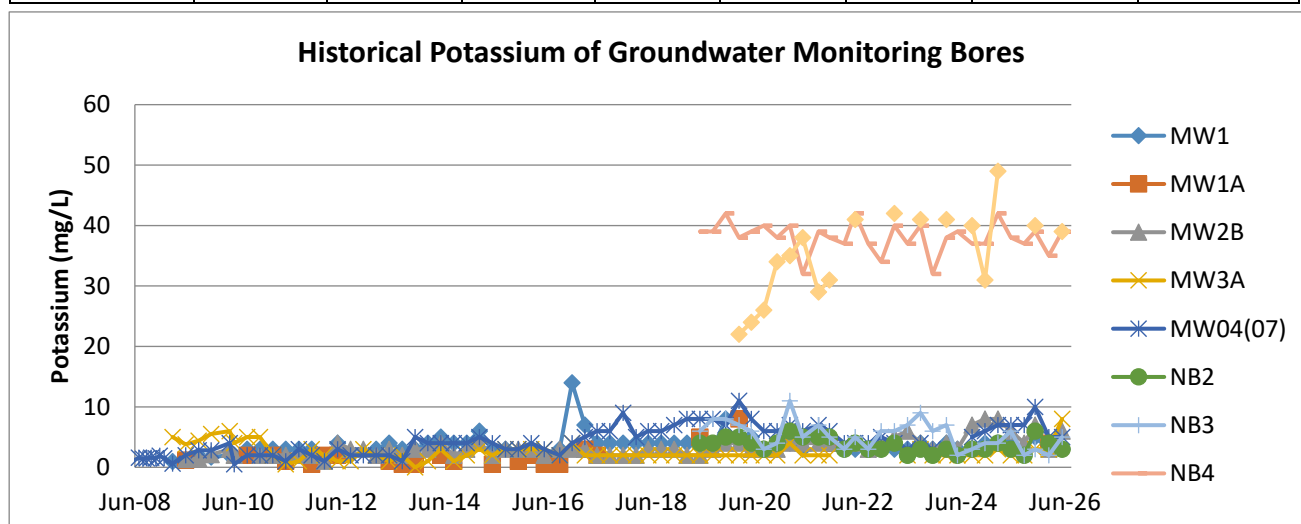
BORE HOLE	2025/26 Reporting Period			Historical Results			DC Objectives	EA Predictions
	Min	Ave	Max	Min	Ave	Max		
MW1	1190	1223	1260	230	1080	1480	< 400	n/a
MW1A	63	63	63	14	27	36	< 400	n/a
MW2B	59	70	87	38	66	114	< 400	n/a
MW3A	41	77	115	4	36	77	< 400	n/a
MW04(07)	78	82	89	11	46	84	< 400	n/a
NB2	12	33	51	10	28	53	< 400	n/a
NB3	13	17	23	10	23	72	< 400	n/a
NB4	1290	1323	1370	1040	1296	1470	< 400	n/a
MW07	1060	1160	1260	765	1110	1380	< 400	n/a

With the exception of boreholes MW1, NB4 and MW07, sodium concentrations recorded in the monitoring network were within the DC objective and consistently at low levels. Concentrations in these bores was significantly above the DC objective during the reporting period; however, these results are considered representative of background conditions, reflecting the influence of the Berry Siltstone aquifer in MW1 and the brackish influence of the Crooked River estuary in NB4 and MW07. All sodium concentrations during the reporting period were generally consistent with the historical averages for the respective bores, with the exception of results from bores MW3A and MW04(07), which recorded sodium concentrations above the historical range.



Potassium Ion (mg/L)

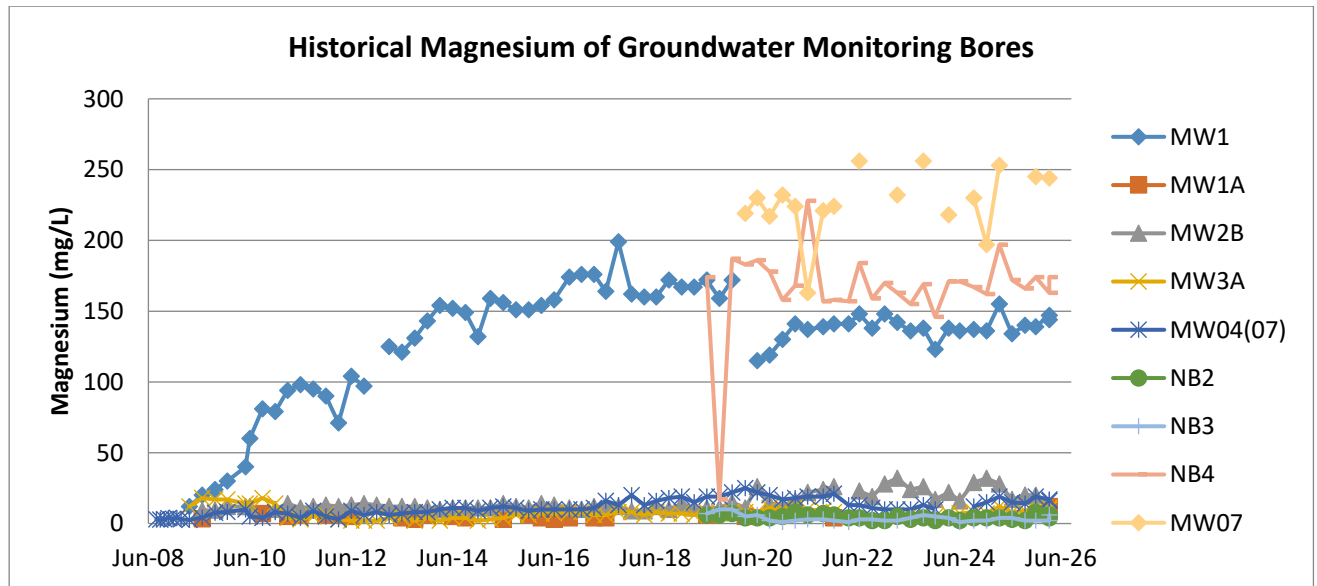
BORE HOLE	2025/26 Reporting Period			Historical Results			DC Objectives	EA Predictions
	Min	Ave	Max	Min	Ave	Max		
MW1	3	4	5	<1	4	14	< 50	n/a
MW1A	4	4	4	<1	2	8	< 50	n/a
MW2B	3	5	7	1	3	8	< 50	n/a
MW3A	2	4	8	<1	2	6	< 50	n/a
MW04(07)	5	7	10	<1	4	11	< 50	n/a
NB2	2	4	6	2	4	6	< 50	n/a
NB3	2	3	5	2	6	11	< 50	n/a
NB4	35	38	39	32	38	42	< 50	n/a
MW07	39	40	40	22	35	49	< 50	n/a



Potassium ion concentrations in the original monitoring network have remained well below the DC objective levels and were generally consistent with historical concentrations in the current reporting period. Concentrations in the newer monitoring bores NB4 and MW7 were recorded higher than the other sites however represent background levels for these sites due to the brackish influence from the Crooked River estuary. MW3A recorded a maximum concentration slightly above the historical range during the reporting period.

Magnesium Ion (mg/L)

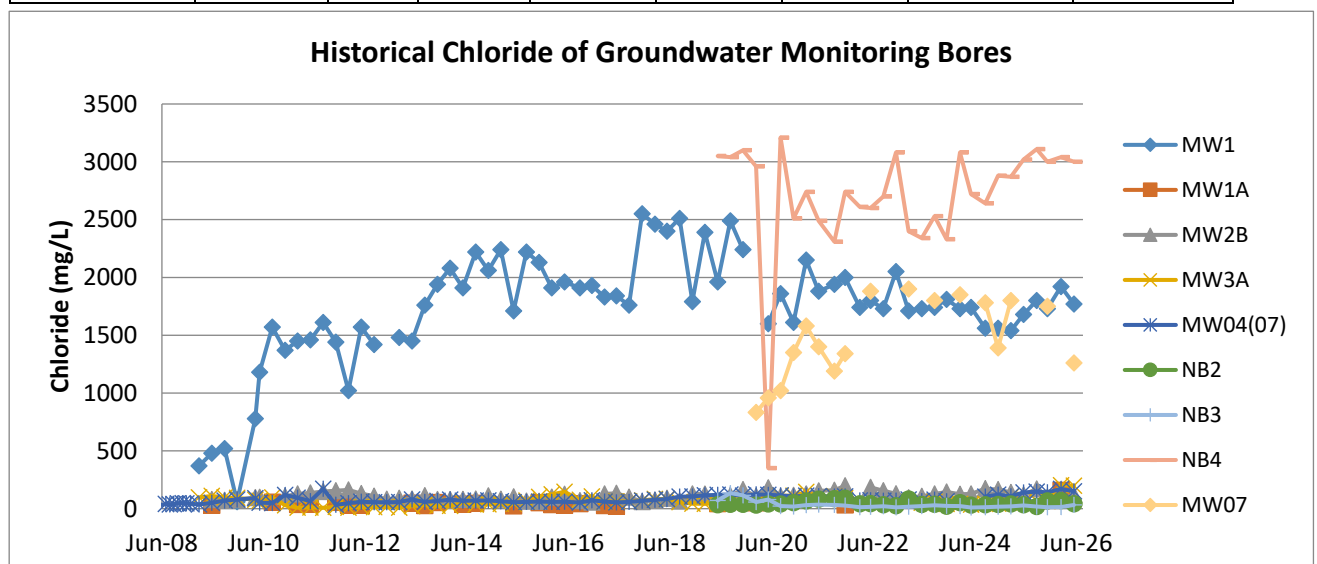
BORE HOLE	2025/26 Reporting Period			Historical Results			DC Objectives	EA Predictions
	Min	Ave	Max	Min	Ave	Max		
MW1	139	143	139	12	129	199	< 50	n/a
MW1A	12	12	12	3	5	7	< 50	n/a
MW2B	12	16	12	9	15	32	< 50	n/a
MW3A	9	10	9	2	7	18	< 50	n/a
MW04(07)	14	17	14	3	11	25	< 50	n/a
NB2	2	5	2	2	4	8	< 50	n/a
NB3	2	3	2	1	4	10	< 50	n/a
NB4	163	169	163	17	165	228	< 50	n/a
MW07	244	245	244	163	225	256	< 50	n/a



Magnesium ion concentrations were within the DC objective level with the exception of MW1, NB4, and MW07, which have followed similar trends as for conductivity and sodium. All samples were within the historical ranges for the respective sites, with the exception of the single sample from MW1A.

Chloride Ion (mg/L)

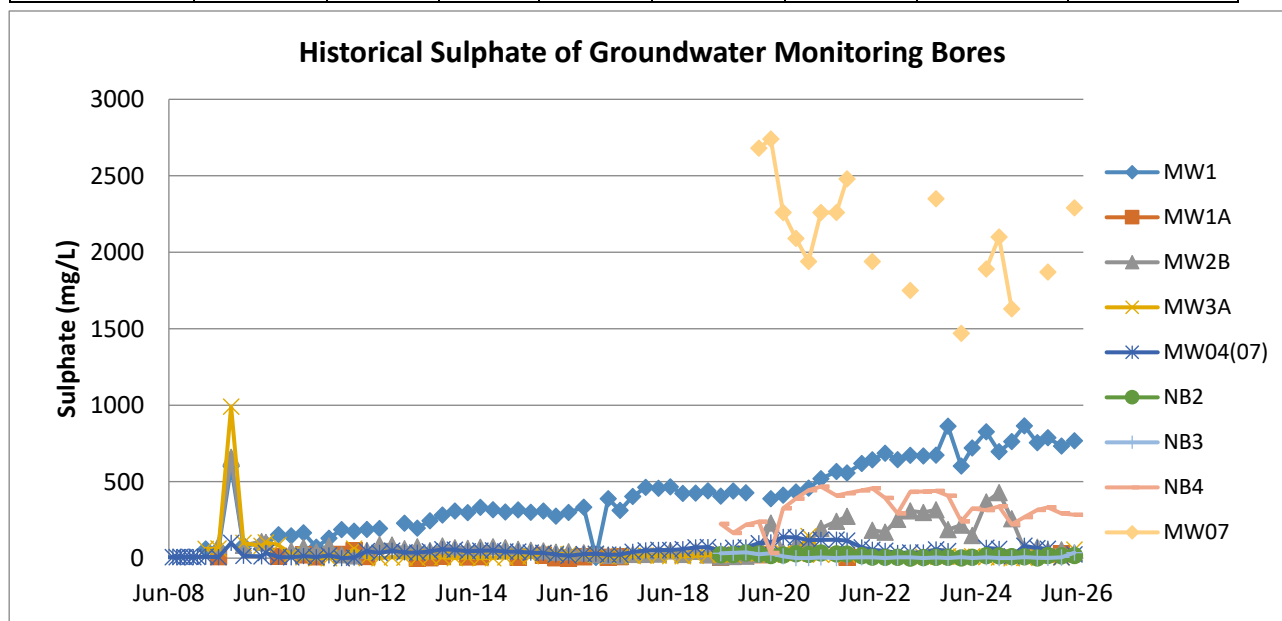
BORE HOLE	2025/26 reporting period			Historical Results			DC Objectives	EA Predictions
	Min	Ave	Max	Min	Ave	Max		
MW1	1540	1805	1920	60	1703	2550	< 300	n/a
MW1A	<1	158	158	18	38	56	< 300	n/a
MW2B	120	120	171	57	114	198	< 300	n/a
MW3A	41	134	203	8	61	146	< 300	n/a
MW04(07)	104	152	171	33	76	172	< 300	n/a
NB2	33	49	70	21	46	90	< 300	n/a
NB3	13	20	32	10	36	135	< 300	n/a
NB4	2640	3038	3110	351	2652	3210	< 300	n/a
MW07	1390	1505	1750	832	1471	1900	< 300	n/a



All chloride ion concentrations were within the DC objective level with the exception of MW1, NB4, and MW07, which have followed similar trends as for conductivity and sodium. MW1A and MW3A recorded results greater than the historical maxima, all other samples were within the historical ranges for the respective sites. Site MW1 continues to be affected by brackish water from the Berry Siltstone, while bores NB4 and MW07 are influenced by brackish water from the Crooked River estuary.

Sulphate Ion (mg/L)

BORE HOLE	2025/26 Reporting Period			Historical Results			DC Objectives	EA Predictions
	Min	Ave	Max	Min	Ave	Max		
MW1	733	761	787	4	386	865	< 250	n/a
MW1A	27	27	27	<1	11	48	< 250	n/a
MW2B	35	52	71	8	113	660	< 250	n/a
MW3A	5	22	56	<1	41	990	< 250	n/a
MW04(07)	5	39	65	<1	41	138	< 250	n/a
NB2	1	13	17	<1	15	34	< 250	n/a
NB3	1	11	36	<1	9	38	< 250	n/a
NB4	284	306	332	34	334	468	< 250	n/a
MW07	1870	2080	2290	1470	2123	2740	< 250	n/a

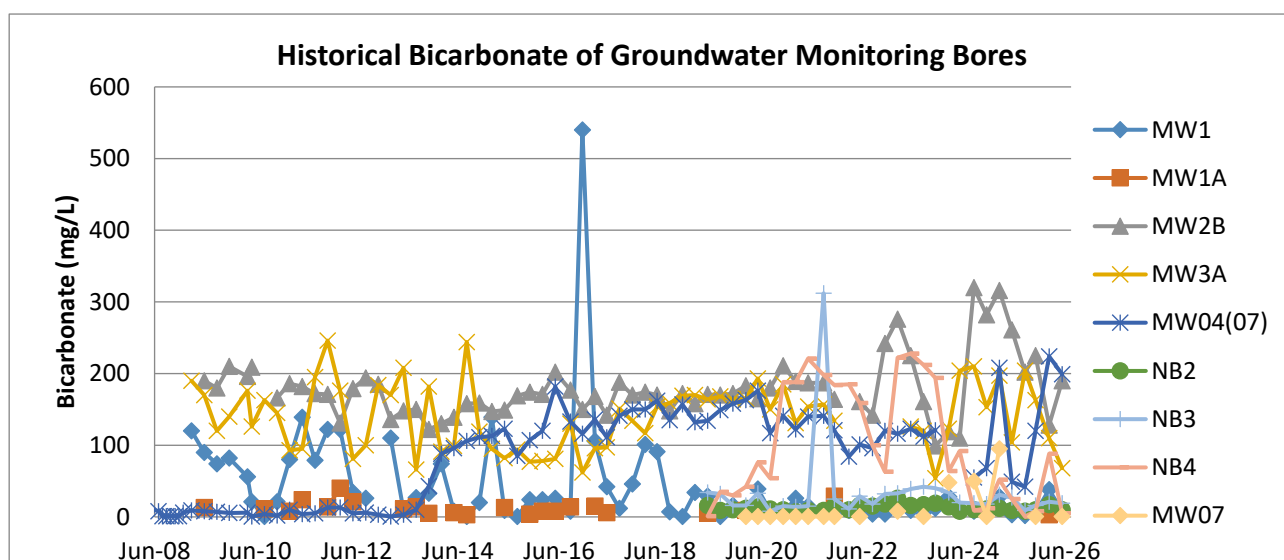


All results were within the historical ranges for the respective bores. The concentration of sulphate in bores MW1, NB4 and MW07 exceeded the DC objective during the reporting period, consistent with recent years, while all other bores remained below the objective level. Elevated sulphate concentrations in MW1 continue to reflect the influence of the Berry Siltstone aquifer, while concentrations in NB4 and MW07 are associated with the brackish influence of the Crooked River estuary. Sulphate concentrations in the remaining bores were generally low and consistent with historical averages. Bore MW1 has shown an increasing trend in sulphate ion concentration over the past five years, generally replacing chloride ions, which have shown a decreasing trend over the same period.

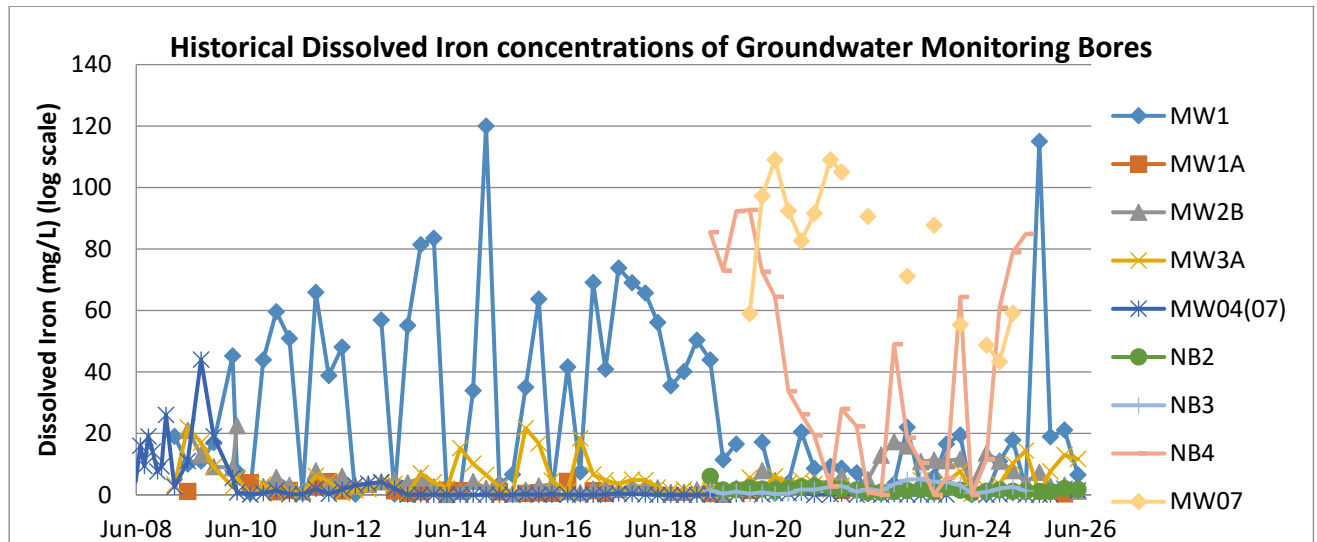
Bicarbonate Ion (mg/L)

BORE HOLE	2025/26 reporting period			Historical Results			DC Objectives	EA Predictions
	Min	Ave	Max	Min	Ave	Max		
MW1	2	14	38	<1	45	540	< 750	n/a
MW1A	3	3	3	3	13	40	< 750	n/a
MW2B	128	186	225	99	178	320	< 750	n/a
MW3A	68	136	204	54	141	246	< 750	n/a
MW04(07)	42	146	224	<1	72	208	< 750	n/a
NB2	8	11	17	7	13	26	< 750	n/a
NB3	9	16	21	8	37	312	< 750	n/a
NB4	<1	25	88	1	113	228	< 750	n/a
MW07	<1	<1	<1	<1	14	95	< 750	n/a

Bicarbonate concentrations remained below the objective level in all groundwater bores during the current reporting period. All bores have continued to show some inherent variability, and generally within the historical ranges. Bore MW04(07) recorded one higher than typical result however subsequently returned to the historical range for this bore in the following sample.

**Dissolved Iron (mg/L)**

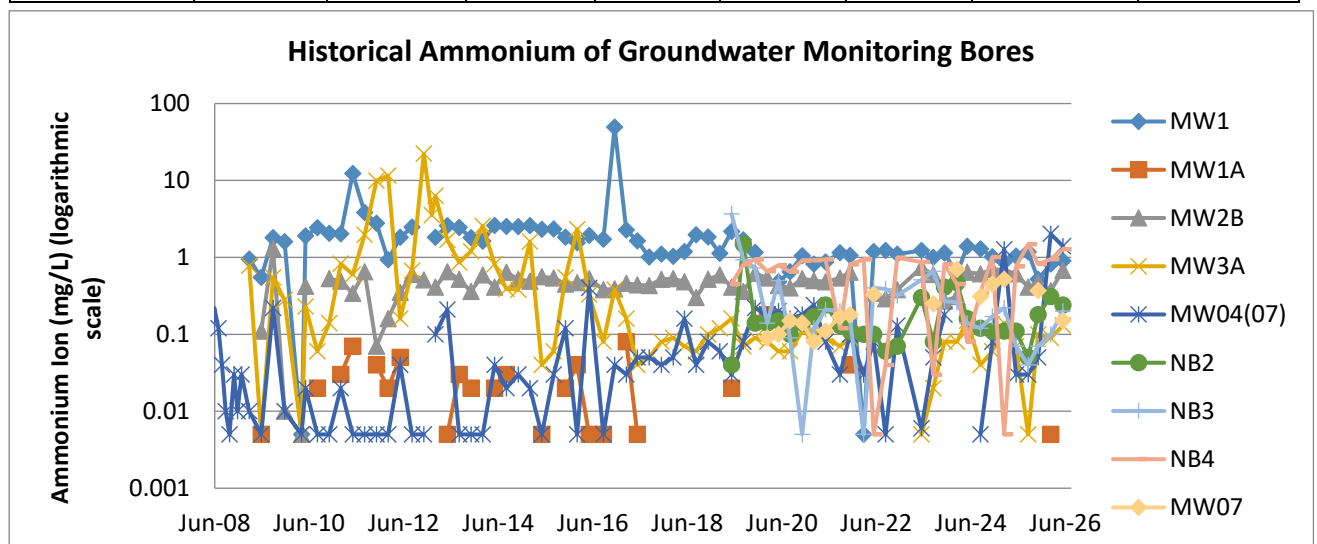
BORE HOLE	2025/26 reporting period			Historical Results			DC Objectives	EA Predictions
	Min	Ave	Max	Min	Ave	Max		
MW1	6.5	40.4	115	0.1	27.5	120	< 6	0.07
MW1A	0.3	0.3	0.3	0.4	1.5	4	< 6	n/a
MW2B	1.2	3.6	7.3	0.1	5.5	23	< 6	n/a
MW3A	0.6	8.2	13.0	0.2	5.1	22	< 6	n/a
MW04(07)	<0.05	0.9	2.0	<0.05	3.0	44	< 6	n/a
NB2	1.1	1.5	2.1	0.6	1.8	6	< 6	n/a
NB3	0.8	1.4	2.4	0.3	2.0	5	< 6	n/a
NB4	26.8	57.4	81.2	<0.05	39.9	93	< 6	n/a
MW07	50.1	72.3	94.5	43.3	80.1	109	< 6	n/a



The dissolved iron concentrations were above the objective level for several bores at times during the current reporting period. This is a common phenomenon, with the graph above showing significant fluctuations throughout the historical period of monitoring for all bores. This historical trend has continued in the current reporting period. The concentrations of dissolved iron in all bores for the reporting period were within the historical ranges for the respective bores.

