

WERRIS CREEK COAL MINE

2021 ANNUAL REVIEW

Table 1 - Annual Review Title Block

Name of Operation	Werris Creek No. 2 Coal Mine
Name of Operator	Werris Creek Coal Pty Limited
Development consent / Project Approval #	Project Approval 10_0059 Modification 4
Name of holder of development consent/project approval	Werris Creek Coal Pty Limited
Mining lease # (Leaseholder)	ML1563 (Creek Resources Pty Ltd & Betalpha Pty Ltd); ML1671, ML1672 (Werris Creek Coal Pty Limited)
Water Licence # (Licence Holder)	WAL29506 (Betalpha Pty Ltd); WAL32224 (Werris Creek Coal Pty Ltd)
MOP Commencement Date	14 January 2016
MOP Completion Date	30 November 2022
Annual Review Commencement Date	1 January 2021
Annual Review Completion Date	31 December 2021
<p>I, Dean Scott, certify that this audit report is a true and accurate record of the compliance status of Werris Creek Coal Mine for the period 1st January 2021 to 31st December 2021, and that I am authorised to make this statement on behalf of Werris Creek Coal Pty Ltd.</p> <p>Note.</p> <p>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.</p> <p>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).</p>	
Name of Authorised Reporting Officer	Dean Scott
Title of Authorised Reporting Officer	General Manager – Open Cut Operations
Signature	
Date	31/03/22 / .

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1 STATEMENT OF COMPLIANCE

This Annual Review has been prepared to provide a summary of the environmental performance of the Werris Creek Coal Mine (WCC) over the reporting period. The compliance status of the WCC against relevant approvals during the reporting period was assessed as at the end of the reporting period (i.e. 31 December 2021) and is summarised in Table 1.

Table 1 – Statement of Compliance

Were all the conditions of the relevant approvals complied with?	Yes/No
Project Approval 10_0059 Modification 3	Yes
Mining Operations Plan (MOP)	Yes
Mining Lease ML 1563	No
Mining Lease ML 1671	No
Mining Lease ML 1672	No
EPL12290	Yes
WAL29506	Yes
WAL32224	Yes

Any non-compliances during the reporting period are detailed in Table 3 and ranked according to the compliance status key in Table 2. Section 11 provides further details of any non-compliance and actions undertaken or proposed for the following reporting period to prevent re-occurrence and mitigate any potential adverse effects, as well as other compliance triggers that were investigated.

Table 2 – Compliance Status Key

Risk Level	Colour Code	Description
High	Non-compliant	Non-compliance with potential for significant environmental consequences, regardless of the likelihood of occurrence
Medium	Non-compliant	Non-compliance with: <ul style="list-style-type: none"> potential for serious environmental consequences, but is unlikely to occur; or potential for moderate environmental consequences, but is likely to occur
Low	Non-compliant	Non-compliance with: <ul style="list-style-type: none"> potential for moderate environmental consequences, but is unlikely to occur; or potential for low environmental consequences, but is likely to occur
Administrative non-compliance	Non-compliant	Only to be applied where the non-compliance does not result in any risk of environmental harm (e.g. submitting a report to government later than required under approval conditions)

Table 3 – Non-Compliances

Relevant Approval	Cond. #	Condition Description (Summary)	Compliance Status	Comment	Where addressed in Annual Review
ML1563	3	Submission of Annual Environmental Management Report in accordance with Director General's guidance and containing a review and forecast of performance.	Non-compliant	2020 Annual Review inadvertently not submitted to Resources Regulator.	Section 11
ML1671	4	Submission of Annual Environmental Management Report in accordance with Director General's guidance and containing a review and forecast of performance.	Non-compliant	2020 Annual Review inadvertently not submitted to Resources Regulator.	Section 11
ML1672	4	Submission of Annual Environmental Management Report in accordance with Director General's guidance and containing a review and forecast of performance.	Non-compliant	2020 Annual Review inadvertently not submitted to Resources Regulator.	Section 11

2 INTRODUCTION

This is the fifteenth Annual Review produced for the Werris Creek No. 2 Coal Mine (WCC) and has been prepared in accordance with the NSW Department of Planning, Industry and Environment's (DPIE) Integrated Mining Policy – Annual Review Guideline, October 2015. This document has been prepared to satisfy the following requirements:

- The Annual Review requirements of the DPIE under the Project Approval PA 10_0059 (Condition 3 Schedule 5);
- Environmental Management Report requirements of the Division of Mining, Exploration and Geoscience (MEG) under the WCC Mining Leases; and
- The routine reporting expectations of DPI Water.

This report covers the period between 1st January 2021 to 31st December 2021.

2.1 PROJECT BACKGROUND

WCC is located approximately 4 km south of Werris Creek and 11 km north-northwest of Quirindi in northwest slopes and plains region of New South Wales (Figure 1) and lies within a 910 ha area covered by Mining Lease (ML) 1563, ML1671 and ML1672. The current Project Approval (PA) 10_0059 Modification 2 limits mining until 31st December 2032. The Mining Operations Plan (MOP) covers a 7-year period from the 14th January 2016 to the 30th November 2022. WCC has approval to mine in full the Werris Creek coal measures.

WCC is owned and operated by Werris Creek Coal Pty Limited (WCC), a wholly owned subsidiary of Whitehaven Coal Limited (WHC). The key operational personnel responsible for environmental management at WCC are listed in Table 4.

Table 4 – Key Personnel at WCC

Name	Title	Contact
Mr Harry Mills	WCC Environmental Officer	02 6763 6000
Ms Megan Martin	WCC Environmental Superintendant	02 6763 6000
Mr Murray O'Keefe	WCC Operations Manager	02 6763 6000
Mr Dean Scott	General Manager – Open Cut Operations	02 6741 9300



Figure 1: WCC Site Map

3 APPROVALS

Table 5 provides a summary of the key current licences, leases and approvals that have been obtained for the operation of WCC.

Table 5 – Licences, Leases and Approvals

Authority	Approval	Number	Issue	Expiry	Comments
Department of Planning Infrastructure & Environment (DPIE)	Project Approval	PA10_0059	25/10/2011	31/12/2032	Life of Mine Project allows northerly continuation for entire coal deposit mining up to 2.5Mtpa and 24 hours 7 days per week.
		PA10_0059 MOD1	30/08/2012	31/12/2032	Modification of Biodiversity Offset Area to allow for augmentation of VWD1 to 250ML.
		PA10_0059 MOD2	3/11/2015	31/12/2032	Modification of overburden emplacement design, enabling of a dry processing plant, and to allow void water for agricultural use.
Department of Regional NSW – Division of Mining, Exploration and Geoscience (DMEG)	Mining Lease	ML 1563	23/03/2005	23/03/2026	Mining Lease granted for 21 years.
		ML 1671	9/03/2012	9/03/2032	Mining Lease granted for 21 years.
		ML 1672	9/03/2012	9/03/2032	Mining Lease granted for 21 years.
	Mining Operations Plan	None	14/01/2016	30/11/2022	MOP approved on 14 th January 2016
Environment Protection Authority	Environment Protection Licence	12290	18/04/2005	Anniversary date: 1 April Review Date: 23/06/2024	Varied 23 rd July 2021 to allow for burial of tyres
Department of Primary Industries – Water	Water Access Licence	WAL29506	21/02/2013	Perpetuity	Aquifer – 50ML annual allocation. DPI-Water reference number 90AL822531. Formerly 90BL252588
		WAL32224	19/06/2013	Perpetuity	Aquifer – 211ML annual allocation. DPI-Water reference number 90AL828344. Formerly 90BL255087
	Water Works Approval	90WA822532	21/02/2013	15/01/2025	Linked to WAL29506. Bore. Formerly 90PT982801
		90WA828345	19/06/2013	25/06/2027	Linked to WAL32224. Excavation. Formerly 90PT982872
Australian Department of Agriculture, Water and the Environment	Environment Protection and Biodiversity Conservation Act Approval	2010/5571	21/12/2011	31/12/2032	Authorises impacts on EPBC listed threatened species and communities and listed migratory species
Dam Safety Committee	Declared Dams	Werris VWD1	18/10/2012	Perpetuity	Significant Sunny Day and Flood Consequence
		Werris VWD3	13/12/2012	Perpetuity	
		Werris VWD4	13/12/2012	Perpetuity	

4 OPERATIONS SUMMARY

4.1 EXPLORATION ACTIVITIES

There were no exploration activities undertaken in the reporting period.

4.2 MINING OPERATIONS

Table 6 presents the production summary for the previous and current reporting periods and the anticipated production schedule for the next reporting period. ROM coal production is summarised by calendar year to align with PA_0059 conditions. All units are in tonnes unless otherwise stated.

Table 6 – Production Summary

Material	Approved limit	Previous reporting period (actual)	This reporting period (actual)	Next Reporting period (forecast)
Waste Rock / Overburden (bcm)	N/A	12,653,604	13,994,182	12,335,275*
ROM Coal (t) (calendar year)	2,500,000 (PA 10_0059)	2,005,043	1,491,960	1,500,000*
Coarse reject (t)	N/A	0	0	0
Fine reject (t)	N/A	0	0	0
Saleable Product (t)	5,000,000 (EPL12290)	1,659,528	1,491,960	1,500,000*

*Estimate

4.3 COAL HANDLING AND PROCESSING

During the reporting period, coal processing operated Monday to Friday 6:00am to 2:40am with an occasional weekend shift. Train loading operations occurred 24 hours per day, 7 days per week dependent on train scheduling. Coal is segregated at the ROM coal stockpile based on the expected ash content of the coal. The higher ash coal products are processed through the fixed plant crusher and subsequently processed through the secondary crusher. Low ash coal products are processed by the mobile crushers and then screened.

Product coal is transported by road trucks from the coal processing area to the product coal stockpile area at the train load out facility via the private coal haul road. The despatch of product coal from WCC is either railed to the Port of Newcastle or transported by road to domestic customers. Product movements by month for both rail and domestic road haulage can be found on the Whitehaven Coal website. WCC complied with Schedule 2, Conditions 7 and 8, of PA_0059. The maximum quantity of product coal stockpiled on site during the reporting period was 216,000 tonnes, which occurred during June 2021 and the total quantity of domestic coal transported from site on public roads was 247.59 tonnes for the period.

4.4 OTHER OPERATIONS

4.4.1 Hours of Operation

Mining operations are permitted to be conducted up to 24 hours per day, 7 days per week, except for blasting, which is restricted to 9:00am – 5:00pm Monday to Saturday. During the reporting period, mining operations generally maintained reduced hours of 20.6 hours per day (6:00am – 2:40am) 5 days per week (Monday to Friday), and a 10.5 hour day shift on both Saturday and Sunday. Some extended hour shifts were undertaken periodically via an earlier shift start of 5:00am as and when required to meet production demands. Other ancillary tasks and maintenance activities continued up to 24 hours per day, 7 days per week.

4.5 NEXT REPORTING PERIOD

4.5.1 Exploration

No exploration drilling is planned at WCC in the next reporting period, however may be undertaken if required.

4.5.2 Mine Operations

The mine production rates are planned to continue at much the same level as in the current reporting period. Final minor vegetation clearing activities in mining areas over the next reporting period will be conducted in accordance with the approved Biodiversity Management Plan and MOP.

4.5.3 Rehabilitation progress

As per MOP commitments, WCC plans to seed approximately 70 hectares of the overburden emplacement in the 2022 reporting period. As the site is approaching closure detailed closure criteria are being developed together with a review of final landform. Updated site rehabilitation plans and methodologies will be detailed in the Annual Rehabilitation Plan that is replacing the MOP in July 2022 to comply with new legislation from the Resources Regulator. The continued focus for the period will be on the finalisation of decommissioned areas, landform development and growth medium development. Maintenance works and supplementary planting will continue on existing rehabilitation areas to continue replacing any losses realised during the period of low rainfall between 2017- 2019. It is noted that with the increased rainfall and the end of drought conditions (2020-2021) the existing rehabilitation is expected to respond accordingly to optimal conditions. This opportunity will be utilised to infill plant and respond to these conditions accordingly.

5 ACTIONS REQUIRED FROM PREVIOUS ANNUAL REVIEW

Table 7 – Actions/Comments to be addressed

Comments/Actions	Addressed
The Resources Regulator (RR) requested the AR includes rehabilitation progress towards completion criteria. The annual rehabilitation monitoring survey undertaken in Nov 2021 included a review and identification of background analogue sites that can be used to determine rehabilitation progression against the relevant analogue sites plant community types (PPT).	Results are documented in section 8.2.
Clearly include a comparison of monitoring results for all environmental aspects (noise, blasting, air quality, biodiversity, heritage and waste) against the relevant predictions in the EA, as required by Schedule 5 condition 3(b) of the approval	Noise: 6.1.2 Blasting: 6.2.2 Air Quality: 6.3.2 Biodiversity: 6.4.2 Heritage: 6.5.2 Waste: 6.6.2
Clearly identify any trends in the monitoring data for all environmental aspects (noise, blasting, air quality, biodiversity, heritage and waste) over the life of the project, as required by Schedule 5 condition 3(d) of the approval	Noise: 6.1.2 Blasting: 6.2.2 Air Quality: 6.3.2 Biodiversity: 6.4.2 Heritage: 6.5.2 Waste: 6.6.2
Clearly identify any discrepancies between the predicted and actual impacts of the project for all environmental aspects (noise, blasting, air quality, biodiversity, heritage and waste), as required by Schedule 5 condition 3(e) of the approval	Noise: 6.1.2 Blasting: 6.2.2 Air Quality: 6.3.2 Biodiversity: 6.4.2 Heritage: 6.5.2 Waste: 6.6.2
Identify when the next Independent Environmental Audit is scheduled.	Section – 10 Independent Audits

6 ENVIRONMENTAL PERFORMANCE

6.1 NOISE

6.1.1 Environmental Management

During the reporting period, the noise mitigation strategies to minimise the effects of noise on the community have been continued as outlined below.

- Annual testing of maximum sound power levels;
- Stage 1 or 2 noise attenuation fitted on all trucks;
- Use of enclosed conveyors; and
- Use of silent horns by excavator operators during the night periods.
- Property acquisitions;
- Private agreements;
- Installation and maintenance of an acoustic and visual amenity bund; and
- Installation and maintenance of a mine infrastructure area bund.

During the reporting period, a number of operational strategies remained in place to respond to potential noise impacts from mining operations including:

- Continuous noise monitoring;
- Attended noise monitoring;
- Noise control operators engaged;
- Sound filtering and interpretation to isolate the masking effects of extraneous noise sources from birds, insects, and other environmental noise sources during monitoring.
- Modification of operations, including shutting down plant items, to reduce offsite impacts.
- Night time surface operations and dump locations planned to minimise noise where possible; and

Figure 2- identifies the monitoring locations for both continuous and attended noise monitoring locations.

