SIMEC

MEMBER OF GFG ALLIANCE

LAND MANAGEMENT PLAN - TAHMOOR SOUTH DOMAIN - LONGWALLS SOUTH 1A - SOUTH 7A

Tahmoor Coal Pty Ltd

Document Control

Applicant:	Tahmoor Coal Pty Ltd
Mine:	Tahmoor Coal Mine
Development Approval:	SSD 8445
Mining Leases:	CCL716 and CCL747
Document Title:	Tahmoor South Domain Longwalls South 1A – South 7A Land Management Plan
Document Number:	TAH-HSEC-00362
Publication Date:	October 2025
Document Status:	Final (Version 7)
Prepared By:	Josselin Ribot Senior Geotechnical Engineer PSM
Approved by:	Zina Ainsworth Environment and Community Manager Tahmoor Coal – SIMEC Mining Signature: Date:
	Malcolm Waterfall Mining Engineering Manager Tahmoor Coal – SIMEC Mining Signature: Date:
	Peter Vale Executive General Manager Coal Operations Tahmoor Coal – SIMEC Mining Signature: Date:

Table of Contents

Table of Contents **3**
List of Figures **5**
List of Tables **5**
1 Introduction **6**
1.1 Background 6
The location of LW S1A-S7A and associated Study Area are illustrated in Figure 2. 6
1.2 Purpose 6
1.3 Scope 6
2 Regulatory Requirements **10**
2.1 Project Approval 10
2.1.1 Development Consent Conditions 10
2.1.1.1 Extraction Plan Requirements 10
2.1.1.2 Management Plan Requirements 13
2.1.2 EIS Commitments 14
2.1.3 Extraction Plan Guideline 14
2.2 Relevant Legislation and Policies 15
2.3 Other Leases and Licences 15
2.4 Stakeholder Consultation 16
2.4.1 Consultation to Date 16
3 Existing Environment **20**
3.1 Climate 20
3.2 Topography 20
3.3 Geology 20
3.4 Cliffs 21
3.5 Steep slopes 21
3.6 Soils 23
3.7 Land Use 23
3.8 Biophysical Strategic Agricultural Land 23
3.9 Farm Dams 23
4 Predicted Subsidence Impacts and Environmental Consequences **26**
4.1 Cliffs 26
4.2 Steep Slopes 26
4.3 General landscape 28
4.4 Agricultural Land 28
4.5 Farm Dams 28
5 Subsidence Monitoring Program **30**
5.1 Performance Measures and Indicators 30

5.2 Monitoring Program 31
5.2.1 Agricultural Monitoring Locations 31
5.2.2 Rural Structure Monitoring and Management 31
5.2.3 Exclusions for this Monitoring Program 32
5.3 Baseline Monitoring to Support Future Extraction Plans 32
6 Subsidence Management Strategies 34
6.1 Mine Design Considerations 34
6.2 Mitigation Measures and Corrective Management Actions 34
6.2.1 Public Safety Management 34
6.2.2 Management of Cliffs and Natural Steep Slopes 35
6.2.3 Management of Farm Dams 36
6.2.4 Management of Agricultural Land 36
6.2.5 Verification Methods 36
6.3 Trigger Action Response Plan 37
6.3.1 Implementation of Monitoring Program and TARP Requirements 37
6.4 Contingency Plan 38
6.5 Adaptive Management Strategies 38
6.5.1 Adaptive Management for Landscape Features 38
6.5.2 Continuous Improvement 38
7 Implementation and Reporting 40
7.1 General Requirements 40
7.2 Reporting Requirements 40
7.2.1 Performance Measure Exceedance 40
7.2.2 Specific Reporting for Landscape Features 41
7.3 Review and Auditing 41
7.3.1 Plan Audit 41
7.3.2 Plan Review 41
7.4 Roles and Responsibilities 42
8 Document Information 43
8.1 Referenced Documents 43
8.2 Related Documents 43
8.3 Glossary of Terms 44
8.4 Abbreviations 44
8.5 Change Information 46
APPENDIX A – Trigger Action Response Plans 47
APPENDIX B – Geotechnical Assessment (Douglas Partners, 2024a) 55
APPENDIX C – Geotechnical Assessment for LW S7A (PSM, 2025) 56
APPENDIX D – Land and Agricultural Resource Assessment (SLR, 2025) 57
APPENDIX E – Detailed Slope Stability Assessment (Douglas Partners, 2022) 58

List of Figures

Figure 1 Regional Context 8
Figure 2 Extraction Plan Study Area 9
Figure 3 Cliffs and Steep Slopes in the Study Area 22

List of Tables

Table 1 Key Conditions from SSD 8445 regarding Landscape Features 10
Table 2 Management Plan Requirements 13
Table 3 EIS Commitments 14
Table 4 Extraction Plan Guideline Requirements for Key Sub-Plans 14
Table 5 Mining Lease 15
Table 6 Environmental Approvals and Licences 15
Table 7 Consultation to Date 16
Table 8 Picton Climate Data (BoM, 2025) 20
Table 9 Soil Landscape Units (SLR, 2025) 23
Table 10 Subsidence Performance Measures and Performance Indicators for Landscape Features 30
Table 11 Monitoring Program for Landscape Features 33
Table 12 Reference Information 42

1 Introduction

1.1 Background

Tahmoor Coal Pty Ltd (Tahmoor Coal) owns and operates the Tahmoor Mine, an existing underground coal mine located approximately 80 kilometres (km) south-west of Sydney in the Southern Coalfields of New South Wales (NSW). Tahmoor Mine surface facilities are situated between the towns of Tahmoor and Bargo within the Wollondilly Local Government Area (LGA). The mine has previously extracted longwalls to the north and west of the surface facilities and has been operating continuously since 1979 when coal was first mined using bord and pillar mining methods, followed by longwall mining methods since 1987.

The location of Tahmoor Mine in the regional context is shown in **Figure 1.**

Tahmoor Mine produces a primary hard coking coal product and a secondary higher ash coking coal product that are used predominantly for coke manufacture for steel production. Extracted coal is processed on site at the coal handling and preparation plant (CHPP) and coal clearance facilities prior to transportation via rail to Port Kembla and Newcastle for Australian domestic and export customers.

An Environmental Impact Statement (EIS) was exhibited in early 2019 to gain approval for the Tahmoor South Coal Project, which involves use of the existing surface infrastructure and the expansion of underground longwall mining to the south of the existing workings (referred to as the Tahmoor South Domain). Tahmoor Coal subsequently revised the proposed mine design and submitted amended development applications on two occasions (in February and August 2020). In April 2021, Tahmoor Coal received Development Application Approval (SSD 8445) for the extraction of up to 4 Mtpa of ROM coal, with a total of up to around 35 Mt of ROM coal proposed to be extracted over a 10-year period.

The Tahmoor South Domain is located south of the Bargo River and east of Remembrance Driveway and the township of Bargo. Longwall mining would be used to extract coal from the Bulli coal seam within the bounds of Consolidated Coal Lease (CCL) 716 and CCL 747. Thirteen longwalls are proposed in this domain which are divided into a series of seven northern (A series) and six southern (B series) longwalls. The A series, Longwalls South 1A to South 7A (LW S1A-S7A), are the focus of the current Extraction Plan.

The location of LW S1A-S7A and associated Study Area are illustrated in **Figure 2**.

1.2 Purpose

This Land Management Plan (LMP) has been prepared and updated to support an Extraction Plan for the secondary extraction of coal from LW S1A-S7A.

The purpose of this management plan is to provide a framework for Tahmoor Coal personnel to ensure that compliance is achieved with relevant internal and external regulatory requirements related to landscape features monitoring and management within the Extraction Plan Study Area. The plan ensures that impacts on the environment and community are minimised and managed within a structured framework.

This plan is to ensure compliance with Development Consent (SDD 8445) (the Consent) Condition C8.

1.3 Scope

The Study Area applicable to this management plan consists of a combination of the predicted 20 millimetre (mm) Total Subsidence Contour and the 35^{o} Angle of Draw Line as shown in **Figure 2**. Relevant environmental features within a 600 metre (m) buffer from extraction that could be susceptible to far-field or valley related movements have also been included for consideration.

This management plan:

- Addresses specific requirements set by Development Consent SSD 8445, EIS Commitments, Leases, Licences, and regulatory requirements (refer to **Section 2**);
- Addresses comments received during stakeholder consultation (refer to **Section2.4**);
- Provides an overview of the existing environment for landscape features (refer to **Section 3**);
- Provides details on the predicted subsidence impacts and environmental consequences to landscape features from the extraction of LW S1A-S7A (refer to **Section 4**);
- Outlines the monitoring program for potential subsidence-related impacts to landscape features (refer to **Section 5**);
- Outlines the management strategies for potential subsidence-related impacts to landscape features (including cliffs, natural steep slopes, farm dams and agricultural land) (refer to **Section 6**);
- Outlines the strategies for implementation, reporting, and review of this document (refer to **Section 7**);
- Provides document information (refer to **Section 8**); and
- Provides Trigger Action Response Plans (TARPs) to be implemented to manage and protect landscape features (including cliffs, natural steep slopes, farm dams and agricultural land) within the Study Area (refer to **Appendix A**).

This management plan has been prepared based on the contents of the following technical reports:

- Geotechnical Assessment for Longwall S1A to S6A (Douglas Partners, 2024a) (**Appendix B**) and Geotechnical Assessment for Longwall S7A (PSM, 2025) (**Appendix C**);
- Tahmoor Extraction Plan LW S1A-S7A Land and Agricultural Resource Assessment (SLR, 2025) (**Appendix D**);
- Subsidence Predictions and Impact Assessments Report (MSEC, 2022)
- Tahmoor Coal – Modification 3 – Longwall South 7A (MSEC, 2024).

Potential risks to constructed steep slopes along road embankments and cuttings are managed separately in accordance with the Wollondilly Shire Council Management Plan.

Potential risks to constructed steep slopes along railway embankments and cuttings are managed separately in accordance with the Main Southern Railway Management Plan.

Potential risks to constructed steep slopes and dams on the Tahmoor Mine Site are managed in accordance separately with the Tahmoor Mine Site Management Plan.

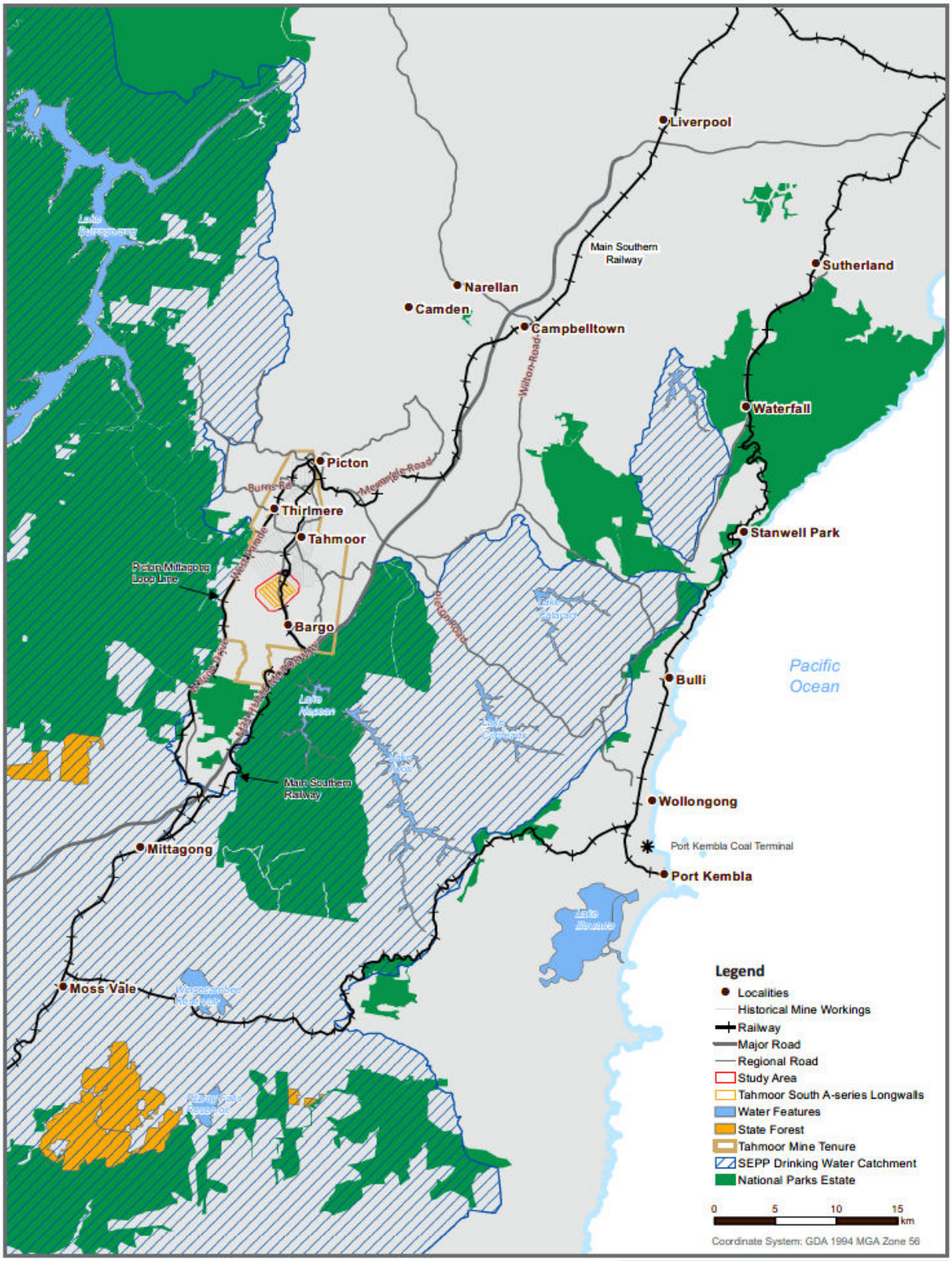

Figure 1 Regional Context

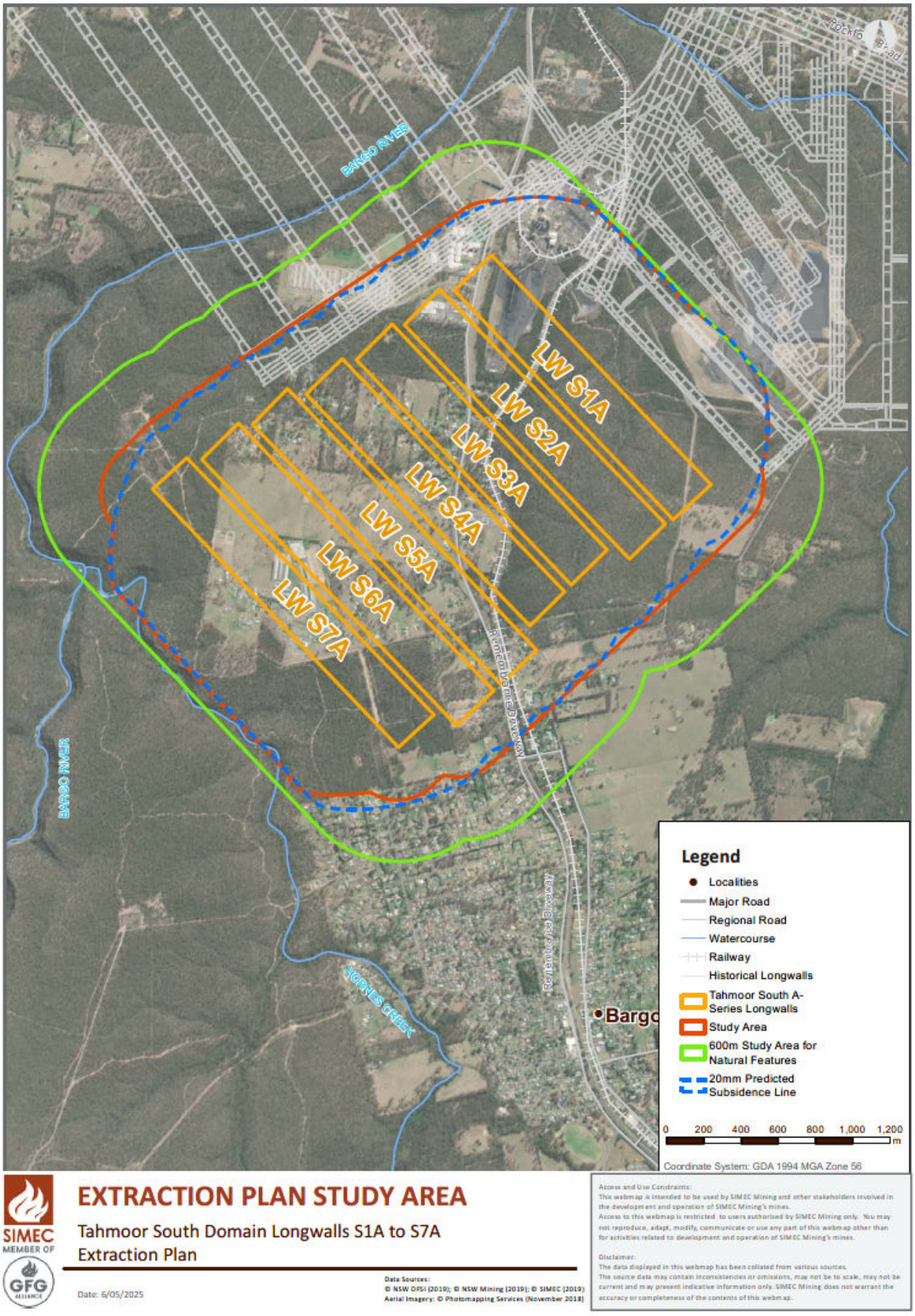

Figure 2 Extraction Plan Study Area

2 Regulatory Requirements

2.1 Project Approval

2.1.1 Development Consent Conditions

2.1.1.1 Extraction Plan Requirements

Tahmoor Coal's operations are conducted in accordance with applicable Commonwealth and State environmental, planning, mining safety, and natural resource legislation. A register of relevant environmental legislative and regulatory requirements is maintained by Tahmoor Coal in a compliance database.

