DEMOLITION ENVIRONMENTAL MANAGEMENT PLAN

LIDDELL POWER STATION DEMOLITION PROJECT

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a DELTA GROUP company

DEMOLITION ENVIRONMENTAL MANAGEMENT PLAN

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This document has been developed to assist CMA Contracting Pty Ltd (CMA) to better understand Environmental Management in the workplace. While every effort has been made to ensure the accuracy of the material in this document, this publication is not meant to substitute for the legislation. For the specific requirements on an issue covered in this document, persons should refer directly to the relevant legislation in their location.
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The QSE documentation supporting this project comprises both client-supplied and CMA Contracting materials. This integrated system demonstrates a unified approach that upholds governance standards and ensures compliance with all relevant contractual, statutory, and regulatory requirements, while aligning proven processes from both parties to support successful project delivery.

REVISION REGISTER

REV	DATE	DESCRIPTION OF CHANGE	PAGE/S	REVIEWED BY	APPROVED BY
0	07/04/2025	Initial submission to DPHI	All	TS	RZ
1	13/05/2025	Address Site Auditor comments dated 16 April 2025	All	TS	RZ
2	03/06/2025	Address Site Auditor dated 28 May 2025 and SafeWork NSW comments dated 30 May 2025	All	TS	RZ
3	30/06/2025	Address DPHI comments dated 25/06/2025	13, 14, Appendices B, C, D, & E	TS	RZ
4	02/07/2025	Address DPHI comments dated 01/07/2025	15, 49	TS	RZ
5	04/07/2025	Disclaimer updated Address DPHI comments dated 03/07/2025	2, 16, 54	TS	RZ
6	13/03/2026	Section 3.2.2 updated to include statement of commitment GG3 Section 5.8 updated to address biodiesel investigation for use	40 48	TS	RZ
7	01/10/2026	Appendix E replaced with updated Dust Management Sub-Plan F2 dated 30 January 2026, removing BAM-specific monitor requirements in Section 7.3.3 (dust monitoring remains required) and excluding scrap-steel trucks from the load-covering requirement in Section 7.2.	Appendix E	RZ	TS

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1 GLOSSARY

ACHMP	Aboriginal Cultural Heritage Management Plan
ACM	Asbestos Containing Material
AGLM	AGL Macquarie (the Client)
ALARP	As low as reasonably practicable
AS	Australian Standard
DEMP	Demolition Environmental Management Plan
DPHI	Department of Planning, Housing, and Infrastructure
DMP	Dust Management Plan
EIS	Environmental Impact Statement
EPA	Environmental Planning and Assessment
EPL	Environmental Protection License
ERT	Emergency Response Team
GVDA	Ground and Vegetation Disturbance Assessment
HSEQ	Health, Safety, Environment and Quality
IMS	Integrated Management System
IWTS	Integrated Waste Tracking Solution
NVMP	Noise and Vibration Management Plan
ISO	International Organisation of Standardisation
LAD	Liddell Ash Dam
LPS	Liddell Power Station
PAR	Post-Approval Requirements
PIRMP	Pollution Incident Response Management Plan
POEO	Protection of the Environment Operations
RFS	NSW Rural Fire Service
RtS	Response to Submission
SDS	Safety Data Sheet
SoC	Statement of Commitment
SSD	State Significant Development
SMF	Synthetic Mineral Fibre
TARP	Trigger Action Response Plan

2 INTRODUCTION

The Liddell Power Station (LPS) ceased power generation operation on 28th April 2023 as part of AGL Macquarie's (AGLMs) AGLMs transition towards a low-carbon future and commitment to the closure of its coal fired power stations at the end of their operating life.

The development has been declared a State Significant Development (SSD) in accordance with Section 4.36(2) of the Environmental Planning and Assessment Act 1979 (EPandA Act) and clause 2.5; 2.19 and 23(5) of Schedule 1 of State Environmental Planning Policy (Planning Systems) 2021 (Planning Systems SEPP). It is permissible with development consent.

An Environmental Impact Statement (EIS) was prepared and submitted to the Department of Planning, Housing, and Infrastructure (DPHI), which was exhibited 4 May to 31 May 2023. A Response to Submissions (RtS) Report (GHD, 2024a) was prepared 19 February 2024 to address submissions received during exhibition. An Amendment Report (GHD, 2024b) was subsequently submitted 11 June 2024 addressing minor changes to the development including a reduction in the disturbance footprint to reduce biodiversity and cultural heritage impacts. The EIS, RtS and Amendment Report will be collectively referred to in this DEMP as the 'environmental assessments'.