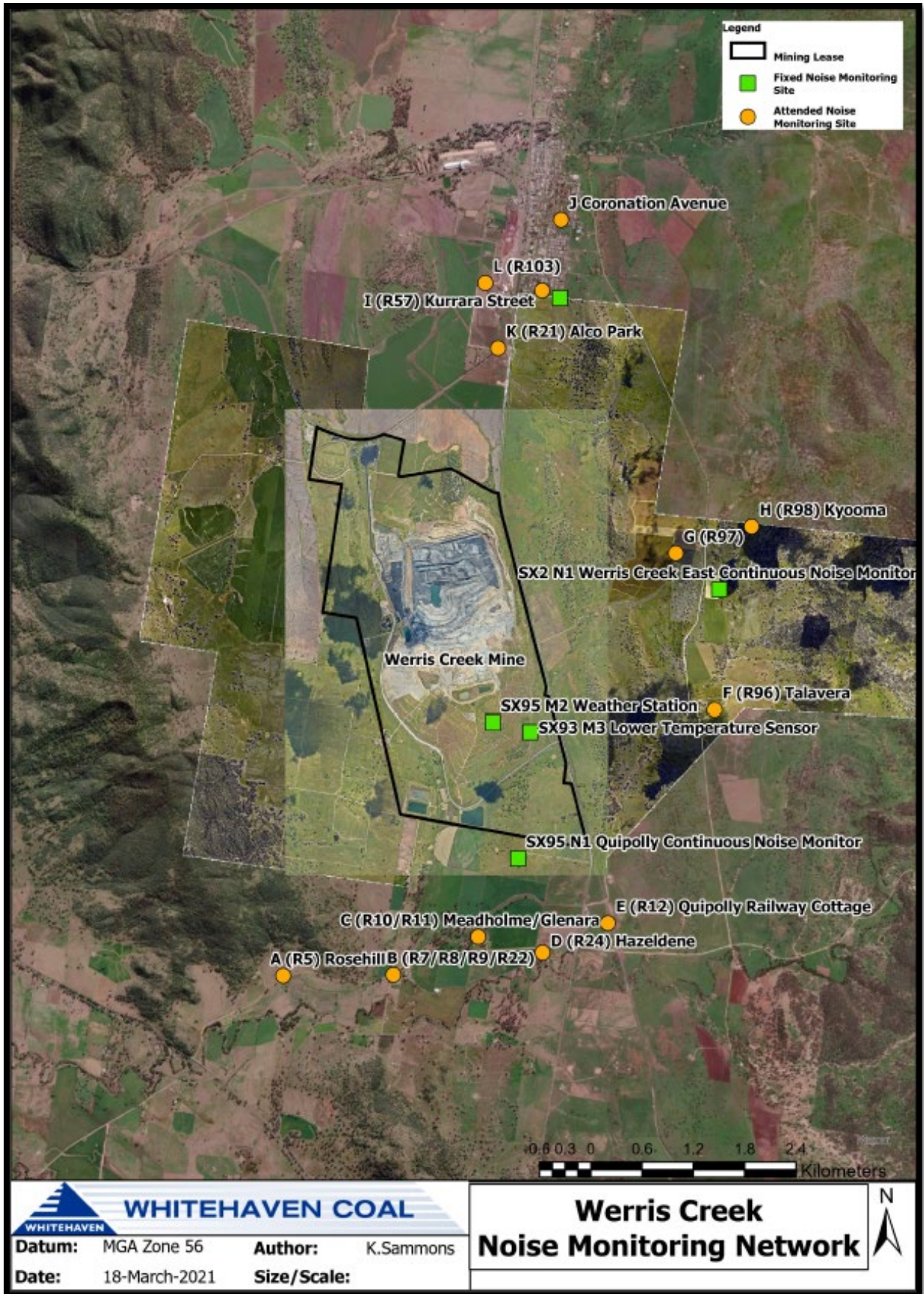


Figure 2: Site Noise Monitoring Locations

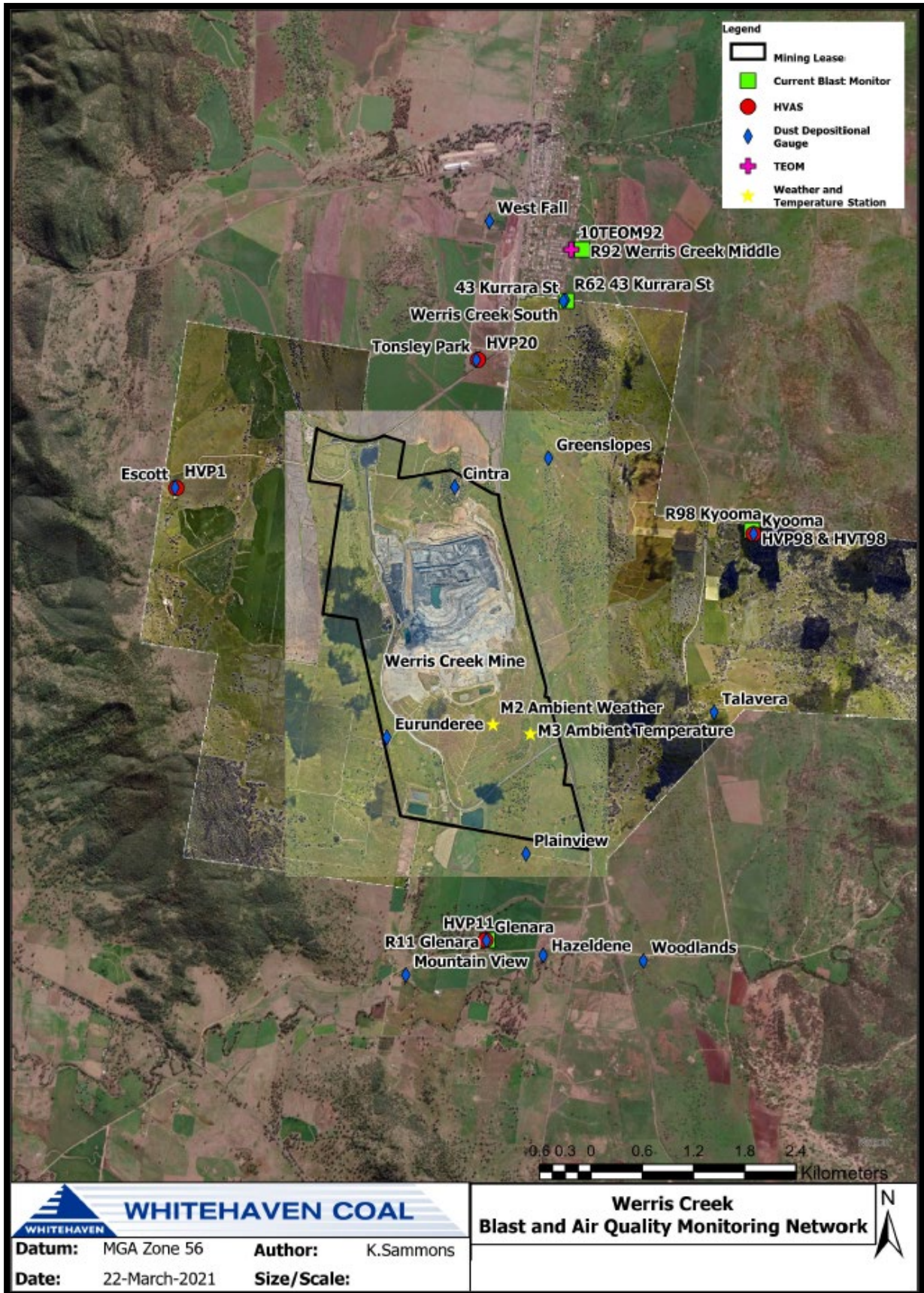


Figure 3: Blast Monitoring Sites and Air Quality Monitoring Network

6.1.2 Environmental Performance

Attended Monitoring

Attended monitoring is undertaken on a monthly basis by an independent consultant and is used to assess compliance with licence and approval limits for mine contributed noise. Attended noise monitoring identified no exceedances of the noise criteria during the reporting period (2021). As a comparison to previous years, no exceedance was reported in 2020.

EA Predictions

Table 8 – Measured WCC Noise Levels vs EA Predictions

Measured WCC noise levels above NVIA Predictions (2021)			
	Day-time dB(A)LAeq,15min	Evening/night-time dB(A)LAeq,15min	Sleep Disturbance dB(A)LA1,1min
B Gedhurst	--	--	4 ¹
G Kyooma	--	--	5 ³
	--	--	4 ⁴
H R97	--	1 ¹	6 ¹
	--	--	1 ²
	--	--	9 ³
I Kurrara	--	--	2 ³

1. Measured minus predicted level during May 2021
2. Measured minus predicted level during June 2021
3. Measured minus predicted level during July 2021
4. Measured minus predicted level during November 2021

Attended noise monitoring results for 2021 show that the majority of measured noise levels were significantly below EA predictions, in many cases mine noise was inaudible (Spectrum Acoustics 2022). In a small number of cases (7) the measured noise levels were above the predicted levels in the EA, however, remained below the relevant compliance limits (Table 8).

Review of monitoring results for the past four years show no upward or downward trending in noise levels from WCC. The majority of levels were inaudible, fewer than 3% were above EA predictions and none exceeded the relevant noise criteria at any receiver in any time period.

6.1.3 Proposed Improvement Measures

N/A

6.2 BLASTING

6.2.1 Environmental Management

Blast management measures are implemented at WCC to achieve acceptable outcomes in terms of blast overpressure and vibration, fume generation, and dust impacts.

During the reporting period, a number of controls were continued and maintained to reduce the potential for impacts, including:

- buffer management through acquisition of a number of adjacent properties through private negotiation;
- blasts designed with consideration of the predicted vibration of the shot, geology, ground conditions, explosives selection, initiation sequence/timing, powder factor, history/experience, and the sleeping time of the shot;
- maintenance of the predicted blast vibration objective for Werris Creek of 0.8 mm/s;
- explosive product selection and loading, to reduce the risk of auto-ignition and/or blast fume generation;
- stemming height and quality monitored by, the shot-firer to minimise the risk of elevated air overpressure from rifling;
- initiation sequence strategies are used to minimise vibration and air overpressure impacts;
- sleeping shots minimised to avoid potential deterioration of product;
- WCC aims to fire all blasts in the middle of the day generally between 12:00pm and 2:00pm, when atmospheric mixing is generally highest;
- blast notification prior to every blast;
- pre-blast weather assessment conducted;
- road closures of the Werris Creek Road when proximity of blasts occurred within 200 metres;
- blast fume rating recorded; and
- structural inspections - In response to claims of property damage due to blasting operations.

Air blast overpressure and ground vibration monitoring is undertaken at four monitoring locations illustrated in Figure 3, with vibration and air overpressure also measured adjacent to a railway culvert for blasts within 500 metres of this structure. All blast monitors were operational during the reporting period.

6.2.2 Environmental Performance

There were 58 blasts undertaken during the reporting period. All blast events have been within the applicable air blast overpressure and ground vibration limits set out in PA 10_0059 MOD2.

EA Predictions

As seen in Table 10 the 2021 Average Blasting Parameters has resulted in lower than expected average blast parameters at the lowest MIC level. This shows that the 2021 blasting impact data is lower than the predicted levels in the EA.

Maximum values have not exceeded the criteria of 120dB or 10mm/s. The maximum values for 2021 show correlation with the 1200 MIC blast predictions (Table 10). The maximum recorded data is consistent with the EA predictions for larger designed blasts.

An analysis of the data in Table 10 shows that the average blasting results are below the EA predictions therefore the monitoring data demonstrates a trend that blasting impacts are consistently below EA predicted levels.

Table 9 – Blasting EA Predictions

EA Predictions	2021 Performance
No exceedances of the maximum blast overpressure limit of 120dB have been predicted at any receiver for the range of blast sizes likely to be required.	No exceedance of 120dB was recorded in the reporting period. This is consistent with the EA predictions.

Table 10 - Predicted Blast Overpressure and Vibration Levels

Receiver	Distance	MIC (kg)						2021 Average Blasting Parameters		2021 Maximum Blasting Parameters		
		400		800		1200		OP	PPV	OP	PPV	
		OP	PPV	OP	PPV	OP	PPV					
R20	“Tonsley Park” ¹	1740*	111	1.4	113	1.7	115	1.9	102.25	0.52	115.9	1.30
R55	Pitkin ²	2680*	107	0.9	109	1.1	110	1.2	102.25	0.52	115.9	1.30
R14	WCC Owned Property ^{&}	1315*	114	1.8	116	2.3	118	2.6	-	-	-	-
R96	“Talavera” ³	2580*	107	0.9	109	1.1	111	1.3	100.9	0.83	114.7	2.72
R15	“Glenara Blast Monitor”	2525*	107	0.9	109	1.1	111	1.3	99.79	0.12	115.3	0.24

*Distances only accurate at time of report (Spectrum 2010)

¹Tonsley Park receiver is located approx. 1.2km South West of Werris Creek South Blast Monitor.

²Pitkin Receiver is located on Kurrara Street approx. 300m West of Werris Creek South Blast Monitor.

³Talavera Receiver is located approx. 2.1km South, South West of Kyooma Blast Monitor

[&] R14 was predicted as it was privately owned at the time. This property has since been purchased by WCC

6.3 AIR QUALITY

6.3.1 Environmental Management

The air quality criterion applicable to WCC is specified in Condition 16, Schedule 3 of PA10_0059 MOD2 and is managed through the implementation of the Air Quality and Greenhouse Gas Management Plan (AQGHGMP). During the reporting period, various controls were maintained and continued to manage dust including:

- Use of water carts across the site with an additional contractor water cart also utilised during rehabilitation activities;
- Overburden, coal and soil loading activities are not undertaken during periods of adverse weather (high winds or dry conditions), with SMS triggers employed to provide a near-real time operational response;
- Blasting activities restricted to suitable weather conditions and include notification to key stakeholders and residents;
- All personnel are instructed that all vehicles must utilise existing tracks on-site and must be driven to the conditions to minimise trafficable dust generation;
- The extent of disturbed areas (pre-strip clearing and rehabilitation) are minimised to that required for mining operations, with these areas stabilised and revegetated as soon as practicable once no longer required for ongoing operations;
- Water sprays are used on the coal feed hopper, crusher and at all conveyor transfer and discharge points;
- A sprinkler system installed during the reporting period to minimise dust entrainment off the steel Authority India Limited (SAIL) stockpile in adverse weather conditions;
- Water Sprinklers used on the TLO to aid in dust suppression in adverse weather conditions;
- Modification of operations, including shutting down plant items, to reduce offsite impacts; and
- Installed bird deterrents were maintained on depositional dust gauges to reduce contamination.

The above management measures will continue to be maintained throughout the next reporting period to continually improve air quality performance.

The WCC Air Quality Monitoring network is illustrated in Figure 3 and includes:

- Continuous monitoring of PM_{2.5} and PM₁₀ levels at the Werris Creek TEOM;
- PM₁₀ levels are measured at four High Volume Air Samplers (HVAS) distributed across neighbouring properties surrounding WCC. The HVAS run for twenty-four hours every six days. Total Suspended Particulate Matter (TSP) is also measured at a separate HVAS unit located at Kyooma;
- A network of dust deposition gauges surrounding WCC, measuring deposited dust and particulates collected monthly; and
- Six depositional dust gauges located in Quirindi to measure deposited dust adjacent to the railway line. The dust gauges are located in a linear fashion on either side of the railway line, in order to determine the contribution of coal dust to the overall reported quantity.

6.3.2 Environmental Performance

TEOM

Monitoring conducted at the Werris Creek TEOM indicates the PM₁₀ annual average remained below the applicable criteria of 30 µg/m³. The 24-hour measurements of PM₁₀ also remained below the 24-hour average limit of 50 µg/m³.

Figure 4 below shows continuous results for PM₁₀ (24hr) and PM_{2.5} (24hr) for the reporting period, as well as a running annual average throughout the reporting year.

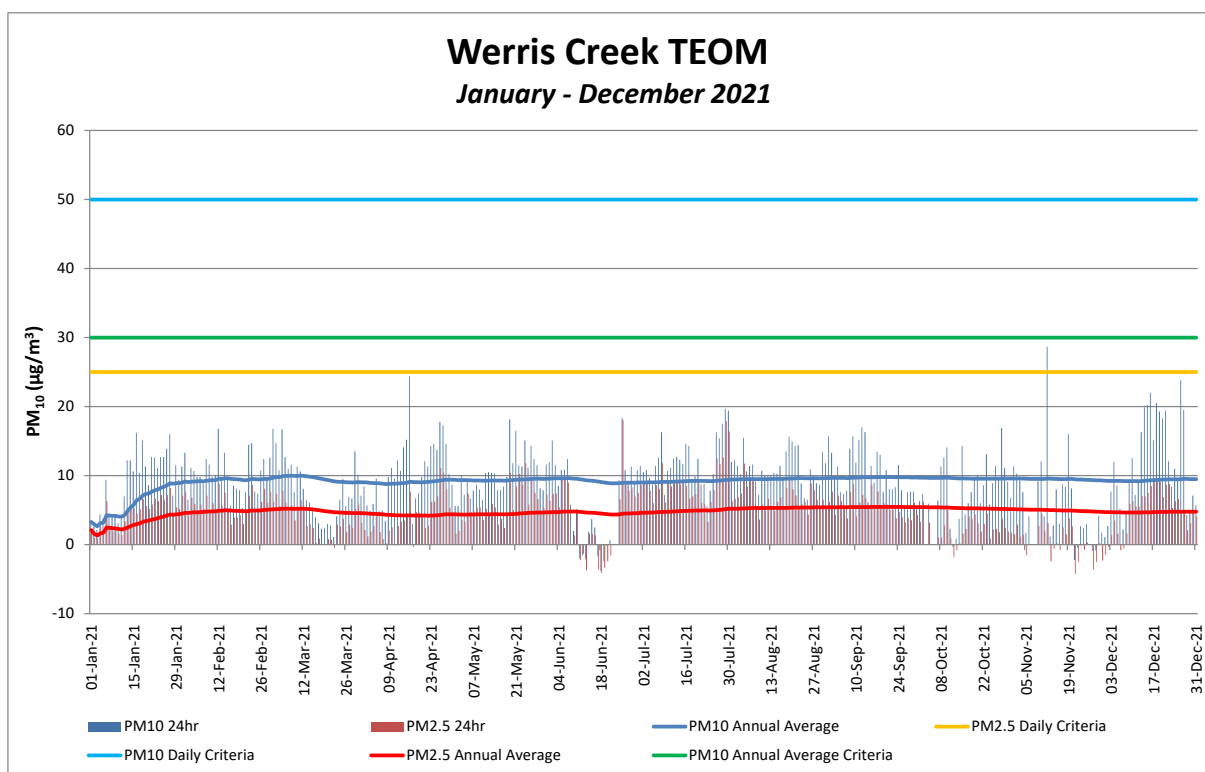


Figure 4: Werris Creek TEOM summary for January – December 2021

HVAS

Monitoring conducted across the HVAS PM₁₀ network has shown the rolling annual average PM₁₀ concentrations to be below the criteria of 30 µg/m³ at all monitoring stations across the network during the reporting period, see Figure 3 and Table 11.

All the 24-hour measurements of PM₁₀ remained below the daily criteria of 50 µg/m³ as shown in Figure 5.

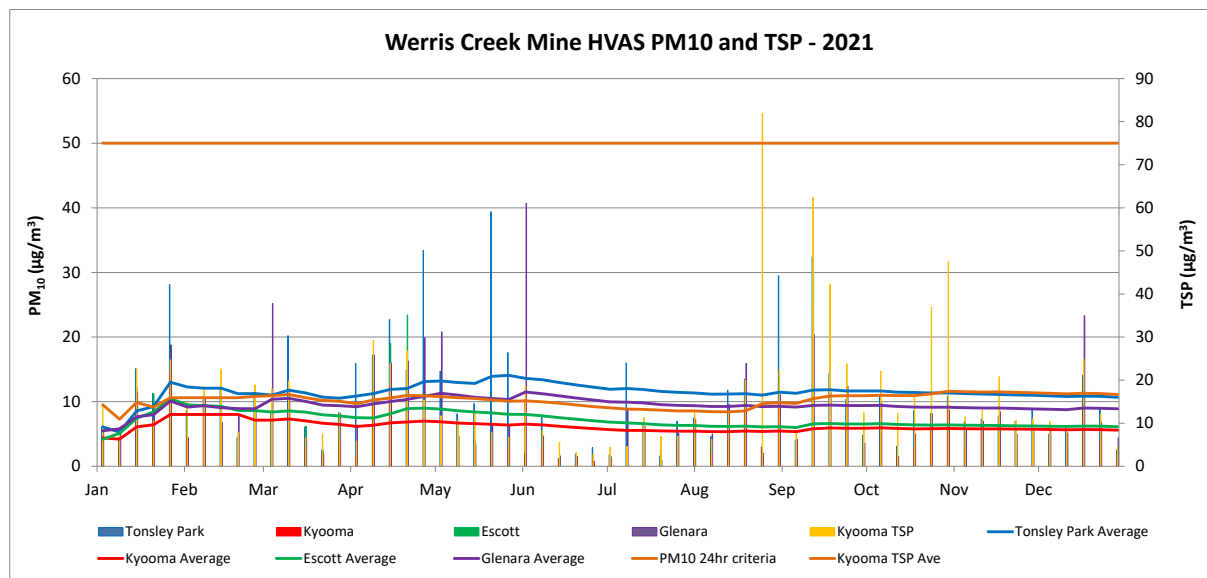


Figure 5: Werris Creek Mine HVAS PM₁₀ and TSP results for January – December 2021

A summary of current and historical HVAS and TEOM data is presented in Table 11.

