



SIMEC

MEMBER OF



TAHMOOR SOUTH SITE

WATER MANAGEMENT PLAN

Tahmoor Coal Pty Ltd



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1 Introduction

1.1 Background

Tahmoor Coal Pty Ltd (Tahmoor Coal) owns and operates Tahmoor Mine, an underground coal mine extracting coking coal which is an ingredient in the production of steel. The mine surface operations are located south of Tahmoor NSW, which is within the greater Sydney Basin - approximately 80 km southwest of Sydney. Tahmoor Mine is within the Wollondilly Shire Council (WSC) Local Government Area (LGA). Underground workings extend north under the town of Tahmoor and Picton with two ventilation shafts being located on the outskirts of town. The location of Tahmoor Mine in the regional context is shown in **Figure 1**.

Tahmoor Mine surface facilities are situated in between the townships of Tahmoor and Bargo, and adjacent to Remembrance Drive on land owned by Tahmoor Coal with mining conducted under both crown and freehold property (see **Figure 1**). Surface facilities at Tahmoor Mine include administration buildings and offices, a materials store, diesel tanks, electrical workshop, mechanical workshop, bathhouse, ventilation fan, Coal Handling Preparation Plant (CHPP), storage areas, run of mine stockpile and product stockpiles. A third party owned power station is also located on-site and utilises methane from the mines' gas drainage system to produce electricity. Extracted coal is processed on site prior to transportation via rail to the Port Kembla Coal Terminal.

An Environmental Impact Statement (EIS) was exhibited in early 2019 seeking approval for the extraction of up to 48 million tonnes (Mt) of ROM coal over a 13-year mine life. 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 Consent SSD 8445 (the Consent) for the Tahmoor South Project, which involves use of the existing surface infrastructure and the extension of underground longwall mining to the south of existing workings. The Project has consent to extract up to 4 Mtpa of ROM coal, with a total of up to 33 Mt of ROM coal extracted over a 10-year period until 31 December 2033.

Modification 1 to SSD 8445 (MOD 1), approved in July 2022, sought to extend the commissioning date of the Water Treatment Plant. Modification 2 to SSD 8445 (MOD 2), approved in June 2023, proposed the underground storage of brine in the historical Tahmoor North Western Domain mining area and the temporary storage of excess mine water in the historical Tahmoor North mining area.

1.2 Purpose

The purpose of this Water Management Plan (WMP) is to provide a framework for Tahmoor Coal (TC) personnel to ensure that compliance is achieved with relevant internal and external regulatory requirements related to surface water and groundwater management at Tahmoor Coal. The plan ensures that impacts on the community are minimised and managed within a structured framework.

This plan is to ensure compliance with Development Consent (SSD 8445) (the Consent) Condition B34, Part B.

1.3 Scope

This WMP includes management measures and monitoring requirements relating to:

- a) Surface Water
- b) Groundwater
- c) Erosion and Sediment Control

The WMP applies to all activities associated with Tahmoor Coal and forms part of the Environmental Management System (EMS).

1.4 Preparation

This management plan has been prepared by Michelle Grierson, Senior Environmental Scientist with Umwelt (Australia) Pty Ltd. Michelle has been endorsed by the Department of Planning and Environment (DPE) as suitability qualified to prepare this WMP (see **Appendix A**).

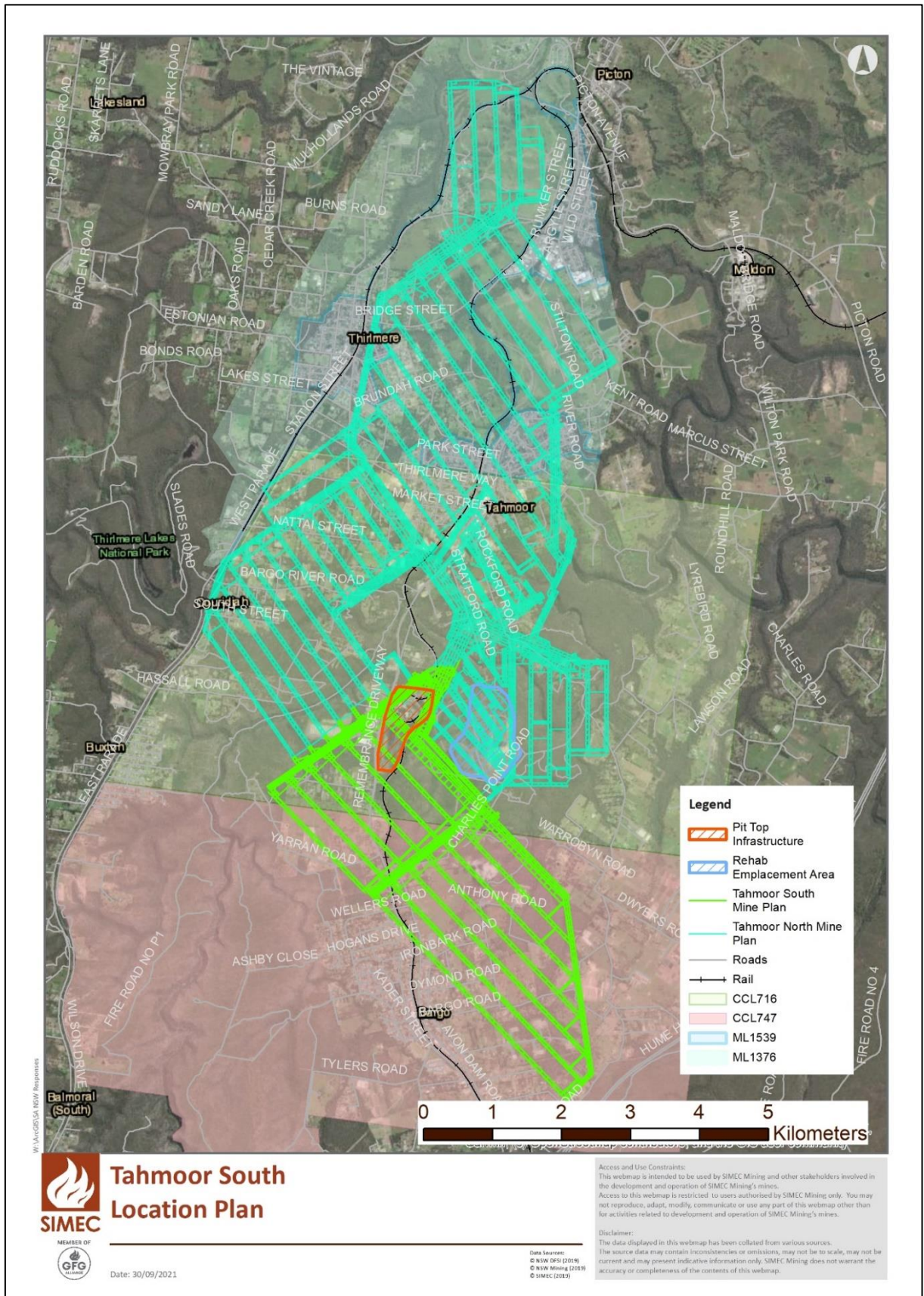


Figure 1 Tahmoor Coal Site Location

2 Planning

2.1 Statutory Requirements and Legislation

2.1.1 Development Consent Conditions

The requirement for this management plan is established by Condition B34 under Schedule 2 of the Consent. **Table 1** outlines the requirements under this condition and identifies where these requirements have been addressed.

Table 1 Development Consent Conditions

Condition Reference	Condition	Where Addressed
Water Supply		
B23	The Applicant must ensure that it has sufficient water for all stages of the development, and if necessary, adjust the scale of the development to match its available water supply.	Section 5.2.1
B24	The Applicant must report on water captured, intercepted or extracted from the site each year (direct and indirect) in the Annual Review. This is to include water take where a water licence is required and where an exemption applies. Where a water licence is required the water take needs to be reviewed against existing water licences. <i>Note: Under the Water Act 1912 and/or the Water Management Act 2000, the Applicant is required to obtain all necessary water licences for the development, including during rehabilitation and following mine closure.</i>	Section 5.2.1 and Section 6.2
Compensatory Water Supply		
B25	Prior to the commencement of second workings under this consent, the Applicant must complete a bore census for all licensed privately-owned groundwater bores that are predicted to have a drawdown of greater than 2 metres as a result of the development providing:	Section 5.2.2
(a)	notification of bore owners, including an indication of the level of risk of impact to their water supply;	
(b)	ongoing engagement and consultation with bore owners in accordance with the Make Good Strategy contained in the EIS;	
(c)	detailed baseline data regarding groundwater levels, yield and quality for privately-owned groundwater bores; and	
(d)	a condition assessment of existing groundwater bores and monitoring equipment; to the satisfaction of the Planning Secretary.	
B26	The Applicant must provide a compensatory water supply to any landowner of privately-owned land whose rightful water supply is adversely and directly impacted (other than an impact that is minor or negligible) as a result of the development, in consultation with NRAR and DPIE Water, and to the satisfaction of the Planning Secretary.	Section 5.2.2
B27	The compensatory water supply measures must provide an alternative long-term supply of water that is equivalent, in quality and volume, to the loss attributable to the development. Equivalent water supply should be provided (at least on an interim basis) as soon as practicable after the loss is identified, unless otherwise agreed with the landowner. The burden of proof that any loss of water supply is not due to mining impacts rests with the Applicant.	
B28	If the Applicant and the landowner cannot agree on whether the loss of water is to be attributed to the development or the measures to be implemented, or	

