


Annual Review

Canyon Coal Mine

Name of operation	Canyon Coal Mine
Name of operator	Whitehaven Coal Mining Ltd
Development consent/project approval number	DA 8-1-2005
Name of holder of development consent/project approval	Whitehaven Coal Mining Ltd
Mining lease number	ML 1464, ML 1471
Name of holder of mining lease	Whitehaven Coal Mining Ltd
Water licence number	WAL 29458
Name of holder of water licence	Whitehaven Coal Mining Ltd
MOP start date	7 September 2015
MOP end date	6 September 2022
RMP start date	23 August 2022
Annual review start date	1 January 2022
Annual review end date	31 December 2022
<p>I, Mark Stevens, certify that this audit report is a true and accurate record of the compliance status of Canyon Coal Mine for the period 1st January 2022 until 31st December 2022, and that I am authorised to make this statement on behalf of Whitehaven Coal Mining Pty Ltd.</p> <p><i>Note. a) The Annual Review is an 'environmental audit' for the purposes of section 122B (2) of the Environmental Planning and Assessment Act 1979. Section 122E provides that a person must not include false or misleading information (or provide information for inclusion in) an audit report produced to the Minister in connection with an environmental audit if the person knows that the information is false or misleading in a material respect. The maximum penalty is, in the case of a corporation, \$1 million and for an individual, \$250,000.</i></p> <p><i>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).</i></p>	
Name of authorised reporting officer	Mark Stevens
Title of authorised reporting officer	EGM – Project Delivery
Signature of authorised reporting officer	
Date	27/02/2023

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1. STATEMENT OF COMPLIANCE

The compliance status of the Canyon Coal Mine (CCM) as at the 31st December 2022 is summarised in **Table 1.1a**.

Table 1.1a - Statement of Compliance

Approval	Were all conditions of the relevant approval(s) complied with?
Development Consent DA 8-1-2005	Yes
Mining Lease 1471	Yes
Mining Lease 1464	Yes
Water Access Licence 29458	Yes
Mining Operations Plan	Yes

2. INTRODUCTION

This is the twenty-first Annual Review (AR), formally Annual Environmental Management Report (AEMR), produced for the CCM. It has been prepared in accordance with Condition 3 of Mining Leases (MLs) 1464 and 1471 issued under Part 5 of the *Mining Act 1992* and Schedule 5, Condition 5 of DA 8-1-2005, as modified. The AR follows the format required by the NSW Governments Annual Review Guideline (October, 2015). The AR covers the period from the 1st January 2022 until the 31st December 2022.

CCM is located within the Narrabri Shire Council (NSC) local government area, approximately 30 km north-west of Gunnedah, 16 km east-south-east of Boggabri and immediately north of the former Vickery Coal Mine (**Figure 1.1**). Mining at CCM ceased in July 2009, and the mine is now in closure.

Development Consent (SSD-7480) was granted to VCPL on 12 August 2020 by the NSW Independent Planning Commission as the declared consent authority, under section 4.38 of the *NSW Environmental Planning and Assessment Act 1979* (EP&A Act). The Development Consent allows for the development of an open cut mine and associated infrastructure with a 25 year mine life, extracting run-of-mine (ROM) coal at up to 10 million tonnes per annum (Mtpa) and processing the coal, as well as coal from WHC's Tarrawonga Mine, at an on-site coal handling and processing plant (CHPP) for off-site transport by rail.

WHC commenced development under Development Consent SSD-7480 for the VCM on 28 April 2022 to undertake pre-construction activities. Pursuant to Schedule 2, Condition A18(b), WHC will surrender DA-8-1-2005 this reporting period (within 12 months of the date of commencement of development).

2.1 Mine Contacts

The management personnel responsible for the CCM during the reporting period and their relevant contact details are as follows:

- Mr Mark Stevens, Executive General Manager – Project Delivery. Contact (07) 3738 2003 or 0400 041 364.

3. APPROVALS

3.1 Tenements, Licences and Approvals

Table 3.1 identifies the approvals in place for the CCM at the end of the reporting period, the issuing/responsible Authority, dates of issue, expiry date and relevant comments.

Table 3.1 - Tenements, Licences and Approvals

Issuing/Responsible Authority	Type of Lease, Licence, Approval	Date of Issue	Expiry
Department of Planning, Infrastructure & Environment (DPIE)	Development Consent: DA 8-1-2005, Mod. 3	30 th June 2005	N/A
Department of Regional NSW – Division of Mining, Exploration and Geoscience (DMEG)	ML 1471	7 th Sept 2000	6 th Sept 2042
Department of Regional NSW – Division of Mining, Exploration and Geoscience (DMEG)	ML 1464	21 st Dec 1999	20 th Dec 2020 (Renewal sought)
Department of Primary Industry - Water	WAL 29458 (90WA822498)	12 th Sept 2012	In perpetuity

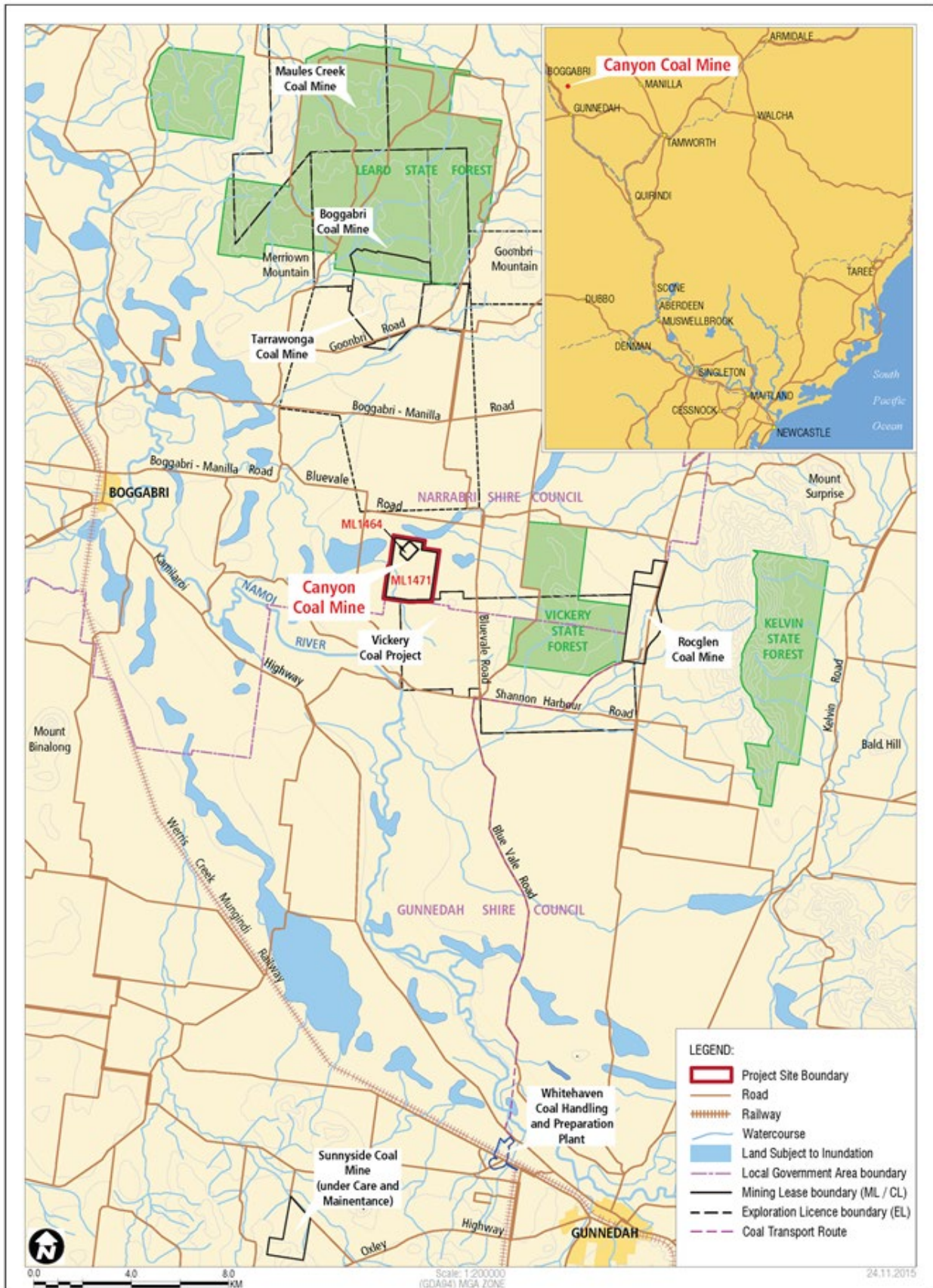


Figure 3.1 - Project locality

4. OPERATIONS SUMMARY

4.1 Mining Operations

No mining operations have occurred at the CCM during the reporting period (refer to **Table 4.1**).