Ammonium Ion (mg/L)

BORE HOLE	2025/26 reporting period			Historical Results			DC Objectives	EA Predictions
	Min	Ave	Max	Min	Ave	Max		
MW1	0.52	0.86	1.18	<0.01	2.48	49.50	< 0.02	n/a
MW1A	<0.01	<0.01	<0.01	<0.01	0.03	0.18	< 0.02	n/a
MW2B	0.37	0.48	0.68	<0.01	0.47	1.30	< 0.02	n/a
MW3A	<0.01	0.08	0.13	<0.01	1.22	22.30	< 0.02	n/a
MW04(07)	0.03	0.88	2.02	<0.01	0.08	1.27	< 0.02	n/a
NB2	0.05	0.20	0.31	0.04	0.21	1.49	< 0.02	n/a
NB3	0.04	0.10	0.20	<0.01	0.43	3.67	< 0.02	n/a
NB4	0.82	1.13	1.48	<0.01	0.60	1.01	< 0.02	n/a
MW07	0.15	0.26	0.37	0.08	0.26	0.70	< 0.02	n/a



Ammonium ion concentrations were consistently above the objective level during the current reporting period; however, concentrations were generally within historical levels for all bores in the original monitoring network. One sample from MW04(07) and two samples from NB4 were above the historical range for these bores, while concentrations in the remaining bores were consistent with historical conditions. Overall, the results indicate that ammonium concentrations remain comparable with long-term groundwater quality trends and do not suggest a deterioration in groundwater quality as a result of dredging operations. Note a logarithmic scale has been applied to the graph above to improve interpretation.

4.2.4. Groundwater Monitoring Results Interpretation

From the data gathered as part of the groundwater monitoring program for the Gerroa Sand Resource, groundwater quality has remained consistent with historical patterns in the current reporting period. Groundwater levels, pH, major ion concentrations and nutrient concentrations were mostly consistent with historical monitoring results, indicating that the groundwater remains largely influenced by natural site conditions and surrounding land uses rather than the dredging activities.

Higher concentrations of electrical conductivity, sodium, chloride, magnesium and sulphate, were observed in bores MW1, NB4 and MW07. Monitoring bore MW1 is connected to the Berry Siltstone aquifer, which forms the topographical high to the southwest of the project area. The Berry Siltstone aquifer is a brackish groundwater system, with a relative deficiency of potassium, which is reflected in the monitoring results of MW1. Historical monitoring from this bore demonstrates naturally elevated salinity and major ion concentrations, including electrical conductivity, chloride, sodium and sulphate. Results from the current reporting period remain consistent with these existing trends. The newer monitoring bores NB4 and MW07 also exhibited elevated concentrations of sodium, chloride, magnesium and sulphate. These results are consistent with historical monitoring and reflect the influence of brackish groundwater associated with tidal interactions from the Crooked River estuary. Elevated potassium concentrations at these bores further support an estuarine influence rather than impact associated with dredging/extraction activities.

A small number of analytes exceeded historical maxima during the reporting period, these were generally isolated results rather than larger trends. Isolated increases above historical ranges were noted for sodium in bores MW3A and MW04(07), chloride in MW1A and MW3A, potassium in MW3A, ammonium in MW04(07) and NB4, and faecal coliforms in MW04(07). These results were not accompanied by corresponding changes across the broader monitoring network and do not indicate a site-wide deterioration in groundwater quality.

Nutrient concentrations remained elevated relative to the adopted groundwater quality objectives. Total nitrogen concentrations exceeded the objective level in all bores, while total phosphorus concentrations were generally above the objective level throughout the monitoring network. However, concentrations were largely consistent with historical results and reflect the established groundwater quality conditions within the region. The recorded concentrations are considered likely to be influenced by surrounding agricultural land uses and natural site conditions. This interpretation is supported by water quality monitoring within the dredge pond, where nitrogen and phosphorus concentrations are typically lower than those observed within the groundwater monitoring network.

One of the key observations made during previous annual reviews related to the shortcomings of the current groundwater quality objectives and their applicability to the natural groundwater regime of the site. The objectives are derived from previous surface water quality objectives for NSW and are not directly applicable to groundwater. This is highlighted by the presence of iron sulphides in the local geology, which has contributed to a number of bores regularly and naturally recording pH levels below the objective range, and soluble iron concentrations above the objective level.

Similarly, concentrations of nitrogen and phosphorus in the groundwater are regularly higher than the objective levels, despite no forms of these substances used or artificially generated on site as part of extraction activities. Nitrogen and phosphorus concentrations in the surface water of the dredge pond are typically far lower than that recorded in the groundwater monitoring network, supporting determinations that extraction activities are not contributing to the observed concentrations of these analytes in the groundwater. For these reasons, the objective levels of these analytes do not suitably reflect the natural groundwater regime, and comparison with

historical results provides a far better method of detecting any changes to groundwater quality as a result of dredging and associated activities.

The current groundwater monitoring program is suitable for monitoring any spatial or temporal changes in the groundwater quality and quantity in the local environment. Current procedures allow for an accurate representation of any longer-term trends in groundwater quality and availability.

There were no non-compliances with conditions of the Development Consent or Environmental Protection Licence 4146 related to groundwater in the 2025-2026 reporting period.

4.3. Surface Water Management

4.3.1. Standards and Performance Measures

There are no specific requirements for surface water quality in the site's EPL other than with regard to discharges from the site, which are to be from the end of the Overflow Pipe of the existing dredge pond. The overflow pipe indicated is licenced in case of extreme wet weather in which flood water would be allowed to drain to the adjacent Foy's Swamp. To date the dredge pond water has never required use of the overflow pipe.

The surface water monitoring requirements from the DC are realised by the sites QEMP. Section 8.5 of the QEMP details the surface water monitoring requirements and specifies that the dredge ponds and Blue Angle Creek require daily water level and pH measurements, as well as monthly monitoring for various analytes in both dredge ponds, Blue Angle Creek, and the processing returns line. The EA predicted that the project is not predicted to lead to any deterioration of the water quality of the dredge pond, or the surrounding area.

The surface water quality objectives for the dredge ponds which CB should "aim to meet" from the DC (and adopted in the QEMP) are as follows:

Analyte	Units	Objective
Turbidity	NTU	5 - 20
pH	pH	6.0 – 8.5
Salinity	µS/cm	<1,500
Dissolved Oxygen	mg/L	>6
Total Phosphorus	µg/L	<30
Total Nitrogen	µg/L	<350
Chlorophyll-A	µg/L	<5
Faecal Coliforms	Median No./100 mL	<1,000
Enterococci	Median No./100 mL	<230
Algae & BGA	No. Cells/mL	<15,000
Sodium	mg/L	<400
Potassium	mg/L	<50
Magnesium	mg/L	<50
Chloride	mg/L	<300
Sulphate	mg/L	<250
Bicarbonate	mg/L	<750
Soluble Iron	mg/L	<6
Ammonium	mg/L*	<0.02

* objective amended from 20 mg/L to 20 µg/L (0.02 mg/L) as part of Modification 1

4.3.2.Environmental Performance

CB has implemented the Surface Water Monitoring Program to meet the requirements of the DC. ALS Laboratory Group were engaged during the reporting period to conduct monthly and quarterly sampling and testing of the surface water monitoring sites. Automatic monitoring stations recording water level and pH were also operating in both dredge ponds and the downstream site on Blue Angle Creek. Additional management and monitoring of surface water resources to assess potential impact from acid sulphate soils are detailed in Section 4.4.

4.3.3.Surface Water Monitoring

A summary of surface water monitoring results for the period is tabulated in this section, with the range and average of each analyte displayed alongside the historical range and average, objectives as described in the DC, and any EA predictions. Units of reporting are listed in the table in Section 4.3.1. Graphs are also included to show trends in all analytes over the historical period of monitoring in the dredge pond. Where surface water monitoring results trend outside of the historical range or DC objectives, these are discussed after each graph.

Existing Dredge Pond

Existing Dredge Pond Analyte	2025/26 Reporting Period			Historical Results			DC Objectives	EA Predictions
	Min	Ave	Max	Min	Ave	Max		
Conductivity	432	570	856	288	646	1,040	< 1,500	N/A
pH	7	7	8	6	8	9	6 - 8.5	N/A
Total Algae	7,920	21,835	59,800	525	121,793	2,070,000	< 15,000	N/A
Cyanophyta	75	14,845	57,800	3	97,018	2,070,000	< 15,000	N/A
Total phosphorus	<5	125	260	<5	50	790	< 30	N/A
Total nitrogen	1	673	1,300	40	667	6,900	< 350	N/A
Chlorophyll-a	3	10	25	0	7	49	< 5	N/A
Faecal coliforms	30	2,265	4,500	1	98	2,100	< 1,000	N/A
Enterococci	8	60	170	1	38	690	< 230	N/A
Sodium	74	95	108	33	56	97	< 400	N/A
Potassium ion	6	8	11	1	5	8	< 50	N/A
Magnesium ion	13	16	19	9	14	22	< 50	N/A
Calcium ion	21	23	25	23	31	43	N/A	N/A
Chloride	136	167	187	16	86	144	< 300	N/A
Sulphate ion	61	79	102	25	103	1,300	< 250	N/A
Bicarbonate ion	35	39	43	1	95	313	< 750	N/A
Soluble iron ion	<0.005	0.03	0.29	0.01	0.06	1.0	< 6	N/A
Ammonium ion	<0.01	<0.01	<0.01	0.01	0.03	0.36	< 0.02	N/A
Turbidity	135	230	337	1	47	288	1 - 20	N/A
DO (mg/L)	6.7	8.2	9.7	2.2	8.7	13.2	> 6	N/A
DO (%)	69	89	104	26	95	170	80-110	N/A

The surface water quality analytes in the existing dredge pond were generally consistent with historical monitoring with the exception of isolated high levels for faecal coliforms, sodium, magnesium, chloride, and turbidity. Analytes were at times outside of the objective levels, including for turbidity, dissolved oxygen %, algae and chlorophyll-A, faecal coliforms and the nutrient species. The nutrient species remained elevated relative to

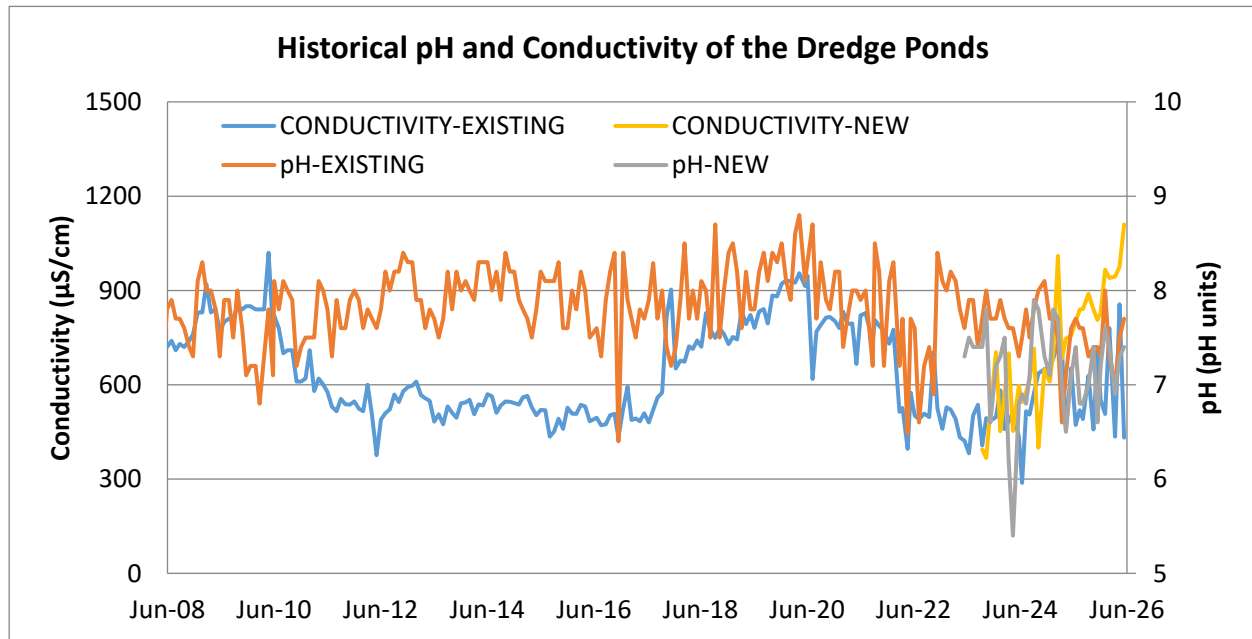
the objectives, consistent with the historical and present agricultural land use of the surrounding area, with nitrogen and phosphorus also elevated in groundwater due to these land uses. Turbidity remained above the objective and marginally above the historical maximum, likely due to the increased fines generation associated with extraction from the new dredge pond; however, with the flood bunds preventing any overflows, this does not pose a risk to surrounding surface water resources. Lower dissolved oxygen saturation was recorded on an isolated basis only, with dissolved oxygen concentrations otherwise remaining within the objective levels throughout the monitoring period. Concentrations of algae and chlorophyll-A generally followed typical seasonal patterns, with higher concentrations above objective levels during warmer periods and lower levels during the Winter and Spring monitoring periods. The elevated faecal coliform results were above the objective and historical range, but are considered isolated and do not indicate a material deterioration in water quality. Higher major ion concentrations are likely related to inflows from the new dredge pond, which typically exhibits higher concentrations of these species due to its closer proximity to the Crooked River estuary.

New Dredge Pond

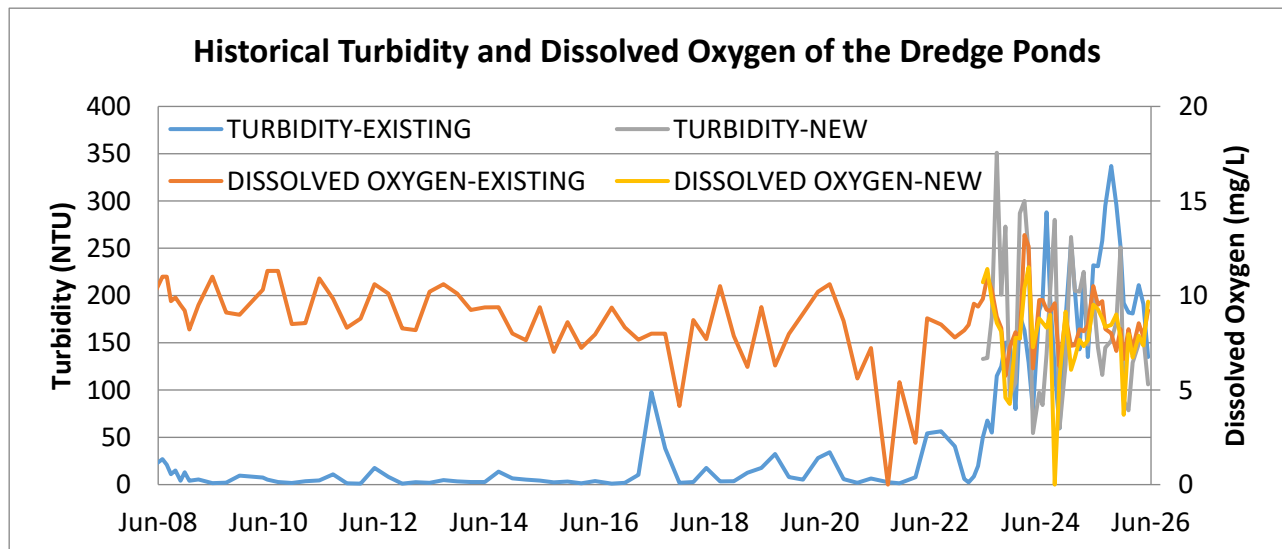
New Dredge Pond	2025/26 Reporting Period			Historical Results			DC Objectives	EA Predictions
Analyte	Min	Ave	Max	Min	Ave	Max		
Conductivity	806	1,004	1,440	367	645	1,010	< 1,500	N/A
pH	6.6	7.2	7.6	5.4	7.2	7.9	6 - 8.5	N/A
Total Algae	3,450	5,985	8,120	750	9,254	24,300	< 15,000	N/A
Cyanophyta	150	2,698	6,420	800	7,550	15,600	< 15,000	N/A
Total phosphorus	140	257	510	100	190	510	< 30	N/A
Total nitrogen	1,000	1,375	2,300	600	1,111.1	1,700	< 350	N/A
Chlorophyll-a	6	8	11	1	9.5	26	< 5	N/A
Faecal coliforms	540	15,847	46,000	10	127.0	560	< 1,000	N/A
Enterococci	12	24	38	17	39.5	60	< 230	N/A
Sodium	113	137	172	45	79.1	119	< 400	N/A
Potassium ion	7	9	12	3	6.1	9	< 50	N/A
Magnesium ion	18	22	27	10	15.7	20	< 50	N/A
Calcium ion	29	32	36	26	35.9	68	N/A	N/A
Chloride	213	250	303	63	130.9	233	< 300	N/A
Sulphate ion	76	102	127	57	98.3	195	< 250	N/A
Bicarbonate ion	20	33	38	28	53.4	86	< 750	N/A
Soluble iron ion	<0.05	0.3	0.6	<0.05	0.5	2.7	< 6	N/A
Ammonium ion	0.02	0.03	0.05	0.01	0.03	0.07	< 0.02	N/A
Turbidity	79	141	251	55	184	351	1 - 20	N/A
DO (mg/L)	4	8	10	4	8	12	> 6	N/A
DO (%)	40	86	109	44	87	128	80-110	N/A

Water quality of the new dredge pond was generally consistent with that of the old dredge pond, which is as expected due to the regular return of water from the old dredge pond to the new dredge pond to maintain stable water levels. Concentrations of major ion species were generally higher than that observed in the existing dredge pond, likely due to the closer proximity to the brackish influences of the Crooked River estuary. The elevated faecal coliform result was above the objective and historical range but appears isolated, while algae and cyanophyta remained below objective levels and historical maxima during the reporting period.

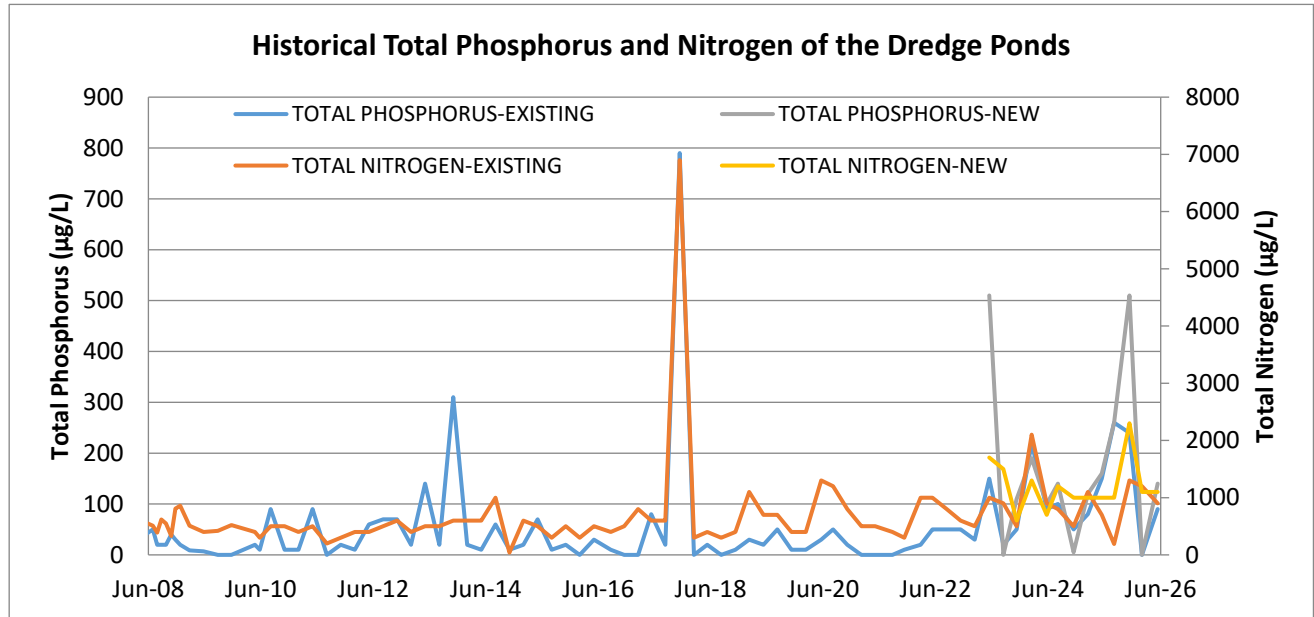
Graphs of the historical trends of each of the analytes for both dredge ponds are included below.

pH and Electrical Conductivity

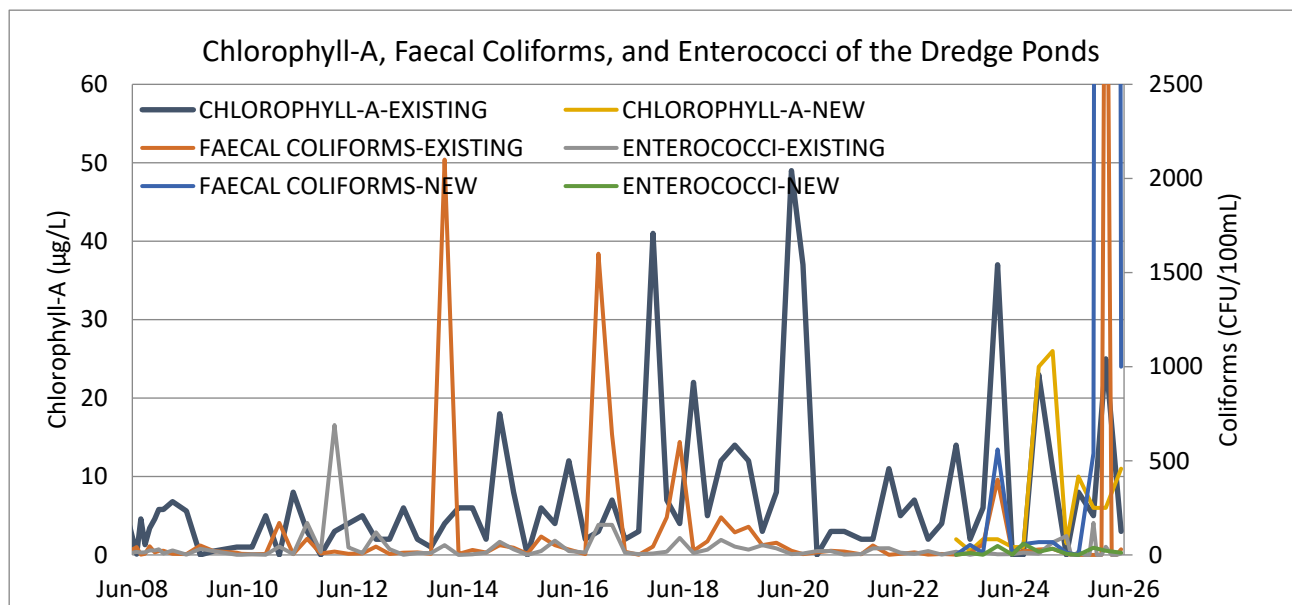
In the current reporting period, the pH of both dredge ponds showed some variability consistent with the longer term patterns, however remained within the surface water quality objective and historical ranges, and within a narrow pattern suggesting minimal influence from acid sulphate soils. EC also showed variability, largely linked to rainfall patterns, with increases during drier periods and decreases during wetter periods as may be expected. Conductivity in the new dredge pond was higher than the historical average and marginally above the historical maximum, although remained below the objective level. This is consistent with the slight brackish influence from the Crooked River estuary.