	there is a dispute about the implementation of these measures, then either party may refer the matter to the Planning Secretary for resolution.									
B29	If the Applicant is unable to provide an alternative long-term supply of water, then the Applicant must provide compensation to the affected land owner, to the satisfaction of the Planning Secretary. <i>Note:</i> • <i>The Water Management Plan (see condition B34) is required to include trigger levels for investigating potentially adverse impacts on water supplies.</i>									
Water Treatment										
B30	Prior to the commencement of second workings under this consent, the Applicant must commission the WTP required under Special Condition E1.1 of EPL 1389.	Section 5.2.1.4								
Off-site Water Discharges and Transfers										
B31	The Applicant must ensure that all surface discharges from the site comply with all relevant provisions of the POEO Act, including any discharge limits (both volume and quality) set for the development in any EPL.	Refer to Surface Water Management Plan								
Off-site Mine Water Transfer										
B32	This consent does not permit the transfer of water to and from the underground workings and goaf areas of the Tahmoor North Mine. Nothing in this consent prevents appropriate consent being granted for such transfers of water.	Noted								
Water Management Performance Measures										
B33	The Applicant must comply with the performance measures in Table 5 of the Consent. <table><tr><th>Feature</th><th>Performance Measure</th></tr><tr><td>Water management – General</td><td> • Maintain separation between clean and dirty (including both sediment-laden water and mine water) water management systems • Minimise the use of clean and potable water on the site • Maximise water recycling, reuse and sharing opportunities to the extent that is reasonable and feasible • Maximise the capture and reuse of mine water and dirty water to meet operational demands for water to the extent that is reasonable and feasible • Minimise the use of make-up water from external sources • Design, install, operate and maintain water management systems in a proper and efficient manner • Minimise risks to the receiving environment and downstream water users </td></tr><tr><td>Aquatic and riparian ecosystems</td><td> • Maintain or improve baseline channel stability • Develop site-specific in-stream water quality objectives in accordance with the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC & ARMCANZ, 2000) and Using the ANZECC Guidelines and Water Quality Objectives in NSW (DEC, 2006) </td></tr><tr><td>Erosion and sediment control works</td><td> • Design, install and maintain erosion and sediment controls in accordance with the guidance series Managing Urban Stormwater: Soils and Construction including Volume 1: Blue Book (Landcom, 2004), Volume 2A: Installation of Services (DECC, 2008), Volume 2C: Unsealed Roads (DECC,2008), Volume 2D: Main Road Construction (DECC, 2008) and Volume 2E: Mines and Quarries (DECC, 2008) • Design, install and maintain any new infrastructure within 40 metres of watercourses in accordance with the guidance series for Controlled Activities on Waterfront Land (DPI Water, 2012) </td></tr></table>	Feature	Performance Measure	Water management – General	• Maintain separation between clean and dirty (including both sediment-laden water and mine water) water management systems • Minimise the use of clean and potable water on the site • Maximise water recycling, reuse and sharing opportunities to the extent that is reasonable and feasible • Maximise the capture and reuse of mine water and dirty water to meet operational demands for water to the extent that is reasonable and feasible • Minimise the use of make-up water from external sources • Design, install, operate and maintain water management systems in a proper and efficient manner • Minimise risks to the receiving environment and downstream water users	Aquatic and riparian ecosystems	• Maintain or improve baseline channel stability • Develop site-specific in-stream water quality objectives in accordance with the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC & ARMCANZ, 2000) and Using the ANZECC Guidelines and Water Quality Objectives in NSW (DEC, 2006)	Erosion and sediment control works	• Design, install and maintain erosion and sediment controls in accordance with the guidance series Managing Urban Stormwater: Soils and Construction including Volume 1: Blue Book (Landcom, 2004), Volume 2A: Installation of Services (DECC, 2008), Volume 2C: Unsealed Roads (DECC,2008), Volume 2D: Main Road Construction (DECC, 2008) and Volume 2E: Mines and Quarries (DECC, 2008) • Design, install and maintain any new infrastructure within 40 metres of watercourses in accordance with the guidance series for Controlled Activities on Waterfront Land (DPI Water, 2012)	Section 2.2, 5.2 and Refer to Surface Water Management Plan
Feature	Performance Measure									
Water management – General	• Maintain separation between clean and dirty (including both sediment-laden water and mine water) water management systems • Minimise the use of clean and potable water on the site • Maximise water recycling, reuse and sharing opportunities to the extent that is reasonable and feasible • Maximise the capture and reuse of mine water and dirty water to meet operational demands for water to the extent that is reasonable and feasible • Minimise the use of make-up water from external sources • Design, install, operate and maintain water management systems in a proper and efficient manner • Minimise risks to the receiving environment and downstream water users									
Aquatic and riparian ecosystems	• Maintain or improve baseline channel stability • Develop site-specific in-stream water quality objectives in accordance with the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC & ARMCANZ, 2000) and Using the ANZECC Guidelines and Water Quality Objectives in NSW (DEC, 2006)									
Erosion and sediment control works	• Design, install and maintain erosion and sediment controls in accordance with the guidance series Managing Urban Stormwater: Soils and Construction including Volume 1: Blue Book (Landcom, 2004), Volume 2A: Installation of Services (DECC, 2008), Volume 2C: Unsealed Roads (DECC,2008), Volume 2D: Main Road Construction (DECC, 2008) and Volume 2E: Mines and Quarries (DECC, 2008) • Design, install and maintain any new infrastructure within 40 metres of watercourses in accordance with the guidance series for Controlled Activities on Waterfront Land (DPI Water, 2012)									

		- Design, install and maintain any new creek crossings generally in accordance with the Fisheries NSW Policy and Guidelines for Fish Habitat Conservation and Management (DPI, 2013) and Why Do Fish Need To Cross The Road? Fish Passage Requirements for Waterway Crossings (NSW Fisheries 2003). - Ensure all works on waterfront land are consistent with the guidance series for Controlled Activities on Waterfront Land (DPI Water, 2012)	
	Clean water diversions and storage infrastructure	- Design, install and maintain any new components of the clean water system to capture and convey the 100 year ARI flood - Maximise as far as reasonable and feasible the diversion of clean water around disturbed areas on the site, except where clean water is captured for use on the site	
	Sediment dams	- Design, install and/or maintain sediment dams to prevent off-site discharges to surface waters, except as may be permitted under condition B31 - Design, install and maintain sediment dams in accordance with the guidance series Managing Urban Stormwater: Soils and Construction – Volume 1 (Landcom, 2004) and 2E Mines and Quarries (DECC, 2008) and the requirements under the POEO Act	
	Above ground mine water storages	- Design, install and maintain mine water storage infrastructure to avoid unlicensed or uncontrolled discharge of mine water - Ensure adequate freeboards within all mine water storage dams at all times to minimise the risk of discharge to surface waters - New on-site storages (including mine infrastructure dams, groundwater storage and treatment dams) are suitably designed, installed and maintained, including being lined to comply with a permeability standard of $< 1 \times 10^{-9}$ m/s	
	Reject management	- Restrict emplacement of any reject material to the REA in a manner that is consistent with the EIS - Design and maintain tailings storage areas to prevent the movement of tailings seepage/leachate outside the REA	
	Chemical and hydrocarbon storage	Chemical and hydrocarbon products to be stored in bunded areas in accordance with the relevant Australian Standard.	

Water Management Plan

B34	Prior to the commencement of construction activities, the Applicant must prepare a Water Management Plan for the development to the satisfaction of the Planning Secretary. This plan must:	This Plan
(a)	be prepared by a suitably qualified and experienced person/s whose appointment has been endorsed by the Planning Secretary;	Section 0 and Appendix A
(b)	be prepared in consultation with DPIE Water and EPA;	Section 3.3 and Appendix C
(c)	describe the measures to be implemented to ensure that the Applicant complies with the water management performance measures (see Table 4);	Section 2.2
(d)	utilise existing data from nearby mines and build on existing monitoring programs, where practicable;	Section 5.1 and Groundwater Management Plan (<i>Groundwater Monitoring Plan</i>)
(e)	include a:	NA
(i)	Site Water Balance that includes details of: predicted annual inflows to and outflows from the site;	Refer to Surface Water Management Plan

	• sources and security of water supply for the life of the development (including authorised entitlements and licences); • water storage capacity; • water use and management on the site, including any water stored underground in goaf areas of Tahmoor North Mine; • licensed discharge points and limits; and • reporting procedures, including the annual preparation of a site water balance;	
(ii)	Salt Balance that includes details of • sources of saline material on the site; • saline material and saline water management on the site; • measures to minimise discharge of saline water from the site; and • reporting procedures, including the annual preparation of an updated salt balance;	Refer to Surface Water Management Plan
(iii)	Erosion and Sediment Control Plan that: • is consistent with the requirements of Managing Urban Stormwater: Soils and Construction - Volume 1: Blue Book (Landcom, 2004) and Volume 2E: Mines and Quarries (DECC, 2008); • identifies activities that could cause soil erosion or generate sediment; • describes measures to minimise soil erosion and the potential for the transport of sediment to downstream waters; • describes the location, function and capacity of erosion and sediment control structures; and • describes what measures would be implemented to maintain (and if necessary, decommission) the structures over time;	Refer to Appendix B - Erosion and Sediment Control Plan
(iv)	Surface Water Management Plan that includes: • detailed baseline data on channel stability, water flows and water quality in the sections or parts of watercourses and/or water bodies potentially impacted by the development (including Tea Tree Hollow, Dog Trap Creek, Bargo River and all associated tributaries); • a detailed description of the surface water management system; • detailed plans, design objectives and performance criteria for water management infrastructure including: - any approved creek restoration works associated with the development; - water run-off diversions and catch drains; - erosion and sediment controls, including sediment dams; - any water storages, including mine water management systems; - water treatment plant required under the EPL; - compliance with the objectives for aquatic and riparian river systems set out in Table 4; - the sewage treatment plant; and - reinstated drainage networks on rehabilitated areas of the site; • surface water performance criteria, including trigger levels for identifying and investigating any potentially adverse impacts (or trends) associated with the development for; - water supply for other water users; - downstream surface water flows and quality; - stream and riparian vegetation health; and - post-mining water pollution from rehabilitated areas of the site; • a program to monitor and evaluate:	Refer to Surface Water Management Plan