Table 11 - TEOM and HVAS Averages

Location	2019	2020	2021
	µg/m ³		
10TEOM92 – Werris Creek	27.0	14.7	9.4
HVP20 – Tonsley Park	33.0	19.4	10.7
HVP98 – Kyooma	25.0	10.5	5.6
HVP1 – Escott	22.0	9.9	6.1
HVP11 – Glenara	32.3	14.5	8.9

Deposited Dust

Analysis of January – December 2021 monitoring results from depositional dust gauges shows that all monitoring sites met compliance criteria. DG2 (Cintra) and DG34 (Kurrara St) recorded some results that had been contaminated or investigated and identified as non-mining related readings as detailed below.

DG2 (Cintra) had consistently high dust levels through the first half of the year with a slight reduction through the later part of the year. The dust is consistent with the activities of the nearby mining activity immediately adjacent to the dust gauge – DG2 is located within the Mining Lease Boundary.

DG34 (Kurrara St) had an anomalous high result in March and August 2021 due to contamination (see Table 12). Considering the low deposited dust levels at other nearby isolated gauges to the DG34 gauge, it is apparent a localised source of contamination, unrelated to dust generating activities including activities at Werris Creek Coal Mine has contributed to the anomalous result.

An investigation of the results at dust gauge site DG34 (8 Kurrara street) and the accuracy of data is underway to attain if this gauge is providing accurate information or if this monitoring station is more susceptible to contamination being situated in a suburban street. A summary of deposited dust monitoring results is presented in Table 12 below.

Also DG96 (Talavera) has not been sampled since 2017 due to the landholder removing the dust gauge. Therefore, it has been removed from Table 12.

Table 12 – Deposited Dust Summary for 2021

EPL# 12290	ID	Property	Annual Average	Average - Excluded	Minimum	Maximum	AQGHGMP Criteria	# Results Excluded
-	DG1	Escott [^]	1.4	0.8	0.2	1.6	4.0	1
-	DG2	Cintra [^]	4.6*	2.8	1.5	12.9	4.0	2
-	DG3	Eurunderee [^]	1.3	1.3	0.1	2.2	4.0	0
-	DG5	Railway View [^]	2.5	1.9	0.7	8.8	4.0	0
-	DG9	Marengo [^]	1.0	1.0	0.2	2.9	4.0	0
#29	DG11	Glenara	1.2	0.9	0.3	2.0	4.0	1
-	DG14	Greenslopes [^]	0.7	0.7	0.1	1.9	4.0	0
-	DG15	Plain View [^]	0.6	0.6	0.1	0.9	4.0	0
-	DG17	Woodlands	1.1	1.1	0.1	2.7	4.0	0
-	DG20	Tonsley Park [^]	1.2	1.2	0.1	2.7	4.0	0
-	DG22	Mountain View	1.4	1.1	0.1	3.0	4.0	1
-	DG24	Hazeldene	0.9	0.9	0.2	2.1	4.0	0
-	DG34	8 Kurrara Street	5.8*	0.6	0.2	47.3	4.0	0
-	DG62	Werris Creek South	0.6	0.6	0.2	1.5	4.0	0
#30	DG92	Werris Creek Centre	0.4	0.4	0.1	0.7	4.0	0
#28	DG98	Kyooma	0.8	0.8	0.2	2.1	4.0	0
-	DG101	Westfall	1.3	1.3	0.4	2.3	4.0	0
-	DG103	West Street	1.3	1.3	0.3	4.0	4.0	0

[^] Properties owned by Werris Creek Coal;

*Sample contaminated with organic matter from non-mining source (i.e. bird droppings and insects)

@ Sample contaminated from local dust source non-mining related (i.e. fire, farming activities)

Bold = elevated result

NS = Not Sampled

+ = Dust gauge removed temporarily by landowner

EA Predictions

The annual averages have been compared to the EA predictions (Figure 6).

The EA predictions have been made via scenarios whereby scenario two is year 7 of mining production and scenario three is year 15 of mining production. Werris Creek Coal mine is currently operating in year 12 of mining production since the predictions were made (Heggies 2010).

As seen in Figure 6 below the Deposited Dust Gauges (DDG) have displayed a slight increase on some predictions made in the EA (Heggies 2010). This is a maximum variance of 0.5g/m²/month in scenario 3 which is 3 years away when production is reduced as mine approaches closure. This shows that the EA predictions are generally correct and some DDGs show an improvement on EA predictions.

In scenario 2 (year 7) three stations match or improve the prediction with five stations showing a slight increase in deposited dust levels than predicted.

It can be shown that PM₁₀ and TSP were significantly under the EA predictions in both Scenario 2 and 3 (Figure 6).

As shown in Table 11 the TEOM and HVAS Averages for previous years show a decreasing trend.

DUST DEPOSITION ($g/m^2/month$)

SCENARIO 2 (Year 7)	AQ Assessment* Receptor ID	2021 Annual Average	SCENARIO 2 (Year 7) PREDICTION	Variance from Prediction
DG11 "Glenara"	11	0.9	0.7	0.2
DG14 "Greenslopes"	14	0.7	1.1	-0.4
DG15 "Plain View"	15	0.6	0.9	-0.3
DG17 "Woodlands"	17	1.1	0.7	0.4
DG20 "Tonsley Park"	20	1.2	1.2	0.0
DG22 "Mountain View"	9	1.1	0.7	0.4
DG24 "Hazeldene"	24	0.9	0.7	0.2
DG98 "Kyooma"	98	0.8	0.7	0.1

SCENARIO 3 (Year 15)	AQ Assessment* Receptor ID	2021 Annual Average	SCENARIO 3 (Year 15) PREDICTION	Variance from Prediction
DG11 "Glenara"	11	0.9	0.7	0.2
DG14 "Greenslopes"	14	0.7	1.3	-0.6
DG15 "Plain View"	15	0.6	0.8	-0.2
DG17 "Woodlands"	17	1.1	0.7	0.4
DG20 "Tonsley Park"	20	1.2	1.1	0.1
DG22 "Mountain View"	9	1.1	0.6	0.5
DG24 "Hazeldene"	24	0.9	0.6	0.3
DG98 "Kyooma"	98	0.8	0.7	0.1

PM₁₀ (HVAS) ($\mu g/m^3$)

SCENARIO 2 (Year 7)	AQ Assessment* Receptor ID	2021 Annual Average	SCENARIO 2 (Year 7) PREDICTION	Variance from Prediction
HVP11 "Glenara"	11	8.9	16.3	-7.4
HVP20 "Tonsley Park"	20	10.7	20.0	-9.3
HVP98 "Kyooma"	98	5.6	16.0	-10.4

SCENARIO 3 (Year 15)	AQ Assessment* Receptor ID	2021 Annual Average	SCENARIO 3 (Year 15) PREDICTION	Variance from Prediction
HVP11 "Glenara"	11	8.9	15.9	-7.0
HVP20 "Tonsley Park"	20	10.7	19.9	-9.2
HVP98 "Kyooma"	98	5.6	15.9	-10.3

TSP (HVAS) ($\mu g/m^3$)

SCENARIO 2 (Year 7)	AQ Assessment* Receptor ID	2021 Annual Average	SCENARIO 2 (Year 7) PREDICTION	Variance from Prediction
HVT98 "Kyooma"	98	16.7	32.6	-15.9

SCENARIO 3 (Year 15)	AQ Assessment* Receptor ID	2021 Annual Average	SCENARIO 3 (Year 15) PREDICTION	Variance from Prediction
HVT98 "Kyooma"	98	16.7	32.2	-15.5

Figure 6 – Air Quality Data vs EA Predictions

*Air Quality Assessment for Werris Creek Coal Mine Life of Mine Project (Heggies Pty Ltd, December 2010)

- **DUST DEPOSITION** - Across all receptors, there was an overall annual average increase of 0.1 $g/m^2/month$ above the Predicted level for Year 7 and Year 15
- **PM₁₀** - Across all receptors, there was an overall annual average decrease of 9.0 $\mu g/m^3$ below Predicted level in Year 7 and 8.8 $\mu g/m^3$ in Year 15
- **TSP** - At designated receptor there was an annual average decrease of 15.9 $\mu g/m^3$ below Predicted level for Year 7 and 15.5 $\mu g/m^3$ in Year 15

6.4 BIODIVERSITY

6.4.1 Environmental Management

Biodiversity was managed in accordance with:

- Schedule 3 Conditions 28 of the PA 10_0059;
- EPBC 2010 / 5571 Condition 1; and
- The WCC Biodiversity Offset Management Plan (BOMP).

6.4.2 Environmental Performance

WCCM Biodiversity Offset Management Plan (BOMP) was approved by DPE on 30th August 2013 and Biodiversity and Offset Management Plan was approved by former DoEE (now DAWE) on 4th July 2017. The WCCM Biodiversity Offset Strategy is required to offset 1317ha of native woodland to achieve a 'like for like or better' biodiversity outcome across six Offset properties adjacent to the WCCM for the purpose of restoring vegetated corridors across WCC land holdings and Quipolly Creek Catchment linking with sub-regional habitat corridors.

Weather Summary of WCCM Offset Properties

Regionally central meteorological station to the BOAs is the Gunnedah Pool site (BOM 2021) which has recorded highly variable rainfall over the last 3 years; from driest in 140 years of 237mm in 2019, followed by above average rainfall years in 2020 and 2021 of 833mm and 990mm respectively resulting in major flooding of the Namoi River in November and December 2021. WHC maintains a meteorological station within the WCCM BOA with a summary of weather conditions experienced at the Narrawolga Offset property during the 2021 reporting period being annual daily average temperature ranges were -3°C to 36°C in 2022. The total annual rainfall in 2022 was 964mm with the maximum in November (210mm) and minimum in April (23mm).

Offset Security Management

The WCCM BOA has previously been secured using NSW Conveyancing Act 1919 Section 88E Instruments which were registered on 20th July 2018 and 2nd August 2018 finalising compliance with PA 10_0059 Schedule 3 Condition 27 and EPBC Act Approval 2010/5571 Condition 1 achieving securement of the WCCM BOS.

Infrastructure Management

During the reporting period, a total of 1.2km of new or repaired fencing (fauna friendly) was constructed along the perimeter of WCCM BOA (Offset properties of Eurunderee, Narrawolga, Railway View, Greenslopes) as well as maintenance of signage and gates undertaken as required to continue to restrict unauthorised access and minimise livestock incursion. During the reporting period, no waste items such as redundant or derelict assets/infrastructure were removed that were previously associated with the former agricultural use of WCCM BOA.

Seed Management

The routine seed assessments on the WCCM BOA aims to identify on a seasonal basis the life cycle stage and development of native plants to identify what, where, when and how to target appropriate resources to collect seed for future revegetation programs. A total of 6 species were collected resulting in 1,132 grams of local provident seed from the Marengo Offset property. As part of the WHC group wide revegetation planning; the onsite collected seed was supplemented with commercially sourced local and regional provident seed by reputable seed collectors. A local revegetation provider was

engaged to propagate the seed to produce Box Gum and non-EEC/CEEC Woodland overstorey species seedlings required for the 2021 revegetation program completed as well as planning for the 2022 revegetation program for the WCCM BOA.

Revegetation Management

The BOMP revegetation strategy focuses on restoration and revegetation of previously cleared derived native grasslands and assisting natural regeneration in better quality woodland areas. During the reporting period, revegetation ground preparation utilised tractors and excavators augering holes (to a depth >0.3m) to relieve compaction, improve permeability and infiltration to increase sub-surface soil moisture for planting as part of the 2021 revegetation program on the Eurunderee, Narrawolga, Railway View and Greenslopes Offset properties. There was no understorey revegetation carried out during the reporting period due to above average rainfall and vegetation growth preventing ecological burns from being undertaken and thus preventing adequate ground preparation from occurring. The overstorey revegetation program was undertaken between February and October 2021 across the Eurunderee, Narrawolga, Railway View and Greenslopes Offset properties with 8657 hiko seedlings of Box-Gum Woodland species planted over 135ha of the WCCM BOA. Combined with good seasonal conditions, routine tree watering and maintenance activities post planting have been successful to ensure that over 80% survival has been achieved for the WCCM BOA which is commensurate with the target Woodland vegetation structure.

Heritage Management

During the reporting period, annual heritage inspections were completed on the 7 known Aboriginal archaeological heritage sites and 1 European historical heritage site within the WCCM BOA. Each site is maintained with demarcation fencing around the heritage site perimeter and signage to mitigate access and disturbance.

Habitat Management

During the reporting period, habitat augmentation was undertaken with 17 nest boxes targeted for Small Gliders and Brown Treecreepers were installed on the Offset Properties of Railway View, Greenslopes and Marengo during reporting period.

Weed Management

WHC coordinated routine formal weed monitoring/inspections undertaken across WCCM BOA in February, May, September and December 2021. The priority weeds identified included legacy weeds inherited from previous owner's management regimes such as Johnston's Grass, Prickly Pear and St John's Wort as well as a range of broadleaf weeds within revegetation areas. The weed monitoring/inspections ensure that timely and prioritised weed control is undertaken on a seasonal basis with the spatial information directly given to spraying contractors to identify what, where, when and how to target appropriate resources across the WCCM BOA for weed control.

During the reporting period, WHC implemented a weed control program across the WCCM BOA including 468ha treated between February to December 2021 targeting St Johns Wort and Prickly Pear within revegetation areas and along tracks. Only appropriately qualified and experienced weed contractors (AQF3 accreditation or higher for use of herbicide) were engaged to undertake weed control works for WHC.

Feral Animal Management

WHC undertook routine pest animal monitoring across the WCCM BOA in February, May, September, and November 2021. The adoption of a "monitor, measure and manage" approach to feral animal

management will allow WHC to implement adaptive management in response to changes being measured through monitoring in feral animal abundance specific to the different geographical regions of the WCCM BOAs. Feral animal monitoring utilises the relevant methodologies for specific feral animals generally in accordance with the NSW DPI Monitoring Techniques for Vertebrate Pests so that a range of methods can be used such as transects/spotlighting and cameras traps where practicable and relevant to specific offset areas/properties. Monitoring demonstrated that certain animals like Eastern Grey Kangaroos can be high, Foxes, Hares and Feral Pigs can be in varying abundance from High to scarce seasonally on some offset properties with all other feral animal species recorded as scarce to low abundance levels across 2021. The feral animal monitoring ensures that timely and prioritised feral animal control is undertaken on a seasonal basis identifying what, where, when and how to target appropriate resources across the WCCM BOAs for feral animal management.

During the reporting period, WHC implemented a comprehensive feral animal control program across the WCCM BOAs with routine 1080 baiting and pig trapping programs undertaken in March (58 Foxes removed from 228 baits presented and 7 Feral Pigs trapped), June & July (76 Foxes removed from 171 baits presented), September (37 Foxes removed from 174 baits presented) and December 2021 (26 Foxes removed from 116 baits presented). A total of 689 baits were presented on WCCM BOA with 29% taken by feral animals. Night time open range shooting programs were implemented in conjunction with the other routine control programs resulting in an additional 5 Rabbits, 4 Hares and 3 Pigs were controlled in 2021. Only appropriately qualified and experienced feral animal contractors (appropriate feral animal management qualifications, NSW fire arm licence and pesticide accreditation where relevant) were engaged to undertake feral animal control works for WHC.

Soil & Erosion Management

Annual inspections were undertaken including unsealed fire break tracks and associated drainage structures across the WCCM BOA to review appropriate erosion and sediment control measures required in accordance with the Blue Book (Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom 2004)). Despite the above average rainfall during the reporting period; no locations of targeted additional maintenance identified out of 11 observations within the WCCM BOA needing further erosion and sedimentation. The remaining sites and tracks/drainage structures are maintained during routine WHC Biodiversity fire break track maintenance program.

Grazing Management

WCCM BOA has been destocked since 2012 and continued to be destocked and no strategic grazing occurring during the reporting period. There was no stock incursion recorded in the WCCM BOA during the reporting period.

Bushfire Management

During the reporting period, no bushfires occurred and no ecological burns were undertaken.

Monitoring Program

During the reporting period, the ecological monitoring program of the Werris BOA included winter bird surveys that were undertaken in August 2021 and annual spring flora monitoring of 25 sites across 4 vegetation zones (VZs) undertaken during October 2021 plus the annual fauna monitoring program including 24 bird monitoring sites, 10 pitfall/funnel trap monitoring sites, 14 diurnal herpetofauna survey sites and 16 microbat echolocation monitoring sites undertaken from September 2021. During the winter bird surveys, one threatened species (Little Lorikeet) was recorded. During flora monitoring, 3 VZs (North-west Slopes Dry Sclerophyll Woodlands – Good condition, Western Slopes Grassy Woodlands – Semi-cleared condition and Good condition) were recorded as meeting or exceeding completion

criteria for all 4 biometrics. Native plant species richness (NPS) completion criteria (native species richness benchmark for relevant biometric vegetation communities) was met or exceeded at 3 out of 4 VZs. Native overstorey cover (NOS) completion criteria (minimum overstorey cover benchmark for relevant biometric vegetation communities) was met or exceeded at 3 out of 4 VZs. Native midstorey cover (NMS) completion criteria (minimum midstorey cover benchmark for relevant biometric vegetation communities) was met or exceeded at all 4 VZs. Native ground cover grass (NGCG) completion criteria (minimum groundcover benchmark for relevant biometric vegetation communities) was met or exceeded at all 4 VZs. Comparison of individual plot data shows that NPS increased from 48% of sites last year to 64% of sites meeting or exceeding the completion criteria in 2021. Native overstorey cover (NOS) increased from 35% of sites last year to 56% of sites meeting or exceeding the completion criteria in 2021. Native midstorey cover (NMS) decreased from 100% of sites last year to 84% of sites meeting or exceeding the completion criteria in 2021. Native ground cover grass (NGCG) increased from 61% of sites last year to 92% of sites meeting or exceeding the completion criteria in 2021. Spring bird surveys recorded 65 bird species during standardised bird surveys across 26 sites and species richness values ranged from 5 to 20. This was a decrease from the 2020 species richness of 82 (range 5 to 35) due to reduced survey effort in 2021. Split by habitat, 44 species of bird were detected in 8 remnant woodland sites (average = 11.75, range 2 to 18), 24 in 10 revegetation/rehabilitation sites (average 4.5; range 1 to 12), and 22 in 8 naturally regenerating sites (average 5.4; range 1 to 11). Twelve species of reptile and 7 species of amphibian were detected during annual monitoring surveys. By habitat, 7 species of reptile were detected in woodland (average 3.25, range 1 to 5), 4 in regenerating woodland (average 1.67, range 0 to 4) and 4 in revegetated woodland (average 1.67, range 1 to 2).

