YANCOAL
兖煤澳大利亚有限公司
MOOLARBEN COAL

UG4 LONGWALLS 409 TO 414 HERITAGE MANAGEMENT PLAN

Version	Issue Date *(Month/YYYY)*	Revision Detail *(Include the main areas reviewed, trigger / why the change)*	Author(s)	Review Team
1	October 2024	Original HMP for the UG4 Longwalls 409-414 Extraction Plan	MCO	MCO
2	January 2025	Updated to Address Agency Consultation	MCO	MCO
3	April 2026	Minor Administrative Updates for Consistency Across the UG4 Longwalls 409 to 414 Extraction Plan	MCO	MCO

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1.0 INTRODUCTION

The Moolarben Coal Complex is an open cut and underground coal mining operation located approximately 40 kilometres (km) north of Mudgee in the Western Coalfield of New South Wales (NSW) (**Figure 1**).

Moolarben Coal Operations Pty Ltd (MCO) is the operator of the Moolarben Coal Complex on behalf of the Moolarben Joint Venture. MCO is a wholly owned subsidiary of Yancoal Australia Limited.

The UG4 Underground Mine (UG4) is a component of the approved Moolarben Coal Complex (**Figure 2**). First workings for UG4 commenced in October 2020 (**Figure 3**). Secondary extraction in UG4 of the first Longwall (LW) 401 commenced in July 2022. LW401 to 407 were completed in January 2026. The extraction of LW409 to 414 (hereafter referred to as LW409-414) within UG4 is scheduled to commence in September 2026.

Mining operations at the Moolarben Coal Complex are currently approved until 31 December 2038 and continue to be carried out in accordance with Project Approval (05_0117) (Moolarben Coal Project Stage 1) (as modified) and Project Approval (08_0135) (Moolarben Coal Project Stage 2) (as modified).

1.1 PURPOSE AND SCOPE

This UG4 Longwalls 409 to 414 Heritage Management Plan (LW409-414 HMP) has been prepared to satisfy the requirements of Condition 77(k), Schedule 3 of Project Approval (05_0117) for the management of potential impacts to Aboriginal and historical heritage due to secondary extraction of LW409-414.

This LW409-414 HMP forms a part of the Extraction Plan being developed for LW409-414 of the approved UG4. This LW409-414 HMP has been prepared by MCO, with input from suitably qualified experts including Niche Environment and Heritage (Niche) and Mine Subsidence Engineering Consultants (MSEC), to satisfy the requirements of Project Approval (05_0117) (as modified) and the *Extraction Plan Guideline* (NSW Department of Planning and Environment [DPE], 2022).

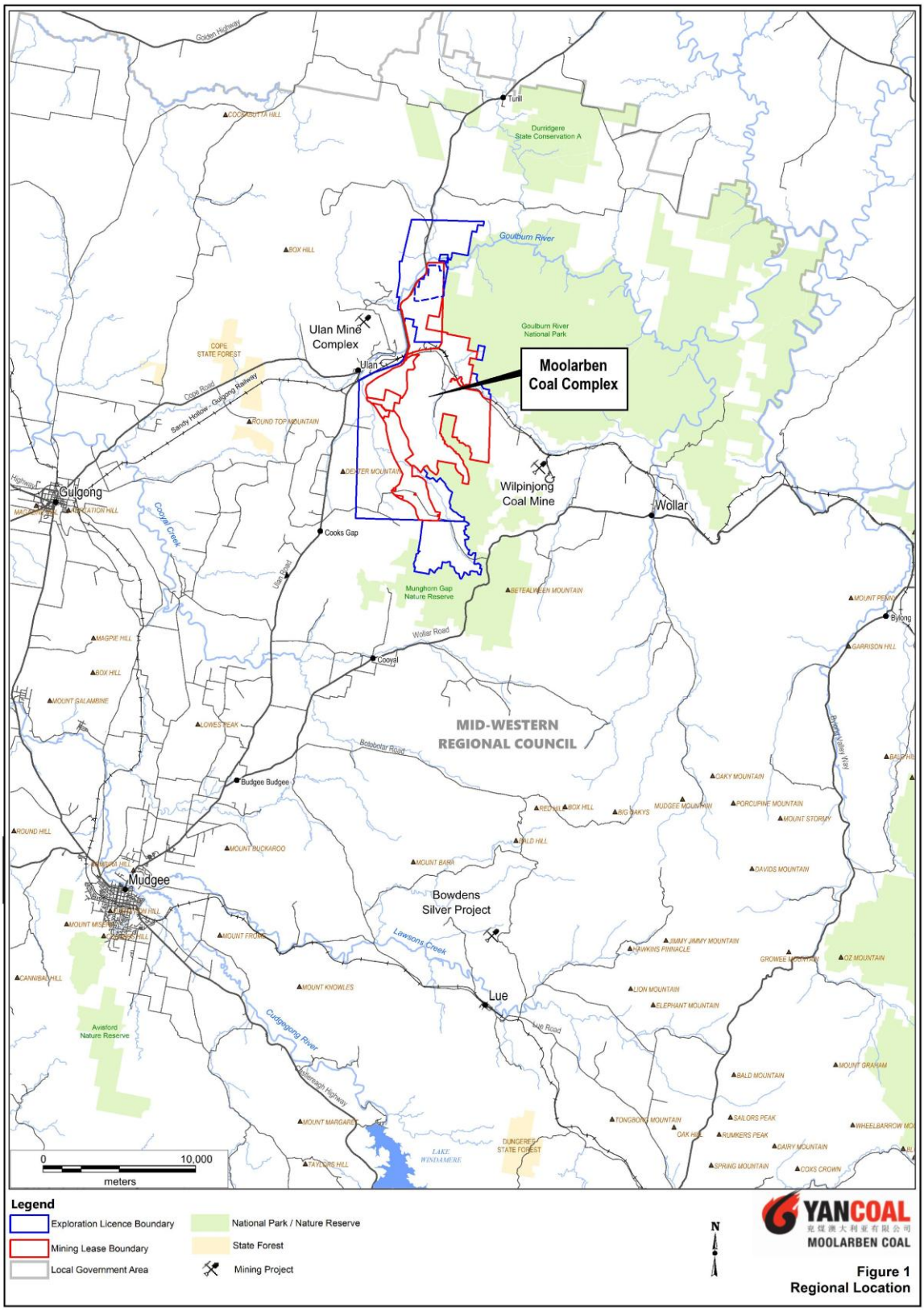
The appointment of the team of suitably qualified and experienced persons (which includes representatives of MCO, Niche and MSEC) was endorsed by the Secretary of the Department of Planning, Housing and Infrastructure (DPHI) on 9 May 2024 (Attachment 2 of the Extraction Plan).

Purpose: This LW409-414 HMP describes the management of potential environmental consequences on Aboriginal and historical heritage resulting from the extraction of LW409-414.

Scope: This LW409-414 HMP considers Aboriginal and historical heritage within the LW409-414 Study Area[1] (**Figure 4**).

[1] The LW409-414 Study Area is defined as the area of land within the furthest extent of the 26.5 degree (°) angle of draw and 20 millimetres (mm) predicted subsidence contour.

Figure 1: **Regional Location**



Document	Version	Issue Date	Status	Author
MCO_UG4_LW409-414_HMP	3	April 2026	Approved	MCO