	- compliance with the relevant performance measures listed in Table 4 and the performance criteria in this plan; - controlled and uncontrolled discharges and seepage/leachate from the site; - impacts on water supply for other water users; - surface water inflows, outflows and storage volumes, to inform the Site Water Balance; - the effectiveness of the surface water management system, and the measures in the Erosion and Sediment Control Plan; - reporting procedures for the results of the monitoring program, including notifying other water users of any elevated results; - a trigger action response plan to respond to any exceedances of the performance measures in Table 5, and to repair, mitigate and/or offset any adverse surface water impacts of the development, including measures to provide compensatory water supply to affected water users under condition B26; and • a program to periodically update and validate the stream flow water balance model; and	
(v)	Groundwater Management Plan that includes: • detailed baseline data regarding groundwater levels, yield and quality for privately-owned groundwater bores (as required under condition B25(a)) and the condition of GDEs (including Thirlmere Lakes) potentially impacted by the development; • a program to periodically review and update data regarding groundwater levels, yield and quality at privately-owned groundwater bores in the vicinity of the development, including any bores potentially impacted by cumulative groundwater drawdown; • a detailed description of the groundwater management system, including commitments to: - install an additional monitoring bore in the footprint of Tahmoor North to monitor post-mining groundwater level and quality; - install additional monitoring bores (minimum of four) at or near the Thirlmere Lakes; - install bores above the initial longwalls to define profile fracturing and depressurisation in the Hawkesbury Sandstone and Bulgo Sandstone; - monitor shallow groundwater within the Hawkesbury Sandstone; - monitor volumetric take (mine inflow), including inflows to the underground mine; and - regularly review the monitoring program to ensure robust and reliable monitoring is undertaken, including reviewing the performance of vibrating wire piezometers; • groundwater performance criteria, including trigger levels for identifying and investigating any potentially adverse groundwater impacts (or trends) associated with the development, on: - regional and local aquifers (alluvial and hard rock); and - groundwater supply for other users such as licensed privately-owned groundwater bores; • uncertainty analysis of the potential impacts of mining the proposed longwalls on the water levels in Thirlmere Lakes, based upon results from the current Thirlmere Lakes Research Program and other ongoing monitoring and investigations; • a program to monitor and evaluate:	Refer to Groundwater Management Plan

	- compliance with the relevant performance measures listed in Table 4 and the performance criteria of this plan; - water loss/seepage from water storages into the groundwater system; - groundwater inflows, outflows and storage volumes, to inform the Site Water Balance; - impacts on water supply for other water users; - impacts on GDEs (including Thirlmere Lakes); - the hydrogeological setting of any nearby alluvial aquifers and the likelihood of any indirect impacts from the development; and - the effectiveness of the groundwater management system; • reporting procedures for the results of the monitoring program, including notifying other water users, the NSW Office of Environment and Heritage and Thirlmere Lakes Research Program of any elevated results; • a trigger action response plan to respond to any exceedances of the relevant performance measures and groundwater performance criteria, and repair, mitigate and/or offset any adverse groundwater impacts of the development, including impacts on Thirlmere Lakes; • a Groundwater Modelling Plan that: - provides details for the future groundwater model re-build and recalibration which must be completed within 2 years of the commencement of development under this consent; - is independently third-party reviewed; - provides for the incorporation of the outcomes of the findings of the Thirlmere Lakes Research Program and other relevant research on the Thirlmere Lakes; - considers field data and the outcomes of subsidence monitoring; - provides for periodic validation and where necessary recalibration, of the groundwater model for the development, including an independent review of the model every 3 years, and comparison of monitoring results with modelled predictions; and • a plan to respond to any exceedances of the performance measures in Table 4.	
(vi)	Long-term Water Management Strategy for the whole Tahmoor mining complex that: • Includes detailed modelling of the potential water impacts of the mining complex as water levels recover following the cessation of mining operations within the complex and rehabilitation of these operations; • identifies the measures that would be implemented at each of these mining operations to minimise any adverse water impacts; • includes a water licencing strategy for the ongoing take of any water over time; and • includes a program to monitor and review the water impacts of the mining complex over time	Refer to Surface Water Management Plan
B35	The Applicant must not commence construction until the Water Management Plan is approved by the Planning Secretary.	Noted
B36	The Applicant must implement the Water Management Plan as approved by the Planning Secretary. <i>Note: Some components of the Water Management Plan, such as the Long-term Water Management Strategy can be staged in accordance with Conditions A29 to A31.</i>	Noted

2.1.2 Management Plan Requirements

Consent Condition E5 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	Where Addressed
E5	Management plans required under this consent must be prepared in accordance with relevant guidelines, and include:	NA
(a)	a summary of relevant background or baseline data;	Section 4
(b)	details of:	NA
(b) (i)	the relevant statutory requirements (including any relevant approval, licence or lease conditions);	Section 2.1
(b) (ii)	any relevant limits or performance measures and criteria; and	Section 2.2
(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;	The Surface Water Management Plan and Groundwater Management Plan cover specific indicators for surface water and groundwater.
(c)	any relevant commitments or recommendations identified in the document/s listed in condition A2(c);	Section 2.1.3
(d)	a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria;	Section 5.2
(e)	a program to monitor and report on the:	NA
(e) (i)	impacts and environmental performance of the development; and	The Surface Water Management Plan and Groundwater Management Plan cover specific indicators for surface water and groundwater.
(e) (ii)	effectiveness of the management measures set out pursuant to condition E5(d);	The Surface Water Management Plan and Groundwater Management Plan cover specific indicators for surface water and groundwater.
(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 5.2.2
(g)	a program to investigate and implement ways to improve the environmental performance of the development over time;	Sections 5.4 and 7
(h)	a protocol for managing and reporting any:	NA
(h) (i)	incident, non-compliance or exceedance of any impact assessment criterion or performance criterion;	Sections 6.3, 6.4 and 6.5
(h) (ii)	complaint; or	Section 6.6
(h) (iii)	failure to comply with other statutory requirements;	Covered collectively within Sections 5.3, 5.4 and 5.5
(i)	public sources of information and data to assist stakeholders in understanding environmental impacts of the development; and	Section 8.1
(j)	a protocol for periodic review of the plan.	Section 7

2.1.3 EIS Commitments

Condition A2 (c) 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 water management are outlined within the Groundwater Management Plan and Surface Water Management Plan.

2.1.4 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 3**. A summary of other approvals and licences is provided in **Table 4**.

Table 3 Mining Lease

Lease	Title	Granted	Expires
CCL 747	Bargo Mining Lease	23/05/1990	06/11/2025
CCL 716	Original Tahmoor Leases	15/06/1990	13/03/2042
ML 1376	Tahmoor North Lease	28/08/1995	28/08/2043
ML 1308	Small Western lease to west of CCL716	02/03/1993	02/03/2035
ML1642	Pit-top and REA surface Mining Lease	27/08/2010	27/08/2031
ML 1539	Tahmoor North Extensions Lease	16/06/2003	16/06/2024

Table 4 Approvals/Licences

Approval Title / Description	Date Granted	Expiry Date
Environmental Protection Licence 1389	01/05/2012	No Expiry
WAL36442	6/12/2013	No Expiry
WAL25777	27/10/2014	No Expiry
WAL43572	10/05/2021	No Expiry
WAL43656	01/08/2022	No Expiry
SWC839757	10/07/2023	No Expiry
XSTR200005 (Licence to store explosives)	02/02/2017	02/02/2027

2.2 Water Management Performance Measures

Consent Condition E5 (b) (ii) and (iii) outlines the requirement for management plans to provide details of any relevant limits, performance measures or criteria. The following definitions have been applied:

Limit - Any limit set within the Consent or other statutory document.

Criteria – Any criterion set within the Consent or other statutory document.

Performance Measures/Objectives – Environmental management performance measures and/or objectives as outlined within Schedule 2 Part B the Consent. Performance Measures and/or objectives outlined within Schedule 2 Part C of the Consent will be managed within the relevant Extraction Plan.

In accordance with Consent Condition E5 (b) (ii), **Table 5** outlines the relevant limits, performance measures relevant to this management plan. These performance measures are addressed within the within the Erosion and Sediment Control Plan (Appendix B) and Surface Water Management Plan.