Table 4.1 - Production Summary

Material	Approval Limit	Previous Reporting Period (actual)	This Reporting Period (actual)	Next Reporting Period (forecast)
Waste Rock/Overburden	N/A	0	0	0
ROM Coal/Ore	N/A	0	0	0
Coarse Reject	N/A	0	0	0
Fine Reject (Tailings)	N/A	0	0	0
Saleable Product	N/A	0	0	0

4.2 Next Reporting Period

WHC will continue to undertake an internal evaluation of project development throughout the 2023 reporting period. Activities in relation to the Project during the 2023 reporting period will include:

- detailed engineering and design studies in relation to infrastructure for the project;
- associated geotechnical investigations and other pre-construction activities; and
- various primary and secondary approvals (ie management plans).

Projects are subject to Whitehaven's strict capital allocation framework for projects. The VEP will continue to target progression through internal 'toll gates' (ie the Future Investment Decision [FID] stage), for the Project.

The commencement of the construction stage of the Project is anticipated during the 2023 reporting period with the final design and establishment of required infrastructure to support the development of early mining.

WHC commenced development under Development Consent SSD-7480 for the VCM on 28 April 2022 to undertake pre-construction activities. Formal surrender of the development consent DA-8-1-2005 will occur during the 2023 reporting period in accordance with condition A18 of SSD-7480.

5. ACTIONS REQUIRED FROM PREVIOUS ANNUAL REVIEW

There were no actions required from DPE in relation to the 2022 Annual Review. **Table 5.1** summarises the commitments made by Whitehaven Coal (WHC) in the last Annual Review.

Table 5.1 - Actions from 2021 Annual Review

Action required from previous Annual Review	Requested by	Action taken by the Operator	Where discussed in Annual Review
Implementation of feral animal control.	Operator	Feral animal control undertaken.	Section 6.2.5
Weed control for African Boxthorn, Prickly Pear and Paterson's Curse	Operator	Ongoing	Section 6.2
Continued implementation of DA 8-1-2005 until surrender, environmental monitoring and management and relevant management plans	Operator	Ongoing	Section 3

6. ENVIRONMENTAL PERFORMANCE

6.1 Air Quality

Dust and air quality criteria for CCM is noted in DA 8-1-2005 however, they are not relevant as no operational activities have occurred during the reporting period.

6.1.1 Key Environmental Performance/Management Issues

The TEOM at Wilgai experienced operational errors in the last quarter of the reporting year, hence a complete datasets for PM10 and TSD are not available. Maintenance of the TEOM was undertaken in December 2022.

Dust Monitoring

The site remained in closure and no mining activity occurred on the site during the reporting period. Monitoring of deposited dust is undertaken on a monthly basis, with results within the criteria of 4 g/m²/month (**Figure 6.1**).

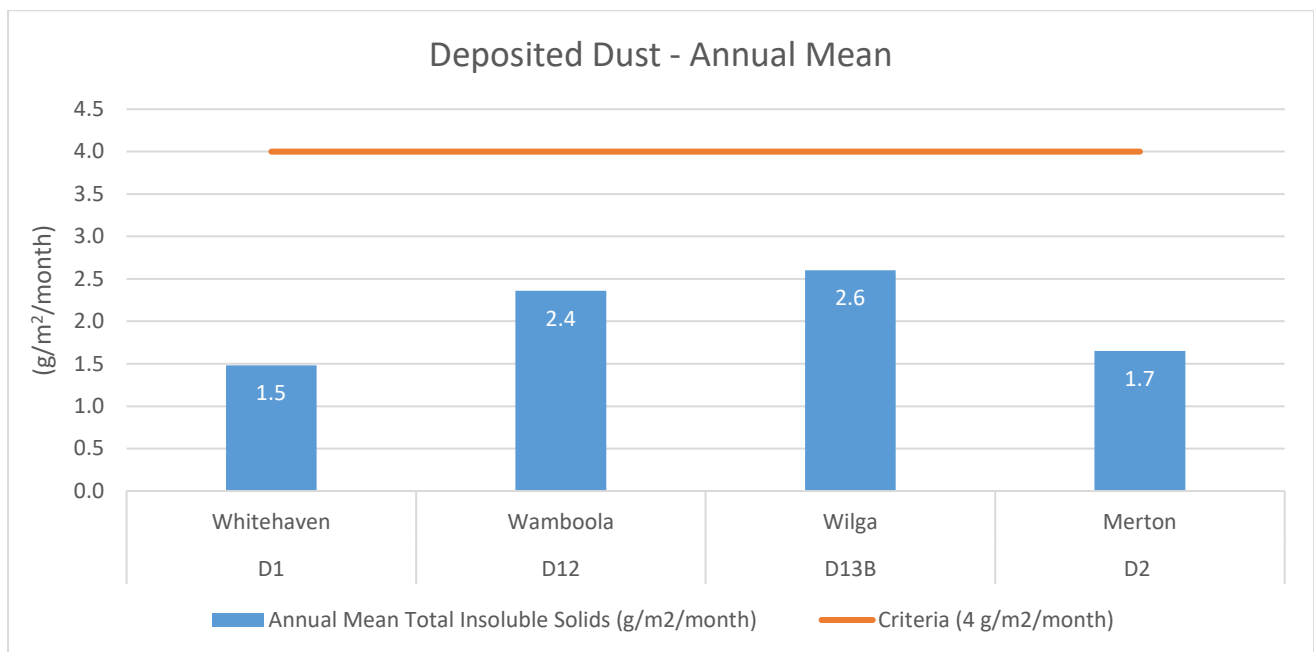


Figure 6.1 - Deposited Dust Annual Mean (actual values for each site shown on bars)

Air Quality Monitoring

PM₁₀ is measured at a Whitehaven Coal owned property, Wilgai, approximately 1.5 km to the east of the north-eastern boundary of ML 1471. The results were within required criteria with a mean annual PM₁₀ particulate level of 5.5 µg/m³ against criteria of 30 µg/m³ (**Figure 6.2**). This value is below the predicted mean annual PM₁₀ particulate levels in the EIS (between 15 µg/m³ and 35 µg/m³). The 24-hour average PM₁₀ particulate level (50 µg/m³) was not exceeded in 2022(**Figure 6.2**).

Total suspended particulate matter was within target criteria during the year with a mean value of 10.2 µg/m³ (**Figure 6.3**).