Turbidity and Dissolved Oxygen

The turbidity of both dredge ponds has stabilised from previous years but remained high due to extraction within the new dredge pond with a higher proportion of fine particles. Turbidity in the existing dredge pond was marginally above the historical maximum, while turbidity in the new dredge pond remained within the historical range but above the objective level. The sampling point is close to the outflow of the existing dredge pond, and also the active area of the new dredge pond, which has influenced these measurements. Dissolved Oxygen also continued to record variations during the reporting period, albeit generally within a narrower range than in previous years and consistent with historical patterns. Isolated low dissolved oxygen results were recorded in both dredge ponds, although these do not indicate a sustained decline in water quality.

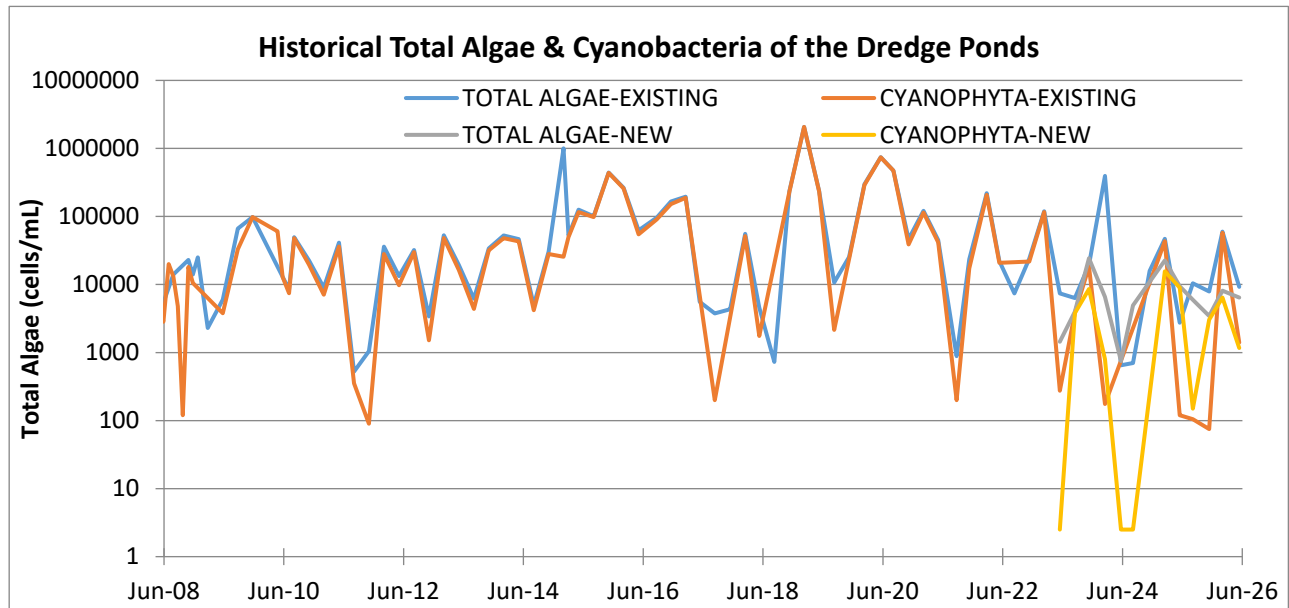
Total Phosphorus and Nitrogen

All nitrogen and phosphorus samples remained within the historical ranges for these analytes in the current reporting period, while concentrations of nitrogen and phosphorus were both above their respective objective levels. Concentrations in the existing dredge pond remained slightly above the longer term trends for phosphorus and broadly consistent with the historical average for nitrogen, while the new dredge pond recorded nutrient concentrations above historical averages, with total nitrogen also above the historical maximum. These results are likely related to the historical use of the current extraction area for nutrient-intensive agricultural activities and the agricultural land use prevalent in the district, and are not considered to be related to dredging operations.

Chlorophyll-A, Faecal Coliforms, and Enterococci

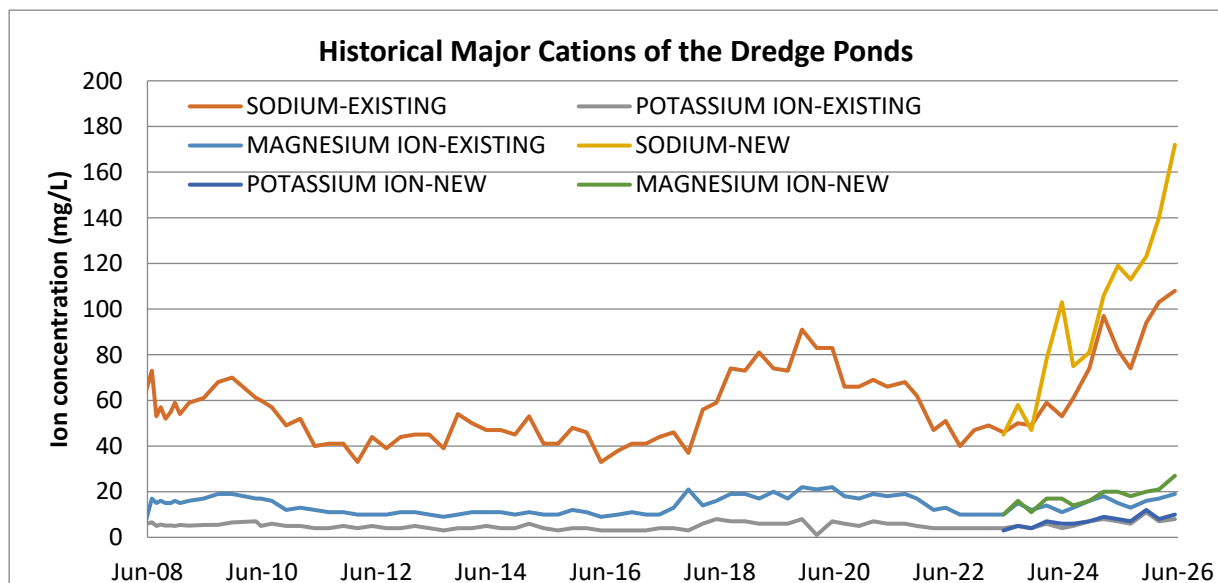
Chlorophyll-A and enterococci results for both dredge ponds were generally within the historical ranges during the reporting period. Chlorophyll-A remained above the objective level in both dredge ponds at times, however continued to show seasonal variation consistent with previous years, with higher concentrations during warmer months and following increased inflows to the dredge ponds. Enterococci remained within the objective levels. Faecal coliforms were elevated in both dredge ponds, with results above the objective level and historical maximum, particularly in the new dredge pond; however, these results appear isolated and are likely influenced by catchment, bird or agricultural sources rather than dredging operations.

Algae and Cyanobacteria



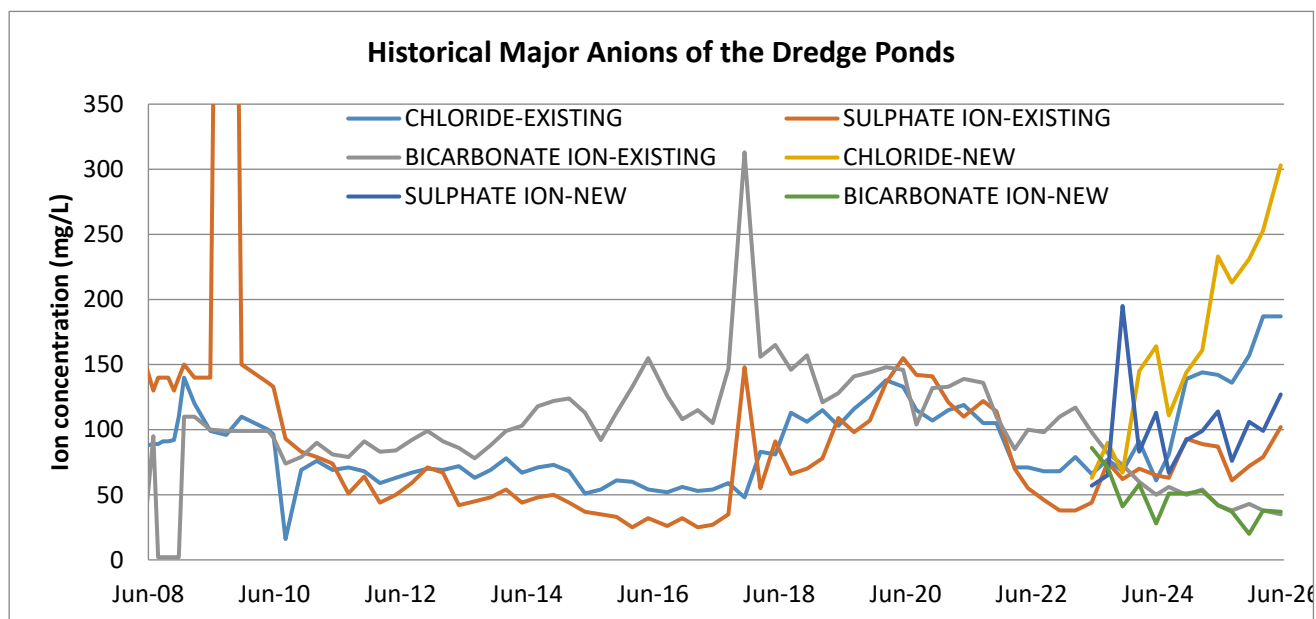
Total algae and cyanobacteria concentrations generally followed historical patterns, with seasonal fluctuations in concentrations of these microorganisms. Concentrations in the existing dredge pond were above the objective level during the year, although remained well below historical maxima and below the long-term average. In the new dredge pond, total algae and cyanobacteria remained below the objective levels and historical maxima during the reporting period. The results are consistent with seasonal biological variability and do not reflect a decline in the water quality of the dredge ponds. Note a logarithmic scale has been applied to the graph above to improve interpretation.

Major Cations



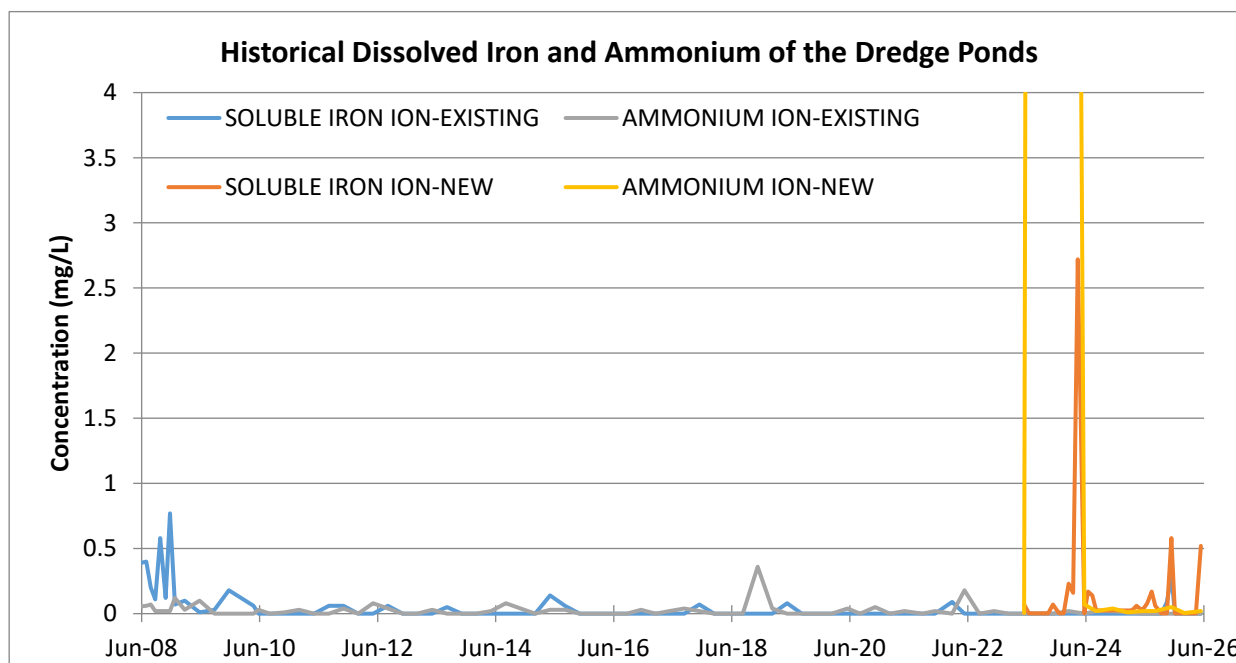
Major cation concentrations have shown an increase in recent years, particularly in the new dredge pond, which is likely related to brackish influence from the Crooked River estuary during periods of low rainfall. Sodium, potassium and magnesium in the new dredge pond were above historical averages and historical maxima, while sodium and potassium in the existing dredge pond were also marginally above historical maxima. Nevertheless, concentrations of all major cations remained within objective levels during the reporting period and are consistent with the established brackish influence rather than an operational impact.

Major Anions



Concentrations of sulphate and bicarbonate within the dredge ponds remained below the objective levels during the current reporting period and were generally consistent with historical levels. Chloride concentrations increased in both dredge ponds, with the new dredge pond recording concentrations marginally above the objective and historical maximum. The concentration of chloride ions mirrored the increase in sodium ions in the reporting period, consistent with brackish influence from the Crooked River estuary.

Soluble Iron and Ammonium



Soluble iron concentrations in both dredge ponds remained relatively stable and at low levels during the current reporting period, consistent with historical values and within the objective levels. Ammonium ion concentrations in the existing dredge pond were consistently at or below the standard laboratory limit of reporting and within the objective level, while the new dredge pond recorded low-level ammonium concentrations marginally above the objective on some occasions. These results remain within historical ranges and do not indicate a significant deterioration in water quality.

4.3.4.Surface Water Monitoring Results Interpretation

Surface water quality and water levels within the new dredge pond and the existing dredge pond continue to be driven by rainfall patterns. During the current reporting period this has included variability in water levels and ongoing elevated turbidity associated with extraction in the new dredge pond, while sodium and chloride concentrations in the new dredge pond showed an increasing trend, likely attributable to a brackish influence from the Crooked River estuary. While nutrient concentrations remained above the objective levels during the reporting period, the results were generally consistent with historical conditions and surrounding agricultural land use influences. Biological parameters, including algae and chlorophyll-a, generally followed their typical seasonal fluctuations, while elevated faecal coliform results appear isolated and do not indicate a sustained change in water quality.

While parameters were at times outside the water quality objectives for the site, results were generally within the respective historical ranges or consistent with established long-term trends, with isolated exceptions including turbidity and faecal coliforms in the existing dredge pond and chloride and selected major ions in the new dredge pond. The existing dredge pond continues to represent a surface water body of good water quality, with no observable material impacts to water quality or levels as a result of dredging, with the exception of the expected increase in turbidity.

The current surface water monitoring program is sufficient for monitoring any changes to the water quality of the dredge ponds. Current procedures allow for an accurate representation of any longer term trends in surface water quality and any potential impacts on surface and groundwater quality of the wider area.

There were no non-compliances with conditions of the Development Consent or Environmental Protection Licence 4146 related to surface water in the 2025-2026 reporting period.

4.4. Acid Sulphate Soils Management

4.4.1. Standards and Performance Measures

There are no requirements for acid sulphate soils monitoring in the sites EPL.

The DC for the site requires an Acid Sulphate Management Plan to be prepared. This plan has been prepared and is included in the Water Management Plan (which forms part of the QEMP), and which requires a range of management and monitoring measures including:

- Lime treatment of stockpile base and dredge pond batters
- Lime treatment of excavated material and verification testing
- Direct piping of processing fines into deep sections of dredge pond
- Continuous monitoring of the pH of both dredge ponds and Blue Angle Creek.
- pH monitoring of stockpile leachate.
- Monitoring of groundwater and surface water for various parameters, which may influence, or be influenced by acid sulphate soils.

4.4.2.Environmental Performance

Cleary Bros has implemented the Acid Sulphate Soils Management Plan in the current reporting period to meet the requirements of the DC. Prior to commencing dredging in the modification area, a layer of lime was spread across the stockpile area and subsequently covered with processed sand. In addition, the processing fines outlet was upgraded at this time from the original surface runoff to a piped system that allowed for burial of fines in the dredge pond below the permanent water table. Continuous monitoring stations measuring water level and pH are installed in both dredge ponds and on Blue Angle Creek immediately above the floodgates. The monitoring station in the existing dredge pond includes two pH sensors to allow the measurement of pH near the surface as well as in the deeper water of the pond. These monitoring stations report data in real time to a central server

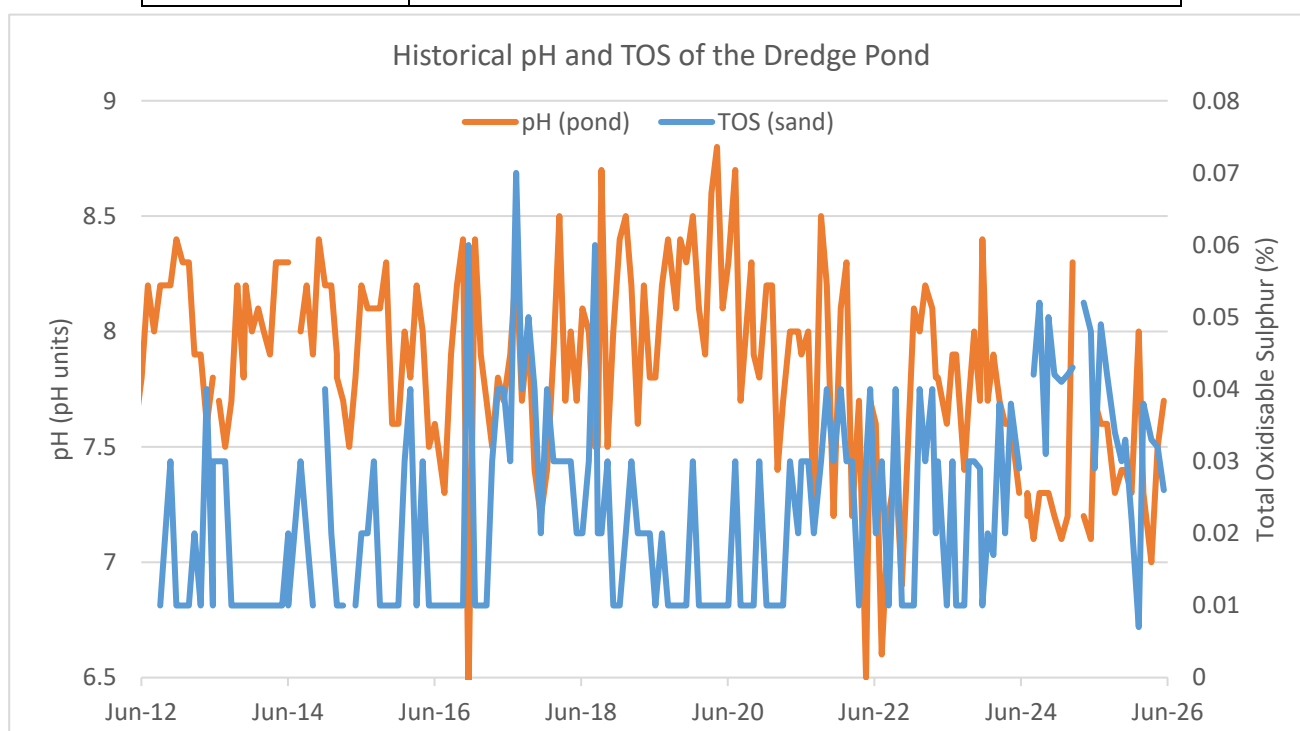
and provide email alerts if pre-determined trigger levels are reached. No excavation or stockpiling of potential acid sulphate soils were undertaken during the reporting period, with all extraction via wet dredging only. The processed sand stockpile continued to be sampled monthly and tested for oxidisable sulphur.

4.4.3. Acid Sulphate Soils Monitoring

Sand Stockpile and monthly water monitoring

Progressive pH testing of water in the existing dredge pond has not yet identified any results outside the desired range of 6.5 – 9 pH units in the current reporting period. During the year, the constituency of the sand has shown minor variability, as dredging continues in the modification area, however all testing of total oxidisable sulphur (TOS) returned low levels with a maximum of 0.05% recorded. Furthermore, real time monitoring of pH in the existing dredge pond adjacent to the washed sand stockpile has shown stability in pH levels. A summary of the results of TOS of the extracted sand and pH of the dredge pond water is shown in the table below, with a graphical representation of historical trends also shown.

Parameter	2025/26 reporting period			Historical Results		
	Min	Average	Max	Min	Average	Max
pH (pH units)	7	7.5	8	6.5	7.8	8.8
TOS (%)	0.007	0.031	0.049	0.01	0.025	0.06
DC Criteria	N/A					
EA Predictions	N/A					



Continuous Monitoring

During the current reporting period, continuous water monitoring stations were in operation in the existing and new dredge ponds, and in Blue Angle Creek immediately above the floodgates. Each station recorded water level and pH, with the existing dredge pond monitoring station featuring two pH sensors, one near the surface and the second at depth. The site on Blue Angle Creek is immediately downstream of the new dredge pond, and monitors water flowing out from Foy's Swamp, as well as tidal influences from the Crooked River estuary in between rain events. These stations have provided a mechanism to ensure the existing environmental controls are effective in minimising the risk of acid sulphate soils associated with dredging and processing activities.

Triggers for both pH and water level were utilised for the new dredge pond, to ensure the water level was maintained at a level which would have minimal risk of oxidation of soils around the pond.

A review of data from the dredge pond stations show a relatively stable pH concentration, whereas water levels vary due to water transfers and rainfall events. The water level in the existing dredge pond is minimally affected by water transfers, with rainfall having a far greater impact on the level of water in this pond. The water level in the new dredge pond is similarly influenced by water transfers and rainfall due to its much smaller size.