Figure 2: Moolarben Coal Complex Layout

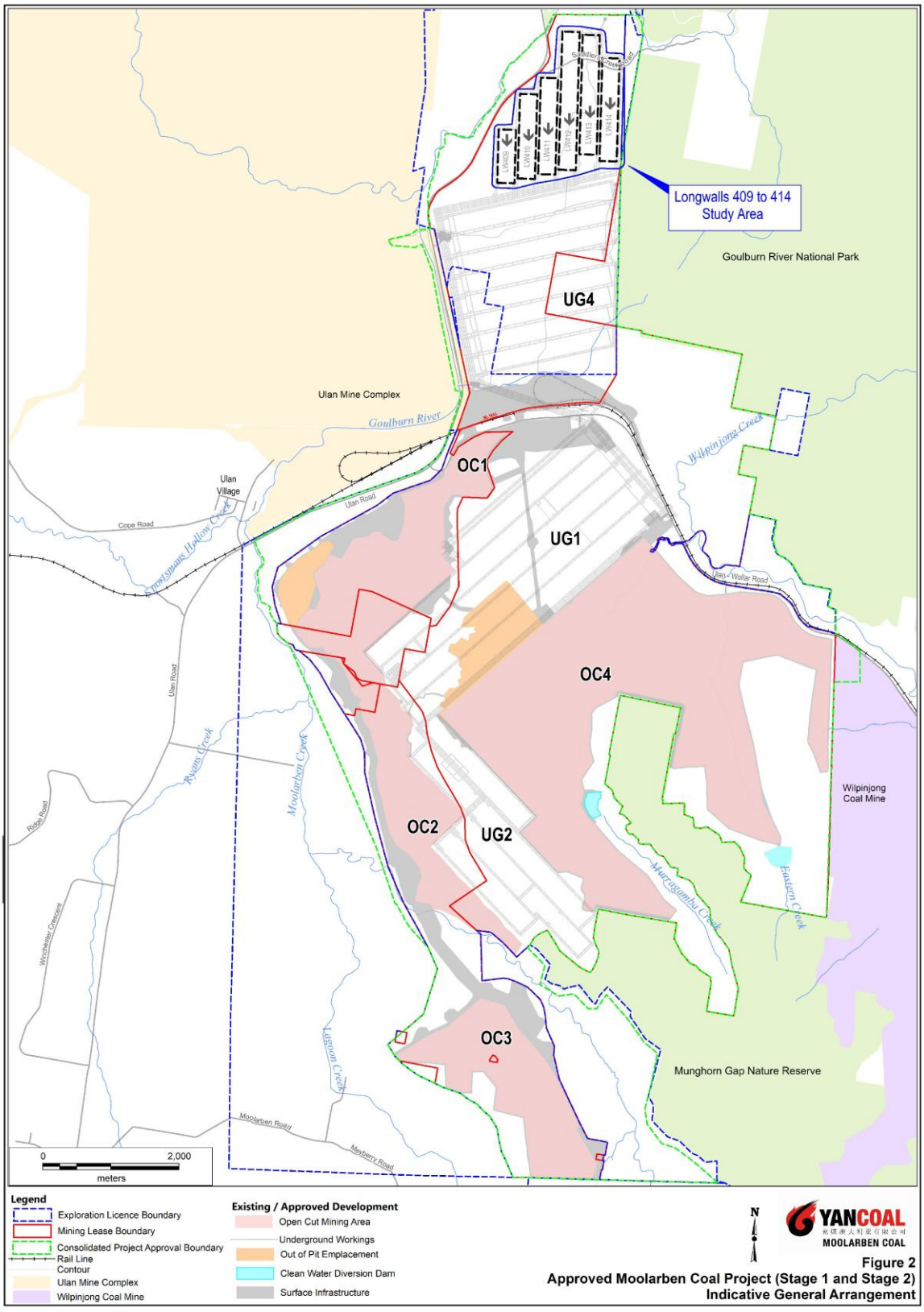


Figure 3: UG4 Longwalls 409 to 414 Layout

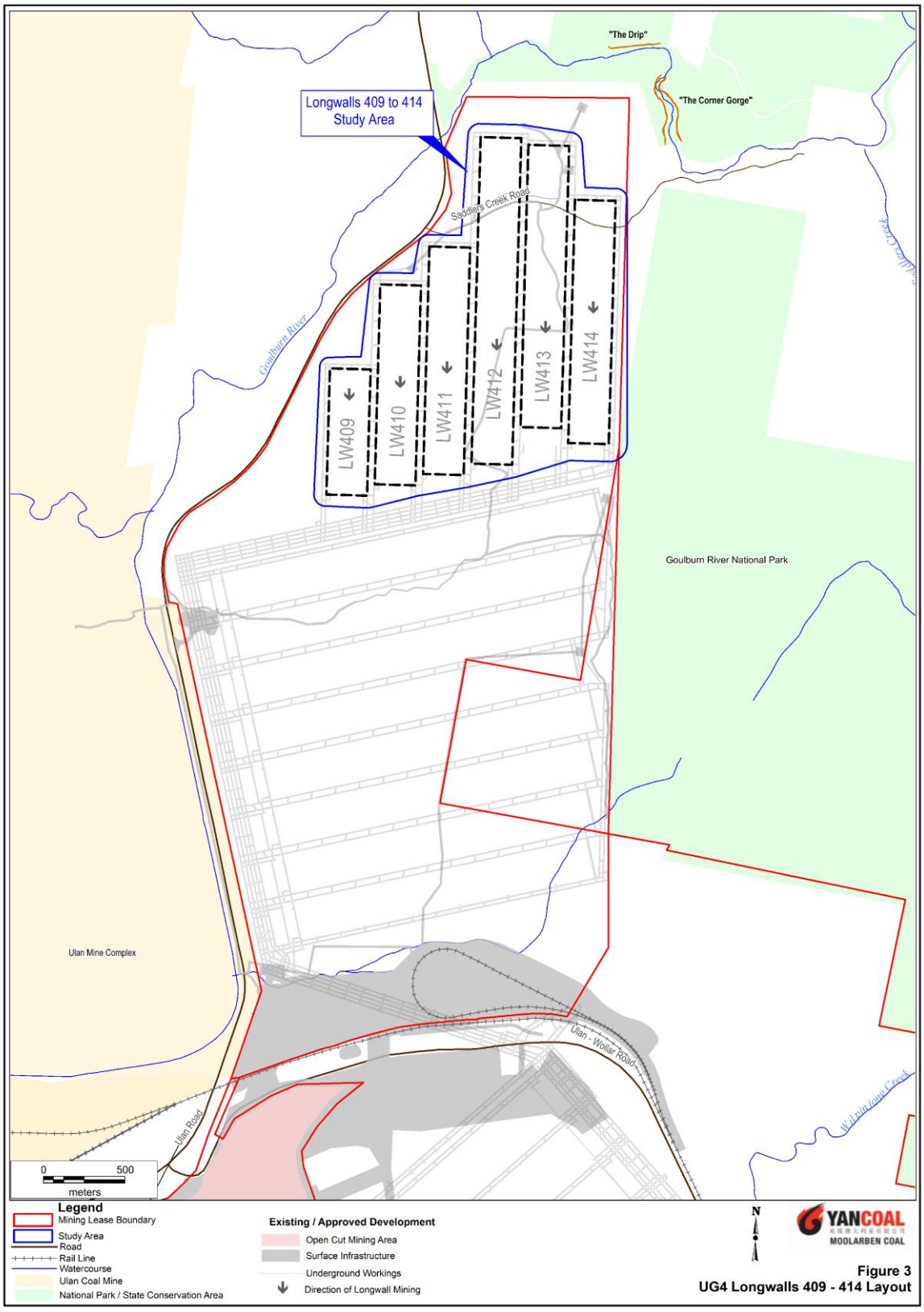
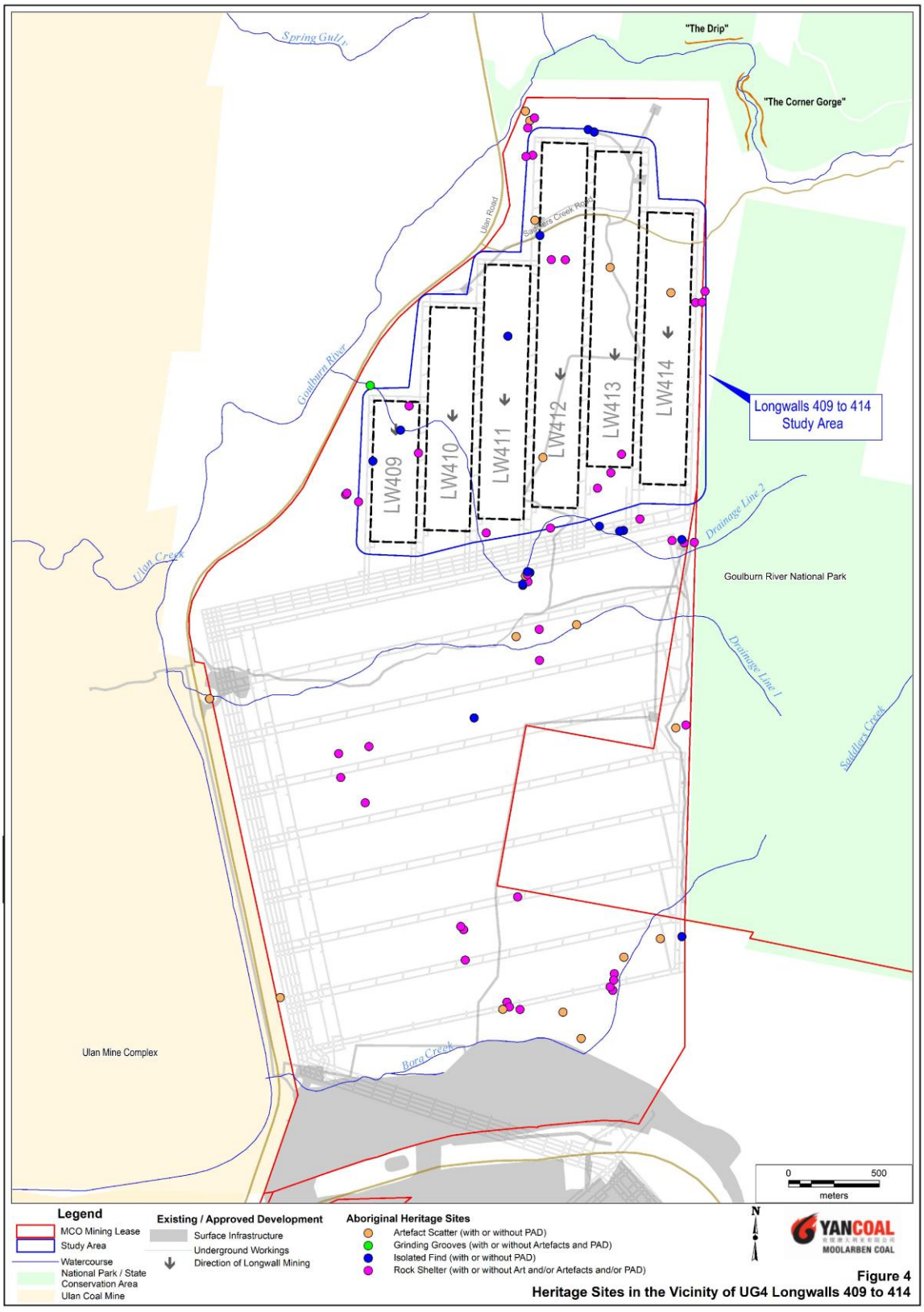