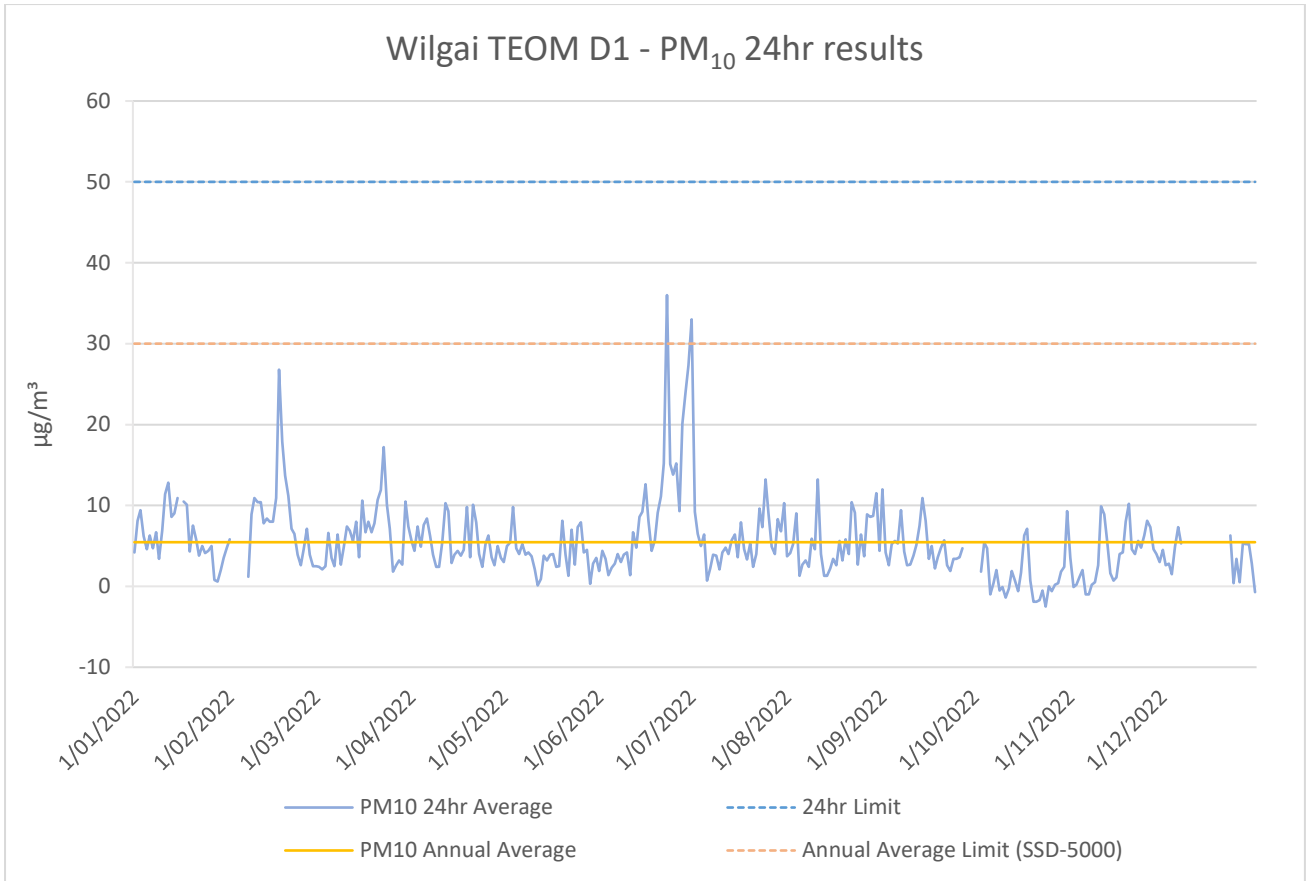


Figure 6.2 - "Wilgai" Particulate Matter (PM₁₀)

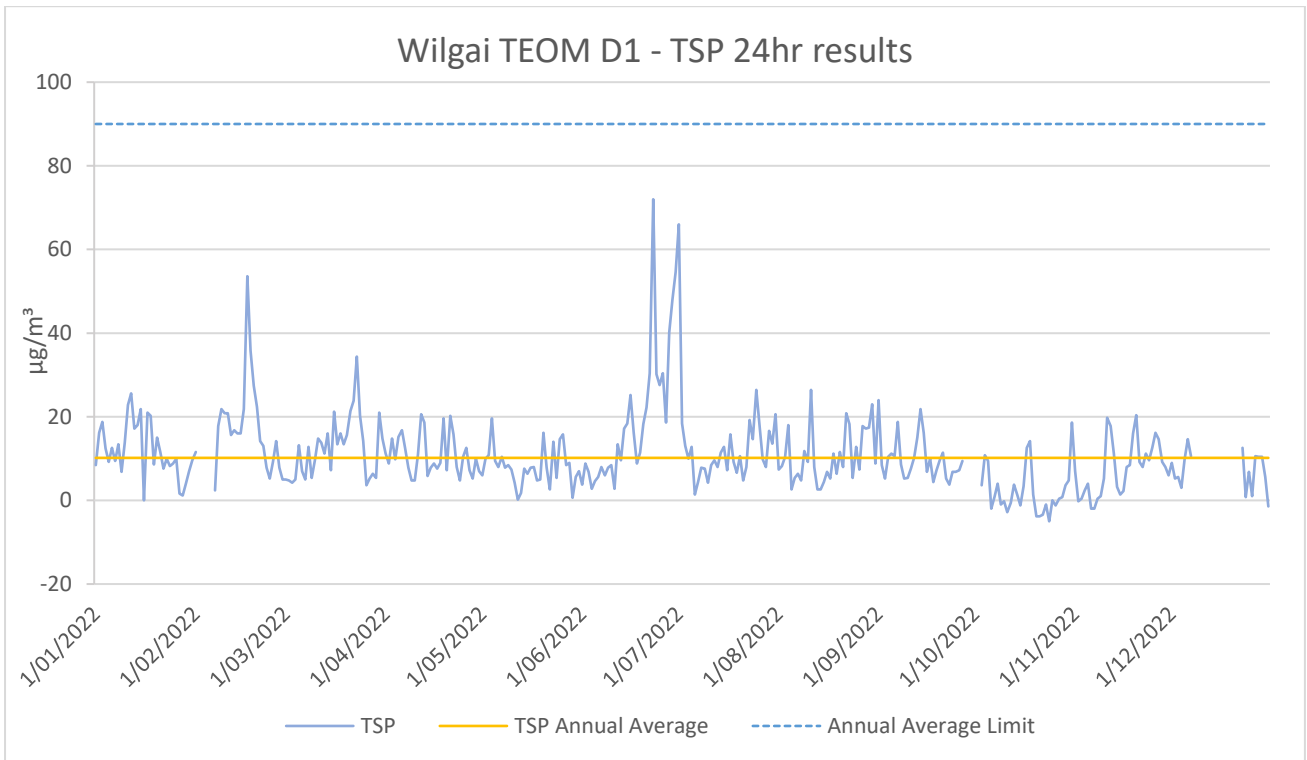


Figure 6.3 - "Wilgai" Total Suspended Particulate (TSP) Matter

6.1.2 Proposed Improvements to Environmental Management

No improvements are proposed within the next reporting period.

6.2 Onsite Biodiversity

Introduction

An ecological field assessment of rehabilitated areas and analogue sites was undertaken in November 2022. Monitoring was undertaken using the Whitehaven Annual Rehabilitation Monitoring Methodology (WARMM v1.4—Aspect Ecology 2021) and reported against relevant completion criteria for Canyon Mine in the Vickery Coal Mine Rehabilitation Management Plan where relevant.

Monitoring in the Woodland Domain comprised:

- the repeat monitoring of one new ‘best-on-offer’ (DPIE 2020) local analogue woodland site situated in one of the two target native vegetation communities specified in the MSRP (CMOP tbl 18, equivalent to lower slopes/ drainage slats Target) Poplar Box – Yellow Box – Western Grey Box grassy woodland Plant Community Type ID 101 in the BioNet Vegetation Classification System); and
- repeat monitoring of twelve Woodland Domain sites.

Monitoring in the Pasture Domain comprised:

- repeat monitoring of one analogue; and
- repeat monitoring of five rehabilitation sites.

6.2.1 Woodland Domain

Groundcover

Within sites, native vegetation and litter collectively were below the average vegetative cover value for analogue woodlands which is (93.8%) (**Figure 5**). However, two sites were approaching this value: CCR21308 at 83.6% and CCR21308 at 75.8%. In addition, three sites already have an average ground cover between 58% and 64% (CCR21338, CCR21398 and CCR21328—**Figure 5**). All sites have greater than 50% groundcover (vegetation, leaf litter, mulch) and currently meet the surface over completion criteria.