LW S1A-S7A will be extracted in the Tahmoor South mining area under Development Consent SSD 8445, as discussed further in Section 3.2.1 of the Extraction Plan Main Document. SSD 8445 provides the conditional planning approval framework for mining activities in the Tahmoor South Domain to be addressed within an Extraction Plan and supporting management plans. Conditions relevant to this management plan from SSD 8445 are detailed in **Table 1.**

SSD 8445 has been modified on three occasions relating to:

- Modification 1 - Extension of time to commission the Tahmoor Coal Water Treatment Plant, approved on 19 July 2022;
- Modification 2 - Underground brine disposal and transfer of mine water, approved on 13 June 2023, and
- Modification 3 – Inclusion of an additional longwall panel (Longwall South 7A (LW S7A)) to the existing approved mine plan, approved on 26 May 2025.

Approval (EPBC 2017/8084) was also granted in 2021 by the then Department of Agriculture, Water and the Environment (DAWE) (now Department of Climate Change, Energy, the Environment and Water (Commonwealth DCCEEW)) for the Tahmoor South Project under sections 130(1) and 133(1) of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act).

It is noted that LW S3A has been shortened by 104 m, as approved by DPHI on 27 March 2024. LW S4A is shortened by 104m as approved by DPHI on 11 November 2024. Modifications to this longwall are discussed in a separate document and further discussion in this document have been omitted. No changes to the proposed monitoring program as presented in this document have resulted from the longwalls shortening.

Table 1 Key Conditions from SSD 8445 regarding Landscape Features

<table>
<tr><th>Condition Reference</th><th>Condition Requirement</th><th>Where Addressed</th></tr>
<tr><td>C1</td><td>SUBSIDENCE
Performance Measures – Natural and Heritage Features etc.
The Applicant must ensure that the development does not cause any exceedances of the performance measures in Table 7.</td><td rowspan="2">Section 5, Section 6, Appendix A</td></tr>
<tr><td>Excerpt from Table 7</td><td>Table 7: Subsidence impact performance measures – natural and heritage features etc
<table>
<tr><th>Feature</th><th>Performance Measures</th></tr>
<tr><td colspan="2">Land</td></tr>
<tr><td>Any cliff located directly above longwalls</td><td>- Minor environmental consequences (that is occasional rockfalls, displacement or dislodgement of boulders or slabs, or fracturing, that in total do</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>Condition Reference</th><th>Condition Requirement</th><th>Where Addressed</th></tr>
<tr><td></td><td>
<table>
<tr><td></td><td>not impact more than 5% of the total face area of the cliff within any longwall mining domain)</td></tr>
<tr><td>Any cliff within Subsidence Area beyond the extent of longwalls</td><td>- Negligible environmental consequences (that is occasional rockfalls, displacement or dislodgement of boulders or slabs, or fracturing, that in total do not impact more than 0.5% of the total face area of such cliffs within Subsidence Area)</td></tr>
<tr><td>All land within the Subsidence Area</td><td>- No greater subsidence impacts or environmental consequences than predicted in the EIS</td></tr>
<tr><td>All land outside the Subsidence Area</td><td>- Negligible subsidence impacts or environmental consequences</td></tr>
</table>
Notes for Table 7 (C1):
Notes:
• These performance measures apply to all mining taking place after the date of this consent.
• The Applicant is required to define more detailed performance indicators (including impact assessment criteria) for each of these performance measures in the various management plans that are required under this consent (see condition CB).
</td><td></td></tr>
<tr><td>C2</td><td>Performance Measures – Natural and Heritage Features etc.
Measurement and monitoring of compliance with performance measures and performance indicators in this consent is to be undertaken using generally accepted methods that are appropriate to the environment and circumstances in which the feature or characteristic is located. These methods are to be fully described in the relevant management plans and monitoring programs. In the event of a dispute over the appropriateness of proposed methods, the Planning Secretary will be the final arbiter.</td><td>Section 5, Subsidence Management Plans for built features</td></tr>
<tr><td>C5</td><td>Performance Measures – Built Features
The Applicant must ensure that the development meets the performance measures in Table 8.
Table 8: Subsidence impact performance measures – built features
<table>
<tr><th>Feature</th><th>Performance Measures</th></tr>
<tr><td colspan="2">Other Built Features</td></tr>
<tr><td>- Other privately-owned built features and improvements, including petrol stations, sheds, garages, farm dams, tanks, swimming pools, tennis courts, roads, tracks and fences</td><td>- Always safe
- Serviceability should be maintained wherever practicable
- Loss of serviceability must be fully compensated
- Damage must be fully repairable, and must be fully investigated and repaired or else replaced or fully compensated at the cost of the Applicant</td></tr>
<tr><td colspan="2">Public Safety</td></tr>
<tr><td>- Public safety</td><td>- Negligible additional risk</td></tr>
</table>
Notes for Table 8 (C5)
Notes:
• These performance measures apply to all mining taking place after the date of this consent.
• The Applicant is required to define more detailed performance measures in the Built Features Management Plans or Public Safety Management Plan (see condition CB).
• Requirements regarding safety or serviceability do not prevent preventative or mitigatory actions being taken prior to or during mining.
• Requirements under this condition may be met by measures undertaken in undertaken in accordance with the Coal Mine Subsidence Compensation Act 2017.</td><td>Section 5, Section 6</td></tr>
</table>

Condition Reference	Condition Requirement	Where Addressed
C6	**Performance Measures – Built Features** Any dispute between the Applicant and the owner of any built feature over the interpretation, application or implementation of the performance measures in Table 8 is to be settled by the Planning Secretary, following consultation with the Resources Regulator. Any decision by the Planning Secretary shall be final.	Noted.
C8	**Extraction Plan** The Applicant must prepare an Extraction Plan for all second workings on the site of the development to the satisfaction of the Planning Secretary. Each Extraction Plan must:	Noted. This management plan is part of the LW S1A-S7A Extraction Plan.
C8(e)	provide revised predictions of the potential subsidence effects, subsidence impacts and environmental consequences of the proposed mining covered by the Extraction Plan, incorporating any relevant information obtained since this consent;	**Section 4**
C8(f)	describe in detail the performance indicators to be implemented to ensure compliance with the performance measures in Table 7 and Table 8, and manage or remediate any impacts and/or environmental consequences to meet the rehabilitation objectives in condition B56;	**Section 5.1, Section 5.2, Section 6**
C8(g)(v)	Land Management Plan which:	This management plan
	• has been prepared in consultation with any affected public authorities;	**Section 2.4**
	• provides for the management of potential impacts and/or environmental consequences of the proposed underground workings on land in general, with a specific focus on steep slopes; and	**Section 5, Section 6, Appendix A**
	• is informed by a detailed slope stability assessment prepared by a suitably qualified and experienced person/s;	**Appendix D**
C8(g)(viii)	Trigger Action Response Plans addressing all features in Table 7 and Table 8, which contain:	**Section 6.3, Appendix A**
	• appropriate triggers to warn of increased risk of exceedance of any performance measure;	
	• specific actions to respond to high risk of exceedance of any performance measure to ensure that the measure is not exceeded;	
	• an assessment of remediation measures that may be required if exceedances occur and the capacity to implement the measures; and	
	• adaptive management where monitoring indicates that there has been an exceedance of any performance measures in Table 7 and/or Table 8, or where any such exceedance appears likely; and	**Section 6.5**
C8(g)(ix)	Contingency Plan that expressly provides for:	**Section 6.4, Appendix A**
	• adaptive management where monitoring indicates that there has been an exceedance of any performance measure in Table 7 and/or Table 8, or where any such exceedance appears likely;	**Section 6.5**
	• an assessment of remediation measures that may be required if exceedances occur and the capacity to implement those measures;	**Section 6.2, Section 6.5**
C8(i)	include a program to collect sufficient baseline data for future Extraction Plans.	**Section 5.3**
E4	**Adaptive Management** The Applicant must assess and manage development-related risks to ensure that there are no exceedances of the criteria and performance measures in this consent. Any exceedance of these criteria or performance measures constitutes a breach of this consent and may be subject to offset or other	**Section 6.5**

Condition Reference	Condition Requirement	Where Addressed
	provisions as specified in this consent and/or penalty or offence provisions under the EP&A Act or EP&A Regulation. Where any exceedance of these criteria or performance measures has occurred, the Applicant must, at the earliest opportunity: (a) take all reasonable and feasible steps to ensure that the exceedance ceases and does not recur; (b) consider all reasonable and feasible options for remediation (where relevant) and submit a report to the Department describing those options and any preferred remediation measures or other course of action (c) within 14 days of the exceedance occurring (or other timeframe agreed by the Planning Secretary), submit a report to the Planning Secretary describing these remediation options and any preferred remediation measures or other course of action; and (d) implement reasonable remediation measures as directed by the Planning Secretary.	

2.1.1.2 Management Plan Requirements

Condition E5 of the Consent outlines the general requirements for all management plans. **Table 2** outlines the requirements under this condition and identifies where these requirements have been addressed.

Table 2 Management Plan Requirements

Condition Reference	Condition Requirement	Where Addressed
E5	Management plans required under this consent must be prepared in accordance with relevant guidelines, and include:	Noted.
(a)	a summary of relevant background or baseline data;	**Section 3**
(b)	details of:	NA
(b)(i)	the relevant statutory requirements (including any relevant approval, licence or lease conditions);	**Sections 2.1, 2.2 and 2.3**
(b)(ii)	any relevant limits or performance measures and criteria; and	**Section 5.1**
(b)(iii)	the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures;	**Section 5.1, Section 6.3, Appendix A**
(c)	any relevant commitments or recommendations identified in the document/s listed in condition A2(c);	**Section 2.1.2**
(d)	a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria;	**Section 6.2**
(e)	a program to monitor and report on the:	NA
(e)(i)	impacts and environmental performance of the development; and	**Section 5**
(e)(ii)	effectiveness of the management measures set out pursuant to condition E5(d);	**Section 6.2**
(f)	a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;	**Section 6.4, Appendix A**
(g)	a program to investigate and implement ways to improve the environmental performance of the development over time;	**Section 6.4, Section 6.5.1**
(h)	a protocol for managing and reporting any:	NA

Condition Reference	Condition Requirement	Where Addressed
(h)(i)	incident, non-compliance or exceedance of any impact assessment criterion or performance criterion;	**Section 7**
(h)(ii)	complaint; or	**Section 7**
(h)(iii)	failure to comply with other statutory requirements;	**Section 7**
(i)	public sources of information and data to assist stakeholders in understanding environmental impacts of the development; and	**Section 7**
(j)	a protocol for periodic review of the plan.	**Section 7**

2.1.2 EIS Commitments

Condition A2(g) of the Consent states that the development may only be carried out generally in accordance with the EIS. The relevant EIS documents include:

- Tahmoor South Project Environmental Impact Statement, Volumes 1 and 7, dated January 2019;
- Tahmoor South Project Amendment Report, including Appendices A to R and response to submissions, dated February 2020;
- Tahmoor South Project Second Amendment Report, Appendices A to O and response to submissions, dated August 2020; and
- Additional information responses dated 14 September 2020 (including Appendices A to L), 23 October 2020 and 4 November 2020.

EIS commitments relevant to this management plan are outlined in **Table 3**. These EIS commitments do not include commitments that are covered by the SSD 8445 Conditions of Consent.

Table 3 EIS Commitments

EIS Reference	Commitment	Where Addressed
LUR-3	**Land use and resources** Potential impact: Impacts of the surface aspects of the Project on land use Management and mitigation measures: Develop a Land Management Plan to manage land use and agricultural land within the Project Area	This document

2.1.3 Extraction Plan Guideline

This management plan has been prepared in accordance with the NSW Department of Planning and Environment (DPE) *Extraction Plan Guideline* (DPE, 2022), as detailed in **Table 4**.

Table 4 Extraction Plan Guideline Requirements for Key Sub-Plans

Extraction Plan Guideline Content Requirements for Key Sub-Plans	Where Addressed
A short overview of relevant landscape features, heritage sites, environmental values, built features or other values to be managed under the sub-plan.	**Section 3**
Setting out the consent's performance measures directly relevant to the features or values to be managed under the sub-plan.	**Section 2.1.1, Section 5.1**
Setting out clear objectives to ensure the delivery of the performance measures and all other relevant statutory requirements.	**Section 2, Section 5.1, Section 6**
Setting out performance indicators to establish compliance with the performance measures and statutory requirements.	**Section 5.1, Appendix A**
A description of the relevant features and values to be managed under the sub-plan, and their significance.	**Section 3**

Extraction Plan Guideline Content Requirements for Key Sub-Plans	Where Addressed
A description of all currently predicted subsidence impacts and environmental consequences relevant to the features and values to be managed under the sub-plan.	**Section 4**
A description of all measures planned to remediate these impacts and/or consequences, including any measures proposed to ensure that impacts and/or consequences comply with performance measures and/or the mining company's commitments.	**Section 6, Appendix A**
A description of the existing baseline monitoring network and the current baseline monitoring results, including pre-subsidence photographic surveys of key landscape features and key heritage sites that may be subject to significant subsidence impacts (such as significant watercourses, swamps and Aboriginal heritage sites).	**Section 3**
A description of the proposed environmental monitoring of subsidence impacts and environmental consequences.	**Section 5.2**
A description of the proposed monitoring of remediation measures.	**Section 6.2, Section 6.4, Appendix A**
A description of adaptive management.	**Section 6.5**
Listing responsibilities for implementation of the plan.	**Section 7**
An attached Trigger, Action, Response Plan.	**Appendix A**

2.2 Relevant Legislation and Policies

For legislation that regulates health and safety during mining subsidence and obligations to remediate (which includes environmental consequences to cliffs, natural steep slopes, farm dams, or agricultural land), refer to the Extraction Plan Main Document, Public Safety Management Plan, and specific Subsidence Management Plans for built features.