Figure 4: Heritage Sites in the Vicinity of UG4 Longwalls 409 to 414



A complex-wide Heritage Management Plan (complex-wide HMP) has been developed to manage Aboriginal and historical heritage across the Moolarben Coal Complex (including the LW409-414 Study Area covered by this LW409-414 HMP). The approved complex-wide HMP is publicly available on Yancoal's website (yancoal.com.au/our-sites/moolarben/moolarben-coal-documents).

To avoid duplication of existing Environmental Management Plans, this LW409-414 HMP references components of the complex-wide HMP (MCO, 2025). Where there is any overlap in monitoring or management measures in this LW409-414 HMP with the complex-wide HMP or the LW401-408 HMP, the measures described in this LW409-414 HMP will supersede them (once approved). Any update required to other management plans once this LW409-414 HMP is approved would occur separately.

1.2 STRUCTURE OF THE LONGWALLS 409 TO 414 HERITAGE MANAGEMENT PLAN

The remainder of the LW409-414 HMP is structured as follows:

Section 2 Describes the review and update of the LW409-414 HMP.

Section 3 Outlines the statutory requirements applicable to the LW409-414 HMP.

Section 4 Summarises the predicted subsidence impacts and environmental consequences resulting from the secondary extraction of LW409-414.

Section 5 Details the performance measures and indicators that will be used to assess environmental performance in relation to Aboriginal and historic heritage sites.

Section 6 Describes the monitoring program and potential management measures that could be implemented to remediate any identified impacts to Aboriginal and historic heritage sites.

Section 7 Provides a Contingency Plan to manage any unpredicted impacts and their consequences.

Section 8 Describes the Annual Review, audits, regular reporting, improvement of environmental performance and the program to collect sufficient baseline data for future Extraction Plans.

Section 9 Outlines the management and reporting of incidents.

Section 10 Outlines the management and reporting of complaints.

Section 11 Outlines the management and reporting of non-compliances with statutory requirements.

Section 12 Lists the references cited in this LW409-414 HMP.

1.3 CONSULTATION FOR THE HERITAGE MANAGEMENT PLAN

In accordance with Condition 77 (k), Schedule 3 of Project Approval (05_0117), this LW409-414 HMP has been provided to Heritage NSW (within the NSW Department of Climate Change, Energy, the Environment and Water) and the Registered Aboriginal Parties (RAPs) for their review and comment. Comments received during the consultation period have been considered in this LW409-414 HMP and lodged with the Secretary of the DPHI for approval.

RAPs for the Moolarben Coal Complex have been identified through a comprehensive program of Aboriginal community consultation undertaken at the Moolarben Coal Complex.

2.0 LONGWALLS 409 TO 414 HERITAGE MANAGEMENT PLAN REVIEW AND UPDATE

In accordance with Condition 5, Schedule 5 of Project Approval (05_0117), this LW409-414 HMP will be reviewed as follows:

> *5. Within 3 months of the submission of:*
>
> *(a) the submission of annual review under condition 4 above;*
>
> *(b) the submission of an incident report under condition 7 below;*
>
> *(c) the submission of an audit under condition 9 below; or*
>
> *(d) any modification of this approval,*
>
> *the Proponent shall review and, if necessary, revise the strategies, plans, and programs required under this approval to the satisfaction of the Secretary. Where this review leads to revisions in any such document, then within 4 weeks of the review the revised document must be submitted to the Secretary for approval.*

2.1 ACCESS TO INFORMATION

In accordance with Condition 11, Schedule 5 of Project Approval (05_0117), MCO will make the approved LW409-414 HMP publicly available on the Yancoal's website.

3.0 STATUTORY REQUIREMENTS

MCO's statutory obligations are contained in:

- the conditions of the Project Approval (05_0117) (as modified);
- the conditions of Commonwealth Approvals (EPBC 2007/3297, EPBC 2013/6926, EPBC 2008/4444 and EPBC 2017/7974);
- relevant licences and permits, including conditions attached to the Environment Protection Licence (EPL) No. 12932 and mining leases (MLs) (i.e. ML 1605, ML 1606, ML 1628, ML 1691 and ML 1715); and
- other relevant legislation.

Obligations relevant to this LW409-414 HMP are described below.

3.1 ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979 APPROVAL

Condition 77(k), Schedule 3 of Project Approval (05_0117) requires the preparation of a Heritage Management Plan as a component of the Extraction Plan (i.e. this LW409-414 HMP). In addition, Conditions 77(n), 77(p) and 78, Schedule 3 and Condition 3, Schedule 5 of Project Approval (05_0117) outline general management plan requirements that are applicable to the preparation of the LW409-414 HMP.

Table 1 presents the relevant Project Approval requirements and indicates where they are addressed within this LW409-414 HMP.

Condition 77(k), Schedule 3 of Project Approval (05_0117) requires that the LW409-414 HMP *"reflects all requirements under conditions 38-39 of Schedule 3"*. These requirements are addressed by the complex-wide HMP (MCO, 2025). Notwithstanding, **Attachment 1** (of this LW409-414 HMP) indicates where each component of the conditions are addressed within the complex-wide HMP (MCO, 2025).

Table 1: Heritage Management Plan Requirements

Project Approval (05_0117) Condition	LW409-414 HMP Section
Condition 77, Schedule 3	
77. The Proponent shall prepare and implement an Extraction Plan for all second workings on site to the satisfaction of the Secretary. Each extraction plan must:	
...	
(k) include a Heritage Management Plan, which has been prepared in consultation with BCD and relevant stakeholders for both Aboriginal and historic heritage, to manage the potential environmental consequences of the proposed second workings on both Aboriginal and non-Aboriginal heritage items, and reflects all requirements under conditions 38-39 of Schedule 3;	**This document and complex-wide HMP**
...	
(n) include a contingency plan that expressly provides for adaptive management where monitoring indicates that there has been an exceedance of any performance measure in Tables 14 and 15, or where any such exceedances appears likely;	**Section 7**
...	
(p) include a program to collect sufficient baseline data for future Extraction Plans.	**Section 8.3**

Table 1 (Continued): Heritage Management Plan Requirements

Project Approval (05_0117) Condition	LW409-414 HMP Section
Condition 78, Schedule 3	
78. The Proponent shall ensure that the management plans required under conditions 77(g)-(l) above include:	
(a) an assessment of the potential environmental consequences of the Extraction Plan, incorporating any relevant information that has been obtained since this approval; and	**Section 4**
(b) a detailed description of the measures that would be implemented to remediate predicted impacts.	**Section 6 and complex-wide HMP**
Condition 3, Schedule 5	
3. The Proponent shall ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines, and include:	
(a) detailed baseline data	**Section 4.4.2**
(b) a description of:	
• *the relevant statutory requirements (including any relevant approval, licence or lease conditions);*	**Section 3**
• *any relevant limits or performance measures/criteria;*	**Section 5**
• *the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project or any management measures;*	**Section 5**
(c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;	**Sections 6 and 7, and complex-wide HMP**
(d) a program to monitor and report on the:	**Sections 6 and 8, and complex-wide HMP**
• *impacts and environmental performance of the project;*	
• *effectiveness of any management measures (see c above)*	
(e) a contingency plan to manage any unpredicted impacts and their consequences;	**Section 7 and complex-wide HMP**
(f) a program to investigate and implement ways to improve the environmental performance of the project over time;	**Section 6 and 8**
(g) a protocol for managing and reporting any:	
• *incidents;*	**Section 9**
• *complaints;*	**Section 10**
• *non-compliances with statutory requirements; and*	**Section 11**
• *exceedances of the impact assessment criteria and/or performance criteria; and*	**Section 7 and complex-wide HMP**
(h) a protocol for periodic review of the plan.	**Section 2**

3.2 OTHER LEGISLATION

MCO operates the Moolarben Coal Complex consistent with Project Approval (05_0117) (as modified) and Project Approval (08_0135) (as modified) and any other legislation that is applicable under the *Environmental Planning and Assessment Act 1979*.