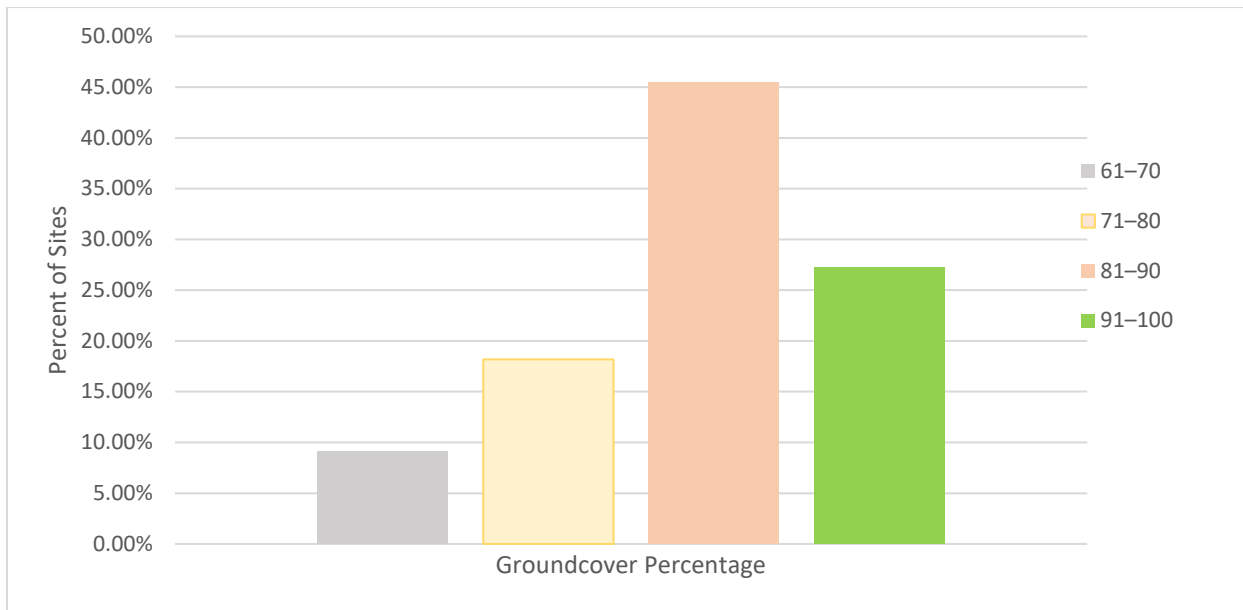


Figure 6.4 - Groundcover of woodland sites at CCM grouped into 10% increments, bar height represents the percent of total sites with that cover range.

Species Composition

In general, field surveys indicated that Woodland rehabilitation at CCM often comprised diverse and well-established woodland with a high diversity of tree and shrub species. The understorey often consisted of abundant, diverse native groundcovers. Approximately two thirds of the sites had moderate to low weed cover while approximately one third were dominated by understorey weeds. A smothering exotic chenopod groundcover was noted in the woodland analogue site CCR21348 which appears to be spreading and suppressing recruitment of other species. It should be incorporated into plans for spot spraying.

Tree density

Woodland sites displayed high variability in tree density at CCM, calculated as stem density per hectare. Values range from 0 - 250 stems/ha (Figure 6).

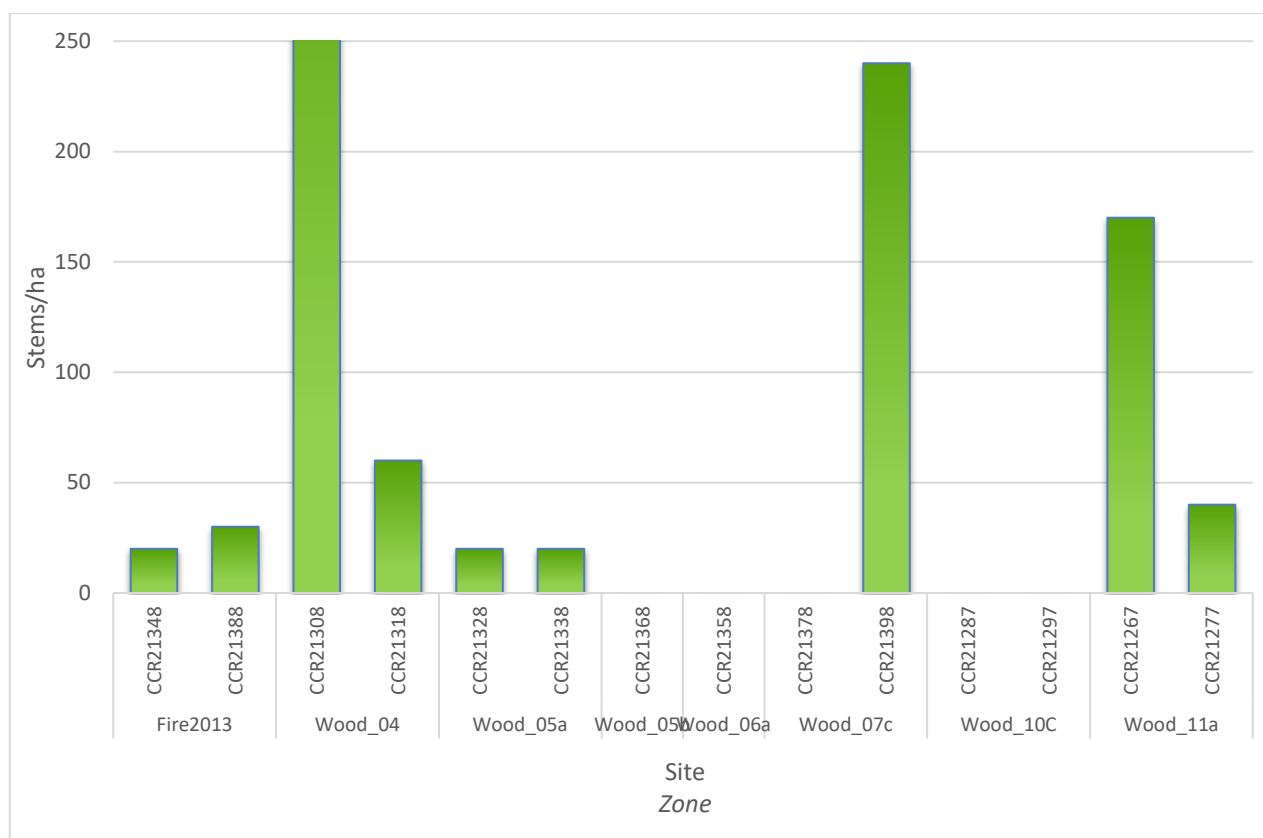


Figure 6.5 - Density of >2m tall trees within rehabilitation sites at CCM in 2022, grouped by rehabilitation zone.

Canopy heights

The lower height of tree canopy in the CCM woodland rehabilitation sites is approximately 2.5 m (range 0-6 m). The upper height of tree canopy is approx. 5.4 m (range 0-14 m). The lower height of tree canopy in the CCM woodland analogue site was 5 m, the upper height was 18 m. This indicates that trees in the Rehab sites are not yet at the mature heights of woodland trees for these Plant Community Types.

Life stage and health of trees

Good tree establishment was noted overall in the rehab areas at CCM and trees generally appeared to be in good health. Reproduction completion criteria requires second generation tree seedlings to be present or likely to be (e.g. presence of flowering). Many planted native trees were noted to be flowering or to hold fruit and tree recruitment was observed, with 42% of rehabilitation plots sampled containing second generation seedlings.

Erosion

Erosion and sediment control completion criteria requires that there is no evidence of significant erosion in the woodland final land use domain. Erosion was absent from crests and flats, upper and lower slopes up to 15 degrees.

Fauna habitat

CCM has abundant maturing Eucalyptus and Acacia trees which are now providing resources such as nectar and seed for a variety of birds. Course woody debris was present in a few survey plots, and together with occasional small rocks present in two sites, this may provide habitat for reptiles and invertebrates. While the analogue site was noted to have hollow bearing trees, stags, excoriating bark and frequent course woody debris on the ground, the rehab sites often lacked these habitat features.

Fauna observations

Numerous birds were observed on site. Macropod scats were observed within three plots.

6.2.2 Pasture Domain

Total groundcover

All pasture rehabilitation sites surveyed at Canyon Mine had over 75% total vegetative cover (vegetation, leaf litter, mulch) (**Figure 7**). All rehabilitation sites showed increased vegetative cover values from the 2021 surveys (**Figure 7**). Four of the five sites exhibited total vegetative cover scores of between 97-100% and have average total vegetative cover values similar to analogue sites (**Figure 7**).