Table 5 Water Management Performance Measures

Feature	Performance Measure
Water management – General	• Maintain separation between clean and dirty (including both sediment-laden water and mine water) water management systems • Minimise the use of clean and potable water on the site • Maximise water recycling, reuse and sharing opportunities to the extent that is reasonable and feasible • Maximise the capture and reuse of mine water and dirty water to meet operational demands for water to the extent that is reasonable and feasible • Minimise the use of make-up water from external sources • Design, install, operate and maintain water management systems in a proper and efficient manner • Minimise risks to the receiving environment and downstream water users
Aquatic and riparian ecosystems	• Maintain or improve baseline channel stability • Develop site-specific in-stream water quality objectives in accordance with the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC & ARMCANZ, 2000) and Using the ANZECC Guidelines and Water Quality Objectives in NSW (DEC, 2006)
Erosion and sediment control works	• Design, install and maintain erosion and sediment controls in accordance with the guidance series Managing Urban Stormwater: Soils and Construction including Volume 1: Blue Book (Landcom, 2004), Volume 2A: Installation of Services (DECC, 2008), Volume 2C: Unsealed Roads (DECC, 2008), Volume 2D: Main Road Construction (DECC, 2008) and Volume 2E: Mines and Quarries (DECC, 2008) • Design, install and maintain any new infrastructure within 40 metres of watercourses in accordance with the guidance series for Controlled Activities on Waterfront Land (DPI Water, 2012) • Design, install and maintain any new creek crossings generally in accordance with the Fisheries NSW Policy and Guidelines for Fish Habitat Conservation and Management (DPI, 2013) and Why Do Fish Need To Cross The Road? Fish Passage Requirements for Waterway Crossings (NSW Fisheries 2003). • Ensure all works on waterfront land are consistent with the guidance series for Controlled Activities on Waterfront Land (DPI Water, 2012)
Clean water diversions and storage infrastructure	• Design, install and maintain any new components of the clean water system to capture and convey the 100 year ARI flood • Maximise as far as reasonable and feasible the diversion of clean water around disturbed areas on the site, except where clean water is captured for use on the site
Sediment dams	• Design, install and/or maintain sediment dams to prevent off-site discharges to surface waters, except as may be permitted under condition B31 • Design, install and maintain sediment dams in accordance with the guidance series Managing Urban Stormwater: Soils and Construction – Volume 1 (Landcom, 2004) and 2E Mines and Quarries (DECC, 2008) and the requirements under the POEO Act
Above ground mine water storages	• Design, install and maintain mine water storage infrastructure to avoid unlicensed or uncontrolled discharge of mine water • Ensure adequate freeboards within all mine water storage dams at all times to minimise the risk of discharge to surface waters

	• New on-site storages (including mine infrastructure dams, groundwater storage and treatment dams) are suitably designed, installed and maintained, including being lined to comply with a permeability standard of $< 1 \times 10^{-9}$ m/s
Reject management	• Restrict emplacement of any reject material to the REA in a manner that is consistent with the EIS • Design and maintain tailings storage areas to prevent the movement of tailings seepage/leachate outside the REA
Chemical and hydrocarbon storage	• Chemical and hydrocarbon products to be stored in bunded areas in accordance with the relevant Australian Standard

3 Stakeholder Consultation

3.1 Internal Stakeholder Communication

Internal stakeholders include employees, contractors and visitors of Tahmoor Coal. *TAH-HSEC-00119-Communication and Engagement Procedure* has been developed to include the following:

- a) Methods of communication between internal stakeholders;
- b) Types of information that is communicated between internal stakeholders;
- c) Responsibilities for communication of information to internal stakeholders; and
- d) Review of communication methods, including the consideration of feedback to / from internal stakeholders.

3.2 External Stakeholder Communication

External stakeholders include neighbours and the local / regional community, local council, state and federal government agencies and regulators, and press / media. Any external communications relating to water management will be conducted in accordance with Tahmoor Coal's standard communications procedures. External stakeholders are identified in accordance with the following:

- *TAH-HSEC-00031- Community Development Plan; and*
- *TAH-HSEC-00039 – Stakeholder Engagement Plan.*

External stakeholder communication is undertaken in accordance with:

- *TAH-HSEC-00039– Stakeholder Engagement Plan; and*
- *TAH-HSEC-00119- Communication and Engagement Procedure.*

These documents include information on the following topics:

- a) Methods of communication to external stakeholders.
- b) Types of information that is communicated between external stakeholders.
- c) Responsibilities for communication of information to external stakeholders.
- d) Review of communication methods, including the consideration of feedback to / from external stakeholders.

A key objective of *TAH-HSEC-00119 - Communication and Engagement Procedure* is to maintain positive relationships established with the local community and other external stakeholders.

3.3 Consultation to Date

A draft version of this management plan was distributed to the following stakeholders for review and feedback:

- a) Department of Planning, Industry and Environment (DPIE) - Water**
- b) Environment Protection Agency (EPA)**

The feedback provided by stakeholders is summarised within **Table 6** below.

Table 6 Consultation to Date

Consulted Parties	Consultation Conducted	Outcomes of Consultation
DPIE Water	Draft plan provided on 08/12/2021	No comments on the plan have been received as of 25/03/2022. Feedback provided by DPIE Water via email on 03/04/2022 stated that DPIE Water would prefer to review the plan once it is in final draft form, with all required elements and supporting work and documents (including modelling) complete and available.
EPA	Draft plan provided on 08/12/2021	No comments on Water Management Plan One comment on Erosion and Sediment Control Plan. See Appendix C for further information.

4 Existing Environment

Tahmoor Coal is located within the Bargo River catchment. From its headwaters near the townships of Hill Top and Yerrinbool, the Bargo River flows in a generally north-easterly direction through incised valleys and gorges to its confluence with the Nepean River, near the Pheasants Nest Weir.

The Bargo River drains a total catchment of some 130 square kilometres (km²) at its confluence with the Nepean River. The Bargo River flows into the Nepean River nine kilometres (km) downstream of the Tea Tree Hollow confluence. The Nepean River rises in the Great Dividing Range to the west of Tahmoor Coal. Its headwaters also lie in the coastal ranges to the east of the Project Area.

Flows in the upper reaches of the Nepean River are highly regulated by the Upper Nepean Water Supply Scheme, operated by WaterNSW, which incorporates four major water supply dams on the Cataract, Cordeaux, Avon and Nepean Rivers. The Nepean Dam is situated some 18 km upstream of the Bargo River confluence. Flows in the Nepean River near and downstream of Tahmoor Coal are not part of a WaterNSW Drinking Water Catchment Area

The Hawkesbury-Nepean catchment is one of the largest coastal catchments in NSW with an area of some 21,400 km² at its mouth in Broken Bay on the northern side of the Sydney Metropolitan area.

A map of the local watercourses and their location in relation to Tahmoor Coal is shown in **Figure 2**.

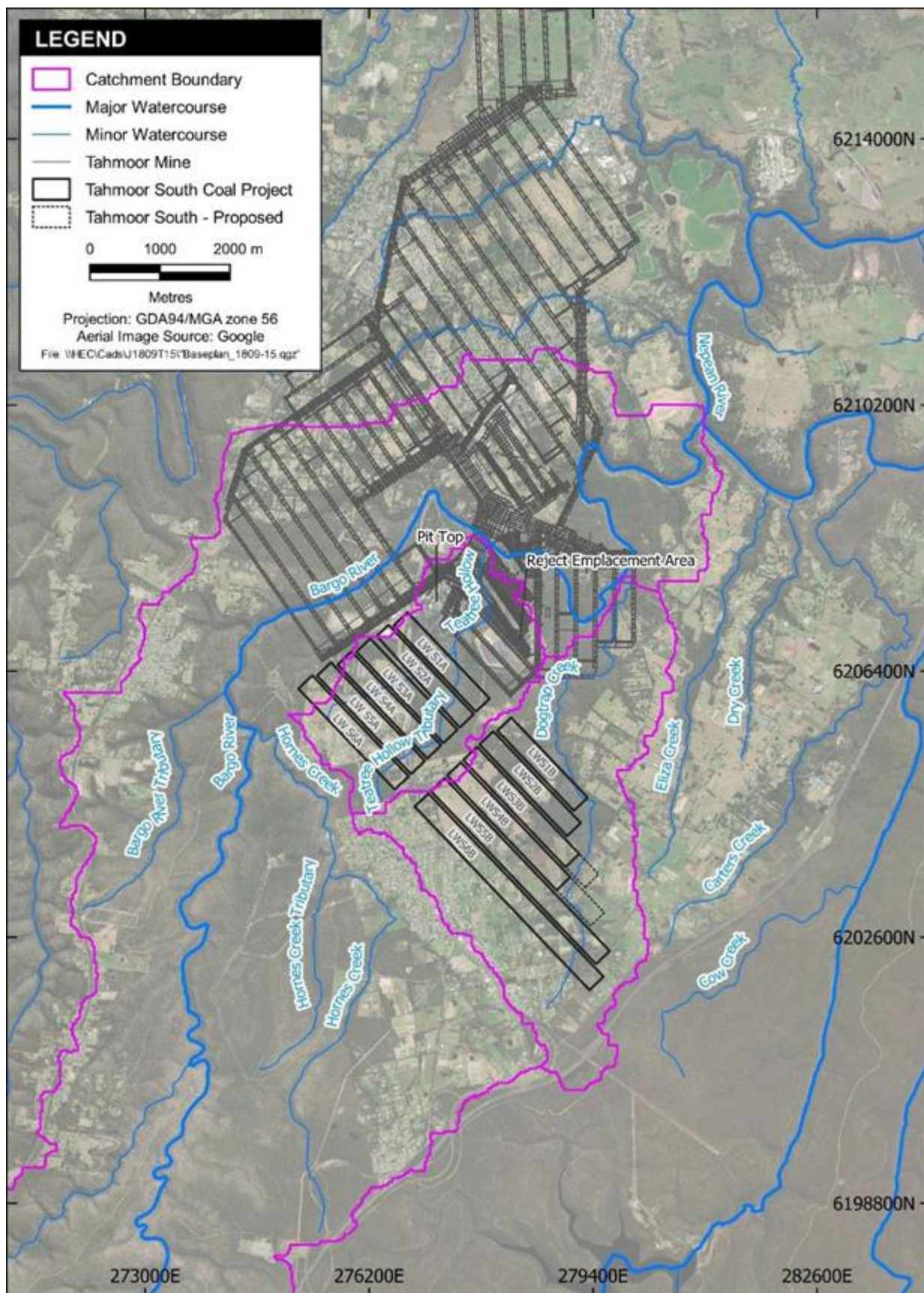


Figure 2 Watercourses

5 Management and Monitoring

5.1 Monitoring Measures

Tahmoor Coal will continue site surface water and groundwater monitoring in accordance with the Surface Water Management Plan (TAH-HSEC-00371) and Groundwater Management Plan (TAH-HSEC-00373).

The appropriate Extraction Plan will provide both surface water and groundwater monitoring for the subsidence areas. Where practicable, these Extraction Plans will utilise existing data from nearby mines and build on existing monitoring programs.