Proposed Improvement Measures

Monitoring programs such as quarterly weed inspections and quarterly seed assessments will continue to be implemented into the next period to maintain an in depth understanding of changing climatic conditions and site specific challenges.

EA Predictions/Impacts

Predicted impacts on biodiversity are outlined in the biodiversity impact assessment undertaken by Ecological Australia in 2010 (Ecological 2010). Predicted impacts are quoted below.

- "The LOM Project would result in the removal of approximately 194 ha of native vegetation, comprising approximately 59 ha of woodland vegetation (Class 4) and 135 ha of derived native grasslands (Class 3a and 3b)"
- "Potential edge effects that may be introduced by the LOM Project include weed invasion and fragmentation of existing woodland remnants."

Werris Creek Coal Mine has continued to operate via within the approved MOP and PA disturbance boundary and has not modified the clearing extent or crest of the pit. Clearing in 2021 consisted of clearing 19.55ha of native vegetation for strip 21 and 22. It is proposed that during 2022 the final clearing of Werris Creek Coal Mine will occur for the progression of strip 23 and 24. This will be the completion of clearing at WCC and will finish the 194ha of clearing predicted by Ecological in 2010.

Weed invasion is a high priority maintenance task and has been outlined in section 6.4.2 of this report. With the continual growth progression of offset properties, the site is tracking well to maintain alignment with the EA predictions via weed control and expansion of woodland continuity throughout the local area.

6.5 HERITAGE

6.5.1 Environmental Management

The LOM Environmental Assessment determined that the project would not result in any future adverse impacts on Aboriginal cultural heritage. The impact associated with the removal of the remnant features of the former Werris Creek Colliery is considered to be minor, as the historic sites do not meet the NSW Heritage Office (2001) criteria for high significance sites (even at a local level) (Landskape, 2010). WCC previously undertook quarterly inspections of the only known significant Aboriginal heritage item onsite – the “Narrawolga” Axe Grinding Grooves prior to their relocation in consultation with stakeholders, to the Willow Tree Visitor Information Centre in 2015.

The Heritage Management Plan outlines additional heritage management actions related to items associated with the former underground and these have been completed. The mining of the former underground workings were finalised during the first half of 2020. No items of heritage significance were located.

6.5.2 Environmental Performance

No previously unknown sites or artefacts were discovered during the period. This is consistent with the EA Predictive model and the Cultural Heritage Assessment undertaken by Landskape (2010).

EA Predictive Model

Based on the regional archaeological record, the high level of disturbance on the Project Site and the general setting of the Project Site, Landskape (2010) proposed the predictive model of Aboriginal cultural heritage site locations on the Project Site summarised in Table 13.

Table 13 – Heritage EA Predictions

EA Prediction	2021 Performance
Trees scarred or carved by Aboriginal people may occur wherever mature Eucalypt and Cypress Pine trees grow. However, given the extent of vegetation clearance the probability of encountering culturally modified trees is not particularly high.	No previously unknown Scarred Trees were observed in the reporting period. This is consistent with the EA predictions.
Stone artefact scatters and isolated finds of stone artefacts are possible over the entire Project Site, but their density is likely to be low due to the absence of creeks and wetlands on or immediately surrounding the Project Site.	No previously unknown Stone Artefacts were observed in the reporting period. This is consistent with the EA predictions.
Burial sites are unlikely, given that the region’s acidic soils are not suited to preserving bone and other organic material.	No previously unknown burial sites were observed in the reporting period. This is consistent with the EA predictions.

<p>Freshwater shell middens will not occur because they are rarely found more than 100m from permanent water sources.</p>	<p>No Freshwater Shell Middens were observed in the reporting period. This is consistent with the EA predictions.</p>
<p>Earthen features including mounds, ovens and hearths, stone arrangements and ceremonial rings are unlikely to be encountered because previous land disturbance such as earthworks associated with past and recent quarrying and mining activities, grading roads and fence lines, and ploughed cultivation during agricultural cropping is likely to have destroyed earthen and stone features (had these site types originally occurred within the Project Site).</p>	<p>No previously unknown mounds, ovens, hearths, stone arrangements or ceremonial rings were observed in the reporting period. This is consistent with the EA predictions.</p>
<p>Some sites dependent upon the presence of rock formations such as rock shelters and rock art sites are also improbable because the sedimentary bedrock in the low hills and ridges of the Project Site does not contain caves or overhangs. The Project Site is not suited to quarrying, although Aboriginal people may have collected pebbles and cobbles from colluvial and alluvial deposits for stone artefact knapping.</p>	<p>No previously unknown rock formations or rock shelters were observed in the reporting period. This is consistent with the EA predictions.</p>
<p>Axe-grinding grooves may occur on sandstone surfaces, and as such outcrops in the Project Site were targeted for particular attention during the survey.</p>	<p>No previously unknown Axe-grinding Grooves were observed in the reporting period. This is consistent with the EA predictions.</p>
<p>Any historical heritage sites in the Project Site were anticipated to most likely relate to early pastoral activities of the last half of the nineteenth century or the first half of the twentieth century and coal mining activities associated with the former Werris Creek Colliery (of 1920s to 1960s). Site types that have the potential to occur include ruins of mine structures, discarded mining and farming machinery and blazed survey marks.</p>	<p>No previously unknown European artefacts or items of interest were observed in the reporting period. This is consistent with the EA predictions.</p>

6.6 WASTE

6.6.1 Environmental Management

WCC continued to engage a total waste management service provider during 2021. This practice has ensured WCC is positioned to maintain regulatory compliance with regard to offsite disposal at licenced facilities and on-site storage requirements.

6.6.2 Environmental Performance

The engaged waste management service provider records waste generation quantities at the point of either disposal or collection. The quantities of each generated waste type have been summarised in Table 14 for the 2021 period. The current reporting period demonstrates benefits in total levels of resource recovery seen from improvements to waste management practices at WCC originally implemented in late 2014. These improvements have led to reduction in general waste volumes, while seeing a general increase in recycling / resource recovery overall 2021 saw improvements in waste tracking via increased accuracy in recording of waste quantities being generated and disposed from site. These waste tracking improvements provide for an enhanced degree of measurability of the success for all resource recovery initiatives undertaken going forward.

Table 14 – Approximate Quantities of Waste Generated in 2021 vs EA Predictions

Waste Stream	2019	2020	2021	EA Estimate/ Predictions	Discrepancy
Waste Oil (kL)	162.3	214.5	212.5	130	+82.5
Scrap Metal (tons)	33.0	36.5	46.0	#	+9.5 [^]
General Waste (tons)	*1302 m ³	163.8	138.53	800m ³	#
Co-Mingled Recycling (tons)	*170m ³	6.25	6.74	#	+0.49 [^]
Timber (tons)	N/A	6.76	12.6	#	+5.84 [^]
Liquid Waste – J120 / Septic (L)	4000	22,500	54,100	10,000 [#]	+41,000
Empty IBCs (tons)	N/A	4.4	0.9	#	-3.5 [^]
Hydraulic Hoses + Filters (tons)	20.5	17.2	12.3	#	-4.9 [^]
Batteries (tons)	N/A	4.9	2.2	#	-2.7 [^]
Tyres (each)	NA	NA	56	68	-12 [§]

* Previously recorded / reported as cubic meters (m3) only.

[^]Discrepancies calculated from previous year instead of EA Prediction.

[@]Estimate of Septic only not including J120 waste

[#] No estimate/prediction for this waste stream. (Note: all waste streams are removed by a licenced contractor and majority recycled)

[§] 147 tyres were disposed of in-pit in accordance with WCC's EPL in 2021. These tyres were stockpiled from previous years.

EA Prediction

Table 14 documents the variation between the EA predicted waste volumes and the reported waste for 2021. The discrepancy in the predicted septic levels and the recorded levels is due to the increased removal of J120 waste which is oily water removed from the in-ground Oil Water Separator (OWS). The existing OWS is to be replaced by an above ground OWS which will negate the need for J120 waste to be disposed of as the water will be treated. This will result in only Septic waste removal and provide a comparison to the EA septic prediction.

The discrepancy in waste oil recycled is due to the change in machinery used onsite in 2021 compared to the EA predictions.

Variations include:

- + 1 x 5600 (560 Ton) Excavator
- + 2 x 87 Ton Excavator
- + 1 x D11 Bulldozer
- + 1 x D10 Bulldozer
- + 2 x Graders
- + 3 x Lighting Plant
- + 1 x Service/fuel cart

As seen in Table 14 some waste streams produced by Werris Creek are not covered in the EA predictions. This shows that WCC is segregating waste effectively and recycling material to individual waste types resulting in reduced overall waste production. Table 14 above shows a trend of increased segregation of co-mingled recycling, scrap metal and timber, correlated to a ~30 ton decrease in general waste.

Based on data shown in Table 14 recyclable waste streams show an increasing trend with a correlated decreasing trend in general waste.

6.7 ENVIRONMENTAL PERFORMANCE SUMMARY

An environmental performance summary is presented in Table 15 below.

Table 15 – Environmental Performance

Aspect	Approval Criteria / EIS Prediction	Performance during the reporting period	Trend / Key Management Implications	Implemented / proposed management actions
Noise	Refer s6.1	Approval criteria has been met	NA	NA
Blasting	Refer s6.2	Approval criteria has been met	NA	NA
Air Quality	Refer s6.3	Approval criteria has been met	NA	NA
Biodiversity	Refer s6.4	Approval criteria has been met	NA	NA
Heritage	Refer s6.5	Approval criteria has been met	NA	NA

7 WATER MANAGEMENT

7.1 WATER TAKE

WCC currently holds two Water Access Licences, with the water taken under these licences for the 2021 reporting year summarised in Table 16.

Table 16 - Water Take 2021 January - December (ML)

Water Licence #	Water Sharing Plan	Water Source and Management Zone	Entitlement	Passive Take / Inflows	Active Pumping by WCC	Total
WAL 32224	NSW Murray Darling Basin Porous Rock Groundwater Sources	Gunnedah – Oxley Basin Mdb Groundwater Source	211	95	0	95
WAL 29506	NSW Murray Darling Basin Porous Rock Groundwater Sources	Gunnedah – Oxley Basin Mdb Groundwater Source	50	0	0	0

7.2 SURFACE WATER MANAGEMENT

7.2.1 Environmental Management

The management of surface water aims to prevent surface water pollution both within onsite dams and offsite watercourses. The overall water management strategy is to segregate different water streams onsite based on the potential pollutant in each stream.

- Void Water – the void water catchment area is comprised of the active mining area and overburden emplacement which collects both rainfall runoff and groundwater in the base of the open cut void and needs to be dewatered by pumping to the surface to allow mining of the basal coal seam;
- Dirty Water – the dirty water catchment area is comprised of areas previously disturbed by mining such as rehabilitation and soil stockpile areas, with the focus on the reduction of suspended solids and subsequent discharge of treated water;
- Clean Water – the clean water catchment area is undisturbed by mining activities and allowed to flow offsite without active management; and
- Contaminated Water – includes potentially hydrocarbon contaminated water runoff from the workshop and fuel farm areas which is treated through an oil-water separator, as well as water from ablutions which is treated through a septic system onsite.

Void Water Management

Void Water is stored in one of six designated void water dams (VWDs) comprising the void water management system at WCC. VWDs 1, 2, 3, 4 and 7 are long term water storage structures, while VWD 8 is a temporary structure, designed for the transfer of void water for use around the project or short term out of pit storage of out of surplus void water. The operational functions of the current VWD2 will be replaced by VWD7 which was constructed in 2018 and is scheduled to be commissioned for full time operational use in 2022. VWD2 will be decommissioned shortly thereafter. This will allow for the northern advancement of the dump formation over the current location of VWD2 in line with the MOP. An annual inspection of the prescribed dams (VWDs 1, 3 and 4) was undertaken by an external structural engineer. The annual inspection identified that all prescribed dams were being managed appropriately.

Void water is predominantly used for dust suppression purposes on site. Water carts engaged in watering haul roads and other areas of the mining excavation are the predominant user of water for dust

suppression purposes, with water also used to control dust at conveyor loading points and on coal stockpiles. Void water use is monitored and calculated monthly using water meters on key pipelines and water fill points, supplemented by surveyed volumes of water stored in dams and the void on site. This data is used to update the Water Balance Model for site.

Dirty Water Management and Erosion and Sediment Control Measures

During the period, dirty water dams remained in place to capture surface runoff from disturbed areas of the mine site. There was a total of twenty seven (27) discharge events during the reporting period from these dams. Six (6) of those events were uncontrolled and twenty one (21) were controlled discharge events.

Maintenance of existing sediment dam SB10 occurred during the period, requiring de-silting, maintenance of flow paths and minor erosion control. Regular checks of the dirty water management system were undertaken as required dependent on rainfall volume.

Contaminated Water Management

WCC undertook regular maintenance of the key contaminated water infrastructure during the reporting period, with the servicing of both the workshop sump and the oil water separator occurring as required throughout the reporting period. Waste from these facilities is transported either offsite (liquid waste to licensed waste facility) or to the onsite bioremediation area (solids) for treatment / disposal of residual hydrocarbons within the material.

7.2.2 Environmental Performance

Surface Water Quality – Routine Quarterly Monitoring

Quarterly sampling of water stored within the clean, dirty and void water dams and within Quipolly and Werris Creeks' (Figure 7) was undertaken by WCC.

Table 17 presents the average results recorded for routine quarterly monitoring at each location for the 2021 reporting period.

The quarterly water quality shown in Table 17 was generally consistent with the previous reporting period, showing a slight decrease in levels for all of the water quality parameters. This was attributed to consistent rainfall for the majority of the reporting period, therefore decreasing recorded EC levels. Water quality monitoring was generally consistent with EA predictions for each analyte.

Table 17 – Quarterly Surface Water Quality for Dams and Offsite Creeks

Dam/ Creek	Monitoring Site (EPA No)	Number of Samples	Value	pH	Electrical Conductivity (μ S/cm)	Total Suspended Solids (mg/L)	Oil & Grease (mg/L)
VWD1	16	4	Ave	7.8	1628	10	<5
			Max	8.1	1760	14	<5
VWD2	27	4	Ave	7.8	1598	17	<5
			Max	8.1	1740	18	<5
VWD3	-	4	Ave	7.8	1320	20	<5
			Max	8.1	1380	25	<5
VWD4	-	4	Ave	7.7	1413	8	<5
			Max	8.0	1460	8	<5
SB2	10	2*	Ave	7.5	445	27	<5
			Max	7.9	513	45	<5
SB9	12	2*	Ave	7.3	335	29	<5
			Max	7.9	343	32	<5
SB10	14	1*	Ave	7.7	301	34	<5
			Max	7.7	301	34	<5
SB18	32	3*	Ave	7.7	316	142	<5
			Max	8.4	367	200	<5
QCU	25	2*	Ave	7.5	487	27	<5
			Max	7.5	658	44	<5
QCD	26	4	Ave	7.8	916	16	<5
			Max	7.9	955	24	<5
WCU	23	4	Ave	8.0	796	94	<5
			Max	8.4	1090	246	<5
WCD	24	4	Ave	8.1	1028	77	<5
			Max	8.3	1210	128	27

* Sample location was dry during some or all of the quarterly monitoring periods.

Surface Water Quality – Discharge Monitoring

Sampling of water discharged via the Licensed Discharge Points and within Quipolly and Werris Creeks' (Figure 7) was undertaken by WCC during each offsite discharge event (Controlled / Uncontrolled). There was a total of twenty seven (27) discharge events during the reporting period from these dams. Six (6) of those events were uncontrolled and twenty one (21) were controlled discharge events. Table 18 presents the average results recorded for discharge monitoring at each location for the 2021 reporting period.

Table 18 - Discharge Water Quality for LDP's and Offsite Creeks

Licensed Discharge Point/ Creek	Monitoring Site (EPA No)	Number of Samples	Value	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Oil & Grease (mg/L)
SB2	10	8	Ave	8.1	448	384	9
			Min	7.6	170	4	<5
			Max	8.5	1040	2980	9
SB9	12	7	Ave	7.8	464	24	6
			Min	7.5	300	4	<5
			Max	8.1	600	77	6
SB10	14	9	Ave	7.7	297	71	<5
			Min	7.3	110	6	<5
			Max	8.0	730	231	<5
SB18	32	3	Ave	8.2	480	14	<5
			Min	8.1	320	8	<5
			Max	8.3	660	24	<5
QCU	25	7*	Ave	7.9	457	61	6
			Min	7.1	190	7	<5
			Max	8.6	1120	256	6
QCD	26	7*	Ave	7.8	427	25	<5
			Min	7.2	140	8	<5
			Max	8.0	990	84	<5
WCU	23	9	Ave	8.1	381	103	<5
			Min	8.0	150	3	<5
			Max	8.2	830	535	<5
WCD	24	9	Ave	8.1	381	394	6
			Min	8.0	160	3	<5
			Max	8.2	720	2305	6

* Sample location was dry during some of the discharge monitoring events.

Bold – indicates results outside criteria due to 5 day rain trigger >39.2mm.

Table 18 shows that all discharges were compliant with EPL 12290 criteria.

Surface Water Quality – Void Water Discharge - Irrigation

During the 2021 period, 42.32 ML of void water was utilised for beneficial reuse through irrigation for agriculture purposes. Table 19 outlines the water quality results taken prior to discharge. All results were within water quality criteria.