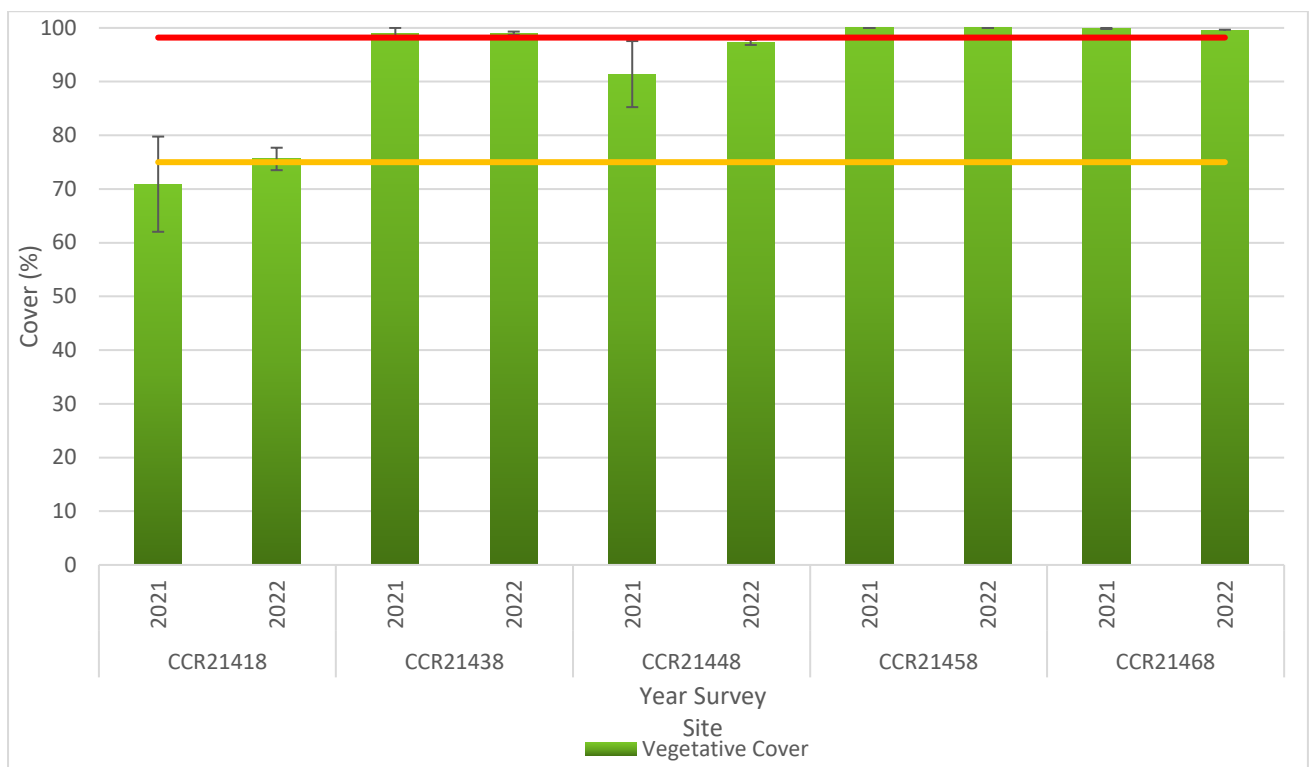


Figure 6.6 - Total vegetative cover (vegetation, leaf litter, mulch) completion criteria at CCM. Red line shows average cover at analogue site. Orange line shows completion criteria minimum of 75%. Bars show standard error of the mean.

Groundcover components

The largest component of the total groundcover in the pasture domain was vegetation (63-89% grasses and forbs). This is comparable with the analogue pasture site (84% vegetation). Litter contributed an additional average 12-28% of the total vegetative cover scores in the rehab and 14% in the analogue. There were very low (<2%) cover scores for rocks, gravel or cryptogams and an absence of mulch or coarse woody debris in rehab and analogue sites. Bare earth cover was less than 3% in four of five pasture rehab sites and comparable with the analogue site. A higher bare earth cover score of 22% was recorded at one site (CCR21418) similar to its 2021 value of 19%. It was speculated that this plot may have been placed over an old road.

Erosion

Erosion and sediment control completion criteria requires that there is no evidence of significant erosion in the agricultural grazing final land use domain. Erosion was absent from the pasture plots and slopes were less than seven degrees.

Species composition

The pasture analogue site (CCA21668) was noted to have extremely high native species diversity with many different grasses, daisies, twiners and other forbs.

The pasture rehabilitation sites were noted to comprise sown pasture grasses and mixed native and exotic herbs, grasses, legumes and chenopods. Palatability was often above 50%.

Fauna habitat and fauna observations

Birds and macropods were noted to pass through but there was little by way of perching, shelter or breeding resources in the pasture sites for birds. Grass seeds would offer food to some finches and invertebrates would be a source for fantails, pipits and robins but they would all require nearby cover. Rodents would be on offer for raptors which would also largely shelter and nest in the woodland domain.

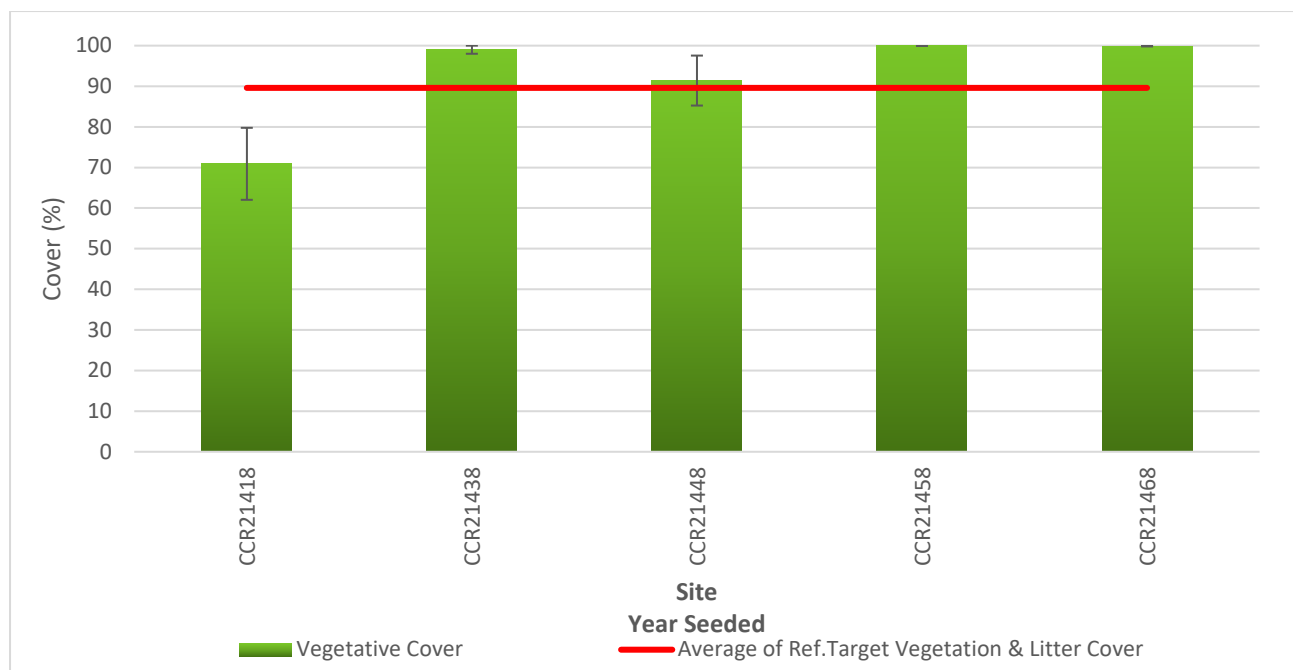


Figure 6.7 - Combined Pasture completion criteria ground cover components (vegetation, leaf litter, and mulch) at Canyon Mine. Line shows average cover at analogue sites. Bars show standard error of the mean.

6.2.3 Recommendations

For areas of Canyon Mine that are to be retained, it is recommended that:

- additional shrub and tree tube stock plantings be carried out in approximately half of the woodland sites in which there has been low seedling survival or recruitment;
- spot spraying be conducted for localised weed patches in areas where there is currently good native groundcover; and
- areas of extensive grass weeds are eradicated in the Woodland Domain, followed by reseeding of suitable native groundcover species.
- introduction of coarse woody debris and artificial hollows be investigated. Often these resources are available for translocation from areas being developed or cleared elsewhere.

6.2.5 Weeds and Pests

Weed monitoring found high densities of Paterson’s Curse, African Boxthorn and Prickly Pear which is consistent with previous reporting periods.

Feral pigs and domestic sheep have been observed at CCM during various site visits. Sheep were mustered and removed from site.

6.2.6 Key Environmental Performance/Management Issues

No key environmental performance/management issues were identified during the reporting period.

6.2.7 Proposed Improvements to Environmental Management

A weed control program will be implemented on site targeting Paterson's Curse, African Boxthorn and Prickly Pear.

6.3 Biodiversity Offsets

The approved WHC Biobank Biodiversity Offset Management Plan (BOMP, 2013) outlines the Biodiversity Offset Strategy (BOS) requiring 1,524 ha of native woodland to be maintained and improved on the Yarrari and Belah properties (collective known as Biobank BOA) with subsequent biobanking credits retired relating to the Rocglen Coal Mine, CCM, the original Tarrawonga Coal Mine with the final credits retired in 2022 for the Vickery Coal Mine.