The development was approved by DPHI on 31 January 2025, with Development Consent SSD 24937520 (the Consent) issued.

The Development will be conducted in compliance with conditions the Consent, relevant licenses and permits. This package of work enables demolition of the structures and infrastructure within the areas outlined in Figure 1 and Figure 2.

To enable the demolition of LPS and associated infrastructure (the Demolition), AGLM and relevant stakeholders are required to prepare management documents, strategies and procedures to support the works, with regards to environmental approvals and legislation.

LPS is located just outside of Muswellbrook, in the New South Wales Hunter Valley along the New England Highway. The station consists of 4 x 500-megawatt steam driven turbines, 4 x coal fired boilers and 2 x reinforced concrete chimneys stacks. The site was opened for operations in May 1971 and retired from service in 2023.

LPS also comprises of associated coal handling facilities, the Hunter Valley Gas Turbines (HVGTs), Transgrid Switchyard (not owned by AGL), Liddell Ash Dam (LAD) and associated support facilities and infrastructure. The site is spread across 960 Hectares and forms part of the greater AGL Macquarie (AGLM) operations.

Figure 1 – Development Area

Figure 2 – LPS Demolition Area

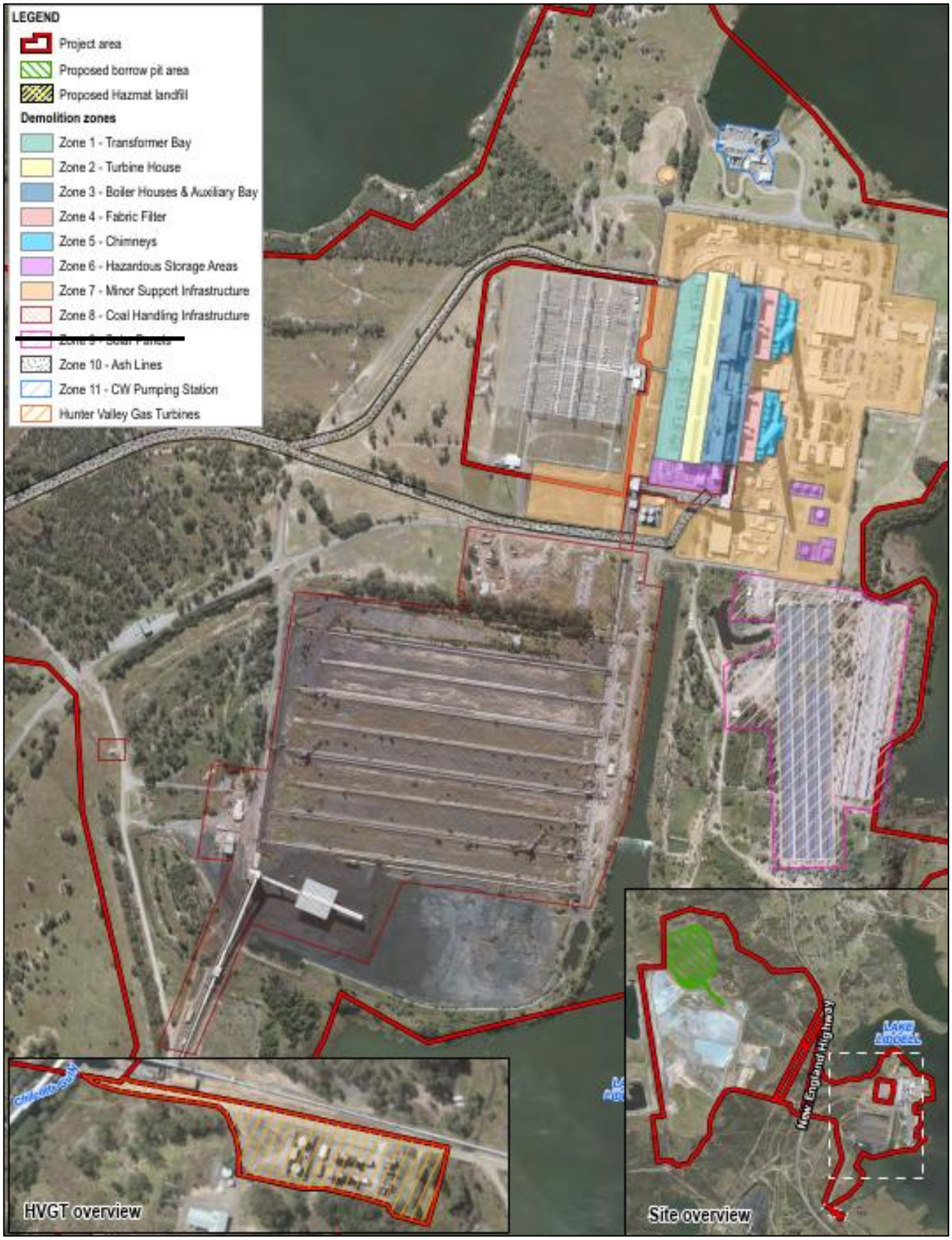

Figure 3 – LPS Demolition Zones

2.1 PURPOSE

Part C, Conditions C16 to C22 of the Consent requires the preparation of a Demolition Environmental Management Plan (DEMP) and the following associated sub-plans:

- Asbestos Management Sub-Plan (AMSP).
- Soil and Water Management Sub-Plan (SWMSP).
- Dust Management Sub-Plan (DMSP).
- Blast Management Sub-Plan (BMSP).

This DEMP is only relevant to Stage 1 of the Consent and is not relevant to Stage 2 and Stage 3.

2.1.1 DEMOLITION ENVIRONMENTAL MANAGEMENT PLAN

This DEMP provides an outline of the environmental management measures related to the Demolition. The Demolition area is as outlined in Figure 1 and Figure 2. The DEMP details how the relevant conditions of the Consent will be satisfied. Refer to Table 3.

This plan sets out the principles and responsibilities by which activities are to be organised and managed in a consistent manner.

This DEMP outlines how the above fundamentals will be achieved throughout the Demolition. This plan forms part of the overall Health, Safety, Environment and Quality (HSEQ) system for the Demolition.

In accordance with condition C17 of the Consent, Demolition will not commence until this DEMP is approved by the Planning Secretary.

In accordance with condition C18 of the Consent, this DEMP will be implemented for the duration of demolition works.

2.1.2 ASBESTOS MANAGEMENT SUB PLAN