The following Acts, Regulations and guidelines may be applicable to, but are not limited to, the conduct of the Moolarben Coal Complex:

- Commonwealth *Aboriginal and Torres Strait Islander Heritage Protection Act 1984*;
- Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*;
- Commonwealth *Native Title Act 1993*;
- NSW *Heritage Act 1977*;
- NSW *National Parks and Wildlife Act 1974;*
- *Aboriginal cultural heritage consultation requirements for proponents 2010* (NSW Department of Environment, Climate Change and Water [DECCW], 2010a);
- *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW, 2010b);
- *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (DECCW, 2010c); and
- *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (NSW Office of Environment and Heritage [OEH], 2011).

Relevant licences or approvals required under these Acts will be obtained as required.

4.0 PREDICTED SUBSIDENCE IMPACTS AND ENVIRONMENTAL CONSEQUENCES

4.1 LONGWALLS 409 TO 414 EXTRACTION SCHEDULE

LW409-414 and the area of land within the Study Area are shown on **Figure 3**. Longwall extraction will occur from the north to south for each panel. The longwall layout includes approximately 260 metre (m) panel widths (void) with 35 m width pillars (solid). The provisional extraction schedule for LW409-414 is provided in **Table 2**.

Table 2: Provisional Extraction Schedule

Longwall	Estimated Start Date	Estimated Duration (months)	Estimated Completion Date
LW409	September 2026	3	November 2026
LW410	December 2026	3	March 2027
LW411	April 2027	3	July 2027
LW412	August 2027	4	December 2027
LW413	January 2028	4	May 2028
LW414	June 2028	4	September 2028

Note: In June 2026, the extraction timing was administratively updated to ensure consistency with the approved June versions of the LW409-414 Water Management Plan and LW409-414 Subsidence Monitoring Program. This update does not otherwise amend the approved April version of this Plan.

4.2 REVISED SUBSIDENCE AND IMPACT PREDICTIONS

Revised subsidence predictions of the potential subsidence effects, subsidence impacts and environmental consequences of the proposed second workings, have been prepared by MSEC (2024) incorporating any relevant information obtained since approval (e.g. additional data from underground mining UG1 and LW401-408 to date), in accordance with Condition 77(e), Schedule 3 of Project Approval (05_0117).

The LW409-414 HMP has incorporated the revised subsidence predictions and impacts from the *Moolarben Project Stage 1 – Longwalls 409 to 414 – Subsidence Predictions and Impact Assessments for the Natural and Built Features in Support of the Extraction Plan* (MSEC, 2024) and *Moolarben Coal Complex, UG4 Longwall 409-414 Aboriginal Cultural Heritage Technical Report* (Niche, 2024) which are summarised in **Section 4.4**.

4.3 ENVIRONMENTAL RISK ASSESSMENT

An Environmental Risk Assessment (ERA) was conducted for four of the key component plans of the LW409-414 Extraction Plan (Water Management Plan, Biodiversity Management Plan, Heritage Management Plan and Land Management Plan) to provide appropriate consideration to risk assessment and risk management in accordance with the *Extraction Plan Guideline* (DPE, 2022).

The ERA workshop for LW409-414 was held on 2 May 2024, facilitated by independent specialist, AXYS Consulting Pty Ltd. The suitably qualified and experienced experts endorsed by the Secretary of the DPHI for the preparation of LW409-414 Extraction Plan and relevant MCO personnel participated in the ERA.

The ERA indicated that risks relevant to Aboriginal and historic heritage sites in the LW409-414 Study Area were in the "Low" category, and it was expected that the risks could be managed with implementation of the appropriate mitigation, management and/or control measures.

4.4 ABORIGINAL HERITAGE SITES AND VALUES

4.4.1 Aboriginal Cultural Heritage Values

The RAPs for the Moolarben Coal Complex have been consulted on the nature and extent of Aboriginal cultural heritage at the Moolarben Coal Complex on a number of occasions, including during the community consultation processes undertaken for previous cultural heritage assessments and investigations (described in Appendix C of the complex-wide HMP).

Previous assessments have identified and documented the following general cultural heritage values for the Moolarben Coal Complex area, including the following:

- Archaeological sites having contemporary cultural value because they provide a tangible link to the traditional past (Kuskie, 2013).
- The presence of flora and fauna species with known traditional uses (Kuskie, 2013).
- The area of Moolarben Ridge to the south of Carrs Gap having contemporary cultural value to the Wiradjuri community (Hamm, 2008 and Kuskie, 2013).
- The area along the Goulburn River known as "The Drip" is considered to have high cultural value as the sites in this area represent easily identified material remains and the area is ceremonially important (Hamm, 2006).

Consultation undertaken to date with the Aboriginal community indicates that all Aboriginal heritage sites at the Moolarben Coal Complex, known or otherwise, have high cultural significance. Consultation during the development of the LW409-414 Extraction Plan with the RAPs is summarised in Section 2.3.5 of the Extraction Plan.

4.4.2 Baseline Data

A number of Aboriginal cultural surveys and assessments have previously been undertaken across the Moolarben Coal Complex and surrounding areas. A list of previous assessments is presented in Appendix C of the complex-wide HMP.

A total of 33 Aboriginal heritage sites have been previously identified within and in proximity (within 100 m) to the Study Area, including 23 sites that are recorded within the Study Area and 10 sites which are recorded in proximity to the Study Area.

Of the 23 Aboriginal heritage sites within the Study Area, four sites have been managed (S1MC254, S1MC255, S1MC324 and S1MC461) having been salvaged under existing approvals (i.e. 19 remain *in situ*). Of the 10 sites in proximity to the Study Area, one site has been managed (S1MC323) (i.e. nine sites remain *in situ*). Another site within the Study Area has been partially managed (S1MC466).

Of the 19 sites *in situ* located within the Study Area (**Table 3**):

- One site has been assessed as having high archaeological (scientific) significance;
- Three sites have been assessed to have moderate archaeological (scientific) significance; and
- 15 sites have been assessed to have low archaeological (scientific) significance.

Among the nine sites *in situ* located in proximity to the Study Area (**Table 3**):

- Four sites have been assessed as having high archaeological (scientific) significance;
- One site has been assessed to have moderate archaeological (scientific) significance; and
- Four sites have been assessed to have low archaeological (scientific) significance.

The location and a description of the Aboriginal heritage sites within and in proximity to the Study Area are shown in **Table 3** and **Figure 4**.

Table 3: Aboriginal Heritage Sites within and in proximity to the Study Area

AHIMS	Site	Site Type	Location	Scientific Significance
Sites within the Study Area				
36-3-1078	S1MC263	Isolated find	Within	Low
36-3-1080	S1MC265	Shelter with artefact(s)	Within	Low
36-3-1081	S1MC266	Shelter with artefact(s)	Within	Low
36-3-1082	S1MC267	Shelter with artefact(s)	Within	Moderate
36-3-1085	S1MC270	Isolated find	Within	Low
36-3-1099	S1MC285	Shelter with artefact(s) and PAD	Within	Low
36-3-1101	**S1MC287**	**Shelter with artefact(s) and PAD**	**Within**	**High**
36-3-1102	S1MC288	Shelter with artefact(s) and PAD	Within	Low
36-3-1111	S1MC297	Shelter with artefact(s) and PAD	Within	Low
36-3-3236	S1MC432	Artefact scatter	Within	Low
36-3-3804	S1MC466	Shelter with artefact(s) and PAD	Within	Moderate Partially managed
36-3-3871	S1MC541	Isolated find	Within	Low
36-3-3877	S1MC480	Shelter with PAD	Within	Low
36-3-3878	S1MC493	Shelter with artefact(s) and PAD	Within	Low
36-3-3880	S1MC470	Shelter with PAD	Within	Low
36-3-3881	S1MC481	Shelter with PAD	Within	Low
36-3-3882	S1MC482	Shelter with artefact(s) and PAD	Within	Moderate
36-3-3883	S1MC492	Artefact scatter	Within	Low
36-3-4053	S1MC467	Shelter with PAD	Within	Low
Sites in proximity to the Study Area				
36-3-1079/ 36-3-0008	**S1MC264**	**Grinding grooves, artefact scatter and PAD**	**22 m**	**High**
36-3-1083	S1MC268	Shelter with artefact(s)	70 m	Low
36-3-1084	S1MC269	Shelter with artefact(s)	63 m	Low
36-3-1096	**S1MC282**	**Artefact scatter**	**59 m**	**High**
36-3-1097	**S1MC283**	**Shelter with artefact(s)**	**63 m**	**High**
36-3-1098	**S1MC284**	**Shelter with art and artefact(s)**	**33 m**	**Moderate**
36-3-1100	**S1MC286**	**Shelter with artefact(s) and PAD**	**7 m**	**High**
36-3-1109	S1MC295	Isolated find	52 m	Low
36-3-1110	S1MC296	Shelter with artefact(s) and PAD	79 m	Low