The Blue Angle Creek water monitoring site similarly shows significant fluctuations in water levels associated with significant rainfall events, while during drier periods diurnal fluctuations can be attributable to tidal patterns within the Crooked River estuary. pH levels at this site also show influences from rainfall and tides, with lower pH levels observed following heavy rainfall between July-September 2025, followed by a drier Spring and early Summer.

Cleary Bros observed some reliability issues with the pH sensors for all stations, with the winter months presenting solar recharge limitations. To overcome this issue, all stations have had the larger (lead-acid) batteries regularly rotated and an extra battery secured to maximise up time during winter.

Surface Water Monitoring

Cleary Bros has monitored the pH and EC of the existing dredge pond weekly for over 15 years. In February 2023, the surface water monitoring program was updated to include a broader range of analytes to identify the precursors of, and potential impacts of acid sulphate soils, as well as expanded to include the new dredge pond, two sites on Blue Angle Creek (upstream and downstream of the new dredge pond), as well as the processing plant return water. The below table presents a summary of the data collected from monthly sampling of each site under the acid sulphate soil surface water monitoring program, with the interim trigger level included for reference.

Analyte	Interim trigger level	Existing Dredge Pond			New Dredge Pond			Processing Returns		
		Min	Ave	Max	Min	Ave	Max	Min	Ave	Max
pH (pH units)	<6.5	7.0	7.5	8.0	6.6	7.2	7.6	7.0	7.4	7.6
EC (µS/cm)	N/A	432	570	856	806	1,004	1,440	643	877	1,120
Turbidity (NTU)	N/A	135	230	337	79	141	251	3	114	607
DO (mg/L)	<3.0	7	8	10	3.7	7.9	9.7	7.2	8.1	8.9
DO (% saturation)	<50	69	89	104	40.1	85.7	109.0	75	90	100
Alkalinity (mg/L)	N/A	35	41	52	20	37	43	38	100	182
Acidity (mg/L)	N/A	2	5	6	3	6	12	3	6.1	19
Surplus Alkalinity (mg/L)	<0	0	30	47	11	31	39	34	94	163
Dissolved Al (mg/L)	0.055	<0.01	0.008	0.03	0.01	0.03	0.06	<0.01	0.09	0.27
Dissolved As (mg/L)	0.024	<0.001	0.001	0.003	0.002	0.003	0.01	<0.001	0.003	0.005
Dissolved Bo (mg/L)	0.370	0.11	0.15	0.19	0.12	0.16	0.22	0.07	0.13	0.26
Dissolved Ba (mg/L)	0.137	0.018	0.08	0.136	0.03	0.07	0.13	0.02	0.05	0.11
Dissolved Be (mg/L)	0.0013	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dissolved Cd (mg/L)	0.0008	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Co (mg/L)	0.0028	<0.001	<0.001	<0.001	<0.01	0.01	0.013	<0.001	<0.001	<0.001
Dissolved Cr (mg/L)	0.013	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.001
Dissolved Cu (mg/L)	0.006	<0.001	0.001	0.002	0.001	0.002	0.002	<0.001	0.001	0.001
Dissolved Mn (mg/L)	1.900	0.001	0.008	0.016	0.02	0.03	0.05	0.001	0.021	0.1

Analyte	Interim trigger level	Existing Dredge Pond			New Dredge Pond			Processing Returns		
		Min	Ave	Max	Min	Ave	Max	Min	Ave	Max
Dissolved Ni (mg/L)	0.044	<0.001	0.0007	0.002	0.001	0.002	0.01	0.001	0.003	0.005
Dissolved Pb (mg/L)	0.020	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dissolved Se (mg/L)	0.011	<0.004	0.003	<0.01	<0.004	<0.004	<0.01	<0.004	<0.01	<0.01
Dissolved Va (mg/L)	0.012	<0.01	0.008	0.01	0.01	0.01	0.02	0.01	0.01	0.01
Dissolved Zn (mg/L)	0.152	<0.005	0.03	0.084	0.04	0.06	0.12	0.02	0.04	0.05
Dissolved Fe (mg/L)	0.326 [^]	<0.005	0.03	0.29	0.1	0.3	0.6	0.08	0.47	1.14
Dissolved Hg (mg/L)	N/A	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001

[^] For existing dredge pond only - triggers to be developed for other sites.

Analyte	Interim trigger level	Blue Angle Creek U/S			Blue Angle Creek D/S		
		Min	Ave	Max	Min	Ave	Max
pH (pH units)	<6.5	6.2	6.8	7.4	5.8	6.8	7.2
EC (µS/cm)	N/A	53	1657	9140	141	5566	42000
Turbidity (NTU)	N/A	4	25	83	2.2	17.2	34.9
DO (mg/L)	<3.0	2.0	4.0	7.0	1.4	3.9	6.6
DO (% saturation)	<50	20	43	67	16.0	40.4	70.7
Alkalinity (mg/L)	N/A	11	75	182	13.0	86.3	148
Acidity (mg/L)	N/A	6	14	36	8	12	24
Surplus Alkalinity (mg/L)	<0	2	62	162	4	74	140
Dissolved Al (mg/L)	0.055	0.02	0.07	0.18	<0.01	0.083	0.220
Dissolved As (mg/L)	0.024	0.001	0.001	0.001	<0.001	0.002	0.004
Dissolved Bo (mg/L)	0.370	0.10	0.21	0.44	0.10	0.58	3.13
Dissolved Ba (mg/L)	0.137	0.003	0.05	0.11	0.004	0.03	0.07
Dissolved Be (mg/L)	0.0013	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01
Dissolved Cd (mg/L)	0.0008	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Co (mg/L)	0.0028	<0.001	0.002	0.003	<0.001	0.002	0.002
Dissolved Cr (mg/L)	0.013	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01
Dissolved Cu (mg/L)	0.006	<0.001	0.003	0.003	<0.001	0.002	0.003
Dissolved Mn (mg/L)	1.900	0.01	0.29	0.75	0.01	0.12	0.36
Dissolved Ni (mg/L)	0.044	<0.001	0.002	0.002	<0.001	0.002	0.002
Dissolved Pb (mg/L)	0.020	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01
Dissolved Se (mg/L)	0.011	<0.01	<0.01	<0.01	<0.004	<0.01	<0.01
Dissolved Va (mg/L)	0.012	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1
Dissolved Zn (mg/L)	0.152	<0.005	0.04	0.10	<0.005	0.038	0.069
Dissolved Fe (mg/L)	N/A	0.40	1.32	4.58	0.27	0.63	1.29
Dissolved Hg (mg/L)	N/A	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001

The results show few exceedances of the ASS interim trigger values, which were subject to further review in line with the Water Management Plan. These exceedances included:

- In the new dredge pond, Dissolved Aluminium and Cobalt were recorded once each above the interim criteria in different sampling periods. Dissolved Oxygen had a single trigger level below required level and Dissolved Vanadium had two measurements above the interim criteria. Due to the infrequent nature of these results, no further action was required.
- The processing returns sample recorded four values higher than the interim trigger level for Aluminium. A review of the samples in line with the water management plan show that these values do not trigger further action.
- Both Blue Angle Creek monitoring locations (upstream and downstream) regularly recorded trigger exceedances for dissolved aluminium, boron and dissolved oxygen, with isolated pH trigger exceedances recorded in April (upstream) and June (downstream). The occurrence and magnitude of these trigger exceedances were generally consistent with historical monitoring results and were observed at both monitoring locations, indicating they reflect background catchment conditions rather than quarry-related impacts.
- No exceedances of the ASS interim trigger values were recorded for the existing dredge pond.

Groundwater Monitoring

Cleary Bros has monitored the pH, EC, major ions, alkalinity, and dissolved iron of the various groundwater monitoring bores on a quarterly basis for between four and 16 years. In February 2023, the groundwater monitoring program was updated to include additional quarterly testing of dissolved metals and ions, and the total acidity or groundwater monitoring bores. The below table presents a summary of the data collected under the revised acid sulphate soil groundwater monitoring program in the current reporting period.

Analyte	Interim trigger level	MW1		MW1A		MW2B		MW3A		MW04(07)	
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
pH (pH units)	N/A	5	5.9	4.67	4.67	6.8	7.2	6.51	7.4	6.8	7.22
EC (µS/cm)	N/A	6750	6930	545	545	629	1010	528	933	623	889
Alkalinity (mg/L)	N/A	2	38	3	3	128	225	68	204	42	224
Acidity (mg/L)	N/A	50	161	27	27	14	44	12	48	6	18
Net Acidity (mg/L)	N/A	-48	-10	-24	-24	113	211	38	192	36	206
Dissolved Al (mg/L)	2.70	<0.01	0.02	0.35	0.35	0.02	0.09	0.02	0.09	<0.01	0.01
Dissolved As (mg/L)	0.024	0.024	<0.001	0.003	<0.001	<0.001	<0.001	<0.001	0.002	0.021	<0.001
Dissolved Ba (mg/L)	0.137	0.031	0.081	0.14	0.14	0.008	0.013	0.008	0.116	0.016	0.132
Dissolved Cd (mg/L)	0.002	0.0001	0.0001	0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Cr (mg/L)	0.03	<0.001	<0.001	<0.001	<0.001	0.001	0.005	0.002	0.002	0.001	0.001
Dissolved Co (mg/L)	0.0028	0.013	0.015	0.001	0.001	<0.001	<0.001	<0.001	<0.001	0.002	0.002
Dissolved Cu (mg/L)	0.013	<0.001	<0.001	0.009	0.009	<0.001	<0.001	<0.001	<0.001	0.002	0.002
Dissolved Pb (mg/L)	0.048	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dissolved Mn (mg/L)	1.90	0.323	0.345	0.032	0.032	0.028	0.061	0.028	0.135	0.003	0.258
Dissolved Ni (mg/L)	0.105	0.01	0.014	0.002	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	0.002

Analyte	Interim trigger level	MW1		MW1A		MW2B		MW3A		MW04(07)	
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Dissolved Se (mg/L)	0.011	<0.004	<0.01	<0.004	<0.004	<0.004	<0.01	<0.004	<0.01	<0.004	<0.01
Dissolved Va (mg/L)	0.012	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01
Dissolved Zn (mg/L)	0.152	0.027	0.341	0.157	0.157	<0.005	<0.005	<0.005	0.078	<0.005	0.122
Dissolved Bo (mg/L)	0.37	0.14	0.15	0.10	0.10	0.07	0.10	0.05	0.12	0.07	0.33
Dissolved Fe (mg/L)	varies	<0.05	21.1	0.32	0.32	1.19	7.34	0.58	13.0	0.12	1.98
Dissolved Hg (mg/L)	N/A	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001

Analyte	Interim trigger level	NB2		NB3		NB4		MW7	
		Min	Max	Min	Max	Min	Max	Min	Max
pH (pH units)	N/A	5.49	6	5.1	6.1	5.8	6.9	3.9	5.4
EC (µS/cm)	N/A	86	343	89	8240	8730	8920	7270	8320
Alkalinity (mg/L)	N/A	8	17	9	21	5	88	<1	<1
Acidity (mg/L)	N/A	23	43	9	27	81	176	217	346
Alkalinity balance (mg/L)	N/A	-32	-13	-8	7	-117	-81	-346	-217
Dissolved Al (mg/L)	2.70	1.11	1.31	0.1	0.3	<0.01	<0.01	0.37	18.0
Dissolved As (mg/L)	0.024	0.005	0.008	<0.001	<0.001	0.001	0.016	0.004	0.004
Dissolved Ba (mg/L)	0.137	0.025	0.151	0.005	0.162	0.057	0.094	0.023	0.041
Dissolved Cd (mg/L)	0.002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0002
Dissolved Cr (mg/L)	0.03	0.002	0.003	<0.001	<0.001	<0.001	<0.001	<0.001	0.002
Dissolved Co (mg/L)	0.0028	<0.001	<0.001	<0.001	0.002	<0.001	0.001	0.039	0.066
Dissolved Cu (mg/L)	0.013	<0.001	0.001	0.001	0.01	<0.001	<0.001	<0.001	0.003
Dissolved Pb (mg/L)	0.048	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dissolved Mn (mg/L)	1.90	0.006	0.011	0.089	0.326	0.409	0.513	1.0	1.3
Dissolved Ni (mg/L)	0.105	<0.001	0.001	<0.001	0.002	0.004	0.008	0.028	0.051
Dissolved Se (mg/L)	0.011	<0.004	<0.01	<0.004	<0.01	<0.004	<0.01	<0.004	<0.01
Dissolved Va (mg/L)	0.012	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Dissolved Zn (mg/L)	0.152	0.006	0.219	0.009	0.069	0.008	0.143	0.275	0.611
Dissolved Bo (mg/L)	0.37	0.06	0.22	<0.05	0.1	0.18	0.32	0.75	0.77
Dissolved Fe (mg/L)	varies	1.1	2.05	0.8	2.37	26.8	81.2	50.1	94.5
Dissolved Hg (mg/L)	N/A	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001

The results show a varied groundwater environment, with varied pH, high alkalinity and high acidity bores, considerable variations in salinity and major ion composition, and significant variability in dissolved metals, especially the major metal species including iron, manganese, and aluminium. Furthermore, there is no clear correlation between pH and any dissolved metal species (including aluminium). This reflects the complex groundwater environment, with various competing influences, including the saline inflows from the Berry Siltstone, the low pH and reducing contributions from the clay-rich Foys Swamp in the west, tidal influences from the Crooked River estuaries and fresh water contributions from local rainfall and the dune network.

During the current reporting period, the following triggers of the groundwater criteria were noted:

- MW1 regularly recorded higher concentrations of dissolved cobalt and zinc, consistent with previous years monitoring.
- MW1A regularly recorded higher concentrations of dissolved barium and zinc.
- MW2B regularly recorded higher concentrations of dissolved iron, consistent with previous years monitoring.
- MW3A recorded higher concentrations of dissolved iron, consistent with previous years monitoring.
- MW04(07) occasionally recorded higher concentrations of dissolved barium.
- NB2 occasionally recorded higher concentrations of dissolved barium, zinc, and dissolved arsenic, consistent with previous years monitoring.
- NB3 occasionally recorded higher concentrations of dissolved barium.
- NB4 regularly recorded higher concentrations of dissolved iron, consistent with previous years monitoring.
- MW07 regularly recorded higher concentrations of dissolved aluminium, boron, cobalt, iron, and zinc, consistent with previous years monitoring. These widely varied triggers reflect the varied nature of the groundwater environment across the monitoring network, and the diversity of the background environment of the site.

The Acid Sulphate Soil Management Plan requires the refinement of the dissolved metals trigger values once 8 samples have been collected for each site. This has now been achieved for all sites except MW1A and MW7, and as such site specific trigger values are in the process of being prepared.

4.4.4. Acid Sulphate Soils Monitoring Results Interpretation

The acid sulphate soil monitoring program is a comprehensive monitoring program spanning local waterways, dredge ponds, and the surrounding aquifer, and through the use of real time monitoring stations, allows for the early detection of any changes in water chemistry associated with acid sulphate soils in the vicinity of the dredge ponds. Triggers recorded in surface and groundwater monitoring sites during the current reporting period were consistent with triggers recorded throughout the period of monitoring, signalling no deterioration in groundwater quality since the commencement of the expanded acid sulphate soil monitoring program.

The monitoring undertaken to date shows that the interim triggers are not necessarily appropriate, with the background monitoring site on Blue Angle Creek regularly recording measurements above the interim triggers for multiple analytes. Furthermore, monitoring conducted at the primary background monitoring bore (MW7) typically records concentrations of various dissolved metals above the interim triggers. An update of the Acid Sulphate Soil Management Plan is underway to derive site-specific trigger values for each all surface water monitoring sites and 7 of the 9 groundwater monitoring sites.

There were no non-compliances with conditions of the Development Consent or Environmental Protection Licence 4146 related to acid sulphate soils in the 2024-2025 reporting period.

4.5. Water Use

4.5.1. Standards and Performance Measures

Cleary Bros holds three Water Access Licences which permit the “take” of water from the environment for site operations. WAL43271, WAL43272, and WAL45890 includes share components of 50 units, 56 units, and 57 units respectively (163 units total) of the Metropolitan Coastal Sands Groundwater Source of the Greater Metropolitan Region Groundwater Sources Water Sharing Plan. The Gerroa Sand Resource is required to adjust site operations where appropriate to ensure it has sufficient shares to meet its take of water. For the 2025-2026

reporting year, the 163 units allowed the Gerroa Sand Resource to take up to 163 ML from the coastal sands aquifer.

4.5.2.Environmental Performance

The two dredge ponds provide the means for the take of groundwater from the coastal sands aquifer and are listed as works in WAL43272.

Inflows to the dredge ponds include the following:

- Rainfall landing on the dredge pond surface.
- Runoff from the sand slurry back into the dredge pond.
- Water pumped into the dredge pond as part of transfers between ponds.

Outflows from the dredge ponds include the following:

- Evaporation from the pond surface.
- Water pumped out for dust suppression, watering plants, or to transfer water between ponds.
- Water pumped out of the pond as part of the sand slurry.
- Water entrained in sand exported from the site.

In addition, the sand removed from the dredge pond that was below the water table creates a void which is rapidly infilled with water.

Where water inflows to the aquifer exceed the outflows from the aquifer, which is predicted to be the case in an average rainfall year, groundwater will flow from the dredge ponds into the surrounding aquifer, such that there will be no take of water from the aquifer. Where water outflows in any dredge pond exceed the inflows, which is predicted to be the case in a dry year, water from the aquifer will flow into one or both dredge ponds to balance the local groundwater table, leading to a take of water.

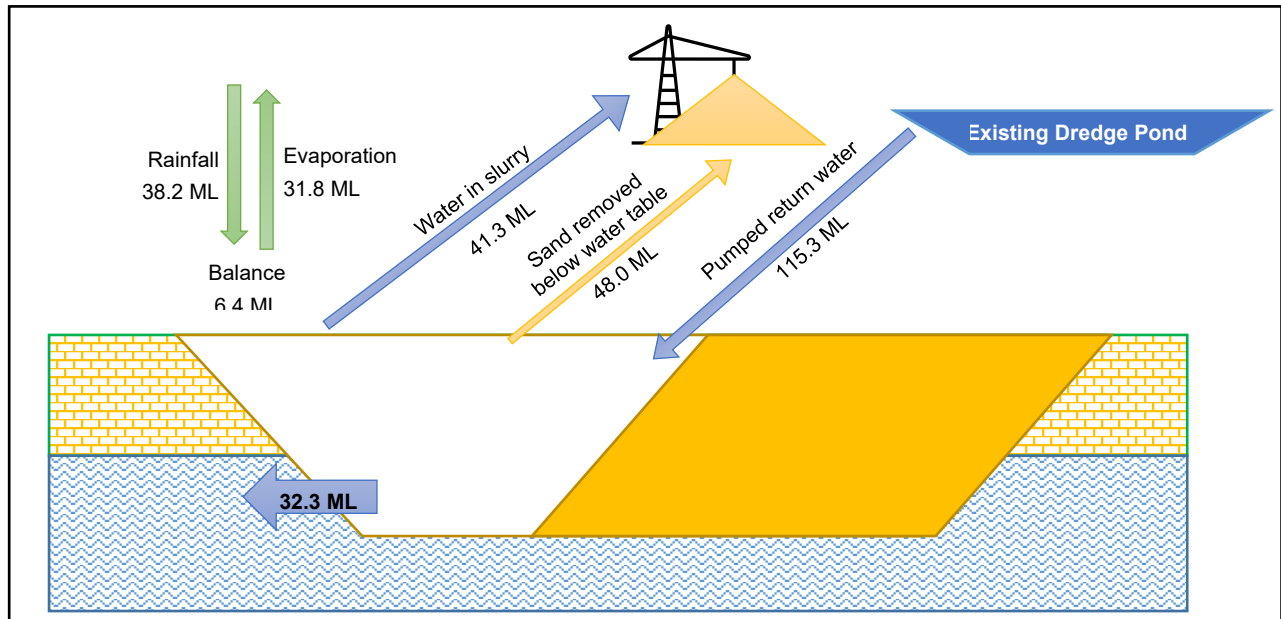
Cleary Bros monitor or record all inflows and outflows of water as follows:

- Rainfall and evaporation (Morton evaporation over shallow lakes) sourced from SILO point data (-34.78 150.78) for the reporting period. SILO rainfall data is selected over rainfall data from the site weather station to ensure consistency when compared to the evaporation data.
- Volume of sand pumped based on cumulative density of sand slurry recorded daily.
- Water in exported sand based on site sales data and measured moisture of sand recorded monthly.
- Engine hours and discharge rates record all pumped water (dust suppression as well as internal transfers).
- Local water table estimated monthly from site observations and groundwater monitoring.
- Changes in dredge pond surface area estimated monthly with regular checks from mapping data.

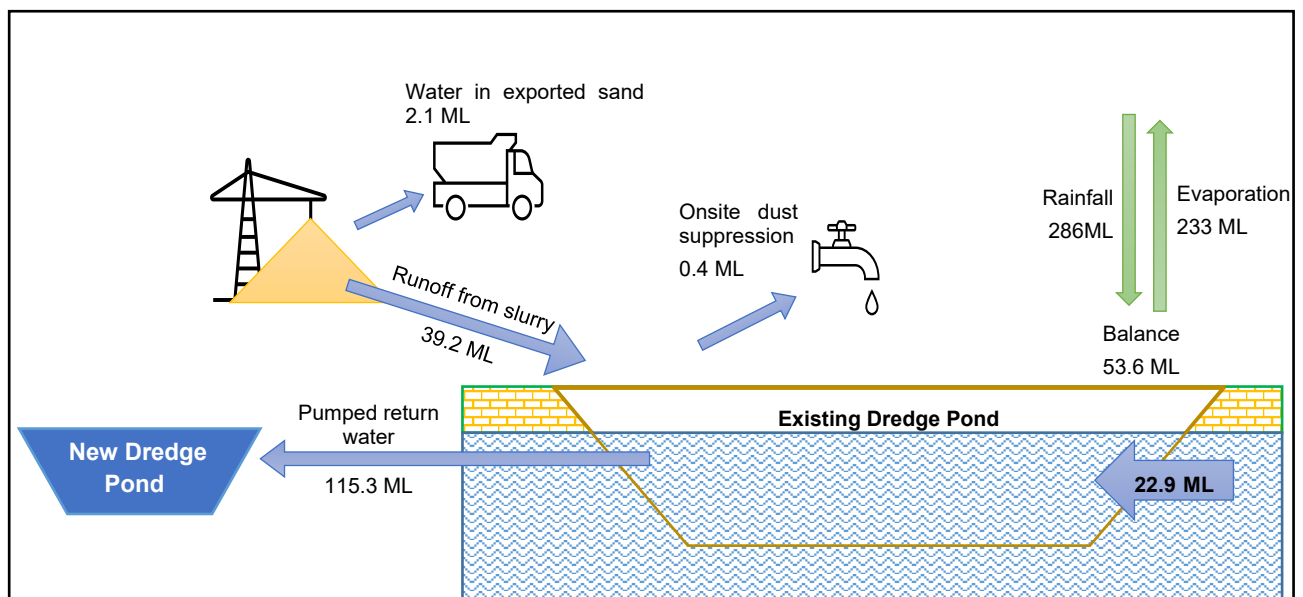
4.5.3.Water Take and Compliance Assessment

The following schematics show the water transfers during the 2025-2026 reporting period.