Table 19 – Surface Water Quality for Irrigation discharges in 2021

Dam/ Creek	Monitoring Site (EPA No)		pH	Electrical Conductivity (µS/cm)
EPL 100% Limit			9	2000
VWD1	33	Min Value	7.83	1430
		Max Value	8.29	1923

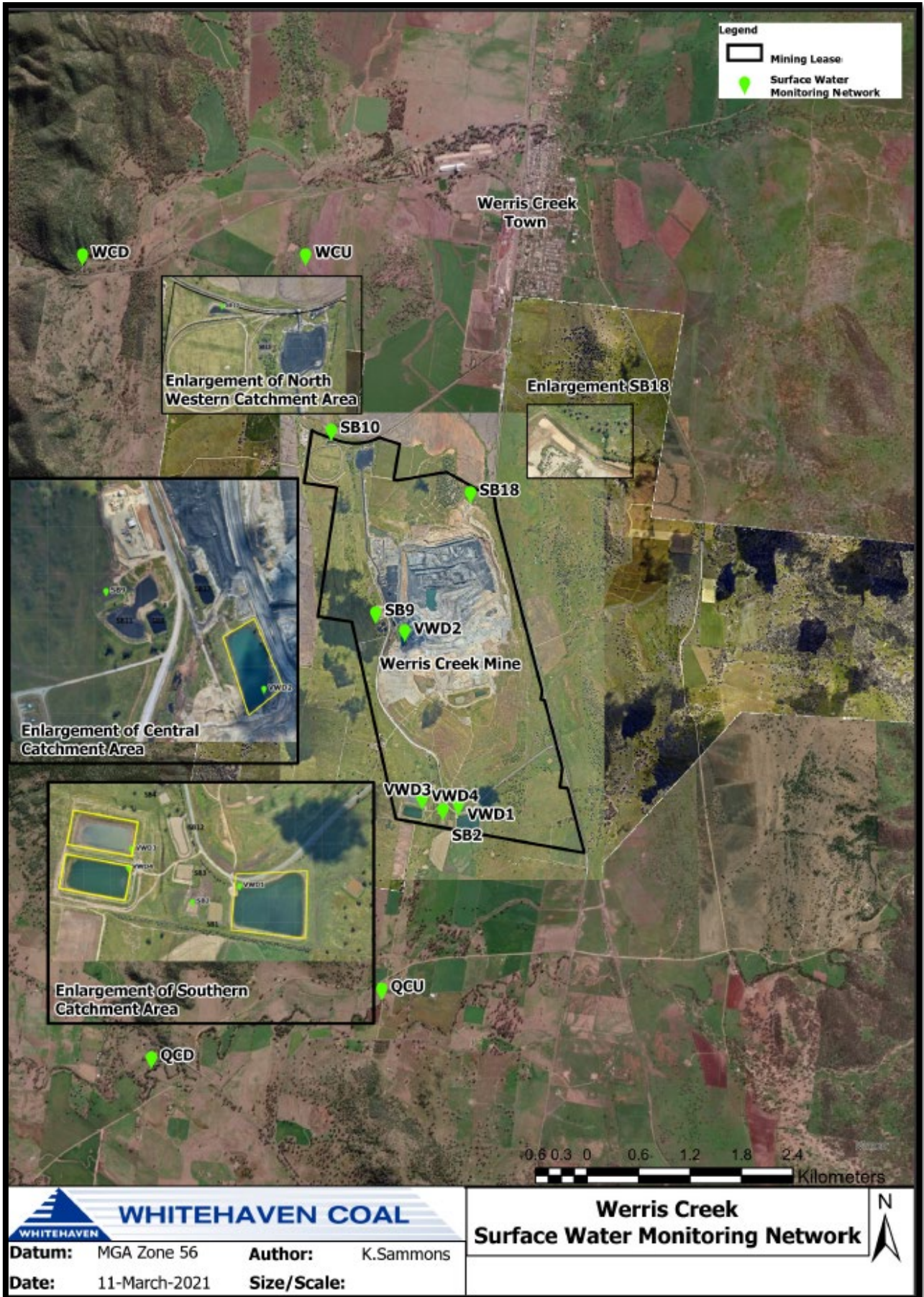


Figure 7 – Surface Monitoring Network

7.3 GROUNDWATER MANAGEMENT

7.3.1 Environmental Management

The management of groundwater at WCC is undertaken to achieve two goals, namely:

- Monitoring and measuring potential impacts from mining operations on adjacent aquifers and privately owned bores: and
- Dewatering and use of void water (rainfall runoff and groundwater) that is intercepted by mining operations.

WCC currently monitors 43 groundwater bores, located on the mine site and neighbouring properties, to measure potential impacts on groundwater quality and groundwater availability.

WCC monitors groundwater quality and levels across a range of bores as shown in Table 20 and Figure 8. Monitoring bores in the Werrie Basalt are separated into those close to WCC and those further away, with select bores in both the Werrie Basalt and Quipolly Alluvium nominated as background monitoring bores, due to their location far upstream from WCC when considering the dominant groundwater flow contours. In addition, ten bores also contain logging piezometers, providing a higher resolution water level dataset to enhance the understanding gained from the bimonthly groundwater level sampling of the monitoring network. These piezometers have been placed to target certain zones, including the Werrie Basalt northwest, south and east of WCC, and the upper, middle and lower reaches of the Quipolly Alluvium aquifer in the vicinity of WCC.

Table 20 – WCC Groundwater Monitoring Program

Precinct	Bores
Werrie Basalt near WCC	MW1, MW2, MW3, MW4B*, MW5, MW6, MW27, MW36A, MW36B*
Werrie Basalt	MW8#*, MW10, MW14, MW17B, MW19A, MW20, MW38A, MW38B, MW38C, MW38E, MW41* and MW43*
Quipolly Alluvium	MW7^, MW12, MW13, MW13B, MW13D, MW15, MW16, MW17A, MW18A, MW21A, MW22A*, MW22B, MW23A, MW23B, MW26B, MW28A#, MW32, MW40* and MW42*
Others	MW24A, MW29 (both Werrie Basalt in the Black Soil Gully valley) MW34 (minor alluvium associated with Werris Creek)
Monitoring Frequency	Parameters
Bimonthly	Standing Water Level
6 Monthly +	Total Nitrogen, Nitrate, Total Phosphorus, Reactive Phosphorus, Electrical Conductivity, pH
Annually	Chloride, Sulfate, Alkalinity, Calcium, Magnesium, Sodium, Potassium, Arsenic, Barium, Beryllium, Cadmium, Cobalt, Chromium, Copper, Manganese, Nickel, Lead, Vanadium, Zinc, Mercury, Ammonium, Nitrite, Nitrite+Nitrate, TKN, Anions, Cations, Ion Balance, TPH
# Regional monitoring bore * Groundwater logger installed in bore. +Applies to MW1, MW2, MW3, MW4B, MW5, MW6 in conjunction with bimonthly depth monitoring ^ Access to MW7 is not available due to landholder restricting access for monitoring	

The Water Balance Model for WCC was updated as part of this Annual Review, with this model used to verify model assumptions in relation to groundwater interception in the mining void. A CUSUM statistical analysis was undertaken on all monitoring bores at the end of the reporting period to assess whether any bores show changes in water level outside of natural variability.

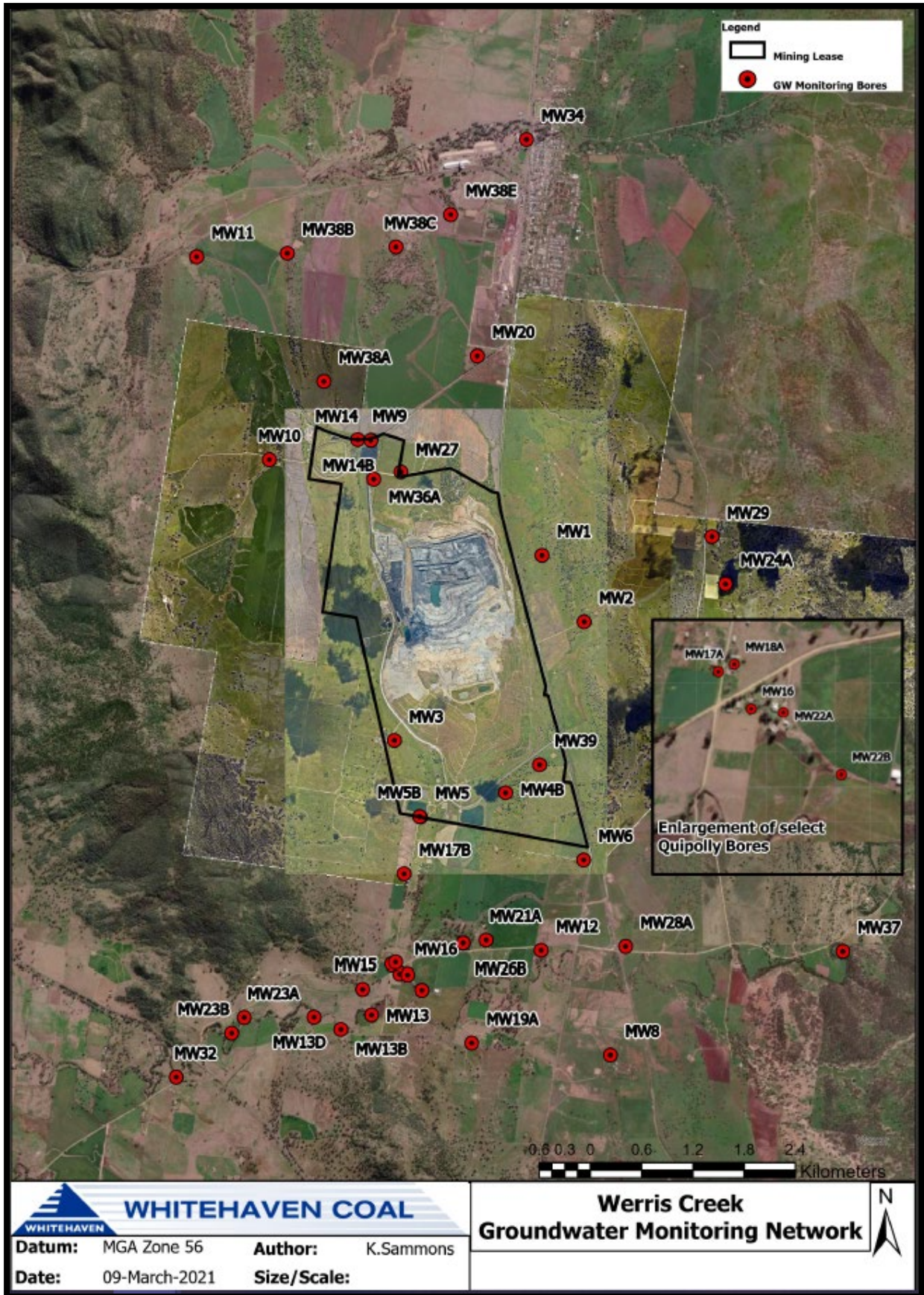


Figure 8: Groundwater Monitoring Network

7.3.2 Environmental Performance

Performance with respect to groundwater management, the prevention of pollution and the assessment of impacts on groundwater availability to other surrounding users, has been assessed through groundwater level and chemistry monitoring. Monitoring focuses on the Werrie Basalt and Quipolly Alluvium aquifers.

Table 21 presents the groundwater level monitoring data for January to December in the Werrie Basalt and Quipolly Alluvium aquifers. For Quipolly Creek Alluvium, MW28A and MW23A are representative of upstream and downstream aquifer conditions respectively. For Werrie Basalt, MW5 and MW14 are representative of aquifer conditions either side of the watershed between Quipolly Creek in the south and Werris Creek in the north. All groundwater sampling and analyses were undertaken by a NATA accredited laboratory.

Table 21 – Groundwater Monitoring Bore Level Summary – January to December 2021

Site	January-21		March-21		May-21		July-21		September-21		November-21		
	mbgl	%	mbgl	%	mbgl	%	mbgl	%	mbgl	%	mbgl	%	
Werris Basalt near WCC	MW1	Dry		Dry		Dry		Dry		Dry		Dry	
	MW2	53.92	3%	52.90	2%	52.38	1%	50.88	3%	49.26	3%	43.50	13%
	MW3	20.63	1%	20.54	0%	20.29	1%	19.73	3%	19.18	3%	18.74	2%
	MW4B	20.03	1%	19.91	1%	19.73	1%	19.36	2%	18.62	4%	18.03	3%
	MW5	13.25	0%	13.25	0%	12.71	4%	11.78	8%	11.40	3%	10.86	5%
	MW6	16.34	0%	16.47	-1%	16.45	0%	16.35	1%	16.21	1%	16.43	-1%
	MW27*	56.51	-2%	55.67	2%	55.03	1%	55.25	0%	56.45	-2%	55.27	2%
	MW36A	15.11	14%	16.26	-7%	16.14	1%	15.93	1%	16.80	-5%	17.27	-3%
	MW36B	15.10	15%	16.25	-7%	16.14	1%	15.92	1%	16.79	-5%	17.29	-3%
Werris Basalt	MW8*	16.34	9%	16.36	0%	15.44	6%	14.37	7%	12.05	19%	11.29	7%
	MW10	11.95	0%	11.90	0%	10.53	13%	10.05	5%	8.87	13%	8.79	1%
	MW14	11.53	20%	11.52	0%	12.62	-9%	12.63	0%	13.03	-3%	13.59	-4%
	MW17B*	13.46	2%	13.04	3%	12.96	1%	12.03	8%	10.60	13%	10.06	5%
	MW19A*	Pump over bore		Pump over bore		Pump over bore		Pump over bore		Pump over bore		Pump over bore	
	MW20*	23.27	1%	22.81	2%	22.35	2%	21.64	3%	20.70	5%	20.14	3%
	MW38A	9.17	6%	8.50	8%	8.68	-2%	No access		8.55	2%	8.58	0%
	MW38B*	9.08	-18%	9.29	-2%	9.14	2%	No access		8.92	2%	8.77	2%
	MW38C*	22.63	1%	23.18	-2%	22.43	3%	21.75	3%	21.68	0%	21.59	0%
	MW38E*	10.22	6%	10.19	0%	No access		No access		8.47	20%	8.36	1%
#1	MW41	8.84	4%	8.94	-1%	8.17	9%	6.91	18%	5.57	24%	5.34	4%
	MW43	7.50	0%	7.71	-3%	6.91	12%	5.38	28%	4.76	13%	4.68	2%
	MW24A*	14.93	1%	14.42	4%	13.97	3%	13.11	7%	12.25	7%	12.53	-2%
	MW29*	10.79	1%	11.38	-5%	10.62	7%	10.15	5%	10.03	1%	10.26	-2%

Site	January-21		March-21		May-21		July-21		September-21		November-21		
	mbgl	%	mbgl	%	mbgl	%	mbgl	%	mbgl	%	mbgl	%	
Quipolly Alluvium	MW12*	11.48	6%	9.25	24%	8.95	3%	8.43	6%	7.68	10%	7.02	9%
	MW13*	6.88	-17%	5.29	30%	6.30	-16%	4.60	37%	4.60	0%	4.01	15%
	MW13B*	4.84	-14%	3.57	36%	4.38	-18%	3.48	26%	3.14	11%	2.70	16%
	MW13D*	5.19	-4%	4.82	8%	4.81	0%	3.99	21%	4.46	-11%	3.67	22%
	MW15*	No access		No access		No access		No access		No access		No access	
	MW16*	7.76	1%	7.24	7%	6.95	4%	5.25	32%	4.55	15%	3.72	22%
	MW17A*	6.73	8%	6.30	7%	6.12	3%	4.97	23%	3.84	29%	3.40	13%
	MW18A*	6.70	5%	6.18	8%	6.03	2%	4.93	22%	3.80	30%	3.56	7%
	MW21A*	10.74	3%	10.44	3%	9.87	6%	9.24	7%	6.47	43%	5.75	13%
	MW22A*	7.72	6%	7.54	2%	7.23	4%	4.86	49%	4.58	6%	3.78	21%
	MW22B*	8.05	-3%	7.49	7%	7.55	-1%	4.80	57%	4.71	2%	3.73	26%
	MW23A*	4.17	-6%	3.74	11%	3.84	-3%	3.33	15%	3.55	-6%	3.28	8%
	MW23B*	No access		4.08	7%	4.25	-4%	3.76	13%	3.87	-3%	No access	
	MW26B*	9.22	4%	8.92	3%	8.62	3%	7.76	11%	5.61	38%	4.48	25%
	MW28A*	12.40	16%	10.95	13%	9.60	14%	8.10	19%	6.05	34%	5.72	6%
	MW32*	Pump over bore		Pump over bore		Pump over bore		Pump over bore		Pump over bore		Pump over bore	
MW40	8.85	4%	8.94	-1%	8.19	9%	6.92	18%	5.58	24%	5.35	4%	
MW42	7.37	0%	7.62	-3%	6.83	12%	5.31	29%	4.69	13%	4.62	2%	
#2 MW34*	9.97	2%	10.19	-2%	9.90	3%	9.25	7%	9.26	0%	8.95	3%	

mbgl – meters below ground level, the distance from top of bore to groundwater surface.

Bold –lowest recorded groundwater level measured during the reporting period.

Orange – Change decrease

Green – Change increase or no change

* - Bore is used for water extraction unrelated to WCC (i.e. stock and domestic or irrigation).

#1 – Werris Basalt in the Black Soil Gully valley to east of Werris Creek Mine.

#2 - Werris Creek Alluvium.

The groundwater level monitoring results have shown generally higher water levels throughout the 2021 annual reporting period year with a historically wet year, with over 40% more rainfall than average due to the influence of a La Niña event in the Pacific Ocean. Cumulative rainfall is presented in Figure 9.

A specialist groundwater consultant (SLR, 2022) undertook the annual groundwater review for 2021, identifying the following findings. All monitoring wells (MW) were reviewed using a Cusum statistical analysis. The Cusum assessment analyses the groundwater levels in each bore and analyses if any statistically significant deviation from the mean groundwater level is observed. For this report, it is considered appropriate to analyse each bore based on their own mean and standard deviation in groundwater levels. This is considered appropriate as the seasonal variation of levels at each bore changes dependent on location and geology monitored.

Most bores in the Quipolly Alluvium are now passing the Cusum assessment compared to 2020 with all alluvial bores demonstrating a decreasing depth to groundwater trend at the end of 2021 (SLR, 2022). The alluvial bores MW13b, MW13d, MW22a, MW22b, MW22c, MW23a, MW23b, MW26b, and MW28a have all showed a groundwater recovery in 2021 and, as of the end of 2021, all have a Cusum beneath their respective upper limits. Bores MW7, MW12, MW13, MW16, MW17a, MW18a and MW21a still exceed the upper Cusum limit, however significant groundwater level recovery has been observed in 2021 with a decreasing trend towards the Cusum limit (SLR, 2022).

Quipolly Alluvium Aquifer

Groundwater levels within the alluvium closely follow the rainfall patterns; there are two noticeable groundwater level declines observed during the periods from 2013 to 2016 and 2017 to 2019, both correlating with a decline in the cumulative rainfall deviation (CRD) and below average rainfall conditions. Similarly, groundwater level increases correlate with periods of high rainfall. Since the start of the 2020 wet year and continuing into 2021, there has been an increase in groundwater levels within the alluvium, with all bores reaching above historical maximum, or near maximum, recorded groundwater conditions.