Source: After Niche (2024)
PAD = Potential Archaeology Deposit
Note: **Bold Sites represent the sites have performance measures or voluntary performance measures.**

4.4.3 Predicted Subsidence Impacts and Environmental Consequences

MSEC (2024) has reviewed the maximum predicted subsidence parameters for each of the Aboriginal heritage sites located within and in proximity to the Study Area as provided in **Table 4**. **Table 4** provides a summary of the maximum predicted values of total conventional subsidence, tilt and curvature for the Aboriginal heritage sites, resulting from the extraction of LW409-414 for the Extraction Plan Layout.

Table 4: Maximum Predicted Subsidence, Tilt and Curvature for Aboriginal Heritage Sites within and in proximity to the Study Area due to the Extraction of Longwalls 409-414

Site Type	Maximum Predicted Subsidence[1, 2] (mm)	Maximum Predicted Tilt[3] (mm/m)	Maximum Predicted Hogging Curvature[4] (km^{-1})	Maximum Predicted Sagging Curvature[4] (km^{-1})
Artefacts	1900	7.5	1.3	0.35
Isolated Find	1900	12	1.3	0.35
Shelter with/without Artefacts and/or PAD and/or Art	1900	40	1.3	1.3
Grinding Grooves, Artefacts and PAD	< 20	< 0.5	< 0.01	< 0.01

Source: MSEC (2024).
mm/m = millimetres per metre, km^{-1} = 1/kilometres.
1 Subsidence refers to vertical displacements of the ground.
2 Maximum Predicted Total Conventional Subsidence for LW409-414 based on the Maximum Subsidence due to the Extraction Plan Layout after LW414.
3 Tilt is the change in the slope of the ground as a result of differential subsidence, and is calculated as the change in subsidence between two points divided by the distance between those two points.
4 Curvature is the second derivative of subsidence, the rate of change of tilt, and is calculated as the change in tilt between two adjacent sections of the tilt profile divided by the average length of those sections.

The predicted strains for the Aboriginal heritage sites are provided in **Table 5**. The values have been provided for conventional movements (based on 10 times the curvature) and for non-conventional anomalous movements.

Table 5: Predicted Strains for the Aboriginal Heritage Sites within and in proximity to the Study Area based on Conventional and Non-Conventional Anomalous Movements

Type	Conventional based on 10 times Curvature (mm/m)	Non-Conventional based on the 95% Confidence Level (mm/m)	Non-Conventional based on the 99% Confidence Level (mm/m)
Tension	13	10	22
Compression	11	13	31

Source: MSEC (2024).
% = percent.

MSEC (2024) has compared the maximum predicted subsidence parameters for Aboriginal heritage sites due to the extraction of LW409-414 based on the Extraction Plan Layout with the maximum predictions due to the extraction of the Approved Layout. This comparison is provided in **Table 6**.

Table 6: Comparison of Maximum Predicted Conventional Subsidence Parameters for Aboriginal Heritage Sites within and in proximity to the Study Area based on the Approved Layout and the Extraction Plan Layout

Layout	Maximum Predicted Total Conventional Subsidence (mm)	Maximum Predicted Total Conventional Tilt (mm/m)	Maximum Predicted Total Conventional Hogging Curvature (km^{-1})	Maximum Predicted Total Conventional Sagging Curvature (km^{-1})
Approved Layout	1900	40	1.3	1.1
Extraction Plan Layout	1900	40	1.3	1.3

Source: MSEC (2024).

The majority of the predicted subsidence parameters based on the Extraction Plan Layout are the same as those based on the Approved Layout. The maximum predicted subsidence, tilt and hogging curvature are unchanged for the Extraction Plan Layout and sagging curvature increases slightly. Based on the similar magnitudes of predicted subsidence parameters, the potential impacts for the Aboriginal heritage sites based on the Extraction Plan Layout are the same as those based on the Approved Layout (MSEC, 2024).

In summary:

- Aboriginal heritage sites with performance measures in accordance with Project Approval (05_0117) (or voluntary performance measures) (i.e. S1MC264, S1MC282, S1MC283, S1MC286, S1MC287 and S1MC284) are located outside the 20 mm subsidence contour. Subsidence impacts to these sites are considered unlikely to occur.
- Impacts to open sites containing artefacts and isolated finds and rock shelters located outside the Study Area are considered to be unlikely.
- Open sites inside the Study Area containing artefacts and isolated finds can potentially be affected by cracking of the surface soils as a result of mine subsidence movements. It is unlikely that the artefacts and isolated finds themselves would be impacted by surface cracking.
- Whilst it is unlikely that the artefacts and isolated finds would be impacted by mine subsidence, it is possible that, if remediation works to the surface areas around the Aboriginal heritage sites were required after mining, these works could potentially impact on the Aboriginal heritage sites. All remediation works would be subject to MCO's ground disturbance permit (GDP) process.
- Rock shelters and overhangs inside the Study Area are predicted to be subject to similar impacts as described for minor cliffs (i.e. potential for fracturing of sandstone and subsequent rockfalls). These sites could therefore be impacted by rockfalls associated with the rock shelter.

4.5 HISTORIC HERITAGE SITES

The management of historic heritage sites is undertaken in accordance with the complex-wide HMP (MCO, 2025). There are no historic heritage sites listed in Project Approval (05_0117) within the Study Area or within the vicinity of the Study Area considered sensitive to subsidence movements.

5.0 PERFORMANCE MEASURES AND PERFORMANCE INDICATORS

This LW409-414 HMP has been developed to manage the potential environmental consequences of the secondary extraction of LW409-414 on Aboriginal and historic heritage in accordance with Condition 77(k), Schedule 3 of Project Approval (05_0117).

In accordance with Condition 73, Schedule 3 of Project Approval (05_0117), MCO must ensure that there is no exceedance of the subsidence impact performance measures listed in Table 14 of Project Approval (05_0117). Subsidence impact performance measures relevant to Aboriginal and historic heritage sites in the LW409-414 Study Area are listed in **Table 7.**

Table 7: Heritage Subsidence Impact Performance Measures

Feature	Subsidence Impact Performance Measure
Aboriginal heritage sites 264, 282, 283, 286 and 287	Reduce the likelihood of subsidence damage to low
Aboriginal heritage site 280	Reduce the likelihood of subsidence damage to moderate
Historic heritage sites	No greater subsidence impacts or environmental consequences than predicted in the Environmental Assessment

Source: Table 14 of Condition 73, Schedule 3 of Project Approval (05_0117).

Aboriginal heritage site S1MC280 is located within the LW401-408 Study Area (south of the LW409-414 Study Area) and the likelihood of subsidence impacts to this feature from LW409-414 is considered to be very low. S1MC280 is described further in the LW401-408 HMP and the LW401-408 S1MC280 Subsidence Monitoring and Mitigation Program.

Aboriginal heritage sites S1MC264, S1MC282, S1MC283 and S1MC286 are located in proximity to the Study Area. The likelihood of subsidence impacts to these features including artefacts and rock shelters in proximity to the Study Area is considered to be unlikely (MSEC, 2024). Aboriginal site S1MC287 which has artefacts in a rock shelter is located immediately downslope of CL3 outside the 20 mm subsidence contour. Predicted subsidence parameters at this site are negligible, less than typical limits of survey accuracy, and impact to this shelter is considered unlikely to occur (MSEC, 2024). Therefore, it is expected the performance measure of reduce the likelihood of subsidence damage to low for sites 264, 282, 283, 286 and 287 will be achieved (MSEC, 2024).