2.3 Other Leases and Licences

All development consents, leases, licences, and other relevant approvals are stored in the Cority Compliance Management database, which is administered by both site and Liberty GFG Corporate. A summary of the relevant mining leases is provided in **Table 5.** A summary of other approvals and licences is provided in

Table 6.

Table 5 Mining Lease

Lease	Title	Granted	Expires
CCL 716	Original Tahmoor Leases	15/06/1990 (Instrument of Renewal 16/8/2023)	13/3/2042
CCL 747	Bargo Mining Lease	23/05/1990 (Instrument of Renewal 16/05/2025)	06/11/2046
ML 1308	Small Western Lease to west of CCL 716	2/03/1993 (Instrument of Renewal 24/6/2014)	2/03/2035
ML 1376	Tahmoor North Lease	28/08/1995 (Instrument of Renewal 28/3/2023)	28/08/2043
ML 1539	Tahmoor North Extensions Lease	16/06/2003	16/06/2035
ML 1642	Pit-top and REA surface Mining Lease	27/08/2010 (Instrument of Renewal 17/10/2022)	27/08/2031

Table 6 Environmental Approvals and Licences

Approval Title / Description	Date Granted	Expiry Date
Environmental Protection Licence 1389	01/05/1994, latest variation 28/06/2024	No Expiry
WAL36442	06/12/2013	No Expiry
WAL25777	27/10/2014	No Expiry
WAL43656	01/8/2022	No Expiry
SWC871469 (Leased)	11/07/2024	01/07/2026
SWC868868 (Leased)	01/07/2024	30/06/2025*
WAL43631	08/03/2021	No Expiry
WAL43655	09/03/2021	No Expiry
WAL43657	09/03/2021	No Expiry
WAL43659	09/03/2021	No Expiry
WAL45204	07/08/2024	No Expiry
XSTR200005 Dangerous Goods Licence	02/02/2017	02/02/2027
5061521 Radiation Management Licence	29/10/2024	29/10/2026

*Lease in process of renewal for FY2026

2.4 Stakeholder Consultation

2.4.1 Consultation to Date

The following stakeholders were consulted during the preparation of this management plan:

- NSW Department of Primary Industries – Agriculture (DPI Agriculture);
- Wollondilly Shire Council;
- Australian Rail Track Corporation (ARTC);
- NSW Department of Planning and Environment – Crown Lands Division (Crown Lands) (now NSW Department of Planning, Housing and Infrastructure (DPHI) – Crown Land).

The feedback provided by stakeholders is summarised within **Table 7** below. No response from ARTC regarding the Extraction Plan has been received at this time. This consultation table does not include consultation completed during the Extraction Plan review stage post submission to DPHI.

A summary of all consultation undertaken for this extraction plan is provided in Section 2.1.2 of the Extraction Plan Main Document, and a copy of the incoming correspondence is also provided in Appendix C of the Extraction Plan Main Document.

Tahmoor Coal will consult with built feature owners during the development of separate Subsidence Management Plans for their built features prior to the influence of subsidence on each relevant feature.

Table 7 Consultation to Date

Consulted Stakeholder	Consultation Conducted	Outcomes of Consultation
DPI Agriculture	A letter introducing the Extraction Plan for LW S1A-S6A was sent on 22 December 2021. Tahmoor Coal provided a figure of the Extraction Plan Study Area, and an overview of the longwalls. A response was received on 4 February 2022.	Noted.
	A full assessment of the agricultural land uses in the area that may be potentially impacted	An Agricultural Impact Statement was prepared for the first Amendment Report for

Consulted Stakeholder	Consultation Conducted	Outcomes of Consultation
	so any agricultural developments and associated enterprises in the area are considered in terms of identified risks and economic disruption particularly with subsidence.	SSD 8445 approval. For this Extraction Plan, a Land and Agricultural Resource Assessment (SLR, 2022) has been prepared to complement the information from the Agricultural Impact Statement, and provide any updates on agricultural development impacts from the proposed longwalls.
	Consult with the owners / managers of affected and adjoining neighbours and agricultural operations in a timely and appropriate manner about: the proposal, the likely impacts and suitable mitigation measures or compensation.	Consultation with owners of agricultural businesses in the Study Area has commenced. Tahmoor Coal will continue to consult with the owners during the preparation of a subsidence management plans for each individual agricultural business, and will monitor and manage potential impacts to the properties in accordance with these management plans. Further information on management plans to be prepared for built features is provided in **Section 2.1.2** and **Table 5**. In addition, all landowners in the Study Area have been informed by an information packaged delivered by mail of the proposed development and the subsidence impact claims process in the event that their property is damaged by mining.
	Consider possible cumulative effects to agricultural enterprises and landholders from subsidence/ other impacting events.	Given the described impacts are of a minor nature and readily managed through application of appropriate mitigation measures and management strategies, any resulting cumulative impacts on agricultural resources and enterprises are also expected to be minor and readily mitigated.
	An assessment of the monitoring regime that will identify any changes as a result of the effects of the longwall mining, especially subsidence. This may include impacts of farm infrastructure i.e. buildings, fences, slope changes, water supply infrastructure.	Tahmoor Coal will consult with the agricultural business owners during the preparation of subsidence management plans for each individual agricultural business, and will monitor and manage potential impacts to the properties in accordance with these management plans. Further information on management plans to be prepared for built features is provided in **Section 2.1.2** and **Table 5**.
	In relation to the poultry enterprises that exist in the area, that these owner / managers as well as the processors / owners of the birds be consulted to ensure that production plans can be adjusted if required. This should have at least for 12 month period of mining activity.	Tahmoor Coal will consult with the agricultural business owners during the preparation of subsidence management plans for each individual agricultural business, and will monitor and manage potential impacts to the properties in accordance with these management plans. Further information on management plans to be prepared for built features is provided in **Section 2.1.2** and **Table 5**.

Consulted Stakeholder	Consultation Conducted	Outcomes of Consultation
	For protected cropping enterprises (glasshouses) located in the impacted area, the slope of the glasshouses is critical for efficient irrigation so subsidence may be a potential issue. This may also be an issue for other open horticultural enterprises e.g. olives if they are irrigated with a dripper system.	Tahmoor Coal will consult with the agricultural business owners during the preparation of management plans for each individual agricultural business, and will monitor and manage potential impacts to the properties (including hothouses and greenhouses) in accordance with these management plans. Further information on management plans to be prepared for built features is provided in **Section 2.1.2** and **Table 5**.
	Dust can also be an issue for greenhouse / glasshouse light transmission so this needs to be addressed if dust levels are an issue above ground.	The extraction of LW S1A-S7A involves the extraction of seven underground longwall panels and as such there will be no impact to air quality resulting from this extraction activity. All other activities associated with the Tahmoor South Project that have the potential to create dust will be undertaken in accordance with the approved Air and Greenhouse Gas Management Plan for any onsite construction as well as the ongoing operation of Tahmoor Mine.
	With water quality any increase in the total dissolved salts (TDS) or an increase in sodium level will be a limitation to any horticultural system relying on hydroponics or fertigation.	There is no predicted increase in total dissolved salts or sodium in groundwater bores associated with LW S1A-S7A. This is discussed further in the Land and Agricultural Resource Assessment (SLR, 2025).
Wollondilly Shire Council	A letter introducing the Extraction Plan for LW S1A-S6A was sent on 22 December 2021. Tahmoor Coal provided a figure of the Extraction Plan Study Area, and an overview of the longwalls. A response from Council's Waste and Environmental Services Team was received on 14 February 2022.	Noted.
	A detailed geological model that identifies the likely interaction of subsidence induced fractures with the modelled groundwater environment as part of complying with the IESC publication.	The Tahmoor South Geological Model has been updated, as discussed in the Groundwater Technical Report in Appendix E of the Water Management Plan.
Crown Lands	A letter introducing the Extraction Plan for LW S1A-S6A was sent on 22 December 2021. Tahmoor Coal provided a figure of the Extraction Plan Study Area, and an overview of the longwalls. A response was received on 2 February 2022.	Noted.
	Surface disposal areas for material from the underground longwall sites will likely be documented in the plan. It is desirable that arrangements for disposal of spoil do not adversely impact on public land (including Crown land) in the environs.	This Extraction Plan discusses the management of potential impact from the extraction of LW S1A-S7A only. Details on the REA and any proposed changes as a result of proposed longwall extraction in the Tahmoor South Domain are documented in the EIS and

Consulted Stakeholder	Consultation Conducted	Outcomes of Consultation
		two Amendment Reports, which were reviewed as part of the approval of SSD 8445. As per condition A39 of SSD 8445, Tahmoor Coal will consult with Crown Land and enter into a compensation agreement prior to undertaking any development on Crown Land or Crown Roads.

3 Existing Environment

3.1 Climate

Climate data for the Study Area has been obtained from the nearest Bureau of Meteorology (BOM) weather station located at Picton, approximately one (1) km to the north-west of the Study Area (Picton Council Depot, BOM Station 068052, Monthly Climate Statistics).

Picton BOM Station has recorded an average annual rainfall of 797.7 mm, of which approximately 476.1 mm (60%) falls between November and April, with an average of 70.6 rain days in any given year, as outlined within **Table 8**. Mean monthly maximum temperatures range between 29.3°C and 16.8 C, with January being the warmest month. Mean monthly minimum temperatures range between 15.4 C and 1.7°C, with July being the coldest month.

Table 8 Picton Climate Data (BoM, 2025)

Climate Data	Average (Mean)	Annual Range
Minimum temperature	8.8°C	1.7°C – 15.4°C
Maximum temperature	23.4°C	16.8°C – 29.3°C
Annual rainfall	797.7 mm	70.6
Wettest month - February	91.0 mm	6.8
Driest month – September	43.5 mm	5.1

The BOM classifies the region as a temperate climate zone. The region can be susceptible to occasional heavy showers and thunderstorms due to easterly troughs during warmer months. Summer winds are generally from the south or south-east, with a tendency for afternoon north-easterly winds. During winter, winds are predominantly from the south or south-west (SLR, 2025).

3.2 Topography

Topography in the region is varied, ranging from gently undulating plateaus, ridges and low hills in the upland areas, to a rugged landscape of deeply dissected valleys and gorges within the Hawkesbury Sandstone (SLR, 2025).

The Study Area is generally undulating with a fall from the south-west to the north-east. The major topographical feature within the Study Area is Teatree Hollow. A spur of the Bargo River valley is present along the south-western site boundary and to the north (SLR, 2025).

Elevation near the Study Area varies from a low point of approximately 265 metres AHD, in the base of Teatree Hollow, downstream from of the proposed LW S1A, to a high point of approximately 350 metres AHD, at the south-western corner of the Study Area to the north-west of the proposed LW S7A. The site starts to fall away to the south-west as the study area reaches Bargo River valley, to an approximate level of 285 m AHD based on Public LiDAR survey.

3.3 Geology

The Study Area is located within the southern area of the Permo-Triassic Sydney Basin. The main coal bearing sequence is the Illawarra Coal Measures, which contains four workable seams. The upper most seam, located in the north-western part of the Illawarra Coalfield, is the Bulli Coal Seam. Overlying the Bulli Coal Seam is the Hawkesbury Tectonic Stage which is comprised of three stratigraphic units, namely the Narrabeen Group, Hawkesbury Sandstone Group and the Wianamatta Group. The Narrabeen Group overlies the Illawarra Coal Measures and is comprised of interbedded sandstones and claystone units up to 310 m thick. Overlying the Narrabeen Group is the Hawkesbury Sandstone which is comprised of a series of bedded sandstones up to 185 m thick. The Wianamatta Group overlies the Hawkesbury

Sandstone, and is comprised of shales and siltstones and is relatively thin in comparison (SLR, 2025).

Another major geological feature is the Bald Hill Claystone which lies at the base of the Hawkesbury Sandstone. The Bald Hill Claystone varies in width to over 25 metres, which tends to act as an aquitard (SLR, 2025).

3.4 Cliffs

The Development Consent (SSD 8445) defines cliffs as a continuous rock face, including overhangs, having a minimum length of 20 metres, a minimum height of 10 metres and a minimum slope of 2 to 1 (>63.4^{o}).

Douglas Partners (2024), the Subsidence Prediction and Impact Assessment Report (MSEC, 2022), PSM (2025) and the Tahmoor Coal – Modification 3 – Longwall S7A (MSEC, 2024) adopted similar definitions in support of the Extraction Plan.

The locations and heights of cliffs within the Study Area were determined based on the results of an airborne laser scan. A total of twenty (20) cliffs have been identified as being located on the outer edge of the 600 metres buffer for environmental features (BC1 to BC20). BC2 is located within a tributary to the Bargo River and is more than 500 metres from LW S4A (MSEC, 2022).

Nineteen (19) cliffs are located within the LW S7A 600 metres buffer for environmental features. The cliffs are located within the Hawkesbury Sandstone along the Bargo River and Hornes Creek, at distances of between 275 metres and 600 metres from LW S7A. There is no direct vehicle access to the bottom of the cliffs within the Study Area though some cliffs can be reached on foot via walking trails. The Picton Weir is located beneath Cliff C_0800, which is located approximately 575 metres from LW S7A and setback approximately 50 metres from the dam wall (MSEC, 2024).

The locations of cliffs within the Study Area are illustrated in **Figure 3.**

3.5 Steep slopes

The Development Consent (SSD 8445) defines steep slopes as an area of land having a gradient between 1 in 3 (33% or 18.3^{o}) and 2 in 1 (200% or 63.4^{o}).

Douglas Partners (2024) and PSM (2025) adopted a similar definition. The Subsidence Prediction and Impact Assessment Report (MSEC, 2022) defined a steep slope "*as an area of land having a gradient greater than 1 in 3 (33% or 18.3^{o})*". The MSEC definition is broader than the definition in the Development Consent as it encompasses slopes greater than 2 in 1 that do not meet the criteria for cliffs.

The steep slopes within the Study Area were identified from an airborne laser scan. Steep slopes are generally located about incised creek gullies and include rocky outcrops, which are located on undeveloped land. Steep slopes comprising four road embankments and one cut batters along Remembrance Drive were also identified by the LiDAR survey. No other properties have been identified as containing structures close to steep slopes (Douglas Partners, 2024a). A total of 7 rock shelters (RS1 to RS7) along the Bargo River and within the 600 metres natural study area were identified by EMM (EMM, 2024).

The locations of steep slopes within the Study Area are illustrated in **Figure 3**.

3.6 Soils

The soils within the Study Area consist of five Soil Landscape Units (SLU) and are summarised in **Table 9**.

Agricultural land best suited to grazing enterprises is the Blacktown, SLU covers 11% of the Study Area, and about 89% of the soils within the Study Area are highly constrained for cultivation (SLR, 2025).

Table 9 Soil Landscape Units (SLR, 2025)

Soil Landscape	Study Area		Agricultural Limitation Rating	
Unit	**Hectares**	**%**	**Unit**	**Hectares**
Gymea	14	2	High – Severe	High – Severe
Disturbed Terrain	12	1.5		
Hawkesbury	4	0.5		
Lucas Heights	701	85	Moderate	High
Blacktown	90	11	Low	Moderate

Three Australia Soil Classification soil types are present in the Study Area:

- Kurosols – moderately low inherent fertility comprising 81% of the Study Area;
- Tenosols – moderately low inherent fertility comprising 10% of the Study Area; and
- Dermosols - moderately high inherent fertility comprising 3% of the Study Area.

The likelihood of acid sulfate soils occurring within the Study Area is very low due to its position away from the coast and potential acid sulfate landform type. Furthermore, none of the Soil Landscape Units mapped within the Study Area have acid sulfate soil potential (SLR, 2025).

3.7 Land Use

Only a minor portion of the Study Area is comprised of cleared pastoral land (approximately 27%) that may be suitable for agricultural enterprises (refer **Figure 5**). The remainder of the land is comprised of thick native vegetation along riparian zones and steep slopes, along with mine disturbance areas, and small holdings used as rural residential land (SLR, 2025).

Grazing is a major agricultural land use in the Study Area. Overall farm size is considered small and many would be classified as hobby farms with a very low potential to produce significant agricultural income (SLR, 2025).