New Dredge Pond



Old Dredge Pond



During the 2025-2026 reporting period the combined take of water from the coastal sands aquifer was 22.9 ML. This was comprised of 22.9 ML taken by the old dredge pond, while a positive contribution of 32.3 ML from the new dredge pond into the aquifer is not considered in calculations of water take. Cleary Bros take of water during the reporting period is within the 163 ML permitted under the water licences.

4.6. Air Quality

4.6.1. Standards and Performance Measures

There are no specific requirements for air quality in the sites EPL.

The air quality monitoring requirements from the Development Consent are realised by the QEMP. Section 8.4 of the QEMP details the air quality testing requirements and specifies that 3 dust gauges are to be tested on site. The contribution from site operations to annual average dust deposition must not cause additional exceedances of the following criteria at any residence on privately owned land or on more than 25% of any privately owned land:

- 2g/m²/month, maximum increase in deposited dust level; and
- 4g/m²/month, maximum annual average deposited dust level.

4.6.2.Environmental Performance

CB has implemented the Air Quality Monitoring Program to meet the requirements of the DC. ALS Laboratory Group were engaged during the reporting period to service the three depositional dust gauges on a monthly basis, in line with *AS/NZS 3580.10.1-2003: Methods for Sampling and Analysis of Ambient Air – Determination of Particulates – Deposited Matter – Gravimetric Method*. In addition, Cleary Bros has sealed the first 200 metres of the site entrance and utilised a water truck when required on the unsealed sections to minimise the generation of dust from unsealed roads.

4.6.3.Air Quality Monitoring

The following table provides Total Insoluble Solids concentrations (in g/m²/month) recorded in the three dust depositional gauges at the Gerroa Sand Resource.

Dust Gauge Units: g/m ² /month	2025/26 reporting period			Historical Results		
	Min	Average	Max	Min	Average	Max
1A	0.8	4.4	16.0	0.1	2.0	20.1
2A	0.5	1.3	2.7	0.1	1.9	49.7
4A	0.1	0.9	4.0	0.1	0.4	1.5
DC Criteria / EA Predictions		< 4			< 4	

4.6.4.Air Quality Monitoring Results Interpretation

The depositional dust monitoring results indicate that activities associated with the Gerroa Sand Resource continue to have a generally low impact on local dust deposition, with dust levels at Dust Gauges 2A and 4A below the Development Consent criterion and generally consistent with historical performance. Dust Gauge 1A recorded an annual average deposition rate of 4.4 g/m²/month, exceeding the Development Consent criterion of 4 g/m²/month and resulting in a non-compliance during the reporting period. As dredging operations at the site commenced in the 1960s, well before depositional dust monitoring commenced, the incremental impact of the project cannot be accurately determined.

An investigation into this non-compliance has identified that elevated dust generation in July and September 2025 has caused the non-compliance, with significantly lower monthly recordings since this time. The non-compliance was reported to the Planning Secretary, and additional controls implemented following the higher results recorded early in the reporting period. This included additional training of water cart operators and the use of a dust suppression additive. Monitoring results since these additional controls have been implemented show reduced dust concentrations in line with the development consent limits, and suggest the current controls are effective.

4.7. Noise Monitoring

4.7.1.Standards and Performance Measures

There are no specific requirements for noise monitoring in the sites EPL.

The noise monitoring requirements from the Development Consent are realised by the QEMP. Section 8.3 of the QEMP details the noise testing requirements and specifies that noise testing is required annually in winter. Operator attended measurements are to be taken to quantify the maximum (LA_{max}) and the average (LA_{eq 15min}) intrusive noise from site activities over a 15 minute measuring period. Measurements are to be taken during the daytime while the site is in normal operation.

4.7.2.Environmental Performance

CB has constructed the visual and acoustic bund along the northern, eastern, and southern boundaries of the dredging operation. A preventative maintenance program is in place to ensure all equipment employed at the site is maintained in accordance with manufacturers' specifications, with no changes to equipment in operation at the site during the current reporting period. Dredging operations were restricted to the approved hours during the current reporting period.

4.7.3.Noise Monitoring

The annual winter noise monitoring was undertaken in July 2025 with normal dredging activities, topsoil stripping, and transport of sand in operation throughout the period of noise monitoring.

Noise from quarry related activities was not detected at any of the monitoring sites at any time with the exception of road-going trucks on public roads. The dominant noise source at most sites was attributable to wind blowing in adjacent trees or waves breaking on the nearby beach, and non-quarry related road traffic at the three sites close to Gerroa Road or Beach Road. Regular helicopters flying overhead were detected at some sites, and when present were generally by far the loudest noise and significantly influenced the average noise levels. Quarry trucks were recorded at site R3 (caravan park) only. A summary of noise levels recorded at each site and the compliance status of the Gerroa Sand Quarry is included in the table below.

ID	Location	Measured Noise Levels				Criteria	Compliant
		Background L _{A90}	Average L _{Aeq}	Maximum L _{Amax}	Quarry contribution	dBA _{eq-15 min}	Yes/No
R1	670 Beach Road	44.7	62.0	83.7	Inaudible#	41	Yes
R2	11 Banggarai St	45.2	53.8	75.7	Inaudible	40	Yes
R3	Caravan Park	39.5	50.1	68.8	Inaudible#	36	Yes
R4	Athelstane*	38.7	41.3	58.3	Inaudible	40	Yes
R5	Picnic Area 1	43.0	45.3	60.6	Inaudible	40	Yes
R6	Picnic Area 2	45.8	61.9	83.7	Inaudible	40	Yes

* monitored at Coralea, which is a project-related residence adjacent to Athelstane and closer to the site.

Quarry trucks on public roads were audible. Two quarry-related road trucks audible driving past monitoring site during period, which contributed 30.0dBA 15-min eq.

Current strategies described above to minimise noise impacts on surrounding receivers have been effective during the current reporting year, which is supported by the noise monitoring program and continued absence of any noise related complaints related to the site.

There were no non-compliances with conditions of the Development Consent or Environmental Protection Licence 4146 related to noise in the 2025-2026 reporting period.

4.8. Rehabilitation & Vegetation Management

4.8.1.Standards and Performance Measures

There are no specific requirements for rehabilitation or vegetation management in the sites EPL.

The DC and QEMP set out long- and short-term requirements and objectives regarding rehabilitation and vegetation management. These objectives are included in the Landscape and Rehabilitation Management Plan, which was most recently updated in December 2022, and includes priorities to be implemented over the following five years. For the purposes of this Annual Review, only those works identified for implementation during the

current five-year period will be reviewed. The current management priorities include weed control, maintenance of existing fencing, and pest animal control in all areas. Furthermore, works required in the Modification 1 area include the planting of a tree screen along the northwestern boundary of the proposed new dredge pond. The QEMP requires that Cleary Bros inspect the planting and conservation works quarterly and that a qualified ecologist monitors the entire area annually.

4.8.2. Summary of Quarterly Inspections and Key Works

Quarterly inspections of the plantings and the conservation works are carried out by site personnel. Quarterly inspections were carried out in September 2025, December 2025, March 2026 and June 2026. Quarterly reports noted the condition of each area, and summarised works undertaken in the previous three months.

Primary planting has been completed for all areas of revegetation. Infill planting for the Modification Area tree screen was undertaken in Spring 2024, with biodegradable tree guards installed in March 2025 to reduce grazing pressures from native macropods. Since this time, plants have shown rapid growth within the tree guard, although continue to be grazed above the guard. It is expected that the tree guards will continue to provide the support needed to outcompete these grazing pressures in time, as has been observed in other sites where a similar strategy was successfully employed.



Figure 3: Western tree screen



Figure 4: Tree protection

No clearing of any trees or shrubs was undertaken during the current reporting period.

The batters of the existing dredge pond foreshore are stable on both the east and west sides with minimal erosion evident. The sections of the batter that were planted in earlier years have established very well with significant growth and cover now evident.

Weed control during the current reporting period focused on lantana control across most conservation areas. Lone Fig Environmental were commissioned to undertake weed control, which occurred on an approximate weekly basis throughout the year, with 542 hours of weed control undertaken. Annual weeds were largely targeted in the northern tree screen area, while lantana, bitou bush and other seasonal weeds was the principle focus in the conservation areas. Cleary Bros also worked with Local Land Services during the reporting period as part of a broader feral deer control strategy, with 13 individuals removed to date.

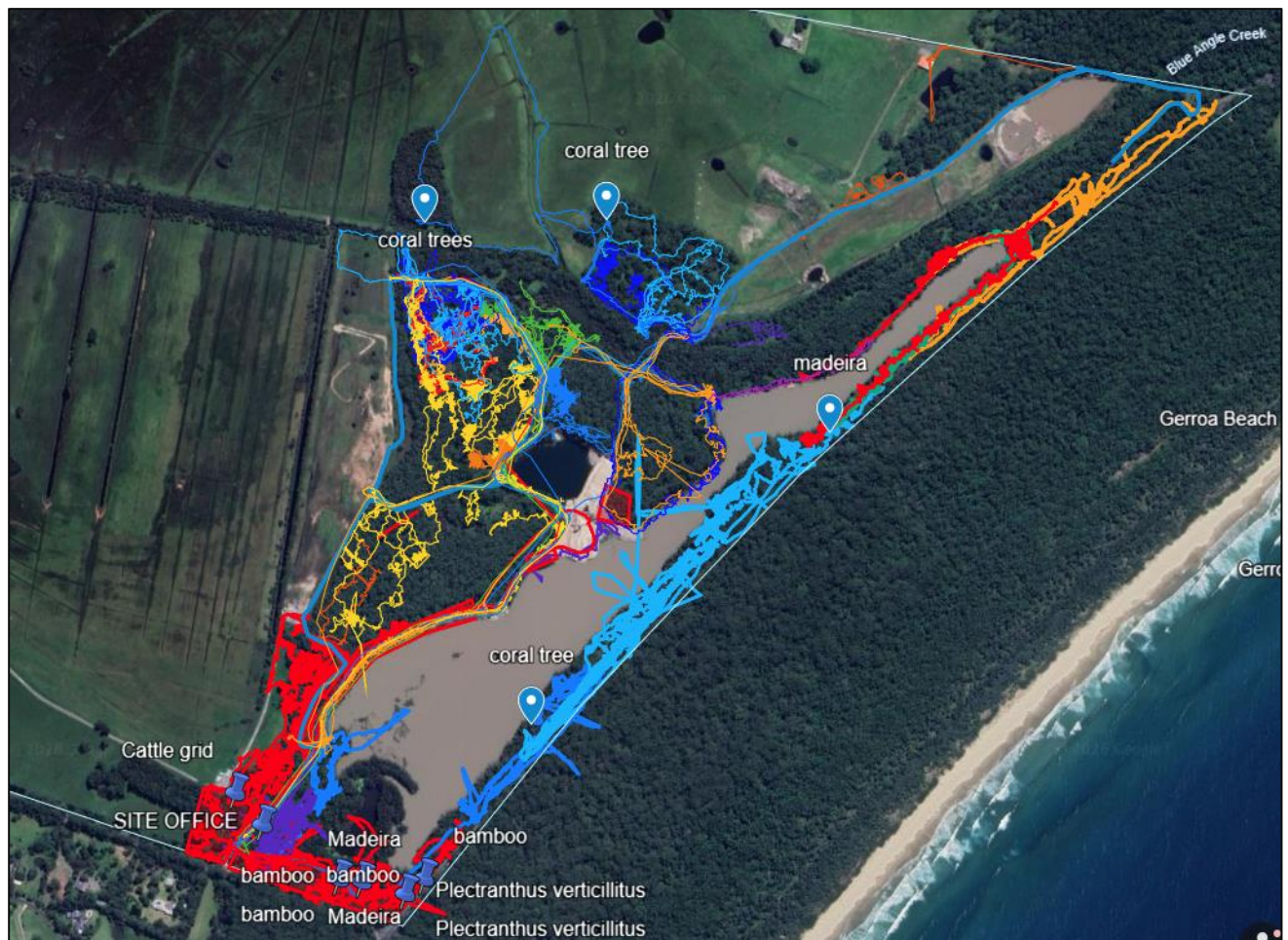


Figure 7: GPS Extent of weed control works

4.8.3.Success of the Northern Corridor

The flora and fauna surveys over the first six years of this project, that is since the habitat establishment began in the Northern Corridor, found that the indigenous biota that inhabits and that traverses the corridor is equal to or greater than that recorded in the East-West Link. The successful establishment of the Northern Corridor has been described extensively in previous reports.

4.8.4.Findings and Recommendations from Annual Inspection

Niche Environment and Heritage were engaged to undertake the Annual Inspection of the Conservation Areas in June 2026. Niche made the following observations as part of the report associated with the annual inspection, which is included as Annexure D.

Most of the plantings were completed at each zone early in the monitoring program and are now in the maintenance phase. The most recent plantings have occurred in Subzone 2B.1, 2C.1, 2C.2 and 2D (see Figure 1) to expand the vegetation buffer along Blue Angle Creek, creating suitable habitat for local fauna. Focus needs to be on the southwestern end of Subzone 2C.1 (situated west of the access track), as these areas are experiencing grazing and most new plantings are struggling to grow (Plate 4). Vegetation in Subzone 2B.1, 2C.2 and 2D are well-established and are in the maintenance phase.

Weed maintenance has been carried out at each of the planting areas since the early stages of the project and should be continued in the future to assist the early growth of vegetation in the southwestern end of Subzone 2C.1. An updated description and condition of each of the zones and the planting areas has been provided in Table 1.

Over the previous year, all zones were inspected and assessed by Regional QC One Pty Limited staff during quarterly inspections. Thorough maintenance work in these zones was conducted throughout the year. This year, Lantana had been targeted by spot spraying and has been quite successful. Many stands of Lantana that were observed during the site inspection were dead.

The recommendations for the rehabilitation zones detailed in Table 1 were made following the site inspection. A priority weeds list for the Site and further detail on their control methods is provided in Appendix 2.

The 2026 annual monitoring inspection indicates that rehabilitation efforts across Gerroa Sand Quarry continue to achieve positive outcomes, with most management zones assessed as being in good to excellent condition. Established rehabilitation areas now support well-developed native canopy, midstory and understorey vegetation and generally require only routine maintenance. Native vegetation is increasingly dominant within many zones, particularly where ongoing weed management has reduced competition from invasive species.

Compared with the previous monitoring period, weed management activities have continued to be effective, particularly for Lantana. Many infestations recorded throughout the Site now consist of dead stands, demonstrating the success of previous control measures. While Lantana remains present within several management zones, its abundance and dominance appear to have decreased in comparison to previous years. Native regeneration was observed within several areas where Lantana has been controlled, particularly within Zones 1 and 4 and the more established revegetation areas.

Despite these improvements, several weed species continue to require ongoing management:

- Moth Vine remains widespread throughout several management zones and has the potential to spread into adjacent native vegetation if left unmanaged.
- Giant Reed continues to occur along creek lines and within wetter portions of the Site, particularly within Subzones 2A.1, 2B.1, 2B.2 and 2C.2.
- Wild Tobacco Bush, Rhodes Grass, Fireweed and Cobbler's Pegs were also recorded throughout several zones, predominantly within disturbed areas and along roadsides.

Similar to last year, there is evidence of grazing on native plantings in the southeastern end of Subzone 2C.1. The grazing has been addressed with the implementation of deer control in the early months of 2026, where 13 deer were removed from the Site. These grazing impacts appear localised, continued monitoring is recommended to ensure recently established plantings are not adversely affected. If grazing persists in the future, deer control is recommended.

Future management should focus on maintaining the positive outcomes achieved through previous rehabilitation works. Continued weed control should target remaining Lantana infestations and prioritise follow up control for stands that are regrowing from previous weed control. Management should be undertaken for other priority weeds like Moth Vine, Giant Reed and Wild Tobacco Bush within areas where these species may impede native vegetation establishment. Repair of damaged fencing within Subzones 1.2 and 7 is also recommended to prevent unauthorised access from roadside. In younger revegetation areas, ongoing maintenance including mowing, weed control and supplementary debris and planting, where required, will assist in promoting successful establishment and long-term vegetation resilience.

Priority management actions for the coming year have been provided in Table 2. Additional information on control methods for priority weeds is provided in Appendix 2.

4.8.5. Priorities for the following reporting period

The following are the priority activities for the 2026-2027 reporting period, subject to suitable weather and ground conditions:

- Second round of control for Lantana across all areas.
- Repair or replace damaged fencing to prevent unauthorised access from roadside.

- Control of Tobacco Bush and Moth Vine across most areas, particularly Zone 6, 2A.2, and 2E.
- Control Giant Reed in Zone 2 and 6
- Monitor grazing impacts on establishing plantings and replace damaged plants if required in southwestern end of Zone 2C.1.
- Undertake infill planting where canopy/midstory gaps exist or where plantings have failed in southwestern end of Zone 2C.1.
- Control roadside weed species.

4.9. Traffic Management

4.9.1. Licence Requirements

The DC requires Cleary Bros to ensure that no truck associated with the project uses Gerroa Road, except where the destination lies along or adjacent to that road.

Modification 2 also requires Cleary Bros to limit trucks to General Access Vehicles, to limit truck movements to no more than 19 trucks loads per day averaged over the month, and to undertake a road safety audit.

4.9.2. Compliance Assessment

Cleary Bros Site Induction and Work Instructions for the site indicates which roads are to be used when entering and exiting the site and further prohibits incidental use of Gerroa Road. Staff are trained in these Work Instructions regularly.

Since the approval of Modification 2, Cleary Bros has limited truck movements to general access vehicles (GAV) only. This has included the use of various heavy vehicle combinations, and where truck and quad dog configurations have been utilised, these have been loaded to ensure compliance with GAV requirements.

The average daily truck movements for each month since approval of Modification 2 is summarised below.

Month	Average daily truck movements
April 2026	3.0
May 2026	8.2
June 2026	10.4

Cleary Bros are currently consulting with Kiama Municipal Council, Shoalhaven Regional Council, and Transport for NSW in regards to the methodology of the road safety audit. Cleary Bros anticipate completing the audit in September 2026.

4.10. Community

4.10.1. Licence Requirement

Licence condition M4 of the site's EPL provides that Cleary Bros must keep records of all complaints received for the site including any action taken regarding the complaint.

The Development Consent has no direct requirements for complaint handling however, the QEMP dedicates chapter 7 to Complaints Management, which describes the process for recording and responding to community complaints. Furthermore, Cleary Bros held two Community Consultative Committee meetings during the reporting period in August 2025 and February 2026, with the February 2026 meeting including a site visit. Minutes of these meetings are available on Cleary Bros website.

4.10.2. Tabulated Results

No complaints were received in relation to the Gerroa Sand Resource in 2025/2026, which is in line with number of complaints received in previous years.

Year	Environmental Complaints	Year	Environmental Complaints
2005/2006	0	2016/2017	0
2006/2007	0	2017/2018	0
2007/2008	0	2018/2019	0
2008/2009	0	2019/2020	0
2009/2010	0*	2020/2021	0
2010/2011	0	2021/2022	0
2012/2013	0	2022/2023	0
2013/2014	0	2023/2024	0
2014/2015	0	2024/2025	0
2015/2016	0	2025/2026	0

*One complaint was reported to Cleary Bros from DoP as a letter dated 2 December 2009 relating to the extent of clearing. This was investigated and found not to be factual (refer Cleary Bros letter to DoP dated 15 December 2009).

4.10.3. Environmental Complaints Results Interpretation

The absence of any environmental complaints since 2005 reinforces the low environmental and amenity impact of the Gerroa Sand Resource and demonstrates that the site is functioning in harmony with the community.

4.11. General Environmental Management & Reporting

4.11.1. Licence Requirements

The EPL has various conditions regarding general environmental performance including reporting requirements for complaints, environmental harm and lodgement of an annual return.

The DC includes various environmental management and reporting procedural requirements that are implemented in the sites QEMP. The conditions that required attention beyond implementation of the QEMP are assessed below.

4.11.2. Performance Criteria and Compliance Assessment

Cleary Bros employs an authorised Environmental Officer to manage all compliance activities at the site, in association with the Quarry Manager.

4.11.3. Review of Environmental Management Plans

Noise Management Plan

The Noise Management Plan has been updated following approval of Modification 2, and has been lodged on the Planning Portal for agency consultation and approval. The updated plan is appropriate based on the findings of this Annual Review.

Air Quality Management Plan

The Air Quality Management Plan has been updated following approval of Modification 2, and has been lodged on the Planning Portal for agency consultation and approval. The updated plan is appropriate based on the findings of this Annual Review.

Water Management Plan

The approved Water Management Plan (Ver 2, Rev 3), incorporating the Acid Sulphate Soils Management Plan (ASSMP), was most recently revised in February 2023 and approved by DPHI on the 10 March 2023. Since this time additional monitoring data has been recorded for the site which now allows for the derivation of groundwater quality criteria for some monitoring bores to support the ASSMP. Cleary Bros have engaged Land and Water Consulting to update the ASSMP, which will be included in an updated Water MP.

Landscape and Rehabilitation Management Plan

The Landscape and Rehabilitation Management Plan was most recently revised and approved by DPHI on the 7 December 2022. This Landscape and Rehabilitation Management Plan remains current and relevant to the site, and will continue to guide management practices on the site.

Cultural Heritage Management Plans

The Cultural Heritage Management Plan for the original extraction area was approved by the Department of Planning on the 5 February 2009. This management plan remains current and appropriate for the management of cultural heritage in the vicinity of the existing extraction area.

The Aboriginal Cultural Heritage Management Plan for the Modification 1 area was most recently approved by DPHI on the 25 November 2024. This management plan remains current and appropriate for the management of cultural heritage across the modification area.

Quarry Environmental Management Plan

The Quarry Environmental Management Plan (QEMP) was most recently revised and approved by DPHI on the 29 June 2023. The QEMP has been updated following approval of Modification 2, and has been lodged on the Planning Portal for agency consultation and approval. The updated plan is appropriate based on the findings of this Annual Review.

4.12. Independent Environmental Audit**4.12.1. Licence Requirements**

The DC requires Cleary Bros to commission and carry out an Independent Environmental Audit within 12 months of the commencement of the Project and every three years thereafter.

4.12.2. Compliance Assessment

Cleary Bros commissioned ERM to carry out the most recent Independent Environmental Audit in November 2025. Two non-compliances with the Site's Environmental Protection Licence or Development Consent were identified in the audit. A copy of the audit was sent to the EPA, Kiama Council, Shoalhaven Council and the CCC members. A copy of the audit was also posted on Cleary Bros website.

The below table summarises the progress of the corrective actions undertaken to address the non-conformances identified in the 2025 Independent Environmental Audit. The next audit is scheduled for late 2028.