6.3.1 Offset Security Management

The WHC Biobank BOA was secured under a NSW Biobanking Agreement on 28 June 2012 (now converted to Biodiversity Stewardship Agreement (BSA) under the *Biodiversity Conservation Act 2016*). The BOMP outlines the intention to transfer the property to the National Parks Estate as an addition to the Boonalla Aboriginal Area (formerly Kelvin State Forest) after Year 10 (~2023), subject to National Parks and Wildlife Service negotiation and agreement.

6.3.2 Weather Summary of Biobank Offset Properties

Regionally central meteorological station to the BOAs is the Gunnedah Pool site (BOM 2023) which has recorded highly variable rainfall over the last 4 years; from driest in 140 years of 237 mm in 2019, followed by above average rainfall years in 2020, 2021 and 2022 of 833 mm, 990mm and 860 mm respectively resulting in major flooding of the Namoi River in October and November 2022. WHC maintains a meteorological station adjacent to the Biobank BOA with a summary of weather conditions experienced at the Roseglass Offset property during the 2022 reporting period being a maximum monthly average temperature of 32°C in January 2022 and a minimum monthly average temperature of 4°C in June 2022. Annual temperature ranges were 0°C to 37°C in 2022. The total annual rainfall in 2022 was 716 mm with the maximum in September (110 mm) and minimum in June (11 mm).

6.3.3 Infrastructure Management

During the reporting period, existing fencing (fauna friendly) was maintained along the perimeter of Biobank BOA as well as maintenance of signage and gates undertaken as required to continue to restrict unauthorised access and minimise livestock incursion. There are no known remaining derelict assets/infrastructure items to be removed but if any are found, those items will continue to be assessed, removed and remediated as required prior to transfer of Yarrari and Belah Offset properties to National Park Estate.

6.3.4 Seed Management

No seed was collected on the Biobank BOA during the reporting period as not required.

6.3.5 Revegetation Management

The revegetation schedule within Biobanking Agreement 43 requires enhancement planting to occur between Year 8 (2021) and 10 (2023) as required. During the reporting period, no specific revegetation management works were undertaken as not required.

6.3.6 Heritage Management

During the reporting period, annual heritage inspections were completed on the 32 known Aboriginal cultural heritage sites within the Biobank BOA with each site maintained with a total of 4.95 km of demarcation fencing around the heritage site perimeter and signage to mitigate access and inadvertent disturbance.

6.3.7 Habitat Management

During the reporting period, no specific habitat management works were undertaken as not required.

6.3.8 Weed Management

WHC coordinated routine formal weed monitoring/inspections undertaken across Biobank BOA in February, May, September and December 2022. The priority weeds identified included legacy weeds inherited from previous owners management regimes such as African/Consul Lovegrass, Buffel Grass, Box Thorn, Bathurst Burr and Common Prickly Pear 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 information directly given to spraying contractors to identify what, where, when and how to target appropriate resources across the Biobank BOA for weed control.

During the reporting period, WHC implemented a weed control program across the Biobank BOA including 275ha treated between January and December 2022 targeting primarily African Lovegrass, Buffel Grass, Bathurst Burr and other broadleaf weeds, Box Thorn, and Prickly Pear weed species as required. Only appropriately qualified and experienced weed contractors (AQF3 accreditation or higher for use of herbicide) were engaged to undertake weed control works for WHC.

6.3.9 Pest Animals Management

WHC undertook routine pest animal monitoring across the Biobank BOA in 2022 adopting the “monitor, measure and manage” approach to pest animal management; which will allow WHC to implement adaptive management in response to changes being measured through monitoring in pest animal abundance specific to the different geographical regions of the Biobank BOA. Pest animal monitoring primarily utilises remote sensor cameras for pest animals generally in accordance with the NSW DPI Monitoring Techniques for Vertebrate Pests as cameras now provide the best option of detection for the greatest range of species as well as being complemented by pest animal sighting reports. Monitoring demonstrated that certain animals like Eastern Grey Kangaroos and Feral Pigs can be high in abundance seasonally with all other pest animal species recorded as scarce to low abundance levels across 2022. The pest animal monitoring ensures that timely and prioritised pest animal control is undertaken on a seasonal basis identifying what, where, when and how to target appropriate resources across the Biobank BOA for pest animal management.

During the reporting period, WHC implemented a comprehensive pest animal control program across the Biobank BOA with routine 1080 and Hoggone baiting and trapping programs for Feral Pigs undertaken throughout 2022. During the reporting period; the 1080 baiting program removed 77 Foxes from 168 baits presented and the Hoggone baiting program removed 49 Feral Pigs from 244 baits presented across the Biobank BOA resulting in 45% and 20% of baits respectively being taken by target feral animals. A further 147 pigs were trapped and removed across the Biobank BOA in 2022. There were 200 Goats harvested at the Biobank BOA during the reporting period with saleable Goats on sold to an abattoir. Only appropriately qualified and experienced pest animal contractors (appropriate pest animal management qualifications, NSW firearms licence and pesticide accreditation where relevant) were engaged to undertake pest animal control works for WHC.

6.3.10 Soil & Erosion Management

Annual inspections were undertaken including unsealed fire break tracks and associated drainage structures across the Biobank 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)). Throughout the reporting period there was above average rainfall, with a number of flood events in the region. A total of 2 observations were recorded within the Biobank BOA with no locations requiring targeted additional track maintenance to mitigate further erosion and sedimentation. The remaining tracks/drainage structures are maintained during routine WHC Biodiversity fire break track maintenance program with no other erosion sites present on Biobank BOA.

6.3.11 Grazing Management

Biobank BOA was destocked in 2016 and continued to be destocked with no strategic grazing occurring during the reporting period. There were two instances of stock incursion during the reporting period; with stock on each occasion retrieved and fencing repaired as required.

6.3.12 Bushfire Management

The Biobanking Agreement 43 prohibits the use of fire within the Biobank BOA until Year 40. During the reporting period, no bushfires occurred and no ecological burns were undertaken. Other fire management implemented by WHC during the report period was maintenance on 33.8 kilometres to zero fuel barrier standard across the Biobank BOA. WHC maintains regular communications throughout the reporting period with the Liverpool Range Zone RFS team around planning of WHC Biodiversity's ecological burn programs as well as maintaining contact points in case of emergency. WHC maintains a specialist fire fighting contractor for an on-call engagement during the fire season to respond in the event of a bushfire on WHC BOAs and non-mining lands.

6.3.13 Monitoring Program

During the reporting period, the ecological monitoring program of the Biobank BOA included winter bird surveys that were undertaken in June/July 2022 and annual spring flora monitoring of 32 plots across five vegetation zones (VZs) undertaken during September and November 2022. During the winter bird surveys, no threatened species were recorded. During flora monitoring, three VZs (Dry Rainforests – Good condition, North-west Slopes Dry Sclerophyll Woodlands – Good condition and

Western Slopes Grassy Woodlands – 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) were met or exceeded at 4 out of 5 VZs. Native overstorey cover (NOS) completion criteria (minimum overstorey cover benchmark for relevant biometric vegetation communities) were met or exceeded at 3 out of 5 VZs. Native midstorey cover (NMS) completion criteria (minimum midstorey cover benchmark for relevant biometric vegetation communities) were met or exceeded at all five VZs. Native ground cover grass (NGCG) completion criteria (minimum groundcover benchmark for relevant biometric vegetation communities) were met or exceeded at 4 out of 5 VZs. Comparison of individual plot data shows that NPS decreased slightly from 81% last year to 78% of plots meeting or exceeding completion criteria in 2022. Native overstorey cover (NOS) increased from 31% last year to 41% of plots meeting or exceeding the completion criteria in 2022. Native midstorey cover (NMS) increased from 78% last year to 94% of plots meeting or exceeding the completion criteria in 2022. Native ground cover grass (NGCG) increased from 66% last year to 84% of plots meeting or exceeding the completion criteria in 2022.

6.4 Blasting

6.4.1 Criteria

Blasting criteria for CCM are noted in DA 8-1-2005 however, they are not relevant for this reporting period as no blasting was undertaken onsite.

6.4.2 Key Environmental Performance/Management Issues

No blasting was undertaken during the reporting period.