The demolition works consists of removal of all Asbestos Containing Material (ACM) and Synthetic Mineral Fibre (SMF) from the structures to be demolished and disposal at the onsite asbestos disposal facility.

An AMSP has been developed (refer to Appendix C) to manage the above ACM and SMF removal works and has been prepared in accordance with Part C, Condition C19 of the Consent and:

a) Has been prepared in accordance with the SafeWork NSW 2022 Code of practice: How to safely remove asbestos, SafeWork: guidance on managing asbestos in soil, Schedule B2 of the NEPM and requirements of the Site auditor.

b) Identifies any known or potential areas of concern within the approved development area for asbestos containing materials and synthetic mineral fibre.

c) Includes:

   (i) procedures for identifying, handling and disposing of asbestos waste, asbestos containing materials and synthetic mineral fibre.

   (ii) procedures for interim storage of asbestos prior to disposal and disposal of asbestos.

   (iii) outlines the relevant requirements of conditions C1 to C13 of the Consent for the management of asbestos waste, asbestos containing materials and synthetic mineral fibre.

d) Addresses Statement of Commitments of the Consent DM1, AQ2, HR6, and HR7

e) Has been approved by DPHI on 18 June 2025 *[ref: SSD-24937520-PA-10]* (refer to Appendix C)

2.1.3 SOIL AND WATER MANAGEMENT SUB PLAN

The SWMSP (refer to Appendix D) has been prepared for the management of soil and water during the demolition works. The SWMSP has been prepared in accordance with Part C, Condition C21 of the Consent and:

a) Has been prepared by a suitably qualified and experienced person/s;

b) Identifies the clean and dirty water management system;

c) Describes the mitigation measures that will be implemented to:

   (i) comply with the conditions of the Consent, including the relevant performance measures identified in Table 3 of the Consent.

   (ii) manage the risks identified in the environmental risk assessment required by condition B1 of the Consent.

   (iii) implement the commitments detailed in the documents listed in condition A2(c) of the Consent.

d) Includes a monitoring, evaluation and reporting program that uses an approach that is consistent with the environmental management strategy required by condition B1 of the Consent.

e) Has been approved by DPHI on 22 May 2025 [ref: SSD-24937520-PA-15] (refer to Appendix D)

2.1.4 DUST MANAGEMENT SUB PLAN

The DMSP (refer to Appendix E) has been prepared for the management of dust during the demolition works. The DMSP has been prepared in accordance with Part C, Condition C22 of the Consent and:

a) Has been prepared by a suitably qualified and experienced person/s.

b) Describes the mitigation measures that will be implemented to:

   (i) comply with the conditions of the Consent.