Poultry farms are a significant industry in the area, with three located within and adjacent to the Study Area. In addition, a number of rural structures that may be used for agricultural purposes also are located in the Study Area, including greenhouses, hothouses, irrigation systems, tanks, dams and groundwater bores.

3.8 Biophysical Strategic Agricultural Land

There is no Biophysical Strategic Agricultural Land =within or adjacent to the Study Area. LW S1A-S7A will not impact any Biophysical Strategic Agricultural Land (SLR, 2025).

3.9 Farm Dams

A total of 45 farm dams have been identified within the Study Area, the locations of which are shown in **Figure 6**. The farm dams have been identified as typically shallow (less than three metres deep), of earthen construction and established by localised cut and fill operations within natural watercourses (MSEC, 2022).

There are no additional farm dams identified within LW S7A Study Area.

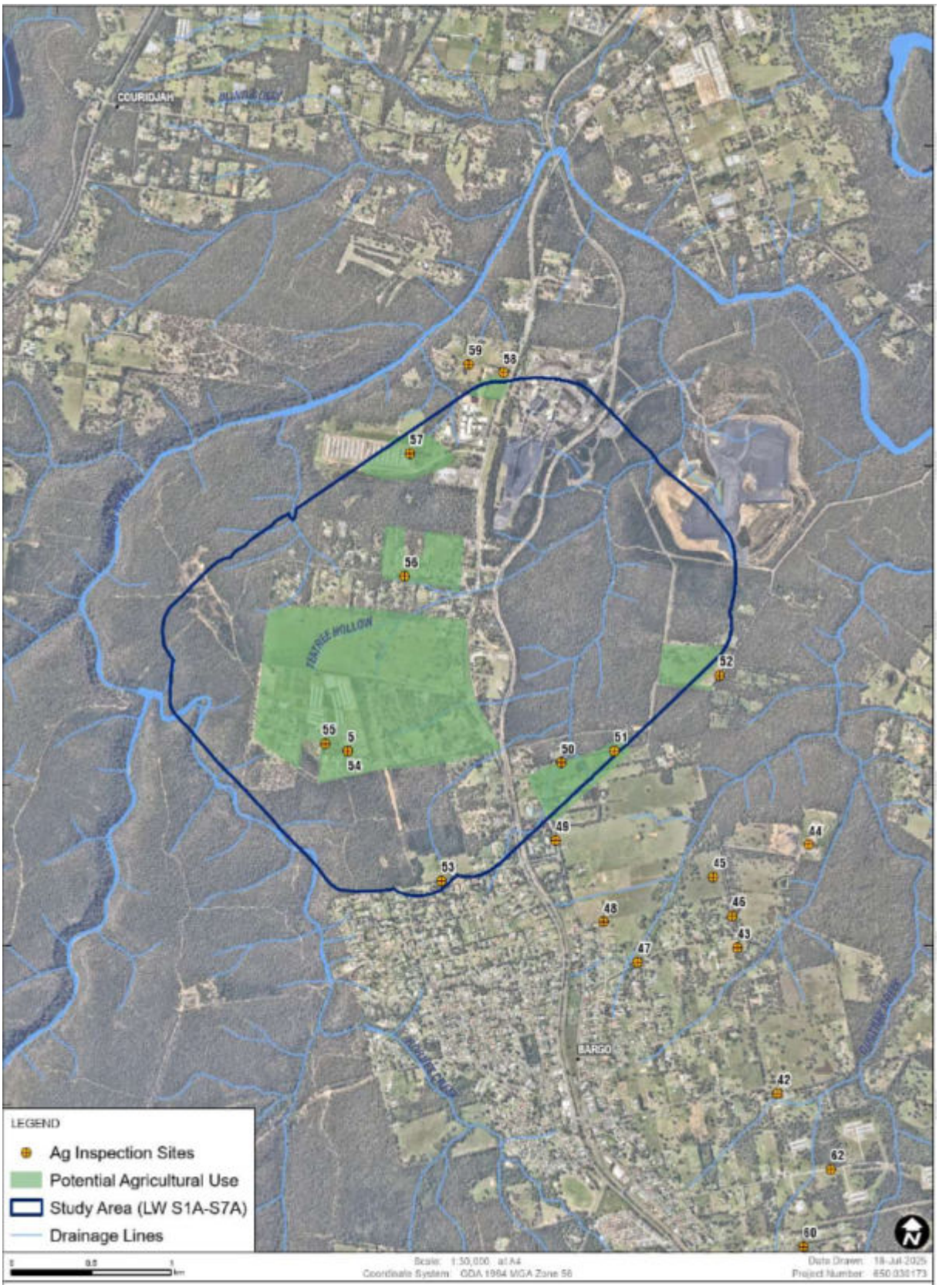

Figure 5 Agricultural Land in the Study Area (SLR, 2025)

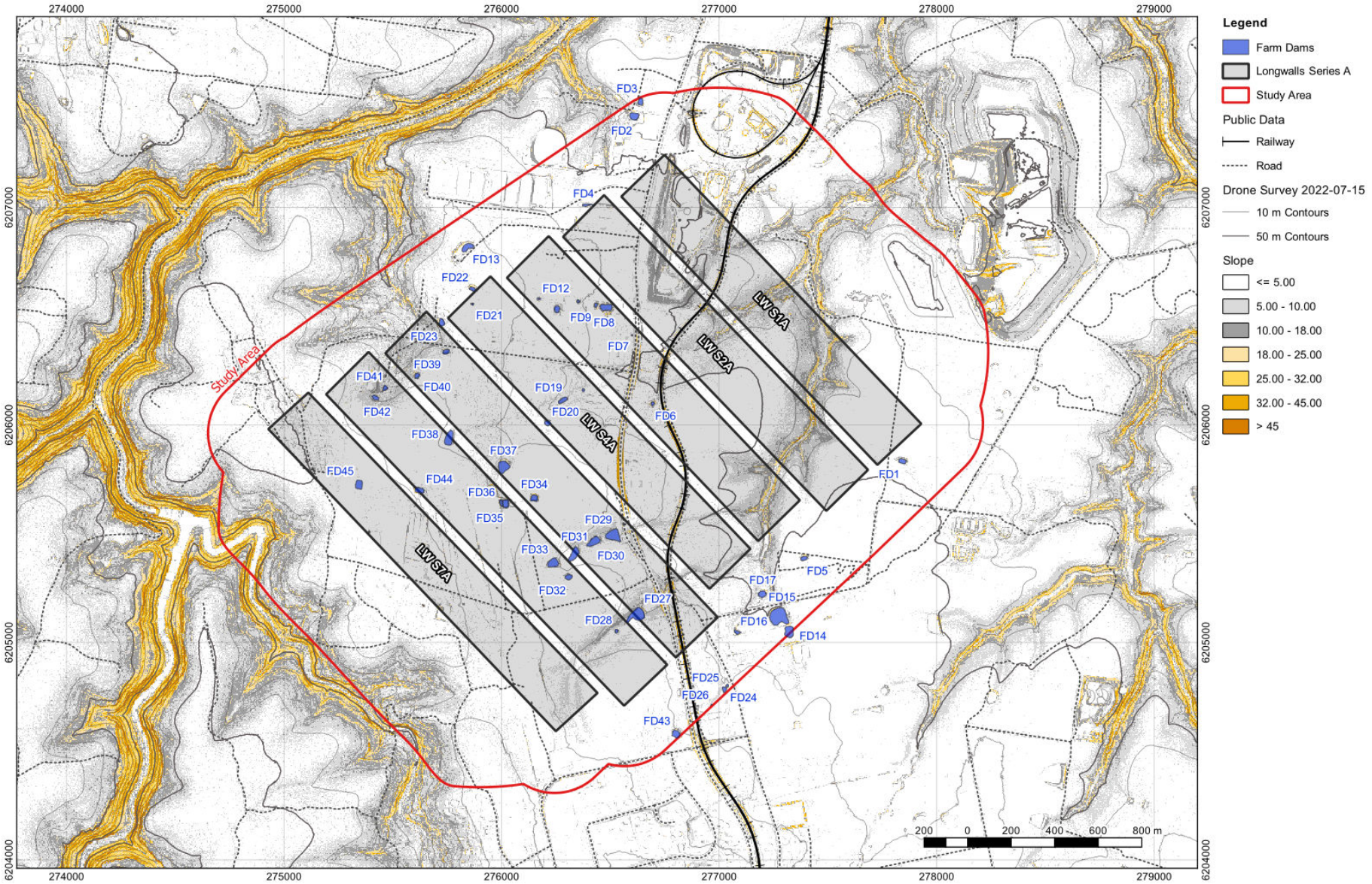

Figure 6 Study Area Farm Dams

4 Predicted Subsidence Impacts and Environmental Consequences

4.1 Cliffs

There has been extensive experience of mining directly beneath and adjacent to cliffs in the Southern Coalfield. These include cliffs along the Bargo River adjacent to Tahmoor Mine Longwalls 24A to 26, Appin Longwalls 301 and 302 adjacent to the Cataract River and Tower Longwalls 18 to 20 and Appin Longwalls 701 to 704 adjacent to the Nepean River (MSEC, 2022).

The cliffs are located outside the predicted limit of subsidence due to the extraction of LW S1A-S7A and will not be directly undermined. The predicted subsidence movements due to the extraction of these longwalls are predicted to be low (MSEC, 2024).

If the actual mine subsidence movements exceeded those predicted values by a factor of 2 times, the likelihood of impacts for the cliffs that are located well outside the proposed longwalls including LW S7A would still be expected to be very low (MSEC, 2024).

Based on this previous experience of mining at Tahmoor, Appin and Tower Collieries, it is unlikely that cliffs beyond the extent of the longwall panels will experience large instabilities. It is possible that isolated rock falls could occur during the mining period due to natural weathering processes. Any impacts are expected to represent less than 0.5 % of the total face area of the cliffs (MSEC, 2024).

The cliffs are located in area that is very difficult to access publicly. In the very unlikely event that an isolated rock fall occurs, the likelihood of a rock fall affecting public safety is assessed to be extremely low (MSEC, 2024).

Cliffs BC1 and BC2, that are located beyond the extent of the longwall panels, with BC1 potentially impacted by LW S6A and BC2 potentially impacted by LW S3A, S4A, S5A and S6A. The pre-mining baseline condition has been established prior to LW S3A for Cliff BC2 and will be established prior to LW S6A for Cliff BC1, subject to land access. Tahmoor Coal completed a calculation of the face area of cliffs BC1 and BC2 using photogrammetry survey in September 2022 and January 2023 respectively.

Cliffs BC3 to BC20, that are located beyond the extent of the longwall panels could potentially be impacted by LW S7A. Prior to the commencement of LW S7A extraction, Tahmoor Coal will calculate the face area using photogrammetry survey for cliffs BC3 to BC20.

4.2 Steep Slopes

There has been extensive experience of mining beneath steep slopes in the Southern Coalfield. These include steep slopes along the Cataract, Nepean, Bargo and Georges Rivers and streams such as Myrtle Creek and Redbank Creek above Tahmoor Mine Longwalls 22 to 32, slopes on Redback Range above Tahmoor Mine Longwalls 26 and 27 and slopes along ridges and valleys above Tahmoor LWs W1-W4. No large-scale slope failures have been observed along these slopes, even where longwalls have been mined directly beneath them. Surface cracking and minor rock falls along clifflines or rock outcrops have been observed, for example, during the mining of Appin Longwalls 301 and 302 adjacent to the Cataract River, however, no large-scale slope failures have been observed (MSEC, 2024).

Potential impacts on steep slopes would generally result from the movement of soils, causing tension cracks to appear at the tops of the slopes and compression ridges to form at the bottoms of the slopes. These movements are consistent with observations of upsidence and closure of creek valleys where compression is developed at the bottoms of the valleys and tension is developed at the tops of the valleys. If tension cracks were left untreated it is possible that soil erosion could occur (MSEC, 2024).

While in most cases impacts to slopes are likely to consist of surface cracking, there remains a low

probability of large-scale slope slippage. The probability is assessed to be very low for slopes that will not be directly mined beneath by the longwalls. Experience indicates that the probability of mining induced large-scale slippages is extremely low due to the substantial depths of cover within the Study Area. While the risk is extremely low, some risk remains and attention must therefore be paid to any structures or roads that may be located in the vicinity of steep slopes (MSEC, 2024).

A detailed slope stability assessment has been completed for the proposed longwalls in accordance with the requirement of Condition C8 (Douglas Partners, 2022; refer **Appendix E**). A high-level review of this assessment was undertaken in PSM (2025), **Appendix C**. As the slopes assessed are constructed steep slopes associated with Remembrance Drive, this information will be used to inform the Wollondilly Shire Council Management Plan.

4.3 General landscape

As discussed in the Subsidence Predictions and Impact Assessment Report (MSEC, 2022), longwall mining can result in surface cracking, heaving, buckling, humping and steeping at the surface. Surface cracking in soils as the result of conventional subsidence movements (e.g. away from valleys and steep slopes) is not commonly observed where the depths of cover are around those as measured in the Study Area. Extents of surface cracking observed as the result of conventional subsidence movements has generally been relatively isolated and of a minor nature (MSEC, 2022).

Localised ground buckling and shearing can occur wherever faults, dykes and abrupt changes in geology occur near the ground surface. In the Study Area, it is possible that ground deformations could develop where the Nepean Fault daylights on the surface (MSEC, 2022).

4.4 Agricultural Land

The majority of agricultural land use is for grazing and no intensive cropping activities are conducted. Based on the natural landscape contours and the predicted subsidence contours, there is unlikely to be any remnant ponding in the landscape. Therefore, there is no land which will be temporarily removed from agriculture as a result of LW S1A-S6A. The predicted impacts of subsidence from LW S7A are materially the same as previously approved for the Tahmoor South domain MSEC (2024) (SLR, 2025).

The majority of rural structures within the Study Area are of lightweight construction and are anticipated to tolerate mining-induced tilt. It has been found from past longwall mining experience that tilts of the magnitudes predicted in the Study Area generally do not result in adverse impacts on rural structures. Some minor serviceability impacts could occur at the higher levels of predicted tilt, including door swing and issues with roof and pavement drainage. These serviceability impacts can generally be remediated using normal building maintenance techniques (MSEC, 2022).

Farm fences are generally flexible in construction and can usually tolerate mine subsidence movements. Impacts to fences may include tension loss and changes to post alignment. The most vulnerable section of farm fences are gates particularly long gates or those with latches as they are less tolerant to differential horizontal movements and tilts between the gate posts and the ground (MSEC, 2022).

Potential risks to rural structures used for agricultural and farming purposes located in the Study Area are discussed in the Built Features Management Plan (e.g. poultry sheds, greenhouses, greenhouses, hothouses, irrigation systems, and tanks) and the Water Management Plan (i.e. watercourses and groundwater bores).

4.5 Farm Dams

Subsidence induced tilt may result in a reduction in the storage capacity of farm dams by decreasing the available freeboard on one side of the dam. As detailed in MSEC (2024), the maximum predicted final tilt for farm dams overlying the Study Area is 8.5 mm/m (i.e. 0.85%) in comparison with a maximum predicted tilt of 10 mm/m based on the EIS longwall layout. Less than 300 mm reduction in freeboard is predicted for 45 dams located in the Study Area, with four dams predicted to incur a reduction in freeboard between 300 mm and 400 mm and one dam predicted to incur a reduction in freeboard greater than 500 mm. Additionally, the predicted curvatures and strains may be sufficient to result in cracking in the base or walls of some farm dams within the Study Area (MSEC, 2024).

The potential impacts on the structural integrity of the dam embankments are addressed further in the Geotechnical Assessment (Douglas Partners, 2024a) and the Geotechnical Assessment for LW S7A (PSM, 2025). Farm dams constructed with compacted clayey material can generally withstand low levels of strain that would result in conventional cracking. However, localised cracking and deformations may occur which may require remediation. It is noted that a number of the farm dams appear to be constructed from sandy soil and crushed sandstone, which would be more susceptible to cracking (e.g. due to mine subsidence) and erosion from overland stormwater flows during heavy rainfall events.