Non-conformances

Condition Number	Auditor Comment	Auditor Recommendation	Progress of Corrective Actions
NC-1 Sch 3 Cond 16	The Site has been moving to this condition since 2008. June 2025 - evidence of registering the planning agreement on the title. This relates to conservating and managing the conservation areas onsite. Evidence of currently in the DPHI system and the fee has been paid. Evidence of several attempts to chase up the DPHI. Non-compliant, as although the Site has made attempts it could not meet "Within 3 months of the date of the approval of Modification 1, the Proponent shall: (a) enter into a Planning Agreement with the Minister under section 93F of the EP&A Act. This Agreement must be generally consistent with commitments in the terms of the offer made by the Proponent to the Minister on 1 May 2007"	Cleary Bros continue to liaise with DPHI, hence no recommendation.	Cleary Bros will continue to engage with DPHI on a regular basis with a view to finalising the agreement. -As this item is outside of Cleary Bros control, no completion date can be set.
NC-2 Sch 3 Cond 30B	One non-compliance with the requirements of the Aboriginal Cultural Heritage Management Plan (ACHMP), which was reported to DPHI in line with the requirements of the consent. This related to the excavation of surface material within the buffer area of locations designated for archaeological test pits prior to the completion of the archaeological investigations.	This non-compliance has been previously reported to DPHI, investigated, and closed out. There are no further recommendations in relation to this noncompliance	No further action. Cleary Bros will continue to implement the revised ACHMP.

Opportunities for improvement

Condition Number	Auditor recommendation	Proposed Action	Progress of Corrective Actions
Sch 3, Cond 38	Look into removing the plastic drums on Site and potential for recycling at a licenced waste facility. These were previously used for pipeline floats.	Cleary Bros will remove any surplus float drums from site including the recycling of these where possible.	Completed Surplus float drums were removed
Sch 3 Cond 39	Ensure chemicals and hydrocarbons are stored within bunds. Develop an internal procedure for the storage of this material.	Cleary Bros will install plastic bunding for the minor storage of fuels and chemicals.	Completed Plastic Bunding installed and internal procedures updated
Sch 5 Cond 7	Ensure all future bonds are sent to the DPHI regardless of whether there are changes to the area or the total amounts. This is to ensure compliance against Schedule 3 Condition 7.	Cleary Bros will send the rehabilitation bond worksheet to the DPHI for review following the bond review required by Condition 7, irrespective of whether the bond amount is changed.	Completed Revised rehabilitation bond submitted to DPHI

5. Conclusion

The Annual Review continued to note the departure of the surface and ground water quality of the site from the objective levels listed in the development consent. However, monitoring undertaken in the current reporting period demonstrates that the water quality is generally consistent with historical levels, with no deterioration in groundwater or surface water quality related to dredging operations with the exception of localised increases to turbidity, and a minor increase in select major ion concentrations in the new dredge pond.

Site conditions during the current reporting period were characterised by a drier first half of the year followed by a wet July-September period, with annual rainfall slightly under the long-term average. Water levels and quality across the site were heavily dictated by these climate patterns. Water take from the coastal sands aquifer during the reporting period was within the allocations permitted by the Water Access Licences held for this Water Source.

Outside of the non-compliance event, Dust deposition levels have remained at relatively low levels, even with the variable rainfall patterns observed throughout the reporting period. Rehabilitation during the year have been limited to the maintenance of seedlings in the screen planting area, with tree guards in place to prevent losses, and significant weed control efforts targeting high density lantana. Following several consecutive years of above or near-average rainfall, weeds have been a challenge to control in some areas of the site, the weed control onsite has started to show positive signs thanks to the hundreds of hours of control works throughout the reporting period. Cleary Bros will continue to focus on lantana control in the next reporting period, particularly in those areas without significant weed establishment.

Overall the site is performing well within the individual criteria and limits assigned to it in regard to environmental performance. One non-compliance with the development consent or Environmental Protection Licence in the current reporting period. There have been no community complaints in the reporting period, with the site continuing to have no unexpected impacts on the local environment.

Annexure A – Extractive Materials Returns

2025-2026

S1 Return for Extractive Materials

Submit this form for Extractive Minerals Returns



If completion of the return is unavoidably delayed, an application for extension of time should be requested before the due date. If no work was done during the year, a NIL return must be forwarded. The return should relate to the below quarrying establishment and should cover the operations of quarrying and treatment (such as crushing, screening, washing etc.) carried out at or near the quarry. A return is required even if the operations are solely of a developmental nature and whether the area being worked is held under a mining title or otherwise.

* Indicates required

Return Period ?

*

Name

* Quarry

*

Email

Quarry Address

Address

Local Government Area

Updated Local Government Area ?

Deposited Plan ?

Lot Number/s ?

Production information may be published in aggregated form for statistical reporting. However, production data for individual operations is kept strictly confidential.

Virgin materials - Crushed coarse aggregates

Add

Remove All

Actions	Product	Description	Quantity tonnes
No data to display			

Recycled materials - Crushed coarse aggregates

Add

Remove All

Actions	Product	Description	Quantity tonnes
No data to display			

River gravel

Add

Remove All

Actions	Product	Description	Quantity tonnes
No data to display			

Construction sand

				Add	Remove All
Actions	Product	Description	Quantity tonnes		
 	Construction Sand	Fine Sand	96428		

Industrial sand

Add

Remove All

Actions	Product	Description	Quantity tonnes
No data to display			

Dimension stone

Add

Remove All

Actions	Product	Description	Quantity tonnes
No data to display			

Decorative aggregate

Add

Remove All

Actions	Product	Description	Quantity tonnes
No data to display			

Loam

Add

Remove All

Actions	Product	Description	Quantity tonnes
No data to display			

Please make sure that the details above are final before clicking the 'Calculate Total Site Production' checkbox.

☒ * Calculate Total Site Production

TOTAL SITE PRODUCTION

96428.00

* Gross Value (\$) of all Sales

* Type of Material

Construction Sand (Processed)

* Number of Full-Time Equivalent (FTE) Employees

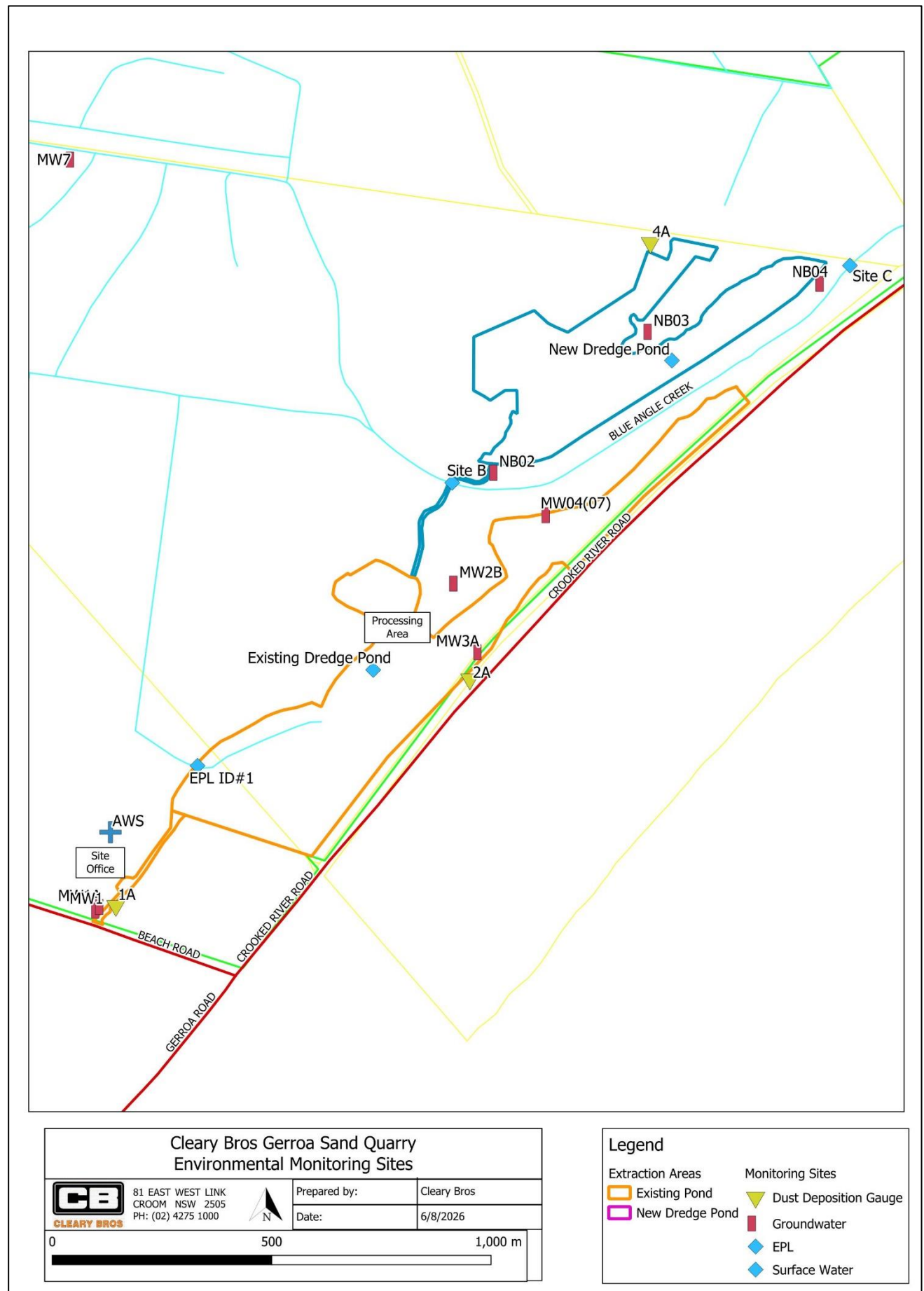
3

* Number of Full-Time Equivalent (FTE) Contractors

3

☒ * To the best of my knowledge, information entered in this return is correct and no blank spaces left where figures should have been inserted.

Annexure B – Environmental Monitoring Locations



Annexure C – 2025/26 Environmental Monitoring Results

Groundwater Monitoring Results

	pH (pH units)				EC (µS/cm)				Total Phosphorus (µg/L)				Total Nitrogen (µg/L)			
	Sep-25	Dec-25	Mar-26	Jun-26	Sep-25	Dec-25	Mar-26	Jun-26	Sep-25	Dec-25	Mar-26	Jun-26	Sep-25	Dec-25	Mar-26	Jun-26
MW 1	5	5.4	5.34	5.9	6820	6870	6930	6750	0.03	3.06	0.09	0.03	1.4	14.9	2	1.6
MW 1A	----	----	4.67	----	----	----	545	----	----	----	0.41	----	----	----	6.7	----
MW 2B	7.2	6.8	7.05	7.1	781	1010	629	757	0.13	0.1	0.05	0.11	1.1	1.1	0.9	1.5
MW 3A	7.4	6.8	6.51	7	677	528	795	933	0.23	0.42	0.08	0.26	0.6	0.7	0.7	1.7
MW04(07)	6.8	6.9	7.22	7	623	724	889	859	0.17	0.69	0.21	0.29	0.5	1.6	3.5	2.6
NB02	5.6	5.5	5.49	6	86	343	324	250	0.09	0.21	0.13	0.16	1.3	2.1	2.7	2.4
NB03	6.1	6.1	6.02	5.1	311	8240	89	244	0.41	0.31	0.24	0.23	0.7	1	1	1
NB04	5.8	6.2	6.24	6.9	8730	8920	8830	8790	0.04	0.14	<0.05	0.03	1.6	1.9	3	1.9
MW7	----	5.4	----	3.9	----	8320	----	7270	----	0.16	----	0.05	----	2.4	----	1.1
	Sodium (mg/L)				Potassium (mg/L)				Magnesium (mg/L)				Chloride (mg/L)			
	Sep-25	Dec-25	Mar-26	Jun-26	Sep-25	Dec-25	Mar-26	Jun-26	Sep-25	Dec-25	Mar-26	Jun-26	Sep-25	Dec-25	Mar-26	Jun-26
MW 1	1190	1200	1260	1240	3	5	3	3	140	139	147	144	1800	1730	1920	1770
MW 1A	----	----	63	----	----	----	4	----	----	----	12	----	----	----	158	----
MW 2B	65	87	59	67	7	4	3	6	20	20	12	13	101	171	88	118
MW 3A	41	41	111	115	2	3	3	8	9	9	10	11	67	66	203	199
MW04(07)	78	82	89	78	7	10	5	5	14	19	17	16	147	141	171	150
NB02	12	44	51	26	2	6	4	3	2	8	6	4	18	67	70	42
NB03	16	13	14	23	2	3	2	5	2	2	2	6	19	13	14	32
NB04	1320	1370	1290	1310	37	39	35	39	166	174	163	174	3110	3000	3040	3000
MW7	----	1260	----	1060	----	40	----	39	----	245	----	244	----	1750	----	1260
	Sulphate (mg/L)				Bicarbonate (mg/L)				Soluble Iron (mg/L)				Chlorophyll-a			
	Sep-25	Dec-25	Mar-26	Jun-26	Sep-25	Dec-25	Mar-26	Jun-26	Sep-25	Dec-25	Mar-26	Jun-26	Sep-25	Dec-25	Mar-26	Jun-26
MW 1	755	787	733	767	2	6	38	8	<0.05	18.9	21.1	6.51	<1	16	<2	<1
MW 1A	----	----	27	----	----	----	3	----	----	----	0.32	----	----	----	<1	----
MW 2B	48	71	55	35	225	202	128	190	2.82	7.34	3.2	1.19	<1	<1	<1	<1
MW 3A	18	9	5	56	204	163	110	68	0.58	7.62	13	11.7	<1	2	<1	<1
MW04(07)	65	61	<10	24	42	120	224	199	<0.05	0.12	1.98	1.4	<1	<5	<5	<1
NB02	1	17	15	17	8	10	17	10	1.1	1.11	2.05	1.8	<1	<5	<3	<1
NB03	2	<1	<10	36	9	16	21	19	0.8	1.07	1.26	2.37	<1	<2	<1	<1
NB04	315	332	292	284	<1	8	88	5	26.8	81.2	70.4	51.3	<1	<3	<2	2
MW7	----	1870	----	2290	----	<1	----	<1	----	94.5	----	50.1	----	<3	----	<1
	Faecal Coliforms (CFU/100mL)				Enterococci (CFU/100mL)				Ammonium (mg/L)							
	Sep-25	Dec-25	Mar-26	Jun-26	Sep-25	Dec-25	Mar-26	Jun-26	Sep-25	Dec-25	Mar-26	Jun-26				
MW 1	<1	<5	~35	23	<1	<5	<1	~1	1.18	0.52	0.82	0.9				
MW 1A	----	----	2900	----	----	----	18	----	----	----	<0.01	----				
MW 2B	<2	<1	16	~980	<2	<1	<1	~5	0.47	0.41	0.37	0.68				
MW 3A	<1	<2	<1	~280	<1	<2	<1	<1	<0.01	0.1	0.09	0.13				
MW04(07)	2000	~<2	350	6600	<1	<2	~9	22	0.03	0.05	2.02	1.4				
NB02	38	<2	55	230	<1	<2	~8	~3	0.05	0.18	0.31	0.24				
NB03	~1	<2	100	~<1	<1	<2	<1	~2	0.04	0.07	0.1	0.2				
NB04	<1	<2	24	480	<1	<2	~1	~1	1.48	0.82	0.95	1.28				
MW7	----	<2	----	~9	----	<2	----	~2	----	0.37	----	0.15				

* inaccessible

Groundwater Depth Results

(mAHD)	Jul-25	Aug-25	Sep-25	Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26	Apr-26	May-26	Jun-26
MW1	1.39	1.31	0.9	1.48	1.72	2.33	2.65	2.65	2.45	2.1	2.44	2.15
MW1A	1.02	1.6	dry	dry	dry	dry	dry	dry	0.6	dry	dry	dry
MW2B	1.68	1.54	1.34	1.59	1.82	1.75	1.9	1.76	1.55	1.6	1.99	1.91
MW3A	0.98	0.81	0.91	1.11	1.9	1.07	1.49	1.98	1.3	1.25	1.49	1.4
MW04(07)	2.65	2.42	2.31	3.2	*	3.71	4.1	3.6	3.55	3.76	3.68	3.95
NB02	1.81	1.44	1.41	2.17	2.68	2.5	2.8	2.78	2.45	2.41	2.48	2.58
NB03	6.1	5.95	5.75	8.42	7.32	7.42	8.06	7.99	7.82	7.76	7.71	7.55
NB04	1.63	1.7	1.9	1.85	1.95	2.21	1.99	2.22	1.87	1.61	1.91	1.86
MW7	*	*	*	*	1.5	1.6	*	1.61	*	*	1.54	1.12

* inaccessible

Existing Dredge Pond Surface Water Monitoring Results

	Jul-25	Aug-25	Sep-25	Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26	Apr-26	May-26	Jun-26
EC (µS/cm)	472	519	491	629	458	710	551	507	780	435	856	432
pH (pH units)	7.7	7.6	7.6	7.3	7.4	7.4	7.3	8	7.3	7	7.5	7.7
Total Algae (cells/mL)			10400			7920			59800			9220
Cyanophyta (cells/mL)			105			75			57800			1400
Total Phosphorus (µg/L)			260			240			<50			90
Total Nitrogen (µg/L)			190			1300			1200			900
Chlorophyll-a (µg/L)			8			5			25			3
Faecal Coliforms (CFU/100mL)			~62			~150			4500			30
Enterococci (CFU/100mL)			18			170			43			8
Sodium (mg/L)			74			94			103			108
Potassium (mg/L)			6			11			7			8
Magnesium (mg/L)			13			16			17			19
Calcium (mg/L)			21			25			22			25
Chloride (mg/L)			136			157			187			187
Sulphate (mg/L)			61			72			79			102
Bicarbonate (mg/L)			38			43			38			35
Soluble Iron (mg/L)	<0.05	<0.05	<0.05	<0.05	0.09	0.29	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ammonium (mg/L)			<0.01			<0.01			<0.01			<0.01
Turbidity (NTU)	231	258	295	337	296	252	192	182	181	211	191	135
Dissolved Oxygen (mg/L)	9.51	9.7	8.23	8	7.07	8.23	6.65	8.22	7.16	8.53	7.82	9.22
Dissolved Oxygen (%)	88	92.1	93.1	91.1	81.5	97.4	69.3	104	86.1	94.4	84.4	91.3
Temperature (deg C)	11.4	13.8	21.6	337	22.1	24	27.8	28.1	24.6	21.6	20	16.2
Total Alkalinity (mg/L)	52	40	38	44	43	43	37	40	38	40	36	35
Total Acidity (mg/L)	5	2	4	6	6	5	6	6	3	5	6	3
Dissolved Aluminium (mg/L)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	0.02	<0.01
Dissolved Arsenic (mg/L)	0.001	<0.001	<0.001	0.001	0.002	0.002	0.002	0.003	0.003	<0.001	0.003	0.003
Dissolved Boron (mg/L)	0.11	0.15	0.15	0.14	0.16	0.18	0.16	0.16	0.13	0.14	0.18	0.19
Dissolved Barium (mg/L)	0.018	0.048	0.077	0.106	0.094	0.095	0.113	0.083	0.081	0.051	0.136	0.058
Dissolved Beryllium (mg/L)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dissolved Cadmium (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Cobalt (mg/L)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dissolved Chromium (mg/L)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dissolved Copper (mg/L)	<0.001	<0.001	0.001	0.001	0.002	<0.001	0.001	0.001	0.001	0.001	<0.001	0.002
Dissolved Manganese (mg/L)	0.006	0.001	0.008	0.008	0.016	0.01	0.005	0.005	0.01	0.007	0.007	0.008
Dissolved Nickel (mg/L)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.002
Dissolved Lead (mg/L)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dissolved Selenium (mg/L)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Dissolved Vanadium (mg/L)	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Dissolved Zinc (mg/L)	<0.005	0.046	0.035	0.031	0.028	0.047	0.02	<0.005	0.031	0.04	0.028	0.084
Dissolved Mercury (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001

Processing Returns Water Monitoring Results

	Jul-25	Aug-25	Sep-25	Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26	Apr-26	May-26	Jun-26
pH (pH units)	7.4	7	7.6	7.5	7.6	7.2	7.3	7.6	7.4	7	7.5	7.4
EC (µS/cm)	787	761	721	643	861	708	944	1030	782	1080	1120	1090
Turbidity (NTU)	6.6	9.4	16.5	358	5.3	340	4.2	2.7	607	5.6	4.6	11.1
Temperature (deg C)	12.6	14.4	22.4	18.8	24	23.3	28.7	25.6	24.6	21.9	19.1	17.9
Total Alkalinity (mg/L)	134	96	83	42	97	2	101	107	38	142	137	182
Total Acidity (mg/L)	8	7	4	4	4	4	4	3	4	5	7	19
Dissolved Aluminium (mg/L)	0.03	0.04	0.05	0.005	0.11	0.005	0.27	0.17	0.005	0.08	0.05	0.05
Dissolved Arsenic (mg/L)	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	0.005
Dissolved Boron (mg/L)	0.023	0.029	0.019	0.11	0.025	0.097	0.023	0.026	0.085	0.032	0.069	0.025
Dissolved Barium (mg/L)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dissolved Beryllium (mg/L)	0.08	0.1	0.07	0.16	0.09	0.19	0.09	0.12	0.26	0.12	0.15	0.11
Dissolved Cadmium (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Cobalt (mg/L)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dissolved Chromium (mg/L)	<0.001	0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.001	<0.001
Dissolved Copper (mg/L)	<0.001	<0.001	0.001	0.001	0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dissolved Manganese (mg/L)	0.18	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.14
Dissolved Nickel (mg/L)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dissolved Lead (mg/L)	0.037	0.023	0.018	0.009	0.001	0.007	0.007	0.008	0.012	0.035	0.029	0.063
Dissolved Selenium (mg/L)	0.002	0.003	0.002	0.001	0.003	<0.001	0.002	0.002	<0.001	0.004	0.005	0.003
Dissolved Vanadium (mg/L)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Dissolved Zinc (mg/L)	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01
Dissolved Iron (mg/L)	<0.005	0.047	<0.005	0.034	<0.005	0.045	<0.005	<0.005	0.018	<0.005	0.035	<0.005
Dissolved Mercury (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Oxygen (mg/L)	8.07	8.79	8.29	7.82	8.1	8.21	8.61	8.01	7.55	7.87	8.85	7.2
Dissolved Oxygen (%)	77	84.2	95.4	86.6	96.7	95.8	89.1	100	90.8	90.8	93.6	75.2