The significant increase in groundwater levels in late September 2016 is coincident with the overflow of Quipolly Dam, located upgradient of these bores, with the bores closest to the dam demonstrating a greater response to this event (SLR, 2022).

Groundwater levels show a higher variability in upstream bores along Quipolly Creek. In Figure 8, the furthest upstream monitoring bore MW28a shows the greatest fluctuations in alluvial groundwater levels whilst MW32, the furthest downstream monitoring bore, shows the least. This is thought to be due to the limited catchment for these bores and their proximity to Quipolly Dam releases and runoff from the weathered basalt from the east. This results in greater range of recharge and recession compared to bores further down the alluvial catchment. It is noted that this groundwater regime has not changed since mining began in 2005, with greater recoveries in 2020 to 2021 groundwater levels still observed in upstream bores.

It is therefore concluded that the main influences on the decline in groundwater levels in the Quipolly Alluvium from 2017 to early 2020, and assessed in previous WCCM annual reports were a result of the prevalent climatic conditions as opposed to mining influences, with groundwater levels recovering over 2021 to their maximum, or near maximum, in monitoring history (SLR, 2022).

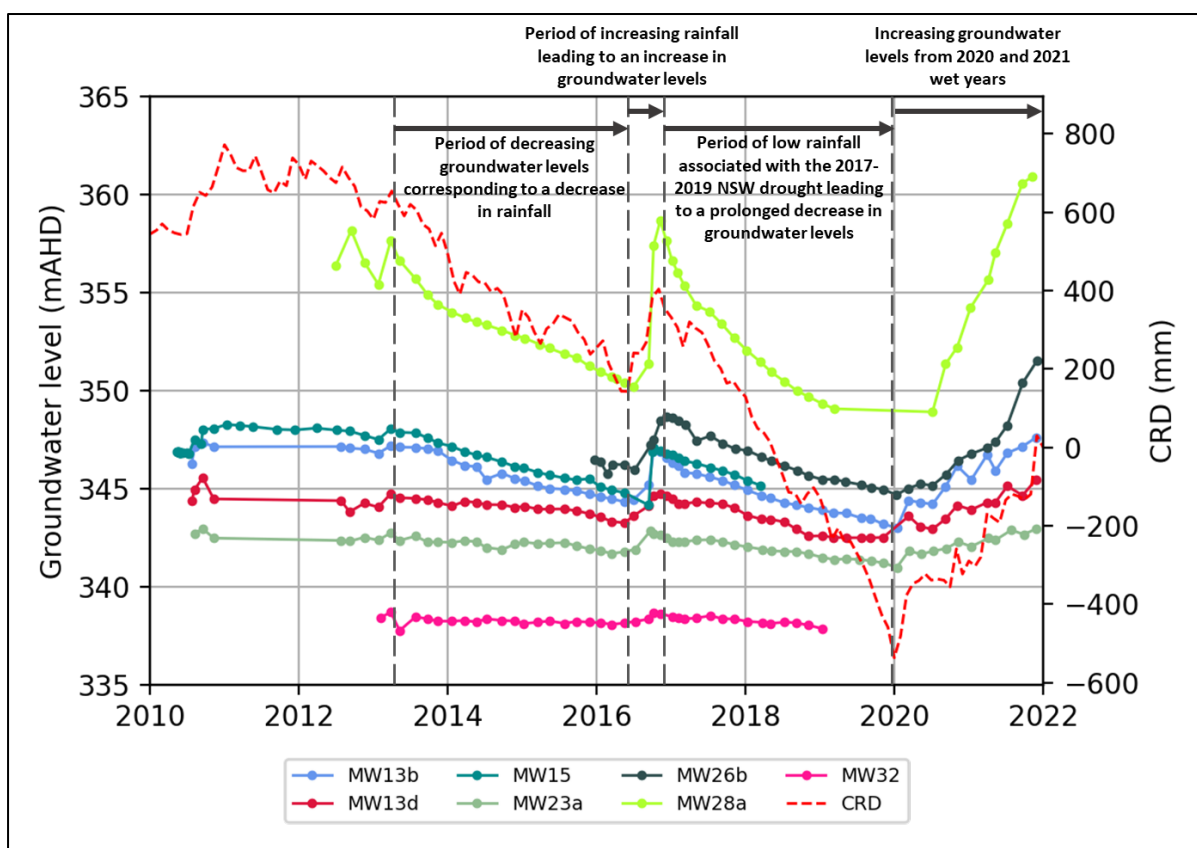


Figure 9: Cumulative residual rainfall and groundwater levels within the Quipolly Alluvium

Werrie Basalt Aquifer

The surface of the Werrie Basalt has weathered to a clay layer that acts as a confining or semi-confining layer to the basalt aquifer. Due to the presence of the overlying weathered basalt layer, the majority of recharge to the basalt aquifer is considered to occur to the west and east of WCCM where the permeable sandstone ridges of the Temi and Currabubula formations outcrop and clay cover to the basalt may be thinner or absent (SLR, 2022).

As seen in Figure 10 groundwater levels in the Werrie Basalt bores show a clear response to the cumulative rainfall trend indicating that direct recharge, either to the higher ground to the west and east of WCCM or through areas of thinner clay cover, with groundwater level decline observed from 2013 to 2016 and 2017 to 2019, and groundwater recovery in 2016 and 2020/21. Groundwater levels vary more than those in the alluvium, with a greater difference between groundwater peaks and troughs, potentially a result of the lower bulk permeability or storage of the lithology.

Since 2013 it appears that there has been a more muted response to rainfall events within all bores in Figure 10 which may indicate a potential mining effect on these bores. In addition, groundwater levels within MW8, the furthest bore from WCCM and considered the 'baseline bore', shows a greater response to rainfall events in 2020/21, with a recovery of groundwater levels back to those observed in 2004. In contrast MW4b, the closest bore to mining at WCCM, observes the most pronounced drawdown since 2017, with the smallest recovery response in 2021 and groundwater levels approximately 9 m lower than those recorded in 2004. Bores MW5 and MW5b, located between MW4b and MW8, show groundwater recovery responses between those mentioned above. All bores show groundwater levels significantly above the base of mining (at relative level of 214 mAHD) and therefore

through this monitoring period these basalt bores still show >100 m higher groundwater levels than in the adjacent mined Coal Measures.

However, the drawdown seen in the near basalt monitoring bores may also be due to other influences outside of mining. It is currently unknown to what extent these bores are also being used as extraction bores, both currently and in the past, and the influence this pumping may have had on the monitoring record.

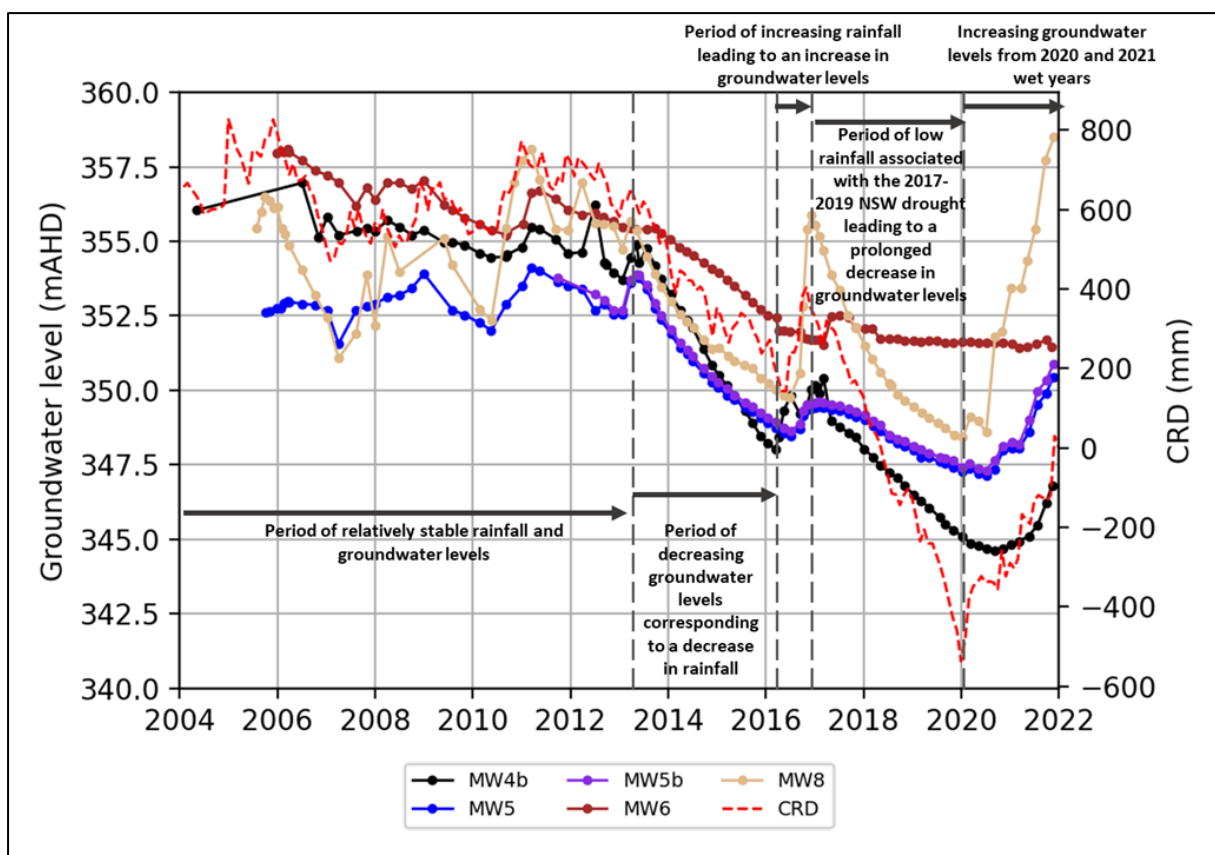


Figure 10: Cumulative residual rainfall and groundwater levels within the Werrie basalt aquifer.

When comparing the 2021 groundwater levels and flow to previous plots from recent years, it is observed that the dominant flow direction and gradient have not changed significantly with flow still predominantly moving across WCCM from the north-east. The 2021 groundwater levels continue to show recovering groundwater levels over time corresponding to the 2021 above average rainfall conditions.

Groundwater Quality

Groundwater quality levels have exceeded both the upper and lower limits in the Quipolly Alluvium and Werrie Basalt aquifers during 2021. With the exception of pH, exceedances of the lower trigger limit are not considered significant for the water quality parameters, as most lower limit exceedances are only slightly below the trigger limit and correspond to an improvement in groundwater quality.

Electrical conductivity, as a proxy for salinity, is higher in Glenara, MW13b, and MW13d than in the remainder of the alluvial bores. Glenara also showed high nitrates, total nitrogen, and reactive phosphorous levels in 2020 (not sampled again in 2021); the likely cause for these trigger level exceedances in this bore is the surrounding agricultural land use (composed of cereal cropping, improved pastures, and grazing land).

7.3.3 Proposed Improvement Measures

The groundwater monitoring program described above will continue to be implemented during the next reporting period. It is also recommended that for any monitoring bores that are also used as third-party extraction bores, an analysis of groundwater levels is carried out to determine the influence of pumping schedules on the groundwater levels.

7.4 SITE WATER BALANCE MODEL VALIDATION

The WCC Water Balance Model is focused on accounting for all water entering and leaving the open cut pit to allow a verification of groundwater interception during the reporting year (Table 22). The key inputs to the water balance model are:

- Direct rainfall and runoff – Generally the largest input due to the large pit catchment, this item relates to rainfall that falls directly in the void water catchment. During any rainfall event, runoff is significant due to the large catchment and hard, compacted surfaces.
- Evaporators recharge – Evaporator sprays have been installed at WCC to reduce the volume of void water stored on site. A portion of this water will not evaporate, but instead percolate through the accumulated spoil until it collects in the void.
- Dust Suppression – To minimise the generation of dust from vehicle movements, water is applied directly to haul roads and dumps. Furthermore, water may be applied to excavator loading faces and production drills to minimise the generation of dust at these points.
- Groundwater – Located within the Coal Measures sequence, the enclosed basin contains various small-scale water bearing zones generally associated with the coal seam. A small proportion of groundwater may also be derived from the Werrie Basalt aquifer.
- Overburden Dump Seepage – Water from Dam 8 on the overburden dump seeps through and is accumulated in the pit.

The key outputs to the model include:

- Pit dewatering – Includes all water pumped from the pit during the year, which is the principle pathway for water leaving the void.
- Irrigation – Includes void water tested and approved for offsite irrigation from VWD 1 onto cropping land.
- Direct evaporation – Includes the volume of water directly evaporated from the pit and other locations within the void water cycle.
- Use of water onsite – Dust suppression, Evaporators, etc.

Table 22 – Water Balance Inputs and Outputs.

Description		Year 2021 (ML/year)
Water Source (Inputs)	Total runoff and direct rain	1,462
	Groundwater (aquifer) inflow	95 ^a
Total Input		1,557
Water Losses and Usage (Outputs)	Evaporation (from water storage)	270
	Haul road and ROM pad dust suppression	273
	Irrigation loss	34
	Evaporator net loss ^b	55
	Workshop water use	8.8
	TLO water use	0.4
	Crushing plant water use	0.2
	Sprinkler loss	0
Total Output		1,234
Water Surplus/Deficit	Total Input-Total Output	323

^a This value represents the groundwater inflows from the aquifer and does not include spoil seepage. The derivation of this value is discussed in the following section.

^b Based on field studies (Minetek, 2017), an average efficiency of 45% was adopted for the evaporators is 45%. Water that is not destroyed is returned the Mine Void.

As presented in, Table 22 once inputs, outputs and the observed change in water in the void have been accounted for, the model reflects a net decrease in water from within the void of 323 ML.

Total inputs of 1,557 ML during the 2021 period in comparison to 1,785ML during 2020 is representative of the sustained above average rainfall experienced at the Werris Creek Coal Mine in recent years and the dramatic increase in rainfall received from 2020 onwards. These water stocks have continued to be carried over from previous surplus years.

8 REHABILITATION

8.1 REHABILITATION PERFORMANCE DURING THE REPORTING PERIOD

The rehabilitation objectives for WCC is described in Section 4 of the WCC MOP. The post mining land use goal for WCC is to reinstate certain areas of the mine to White-box Grassy Woodland communities and to ensure rehabilitation and revegetation is self-sustaining.

As discussed in Section 8.2 the rehabilitation monitoring observed that tree species matching closely with Box Gum woodland TEC/EEC canopy assemblages, including *Eucalyptus melliodora*, *E. blakelyi* and *E. albens*, were frequently observed to be establishing satisfactorily. Monitoring of rehabilitation using the newly established methodology will continue in 2022. Section 8.2.2 discussed rehabilitation progression towards identified Plant Community types (PCT). As the site is progressing towards closure detailed closure criteria are being developed that will be presented in the Rehabilitation Management Plan in conformance with the RR new legislation that replaces the MOP.

During the reporting period, mining operations progressed generally in line with the Mining Operations Plan. Works were undertaken to final landform and growth medium development (approx. 50.6ha), an additional 6.6ha was progressed to ecosystem establishment. This is generally in alignment with 2021 MOP requirements. WCC will continue to rehabilitate the final landform in line with these requirements. All infrastructure continued to be in use during the period, and as such, no areas of infrastructure were rehabilitated during the period.

2021 rehabilitation works included the planting of approximately 2800 native tube stock coupled with ongoing maintenance and watering. Tube stock was planted on rehabilitation areas and infill planting to replace dieback due to drought and natural conditions.

The continued rainfall experienced onsite during the 2021 period continued the prolific weed growth by some fast growing opportunistic weed species. One species in particular - David's Spurge (*Euphorbia davidii*) has been observed in high abundance in areas previously lacking ground cover as a result of the previous drought conditions. Chemical control of the spurge has continued on from the 2020 period with care being taken to not impact the desired native species and trees via the use of selective herbicides. The control program will continue in subsequent growing seasons in an effort to control the presence of the David's Spurge and any other weed species observed within the established rehabilitation areas.

8.2 REHABILITATION MONITORING

8.2.1 Introduction

A detailed ecological field assessment of rehabilitated areas and analogue sites was undertaken in October 2021 (Figure 11 and Figure 12). Monitoring was undertaken using the Whitehaven Annual Rehabilitation Monitoring Methodology (WARMM, Aspect Ecology 2021). Monitoring comprised:

- the establishment of three new 'best-on-offer' (DPIE 2020) local analogue woodland sites in Blakely's Red Gum – Yellow Box grassy tall woodland (Plant Community Type ID 599 in the BioNet Vegetation Classification System);
- twenty newly established Woodland Domain Sites, capturing all extant years seeded (2007–20), comprising—
- twenty-three categorical Rehabilitation Point Assessments across the rehabilitation, aimed at further improving rehabilitation data spatial coverage.