5.2 Management Measures

Table 7 Water Management Measures

Feature	Performance Measure	Where Addressed
Water management – General	- Maintain separation between clean and dirty (including both sediment-laden water and mine water) water management systems - Minimise the use of clean and potable water on the site - Maximise water recycling, reuse and sharing opportunities to the extent that is reasonable and feasible - Maximise the capture and reuse of mine water and dirty water to meet operational demands for water to the extent that is reasonable and feasible - Minimise the use of make-up water from external sources - Design, install, operate and maintain water management systems in a proper and efficient manner - Minimise risks to the receiving environment and downstream water users	Appendix B Erosion and Sediment Control Plan & Surface Water Management Plan
Aquatic and riparian ecosystems	- Maintain or improve baseline channel stability - Develop site-specific in-stream water quality objectives in accordance with the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC & ARMCANZ, 2000) and Using the ANZECC Guidelines and Water Quality Objectives in NSW (DEC, 2006)	Surface Water Management Plan
Erosion and sediment control works	- Design, install and maintain erosion and sediment controls in accordance with the guidance series Managing Urban Stormwater: Soils and Construction including Volume 1: Blue Book (Landcom, 2004), Volume 2A: Installation of Services (DECC, 2008), Volume 2C: Unsealed Roads (DECC, 2008), Volume 2D: Main Road Construction (DECC, 2008) and Volume 2E: Mines and Quarries (DECC, 2008) - Design, install and maintain any new infrastructure within 40 metres of watercourses in accordance with the guidance series for Controlled Activities on Waterfront Land (DPI Water, 2012) - Design, install and maintain any new creek crossings generally in accordance with the Fisheries NSW Policy and Guidelines for Fish Habitat Conservation and Management (DPI, 2013) and Why Do Fish Need To Cross The Road? Fish Passage Requirements for Waterway Crossings (NSW Fisheries 2003). - Ensure all works on waterfront land are consistent with the guidance series for Controlled Activities on Waterfront Land (DPI Water, 2012)	Appendix B Erosion and Sediment Control Plan & Surface Water Management Plan
Clean water diversions	Design, install and maintain any new components of the clean water system to capture and convey the 100 year ARI flood	Appendix B Erosion and Sediment Control Plan &

and storage infrastructure	Maximise as far as reasonable and feasible the diversion of clean water around disturbed areas on the site, except where clean water is captured for use on the site	Surface Water Management Plan
Sediment dams	- Design, install and/or maintain sediment dams to prevent off-site discharges to surface waters, except as may be permitted under condition B31 - Design, install and maintain sediment dams in accordance with the guidance series Managing Urban Stormwater: Soils and Construction – Volume 1 (Landcom, 2004) and 2E Mines and Quarries (DECC, 2008) and the requirements under the POEO Act	Appendix B Erosion and Sediment Control Plan
Above ground mine water storages	- Design, install and maintain mine water storage infrastructure to avoid unlicensed or uncontrolled discharge of mine water - Ensure adequate freeboards within all mine water storage dams at all times to minimise the risk of discharge to surface waters - New on-site storages (including mine infrastructure dams, groundwater storage and treatment dams) are suitably designed, installed and maintained, including being lined to comply with a permeability standard of $< 1 \times 10^{-9}$ m/s	Appendix B Erosion and Sediment Control Plan & Surface Water Management Plan
Reject management	- Restrict emplacement of any reject material to the REA in a manner that is consistent with the EIS - Design and maintain tailings storage areas to prevent the movement of tailings seepage/leachate outside the REA	Rehabilitation Strategy
Chemical and hydrocarbon storage	Chemical and hydrocarbon products to be stored in bunded areas in accordance with the relevant Australian Standard	Surface Water Management Plan

5.2.1 Water Supply

5.2.1.1 Potable Water

Potable water is supplied to Tahmoor Coal by the Sydney Water Corporation, with the take-off from the main pipeline near the main administration building on Remembrance Drive, Tahmoor. The mine uses approximately 2.0 ML/day of potable and recycled water. Water supplied to the underground mine at Tahmoor Coal is sourced from recycled and potable water. Potable water is supplied to the underground via two surface water tanks, described in the table below. The recycled water plant described above has seen a dramatic reduction in daily (and annual) potable water usage at Tahmoor Coal.

Table 8 Tank Details

Tank No	Capacity	Location	Use
1	200 KL	Pit Top closest to Gas Extraction Plant	Underground process areas supply and statutory firefighting supply.
2	200 KL	Pit top closest to CHPP	Underground process areas supply and statutory firefighting supply.

5.2.1.2 Recycled Water

Whenever possible, recycled water will be used instead of potable water to minimise potable water consumption. Water is recycled by the CHPP from M4 dam, and used in coal washing and dust suppression, including a pipeline over 3R conveyor for the water cart fill point at the REA. Water is also drawn from dams S2/S3 for dust suppression on the coal stockpiles.

In May 2013 a recycled water plant was constructed at No.3 shaft to treat and recycle groundwater (up to 1ML/day). Treated water is supplied to underground as a potable substitute for industrial purposes only

(not for human consumption). A small amount of potable water is continued to be supplied to key underground process areas, such as the emulsion mixing station at the longwall. This recycled water plant significantly reduces Tahmoor Coal's potable water consumption.

5.2.1.3 Water Sharing Plans

The Natural Resources Access Regulator (NRAR) implements water regulation according to the Water Management Act 2000. A primary objective of this policy is the sustainable management and use of water resources, balancing environmental, social and economic considerations. NRAR have developed Water Sharing Plans (WSPs) for much of the State and these establish rules for sharing and trading water between the environment, town water supplies, basic landholder rights and commercial uses.

The Water Sharing Plan for Greater Metropolitan Region Unregulated River Water Sources (the WSP) is the relevant plan for surface waters at Tahmoor Coal.

Tahmoor Coal uses water for coal processing within the existing facilities at Tahmoor Coal and for control of dust emission from the REA. The water used in these operations is sourced from the underground operations and from water captured within the existing site water management system, principally at the coal handling area and REA. Some water is also supplied under agreement with Sydney Water. None of these activities involve extraction of water or water sharing from sources covered by the WSP.

Tahmoor Coal currently holds a WAL for the Sydney Basin Nepean Groundwater Source which is regulated in accordance with the *Greater Metropolitan Region Groundwater Sources Water Sharing Plan*. Additionally, Tahmoor Coal holds WALs for a number of Upper Nepean and Upstream Warragamba Water Source management zones as listed in **Table 9**.

Table 9 Tahmoor Coal Water Access Licences

WAL Number	Water Sharing Plan	Water Source	Management Zone	Entitlement	Category
36442	Greater Metropolitan Region Groundwater Sources WSP	Sydney Basin Nepean Groundwater Source	Nepean (2)	1,642 units	Aquifer
25777	Greater Metropolitan Region Unregulated River Water Sources WSP	Upper Nepean and Upstream Warragamba Water Source	Maldon Weir	5 ML	Unregulated river
43572			Stonequarry Creek	16 ML	
43656			Maldon Weir	25 ML	
SWC839757			Maldon Weir	11 ML	

Tahmoor Coal will ensure that it has sufficient water for all stages of the development of Tahmoor South, and if necessary, will adjust the scale of the development to match the available water supply.

5.2.1.4 Water Treatment

Tahmoor Coal will commission the WTP required under Special Condition E1.1 of EPL 1389.

5.2.2 Private Bores

5.2.2.1 Bore Census

Water level data for the private landholder bores identified in the Tahmoor South region were captured in accordance with Consent Condition B25 as part of the bore census completed prior to the commencement of Tahmoor South operations as outlined in the Groundwater Monitoring Plan (Appendix B of GWMP).

An initial field survey was conducted as part of the bore census to derive bore status and establish ongoing monitoring requirements and regimes for each bore. The bore census and monitoring of

boreholes may be staged appropriately based on mining progress. Monitoring of bores can only occur if access is granted by the landholder.

Groundwater modelling indicates 52 bores that may experience a potential impact, in the form of groundwater level drawdown exceeding 2 metres, resultant from extraction operations. A detailed survey of these private bores was undertaken to ascertain details on the current bore condition (i.e. operational, not in use, impacted, decommissioned, etc), and groundwater conditions (water levels and quality). The preliminary bore survey captured baseline data and can be completed in stages dependent on the proximity to the longwalls and commensurate with the extraction plan (i.e. A-block extracted first).

5.2.2.2 Make Good Strategy

The simplest means of addressing and managing the potential bore impacts is via the existing process to allow the mine to 'make-good' on the impacted users' water sources. Tahmoor Coal has been operating this process during the life of Tahmoor/Tahmoor North. The process allows for bore owners to apply to Tahmoor Coal if they believe their bore's level or water quality has declined and have an assessment of whether the mine is the cause of this. If it is deemed that the mine is responsible, then remedial actions could involve deepening and/or replacing bores and wells, and/or providing an alternative water source to affected users.

Details of this including trigger levels for investigating potentially adverse impacts on water supplies are provided within Groundwater Management Plan.

Mitigation measures such as compensatory water supply may be implemented depending on the source of groundwater impact. The compensatory water supply measures must provide an alternative long-term supply of water that is equivalent, in quality and volume, to the loss attributable to the development. Equivalent water supply should be provided (at least on an interim basis) as soon as practicable after the loss is identified, unless otherwise agreed with the landowner. The burden of proof that any loss of water supply is not due to mining impacts rests with Tahmoor Coal, in accordance with Consent Condition B27.

If there is a dispute as to whether the loss of water is to be attributed to the development or the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Planning Secretary for resolution, in accordance with Consent Condition B28. If Tahmoor Coal is unable to provide an alternative long-term supply of water, compensation will be provided to the affected land owner, to the satisfaction of the Planning Secretary.