Project Approval (05_0117) does not include any specific performance measures for the Aboriginal heritage site S1MC284. However, in consideration of the features associated with S1MC284 (i.e. shelter with art and artefact[s]) and the scientific significance (moderate), it is proposed that the performance measure of *reduce the likelihood of subsidence damage to low* is voluntarily applied to S1MC284. S1MC284 is located in proximity to the Study Area and the likelihood of subsidence impacts to this feature is considered to be unlikely (MSEC, 2024). Therefore, the subsidence impact performance measure of *reduce the likelihood of subsidence damage to low* is expected to be maintained.

There are no historic heritage sites listed in Project Approval (05_0117) within the Study Area or within the vicinity of the Study Area considered sensitive to subsidence movements.

Further details of the subsidence impacts to these sites are described in **Section 4.4.3** and MSEC (2024).

Section 6 describes the monitoring that will be conducted to assess the UG4 LW409-414 against the relevant subsidence impact performance measures for Aboriginal heritage sites as well as the predicted subsidence impacts.

Section 7 describes the contingency measures to be implemented, in the event that monitoring results indicate an increased likelihood of damage to S1MC264, S1MC282, S1MC283, S1MC284, S1MC286 and S1MC287.

6.0 MONITORING AND MANAGEMENT

6.1 BASELINE RECORDING

A pre-mining baseline record will be obtained prior to the commencement of secondary extraction beneath each site in accordance with **Table 8**. S1MC466 has previously been subject to baseline recording in November 2022 and has been partially salvaged under existing approvals.

Where required, the baseline recording would include, at a minimum:

- a photographic record of the site;
- a detailed scaled plan of the site including physical characteristics and features; and,
- detailed information regarding the dimensions, composition and features of the site.

Baseline surveys would also be undertaken within sections of the Goulburn River National Park within and in proximity (i.e. within 100 m of) the Study Area, prior to the commencement of mining and in consultation with National Parks and Wildlife Service.

6.2 MONITORING AND MANAGEMENT OF ABORIGINAL HERITAGE SITES

A framework for the management of Aboriginal heritage sites within the approved Moolarben Coal Complex has been developed as part of the complex-wide HMP (MCO, 2025) based on the sites assessed significance, site type and the nature of proposed impacts. This management framework provides a robust system for managing subsidence impacts within LW409-414. Niche (2024) has prepared management requirements and recommendations for each site within the Study Area and sites relevant to LW409-414 with performance measure located in proximity to the Study Area (i.e. S1MC264, S1MC282, S1MC283, S1MC284 and S1MC286) (**Table 8**), that aligns with the complex-wide HMP (MCO, 2025).

Table 8: Summary of Management Requirements for Aboriginal heritage sites for the LW409-414 Study Area

Area	Scientific Significance	Site Type	Management / Monitoring	Other Actions	Site Name
Within the Study Area	Low	Artefacts / Isolated Find	GDP process (if required)	Update AHIMS (if required due to surface disturbance).	S1MC263, S1MC270, S1MC432, S1MC492, S1MC541,
		Shelter with artefact(s)	Pre-mining salvage	Update AHIMs to reflect salvage / and any observed impacts post-mining, if required.	S1MC265, S1MC266
		Shelter with artefact(s) and PAD	Pre-mining salvage (for artefacts) No test excavation required	Update AHIMS to reflect salvage / and any observed impacts post-mining, if required.	S1MC285, S1MC288, S1MC297, S1MC493
		Shelter with PAD	None required (i.e. no test excavation)	N/A	S1MC467, S1MC470, S1MC480, S1MC481
	Moderate	Shelter with artefact(s)	Pre-mining salvage	Update AHIMs to reflect salvage / and any observed impacts post-mining, if required.	S1MC267
		Shelter with artefact(s) and PAD	Pre-mining salvage (for artefacts) Test excavation (and salvage if required)	Update AHIMs to reflect test excavation and salvage as required / and any observed impacts post-mining, if required.	S1MC466*, S1MC482
	Moderate-high	N/A- no sites within the Subject Area			
	High Site relevant to LW409-414 with performance measure	Shelter with artefact(s) and PAD	Pre-mining salvage (for artefacts) Test excavation (and salvage if required) Pre-mining and post-mining inspections	Update AHIMs to reflect test excavation and salvage as required. Update AHIMS in unlikely event that subsidence impact occurs.	**S1MC287**
Outside the Study Area	Sites relevant to LW409-414 with performance measure in Stage 1 Project Approval and voluntary performance measures	All	Pre-mining and post-mining inspections	Update AHIMS in unlikely event that subsidence impact occurs.	**S1MC264, S1MC282, S1MC283, S1MC284, S1MC286**

Source: After Niche (2024)

Note: **Bold Sites represent the sites have performance measures or voluntary performance measures.**

* S1MC466 has been partially salvaged under existing approvals comprising surface artefact collection undertaken in November 2022 however subsequent to this, a PAD was identified at the site which requires future management.

6.2.1 Ground Disturbance and Permit Process

In the event that, any surface disturbance works are required (e.g. in relation to subsidence remediation activities), MCO must apply the GDP process outlined in the currently approved HMP.

6.2.2 Monitoring of Aboriginal Heritage Sites

In accordance with Section 5.9.1 of the complex-wide HMP (MCO, 2025), monitoring Aboriginal heritage sites for subsidence-related impacts, for sites which have not been managed prior to mining will be undertaken within and near the LW409-414 Study Area as follows:

> *Monitoring of potential subsidence impacts will be undertaken for a number of rock shelter and open grinding groove sites (unless previously salvaged), in order to identify and document whether any subsidence impacts have arisen from mining. Monitoring of the above sites will involve the following:*
>
> - *MCO will engage an appropriately qualified expert to monitor the Aboriginal archaeological sites described as requiring monitoring. This may include the establishment of a percentage estimate of the likelihood of subsidence occurring in sensitive areas.*
> - *Where insufficient pre-existing information is available for any of the specific Aboriginal archaeological sites to permit comparison with the condition post-mining, more detailed recording will occur prior to undermining.*
> - *Monitoring will involve inspecting and recording the condition of these specific Aboriginal archaeological sites within three to six months after undermining has occurred. Each inspection will involve recording of data on environmental conditions, pre-existing human and natural impacts, heritage evidence present and any identified changes to these environmental and heritage conditions compared with previous inspections. The potential cause (subsidence or other impacts) of changes to the condition of individual sites will be assessed.*
> - *Monitoring will be focussed on the features of the site that make it significant (e.g. grooves, art, artefacts and/or PAD).*
> - *A report documenting the results of monitoring will be prepared that details the methodology of the inspections, conditions of the environment and Aboriginal heritage evidence at the relevant sites, comparisons with previously reported conditions at each site, identification of any natural and/or human impacts during the intervening period, identification of any implications for the ongoing management and protection of Aboriginal heritage evidence at the Moolarben Coal Complex, and documentation of the actual impacts of operations on the Aboriginal archaeological sites.*
> - *Copies of this report will be distributed to the RAPs, Heritage NSW and the DPE and a summary included in the Annual Review.*

Monitoring for subsidence related impacts will occur within three to six months of undermining (unless salvaged). If, during the above monitoring, significant subsidence impacts are identified, then the salvage and excavation procedures outlined in **Section 6.2.3** will be considered. Monitoring and/or salvage and/or excavation would only occur where safe to do so, as determined in consultation with relevant MCO safety personnel.

For the purpose of determining what constitutes a significant subsidence impact on Aboriginal heritage sites, a site is considered to be "affected by significant subsidence impacts" if it exhibits one or more of the following consequences that cannot be attributed to natural weathering or deterioration:

- overhang collapse;
- cracking of sandstone that coincides with the feature(s) of the site that make it significant; and
- rock fall that damages the feature(s) of the site that make it significant.