New Dredge Pond Surface Water Monitoring Results

	Jul-25	Aug-25	Sep-25	Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26	Apr-26	May-26	Jun-26
EC (µS/cm)	840	806	829	966	940	944	975	1110	973	1110	1120	1440
pH (pH units)	7.4	6.8	6.8	7	7.4	6.6	7.2	7.6	7.4	6.9	7.3	7.4
Total Algae (cells/mL)			5950			3450			8120			6420
Cyanophyta (cells/mL)			150			3050			6420			1170
Total Phosphorus (µg/L)			260			510			<10			140
Total Nitrogen (µg/L)			1000			2300			1100			1100
Chlorophyll-a (µg/L)			10			6			6			11
Faecal Coliforms (CFU/100mL)			~100			540			46000			1000
Enterococci (CFU/100mL)			~9			38			22			12
Sodium (mg/L)			113			123			140			172
Potassium (mg/L)			7			12			8			10
Magnesium (mg/L)			18			20			21			27
Calcium (mg/L)			30			31			29			36
Chloride (mg/L)			213			231			253			303
Sulphate (mg/L)			76			106			99			127
Bicarbonate (mg/L)			37			20			38			37
Soluble Iron (mg/L)	0.08	0.17	0.06	<0.05	<0.05	0.58	<0.05	<0.05	<0.05	<0.05	<0.05	0.52
Ammonium (mg/L)			0.02			0.05			<0.01			0.02
Turbidity (NTU)	145	116	145	152	172	251	88.9	78.5	129	149	156	106
Dissolved Oxygen (mg/L)	9.27	8.78	8.34	8.44	9	7.78	3.69	7.96	6.72	7.87	7.36	9.68
Dissolved Oxygen (%)	85.4	82.1	86	93.2	109	91.2	40.1	99.2	78.5	90.8	77.1	96.1
Temperature (deg C)	11	13.2	17.8	19.4	25	23.6	29	27.1	23.3	21.9	18.5	16.4
Total Alkalinity (mg/L)	43	35	37	42	39	20	36	34	38	42	37	37
Total Acidity (mg/L)	4	7	8	6	4	9	4	3	4	4	5	12
Dissolved Aluminium (mg/L)	0.02	0.04	0.04	<0.01	0.03	0.06	0.02	0.05	0.01	<0.01	0.01	0.01
Dissolved Arsenic (mg/L)	0.002	0.002	0.002	0.004	0.005	0.003	0.005	0.004	0.004	0.002	0.006	0.002
Dissolved Boron (mg/L)	0.120	0.13	0.15	0.14	0.14	0.18	0.16	0.15	0.22	0.18	0.18	0.17
Dissolved Barium (mg/L)	0.028	0.049	0.064	0.084	0.063	0.098	0.105	0.027	0.034	0.072	0.13	0.051
Dissolved Beryllium (mg/L)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dissolved Cadmium (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Cobalt (mg/L)	<0.001	<0.001	<0.001	<0.001	<0.001	0.013	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dissolved Chromium (mg/L)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dissolved Copper (mg/L)	0.002	<0.001	0.002	0.001	0.002	<0.001	0.001	0.001	0.001	0.002	<0.001	0.002
Dissolved Manganese (mg/L)	0.041	0.033	0.041	0.033	0.022	0.053	0.022	0.024	0.022	0.035	0.041	0.04
Dissolved Nickel (mg/L)	0.001	<0.001	0.001	0.001	0.001	0.01	0.001	<0.001	0.001	0.001	0.002	0.002
Dissolved Lead (mg/L)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dissolved Selenium (mg/L)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Dissolved Vanadium (mg/L)	<0.01	<0.01	<0.01	<0.01	0.01	0.02	0.01	<0.01	0.01	0.01	0.02	<0.01
Dissolved Zinc (mg/L)	<0.005	0.05	0.09	0.05	0.035	0.12	0.039	<0.005	0.035	0.085	0.062	0.062
Dissolved Mercury (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001

Blue Angle Creek Upstream (Site B) Surface Water Monitoring Results

	Jul-25	Aug-25	Sep-25	Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26	Apr-26	May-26	Jun-26
pH (pH units)	6.7	6.8	6.5	6.5	7	7.1	7.1	6.7	6.7	6.2	6.9	7.4
EC (µS/cm)	196	217	53	682	1330	1090	1790	1930	1440	935	9140	1080
Turbidity (NTU)	8	18.8	14	83.2	20	7.5	28.9	9.8	4.1	48.5	39.9	17.2
Temperature (deg C)	10.5	12.4	15.5	17.8	19	20.3	27.6	22.4	21.4	19.3	17.6	14.4
Total Alkalinity (mg/L)	19	11	12	51	68	138	182	149	80	36	119	38
Total Acidity (mg/L)	8	6	10	18	11	9	20	6	14	11	36	13
Dissolved Aluminium (mg/L)	0.1	0.18	0.14	0.03	0.02	0.03	0.05	0.05	0.03	0.07	0.06	0.1
Dissolved Arsenic (mg/L)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dissolved Barium (mg/L)	0.004	0.063	0.003	0.106	0.055	0.114	0.015	0.025	0.025	0.017	0.101	0.016
Dissolved Beryllium (mg/L)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dissolved Boron (mg/L)	<0.05	<0.05	<0.05	0.13	0.17	0.19	0.22	0.28	0.24	0.1	0.44	0.11
Dissolved Cadmium (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Chromium (mg/L)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dissolved Cobalt (mg/L)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.003	0.001	0.001
Dissolved Copper (mg/L)	0.002	0.003	0.003	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	<0.001	<0.001
Dissolved Iron (mg/L)	1.17	0.76	0.52	0.67	0.49	0.97	2.25	1.07	0.4	2.49	4.58	0.45
Dissolved Lead (mg/L)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dissolved Manganese (mg/L)	0.019	0.013	0.02	0.346	0.127	0.339	0.276	0.323	0.599	0.465	0.748	0.176
Dissolved Nickel (mg/L)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	0.002
Dissolved Selenium (mg/L)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Dissolved Vanadium (mg/L)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Dissolved Zinc (mg/L)	0.006	0.067	<0.005	0.104	0.041	0.066	<0.005	0.008	<0.005	0.009	0.017	0.011
Dissolved Mercury (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Oxygen (mg/L)	4.92	7.35	4.36	2.93	4.54	2.36	3.65	5	2.4	6.05	1.88	5.52
Dissolved Oxygen (%)	43.7	64.5	43.4	31.3	49.2	26	39.8	57.3	27	67	19.8	52.3

Blue Angle Creek Downstream (Site C) Surface Water Monitoring Results

	Jul-25	Aug-25	Sep-25	Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26	Apr-26	May-26	Jun-26
pH (pH units)	7	6.6	6.5	6.9	7.2	7	7.1	7.1	7	6.5	7.2	5.8
EC (µS/cm)	246	200	141	2620	1050	6960	3720	6010	1810	819	42000	1220
Turbidity (NTU)	7.5	18.5	20.9	34.9	22.6	15.1	19.4	2.2	4.6	20.4	18.2	22
Dissolved Oxygen (mg/L)	4.45	5.1	4.36	3.32	6.64	4.42	4.21	3.89	1.44	2.78	1.92	3.79
Dissolved Oxygen (%)	40.7	47.1	43.4	35.4	70.7	50.7	45.3	44.5	16	30.7	23.5	36.2
Total Alkalinity (mg/L)	30	13	14	114	106	126	137	148	134	53	118	42
Total Acidity (mg/L)	9	8	10	16	9	10	12	8	13	10	24	13
Dissolved Aluminium (mg/L)	21	5	4	98	97	116	125	140	121	43	94	29
Dissolved Arsenic (mg/L)	0.12	0.19	0.12	0.05	0.04	0.02	0.02	0.03	0.04	0.06	<0.01	0.22
Dissolved Boron (mg/L)	<0.001	0.001	<0.001	0.004	<0.001	<0.001	0.001	0.003	<0.001	<0.001	<0.01	<0.001
Dissolved Barium (mg/L)	<0.05	<0.05	<0.05	0.24	0.14	0.51	0.29	0.44	0.25	0.1	3.13	0.14
Dissolved Beryllium (mg/L)	0.006	0.059	0.004	0.072	0.009	0.055	0.071	0.013	0.024	0.014	0.049	0.012
Dissolved Cadmium (mg/L)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001
Dissolved Cobalt (mg/L)	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.001	<0.0001
Dissolved Chromium (mg/L)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.01	0.002
Dissolved Copper (mg/L)	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001
Dissolved Manganese (mg/L)	0.002	0.002	0.003	0.003	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001
Dissolved Nickel (mg/L)	0.024	0.012	0.018	0.108	0.07	0.079	0.051	0.17	0.249	0.36	0.1	0.143
Dissolved Lead (mg/L)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.01	0.002
Dissolved Selenium (mg/L)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001
Dissolved Vanadium (mg/L)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Dissolved Zinc (mg/L)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01
Dissolved Iron (mg/L)	0.006	0.063	<0.005	0.061	0.011	0.069	0.04	<0.005	0.041	0.041	<0.05	0.01
Dissolved Mercury (mg/L)	1.25	0.77	0.47	0.35	0.31	0.3	0.27	0.49	0.54	0.6	1.29	0.94
Temperature (deg C)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001

Air Quality Monitoring Results – Depositional Dust Gauges

TIS (g/m2/month)	1A	2A	4A
Jul-25	11.2	1.4	0.3
Aug-25	5.5	0.5	0.1
Sep-25	16.0	0.9	4.0
Oct-25	1.7	2.7	0.7
Nov-25	1.2	2.0	0.3
Dec-25	4.2	0.9	0.8
Jan-26	1.9	1.3	1.8
Feb-26	1.5	0.8	0.5
Mar-26	3.4	Damaged (vandalism)	0.4
Apr-26	2.4	2.5	Damaged (stock)
May-26	2.9	0.8	Damaged (stock)
Jun-26	0.8	0.5	0.2

Acid Sulphate Sand Monitoring

	TOS (%)
Jul-25	0.03
Aug-25	0.05
Sep-25	0.04
Oct-25	0.03
Nov-25	0.03
Dec-25	0.03
Jan-26	0.02
Feb-26	0.01
Mar-26	0.04
Apr-26	0.03
May-26	0.03
Jun-26	0.03

Annexure D - Annual Review of the Landscape and Rehabilitation Management Plan

Gerroa Sand Quarry – Annual Monitoring Report 2026 – Vegetation Management Plan

Niche Environment and Heritage

July 2026



Gerroa Sand Quarry – Annual Monitoring Report 2026

Vegetation Management Plan

Prepared for Regional Quarries and Concrete Pty Ltd (t/a Cleary Bros) | 23/07/2026



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1 Background and key findings

1.1 Introduction

Niche was commissioned by Regional Quarries and Concrete Pty Ltd (t/a Cleary Bros) to complete the Gerroa Sand Quarry Annual Monitoring Report (the Project), located at the corner of Beach Road and Crooked River Road, Gerroa, New South Wales (NSW) (the Site). A map of Gerroa Sand Quarry Vegetation Management Zones is provided in Figure 1.

The primary objective of this report is to update any necessary control measures required with regards to priority weed management within the designated management zones across the Site and provide advice on any management actions that can be implemented to encourage the rehabilitation of the Site.

Primarily, this report aims to meet the Conditions of Approval granted by the NSW Land and Environment Court for the extension of the Gerroa Sand Quarry, operated by Regional Quarries and Concrete Pty Ltd (t/a Cleary Bros) (Appendix 1). This report satisfies the condition requiring an annual report on the progress of the revegetation project.

This report is the 18th such annual report covering the Site at Gerroa prepared since 2009.

1.2 Background

Regional Quarries and Concrete Pty Ltd (t/a Cleary Bros) have undertaken annual rehabilitation monitoring of the Gerroa Sand Quarry since 2009. The rehabilitation and management zones assessed within this report are consistent with those identified in the approved Landscape and Rehabilitation Management Plan (LRMP) for the Gerroa Sand Quarry, originally prepared by Kevin Mills & Associates (2008) and subsequently updated to reflect works undertaken across the Site.

This report represents the annual inspection for the 2025/2026 monitoring period. Annual monitoring reports have been prepared by Niche Environment and Heritage since 2018, with earlier reports prepared by Kevin Mills & Associates. The annual monitoring program provides an assessment of vegetation condition, weed management outcomes, rehabilitation progress and ongoing maintenance requirements across the Site.

The LRMP (GSR, 2022) has been prepared to meet the requirements of the Quarry Environmental Management Plan (CB, 2023). The key objectives of rehabilitation are to establish and maintain indigenous vegetation communities, strengthen habitat connectivity across the Site, provide wildlife habitat, control priority weed species and progressively develop self-sustaining native vegetation communities.

Quarterly inspections undertaken by Regional Quarries and Concrete Pty Ltd (t/a Cleary Bros) continue to provide regular updates on the condition of rehabilitation areas and assist in identifying maintenance requirements throughout the year. Most revegetation works across the Site have now been completed and most rehabilitation zones have transitioned into the maintenance phase. Management activities are primarily focused on weed control, monitoring vegetation establishment, maintaining habitat corridors and supporting the continued development of native vegetation communities.

Recent annual monitoring reports have focused on assessing the condition of rehabilitation areas, evaluating progress towards rehabilitation objectives and identifying management actions required to support long-term rehabilitation success. Wildlife monitoring has not been undertaken since 2016, as previous assessments concluded that further targeted fauna surveys were not necessary for the purposes of ongoing rehabilitation monitoring.

Background information, detailed survey methodologies and historical monitoring results are provided within previous annual monitoring reports and are not repeated within this document.



Figure 1: Map of Gerroa Sand Quarry Vegetation Management Zones



1.3 Summary of findings

The classification of priority of weeds is used to assist in the management of order of priority of weeds (DPI, 2025). The inspection found that most revegetation areas continue to progress towards objectives outlined within the approved LRMP. Most revegetation zones are now in the maintenance phase, with established native canopy, midstory and understorey layers providing habitat value and contributing to the development of self-sustaining vegetation communities.

Weed management undertaken across the Site has resulted in a substantial reduction in Lantana (*Lantana camara*), with many previously treated infestations now consisting of dead stands. While Lantana remains present throughout several management zones, ongoing treatment has significantly reduced its dominance. Other priority weed species recorded during the inspection included:

- Moth Vine (*Araujia sericifera*)
- Giant Reed (*Arundo donax*)
- Tobacco Bush (*Solanum mauritanum*)
- Fireweed (*Senecio madagascariensis*).

Other non-priority weeds recorded during the inspection included:

- Spear Thistle (*Cirsium vulgare*)
- Rhodes Grass (*Chloris gayana*)
- Madeira Winter Cherry (*Solanum pseudocapsicum*)
- Cobblers Peg (*Biden's Pilosa*),
- Crofton Weed (*Ageratina Adenophora*)
- Kikuyu Grass (*Cenchrus clandestinus*)
- Paddy's Lucerne (*Sida rhombifolia*).

Several revegetation areas, particularly those associated with Swamp Oak (*Casuarina glauca*) plantings, were observed to be establishing successfully. However, evidence of deer and/or kangaroo grazing was observed in the southwestern end of Subzone 2C.1 and may require ongoing monitoring. Despite this, most of the vegetation in Subzone 2C.1 is mature and has established itself well. Older plantings in zones such as Subzone 2D and 5C.1 have been a success and need their old plastic sleeves to be removed.

This year, Subzone 2C.2 could not be accessed due to multiple creek crossings surrounding the subzone. The eastern and southwestern corners were observed from afar, across the other side of creeks. All other zones were accessible.

Overall, the Site was found to be in good condition, with most management requirements relating to ongoing weed control maintenance of younger revegetation areas and monitoring of previously treated weed infestations.



2 Assessment of individual zones

An inspection of the rehabilitation and management zones at Gerroa Sand Quarry was undertaken on 9th of June 2026 by Jesse Paton (Niche Ecologist). Weather conditions and limited rainfall prior to the site inspection allowed access to most subzones; only 2C.2 was not accessible.

Most of the plantings were completed at each zone early in the monitoring program and are now in the maintenance phase. The most recent plantings have occurred in Subzone 2B.1, 2C.1, 2C.2 and 2D (see Figure 1) to expand the vegetation buffer along Blue Angle Creek, creating suitable habitat for local fauna. Focus needs to be on the southwestern end of Subzone 2C.1 (situated west of the access track), as these areas are experiencing grazing and most new plantings are struggling to grow (Plate 4). Vegetation in Subzone 2B.1, 2C.2 and 2D are well-established and are in the maintenance phase.

Weed maintenance has been carried out at each of the planting areas since the early stages of the project and should be continued in the future to assist the early growth of vegetation in the southwestern end of Subzone 2C.1. An updated description and condition of each of the zones and the planting areas has been provided in Table 1.

Over the previous year, all zones were inspected and assessed by Regional Quarries and Concrete Pty Ltd (t/a Cleary Bros) staff during quarterly inspections. Thorough maintenance work in these zones was conducted throughout the year. This year, Lantana had been targeted by spot spraying and has been quite successful. Many stands of Lantana that were observed during the site inspection were dead.

The recommendations for the rehabilitation zones detailed in Table 1 were made following the site inspection. A priority weeds list for the Site and further detail on their control methods is provided in Appendix 2.

The conditions of each zone will be assessed as follows:

Outcome	Description
Excellent	Native vegetation dominant, minimal weed presence
Good	Native vegetation dominant, some weed presence
Moderate	Native vegetation and weeds co-dominant
Poor	Weed dominated or rehabilitation failing



Table 1: Recommendations for the management zones

Zone / Location	Observations	Recommendations for ongoing works 2026/2027	Reference Images
Zone 1: Forest Enhancement Zone Objectives (41.95 ha)			
- Improve the quality of the forest by removal of weeds. - Restrict access to grazing stock. - Monitor the health of the forest. - Strengthen tree cover south of previous dredge pond.			
Work in the past has included Lantana control and removal of selected weeds such as Bitou Bush (<i>Chrysanthemoides monilifera</i>). Weed management is ongoing and is guided by the Weed Management Plan for the Site (KMA 2008).			



Zone / Location	Observations	Recommendations for ongoing works 2026/2027	Reference Images
Subzone 1.1 This is the main area of existing forest and largest coverage of vegetation of any subzone. It extends from the southern to the northern end of the property boundary.	Excellent condition. Dead stands of Lantana are present throughout. Tobacco Bush, Rhodes Grass, Fireweed and Cobbler's Pegs are mainly restricted to the roadside areas. Healthy canopy of <i>Eucalyptus botryoides</i> with well-developed midstory including <i>Acacia longifolia</i> and <i>Pittosporum spp.</i> Understorey consists predominantly of <i>Hypolepis muelleri</i> and <i>Lomandra longifolia</i>.	Requires minimal management intervention. Ongoing monitoring should continue to ensure the health and structural integrity of the native vegetation. Dead stand of Lantana should be monitored for regrowth and treated as required.	



Zone / Location	Observations	Recommendations for ongoing works 2026/2027	Reference Images
Subzone 1.2 This subzone covers the forest around the eastern and southern sides of the old dredge pond.	Good condition. Dead stands of Lantana occur throughout. Rhodes Grass and Fireweed are prevalent near the roadside. Boundary fencing is flattened or damaged in several locations.	Dead stands of Lantana should be monitored for regrowth and treated as required. Manage roadside weeds and monitor for encroachment on native vegetation. Consider upgrading fence to prevent unauthorised access from roadside.	



Zone / Location	Observations	Recommendations for ongoing works 2026/2027	Reference Images
Subzone 1.3 Covers the old bund wall. This subzone is located behind the site office and towards the front gate.	Good condition. Native vegetation well established. Most Lantana has been successfully managed. Moth Vine, Spear Thistle, Cobbler's Pegs and Fireweed are present – mostly along roadside.	Monitor stands of Lantana for regrowth. Continue targeted control of Moth Vine and other roadside weed species to improve vegetation condition.	



Zone / Location	Observations	Recommendations for ongoing works 2026/2027	Reference Images
Subzone 1.4 A fenced patch of Swamp Oak (<i>Casuarina glauca</i>) within grazing land. It is in the western most part of the Site and conjoins onto Subzone 2E.	Excellent condition. No Lantana and Blackberry recorded. Moth vine is present. Vegetation is well established and healthy.	Vegetation is well established and requires minimal intervention. Continue routine monitoring and undertake targeted control of Moth Vine where necessary to maintain the excellent condition of the subzone and prevent spread into adjoining rehabilitation areas.	



Zone / Location	Observations	Recommendations for ongoing works 2026/2027	Reference Images
Zone 2: Broad scale planting zone Objectives (25.39 ha)			
- Develop habitat by planting forest communities in accordance with the LRMP (KMP, 2008). - Establish stronger habitat corridors to the north and south of the existing forest. - Monitor plantings and complete maintenance, including the removal of unused plant guards. - Strengthen east-west and north-south links between the established forest and Seven Mile Beach National Park.			



Zone / Location	Observations	Recommendations for ongoing works 2026/2027	Reference Images
Subzone 2A.1 This is the main area that has been used to develop the forested link in the northeast corner of the Site.	Northern portion is in excellent condition; southern portion in good condition. The northern area is largely weed free apart from Rhodes Grass. The southern area contains Moth Vine and patches of Cobbler's Pegs.	Continue targeted weed management within the southern portion of the subzone, focusing on Moth Vine and Cobbler's Pegs. Monitor the developing forest corridor to ensure ongoing vegetation establishment and connectivity between adjoining habitat areas. Maintain the northern section through routine inspections and weed management as required.	



Zone / Location	Observations	Recommendations for ongoing works 2026/2027	Reference Images
Subzone 2A.2 This area is important for the forest link to the south and into Seven Mile Beach National Park on the southern side of Beach Road.	Moderate condition. Most Lantana has been successfully treated. Rhodes Grass and Moth Vine dominate the weed layer, with Tobacco Bush, Fireweed and Cobbler's Pegs present. Native canopy and shrub layers are established.	This subzone should remain a priority for weed management. Targeted control of Rhodes Grass, Moth Vine and Tobacco Bush is recommended to reduce competition with native vegetation and improve habitat connectivity. Continue monitoring treated Lantana infestations and encourage natural regeneration within canopy gaps.	



Zone / Location	Observations	Recommendations for ongoing works 2026/2027	Reference Images
Subzone 2A.3 This area is located south of the dredge pond and is encompassed by Subzone 1.1 and a road.	Good condition. Roadside weeds include Cobbler's Pegs and Spear Thistle. All Lantana observed was dead. Healthy native understory regeneration is occurring.	Continue routine roadside weed control to prevent further spread into rehabilitated areas. Monitor natural regeneration and undertake maintenance only where necessary to support the continued development of native vegetation.	



Zone / Location	Observations	Recommendations for ongoing works 2026/2027	Reference Images
Subzone 2B.1 This subzone is a narrow area that was regenerated to link the creek-side forest to that within Zone 4.	Good condition. Native canopy, midstory and understorey is well established. All stands of Lantana that were observed, were dead. Moth Vine and Giant Reed occur near the creek and roadside.	Monitor dead stands of Lantana for any regrowth, treat if required. Target Moth Vine and Giant Reed infestations through ongoing weed control.	



Zone / Location	Observations	Recommendations for ongoing works 2026/2027	Reference Images
Subzone 2B.2 This subzone is located north of the main area of Subzone 1.1 and there is a low-lying swamp present.	Good condition. Most Lantana has been successfully treated. Moth Vine and Giant Reed occur in wetter areas. Healthy Swamp Oak-dominated vegetation is present.	Continue targeted weed management within wetter areas, focusing on Moth Vine and Giant Reed infestations. Monitor the health and expansion of the Swamp Oak community and undertake maintenance as required to ensure weed species do not become dominant.	



Zone / Location	Observations	Recommendations for ongoing works 2026/2027	Reference Images
Subzone 2C.1 (southwestern end) Small revegetation patch at the southern end of the current extraction area, where the road goes back into the forest within Subzone 1.1.	Moderate condition. Some plantings are establishing well. Kikuyu Grass and Rhodes Grass present. Roadside weeds such as Fireweed are present along the main track to the east. Evidence of grazing on several younger plantings was observed (Plate 5).	Continue targeted weed management, including mowing and control of Kikuyu Grass and Rhodes Grass to reduce competition around plantings. Monitor grazing impacts, growth of native vegetation and replace failed plantings where required.	