Douglas Partners (2024) identified eight farm dams (FD8, FD19, FD23, FD27, FD29, FD30, FD31, FD38 and FD42) which may potentially experience cracking due to mining induced subsidence and associated loss of water storage capacity due to differential settlements across the footprint of the dam.

Geotechnical investigations including dam break analyses were carried out for dams FD8, FD13, FD29-FD31, FD35, FD37 and FD38 to assess the likelihood and extent of the assessed risk and to provide recommendations on remedial and precautionary works, if required (Douglas Partners, 2023; Douglas Partners, 2024b). The assessments indicated that the dam walls would not be adversely impacted by the proposed longwalls mining, and no hazard reduction works will be required to protect the farm dam from mine subsidence impacts prior to the commencement of LW S1A-S7A. In the event of a failure of the dam walls, it is considered that the impacts downstream would be relatively minor, however multiple dams are built directly upstream of each other's, and as such dams downstream are more susceptible to be impacted in the case of failure of dams upstream. Based on Douglas Partners (2024b) dam brake assessment for a sunny day failure all dams would be subject to a "Very Low" consequence category including the effects of cascading failure (PSM, 2025).

As detailed in Douglas Partners (2024a) and PSM (2025), a monitoring program pertaining to the structural integrity and water holding capacity of the farm dams would be implemented prior to mining of LW S1A-S7A, during operations and post mining. Should impacts be reported, a remediation program would be implemented in accordance with TARP LMP3. Further detail on potential remediation and make good measures is provided in **Section 6.2.3**.

5 Subsidence Monitoring Program

5.1 Performance Measures and Indicators

Performance measures for landscape features are provided in Table 7 of Condition C1 and Table 8 of Condition C5 of SSD 8445 and are summarised in **Table 10.**

Table 10 Subsidence Performance Measures and Performance Indicators for Landscape Features

Feature	Subsidence Performance Measures	Subsidence Performance Indicators
Any cliff located directly above longwalls	Minor environmental consequences (that is occasional rockfalls, displacement or dislodgement of boulders or slabs, or fracturing, that in total do not impact more than 5% of the total face area of the cliff within any longwall mining domain)	This performance measure is not relevant to this Extraction Plan, as there are no cliffs located directly above LW S1A-S7A.
Any cliff within Subsidence Area beyond the extent of longwalls	Negligible environmental consequences (that is occasional rockfalls, displacement or dislodgement of boulders or slabs, or fracturing, that in total do not impact more than 0.5% of the total face area of such cliffs within Subsidence Area)	This performance measure will be considered to be triggered if more than 0.5% of the total face area of the cliffs within the 600 m Environmental Features Study Area is impacted by mining (i.e. by occasional rockfalls, displacement or dislodgement of boulders or slabs, or fracturing). This performance measure and performance indicator have been incorporated into TARP LMP1 (cliffs).
All land within the Subsidence Area	No greater subsidence impacts or environmental consequences than predicted in the EIS	This performance measure will be considered to be triggered if mining results in mine subsidence-induced slope instability, which would be a greater subsidence impact or consequence than predicted in the EIS. This performance measure and performance indicator have been incorporated into TARP LMP2 (natural steep slopes).
All land outside the Subsidence Area	Negligible subsidence impacts or environmental consequences	This performance measure is not relevant to this Extraction Plan, as there are no steep slopes identified within the 600 m Environmental Features Study Area, other than the ten (WC1 to WC3 and RS1 to RS7) steep slopes located within the Subsidence Area and already assessed in accordance with the 'All land within the Subsidence Area' performance measure.
Other privately-owned built features and improvements, including farm dams.	Always safe. Serviceability should be maintained wherever practicable. Loss of serviceability must be fully compensated. Damage must be fully repairable, and must be fully investigated and repaired or else replaced or fully compensated at the cost of the Applicant.	This performance measure will be considered to be triggered if mining results in damage to a farm dam such that the dam is not safe and serviceable and/or any damages cannot be fully repairable and/or compensated. This performance measure and performance indicator have been incorporated into TARP LMP3 (farm dams).

Feature	Subsidence Performance Measures	Subsidence Performance Indicators
Public safety	Negligible additional risk.	This performance measure will be considered to be triggered if subsidence monitoring identifies a mining induced hazard to the public that cannot be controlled or managed.

For the purpose of this management plan, 'negligible' is defined as being 'so small and insignificant as to not be worth considering'. A negligible impact is viewed with regards to a long term context, causing little or no impact. If a short term impact causes a greater than negligible impact, the impact can still be considered negligible if the impacts are of a limited duration and are considered negligible when considered over the long term.

Based on the predicted subsidence impacts (MSEC, 2022) and (MSEC, 2024), it is considered that the performance measures for landscape features within the Study Area will be achieved during and after mining of LW S1A-S7A.

To assist in measurement of compliance with the performance measure for 'any cliff within Subsidence Area beyond the extent of longwalls', Tahmoor Coal completed calculation of the total face area of cliffs BC1 and BC2using photogrammetry. Calculation of the total face area of cliffs BC3 to BC20 will be completed prior to extraction of LW S7A.

5.2 Monitoring Program

A subsidence monitoring program for landscape features will be implemented to monitor the impacts and consequences of subsidence effects on during the extraction of LW S1A-S7A. The details of this monitoring program are provided in **Table 11**, and the locations of monitoring sites are illustrated in **Figure 3 and Figure 6**.

The aim of the monitoring program is to identify where there is a risk of impact to landscape features as a result of extraction activities. The monitoring program provides for the opportunity to record the condition of the site during the following three phases:

- Prior to Mining – baseline survey of the condition of the site before the commencement of mining;
- During Mining – monitoring of the condition of the site during active subsidence to establish whether there has been any change to the site or if changes have occurred from the effects of subsidence; and
- Post Mining – monitoring of the condition of the site after mining to identify whether there has been any change to the site in the period since mining, and to determine if the ground surface conditions have stabilised.

If an impact is identified to have occurred or is likely to occur, the relevant TARP (refer to **Appendix A**) will then be referred to for the identification of appropriate mitigation strategies.

5.2.1 Agricultural Monitoring Locations

Agricultural monitoring will be completed from fixed photo points, as identified in **Figure 5** as agricultural inspection points. The location and number of these fixed photo points may change due to land access.

5.2.2 Rural Structure Monitoring and Management

Tahmoor Coal notifies all residents and/or businesses within the 20 millimetres subsidence area and 35 degrees angle of draw prior to commencement of second workings. Comprehensive monitoring of all potentially impacted properties within these areas is undertaken from the commencement of extraction, and continues regularly until extraction is completed. Further monitoring is completed during the post-extraction phase in accordance with the relevant management plan for the residence / business (refer to the Built Features Management Plan for further details).

In relation to the poultry enterprises that exist in the area, that the owner/manager as well as the processor/owner of the birds will be consulted during the preparation of the relevant management plan for each agricultural business to ensure that production plans can be adjusted if required. Monitoring will also be detailed in the relevant management plan, as agreed during consultation with the poultry enterprises.

5.2.3 Exclusions for this Monitoring Program

This management plan includes a monitoring program and TARP for natural steep slopes within the Study Area. It is noted that the monitoring of constructed slopes (i.e. slopes associated with roads, Main Southern Railway, and the Tahmoor Mine Site) will be monitored and managed in accordance with the specific subsidence management plans for these built features (e.g. Wollondilly Shire Council Management Plan, Main Southern Railway Management Plan, and the Tahmoor Mine Site Management Plan).

This management plan includes a monitoring program and TARP for farm dams within the Study Area. It is noted that the monitoring of dams located on the Tahmoor Mine Site will be discussed and managed in accordance with the Tahmoor Mine Site Management Plan.

5.3 Baseline Monitoring to Support Future Extraction Plans

To assist in the preparation of future Extraction Plans, landscape feature monitoring as outlined in **Table 11** would provide sufficient baseline data. Monitoring data collected during the mining of LW S1A-S7A will be used in the review of observed subsidence impacts to inform future Extraction Plans for the Tahmoor South Domain.

Table 11 Monitoring Program for Landscape Features

Feature	Monitoring Component / Location	Pre-mining Monitoring	During Mining Monitoring	Post-mining Monitoring
Cliffs	Cliffs (BC1 to BC20) within the 600 m Environmental Features Study Area.	Visual inspection baseline before mining by a geotechnical engineer, subject to land access (Cliff BC1 prior to LW S6A, Cliff BC2 prior to LW S3A, Cliffs BC3 to BC20 prior to LW S7A). 3D photogrammetry survey to measure face area of cliffs within the Study Area.	None required.	Visual inspection at the completion of mining by a geotechnical engineer, subject to land access (Cliff BC1 after LW S6A, Cliff BC2 after LW S3A, S4A, S5A,S6A and S7A, Cliffs BC3 to BC20 after LW S7A).
Natural Steep Slopes	Natural steep slopes (WC1 to WC3 and RS1 to RS7).	Visual inspection baseline one month before active subsidence period by a geotechnical engineer, subject to land access. 3D photogrammetry survey	Monthly visual inspection during active subsidence period by a geotechnical engineer, subject to land access.	Quarterly visual inspection for 12 months following active subsidence period by a geotechnical engineer, or as required in accordance with a Rehabilitation Management Plan, subject to land access.
Farm Dams	Identified farm dams within the Study Area (FD1 to FD45).	Dam embankment integrity and water level observation by a geotechnical consultant one month before active subsidence period using fixed location photo points.	Dam embankment integrity and water level observation every month during the active subsidence period by a geotechnical consultant, using fixed location photo points, subject to land access.	Dam embankment integrity and water level observation using fixed location photo points on a quarterly basis for 12 months following completion of active subsidence by a geotechnical consultant, or as required in accordance with a Rehabilitation Management Plan.
Agricultural Land	Identified agricultural land within the Study Area.	Visual inspection prior to the commencement of mining from fixed photo points.	Weekly inspections along local roads. Monthly inspections along farm dams by a geotechnical consultant, subject to land access.	Visual inspection at the completion of each longwall for land within the predicted limit of subsidence for each longwall.

6 Subsidence Management Strategies

6.1 Mine Design Considerations

The Tahmoor South Domain mine plan has undergone a series of amendments since the issue of the first EIS for the Tahmoor South Project in 2014. These mine plan revisions are summarised below:

- EIS Submission (2014): Original EIS submission, which was placed on hold and subsequently withdrawn in late 2015;
- EIS Submission (January 2019): Updated EIS submission based on revised Secretary's Environmental Assessment Requirements (SEARs) issued in June 2018;
- Project Amendment Report (February 2020): The mine design was modified to reduce potential environmental impacts of the Project through the reduction in the extent of longwall mining. This was achieved by the following modifications:
    i. Removal of LW 109, which was located directly beneath Dog Trap Creek. This would result in elimination of direct impacts to Aboriginal heritage items;
    ii. Configuration of the longwall layout to comprise two series of shorter longwall panels;
    iii. Reduction in the proposed longwall width, from approximately 305 m to approximately 285 m; and
    iv. Reduction in the height of extraction within the longwall panels from up to 2.85 m to up to 2.6 m.
- Second Amendment Report (August 2020): The mine design was again modified to further reduce potential environmental impacts. This included the removal of two longwalls in the southern part of the mine near the township of Bargo (LW 107B and LW108B), which would result in a reduction in magnitude of subsidence impacts.

The numerous modifications of the Tahmoor South Domain mine plan have resulted in a reduction of the magnitude and extent of subsidence impacts, as well as avoidance of significant impact to sensitive surface features of the environment, including Aboriginal heritage items.

The current mine plan proposes to complete underground mining with access to the Tahmoor South Domain provided from the existing pit top facilities. This mine design consideration minimises surface impacts from mining through the avoidance of establishing new surface facilities.

6.2 Mitigation Measures and Corrective Management Actions

6.2.1 Public Safety Management

Tahmoor Coal manages risks by following a risk management process, which involves the four steps:

- Identify hazards – find out what could cause harm;
- Assess risks if necessary – understand the nature of the harm that could be caused by the hazard, how serious the harm could be and the likelihood of it happening;
- Control risks – eliminate the risk or, if this is not possible, minimise the risk through risk control measures; and
- Review – review control measures to ensure they are working as planned.

The framework utilised for the risk assessment is the risk management process outlined within AS/NZS ISO 31000.

Tahmoor Coal completed a risk assessment as part of the broader Extraction Plan process that included the risk assessment of built and natural features likely to be affected by subsidence from the extraction of LW S1A-S6A.

Tahmoor Coal completed a review of the risk assessment for built and natural features likely to be affected by subsidence from the extraction of LW S4A to LW S7A in July 2025. The outcomes of the risk assessments are outlined further in the Public Safety Management Plan (Appendix B).

Landscape features that could be at risk from the development of mine subsidence in the Study Area include:

- Cliffs;
- Natural Steep slopes;
- Farm dams;
- Agricultural land.

Waterways, dams and groundwater are considered further in the LW S1A-S7A Water Management Plan.

Potential hazards to cliffs from mine subsidence can include:

- Potential for surface cracking;
- Potential for rock fall or toppling; and
- Potential for collapse.

Potential hazards to natural steep slopes from mine subsidence can include:

- Potential for surface cracking; and
- Potential for movement of overhang rock boulders/landslide.

Potential hazards from the impact of mine subsidence on agricultural land can include:

- Potential impact to land use from flooding;
- Potential for remnant ponding reducing available land;
- Potential impact on water resources - surface water and ground water;
- Potential change in grade of drainage lines; and
- Potential increase in erosion / tunnel erosion on earthworks.

6.2.2 Management of Cliffs and Natural Steep Slopes

Tahmoor Coal has extensive experience in managing potential impacts and environmental consequences on cliffs and steep slopes. In response to observed subsidence impacts causing surface deformations or surface cracking, Tahmoor Coal could implement the following management measures / corrective management actions:

- Install warning signs and/or danger tape in the immediate area if the cracking is consider a public safety risk;
- Plan and undertake site rehabilitation as soon as practical to remove any ongoing public safety risks. Site rehabilitation measures could include:
  - Backfilling or grout filling of surface cracking;
  - Re-profiling of compression humps;
  - Infilling of pot-holes or subsidence-related undulations developed;
  - Re-direction of drainage; and

- Installation of supports or securing of unstable structures or natural features, such as rock masses or cliffs.

6.2.3 Management of Farm Dams

Should mining related impacts to farm dams be reported, a remediation program would be implemented in accordance with TARP LMP3 (farm dams). Any substantial cracking in the base or walls of the dam could be repaired by reinstating with cohesive materials.

If mining related impacts resulted in a reduction in water storage capacity/water supply, Tahmoor Coal could provide an alternative water source until the completion of repairs in accordance with the *Coal Mine Subsidence Compensation Act 2017*.

All reports from any source of any new cracks or leakage from a dam, including a routine inspection or from the landowner or other member of the public or Subsidence Advisory NSW, are investigated as part of Tahmoor Coal's obligation to investigate all possible mining-related impacts and environmental consequences. Section 7.2 of Extraction Plan Main Document outlines the procedure for management of an incident in accordance with the following Tahmoor Coal management plans:

- Emergency and Incident Manual (TAH-HSEC-00232);
- Pollution Incident Response Management Plan (TAH-HSEC-00155); and
- Notification of Environmental Pollution Incidents (TAH-HSEC-00224).

In addition, Section 7.5 of the Extraction Plan Main Document outlines the procedure for management of any complaints and disputes in accordance with the Community Complaints and Enquiry Procedure (TAH-HSEC-00120).