6.2.3 Surface Collection and Excavation

Salvage and test excavation of Aboriginal heritage sites (refer to **Table 8**) will be undertaken prior to extraction in consultation with a suitably qualified archaeologist and RAPs. Monitoring and/or salvage and/or excavation would only occur where safe to do so, as determined in consultation with relevant MCO safety personnel. In accordance with Sections 5.6.1 and 5.6.2 of the complex-wide HMP (MCO, 2025), this LW409-414 HMP will adopt protocols for the salvage and excavation of Aboriginal heritage sites as follows:

> *Aboriginal archaeological sites that are considered to hold research potential and are scheduled to be impacted will undergo a two-phase program of archaeological excavation. This program will include an initial exploratory phase followed, when warranted, by a more targeted investigation of the site's research potential as follows:*
>
> 1. *initial subsurface testing using one or more linear transects of hand excavated, regularly-spaced shovel test pits (Section 5.6.1); and*
> 2. *controlled salvage excavation of areas with high research potential as identified through Phase 1 (the initial subsurface testing) (Section 5.6.2).*
>
> *If the initial program of shovel test pits determines that the site does not hold high scientific significance in accordance with the Burra Charter (Australia ICOMOS 1999) and the Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH, 2011), then the second phase of investigation (i.e. open area excavation) will not be undertaken. For instance, if initial subsurface testing revealed evidence of poor spatial integrity at the site (e.g. ground disturbance, sheet erosion) or few subsurface artefacts, there will remain little value in a more detailed scientific investigation of the site through controlled salvage excavation.*
>
> ***Initial Subsurface Testing***
>
> *The objective of the initial phase of the archaeological excavation program is to determine the nature, extent and composition of each site. Data collected during this phase will be used to inform the need for a further controlled salvage excavation phase (where required), which is designed to target in situ concentrations of sub-surface cultural deposits.*
>
> *Following the initial subsurface testing (shovel test pits), any sites that reveal poor spatial integrity, significant ground disturbance, shallow soil profiles and/or few subsurface cultural material, will not be subject to further subsurface investigation (i.e. the second phase of more detailed investigation and controlled salvage excavation will not occur).*

Initial subsurface testing will be undertaken as follows:

- *One or more transects of shovel test pits spaced no more than 20 m apart will be excavated along the length and/or width of the site (as determined from surface expression of artefacts). Areas of grossly modified terrain (e.g. dams) will be excluded from the sampling process.*
- *Approximately 0.5 m x 0.5 m (0.25 square metres [m²]) test pits will be dug by hand (shovel) at each designated shovel test pit point (approximately 20 m apart along the length of the transect).*
- *For the initial subsurface testing, all excavated material will be sieved through 5 millimetre (mm) aperture screens.*
- *The number of transects and shovel test pits may be reduced depending on the nature and scale of the site being assessed, subject to advice from a suitably qualified and experienced archaeologist and in consultation with the attending RAPs.*
- *The spacing of transects and shovel test pits may be reduced depending on the nature and scale of the site being assessed, subject to advice from a suitably qualified and experienced archaeologist and in consultation with the attending RAPs. For example, when undertaking test pits within a rockshelter, testing will be undertaken in closer proximity.*

Controlled Salvage Excavation

Where controlled salvage excavation is determined to be warranted in consultation with a suitably qualified and experienced archaeologist and the attending RAPs, the following process will be generally implemented at a level appropriate to the extent and nature of the site:

- *Controlled salvage excavation will be undertaken by a suitably qualified archaeologist(s), with assistance provided by the RAPs.*
- *All excavation will be carried out manually using trowels, shovels and mattocks (where appropriate).*
- *Open area excavation will proceed in 1 m² units.*
- *All excavation units (i.e. shovel test pits and open area 1 x 1 m2 squares) will be assigned an alpha-numeric identifier.*
- *The first excavation unit will be excavated and documented in 5 cm spits at each area – either PAD or site – being investigated. Based on the evidence of the first excavation unit, 10 cm spits or sediment profile/stratigraphic excavation (whichever is smaller) may then be implemented.*
- *Excavation will cease at culturally sterile units or bedrock in all instances – the identification of sterile stratigraphic units will draw upon a geomorphological understanding of the wider Moolarben Coal Complex.*
- *Photographic and/or scale-drawn records of exposed soil profiles in open area excavations will be made.*
- *If specific archaeological features (e.g. hearths) are identified, the entire feature will be excavated and recorded prior to the continuation of excavation. Features will be photographed and scale plans drawn.*
- *All excavated soils will be wet or dry-sieved (dependent on composition) through 5 mm and/or 3 mm sieves, as deemed appropriate by a qualified archaeologist, and in accordance with the Heritage NSW policy Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW, 2010b).*
- *All material remaining in the sieve will be sorted by a qualified archaeologist to identify and retain all cultural items. All remaining non-cultural material will be discarded.*

- *Artefacts recovered from sieving will be retained in plastic zip-lock bags and labelled with appropriate provenance data and assigned an URN.*
- *Radiometric (or Accelerated Mass Spectrometry [AMS]) dating samples will be collected and processed when appropriate samples are identified. As opportunities emerge during salvage excavation, dating samples will be collected from archaeological deposits where the contents and stratigraphic structure are suitable for dating analysis (e.g. in situ charcoal or other organic material). This analysis will only be undertaken when it will add significantly to an understanding of the site's stratigraphy.*
- *A standard site recording form will be used for each 1 x 1 m² excavation unit and will include (as a minimum) site name, date, recorder, square identifier, and number of spits.*
- *Upon completion of excavation, the location of all excavation units will be incorporated into the topographic survey plan for the site.*
- *All excavation units will be backfilled upon conclusion of excavations at the site.*

The above requirements may be modified if suitable based on advice by a suitably qualified archaeologist and in consultation with attending RAPs.

6.3 SUBSIDENCE PARAMETERS

Subsidence parameters will be measured in accordance with the UG4 Longwalls 409-414 Subsidence Monitoring Program (LW409-414 SMP). In summary, surveys will be conducted to measure subsidence movements in three dimensions using a total station survey instrument. Subsidence movements will be measured along subsidence lines that have been positioned across the general landscape.

7.0 CONTINGENCY PLAN

In the event a performance measure detailed in **Section 5** is considered to have been exceeded, MCO will implement the following Contingency Plan (detailed in Section 9.0 of the complex-wide HMP):

- The Environment and Community Manager will report the exceedance to the General Manager within 24 hours of assessment completion.
- In the event that the incident has caused, or threatens to cause, material harm to the environment, MCO will report the exceedance of the performance to the DPHI and Heritage NSW immediately. All other incidents will be reported to the DPHI and Heritage NSW as soon as practicable after MCO becomes aware of the incident.
- MCO will identify an appropriate course of action with respect to the identified impact(s), in consultation with specialists, RAPs (in relation to Aboriginal archaeological sites) and relevant agencies, as necessary. For example, identification of proposed contingency measure(s) and a program to review the effectiveness of the contingency measures. Contingency measures will be developed in consideration of the specific circumstances of the exceedance and the assessment of environmental consequences.
- MCO will, on request, submit the proposed course of action to the DPHI for approval.
- MCO will implement the approved course of action to the satisfaction of the DPHI.
- MCO will provide a detailed report on the exceedance of the performance measures to the DPHI and Heritage NSW within 7 days of the date of becoming aware of the exceedance.
- MCO will report the exceedance of the performance measure and the success of the approved course of action as a component of the Annual Review (detailed in Section 10 of the complex-wide HMP).

8.0 REVIEW AND IMPROVEMENT OF ENVIRONMENTAL PERFORMANCE

8.1 ANNUAL REVIEW

In accordance with Condition 4, Schedule 5 of Project Approval (05_0117) (as modified), MCO will conduct an Annual Review of operations conducted at the Moolarben Coal Complex (including the performance of this LW409-414 HMP) prior to 31 March for the preceding calendar year, or as otherwise agreed by the Secretary of the DPHI.

The Annual Review will:

- describe the works carried out in the previous calendar year, and the development proposed to be carried out over the current calendar year;
- include a comprehensive review of the monitoring results and complaints records of the Project over the previous calendar year, including a comparison of these results against the:
  - relevant statutory requirements, limits or performance measures/criteria;
  - monitoring results of previous years; and
  - relevant predictions in the Environmental Assessment;
- identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;
- identify any trends in the monitoring data over the life of the Project;
- identify any discrepancies between the predicted and actual impacts of the Project, and analyse the potential cause of any significant discrepancies; and
- describe what measures will be implemented over the next year to improve the environmental performance of the Project.

In accordance with Condition 11, Schedule 5 of Project Approval (05_0117), the Annual Review will be made available on the Yancoal's website. As described in **Section 2**, this LW409-414 HMP will be reviewed within three months of the submission of an Annual Review, and, if necessary, revised to ensure the plan is updated on a regular basis and to incorporate any recommended measures to improve environmental performance.

8.2 AUDITS

In accordance with Condition 9, Schedule 5 of Project Approval (05_0117), the most recent independent environmental audit of the Moolarben Coal Complex was conducted in July 2024, and will continue to be conducted every three years. A copy of the independent environmental audit will be provided to the Secretary of the DPHI and made available on the Yancoal's website.

The independent environmental audit will be conducted by suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary of the DPHI. The independent environmental audit will assess the environmental performance of the Project and assess whether it is complying with the requirements of Project Approval (05_0117), and any other relevant approvals, and recommend measures or actions to improve the environmental performance of the Project.