6.4.3 Proposed Improvement to Environmental Management

No blasting is proposed within the next reporting period.

6.5 Operational Noise

DA 8-1-2005 details the noise criteria for site operations and coal haulage, however there was no requirement for noise monitoring during the reporting period as CCM is no longer operational.

6.5.1 Key Environmental Performance/Management Issues

No key environmental performance/management issues were identified during the reporting period.

6.5.2 Proposed Improvements to Environmental Management

No improvements are proposed within the next reporting period.

6.6 Aboriginal Heritage Management

6.6.1 Environmental Management Measures

Four Aboriginal heritage sites have been recorded since 1999, during investigations for the CCM. Two of these sites, Whitehaven 3 and Whitehaven 4, were located within ML 1471. Whitehaven 3, a scar tree located adjacent to the southern mine lease boundary, has been protected by fencing to

minimise the potential for adverse impacts. Whitehaven 4 was located within the extraction area, and artefacts at this site were salvaged by representatives of the Red Chief LALC in accordance with a Section 90 Permit (No. 2051) prior to disturbance. The remaining two heritage sites, Whitehaven 1 and Whitehaven 2, although not located within the ML 1464 or ML 1471, have also been fenced and demarcated to avoid disturbance.

No additional consultation with Aboriginal stakeholders was required during the reporting period.

6.6.2 Key Environmental Performance/Management Issues

No key environmental performance/management issues were identified during the reporting period.

6.6.3 Proposed Improvements to Environmental Management

In accordance with the VCM Aboriginal Cultural Heritage Management Plan, the condition of fencing at Whitehaven 1 and Whitehaven 2 will be inspected as part of the annual inspections of the Aboriginal cultural heritage site fencing installed at VCM, in accordance with the VCM Aboriginal Cultural Heritage Management Plan.

6.7 Non-Aboriginal Heritage

There are no features of non-Aboriginal heritage within the Project Approval area and hence no specific management procedures are required.

6.8 Bushfire Management

6.8.1 Environmental Management Measures

CCM is located within an area of cleared agricultural land, and WHC personnel liaise with the local Rural Fire Service, as required. No bushfire incidents occurred on, or adjacent to, the mine site during the calendar year.

6.8.2 Key Environmental Performance/Management Issues

No key environmental performance/management issues were identified during the reporting period.

6.8.3 Proposed Improvements to Environmental Management

The perimeter access roads will be graded and cleared of vegetation and utilised as fire breaks. Due to substantial precipitation in the last quarter of 2022 site access roads have become overgrown with vegetation.

6.9 Environmental Performance Summary

An environmental performance summary for CCM is presented in **Table 6.9** below.

Whitehaven Coal Mining Pty Limited Canyon Coal Mine Annual Review

Table 6.9 - Environmental Performance

Aspect	Approval Criteria/EIS Prediction	Performance during the Reporting Period	Trend/Key Management Implications	Implemented/ Proposed Management Actions
Blasting	DA 8-1-2005, Schedule 3 (12 & 13)	N/A. No blasting on site.	No blasting on site.	No blasting on site.
Noise	DA 8-1-2005, Schedule 3 (6)	N/A. No operational activity on site.	N/A	N/A
Air Quality	DA-8-1-2005, Schedule 3 (1)	Compliance with the annual average depositional dust criterion General compliance with annual average PM ₁₀ level and 24-hour PM ₁₀ level. Two exceedances are not attributed to mining activities as site is not operational.	No operational activities on CCM.	N/A
Rehabilitation	DA 8-1-2005, Schedule 3 (28)	Rehabilitation progresses	Continue monitoring, and manage weeds and pests as required.	Ongoing environmental monitoring and management

7. WATER MANAGEMENT

7.1 Surface Water Management & Performance

Surface water management on site is limited to the lower void. Water monitoring occurs on a 6-monthly basis for water level and quality in the void. 2022 sampling results show a decrease in Electrical Conductivity (EC) at the beginning of the reporting period, which then increased midway through the reporting period, likely due to high rainfall in the last quarter of the reporting period. pH in the lower void was within criteria is at 8.64 which is generally consistent with the average pH recorded on the site (8.69). Total Suspended Solids (TSS) were within criteria and oil and grease levels were not detectable. The void water level in December 2022 was recorded at 188.7 ML which is an increase of 46.7 ML from the 142 ML reported in December 2021.

7.1.1 Water Take

There was no groundwater take from void seepage during the reporting period.

7.1.2 Wet Weather Discharge

There are no licensed discharge points at CCM. However, wet weather discharge from site occurred on five occasions in the reporting period. Samples collected for each event, except one where safe access could not be obtained, showed water pH, total suspended solids, and oil and grease were within the 100 percentile concentration limits set out in DA- 8-1-2005 (50 mg/L, 6.5 – 8.5 and 10 mg/L respectively).

7.2 Groundwater Management & Performance

Current monitoring requirements include six (6) monthly monitoring as per **Table 7.2** below.

Table 7.1 - Groundwater Monitoring Parameters

GW Bore	Parameters					
	Standing Water Level (SWL)	pH	Conductivity	Cl	Na	Oil & Grease
GW-7	✓					
GW-8	✓					
GW-9	✓					
GW-11	✓	✓	✓	✓	✓	✓
P3	✓	✓	✓	✓	✓	✓

Results show the Standing Water Level (SWL) of sites GW-7, GW-9, GW-11 and P3 remain generally consistent. Site GW-8 shows regular fluctuations in SWL over the long term which was due to being connected to a solar pump. Now the pump is not operational, the water level has been consistent until an increase was recorded at the end of the reporting period (**Figure 7.1**). The increased SWL is consistent with SWL recorded between 2006 and 2012 before pump operation. All sites continued to display water quality results that are generally consistent with the long-term trends at the beginning

of the reporting period. P3 displayed a substantial decrease in Electrical Conductivity (EC). EC was consistent with long term trends at all other sites. pH was consistent with long-term trends and within criteria at all sites except for an exceedance at GW-7 at the beginning of the reporting period. No oil and grease have been identified in monitoring bores or were below the limit of reporting (<5 mg/L).

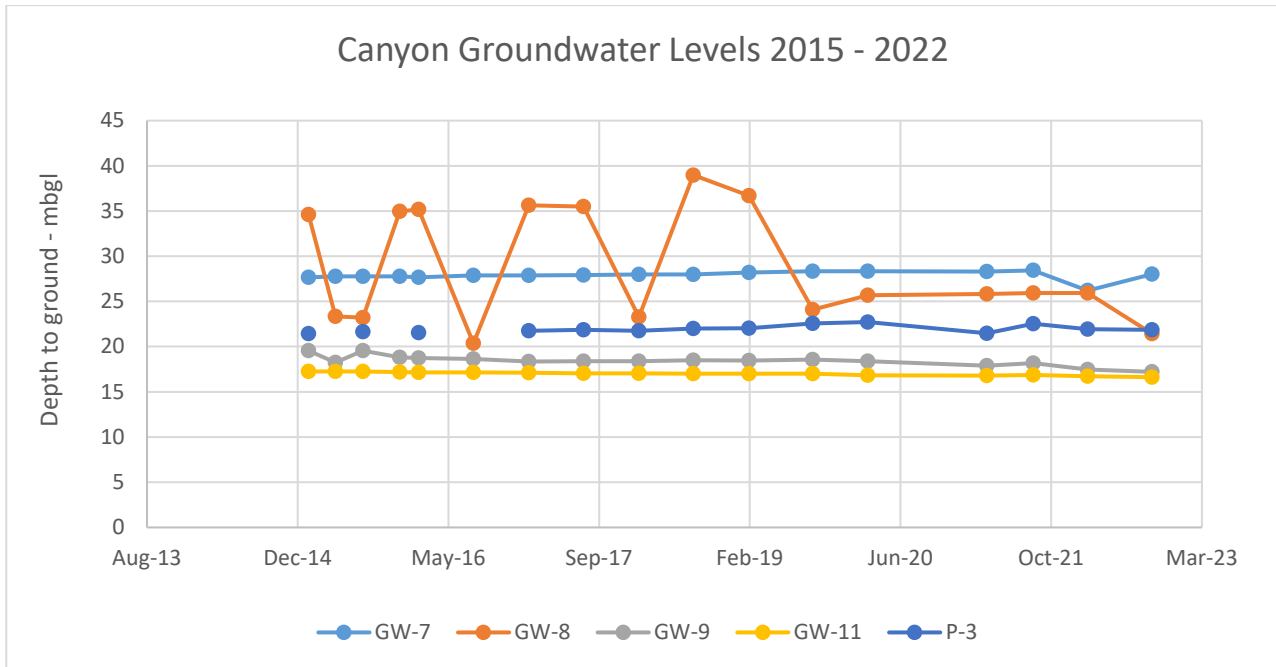


Figure 7.1 - Groundwater levels 2015 - 2022

7.1.1 Water Take

During the reporting period, no water was taken from any bores on site. WHC has a groundwater approval for 50 ML take.