6.2.4 Management of Agricultural Land

Tahmoor Coal could implement the following management and corrective management actions for agricultural land features if impacted during the extraction of LW S1A-S7A:

- Whilst there are no earthworks proposed during the extraction of LW S1A-S7A, in the unlikely event they would be required, gypsum will be applied for any remediation earthworks where sodic subsoils (exchangeable sodium is greater than 5%) are exposed. The application of gypsum will minimise the potential for tunnel erosion to occur on disturbed subsoil;
- Where watercourses have been impacted resulting in fractures and voids, remediation will be completed in accordance with the Water Management Plan;
- Tahmoor Coal has committed to "make good" provisions for any groundwater users shown to be adversely affected by mine operations and associated impacts (discussed in further detail in the Water Management Plan);
- If impacts to tanks occur, the structure will be repaired in accordance with the *Coal Mine Subsidence Compensation Act 2017* (refer to the Built Features Management Plan);
- In the unlikely event of damage to fence tensioning or farm gate levels, Tahmoor Coal will remediate any damage in consultation with relevant landowner stakeholders; and
- As discussed in **Section 6.2.3**, any substantial cracking in the dam bases or walls within the Study Area could be repaired by reinstating with cohesive materials. If any farm dams were to lose water as a result of mining, the mine would provide an alternative water source until the completion of repairs in accordance with the *Coal Mine Subsidence Compensation Act 2017*.

6.2.5 Verification Methods

Ongoing monitoring as specified in **Section 5.2** will provide early warning of potential impacts to landscape features. In addition, landscape features will be inspected at the completion of each longwall, which will enable the current condition of each landscape feature to be verified against its pre-mining

condition.

6.3 Trigger Action Response Plan

A series of TARPs have been developed to address various components of landscape features using the performance indicators for implementation during LW S1A-S7A mining, in accordance with Condition C8(g)(viii) of the Consent (refer to **Appendix A**).

The primary actions of the TARP are to:

- Define appropriate trigger levels for cliffs, natural steep slopes, farm dams, and agricultural land;
- Develop specific actions to respond to high risk of exceedance of any performance measure to ensure that the measure is not exceeded; and
- Present a plan in the event a performance measures are exceeded or are likely to be exceeded and describe the management / corrective actions to be implemented (i.e. notifications to relevant agencies, repair of cracks and instabilities).

The 'Normal Condition' section of each TARP indicates that the environment is performing within normal levels or natural variability. Deviation from baseline or expected condition triggers an increased level of risk to the environment (Level 1 or higher based on escalating corresponding risk).

TARPs for constructed steep slopes associated with roads, railways and the Tahmoor Mine site have been developed separately in the relevant Subsidence Management Plans for built features. These TARPs will be added to the Master TARP, located in Appendix B of the Extraction Plan Main Document, once completed.

6.3.1 Implementation of Monitoring Program and TARP Requirements

Tahmoor Coal's standard approach for all monitoring, reporting, investigation and remediation is to commence all tasks as soon as practicable. The following sections provide more information on this standard approach to be adopted during the LW S1A-S7A pre-mining, mining and post-mining phases:

- All monitoring commitments will be tracked on a weekly basis and reviewed by the Structural Response Group (SRG) so that tasks are completed as required, taking into consideration land access and environmental factors. Post-mining monitoring will typically be completed within one month of the completion of the relevant longwall and prior to the influence from the active subsidence zone on the feature from the next longwall;
- Following the receipt of monitoring data and laboratory results, specialist consultants will review the data against the relevant TARPs as soon as practicable. If any TARP trigger has occurred, specialist consultants will notify Tahmoor Coal as soon as practicable. Monitoring results and TARP triggers will also be discussed during the monthly Environmental Response Group (ERG) meetings, and any relevant information from other disciplines will be shared within the group. It is noted that discussions amongst specialists from different disciplines will not be restricted to ERG meetings, and relevant specialists will be included at any time to discuss results and assist with the completion of required actions and responses, as required;
- In the event of a TARP trigger occurrence, Tahmoor Coal will initiate all requirements (actions and responses) in accordance with the relevant TARP (i.e. investigation, report, negotiation, CMA determination, or similar) as soon as practicable and endeavour to commence actions and responses within one month of the exceedance being recorded. This timeframe is noted to be subject to issues outside of Tahmoor Coal's control such as land access constraints, inclement weather, extended timeframes where further monitoring is required, and inability to communicate with a third party / landholder;
- Tahmoor Coal will complete the required actions and responses relating to the TARP trigger as soon as practicable and will endeavour to finalise these requirements, subject to issues outside of

Tahmoor Coal's control, as follows:

- Level 1 and Level 2 TARP trigger actions and responses within three months of the exceedance being recorded;
- Level 3 and Level 4 TARP trigger actions and responses within six months of the exceedance being recorded; and
- Exceeds Performance Measures actions and responses in accordance with the timeframes provided in the relevant TARPs.

6.4 Contingency Plan

In accordance with Conditions C8(g)(ix) and E5(f) of the Consent, in the event that performance measures (in the form of pre-defined triggers) are considered to have been exceeded or are likely to be exceeded, a response will be undertaken in accordance with these TARPs (refer to **Appendix A**). This response is a contingency plan that describes the management / corrective management actions which can be implemented where required to remedy the exceedance.

If a Corrective Action Management Plan is required in accordance with the TARP, this plan will be prepared in accordance with Section 3.6.3 of the Extraction Plan Main Document.

The success of remediation measures / correction management actions that have been implemented for any TARP exceedance would be reviewed as part of any Corrective Action Management Plan, and the Annual Review.

6.5 Adaptive Management Strategies

6.5.1 Adaptive Management for Landscape Features

There are no adaptive management strategies currently proposed for the management of landscape features in the Study Area.

6.5.2 Continuous Improvement

Tahmoor Coal have adopted the "Plan-Do-Check-Act" model as shown in **Figure 7**. This model will be applied to all aspects of Tahmoor Coal's environmental management and is utilised to embed the continuous improvement process in all system documents.

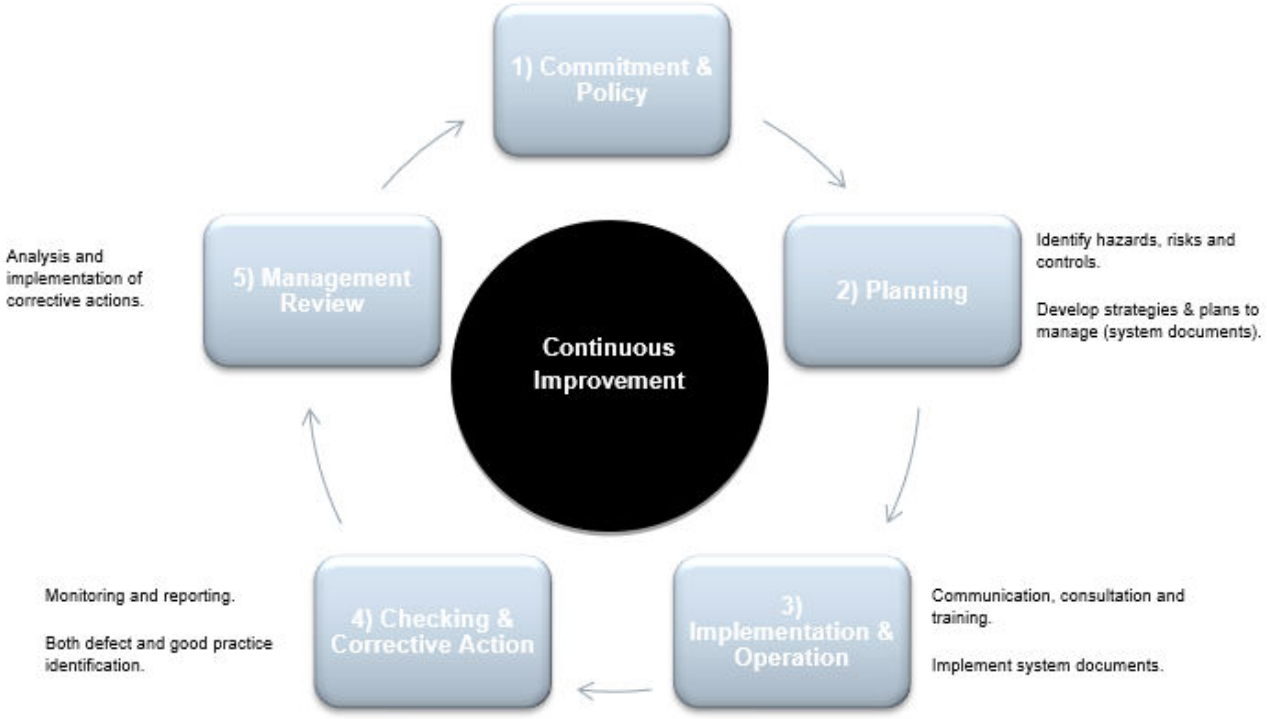

Figure 7 Continuous Improvement Model

7 Implementation and Reporting

7.1 General Requirements

This section of the management plan describes the key elements of implementation and reporting specific to the management of landscape features.

A description of requirements and procedures that are applicable to the extraction of LW S1A-S7A in general are provided in the Extraction Plan Main Document. This detail includes:

- Environmental Management System Framework;
- General reporting requirements, including details regarding the Annual Review, and Annual Return;
- Incident management and reporting requirements;
- Non-compliance management and reporting requirements;
- Exceedances management and reporting requirements;
- Compliant and dispute management protocol;
- Audit and review requirements for general environmental performance, including internal audits and reviews, and independent environmental audits;
- General roles and responsibilities;
- Employee and contractor training requirements;
- Response groups to facilitate the review of monitoring data;
- Internal and External Stakeholder Communication Procedures;
- Access to information requirements, including Tahmoor Coal website and the Tahmoor Colliery Community Consultative Committee;
- Document control protocol; and
- Risk assessment for built and natural features and corresponding outcomes.

7.2 Reporting Requirements

7.2.1 Performance Measure Exceedance

In accordance with Condition E4 of the Consent, where any exceedance of the criteria or performance measures outlined within this document has occurred, Tahmoor Coal will:

- Take all reasonable and feasible steps to ensure that the exceedance ceases and does not recur;
- Consider all reasonable and feasible options for remediation (where relevant) and submit a report to the Department describing those options and any preferred remediation measures / corrective management actions or other course of action;
- Within 14 days of the exceedance occurring (or other timeframe agreed by the Planning Secretary), submit a report to the Planning Secretary describing these remediation options and any preferred remediation measures / corrective management actions or other course of action; and
- Implement reasonable remediation measures / corrective management actions as directed by the Planning Secretary.

7.2.2 Specific Reporting for Landscape Features

There are no specific reporting requirements to the management of landscape features identified for the extraction of LW S1A-S7A, unless a TARP is triggered, and a notification report is required.

7.3 Review and Auditing

7.3.1 Plan Audit

Audits of the Land Management Plan are to be conducted in consultation with the Plan owner and nominated individuals and shall focus on the content and implementation.

Audits on the content shall consist of a determination of understanding of the Land Management Plan by the individual's allocated responsibility under this plan.

Audits on the implementation shall consist of reviews of the safe working procedures and risk assessments developed to ensure safe operation of this Land Management Plan, they may also involve discussions with personnel involved in the management plan to determine understanding and compliance.

Should an audit of this Land Management Plan determine that a deficiency is evident in the content or implementation, a corrective action must be developed and implemented. Actions will be assigned to a nominated individual and tracked in Cority.

Tahmoor Coal is responsible to verify that the nominated corrective action has been implemented by way of a follow up audit.

Any changes to the Land Management Plan are to be managed and communicated to all personnel in line with the Change Management Process.

7.3.2 Plan Review

This Land Management Plan will be reviewed:

Event based: in accordance with Condition E7 (a) of the Consent, a review will be required within 3 months of any incident, event or finding that identifies an inadequacy in the Land Management Plan risk assessment or associated documents to continue to effectively manage the identified hazard; a change to the workplace itself or any aspect of the work environment, a change to a system of work, a process or a procedure; or

Time based: in the absence of regular event-based reviews and in accordance with Condition E7 (b-e) of the Consent, this plan will be reviewed within three months of:

b) the submission of an Annual Review under Condition E13;

c) the submission of an Independent Environmental Audit under Condition E15;

d) the approval of any modification of the conditions of this consent (unless the conditions require otherwise); or

e) notification of a change in development phase under Condition A19;

If deemed appropriate, relevant stakeholders may be included in the review process. All reviews are to be documented. The process for review of this document will be in according to Tahmoor Coal's *Document and Record Control* (TAH-HSEC-00124).

Following changes (or as otherwise required above), a copy of the amended management plan will be forwarded to the Secretary of the DPHI for approval.

7.4 Roles and Responsibilities

Specific information pertaining to the role, responsibility, authority and accountability of key personnel involved in implementation of the Land Management Plan for the extraction of LW S1A to LW S7A at Tahmoor Coal is provided in Table 12 below.

Table 12 Reference Information

Role	Responsibilities for this document
Operations Manager	Provide adequate environmental personnel/resources for implementation of this plan and associated plans.
Environment & Community Manager	Facilitate a process of managing overall compliance with regulatory requirements and undertake external reporting for legislative non-compliances as required. Determine adequate resources and funds are available to ensure the effectiveness of this procedure; and certify compliance and adherence to this plan. Develop, implement and maintain this plan. Liaise with relevant government authorities in relation to regulatory conditions and compliance issue.
All Managers	Activities under their control are to be undertaken in accordance with this plan and associated management plans and site procedures. Manage environmental controls within their jurisdiction are operated and maintained in a proper and efficient manner. Report all environmental incidents and complaints in a timely manner.
Environmental Specialist	Responsible for coordinating environmental compliance on-site including timely completion of monitoring and reporting in accordance with internal and external requirements. Sign off on the accuracy of reports and the suitability of recommendations. Develop, implement, review and maintain this plan and system documents. Implement process for self-assessment audits. Assign persons responsible for completion of audit actions and set a due by date. Monitor that planned actions arising out of audits are implemented. Ensure all community complaints are addressed, investigated and appropriately managed as per site procedures, and reported internally as per internal requirements.
All Coordinators	Activities under their control are to be undertaken in accordance with this plan and associated management plans and site procedures. Manage environmental controls within their jurisdiction are operated and maintained in a proper and efficient manner. Report all environmental incidents and complaints in a timely manner.
All Persons	Activities under their control are to be undertaken in accordance with this plan and associated management plans and site procedures. Manage environmental controls within their jurisdiction are operated and maintained in a proper and efficient manner. Report all environmental incidents and complaints in a timely manner.

8 Document Information

8.1 Referenced Documents

Reference information, listed in **3** below, is information that is directly related to the development of this document or referenced from within this document.

Table 3 Reference Information

Title
Bureau of Meteorology (2025), BoM Website accessed July 2025, www.bom.gov.au
Department of Planning and Environment (DPE) (2022), Extraction Plan Guidelines.
Douglas Partners (2024a), Report on Geotechnical Assessment, Longwalls S1A to S6A, Bargo, prepared for Tahmoor Coal, June 2024, document 210597.00.R.002.
Douglas Partners (2024b), Report on Preliminary Stability and Dam Break Assessment, Longwalls S4A to S6A, Bargo, prepared for Tahmoor Coal, May 2024, document 210597.08.R.001.Rev0
Douglas Partners (2023), Report on Geotechnical Assessment, Detailed Assessment of Farm Dams FD8 and FD13, Longwalls S1A to S3A, Bargo, prepared for Tahmoor Coal, May 2023, document 210597.03.R.001.Rev1
Douglas Partners (2022), Report on Geotechnical Investigation, Detailed Slope Stability Assessment, Longwalls S1A to S6A, Bargo, September 2022, document 210597.02.R.001
SLR (2022), Tahmoor Extraction Plan LW S1A-S6A Land and Agricultural Resource Assessment, prepared for Tahmoor Coal, April 2022, document 630.12732.002.
Mine Subsidence Engineering Consultants (2022), Tahmoor South Project – Extraction Plan for Longwalls S1A to S6A: Subsidence ground movement predictions and subsidence impact assessments for natural features and surface infrastructure. Prepared for Tahmoor Coal, May 2022, document MSEC1192.
PSM (2025), Geotechnical Assessment – Longwall S7A. Prepared for Tahmoor Coal, October 2025, document PSM5522-013R.
SIMEC (2019) Tahmoor South Project Environmental Impact Statement, Volumes 1 and 7, dated January 2019.
SIMEC (2020a) Tahmoor South Project Amendment Report, including Appendices A to R and response to submissions, dated February 2020.
SIMEC (2020b) Tahmoor South Project Second Amendment Report, Appendices A to O and response to submissions, dated August 2020.
SIMEC (2020c) Additional information responses dated 14 September 2020 (including Appendices A to L), 23 October 2020 and 4 November 2020.
Mine Subsidence Engineering Consultants (2024), Tahmoor Coal – Modification 3 – Longwall S7A, prepared for Tahmoor Coal, March 2024, document MSEC1348.
SLR (2025), Tahmoor Extraction Plan LW S1A-S7A Land and Agricultural Resource Assessment, prepared for Tahmoor Coal, August 2025, document 650.030173.00001.