8.3 FUTURE EXTRACTION PLANS

In accordance with Condition 77(p), Schedule 4 of Project Approval (05_0117), MCO will collect baseline data for future Extraction Plans (e.g. for the next underground mining domain). In addition to the baseline data collection, consideration of the environmental performance and management measures, in accordance with the review(s) conducted as part of this LW409-414 HMP, will inform the appropriate type and frequency of monitoring of the assets relevant to any future Extraction Plan at the Moolarben Coal Complex.

9.0 INCIDENTS

An incident is defined in Project Approval (05_0117) as a set of circumstances that:

- causes or threatens to cause material harm to the environment; and/or
- breaches or exceeds the limits or performance measures/criteria in Project Approval (05_0117).

In the event that an incident which causes, or threatens to cause, material harm to the environment occurs, the incident will be managed in accordance with the Pollution Incident Response Management Plan.

The reporting of incidents will be conducted in accordance with Condition 7, Schedule 5 of Project Approval (05_0117).

MCO will notify the Secretary of DPHI and any other relevant agencies of any incident associated with LW409-414 which causes or threatens to cause material harm to the environment immediately after MCO confirms that an incident has occurred. For any other incident associated with the mining of LW409-414, MCO will notify the Secretary and any other relevant agencies as soon as practicable after becoming aware of the incident. Within seven days of the date of the incident, MCO will provide the Secretary of DPHI and any relevant agencies with a detailed report on the incident. The report will:

- describe the date, time and nature of the exceedance/incident;
- identify the cause (or likely cause) of the exceedance/incident;
- describe what action has been taken to date; and
- describe the proposed measures to address the exceedance/incident.

10.0 COMPLAINTS

MCO maintains a Community Complaints Line (Phone Number: 1800 556 484) that is dedicated to the receipt of community complaints. The Community Complaints Line is publicly advertised and operates 24 hours per day, seven days a week, to receive any complaints from neighbouring residents or other stakeholders.

MCO has developed a Community Complaints Procedure which details the process to be followed when receiving, responding to and recording community complaints. The Community Complaints Procedure is supported by a Complaints Database.

The Community Complaints Procedure is a component of the MCO Environmental Management Strategy which requires the recording of relevant information including:

- the nature of complaint;
- method of the complaint;
- relevant monitoring results and meteorological data at the time of the complaint;
- site investigation outcomes;
- any necessary site activity and activity changes;
- any necessary actions assigned; and
- communication of the investigation outcome(s) to the complainant.

In accordance with Condition 11, Schedule 5 of Project Approval (05_0117), the complaints register will be updated monthly and made available on the Yancoal's website.

11.0 NON-COMPLIANCES WITH STATUTORY REQUIREMENTS

A protocol for the managing and reporting of non-compliances with statutory requirements has been developed as a component of MCO's Environmental Management Strategy and is described below.

Compliance with all approvals, plans and procedures will be the responsibility of all personnel (staff and contractors) employed on or in association with the Moolarben Coal Complex.

The Environment and Community Manager (or delegate) will undertake regular inspections, internal audits and initiate directions identifying any remediation/rectification work required, and areas of actual or potential non-compliance.

As described in **Section 9**, MCO will notify the Secretary of the DPHI and any other relevant agencies of any incident associated with MCO immediately after MCO becomes aware of the incident. Within seven days of the date of the incident, MCO will provide the Secretary of the DPHI, and any relevant agencies, with a detailed report on the incident.

A review of MCO's compliance with all conditions of Project Approval (05_0117), mining leases and all other approvals and licenses will be undertaken prior to (and included within) each Annual Review. The Annual Review will be made publicly available on the Yancoal's website.

As described in **Section 8.2**, the most recent independent environmental audit was conducted in July 2024, and will be conducted every three years thereafter. A copy of the independent environmental audit will be provided to the Secretary of the DPHI and made available on the Yancoal's website.

12.0 REFERENCES

Department of Environment, Climate Change and Water (2010a) *Aboriginal cultural heritage consultation requirements for proponents 2010*.

Department of Environment, Climate Change and Water (2010b) *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*.

Department of Environment, Climate Change and Water (2010c) *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales*.

Department of Planning and Environment (2022) *Extraction Plan Guideline*.

Hamm, G (2006) *Moolarben Coal Project - Aboriginal Cultural Heritage Assessment Report*. Report to Moolarben Coal Mines Pty Ltd.

Hamm, G (2008) *Aboriginal Heritage Plan for MCP Stage 1 Development Areas: Open Cut 1 and Main Infrastructure Area*. Report Prepared for Moolarben Coal Mine.

Kuskie, P (2013) *Moolarben Coal Project – Stage 1 Optimisation Modification, Near Ulan, Central Tablelands of New South Wales: Aboriginal Cultural Heritage Assessment*. Report to Moolarben Coal.

Mine Subsidence Engineering Consultants (2024) *Moolarben Project Stage 1 – Longwalls 409 to 414 – Subsidence Predictions and Impact Assessments for the Natural and Built Features in Support of the Extraction Plan.*

Moolarben Coal Operations (2025) *Moolarben Coal Complex Heritage Management Plan*.

Niche Environment and Heritage (2024) *Moolarben Coal Complex, UG4 Longwalls 409-414 Extraction Plan Aboriginal Cultural Heritage Technical Report.*

NSW Office of Environment and Heritage (2011) *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW.*

ATTACHMENT 1

CONDITIONS 38-39, SCHEDULE 3 OF PROJECT APPROVAL (05_0117)

Condition 77(k), Schedule 3 of Project Approval (05_0117) requires that the LW409-414 HMP *"reflects all requirements under conditions 38-39 of Schedule 3"*. These requirements are covered by the complex-wide HMP (MCO, 2025). Table A-1 indicates where each component of the conditions is addressed within the complex-wide HMP (MCO, 2025).

Table A-1: Project Approval (05_0117) Requirements

New South Wales Project Approval (05_0117) Condition	Complex-wide HMP Section
Protection of Aboriginal Heritage Items	
38. Unless otherwise authorised under the NP&W Act, the Proponent shall ensure that the project does not cause any direct or indirect impact on the identified Aboriginal heritage items located outside the approved disturbance area of the project. Note: Identified Aboriginal heritage items are listed in Appendix 9. The details in Appendix 9 are subject to revision following ongoing survey and assessment in accordance with the Heritage Management Plan required under this Project Approval	Section 5
Heritage Management Plan	
39. The Proponent shall prepare and implement a Heritage Management Plan for the project to the satisfaction of the Secretary within six (6) months from the date of approval for MOD 9. This plan must:	
(a) be prepared by suitably qualified and experienced persons whose appointment has been endorsed by the Secretary;	Section 1.2
(b) be prepared in consultation with BCD and the Aboriginal stakeholders (in relation to the management of Aboriginal heritage values);	Section 1.4
(c) include results of further archaeological survey of the 10 hectares of land (as identified on Figure 10 of Appendix F of the EA) that has not been surveyed, and any land adjacent to the open cut mines that has not been surveyed and may be subject to blasting impacts;	Tables 2 and 6, Appendices C and D
d) include the following for the management of Aboriginal Heritage:	
• *a detailed archaeological test excavation and potential salvage program for site S1MC331;*	Condition Satisfied[1]
• *a detailed archaeological test excavation and potential salvage program for sites S1MC343 and S1MC344, if it is determined by a qualified archaeologist that these sites may be subject to impacts associated with blasting;*	Condition Satisfied[1]
• *a description of the measures that would be implemented for:* *- protecting, monitoring and/or managing the heritage sites/items identified in Appendix 9 and any sites identified during the surveys required in (c) above;*	Section 5
- conserving the sites outside the surface disturbance area, including measures that would be implemented to secure, analyse and record the sites at risk of subsidence and/or blasting;	Section 5.2, Table 6 and Appendix D
- managing the discovery of any human remains or previously unidentified Aboriginal objects on site;	Sections 5.10 and 5.11
- maintaining and managing reasonable access for Aboriginal stakeholders to heritage items on site;	Section 5.16
- ongoing consultation with the Aboriginal stakeholders in the conservation and management of Aboriginal cultural heritage both on site and within any Aboriginal heritage conservation areas; and	Sections 1.4 and 5.1
- ensuring any workers on site receive suitable heritage inductions prior to carrying out any development on site, and that suitable records are kept of these inductions;	Section 7
• *a strategy for the storage of any heritage items salvaged on site, both during the project and in the long term;*	Section 5.13
(e) include a detailed plan for the implementation of the mitigation and management measures outlined for the specified heritage items in Appendix 10, including archival recording, historical research and archaeological assessment prior to any disturbance.	Section 6

[1] In accordance with Stage 1 Project Approval (05_0117), sites S1MC343 have been subject to detailed test excavation and salvage.