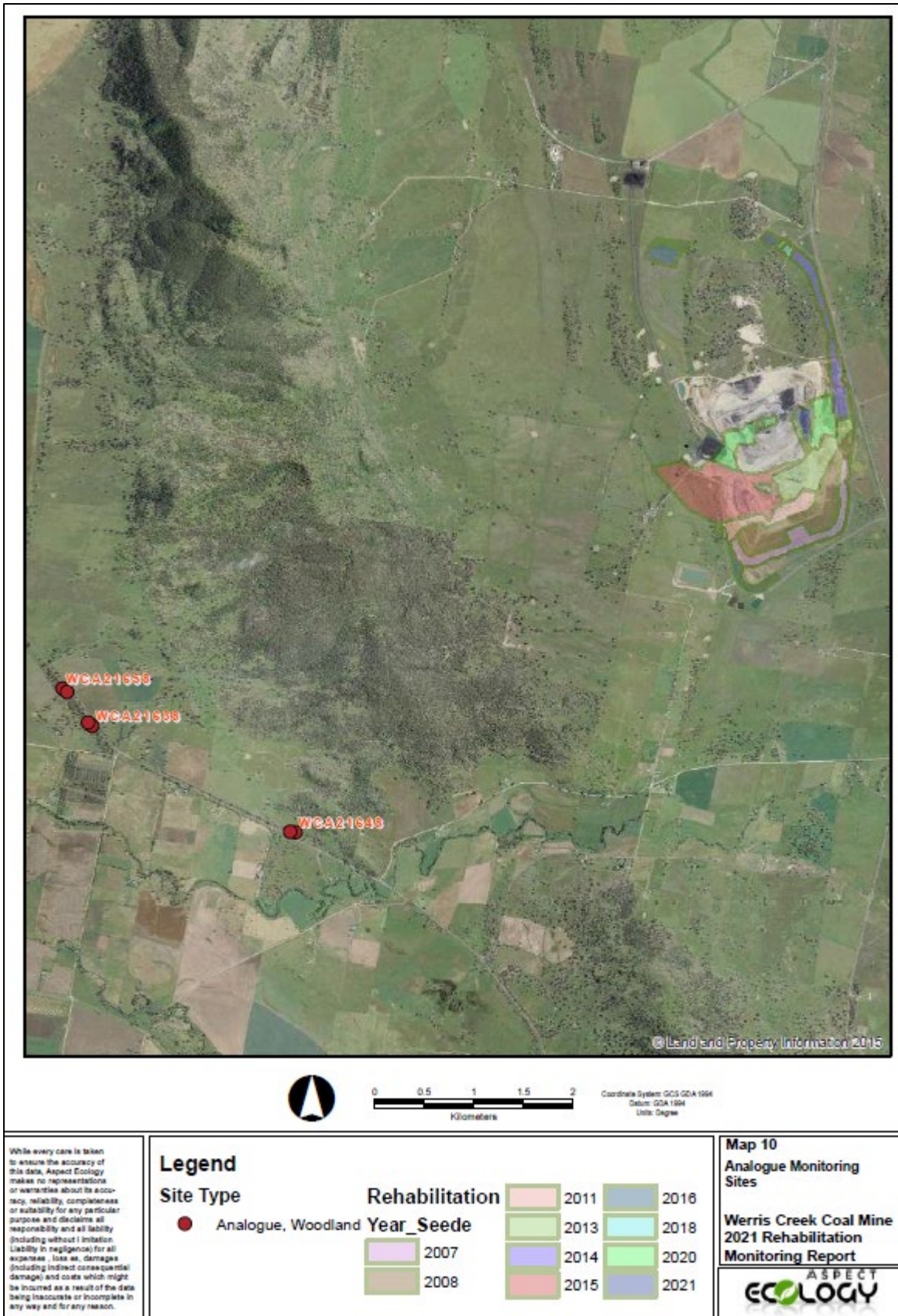


Figure 11: Analogue Monitoring Sites

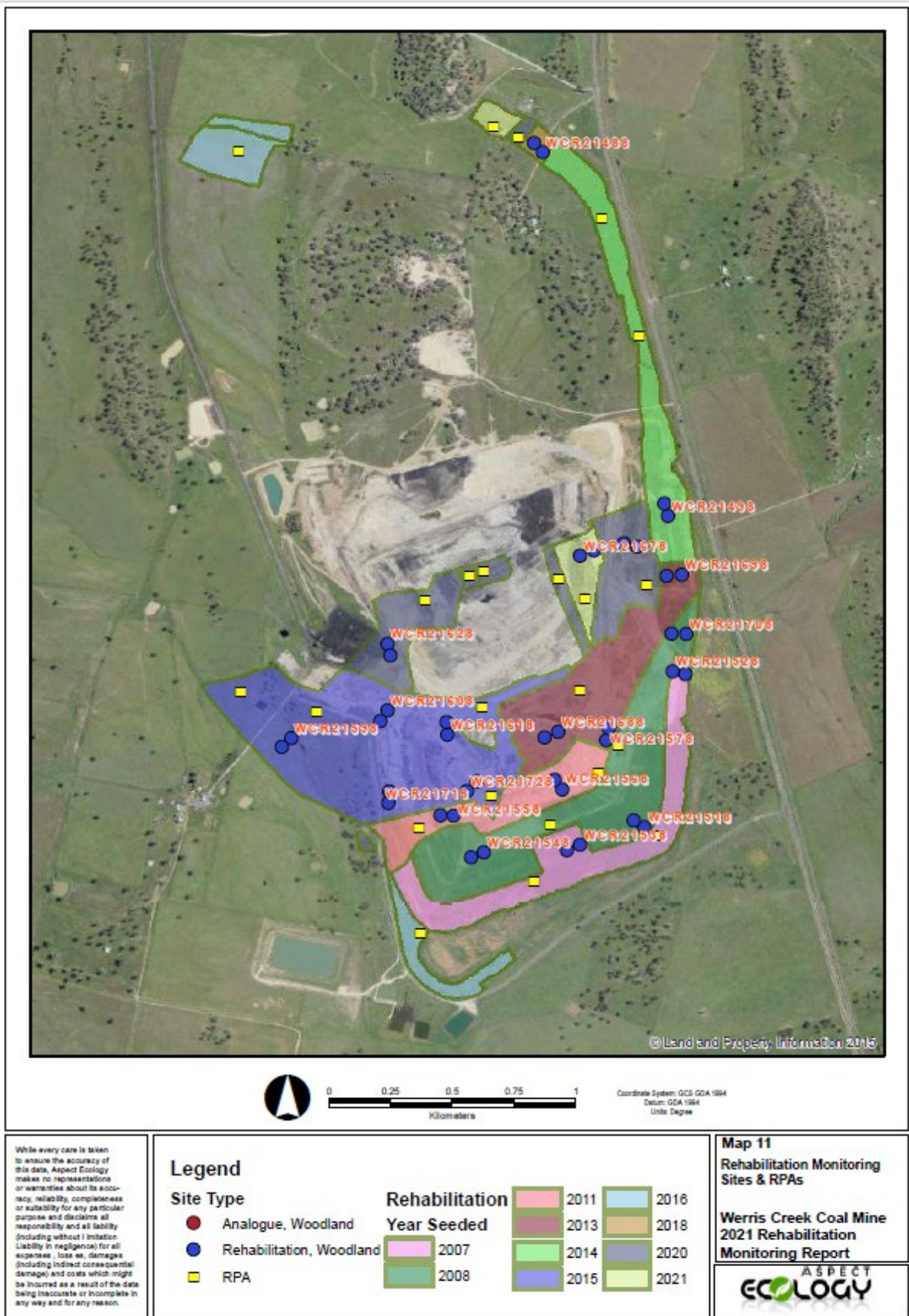


Figure 12: Rehabilitation Monitoring Sites and RPAs

8.2.2 Woodland Domain

8.2.3 Groundcover

In general observations at RPA sites in the field indicate that the rehabilitation frequently exhibits a good diversity of groundcover species, especially native grassland species typical of cracking clay communities (Figure 13). Observations included the threatened native bristly blue grass *Dichanthium setosum*.

Aspect Ecology recommended that the current methods of sourcing topsoil continue as they appear to yield a good diversity of native herbs and grasses. Sites exhibiting higher prevalence of weeds are recommended to be targeted with herbicide application and reseeded of native groundcover species.

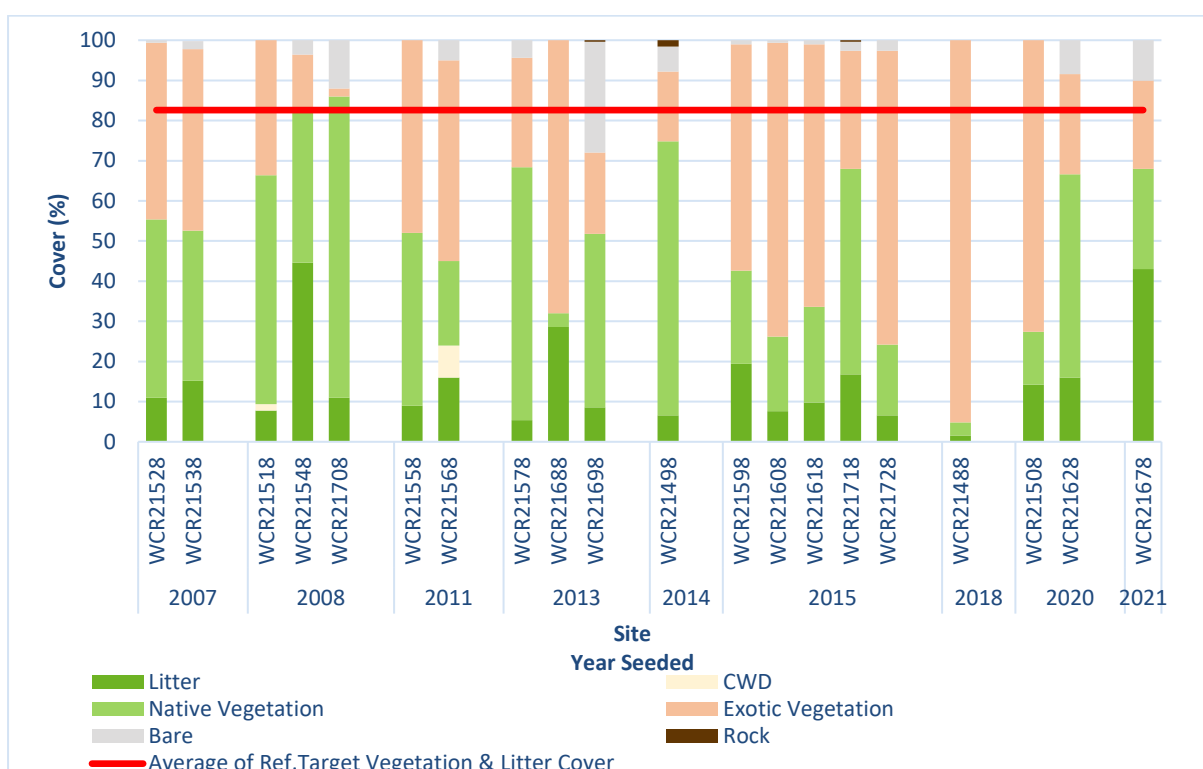


Figure 13: Combined desirable ground cover components (vegetation, leaf litter, and mulch) at Werris Creek Coal Mine rehabilitation sites in 2021. Lines shows average cover observed at analogue sites.

Just under 60% of RPAs had very high groundcover of 91-100% while only 12.5% of sites had very low values of groundcover from 0-10%. All remaining sites (29%) had between 50% and 90% cover (Figure 14).

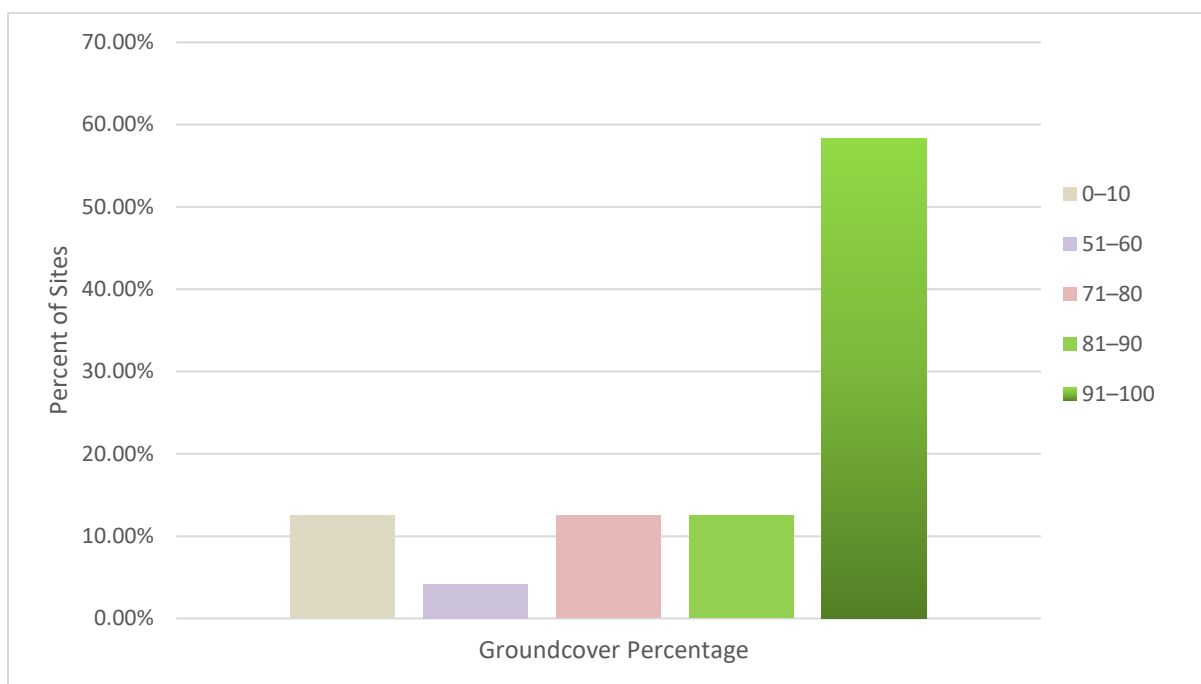


Figure 14 Groundcover of woodland sites at Werris Creek grouped into 10% increments, bar height represents the percent of total sites with that cover range.

8.2.4 Species Composition

The categorical abundance of weeds observed in woodland sites at Werris Creek mine rehabilitation varied from abundant at 63% of all sites to common at 25% of sites and occasional at only 4% of RPAs. Some weeds were present at all RPAs.

Exotic grasses were observed to occur at densities characterised as ‘occasional’ at 42% of all RPA sites at Werris Creek Mine. They were classes as common at 21% of all sites, frequent at 17% and rare at only 2% of all sites.

Native Grasses were observed to be occasional at 33% of all RPAs in the Woodland rehabilitation domain at WCM. The next most common abundances for native grasses were rare at one quarter of sites, frequent at 21% and common or abundant each at 8%. Native grasses were absent at only 4% of all RPAs.

8.2.5 Tree density

Trees (combined < 2m tall and >2m tall) were present at all sites but were generally in low densities; thirteen of the 17 sites seeded prior to 2020 had densities <50 stems/ha, and two were only slightly above this at 70 stems/ha (Figure 15). Some of the 2008 rehabilitation had higher densities, with one site having 130 stems/ha and one at 370 stems/ha. All three sites from 2020–21 had densities >50 stems/ha (Figure 15).

Tree species matching closely with Box Gum woodland TEC/EEC canopy assemblages, including *Eucalyptus melliodora*, *E. blakelyi* and *E. albens*, were frequently observed to be establishing satisfactorily.

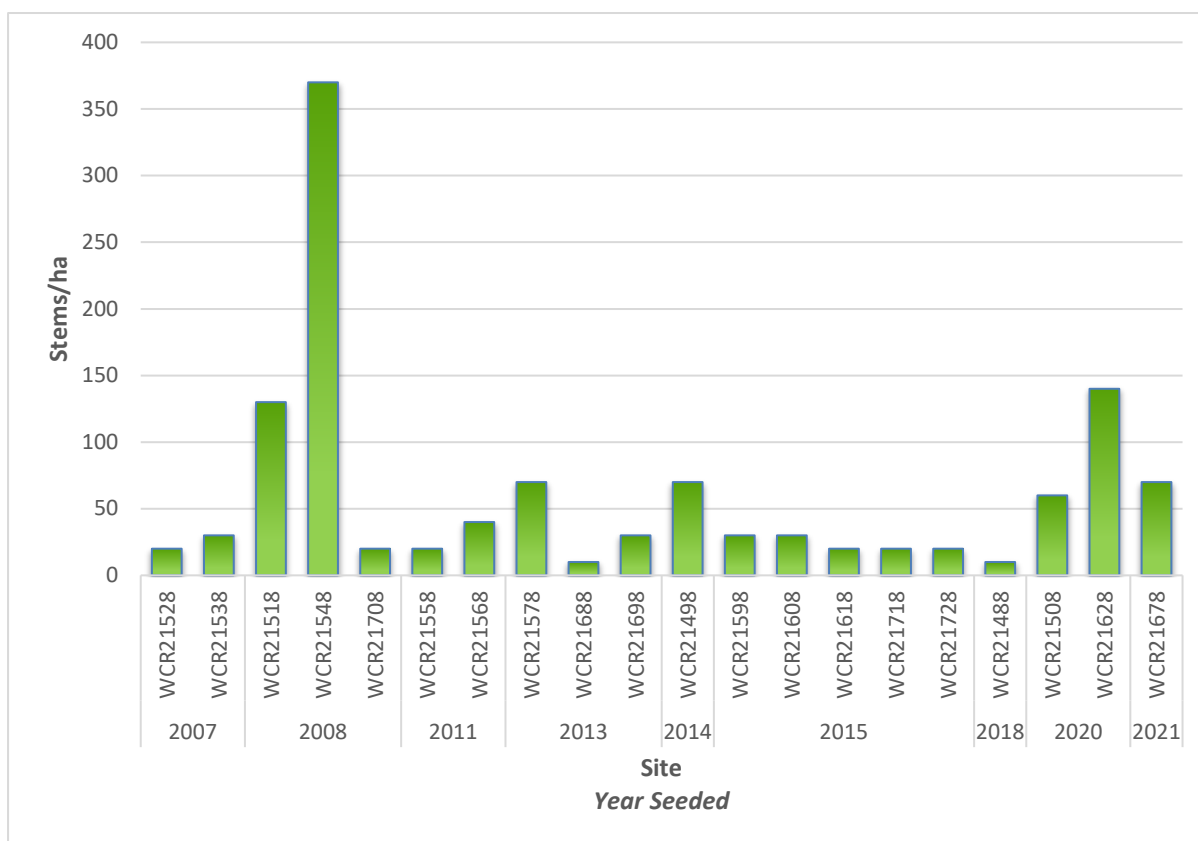


Figure 15: Density of <2m tall trees within rehabilitation sites at Werris Creek in 2021.

Trees less than two metres tall in the Woodland domain were absent from 63% of RPAs and occasional at 17% of RPAs. They were only common at 4% of all RPAs.

Trees greater than two metres tall in Woodland domain sites were absent from 88% of RPAs and occasional, frequent, or common each at 4% of RPAs.

8.2.6 Fauna

Fauna habitat consisted primarily of abundant stag tree emplacements featuring perches and hollows at most sites, while habitat features on the ground were lacking with very little rock or coarse woody debris. Eastern Grey Kangaroos, skinks, and numerous species of birds, including Noisy Miners, were observed. Traces of feral rabbits or hares were present in the form of scats at one site.

8.2.7 Recommendations

A quarter of rapid assessments at Werris Creek determined that no retreatment is required in the 2022 rehabilitation season, while 42% of sites were observed to require tubestock supplementation and 34% were assessed to require understorey or groundcover plantings. It is recommended that:

- supplemental tubestock plantings be carried out in approximately half of the sites in which there has been low seedling survival or insufficient planting density;
- Spot spraying be conducted in areas that require supplemental tubestock planting to facilitate seedling development; and
- Retreatment of some sites in which weeds are dominate and seedling establishment was poor.