8.2 Related Documents

Related documents, listed in **4** below, are internal documents directly related to or referenced from this document.

Table 4 Related Documents

Number	Title
TAH-HSEC-00120	Community Complaints and Enquiry Procedure
TAH-HSEC-00124	Document and Record Control

Number	Title
TAH-HSEC-00155	Pollution Incident Response Management Plan
TAH-HSEC-00224	Notification of Environmental Pollution Incidents
TAH-HSEC-00416	Emergency Response Control Plan
TAH-HSEC-00365	LW S1A-S7A Extraction Plan Main Document
TAH-HSEC-00361	LW S1A-S7A Water Management Plan
TAH-HSEC-00362	LW S1A-S7A Land Management Plan
TAH-HSEC-00364	LW S1A-S7A Heritage Management Plan
TAH-HSEC-00366	LW S1A-S7A Built Features Management Plan
TAH-HSEC-00365	LW S1A-S7A Public Safety Management Plan
TAH-HSEC-00367	LW S1A-S7A Subsidence Monitoring Plan

8.3 Glossary of Terms

Section 8.3 of the Extraction Plan Main Document provides a compiles Glossary of Terms.

8.4 Abbreviations

Abbreviations used in this document are provided below in **5.**

Table 5 Abbreviations

Abbreviation	Definition
AHD	Australian Height Datum
BOM	Bureau of Meteorology
Commonwealth DCCEEW	Commonwealth Department of Climate Change, Energy, the Environment and Water Formerly known as Commonwealth Department of Agriculture, Water and the Environment (DAWE)
DAWE	Commonwealth Department of Agriculture, Water and the Environment Now known as Commonwealth Department of Climate Change, Energy, the Environment and Water (Commonwealth DCCEEW)
DPE	NSW Department of Planning and Environment Formerly known as NSW Department of Planning, Industry and Environment (DPIE) Now known as NSW Department of Planning, Housing and Infrastructure (DPHI)
DPHI	NSW Department of Planning, Housing and Infrastructure Formerly known as NSW Department of Planning and Environment (DPE)
DPIE	NSW Department of Planning, Industry and Environment (former) Now known as NSW Department of Planning, Housing and Infrastructure (DPHI)
DPI Agriculture	NSW Department of Primary Industries – Agriculture
EIS	Environmental Impact Statement
ERG	Environmental Response Group
km	Kilometre/s
LMP	Land Management Plan
LW	Longwall
LW S1A-S7A	Longwall South 1A – South 7A
m	Metre/s

Abbreviation	Definition
mm	Millimetre/s
ML	Mining Lease
NSW	New South Wales
Resources Regulator	Department of Regional NSW – Resources Regulator
SRG	Structural Response Group
Study Area	Study Area applicable to this management plan consists of a combination of the predicted 20 millimetres (mm) Total Subsidence Contour and the 35o Angle of Draw Line as shown in **Figure 2.**
Tahmoor Coal	Tahmoor Coal Pty Ltd
Tahmoor Mine	Tahmoor Coal Mine
TARP	Trigger Action Response Plan

8.5 Change Information

Full details of the document history are recorded below in **6**.

Table 6 Document History

Version	Date Reviewed	Review Type (Major/Minor)	Reviewed By	Change Summary
1.0	May 2021	Major	Zina Ainsworth, Charlie Wheatley, Malcolm Waterfall, Peter Vale	New Document.
2.0	September 2022	Major	Charlie Wheatley, Zina Ainsworth	Updated document following consultation with DPE (now DPHI), government agencies and the Independent Advisory Panel for Underground Mining.
3.0	January 2023	Major	April Hudson, Zina Ainsworth	Review in accordance with Condition E7(e) following the commencement of first and second workings (18 October 2022) of the Consent SSD 8445.
4.0	June 2023	Major	April Hudson, Zina Ainsworth	Review in accordance with Condition E7(b) following the submission of an Annual Review (31 March 2023), Condition E7(c) following the submission of an Independent Environmental Audit (2 June 2023) and Condition E7 (d) following the approval of any modification (Modification - 13 June 2023) of the Consent SSD 8445.
5.0	June 2024	Major	April Hudson, Zina Ainsworth	Review in accordance with Condition E7(b) following the submission of an Annual Review (28 March 2024).
6.0	February 2025	Major	Nick Le Baut, Zina Ainsworth	Review following the approval of Amendment 2 (shortening of LWS4A) to the Tahmoor South LWS1A-S6A Extraction Plan (11 November 2024).
7.0	October 2025	Major	Josselin Ribot, Zina Ainsworth, Nick Le Baut	Review following the approval of Modification 3 (LW S7A) (26 May 2025) Review in accordance with Condition E7(b) following the submission of an Annual Review (30 September 2025).

APPENDIX A – Trigger Action Response Plans

LAND MANAGEMENT PLAN TARP – LMP1 CLIFFS

Performance Measure and Indicator, TARP Objective and Assessment Criteria	Monitoring Program	Management		
		Trigger	**Action**	**Response**
Performance Measure Feature Any cliff within Subsidence Area[1] beyond the extent of longwalls[2]. **Performance Measure** Negligible environmental consequences (that is occasional rockfalls, displacement or dislodgement of boulders or slabs, or fracturing, that in total do not impact more than 0.5% of the total face area of such cliffs within Subsidence Area). **Performance Indicator** This performance measure will be considered to be triggered if more than 0.5% of the total face area of the cliffs within the 600 m Environmental Features Study Area is impacted by mining (e.g. by occasional rockfalls, displacement or dislodgement of boulders or slabs, or fracturing). **TARP Objective** This TARP defines measures to manage potential impacts on cliff lines and the actions required to be implemented in response to exceedance of defined trigger levels. **Assessment Criteria** Extent of surface cracking, rockfalls, displacement or dislodgement of boulders or slabs observed.	**Locations** Cliffs (BC1 to BC20) within the 600 m Environmental Features Study Area as illustrated in Figure 3 of the Land Management Plan. **Monitoring Frequency** **Prior to the commencement of each panel** Visual inspection baseline by a geotechnical engineer, subject to land access Timing: - Cliff BC1 prior to LW S6A and LW S7A, - Cliff BC2 prior to LW S3A S4A, S5A and S6A, - Cliff BC3 to BC20 prior to LW S7A. **During Mining of each panel** None required (as the identified cliffs are located near the finishing ends of the longwalls). **At the completion of each panel**Visual inspection by a geotechnical engineer, subject to land access Timing: - Cliff BC1 prior to LW S6A and LW S7A, - Cliff BC2 prior to LW S3A S4A, S5A and S6A, - Cliff BC3 to BC20 prior to LW S7A. **Note: inspections can be combined depending in the timing between completion of panels and commencement of new panels**	**Normal Range of Condition**		
		• Surface cracking < 10 mm wide above the cliff line, on the cliff face, or in the underside of overhangs. AND/OR • No rockfalls, displacement or dislodgement of boulders or slabs observed.	• Continue monitoring and review of data as per monitoring program.	• No response required.
		Level 1		
		• Surface cracking > 10 mm wide above the cliff line, on the cliff face, or in the underside of overhangs. AND/OR • No rockfalls, displacement or dislodgement of boulders or slabs observed.	• *Actions as required for Normal Condition.* • Undertake an investigation to assess cause and determine if mining related. • Discuss findings and obtain other relevant information from key specialises (e.g. subsidence monitoring results). If it is concluded that the cliff has been damaged by subsidence impacts: • Consider and decide on reasonable and feasible options to support the cliff line, where relevant (e.g. repairing cracks, installation of support (e.g. rockbolts)). • Erect hazard/warning signs and restrict access to areas where necessary. • Consider increasing monitoring and review of data frequency at sites where Level 1 has been reached, subject to land access. Considerations will take into account position of LW face relative to impact site, rate of longwall retreat, current weather conditions, development of conventional subsidence above longwall, consequences of potential cliff instability and monitoring results relevant to the cliff locations.	• Report trigger exceedance to DPHI and key stakeholders. • Report trigger exceedance and investigation outcomes in the Annual Review. • Provide DPHI and key stakeholders with proposed corrective management actions (CMAs) for consultation (e.g. repairing cracks, installation of support). • Implement CMAs, subject to land access. • Monitor and report on success of CMAs in the Annual Review.
		Level 2		
		• Rockfalls, collapse of overhang, displacement or dislodgement of boulders or slabs observed.	• *Actions as stated in Level 1.* • Determine the percentage area of impacted area relative to the total face area. • Undertake a detailed investigation to assess if the change in behaviour is related to mining effects (e.g. whether there has been subsidence induced fracturing, or the effect is unrelated to mining such as environmental effects, tree root jacking). If it is concluded that cliff line has been damaged by subsidence impacts: • Increase frequency of monitoring by geotechnical consultant during active subsidence period at sites where Level 2 has been reached, subject to land access. Considerations will take into account position of LW face relative to impact site, rate of longwall retreat, current weather conditions, development of conventional subsidence above longwall, consequences of potential cliff instability and monitoring results relevant to the cliff locations. • Notify and consult with affected landowner(s). • Review CMAs in light of findings from further investigations and consider additional reasonable and feasible options. • Review Land Management Plan and modify if necessary. • Undertake an investigation to determine if an exceedance of the performance measure is likely.	• *Responses as stated in Level 1.* If it is concluded that cliffs have been damaged by subsidence impacts: • Offer site visit with DPHI and key stakeholders. • Develop a Rehabilitation Management Plan in consultation with DPHI and key stakeholders if relevant. • Notify Commonwealth DCCEEW of any predictions of an exceedance of a performance measure (if relevant) within two business days. • Provide findings of CMA review to DPHI and key stakeholders for consultation. • Implement additional CMAs, subject to land access. • Advise DPHI and key stakeholders of any required amendments to Land Management Plan.
		Exceeds Performance Measure		
		• More than 0.5% of the total face area of the cliffs within the 600 m Environmental Features Study Area is impacted due to mining (e.g. by occasional rockfalls, displacement or dislodgement of boulders or slabs, or fracturing).	• *Actions as stated in Level 2.* • Investigate reasons for the performance measure exceedance. • Review predictions of subsidence impacts and environmental consequences associated with further longwall extraction based on the outcomes of the investigation. • Consider modifying mine plan for future longwalls located near cliffs.	• *Responses as stated in Level 2.* • Submit a report to DPHI (in accordance with Condition E4 of SSD 8445) within 14 days of the exceedance occurring (or other timeframe agreed by DPHI) describing remediation options and any preferred remediation measures or other course of action. • Implement reasonable remediation measures as directed by DPHI, subject to land access. • Notify Commonwealth DCCEEW of any detection or predictions of an exceedance of a performance measure within two business days. • Submit an Impact Response Plan to Commonwealth DCCEEW (in accordance with Condition 11 of the DAWE (now Commonwealth DCCEEW) Consent for the Tahmoor South Project).

Performance Measure and Indicator, TARP Objective and Assessment Criteria	Monitoring Program	Management		
		Trigger	Action	Response
Notes: [1] Subsidence Area is defined as the 'Subsidence Study Area' as illustrated in Figure 1 of Appendix 2 of SSD 8445. [2] It is noted that there are no cliff lines located directly above Longwalls S1A-S7A. Therefore, the performance measure for 'Any cliff located directly above longwalls' is not relevant.				

LAND MANAGEMENT PLAN TARP – LMP2 NATURAL STEEP SLOPE (EXCLUDING CONSTRUCTED STEEP SLOPES ASSOCIATED WITH ROADS, RAILWAY AND THE TAHMOOR MINE SITE)

<table>
<tr><th rowspan="2">Performance Measure and Indicator, TARP Objective and Assessment Criteria</th><th rowspan="2">Monitoring Program</th><th colspan="3">Management</th></tr>
<tr><th>Trigger</th><th>Action</th><th>Response</th></tr>
<tr><td rowspan="8"><u>Performance Measure Feature</u>
All land within the Subsidence Area[1,2].

<u>Performance Measure</u>
No greater subsidence impact or environmental consequences than predicted in the EIS[3].

<u>Performance Indicator</u>
This performance measure will be considered to be triggered if mining results in mine subsidence-induced slope instability, which would be a greater subsidence impact or consequence than predicted in the EIS.

<u>TARP Objective</u>
This TARP defines measures to manage potential impacts on natural steep slopes[4,5] and the actions required to be implemented in response to exceedance of defined trigger levels.

<u>Assessment Criteria</u>
Extent of surface cracking and stepping, ground bulging, buckling and shearing for steep slopes[4].</td><td rowspan="8"><u>Locations</u>
Natural steep slopes (RS1 to RS7 and WC1 to WC3)

Locations of natural steep slopes shown in Figure 3 of the Land Management Plan.

<u>Monitoring Frequency</u>
Prior to the commencement of each panel

Visual inspection baseline one month before active subsidence period by a geotechnical engineer, subject to land access.

During mining of each panel
Monthly visual inspection during active subsidence period by a geotechnical engineer, subject to land access.

At the completion of each panel
Quarterly visual inspection for 12 months following active subsidence period by a geotechnical engineer, or as required in accordance with a Rehabilitation Management Plan, subject to land access.