Zone / Location	Observations	Recommendations for ongoing works 2026/2027	Reference Images
Subzone 2C.1 (eastern end) This subzone is known as 'The Garden' and is a planted area adjacent to more established vegetation located in Subzone 1.1.	Good condition. Native vegetation is establishing well, and the area is largely free from significant weed infestations. Moth Vine was the primary weed species recorded and occurred sporadically throughout the subzone. Native canopy and shrub species are continuing to develop and provide increasing habitat value.	Continue targeted control of Moth Vine to prevent further spread into adjacent native vegetation. Ongoing monitoring is recommended to maintain the good condition of the subzone and support the continued establishment of native vegetation.	



Zone / Location	Observations	Recommendations for ongoing works 2026/2027	Reference Images
Subzone 2C.2 A long narrow area supporting some well-established plantings.	Only the eastern and western boundary were accessible due to creek lines. Accessible areas are in good condition with extensive Swamp Oak stands. Giant Reed occurs along the creek lines.	Continue monitoring of Swamp Oak stands where and when access permits. Undertake targeted control of Giant Reed.	



Zone / Location	Observations	Recommendations for ongoing works 2026/2027	Reference Images
Subzone 2D Located west of Subzone 2C.1 and north of Subzone 2E and 1.4. This area is prone to water inundation during wetter months, limiting access to some areas.	Moderate condition. Older plantings (<i>Leptospermum spp.</i>, <i>Casuarina spp.</i>) are thriving. Weed abundance is greatest along roads, fences and creek lines. Tobacco Bush, Purpletop and Paddy's Lucerne were recorded.	Continue targeted weed control along disturbed boundaries and access tracks. Monitor the performance of established plantings and maintain as required.	



Zone / Location	Observations	Recommendations for ongoing works 2026/2027	Reference Images
Subzone 2E This narrow strip of trees extends into Subzone 1.4, an established area of trees.	Mostly good condition, although the southeastern end is in poor condition (Plate 9). Native canopy is well established. Moth Vine is widespread. Fireweed, Cobbler's Pegs and Wild Tobacco occur in open areas.	Prioritise weed control within the southeastern end to encourage further native vegetation establishment. Continue monitoring of Moth Vine and any other priority weeds.	



Zone / Location	Observations	Recommendations for ongoing works 2026/2027	Reference Images
Zone 3: Screen Planting Zone Objectives (0.42 ha)			
- Establish a screen of native vegetation along the eastern edge of pond extension. - Maintain existing trees on south-eastern boundary, remove Lantana and replace with native plantings.			



Zone / Location	Observations	Recommendations for ongoing works 2026/2027	Reference Images
Zone 3 This zone includes the bund wall which reached its final height early in 2015.	Moderate to poor condition. Although some dead Lantana was observed, it remains extensive throughout the zone. Rhodes Grass, Giant Reed and Fireweed are also common, more so to the southern end. Vegetation assists in stabilising the bund wall.	Continue targeted Lantana control while minimising disturbance to bund wall stability. Consider supplementary native planting where weed removal creates large gaps.	



Zone / Location	Observations	Recommendations for ongoing works 2026/2027	Reference Images
Zone 4: Bangalay Sand Forest Zone Objectives (3.32 ha)			
- Restrict access to grazing stock. - Establish a forest link to nearby larger area through plantings. - Monitor the health of the forest. - Remove weeds when required.			



Zone / Location	Observations	Recommendations for ongoing works 2026/2027	Reference Images
Zone 4 This zone is remnant Bangalay Sand Forest vegetation.	Excellent condition. Healthy multi-layered native vegetation community. Most Lantana has been successfully controlled. Minor roadside weeds remain present.	Continue routine monitoring and maintenance of treated Lantana infestations. Undertake roadside weed control as required.	



Zone / Location	Observations	Recommendations for ongoing works 2026/2027	Reference Images
Zone 5: Swamp Oak Forest Zone Objectives (1.82 ha)			
- Restrict access to grazing stock. - Establish a forest link to nearby larger area through plantings. - Monitor the health of the forest. - Remove weeds when required.			



Zone / Location	Observations	Recommendations for ongoing works 2026/2027	Reference Images
Zone 5 This zone is located north of the main creek, mostly surrounded by grazing paddocks. It is difficult to drive/walk to due to fence and creek lines.	Excellent condition. Open understorey with healthy Swamp Oak and Bangalay canopy. Moth Vine present.	Minimal management required. Continue monitoring for Moth Vine and undertake weed control if infestations expand.	



Zone / Location	Observations	Recommendations for ongoing works 2026/2027	Reference Images
Zone 5C.1 Occurs between Zone 5 and the main creek.	Good condition. Existing revegetation includes Paperbark and Swamp Oak. Rhodes Grass and Kikuyu Grass are prevalent.	Continue targeted control of Rhodes Grass and Kikuyu Grass to reduce competition with native vegetation - mowing and spot spraying away from developing trees is preferred. By actioning this, this Subzone will continue to establish well, similar to the adjoining remnant vegetation in Zone 5.	



Zone / Location	Observations	Recommendations for ongoing works 2026/2027	Reference Images
Zone 6: Dredge Pond Foreshore Zone Objectives (includes 5 m setback from pond and batter slopes on both the existing and extension pond). - Stabilise the batters on the edges of the dredge pond. - Undertake plantings within the 5 m set back area along the edge of the retained Littoral Rainforest (Zone 7) as soon as practical after dredging is completed in this area. - Continue rehabilitation of previous dredge pond areas.			



Zone / Location	Observations	Recommendations for ongoing works 2026/2027	Reference Images
Zone 6 This zone occurs within the foreshore areas of the Dredge Pond.	Good condition. Some living Lantana remains. Wild Tobacco, Rhodes Grass and Giant Reed are present. Pond banks are stable with little evidence of erosion.	Continue targeted weed control and encourage native regeneration through supplementary planting where appropriate. Maintain bank stability through ongoing vegetation management.	



Zone / Location	Observations	Recommendations for ongoing works 2026/2027	Reference Images
Zone 7: Littoral Rainforest Zone Objectives (0.95 ha)			
- Control weeds, particularly Lantana. - Monitor the health of the forest. - Protect the western edges of the zone from quarrying. - Ensure that the felling of trees does not impact the vegetation in this area.			



Zone / Location	Observations	Recommendations for ongoing works 2026/2027	Reference Images
Zone 7 This zone occurs along the eastern edge of the Site between zones 3 and 1.2. This zone has cultural significance; therefore, only minor control of Lantana has been conducted over time.	Moderate condition. Fence adjacent to the road is damaged. Most Lantana has been treated successfully. Fireweed, Spear Thistle and Moth Vine remain present.	Continue monitoring treated Lantana areas for regrowth and treat as required. Undertake control of roadside weeds and Moth Vine as required. Consider repairing damaged fencing to prevent unauthorised access from roadside.	



3 Discussion and recommendations

The 2026 annual monitoring inspection indicates that rehabilitation efforts across Gerroa Sand Quarry continue to achieve positive outcomes, with most management zones assessed as being in good to excellent condition. Established rehabilitation areas now support well-developed native canopy, midstory and understorey vegetation and generally require only routine maintenance. Native vegetation is increasingly dominant within many zones, particularly where ongoing weed management has reduced competition from invasive species.

Compared with the previous monitoring period, weed management activities have continued to be effective, particularly for Lantana. Many infestations recorded throughout the Site now consist of dead stands, demonstrating the success of previous control measures. While Lantana remains present within several management zones, its abundance and dominance appear to have decreased in comparison to previous years. Native regeneration was observed within several areas where Lantana has been controlled, particularly within Zones 1 and 4 and the more established revegetation areas.

Despite these improvements, several weed species continue to require ongoing management:

- Moth Vine remains widespread throughout several management zones and has the potential to spread into adjacent native vegetation if left unmanaged.
- Giant Reed continues to occur along creek lines and within wetter portions of the Site, particularly within Subzones 2A.1, 2B.1, 2B.2 and 2C.2.
- Wild Tobacco Bush, Rhodes Grass, Fireweed and Cobbler's Pegs were also recorded throughout several zones, predominantly within disturbed areas and along roadsides.

Similar to last year, there is evidence of grazing on native plantings in the southeastern end of Subzone 2C.1. The grazing has been addressed with the implementation of deer control in the early months of 2026, where 13 deer were removed from the Site. These grazing impacts appear localised, continued monitoring is recommended in to ensure recently established plantings are not adversely affected. If grazing persists in the future, deer control is recommended.

Future management should focus on maintaining the positive outcomes achieved through previous rehabilitation works. Continued weed control should target remaining Lantana infestations and prioritise follow up control for stands that are regrowing from previous weed control. Management should be undertaken for other priority weeds like Moth Vine, Giant Reed and Wild Tobacco Bush within areas where these species may impede native vegetation establishment. Repair of damaged fencing within Subzones 1.2 and 7 is also recommended to prevent unauthorised access from roadside. In younger revegetation areas, ongoing maintenance including mowing, weed control and supplementary debris and planting, where required, will assist in promoting successful establishment and long-term vegetation resilience.

Priority management actions for the coming year have been provided in Table 2. Additional information on control methods for priority weeds is provided in Appendix 2.



Table 2: Priority Management Actions 2026/2027

Priority	Management Action	Recommended Approach	Location
High	Continue targeted Lantana control.	Second round of spray for Lantana. Monitor treated infestations and follow up with cut-and-paint treatment where regrowth occurs.	All zones
Medium	Repair damaged fencing.	Repair or replace damaged fencing to prevent unauthorised access from roadside.	Zone 7 and Subzone 1.2
Medium	Control Tobacco Bush and Moth Vine	Undertake cut-and-paint treatment of established plants and monitor for regrowth and new growth.	Most zones, particularly Zone 6 and Subzone 2A.2 and 2E – southeast corner.
Medium	Control Giant Reed	Undertake cut-and-paint treatment of established plants and monitor for regrowth and new growth.	Zone 2 and 6
Medium	Monitor grazing impacts.	Monitor recently planted areas and replace damaged plantings if required.	Southwestern end of Subzone 2C.1
Medium	Supplementary planting.	Undertake in-fill planting where canopy/midstory gaps exist or where plantings have failed.	Southwestern end of Subzone 2C.1.
Low	Control roadside weed species.	Spot spray and manually remove Rhodes Grass, Fireweed, Cobbler's Peg and Spear Thistle within disturbed areas and along access tracks and roadsides.	All zones



4 Conclusion

The 2026 annual monitoring inspection found that rehabilitation areas at Gerroa Sand Quarry continue to develop positively and remain generally consistent with the objectives of the approved Landscape and Rehabilitation Management Plan. Most revegetation zones are now well established and support native vegetation communities that require only routine maintenance and monitoring.

Ongoing weed management remains the primary maintenance requirement across the Site, with continued control of Lantana, Tobacco Bush and other priority weed species recommended. Subject to ongoing maintenance and monitoring, the rehabilitation areas are expected to continue improving in condition and developing towards self-sustaining native vegetation communities.



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Plates



Plate 1: Madeira Winter Cherry Bush growing within Subzone 1.4



Plate 2: Rhodes Grass (*Chloris gayana*) growing in front of a dead stand of Lantana (*Lantana camara*) found on the western boundary of Subzone 1.3.



Plate 3: Spear Thistle (*Cirsium vulgare*) found within Subzone 2A.2.



Plate 4: Overgrown exotic vegetation in the southwestern end of Subzone 2C.1. Some native plantings are establishing themselves – Swamp Oak (*Casuarina glauca*) and Cabbage Palm (*Livistona australis*).



Plate 5: Grazed Swamp Oak (*Casuarina glauca*) planting in the southwestern end in Subzone 2C.1.



Plate 6: Giant Reed (*Arundo donax*) growing in Subzone 2B.2.



Plate 7: Giant Reed (*Arundo donax*) growing next to a creek, near a well-established Swamp Oak forest in Subzone 2D.



Plate 8: Native plantings with plastic sleeves that are establishing well in Subzone 2D.



Plate 9: Fireweed, Tobacco Bush and Crofton Weed spreading throughout the southeastern corner of Subzone 2E.



Plate 10: Lantana (*Lantana camara*) and Giant Reed (*Arundo donax*) are the dominate vegetation at the southern end of Zone 3.



Plate 11: Tobacco Bush (*Solanum mauritianum*) and Lantana (*Lantana camara*) growing in Zone 6.



Appendix 1: Selected Conditions of Approvals

Condition 17

The Proponent shall:

(b) ensure that within four years of the date of this approval¹, the additional plantings in the Northern Corridor and Southern Rehabilitation Area are comprised of at least 60% of the plant species recorded for the representative plant communities in the quarry extension area, such as Bangalay Sand Forest and Littoral Rainforest.

Condition 20

The proponent shall:

(a) commence Compensatory Planting and the vegetation screen along the Crooked River Road frontage north of the east-west link (as shown conceptually in Appendix 3) within 12 months of the date of this approval or when sufficient propagation material has been collected; and

(b) not sever the east-west link until it can be demonstrated to the satisfaction of the director-general that the established communities represented in the northern corridor comprise at least 60% of the native flora species and the Northern Corridor is successful according to the criteria in Condition 25 to the satisfaction of the director-general.”

Condition 23

Successful establishment of the Northern Corridor shall be measured by the following criteria:

- (a) presence of native flora species;
- (b) a majority of the flora species recorded from the removed forest occur in the area (e.g. 60% of flora species recorded in removed forest are present);
- (c) species from all four layers have been planted and at least 50% of the projected cover has been achieved for each of the shrub and ground cover layers;
- (d) self-sustaining native plant populations (e.g. regeneration of a second generation);
- (e) no dominance by single flora species (e.g. Bracken);
- (f) weeds are not significantly impacting on the native vegetation;
- (g) weeds do not represent a majority of the flora species or a higher percentage cover than the native flora species; and
- (h) impacts such as grazing are excluded from the area.

Condition 24

Successful establishment of fauna habitat in the Northern Corridor would be measured by:

- (a) presence of species;
- (b) a majority of the resident species recorded from the removed forest occur in the area;

¹ The date of this approval was effective from the 1st of June.



- (c) fauna populations are resident in the area;
- (d) pest animals are controlled and not impacting upon the fauna or its habitat; and
- (e) impacts such as grazing are excluded from the area.

Condition 25

Prior to the severance of the East-West Link the Proponent shall:

- (a) determine the presence of species in both the East-West Link and Northern Corridor by conducting standard animal survey techniques at least twice in the first year (e.g. Elliot trapping for small mammals, pitfall trapping for reptiles, observational surveys for frogs and birds, and spotlighting transects for arboreal animals);
- (b) determine whether a majority of animal species (particularly those determined to be likely to be impacted by fragmentation) utilising the corridor in the East-West Link are present in the conservation area and the Northern Corridor and the re-created link at the northern boundary.





Appendix 2: Priority weeds for the South East region

Note: the South East region includes the local council areas of Bega Valley, Eurobodalla, Goulburn, Mulwaree, Hilltops (eastern), Kiama, Queanbeyan-Palerang Regional, Shellharbour, Shoalhaven, Snowy Monaro Regional, Upper Lachlan, Wingecarribee, Wollongong and Yass Valley.

WARNING: ALWAYS READ THE LABEL

Users of agricultural or veterinary chemical products must always read the label and any permit, before using the product, and strictly comply with the directions on the label and the conditions of any permit. Users are not absolved from compliance with the directions on the label or the conditions of the permit by reason of any statement made or not made in this information. To view permits or product labels go to the Australian Pesticides and Veterinary Medicines Authority website www.apvma.gov.au.

Common name	Scientific name	Duty under <i>Biosecurity Act 2015</i>	Action
African Lovegrass	<i>Eragrostis curvula</i>	Regional Recommended Measure Land managers reduce impacts from the plant on priority assets.	Spot spray new growth if any arise with a 360g/L Glyphosate based herbicide at a diluted rate of 10ml/Litre of water.
Asparagus fern	<i>Asparagus aethiopicus</i>	General Biosecurity Duty All plants are regulated with a general biosecurity duty to prevent, eliminate or minimise any biosecurity risk they may pose. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable. Prohibition on certain dealings Must not be imported into the state, sold, bartered, exchanged or offered for sale.	Main methods of control include excluding plants from uninfested areas, physical removal of all plants parts, and herbicide application. Spot spraying is most successful when completed between flowering and berries forming. Spot spray using 360g/L Glyphosate based herbicide at a rate 1 part glyphosate to 50 parts water.



Common name	Scientific name	Duty under <i>Biosecurity Act 2015</i>	Action
Bitou bush	<i>Chrysanthemoides monilifera</i> subsp. <i>rotundata</i>	Biosecurity Zone The Bitou Bush Biosecurity Zone is established for all land within the State except land within 10 kilometres of the mean high water mark of the Pacific Ocean between Cape Byron in the north and Point Perpendicular in the south. Within the Biosecurity Zone this weed must be eradicated where practicable, or as much of the weed destroyed as practicable, and any remaining weed suppressed. The local control authority must be notified of any new infestations of this weed within the Biosecurity Zone.	Mature bitou bush plants can be slashed, whilst seedlings can be hand-pulled to remove the entire root system. Plants are liable to resprout after slashing alone, but applying herbicide to stems immediately after cutting should prevent regrowth. Use cut and paint methods or spot spray using 360g/L Glyphosate based herbicide at a diluted rate of 5 or 10ml/Litre of water.
Blackberry	<i>Rubus fruticosus</i> species aggregate	Prohibition on dealings Must not be imported into the State or sold, bartered, exchanged or offered for sale. <i>All species in the Rubus fruticosus species aggregate have this requirement, except for the varieties Black Satin, Chehalem, Chester Thornless, Dirksen Thornless, Loch Ness, Murrindindi, Silvan, Smooth Stem, and Thornfree.</i>	Not to be mulched with native species to reduce spread. A combination of slashing or hand removal and spot spraying with a 360g/L Glyphosate based herbicide at a diluted rate of 10ml/Litre of water.
Cassia	<i>Senna pendula</i> var. <i>glabrata</i>	General Biosecurity Duty All plants are regulated with a general biosecurity duty to prevent, eliminate or minimise any biosecurity risk they may pose. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable.	Spot spraying is recommended for seedlings and plants less than 2 m tall in dense infestations. Cut and paint methods should be used on taller or individual plants. Dried seed pods can be burnt in a hot fire. Contact your local council for further advice on how to dispose of seed pods. For spot spray and cut and paint methods use 360g/L Glyphosate at a diluted rate of 20 ml/Litre of water.



Common name	Scientific name	Duty under <i>Biosecurity Act 2015</i>	Action
Common thornapple	<i>Datura stramonium</i>	General Biosecurity Duty All pest plants are regulated with a general biosecurity duty to prevent, eliminate or minimise any biosecurity risk they may pose. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable.	Common thornapple can be controlled by herbicides, mulching, slashing, hand-pulling or chipping. Preventing plants from seeding is the most effective way to control it. For chemical control of small infestations use Glyphosate 450 g/L in a handgun spray at a rate of 400 to 560 mL per 100 L of water.
Coral tree	<i>Erythrina crista-galli</i>	General Biosecurity Duty All plants are regulated with a general biosecurity duty to prevent, eliminate or minimise any biosecurity risk they may pose. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable.	Seedlings can be removed by hand or be dug out. Cut stump method or stem injection is recommended for mature plants. This involves cutting the trunk or making an injection into the trunk and applying herbicide within 15 seconds. For chemical control use 360g/L Glyphosate at a rate of 1 part glyphosate and 1.5 parts water.
Crofton weed	<i>Ageratina adenophora</i>	General Biosecurity Duty All plants are regulated with a general biosecurity duty to prevent, eliminate or minimise any biosecurity risk they may pose. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable.	Crofton weed can be controlled using a combination of methods, in conjunction with pasture and grazing management practices, aimed at creating an unfavourable environment for weed invasion. Small infestations can be manually removed. For larger infestations a combination of slashing and chemical application is used. When spraying Crofton weed use 360g/L Glyphosate based herbicide at a rate of 5 ml/Litre of water.
Fireweed	<i>Senecio madagascariensis</i>	Regional Recommended Measure Exclusion zone: whole of region except the core infestation area of Wollongong, Kiama, Shellharbour,	Herbicides are most effective in combination with healthy, competitive pastures. The best time to treat



Common name	Scientific name	Duty under <i>Biosecurity Act 2015</i>	Action
		Eurobodalla, Shoalhaven, Bega Valley and Wingecaribee councils. Whole region: Land managers should mitigate the risk of new weeds being introduced to their land. The plant should not be bought, sold, grown, carried or released into the environment. Exclusion zone: The plant should be eradicated from the land and the land kept free of the plant. Core area: Land managers reduce impacts from the plant on priority assets.	fireweed with herbicide is late autumn. This controls the peak numbers of seedlings and young plants. Spot spray with a 600g/kg Metsulfuron-methyl (Brush off), a broad leaf selective herbicide to avoid harming native grasses, at a diluted rate of 1g/10L of water.
Giant Reed	<i>Arundo donax</i>	General Biosecurity Duty All plants are regulated with a general biosecurity duty to prevent, eliminate or minimise any biosecurity risk they may pose. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable.	Cut and paint using 360g/L Glyphosate at a diluted rate of 1 part glyphosate to 1.5 parts of water.
Lantana	<i>Lantana camara</i>	Regional Recommended Measure Exclusion zone: whole region excluding the core infestation area of Eurobodalla, Kiama, Shellharbour, Wollongong and the Shoalhaven local government area north of the Lantana Containment Line at 35°11'42 S Whole region: Land managers should mitigate the risk of new weeds being introduced to their land. The plant should not be bought, sold, grown, carried or released into the environment.	Gradually control sections of large infestations, starting at the edges. Dry or frosty periods are good times to work on mature lantana plants, treat regrowth or seedlings before they are 1 m high and control young plants before they are a year old to prevent new fruit and seeds. Chemical control: Cut stems off at about 15 cm from the ground. Apply herbicide to the cut surface of the stump within 15



Common name	Scientific name	Duty under <i>Biosecurity Act 2015</i>	Action
		Exclusion zone: The plant should be eradicated from the land and the land kept free of the plant. Core area: Land managers reduce impacts from the plant on priority assets.	seconds. Treat every cut stem because lantana regrows vigorously from untreated stems or a variety of spot spray especially on new growth if any arise with a 360g/L Glyphosate based herbicide at a diluted rate of 10ml/Litre of water.
Maderia Vine	<i>Anredera cordifolia</i>	General Biosecurity Duty All plants are regulated with a general biosecurity duty to prevent, eliminate or minimise any biosecurity risk they may pose. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable. Prohibition on dealings Must not be imported into the State or sold.	Successful control of Madeira vine requires all the tubers and bulbils to be removed or killed. Control activities are long-term, and require regular follow-up for many years. Single control activities generally cause disturbance that results in vigorous regrowth and can lead to worse infestation levels unless dedicated follow-up occurs.
Moth Vine	<i>Araujia sericifera</i>	General Biosecurity Duty All plants are regulated with a general biosecurity duty to prevent, eliminate or minimise any biosecurity risk they may pose. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable.	Cut and paint using 360g/L Glyphosate at a diluted rate of 20 ml/Litre of water.
Tobacco Bush	<i>Solanum mauritianum</i>	General Biosecurity Duty All plants are regulated with a general biosecurity duty to prevent, eliminate or minimise any biosecurity risk they may pose. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty	Cut and paint using 360g/L Glyphosate at a diluted rate of 20 ml/Litre of water.



Common name	Scientific name	Duty under <i>Biosecurity Act 2015</i>	Action
		to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable.	



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