5.3 Contingency Plan

In accordance with Condition E5 (f) of the Consent, in the event that performance measures are considered to have been exceeded or are likely to be exceeded, a response will be undertaken in accordance with the Trigger Action Response Plans (TARP) provided in Surface Water Management Plan and Groundwater Management Plan. The TARP responses are a contingency plan that describes the management/corrective actions which can be implemented where required to remedy the exceedance.

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

5.4 Adaptive Management/Continuous Improvement

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

- 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

Tahmoor Coal have adopted the “Plan-Do-Check-Act” model as shown in **Figure 3**. 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.

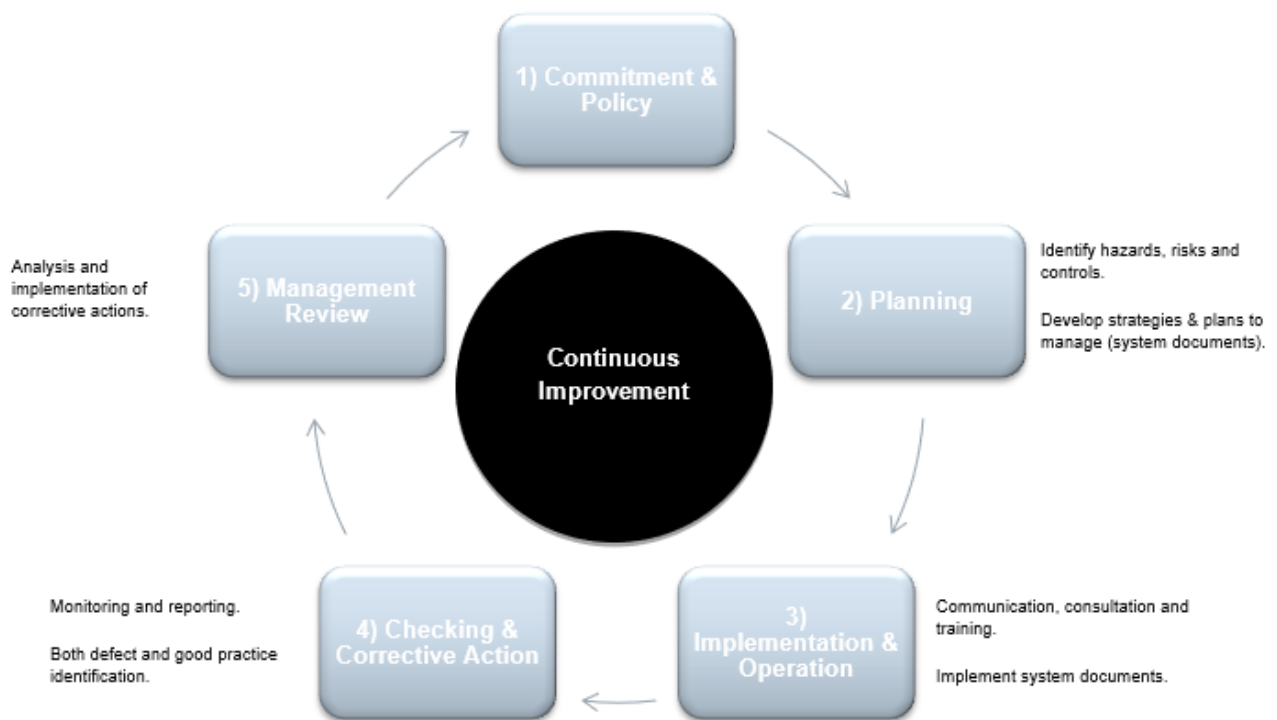


Figure 3: Continuous Improvement Model

6 Implementation and Reporting

6.1 Tahmoor Environmental Management System (EMS) Framework

The Tahmoor Environmental Management System (EMS) Framework provides the strategic context for the environmental management of Tahmoor Coal and forms part of the broader Health, Safety, Environment and Community (HSEC) management systems at Tahmoor Coal. The EMS outlines how Tahmoor Coal manages environment and community (E&C) aspects, impacts and performance. It provides a framework for the standards, plans and procedures implemented to ensure operations are managed in accordance with the ISO:14001 principles.

The objectives of the EMS are:

- a) To provide an overall framework for environmental management at Tahmoor utilising the principles of ISO:14001;
- b) To ensure compliance with all development consent, licences and approvals at Tahmoor Coal;
- c) To detail the relationship and interactions between various operational and environmental components at Tahmoor Coal;
- d) To provide effective mechanisms for external communications, maintaining a relationship with the local community; and
- e) To assist Tahmoor Coal employees and contractors in administering their responsibilities regarding environmental management.

This plan will be implemented in conjunction with the EMS framework.

6.2 Reporting

Tahmoor Coals' reporting requirements are outlined in **Table 10** below.

Table 10 Tahmoor Coal Water Reporting Requirements

Instrument	Report	Details	Submitted/Uploaded
Consent Condition E13 and E14	Annual Review	Tahmoor Coal will report on water captured, intercepted or extracted from the site each year (direct and indirect) in the Annual Review. Reporting will include water take where a water licence is required and where an exemption applies. Where a water licence is required the water take needs to be reviewed against existing water licences. Tahmoor Coal submit the Annual Review by the end of March each year. The Annual Review: - describes the development (including any rehabilitation) that was carried out in the previous calendar year, and the development that is proposed to be carried out over the current calendar year; - includes a comprehensive review of the monitoring results and complaints records of the development over the previous calendar year, including a comparison of these results against the relevant statutory requirements, limits or performance measures/criteria; requirements of any plan or program required under this consent; monitoring results of previous years; and relevant predictions in the EIS;	Copies of the Annual Review are submitted to DPIE, Council and relevant agencies and made available to the CCC and any interested person upon request. Copies are also available on the Tahmoor Coal website http://www.simec.com/mining/tahmoor-coal-pty-ltd/publications/

Instrument	Report	Details	Submitted/Uploaded
		- identifies any non-compliance or incident which occurred in the previous calendar year, and describe what actions were (or are being) taken to rectify the non-compliance and avoid reoccurrence; evaluates and reports on the effectiveness of air quality management systems; and compliance with the performance measures, criteria and operating conditions of this consent; - identifies any trends in the monitoring data over the life of the development and provide any raw monitoring data as requested by the Planning Secretary; - identifies any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and - describes what measures will be implemented over the next calendar year to improve the environmental performance of the development.	

6.3 Incidents

The Consent defines an incident as *'an occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance'*.

Material Harm is defined within the Consent as 'harm to the environment that:

- involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial, or results in actual or potential loss or property damage of an amount, or
- amounts in aggregate, exceeding \$10,000, (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment)

This definition excludes "harm" that is authorised under either this consent or any other statutory approval.'

Tahmoor Coal manages and responds to incidents in accordance with the following plans:

- Emergency and Incident Manual (TAH-HSEC-232).
- Pollution Incident Response Management Plan (TAH-HSEC-00155)
- Notification of Environmental Pollution Incidents (TAH-HSEC-00224)

These plans have been developed to manage preparation, incident response and reporting requirements under the Protection of the Environment Operations Act 1997 (NSW).

The management plans provide roles and responsibilities, management strategies, action and response plans and record management protocols for incidents and emergencies.

A Written Incident Notification will be submitted to the Planning Secretary via the Major Projects website within seven days after Tahmoor Coal becomes aware of an incident.

Written Incident Notifications will include:

- the development and application number;
- details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident);
- how the incident was detected;
- when Tahmoor Coal became aware of the incident;
- any actual or potential non-compliance with conditions of consent;

- f) describe what immediate steps were taken in relation to the incident;
- g) identify further action(s) that will be taken in relation to the incident; and
- h) identify a project contact for further communication regarding the incident.

Within 30 days of the date on which the incident occurred or as otherwise agreed to by the Planning Secretary, Tahmoor Coal will provide the Planning Secretary and any relevant public authorities (as determined by the Planning Secretary) with a Detailed Incident Report.

Detailed Incident Reports will include:

- a) a summary of the incident;
- b) outcomes of an incident investigation, including identification of the cause of the incident;
- c) details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence; and
- d) details of any communication with other stakeholders regarding the incident.

6.4 Non-Compliances

The Consent defines a non-compliance as 'an occurrence, set of circumstances or development that is in breach of the consent'.

Non-compliances or system defects detected during monitoring, inspections and audits will be managed in accordance with the Tahmoor Coal Environmental Management Framework Document (TAH-HSEC-00173), with corrective action plans developed and implemented to rectify any issues.

The Planning Secretary will be notified in writing via the Major Projects website within seven days after Tahmoor Colliery becomes aware of any non-compliance.

If a non-compliance is detected, the following steps will be followed:

- a) Identify and confirm the non-compliance (i.e. review against approval criteria or condition and confirm that a non-compliance has occurred);
- b) Complete internal environmental incident reporting documentation including an investigation to capture all relevant information;
- c) In accordance with the relevant approval, determine what action (i.e. external reporting) is required. Specifically, determine if immediate reporting is required and to which stakeholders, or ensure that the event is captured for future reporting;
- d) Following the incident investigation, develop a corrective action plan aimed at preventing future re-occurrence; and
- e) Complete all required reporting and consult with relevant agencies on the corrective action plan to be implemented.

A non-compliance notification will identify the following:

- a) the development and the application number,
- b) the condition of consent that the development is non-compliant with
- c) the way in which it does not comply and the reasons for the non-compliance (if known); and
- d) any actions which have been, or will be, undertaken to address the non-compliance.

A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.

6.5 Exceedances

For the purposes of this plan, an exceedance is defined 'any instance where monitoring results show an exceedance of criterion outlined within the Consent or other regulatory instrument'.

Exceedances will be managed by Tahmoor Coal through the Contingency Plan and TARP process as outlined in **Section 5.2.2** and **Appendix A**.