Note: inspections can be combined depending in the timing between completion of panels and commencement of new panels</td><td colspan="3">Normal Range of Condition</td></tr>
<tr><td>• Discontinuous surface cracking < 10 mm wide on steep slope (e.g. other than natural desiccation cracking).
AND/OR
• No localised ground bulging, buckling or shearing.</td><td>• Continue monitoring and review of data as per monitoring program.</td><td>• No response required.</td></tr>
<tr><td colspan="3">Level 1</td></tr>
<tr><td>• Persistent[6] surface cracking 10 - 20 mm, or stepping (including shearing) across a crack 10 – 20 mm high on steep slope.
AND/OR
• Localised ground bulging or buckling (between 100 – 200 mm) is observed on steep slope.</td><td>• Actions as required for Normal Condition.
• Geotechnical consultant inspection to assess cause and determine need for further action/investigation.
• Discuss findings and obtain other relevant information from key specialists (e.g. subsidence monitoring results).
If it is concluded that the slope has been damaged by subsidence impacts:
• Consider and decide on reasonable and feasible options for remediation as relevant (e.g. backfilling or grout filling of surface cracking, re-profiling of compression humps).
• Erect warning signs and restrict access to areas where necessary.
• Consider increasing monitoring and review of data frequency at sites where Level 1 has been reached, subject to land access. Considerations will take into account position of LW face relative to impact site, rate of longwall retreat, current weather conditions, development of conventional subsidence above longwall, consequences of potential slope instability and monitoring results relevant to the steep slope locations.
• Consider additional specific monitoring at the impact site and implement if feasible and effective.</td><td>• Report trigger exceedance to DPHI and key stakeholders.
• Report trigger exceedance and investigation outcomes in Annual Review.
• Provide DPHI and key stakeholders with proposed corrective management actions (CMAs) for consultation (e.g. backfilling or grout filling of surface cracking, re-profiling of compression humps, re-direct drainage)
• Implement CMAs, subject to land access.
• Monitor and report on success of CMAs in Annual Review.</td></tr>
<tr><td colspan="3">Level 2</td></tr>
<tr><td>• Persistent[5] surface cracking > 20 mm wide or stepping > 20 mm high on slope.
AND/OR
• Localised ground bulging or buckling > 200 mm is observed on steep slope.
AND/OR
• Slope instability < 300 m^3 is observed or assessed as likely by a geotechnical engineer based on the extent of surface cracking or deformation.</td><td>• Actions as stated in Level 1.
• Undertake a detailed investigation to assess if the change in behaviour is related to mining effects (e.g. whether there has been subsidence induced cracking, or the effect is unrelated to mining such as wet weather or other environmental effects).
If it is concluded that the slope has been damaged by subsidence impacts:
• Increase frequency of monitoring by geotechnical consultant during active subsidence period at sites where Level 2 has been reached, subject to land access. Considerations will take into account position of LW face relative to impact site, rate of longwall retreat, current weather conditions, development of conventional subsidence above longwall, consequences of potential slope instability and monitoring results relevant to the steep slope locations.
• Assess potential for slope instability (and if an exceedance of the performance measure is possible).
• Consider actions to avoid or reduce the likelihood and/or consequence of slope instability and implement if feasible and effective.
• Notify and consult with affected landowner(s).
• Review CMAs with regards to the findings from further investigations and consider additional remediation options.
• Review Land Management Plan and modify if necessary.</td><td>• Responses as stated in Level 1.
If it is concluded that the slope has been damaged by subsidence impacts:
• Offer site visit with DPHI and key stakeholders.
• Develop a Rehabilitation Management Plan in consultation with DPHI and key stakeholders if relevant.
• Notify Commonwealth DCCEEW of any predictions of an exceedance of a performance measure (if relevant) within two business days.
• Provide findings of CMA review to DPHI and key stakeholders for consultation.
• Implement additional CMAs, subject to land access.
• Advise DPHI and key stakeholders of any required amendments to Land Management Plan.</td></tr>
<tr><td colspan="3">Exceeds Performance Measure</td></tr>
<tr><td>• Subsidence-induced impacts or environmental consequences that result in slope instability > 300 m^3.</td><td>• Actions as stated in Level 2.
• Investigate reasons for the performance measure exceedance.
• Review predictions of mine subsidence impacts and environmental consequences associated with further longwall extraction based on the outcomes of the investigation.</td><td>• Responses as stated in Level 2.
• Submit a report to DPHI (in accordance with Condition E4 of SSD 8445) within 14 days of the exceedance occurring (or other timeframe agreed with DPHI) describing temporary protection measures and long-term remediation options and any preferred remediation measures or other course of action.
• Implement reasonable remediation measures as directed by DPHI, subject to land access.
• Notify Commonwealth DCCEEW of any detection or predictions of an exceedance of a performance measure within two business days.
• Submit an Impact Response Plan to Commonwealth DCCEEW (in accordance with Condition 11 of the DAWE (now Commonwealth DCCEEW) Consent for the Tahmoor South Project).</td></tr>
<tr><td colspan="4">Notes:
[1] Subsidence Area is defined as the ‘Subsidence Study Area’ as illustrated in Figure 1 of Appendix 2 of SSD 8445.</td></tr>
</table>

Performance Measure and Indicator, TARP Objective and Assessment Criteria	Monitoring Program	Management		
		Trigger	Action	Response
[2] Steep slopes are defined as greater than 18.4°. There are three steep slopes identified within the 600 m Environmental Features Study Area that are also located within the Subsidence Area[1]. As no other steep slopes have been identified within the 600 m Environmental Features Study Area, the performance measure for 'all land outside the subsidence area' is not relevant. [3] EIS predictions are summarised in the Subsidence Predictions and Impact Assessment Report by MSEC (2022) and MSEC (2024), and the relevant predictions for steep slopes is provided in Section 4.2 of the Land Management Plan. [4] All road embankments and road cutting identified in Figure 3 of the Land Management Plan will be managed in accordance with the Wollondilly Shire Council Management Plan. All railway embankments within the Study Area will be managed in accordance with the Main Southern Railway Management Plan. All steep slopes on the Tahmoor Mine Site will be managed in accordance with the Tahmoor Mine Site Management Plan. [5] TARPs for the management of constructed steep slopes will be provided as part of the Wollondilly Shire Council Management Plan (road embankments and cuttings), Main Southern Railway Management Plan (rail embankments) and the Tahmoor Mine Site Management Plan (mine site slopes). These yet to be prepared TARPs will be included in Appendix B Master TARP following preparation and approval by the infrastructure owner. [6] For the purpose of this TARP, persistent cracking is a tension crack/s that combine to form a potential backscarp or failure plane for slope instability. The length is proportional to the size of the failure surface.			

LAND MANAGEMENT PLAN TARP – LMP3 FARM DAMS

Performance Measure and Indicator, TARP Objective and Assessment Criteria	Monitoring Program	Management		
		Trigger	**Action**	**Response**
Performance Measure Feature Other privately-owned built features and improvements, including… farm dams. **Performance Measure** • Always safe. • Serviceability should be maintained wherever practicable. • Loss of serviceability must be fully compensated. • Damage must be fully repairable, and must be fully investigated and repaired or else replaced or fully compensated at the cost of the Applicant. **Performance Indicator** This performance measure will be considered to be triggered if mining results in damage to a farm dam such that the dam is not safe and serviceable and/or any damages cannot be fully repairable and/or compensated. **TARP Objective** This TARP defines measures to manage potential impacts on farm dams and the actions required to be implemented in response to exceedance of defined trigger levels. **Assessment Criteria** Dam embankment integrity, water level and seepage observations.	**Locations** Identified farm dams within the Study Area (FD1 to FD45). Locations shown in Figure 8 of the Land Management Plan. **Monitoring Frequency** **Prior to the commencement of each panel** Dam embankment integrity and water level observation by a geotechnical consultant one month before active subsidence period using fixed location photo points. **During mining of each panel** Dam embankment integrity and water level observation every month during the active subsidence period by a geotechnical consultant, using fixed location photo points, subject to land access. **At the completion of each panel** Dam embankment integrity and water level observation using fixed location photo points on a quarterly basis for 12 months following completion of active subsidence by a geotechnical consultant, or as required in accordance with a Rehabilitation Management Plan. **Note: inspections can be combined depending in the timing between completion of panels and commencement of new panels**	**Normal Range of Condition**		
		• No cracks develop within dam embankment (e.g. other than natural desiccation cracking).	• Continue monitoring and review of data as per monitoring program.	• No response required.
		Level 1		
		• Development of isolated cracks (> 10 mm wide) within the dam wall (e.g. other than natural desiccation cracking). AND/OR • Development of isolated seepage without suspended solids (e.g. clear water) from the face or toe of the farm dam embankment.	• *Actions as required for Normal Condition.* • Geotechnical consultant inspection to assess cause and determine need for further action/investigation. • Discuss findings and obtain other relevant information from key specialists (e.g. subsidence monitoring results). If it is concluded that dam has been damaged by subsidence impacts: • Consider and decide on reasonable and feasible options for remediation as relevant (e.g. backfilling surface cracking, reinstatement). • Notify and consult with affected landowner. • Erect warning signs and restrict access to areas where necessary and permitted by the landowner.	• Report trigger exceedance to DPHI, SA NSW and key stakeholders. • Report trigger exceedance and investigation outcomes in Annual Review. • Provide DPHI, SA NSW and landowner with proposed corrective management actions (CMAs) for consultation (e.g. backfilling surface cracking, reinstatement). • Implement CMAs, subject to land access. • Monitor and report on success of CMAs in Annual Review.
		Level 2		
		• Development of persistent longitudinal or arcuate cracking within dam wall > 20 mm. AND • Development of seepage with suspended solids (e.g. turbid water) from the face or toe of the farm dam embankment.	• *Actions as stated in Level 1.* • Consider increasing monitoring and review of data frequency at sites where Level 2 has been reached, subject to land access. Considerations will take into account position of LW face relative to impact site, rate of longwall retreat, current weather conditions, development of conventional subsidence above longwall, consequence of potential dam break, and monitoring results relevant to the dam locations. • Review CMAs in light of findings from further investigations and consider additional reasonable and feasible options. • Review Land Management Plan and modify if necessary. • Geotechnical Consultant to advise on the need for a reduction in the dam water level (e.g. half dam volume) to reduce the risk of a dam break failure.	• *Responses as stated in Level 1.* • Advise DPHI, SA NSW and key stakeholders of any required amendments to Land Management Plan. • Provide findings of CMA review to DPHI, SA NSW and landowner for consultation. • Implement additional CMAs, subject to land access.
		Level 3		
		• Development of persistent longitudinal or arcuate cracking within dam wall > 20 mm. AND • Subsidence monitoring identifies subsidence-induced impacts or environmental consequences that result in any slope instability to the farm dam embankment.	• *Actions as stated in Level 2.* • Undertake a detailed investigation to assess if the change in behaviour is related to mining effects (e.g. whether there has been subsidence induced fracturing, or the effect is unrelated to mining such as environmental effects). If it is concluded that the dam has been damaged by subsidence impacts: • Increase frequency of monitoring by geotechnical consultant during active subsidence period at sites where Level 3 has been reached, subject to land access. Considerations will take into account position of LW face relative to impact site, rate of longwall retreat, current weather conditions, development of conventional subsidence above longwall, consequence of potential dam break, and monitoring results relevant to the dam locations. • Reduction of dam water level in accordance with advice from Geotechnical Consultant. • Review predictions of mine subsidence impacts and environmental consequences associated with further longwall extraction based on the outcomes of the investigation. • Assess potential for the safety and serviceability of the dam to be lost (and if an exceedance of the performance measure is possible).	• *Responses as stated in Level 2.* If it is concluded that the dam has been damaged by subsidence impacts: • Offer site visit with DPHI and key stakeholders. • Repair or replace farm dam in consultation with DPHI and SA NSW and landowner. • Provide alternate water supply for landowner, if required. • Notify Commonwealth DCCEEW of any predictions of an exceedance of a performance measure (if relevant) within two business days.
		Exceeds Performance Measure		

Performance Measure and Indicator, TARP Objective and Assessment Criteria	Monitoring Program	Management		
		Trigger	**Action**	**Response**
		• Mining results in damage to a farm dam such that the dam is not safe and serviceable and/or any damages cannot be fully repairable and/or compensated.	• *Actions as stated in Level 3.* • Investigate reasons for the performance measure exceedance. • Review predictions of mine subsidence impacts and environmental consequences associated with further longwall extraction based on the outcomes of the investigation.	• *Responses as stated in Level 3.* • Submit a report to DPHI (in accordance with Condition E4 of SSD 8445) within 14 days of the exceedance occurring (or other timeframe agreed with DPHI) describing temporary protection measures and long-term remediation options and any preferred remediation measures or other course of action. • Implement reasonable remediation measures as directed by DPHI, subject to land access. • Notify Commonwealth DCCEEW of any detection or predictions of an exceedance of a performance measure within two business days. • Submit an Impact Response Plan to Commonwealth DCCEEW (in accordance with Condition 11 of the DAWE (now Commonwealth DCCEEW) Consent for the Tahmoor South Project).

LAND MANAGEMENT PLAN TARP – LMP4 AGRICULTURAL LAND

<table>
<tr><th rowspan="2">Performance Measure and Indicator, TARP Objective and Assessment Criteria</th><th rowspan="2">Monitoring Program</th><th colspan="3">Management</th></tr>
<tr><th>Trigger</th><th>Action</th><th>Response</th></tr>
<tr><td rowspan="6"><u>Performance Measure Feature</u>
No performance measures relevant.

<u>TARP Objective</u>
This TARP defines measures to manage potential impacts on agricultural land and the actions required to be implemented in response to exceedance of defined trigger levels.

<u>Assessment Criteria</u>
Changes to agricultural land such as to impact the use of the land for agricultural productivity[1].</td><td rowspan="6"><u>Locations</u>
Identify agricultural land uses within the Study Area (refer to Figure 8 in the Land Management Plan).

<u>Monitoring Frequency</u>
Pre-mining
Visual inspection prior to the commencement of mining from fixed photo points.

During Mining
Weekly inspections along local roads. Monthly inspections of farm dams by a geotechnical consultant, subject to land access.

Post-mining
Visual inspection at the completion of each longwall for land within the predicted limit of subsidence for each longwall.</td><td colspan="3">Normal Condition</td></tr>
<tr><td>• Negligible impact to agricultural productivity or use of land, negligible effects from mining-induced changes in slope (tilt) on ponding / flooding (reversal of natural slope), or increase in soil / tunnel erosion (increase in slope).</td><td>• Continue monitoring and review of data as per monitoring program.</td><td>• No response required.</td></tr>
<tr><td colspan="3">Level 1</td></tr>
<tr><td>• Minor impact to agricultural land from subsidence resulting in increased flooding or ponding within predicted impacts.
AND/OR
• Minor impact to drainage systems due to increased ponding / flooding or increased soil / tunnel erosion that can be remediated.
AND/OR
• Surface cracking affecting safety of livestock.</td><td>• Actions as required for Normal Condition.
• Undertake an investigation to assess cause and determine if mining related.
• Discuss findings and obtain other relevant information from key specialists (e.g. subsidence monitoring results, surface water monitoring results).
• Consider and decide on reasonable and feasible options for remediation as relevant (e.g. adjustment of farm gate levels, fence tensioning, backfilling of surface cracking).
• Consider increasing monitoring and review of data frequency at sites where Level 1 has been reached, subject to land access. Considerations will take into account position of LW face relative to impact site, rate of longwall retreat, current weather conditions, development of conventional subsidence above longwall, consequences of further impacts on agricultural land use and monitoring results relevant to the agricultural land.</td><td>• Report trigger exceedance to DPHI and key stakeholders.
• Report trigger exceedance and investigation outcomes in Annual Review.
• Provide DPHI and key stakeholders with proposed corrective management actions (CMAs) for consultation (e.g. adjustment of farm gate, fence tensioning, backfilling of surface cracking).
• Implement CMAs, subject to land access.
• Monitor and report on success of CMAs in Annual Review.</td></tr>
<tr><td colspan="3">Level 2</td></tr>
<tr><td>• Significant impact and change to agricultural land functionality or agricultural productivity greater than predicted (e.g. excessive subsidence and mining-induced changes in slope (tilt), resulting in substantial ponding / flooding (reversal in natural slope), excessive soil / tunnel erosion (increase in slope), or excessive surface cracking affecting safety of livestock that require livestock to be relocated from a property in order to rehabilitate the land.</td><td>• Actions as stated in Level 1.
• Undertake a detailed investigation to assess if the change in behaviour is related to mining effects (e.g. whether there has been subsidence induced fracturing, or the effect is unrelated to mining such as environmental effects).
If it is concluded that agricultural land has been damaged by subsidence impacts:
• Increase frequency of monitoring during active subsidence period at sites where Level 2 has been reached, subject to land access. Considerations will take into account position of LW face relative to impact site, rate of longwall retreat, current weather conditions, development of conventional subsidence above longwall, consequences of further impacts on agricultural land use and monitoring results relevant to the agricultural land.
• Review CMAs in light of findings from further investigations and consider additional reasonable and feasible options.
• Review Land Management Plan and modify if necessary.</td><td>• Responses as stated in Level 1.
If it is concluded that the agricultural land has been damaged by subsidence impacts:
• Offer site visit with DPHI and key stakeholders.
• Develop a Rehabilitation Management Plan in consultation with DPHI and key stakeholders if relevant.
• Provide findings of CMA review to DPHI and key stakeholders for consultation.
• Implement additional CMAs, subject to land access.
• Advise DPHI and key stakeholders of any required amendments to Land Management Plan.</td></tr>
<tr><td colspan="6">Notes:
[1] It is noted that the management of rural structures used for agricultural and farming purposes located in the Study Area are discussed in the Built Features Management Plan (e.g. poultry sheds, greenhouses, greenhouses, hothouses, irrigation systems, and tanks), the Water Management Plan (e.g. watercourses and groundwater bores), and the separate TARP for farm dams as part of this Land Management Plan.</td></tr>
</table>

APPENDIX B – Geotechnical Assessment (Douglas Partners, 2024a)

APPENDIX C – Geotechnical Assessment for LW S7A (PSM, 2025)

APPENDIX D – Land and Agricultural Resource Assessment (SLR, 2025)

APPENDIX E – Detailed Slope Stability Assessment (Douglas Partners, 2022)