8. REHABILITATION

8.1 Rehabilitation during the reporting period

8.1.1 Status of Mining and Rehabilitation

Table 8.1 summarises the rehabilitation status at CCM. The site is in closure and no further rehabilitation is planned.

Table 8.1 - Rehabilitation Status

Mine Area Type ¹	Previous Reporting Period (Actual)	This Reporting Period (Actual)	Next Reporting Period (Forecast)
	2021 (ha)	2022 (ha)	2023 (ha)
A. Total Mine Footprint	416.98	416.98	416.98
B. Total Active Disturbance	2.9	2.9	2.9
C. Land Being Prepared for Rehabilitation	0	0	0
D. Land Under Active Rehabilitation	249.8	249.8	249.8
E. Completed Rehabilitation	0	0	0

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

8.1.2 Post Rehabilitation Land Uses

The overall closure goal for Canyon is for the restored landform to be capable of sustaining pre-mining land-uses.

8.1.3 Renovation or Removal of Buildings

No renovation or removal of buildings occurred during the reporting period.

8.1.4 Other Rehabilitation Undertaken

No additional rehabilitation occurred during the reporting period.

8.1.5 Departmental Sign-off of Rehabilitated Areas

No departmental sign-off of rehabilitated areas was received during the reporting period.

8.1.6 Variations in Activities against MOP/RMP

Not applicable.

8.1.7 Trials, Research Projects Initiatives

No rehabilitation trials, research projects or other initiatives were undertaken during the reporting period.

8.1.8 Key Issues to Achieving Successful Rehabilitation

The key issues to achieving successful rehabilitation are:

- Landform stability (Final Void);
- Soil quality;
- Water quality;
- Pasture development; and
- Land management, including weed control.

Management measures to address these key issues, including both trigger levels and response, are described in the Vickery Coal Mine Rehabilitation Management Plan approved in August 2023 by the NSW Resources Regulator.

8.2 Actions for Next Reporting Period

Proposed actions include the implementation of controls for feral animals and weeds, and ongoing environmental management.

9. COMMUNITY

A Community Consultative Committee (CCC) for Canyon Coal Mine is covered under the terms of reference of the Vickery Coal Mine CCC. Two meetings were held in 2022 in conjunction with the Vickery Extension Project. A copy of each Annual Review is provided to Narrabri and Gunnedah Councils, relevant agencies, CCC and project website.

No complaints have been received for the site since 2008.

Community contributions are managed in accordance with the Whitehaven Coal Donations and Sponsorship Policy. Whitehaven Coal donated \$147,172.72 to local Gunnedah groups and over \$135,000 to support local groups in Narrabri during the reporting period. Groups and activities which received contributions included, but were not limited to the following;

Gunnedah LGA:

Gunnedah Rural Museum
Gunnedah Ladies Golf Club
Gunnedah Bulldogs Rugby League
Gunnedah District Aeromodellers
Gunnedah District Australian Football Club
Gunnedah Shire Council
Black & Blue Boxing
Gunnedah Show Society
G S Kidd School
Gunnedah Rugby League
Gunnedah Pistol Club
Gunnedah Eisteddfod Society
Gunnedah High School
Whitbread Memorial Fund
Gunnedah Netball Association
Gunnedah Netball Association
Gunnedah Athletics Centre Incorporated
White Cockatoos Gomeri Roos
Gunnedah Public School
Gunnedah & District Historical Society Inc
Gunnedah Meals on Wheels
GHFC Pty Ltd
Swimming Gunnedah Incorporated
Gunnedah Touch Association
Gunnedah Baptist Community Preschool
Gunnedah Homes for the Aged
Gunnedah Basketball Association
Swimming Gunnedah Incorporated
Gunnedah High School
Black and Blue Boxing Gunnedah
Dorothea Mackellar Poetry Awards

Winanga-Li Aboriginal Child and Family Centre
McLean Care Mackellar
Gunnedah Ministers Fraternal
Gunnedah Public School P&C Association
St Mary's College
Rotary Club of Gunnedah West Inc
Week of Speed
Curlewis Public School P&C
Winanga-Li Aboriginal Child and Family Centre
The Rotary Club of Gunnedah

Narrabri LGA:

Sponsorship seed funding to establish and innovation hub in Narrabri
Sponsorship for Create 2022
Assistance to cover daily operation expenses
Upgrade a new food safe BBQ trailer
purchase more resources for the kids
Assistance to help high school students further their education
Costs of installation of new electronic scoreboard
Donation to help run race meeting
Sponsorship for 2022 season
Funding for more sports equipment
Sponsorship of 2022 Camp Draft
Platinum Sponsorship of 2022 Narrabri Show
Purchase 10 new student laptops and charging station
Funding Costs to hold the 2022 Science and Engineering Challenge
NIN Gala Evening
NIN Gold Membership Level
Donation towards the cost of office & kitchen equipment
Repairs to the hall to keep the club running
New Trailer & dolly to move their boat around the local water ways
Sponsorship for the B to B Bash 2022
Send players on a South Sydney Trip
Narrabri LALC NAIDOC Week 2022
Sponsorship for the 2023 Drovers Campfire
Replacement of the fort
Sponsorship Lucas Summers Lawler for NW Primary Boys Softball
Purchase a new keyboard and licenced music sheets
2022 Annual Presentation Night
Sponsorship of event
Carols in the Park
Sponsorship for Create 2023
Advertising in the Boggabri Weekly
Narrabri town street Christmas party

10. INDEPENDENT AUDIT

The most recent Independent Environmental Audit (IEA) of CCM was undertaken by an independent audit team from Environmental Resource Management Australia Pty Ltd (ERM) in September 2021, who were endorsed as the independent and qualified auditors by DPI&E.

The key audit outcomes related to the distribution of Annual Review documents to the council and CCC in 2020. An action from the IEA relating to DA 8-1-2005 advised that WHC are required under condition 10 of schedule 5 of this consent to provide a copy of the approved documents to Narrabri Shire Council (NSC), Gunnedah Shire Council (GSC), relevant agencies and the CCC, and ensure that a copy of the relevant documents is made publicly available at NSC and GSC offices, to the satisfaction of the Secretary. This action has now been completed and measures are now in place to ensure the Annual Review is distributed in a timely manner to relevant parties.

11. INCIDENTS AND NON-COMPLIANCES DURING THE REPORTING PERIOD

11.1 Reportable Incidents

No incidents occurred during the reporting period.

11.2 Non-compliances

There were no non-compliances during the reporting period.

11.3 Regulatory Actions

There were no regulatory actions during the reporting period.

12. ACTIVITIES TO BE COMPLETED IN THE NEXT REPORTING PERIOD

The following measures will be continued, or implemented, in the next reporting period to improve the environmental or community performance of the operation:

- Continued implementation of controls for feral animals;
- Weed control for African Boxthorn, Prickly Pear and Paterson's Curse;
- Continued implementation of DA 8-1-2005 until surrendered, environmental monitoring, management and relevant environmental management plans.
- After care and maintenance of rehabilitated areas as required

WHC commenced development under Development Consent SSD-7480 for the VCM on 28 April 2022 to undertake pre-construction activities. Formal surrender of the development consent DA-8-1-2005 will occur during the 2023 reporting period in accordance with condition A18 of SSD-7480.

13. REFERENCES

New South Wales Government (2015) Annual Review Guideline – Post Approval requirements for State significant mining developments, available:

<https://www.planning.nsw.gov.au/en/Policy-and-Legislation/Mining-and-Resources/~media/3AA21D35168042FE813DD0FB92E00E58.ashx>, accessed on 4/01/2022

North West Local Land Services (2017) North West Regional Strategic Weed Management Plan 2017 – 2022.

R. W. Corkery & Co Pty. Ltd (2000) Environmental Impact Statement for the Stage 2 “Whitehaven” Open Cut Coal Mine Development near Boggabri.