As soon as practicable and no longer than 7 days after obtaining monitoring results showing an exceedance of any noise or air quality criterion in PART B of the Consent, Tahmoor Coal will provide the details of the exceedance to any affected landowners, tenants and the CCC. NSW Government 36 Tahmoor South Coal Project Department of Planning, Industry and Environment (SSD 8445) D7.

For any exceedance of any air quality criterion in PART B of the Consent, Tahmoor Coal will also provide to any affected landowners and tenants a copy of the fact sheet entitled "Mine Dust and You" (NSW Health, 2017).

6.6 Complaints and Disputes

Community Complaints at Tahmoor Coal are managed in accordance with TAH-HSEC-00119- Communication and Engagement and TAH-HSEC-00120- Community Complaints & Enquiry Procedure. Tahmoor Coal operates a 24-hour complaints line (1800 154 415) for receiving community complaints and other stakeholder communications. The general process detailed in TAH-HSEC-00120- Community Complaints & Enquiry Procedure for responding to complaints is:

- a) Acknowledging all complaints and responding to the complainant within 24 hours where practicable;
- b) Registering all complaint details in Cority;
- c) Investigating complaints impartially considering the facts and the circumstances prevailing at the time;
- d) Implementing corrective actions if required; and
- e) Reporting to relevant stakeholders of investigation outcomes and corrective actions taken.

A record of all community complaints in relation to activities undertaken by the licensee must be kept in a legible form and be in accordance to Tahmoor Coal's Environmental Protection Licence 1389.

The following information will also be kept in the event of a community complaint; as required by Section M4 in Tahmoor Coal's EPL 1389:

- a) The date and time of the complaint;
- b) The method by which the complaint was made;
- c) Any personal details of the complainant which were provided by the complainant or a note to that effect;
- d) The nature of the complaint;
- e) The action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
- f) If no action was taken by the licensee, the reasons why no action was taken.

These records must be kept for at least 4 years after the complaint was made and be able to be produced to any authorised officer who asks to see them.

In the event of a dispute or conflict between Tahmoor Coal personnel and a member of the community, the Tahmoor Coal E&C Manager will facilitate communication between both parties to reach a resolution, which may include a meeting with the complainant to discuss the issue.

Where relevant, negotiations will be initiated in accordance with any relevant Consent conditions. This general process is documented in *TAH-HSEC-00119- Communication and Engagement*. If a dispute cannot be resolved, the matter will be escalated to involve the site Operations Manager or General Manager as required and may involve consultation with the relevant government agency to assist in reaching a determination on the matter

6.7 Risk and Change Management

Aspects and impacts at Tahmoor Coal are considered for operational activities, legislative requirements and internal and external stakeholder views. Key aspects and impacts are identified during the annual review of the Tahmoor Coal Environment and Community (E&C) Broad Brush Risk Assessment (BBRA) and the operational Life of Mine (LOM) Risk Assessment and Site Wide Broad-Brush Risk Assessment (Mine BBRA).

The purpose of the E&C BBRA is to identify significant E&C aspects and impacts across the site, the risk they pose and the controls necessary to effectively manage them. Management of potential impacts is prioritised according to the level of risk each aspect is assigned. Once all identified aspects, impacts, risks and management controls have been identified within the Annual E&C Risk Assessment, associated plans are updated accordingly.

The purpose of the Mine BBRA is to identify significant aspects and impacts of operations at a site level. Existing or proposed management controls are identified to reduce the risk of impacts on the E&C. The need for any new (or modifications to existing) approvals is also identified during this process.

The LOM Risk Assessment considers aspects and impacts of business activities at a strategic level. These risk assessments cover the life of mine risks associated with each operation. The outcomes of the LOM Risk Assessment are used in conjunction with the Tahmoor Coal E&C BBRA and Mine BBRA to develop the annual capital and operational budget and the associated work schedule.

In accordance with Tahmoor Coal's Health & Safety Management System, project and activity specific risk assessments are completed as required and include assessment of E&C risks.

6.8 Roles & Responsibilities

E&C management is regarded as part of the responsibilities of all employees and contractors at Tahmoor Coal. Specific information pertaining to the role, responsibility, authority and accountability of key personnel involved in environmental management at Tahmoor Coal is provided in **Table 11** below.

Table 11 Accountabilities

Role	Accountabilities for this document
Head of Operations	Provide adequate environmental personnel/resources for implementation of this plan and associated plans.
Environment & Community (E&C) 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. Liaise with the community as required and as per the Stakeholder Engagement Strategy, including facilitation of Community Consultative Committee meetings.
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.

Role	Accountabilities for this document
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.

6.9 Internal Audits & Reviews

In accordance with internal company requirements, Tahmoor Coal has implemented a system for the monitoring and review of E&C performance at the site. Tahmoor Coal is to provide ongoing monitoring and regular management review of E&C performance to:

- Confirm the adequacy and effectiveness of management plans, procedures and standards;
- Address any identified weaknesses;
- Share good performance and lessons learnt with other sites; and
- Ensure ongoing compliance with all leases, licences and approvals.

Process or area specific internal audits are also conducted periodically, generally administered by the General Manager E&C, focussing on the following areas:

- Air quality;
- Water management;
- Erosion and sediment control; and
- Statutory approvals.

These audits may be conducted by consultants on behalf of Tahmoor Coal, by Liberty GFG employees or may be self-assessments conducted by Tahmoor Coal personnel. Audit results and corrective actions are recorded in Cority and assigned to responsible personnel for completion within appropriate timeframes.

6.10 Independent Environmental Audit

In accordance with Conditions E15 – E20 of the Consent, Tahmoor Coal will complete Independent Environmental Audits of the development at the frequencies determined within DPIE's *Independent Audit Post Approval Requirements (2020)*, and outlined below in **Table 12**.

Table 12 Independent Audit Frequencies

Phase	Initial Independent Audit	Ongoing Independent Audit Intervals
Construction	Within 12 weeks of the commencement of construction	At intervals, no greater than 26 weeks from the date of the initial Independent Audit or as otherwise agreed by the Secretary.
Operation	Within 26 weeks of the commencement of operation	At intervals, no greater than 3 years or as otherwise agreed by the Secretary.
Closure /Rehabilitation	Within 52 weeks from notifying of suspension/ceasing of operations	At intervals no greater than 1 year or as otherwise agreed by the Secretary.

The audits will assess:

- a) Environmental performance of the Mine;
- b) Compliance with the requirements of all relevant:
 - i. Development consents;
 - ii. Mining leases;
 - iii. Exploration Authorisations; and
 - iv. Site environmental protection licence

The audit will also assess:

- c) Environmental assessments; and
- d) Plans and programs required by above approvals.

The audit will review the adequacy of the following requirements under the abovementioned approvals:

- e) Strategies;
- f) Plans; and
- g) Programs

The audit will recommend appropriate measures and corrective actions to improve environmental performance at Tahmoor Coal. Audit results and corrective actions are recorded in Cority and assigned to responsible personnel for completion within appropriate timeframes.

6.11 Employee & Contractor Training

Environmental training for Tahmoor Coal employees and contractors is conducted in accordance with the Environment & Community Training Needs Analysis, which Tahmoor Coal manages through the Scenario Training Database. General environmental awareness training is provided to all employees and contractors annually through a generic visitor induction and the SafeCoal training session scheduled by the Tahmoor Coal Health, Safety & Training Department.

7 Review and Improvement

7.1 Plan Audit

Audits of the WMP 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 WMP 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 WMP, they may also involve discussions with personnel involved in the management plan to determine understanding and compliance.

Should an audit of this WMP 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.

The E&C Manager is responsible to verify that the nominated corrective action has been implemented by way of a follow up audit.

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

7.2 Plan Review

This WMP 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 WMP, 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, external service providers may be included in the review process. All reviews are to be documented.

8 Document Information

Relevant legislation, standards and other reference information will be regularly reviewed and monitored for updates and will be included in the site management system. Related documents and reference information in this section provides the linkage and source to develop and maintain site compliance information.

8.1 Access to Information

Information pertaining to Tahmoor Coal's general environmental performance against internal targets and external approvals criteria is reported to the community via the mine website and Tahmoor Coal's Community Consultative Committee (TCCCC). Examples of reports to government agencies include:

- a) Environmental Protection Licence Annual Return (submitted to Environment Protection Authority);
- b) Annual Review (submitted to Department of Planning & Infrastructure, Council, TCCCC etc.); and
- c) Independent Environmental Audit (submitted to Department of Planning & Infrastructure).

These reports are prepared in accordance with relevant guidelines and *TAH-HSEC-00119- Communication and Engagement* and are published on Tahmoor Coal's website in accordance with *TAH-HSEC-00221- Website Management Procedure*.