8.3 REHABILITATION TRIALS

WHC is supporting research into arboreal habitat augmentation of woodland rehabilitation by installing previously cleared timber back on the post mining landform to replicate habitat provided by stag trees that occur naturally in woodland communities.

During 2021, the use of Jute matting and taller (450mm) Corflute type tree guards was continued to increase performance in preventing weed competition around base of the planted tube stock, predation by kangaroos and retention of moisture at base of trees. Results continue to be positive with survival rates for planted tube stock exceeding 90% survival. The current intention is to retrieve the corflute guards approximately 12 months after tree planting. Dependant on the condition of the corflute, it may be able to be reused on subsequent planting campaigns.

Table 23 presents a summary of the disturbance classes for the end of the previous reporting period, the end of the current reporting period, and a forecast as at the end of the next reporting period and Figure 16 identifies the rehabilitation categories as at December 2021.

Table 23 – Rehabilitation Status

Mine Area Type ¹	Previous Reporting Period 2020	This Reporting Period 2021 (Actual)	Next Reporting Period 2022 (Forecast)
	2020 (ha)	2021 (ha)	2022 (ha)
A. Total mine footprint	591	593.5	603.2
B. Total active disturbance	380	360.3	350
C. Land being prepared for rehabilitation	34	50.6	0
D. Land under active rehabilitation	176	182.6	253.3
E. Completed rehabilitation	0	0	0

¹ Refer Annual Review Guideline (p.11) for description of mine area types.

No areas of rehabilitation at WCC have received formal signoff for completion; however, areas under active rehabilitation as listed in item D above are trending well towards completion.

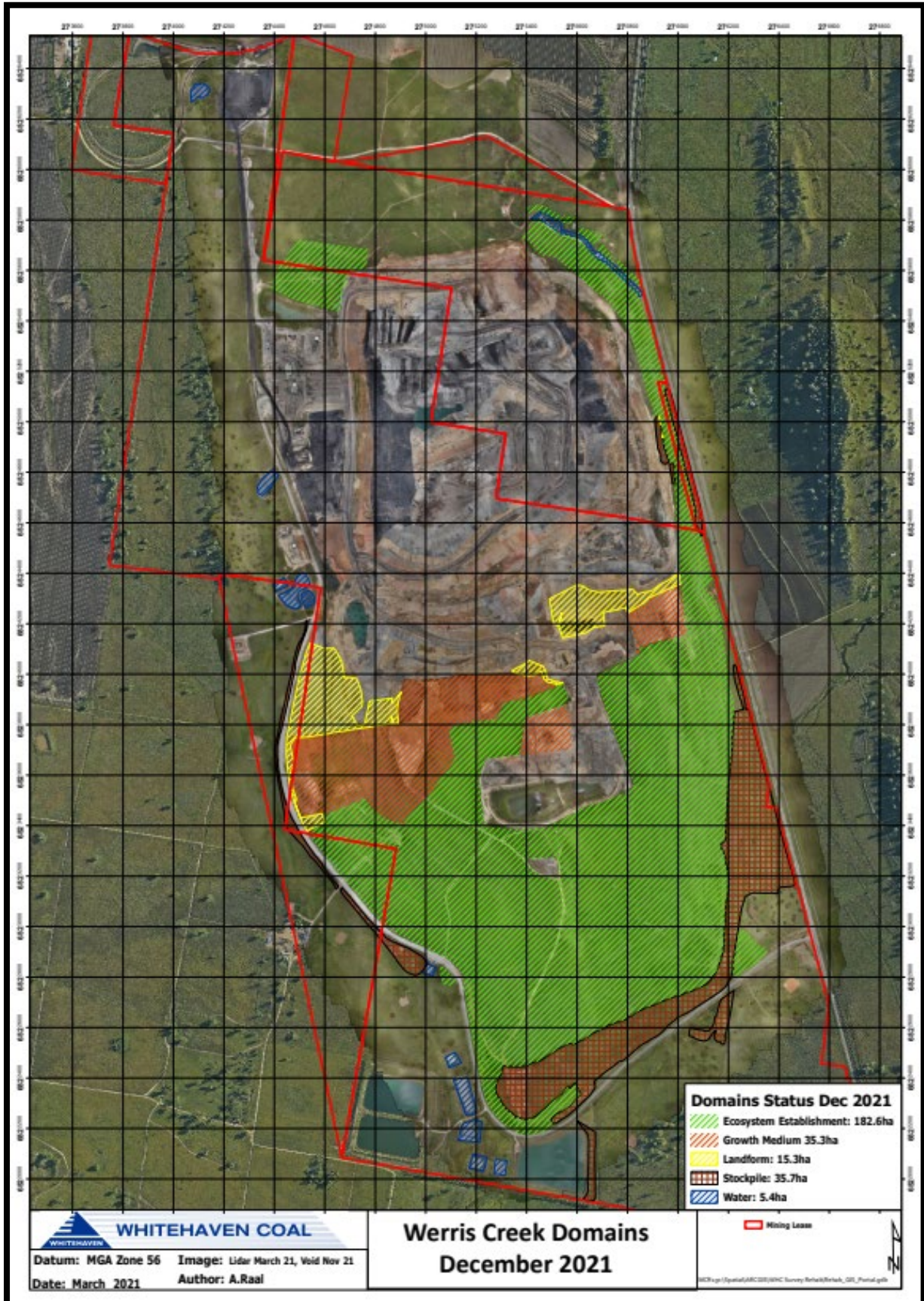


Figure 16: Rehabilitation Status at December 2021

8.4 REHABILITATION WORKS PROPOSED FOR NEXT REPORTING PERIOD

Rehabilitation actions will focus on finalisation of decommissioned areas, landform development and growth medium development of the next section of the outer western batter and northern extents of the upper plateau. Works will also continue to focus on the in-fill planting of tube stock on all rehabilitation areas.

An additional 70.7 ha will be progressed from “under rehabilitation” to “ecosystem establishment” via the spreading of seed and planting of native tube stock in the reporting period.

In addition to the progression of the rehabilitated landform, WCC will manage the existing areas of rehabilitation to ensure a continued trend towards the rehabilitation objectives as previously described. This will include significant focus on infill planting on existing established areas with native tubestock including relevant mid storey species coupled with increased weed management programs to target any emerging weed issues (current or future).

8.5 KEY ISSUES TO ACHIEVING SUCCESSFUL REHABILITATION

There are three key issues in achieving successful rehabilitation, including:

- Managing weed and feral animal infestation due to increased rainfall;
- Improving landform water management to reduce erosion and sedimentation resulting in instability and vegetation growth issues;
- Wet planting conditions and continuous rainfall

In cases where the performance is sub-optimal, additional management measures will be implemented (e.g. replanting, repairing landform and water management features, application of mulch/fertilisers, feral animal and weed control etc.).

9 COMMUNITY

WCC is located approximately 2 km south-southwest of the residential area of Werris Creek and 1.5km north of the rural community of Quipolly, and as such works closely with these communities to provide beneficial outcomes resulting from coal mining activities at WCC.

9.1 COMMUNITY ENGAGEMENT ACTIVITIES

WCC uses a variety of community engagement and consultation methods including the WCC Community Consultative Committee (CCC), regular updates to the Whitehaven Coal website, designated community telephone complaints lines, local media updates, local school visits, sponsorship of local community events and groups, and meetings as required with neighbours and a range of stakeholders including government and non-government agencies.

In addition, there were three (3) CCC meetings held during the 2021 reporting period.

9.2 COMMUNITY CONTRIBUTIONS & INITIATIVES

WHC, which includes WCC, contributes financially to the economy at both state and federal level and to the communities in which we operate. Employees and contractors also add a significant economic contribution to townships in the Liverpool Plains Shire Council (LPSC) through their purchases from local businesses. Whitehaven Coal has contributed in excess of \$1 billion to the North West NSW region since 2012.

Community Enhancement Fund (CEF)

As part of the Life of Mine Project, WCC established the Community Enhancement Fund (CEF) to provide support for community projects in the Liverpool Plain Shire and in particular the Werris Creek township. Whitehaven has pledged more than \$1m in payments to the Liverpool Plains Shire Council for community projects. Projects funded to date by Whitehaven in the Liverpool Plains LGA include:

- \$100k for projects at Australian Railway Museum, Werris Creek;
- \$70k for playground improvements in Werris Creek;
- \$65k for skate park, Werris Creek;
- \$50k for projects in villages in Liverpool Plains Shire; and
- \$20k for Royal Theatre, Quirindi.

Community contributions are managed in accordance with the Whitehaven Coal Donations and Sponsorship Policy. Whitehaven Coal donated \$250,444.65 to local Gunnedah and Regional groups during the reporting period. Groups which received contributions included, but were not limited to the following;

Gunnedah

Gunny Munny
Gunnedah Show Society
St Marys College
Two Rivers Arts Council
Legacy
Rotary Mental Health
Curlewis Public School
Gunnedah South Public School
Gunnedah High School
Gunnedah Public School
Gunnedah Ministers Fraternal
Gunnedah Water Tower Museum
Gunnedah PCYC
Gunnedah Shire Band Incorporated
The Gunnedah Tennis Club
Firebug Photography
Black n Blue Boxing
Gunnedah Show Society
Gunnedah Eisteddfod Society
Clontarf Foundation
Clontarf Foundation
Gunnedah Can Assist
Gunnedah Bulldogs Rugby League Club
Mary Ranken Child Care Centre
Dorothea Mackellar Poetry Awards
Gunnedah Junior Rugby League Football Club
Gunnedah Junior Rugby League Football Club
Gunnedah High School
Challenge Community Services
Rotary Club of Gunnedah West Inc
Funktionalität Event Management

Regional

The OBG Co
The OBG Co
Currabubula Red Cross
Westpac Rescue Helicopter Service
Clontarf Foundation
Operation Pilgrimage Group
Curlewis Pre-School
Liberty Party
West Tigers Rugby League Club
Clontarf Foundation
Operation Pilgrimage Group
Special Children's Christmas Party
Touch Rugby League
St Vincent De Paul Society
Pilliga CWA
Tamworth Family Support

Gunnedah Baptist Community Preschool
Gunnedah Public School
Carroll Community Bus Incorporated
Gunnedah & district Chamber of Commerce
Winanga-Li Early Learning & care services
Gunnedah Community Carols
Lions Club Gunnedah
Gunnedah District cricket Association &
gunnedah junior cricket
Gunnedah South School
Open Opportunities
Gunnedah High School
Gomeri Roos

9.3 COMMUNITY COMPLAINTS

WCC maintains a dedicated community telephone complaints line (1800 942 836) which is published at the mine entrance and on the Whitehaven Coal website. In the event of a complaint or enquiry, details pertaining to the complainant, the complaint and action taken is recorded in the complaints register. The register is available on the Whitehaven website.

Blasting was the dominant cause for complaints within 2021, with 13 blast-related complaints of the total (15) complaints received. When compared to the 2020 reporting period, there was an increase in blast-related complaints during 2021. The total number of complaints and respective category of each complaint for the current 2021 reporting period is provided in Table 24. The previous 2017 to 2020 reporting period's data has been provided for comparison.

For specific complaint details and actions taken, refer to the Complaint Database for 2021 located on the Whitehaven Coal website.

Table 24 – WCC Complaints 2021

Issue	2017	2018	2019	2020	2021
Blast - Vibration/Overpressure	9	19	12	5	13
Blast - Dust/Fume	1	2	1	0	0
Blast/Other	0	0	0	1	0
Noise – Mine	3	0	0	0	0
Dust – Mine	4	5	3	0	0
Surface Water	0	0	0	0	0
Odour	7	8	1	0	0
Water- evaporation	0	1	0	0	0
Other	0	0	0	0	2
Number of Complaints Raised*	24	35	17	6	15

* Number of complaints does not equal the number of issues raised as one complaint can raise multiple issues.

10 INDEPENDENT AUDITS

An Independent Environmental Audit (IEA) was undertaken at WCC on the 11th and 12th of June-2020. The full IEA report and Action Plans can be found on the Whitehaven Coal website.

The next IEA is scheduled for 2023.

The Audit findings relative to the statutory conditions and implementation of the management plans is summarised in Table 25 below.

Table 25 – Summary of 2020 IEA findings

Review	Non compliances (NC)	Observation (NC Obs)	Observation (C Obs)
Statutory Instruments	7	-	4
Implementation of Plans	-	-	-

An action plan was developed to address the 2020 IEA findings. The actions and their current status is summarised below. It is noted that all required actions within the 2020 IEA action plan have been completed and closed out during 2020.

Table 26 - Status of the Implementation of the 2020 IEA Action Plan

Condition	Recommendations	Actions taken
PA 10_0059 MOD3 Schedule 3 Condition 8	Consider implementing an alert mechanism to identify potential blast exceedances – total number of blast events per month.	WCC has implemented a blast management tracking function in monitoring databases to track each planned blast event and provides a visual alert that identifies planned blast events that may exceed the prescribed monthly blast event limits. - Completed
PA 10_0059 MOD3 Schedule 3 Condition 14	Although the Site did receive odour related complaints, indicating offensive odour was emitted from Site, the site has robust odour management process to mitigate odours from spontaneous combustion. No actions required.	Mining of former underground area complete. Risk of spontaneous combustion and subsequent odour generation has substantially declined. No further action required. Item closed
EPL 12290 L1.1	Investigation into Low pH water discharge from EPA14 – February 2020 indicates that the exceedance appears to be anomalous. No further action required. Continue to monitor water quality during discharge events.	Discharge water quality will continue to be monitored as per approval requirements and the approved WCC Water Management Plan. Item closed
EPL 12290 L1.2	Investigation into Low pH water discharge from EPA14 – February 2020 indicates that the exceedance appears to be anomalous. No further action required. Continue to monitor water quality during discharge events.	Discharge water quality will continue to be monitored as per approval requirements and the approved WCC Water Management Plan. Item closed
EPL 12290 L7.1	Although the Site did receive odour related complaints, indicating offensive odour was emitted from Site, the site has robust odour management process to mitigate odours from spontaneous combustion. No actions required.	No actions required. The site has robust odour management process to mitigate odours from spontaneous combustion. Item closed

Condition	Recommendations	Actions taken
EPL 12290 O5.3	The operations manager's contact details should be updated in the PIRMP and amended copies issued where relevant. (the change in roles has only occurred within the last few months).	PIRMP details updated with current staff contact details. Completed – Item closed.
EPL 12290 M6.2	Update the website complaints line number to reflect the correct phone number.	The Website has been updated with the new Whitehaven Complaints number. Completed – Item closed.
EPL 12290 R1.5	Communicate with Environmental Team and higher management at Whitehaven confirming Annual Return submission date for EPL12290 is 30 th May each year. Update calendars accordingly.	The introduction of a notification system to notify and escalate prior to approval reporting and submission dates has been implemented at WCC. Completed – Item closed.
EPL 12290 R1.7	Ensure a signed copy of the annual return is maintained for records.	A signed copy of future Annual Returns will be kept on file. Completed – Item closed.
EPL 12290 R4.1	WCC should review noise monitoring supplier contract to require reporting completed within 30 days.	Contractor engagement terms reviewed and required report submission time communicated with consultants. Completed – Item closed.
EA Statement of Commitments – 14.2	It is ERM's opinion that publication of a regular newsletter would duplicate effort already achieved during CCC meetings and annual reporting. No action deemed required.	Noted – No action required. Project updates to continue being made available to community via CCC minutes / reports and annual reporting documentation made available on project website. Item closed.

The remaining issues outstanding at the completion of the reporting period are summarised in Table 27. All other actions required by previous IEA action plans not listed below have been completed or closed out previously.

Table 27 – Status of the Implementation of the 2017 IEA Action Plan

Condition	Recommendations	Actions taken
PA 10_0059 MOD2 Schedule 3 Condition 43	For the next MOP update, send the key sections of the MOP document to these agencies for review/comment.	WCC will ensure appropriate consultation will be undertaken during the next MOP revision scheduled for 2021 / 2022.
EPL 12290 M9.1	It is unclear to the auditor as to why the EPL requires 60 minute noise monitoring surveys to assess compliance with the criteria which is LAeq15minute.	WCC has considered and variation to EPL 12290 will be made at next EPL review. Completed – Item closed.

11 INCIDENTS AND NON-COMPLIANCES DURING THE REPORTING PERIOD

11.1 REPORTABLE INCIDENTS

No reportable incidents occurred during the reporting period.

11.2 NON-COMPLIANCES

The compliance status of WCC against relevant approvals during the reporting period was assessed in Section 1 as at the end of the reporting period (2021).

One low level non-compliance was identified that was an administrative non-compliance for each mining lease. In May 2021 during a compliance audit by the Resources Regulator it was discovered that the Annual Review had not been submitted in accordance with Condition 3 of ML1563 and Condition 4 of MLs 1671 and 1672. This was immediately rectified by the submission of the document and was noted as a 'NC3' or in the subsequent audit report from the Resources Regulator. An NC3 non-compliance is defined as 'an administrative or reporting non-compliance which does not have a direct environmental or safety significance' by the Resources Regulator.

A specific action for the submission of the Annual Review to both the Department of Planning and the Resources Regulator has been added to the compliance management system, CMO, to ensure that this requirement is not overlooked again. CMO sends out a reminder to the Environmental Superintendent prior to the due date of the Annual Review. Evidence of submission to both agencies is required to close out the action.

11.3 REGULATORY ACTIONS

The Resources Regulator issued an Official Caution (NCN0009386, NCN0009384, NCN0009385, NCN0009387) for failure to comply with Condition 3, 4 and 4 of MLs 1563, 1671 and 1672 respectively.

The EPA also issued an official caution notice (#350087) in relation to the burial of end of life tyres between 2017 and 2018.

12 ACTIVITIES TO BE COMPLETED IN THE NEXT REPORTING PERIOD

Activities to be completed in the next reporting period to improve the environmental or community performance of WCC have been included in Table 28 .

Table 28 – Activities proposed to be completed in the next reporting period

Activity	Timeframe
Completion of review and, if necessary, revision of Environmental Management Plans – submit to relevant Govt agencies and stakeholders for consultation / sign off as relevant.	In accordance with PA 10_0059
Progression of remaining actions from the 2017 IEA – Development of Closure MOP – submit to relevant stakeholders and agencies for consultation	2022 - 2023
Continued community liaison and engagement with local stakeholders	Ongoing