8.2 Related Documents

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

Table 13 Related Documents

Number	Title
TAH-HSEC-00375	Tahmoor South Environmental Management Strategy Management Plan
TAH-HSEC-00119	Communication and Engagement
TAH-HSEC-00120	Community Complaints & Enquiry Procedure
TAH-HSEC-00221	Website Management Procedure
TAH-HSEC-00031	Community Development Plan
TAH-HSEC-00039	Stakeholder Engagement Plan
TAH-HSEC-00232	Emergency and Incident Manual
TAH-HSEC-00155	Pollution Incident Response Management Plan
TAH-HSEC-00224	Notification of Environmental Pollution Incidents
TAH-HSEC-00374	Erosion and Sediment Control Plan
TAH-HSEC-00373	Groundwater Management Plan
TAH-HSEC-00371	Surface Water Management Plan

8.3 Reference Information

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

Table 14 Reference Information

Title
Department of Environment and Climate Change (DECC), 2008. Managing Urban Stormwater – Soils and Construction, Volume 2A Installation of services.
Department of Environment and Climate Change (DECC), 2008. Managing Urban Stormwater – Soils and Construction, Volume 2C Unsealed Roads.
Department of Environment and Climate Change (DECC), 2008. Managing Urban Stormwater – Soils and Construction, Volume 2D Main Road Construction.
Department of Environment and Climate Change (DECC), 2008. Managing Urban Stormwater – Soils and Construction, Volume 2E – Mines and Quarries.
Department of Primary Industries (DPI), 2012. Controlled Activities on Waterfront Land
Department of Primary Industries (DPI), 2013. Policy and Guidelines for Fish Habitat Conservation and Management NSW Fisheries, 2003. Why Do Fish Need To Cross The Road? Fish Passage Requirements for Waterway Crossings

9 Change Information

9.1 Change Information

Document History

Version	Date Reviewed	Review team (Consultation)	Change Summary
0.1	19/01/2022	Zina Ainsworth	Version 1
1.0	14/03/2022	Zina Ainsworth, Charlie Wheatley	Revision following DPIE comments
2.0	17/06/2022	Natalie Brumby	Reviewed in accordance with Condition 46 of DA 67/98 and condition E7(b) of SSD 8445 following submission of the 2021 Annual Review to DPE. Reviewed in accordance with condition E7(e) of SSD 8445 following change in development phase under condition A9 (construction commencement on 16 th May 2022).
3.0	19/10/2022	Natalie Brumby	Reviewed in accordance with Condition E7(c), (d) and (e) following an Independent Environmental Audit (10 th August 2022), following the approval of any modification (Mod 1 approved 19 th July 2022) and following the commencement of first and second workings (18 th Oct 2022) of the Consent SSD 8445.
4.0	16/06/2023	Natalie Brumby	Reviewed in accordance with Condition E7(b) following the submission of an Annual Review (31 st March 2023) and Condition E7(c) following the submission of an Independent Environmental Audit (2 nd June 2023)
5.0	12/09/2023	Camilla West (ATC Williams), Natalie Brumby	Reviewed and updated in accordance with Condition E7 (d) following the approval of any modification (MOD 2 - 13 th June 2023) of the Consent SSD 8445.

APPENDIX A – Letter of Endorsement



Planning,
Industry &
Environment

Ms Zina Ainsworth
Manager Environment and Community
SIMEC Mining
2975 Remembrance Drive
Tahmoor NSW 2573

16/08/2021

Dear Ms. Ainsworth

Tahmoor South Coal (SSD-8445) Management Plan Experts Endorsement

I refer to your request (SSD-8445-PA-2) for the Secretary's approval of suitably qualified persons to prepare the Management Plans for the Tahmoor South Coal (SSD-8445).

The Department has reviewed the nominations and information you have provided and is satisfied that these experts are suitably qualified and experienced. Consequently, I can advise that the Secretary approves the appointment of the following experts to prepare the following Management Plans:

Management Plan	Suitably Qualified Person
Noise Management Plan	Michelle Grierson – Senior Environmental Scientist Umwelt Australia Pty Ltd Katie Teyhan (Technical Reviewer) - Associate Acoustics Manager Newcastle EMM
Spontaneous Combustion Management Plan	Michelle Grierson – Senior Environmental Scientist Umwelt Australia Pty Ltd
Water Management Plan	Camilla West - Senior Water Resources Scientist Tony Marszalek - Director and Principal Water Resources Engineer Hydro Engineering & Consulting Pty Ltd
Groundwater Management Plan	Will Minchin – Hydrogeologist Maxime Philibert - Hydrogeologist SLR Consulting
Biodiversity Management Plan	Luke Baker - Team Leader Ecology Niche Environment and Heritage
Rehabilitation Strategy	Michelle Grierson – Senior Environmental Scientist Umwelt Australia Pty Ltd
Traffic Management Plan	Michelle Grierson – Senior Environmental Scientist Umwelt Australia Pty Ltd
Social Impact Management Plan	Amanda Bateman – Community Liaison Specialist Tahmoor Coal Pty Ltd

It is noted that it was proposed that Michelle Grierson – Senior Environmental Scientist Umwelt Australia Pty Ltd was proposed to prepare the Air Quality and Greenhouse Gas Management Plan. Given the significance of the technical aspects associated with air quality and greenhouse gas emissions at the project, the Department requests that a technical specialist be proposed to work with Ms Grierson to prepare this Air Quality and Greenhouse Gas Management Plan. Please provide further details of the proposed air quality expert by lodging further details via the portal.

320 Pitt Street Sydney 2000 | GPO Box 38 Sydney 2001 | dpie.nsw.gov.au | 1

If you wish to discuss the matter further, please contact Wayne Jones on (02) 6575 3406.

Yours sincerely

A handwritten signature in black ink, appearing to be 'S O'Donoghue'.

Stephen O'Donoghue
Director
Resource Assessments
As nominee of the Secretary



Ms Zina Ainsworth
Manager Environment and Community
Tahmoor Coking Coal Operations
PO Box 100
TAHMOOR NSW 2573

15/11/2021

Dear Ms Ainsworth

Tahmoor South Project (SSD 8445)
Endorsement of suitably qualified persons

I refer to your request dated 10 November 2021 (SSD-8445-PA-10) seeking the Secretary's endorsement of suitably qualified and experienced persons to prepare the Water Management Plan as required under condition B34 of Schedule 3 of the development consent (SSD 8445).

The Department has reviewed the nominations and information you have provided and is satisfied that these persons are suitably qualified and experienced. Consequently, I can advise that the Secretary endorses the appointment of the following:

Consent Condition	Management Plan/Component	Suitably Qualified Person/s
Part B, B34	Water Management Plan (overarching document containing generic Tahmoor Coal material and management measures from Surface Water and Groundwater Management Plans)	Michelle Grierson, Senior Environmental Scientist Umwelt (Australia) Pty Ltd
B34 (e) (i)	Site Water Balance (appendix to Water Management Plan)	Camilla West, Senior Water Resources Scientist Tony Marszalek, Director and Principal Water Resources Engineer Hydro Engineering & Consulting Pty Ltd
B34 (e) (ii)	Salt Balance (appendix to Water Management Plan)	Camilla West, Senior Water Resources Scientist Tony Marszalek, Director and Principal Water Resources Engineer Hydro Engineering & Consulting Pty Ltd
B34 (e) (iii)	Erosion and Sediment Control Plan (appendix to Water Management Plan)	Michelle Grierson, Senior Environmental Scientist Umwelt (Australia) Pty Ltd
B34 (e) (iv)	Surface Water Management Plan (appendix to Water Management Plan)	Camilla West, Senior Water Resources Scientist Tony Marszalek, Director and Principal Water Resources Engineer Hydro Engineering & Consulting Pty Ltd
B34 (e) (v)	Groundwater Management Plan (appendix to Water Management Plan)	Will Minchin – Hydrogeologist Maxime Philibert - Hydrogeologist SLR Consulting
B34 (e) (vi)	Long-term Water Management Strategy (appendix to Water Management Plan)	Camilla West, Senior Water Resources Scientist Tony Marszalek, Director and Principal Water Resources Engineer Hydro Engineering & Consulting Pty Ltd

If you wish to discuss the matter further, please contact me on jessie.evans@dpie.nsw.gov.au.

Yours sincerely

4 Parramatta Square, 12 Darcy Street Parramatta 2150 | dpie.nsw.gov.au | 1



Jessie Evans
Director
Resource Assessments

As nominee of the Secretary

APPENDIX B – TAH-HSEC-00374 - Erosion and Sediment Control Plan (ESCP)

APPENDIX C – Consultation

Agency	Date response received	Comments	Response
DPIE Water	NA	No comments on the plan have been received as of 2517/031/2022. Feedback provided by DPIE Water via email on 03/04/2022 stated that DPIE Water would prefer to review the plan once it is in final draft form, with all required elements and supporting work and documents (including modelling) complete and available.	Tahmoor Coal will provide the final suite of water related management plans to DPIE Water for review prior to secondary workings. This will allow them to review all documents, including modelling and the Site Water Balance, Salt Balance and Long Term Water Management Strategy at the same time as requested.
EPA	22/12/2021	Response received on 22/12/2022, no comments on Water Management Plan provided. One comment on Erosion and Sediment Control Plan: The EPA has a minor comment to make on the Erosion and Sediment Control Plan as follows. Table 3 in the plan could describe the points where chemical flocculation is added to the system to improve water quality. For example, chemical flocculant is added to water entering dam S4 to remove fine sediment and improve the quality of discharges through LDP1 and any overflow discharges from LDP4.	No response required. Information on chemical flocculation included within Table 3 of the Erosion and Sediment Control Plan.

APPENDIX D – Approval Letter



Planning,
Industry &
Environment

Zina Ainsworth
Environment & Community Manager
Tahmoor Coal Pty Ltd
2975 Remembrance Drive
Tahmoor, NSW, 2573

14/04/2022

Dear Ms. Ainsworth

**Tahmoor South Coal (SSD-8445)
Water Management Plan**

I refer to the Water Management Plan submitted in accordance with Condition B34 of Schedule 2 of the Development Consent for Tahmoor South Coal (SSD-8445).

The Department has carefully reviewed the document and is satisfied that it meets the requirements of the relevant conditions of consent.

Accordingly, the Secretary has approved the Water Management Plan (Version V2, dated 14 March 2022) and associated Erosion and Sediment Control Plan (Version V3, dated 14 March 2022). Please ensure that the approved plans are placed on the project website at the earliest convenience.

If you wish to discuss the matter further, please contact Wayne Jones on (02) 6575 3406.

Yours sincerely

A handwritten signature in black ink, appearing to read 'W Jones'.

Wayne Jones
Team Leader - Post Approval
Resource Assessments

As nominee of the Secretary

4 Parramatta Square, 12 Darcy Street Parramatta 2150 | dpie.nsw.gov.au | 1