   (ii) manage the risks identified in the environmental risk assessment required by condition B1 of the Consent.

c) Includes a monitoring, evaluation and reporting program that uses an approach that is consistent with the environmental management strategy required by condition B1 of the Consent.

d) Has been approved by DPHI on 23 May 2025 [ref: SSD-24937520-PA-9] (refer to Appendix E)

2.1.5 BLAST MANAGEMENT SUB PLAN

The demolition works consists of 4 separate blast events which are staged throughout the demolition works (note: indicative start dates are subject to change):

- Chimney Stacks (indicative blast date – November 2025)
- Coal Stacking Conveyor (indicative blast date – August 2026)
- Boiler Unit 3/4 (indicative blast date – September 2026)
- Boiler Unit 1/2 + Transfer House 5/6 (indicative blast date – November 2026)

A BMSP (refer to Appendix F) will progressively be prepared for each blast event, and each BMSP will be prepared in accordance with Part C, Condition C20 of the Consent and:

a) Be prepared by a suitably qualified and experienced person/s.

b) Includes:

   (i) an assessment of blasting impacts at sensitive receivers and infrastructure, including the Liddell Ash Dam including the predicted airblast overpressure and ground vibration.

   (ii) consultation with the relevant private landowners or infrastructure owners if the assessment predicts blasting by the development will impact sensitive receivers.

   (iii) a strategy to monitor, assess, mitigate or compensate for the effects of blasting at sensitive receivers identified by the assessment required by condition C20(b)(i) of the Consent.

c) Describe the mitigation measures that will be implemented to:

   (i) comply with the conditions of the Consent.

   (ii) manage the risks identified in the environmental risk assessment required by condition B1 of the Consent.

   (iii) manage blast generated dust and fumes, protect public safety and manage road closures.

d) Include a monitoring, evaluation and reporting program that uses an approach that is consistent with the environmental management strategy required by condition B1.

e) Addresses Statement of Commitments of the Consent AQ2, HR1, HR2, HR3, HR4, and HR5

Each BMSP will be submitted to DPHI and SafeWork NSW for review and approval prior to each blast event.

For the Chimney Stack demolition, it is proposed that ACM remains in situ during the explosive felling event. Prior to proceeding with these works, a risk assessment shall be undertaken to justify leaving the ACM in situ and shall be discussed with SafeWork NSW and form part of the blast approval process with SafeWork NSW.

2.2 PROJECT SCOPE AND DEMOLITION DESCRIPTION

The key development elements in Stage 1 for demolition works include the following:

- Demolition of LPS and redundant associated infrastructure.
- Demolition of the HVGTs and any associated transmission infrastructure.
- Construction and use of the onsite asbestos disposal facility, including access road.

The Demolition consists of the supply of all design, management, planning, engineering, procurement, supervision, administration, labour, mobile powered plant, and equipment required to complete the hazardous material removal and demolition of the AGLM – LPS, infrastructure and all identified plant, equipment, and structures.

In accordance with condition C14 of the Consent, all demolition will be carried out in accordance with Australian Standard AS 2601-2001 The Demolition of Structures.

The works have been segregated into a number of zones as follows:

- Zone 1 – Transformer Bay.
- Zone 2 – Turbine House.
- Zone 3 – Boiler Houses and Auxiliary Bay.
- Zone 4 – Fabric Filters.
- Zone 5 – Chimney Stacks.
- Zone 6 – Hazardous Storage Areas.
- Zone 7 – Minor Support Infrastructure.
- Zone 8 – Coal Handling Infrastructure.
- Zone 10 – Ash and Dust lines.
- Zone 11 – CW Pumping Station.
- Zone 12 – Hunter Valley Gas Turbines (HVGTs).

**Note: Zone 9 – (Solar Plant) is not applicable to the Demolition*

The demolition works generally include:

- Hazardous materials identification and removal (where demolition is required for access).

- Removal of all above ground infrastructures and ancillary infrastructure to ground level within the nominated demolition zones by means of mechanical demolition, induced collapse by blast felling, induced collapse by mechanical felling, etc.
- Removal of concrete slabs on ground to the underside of slab level only. Pits, tunnels, and trenches to have the base punctured (where deemed appropriate to do so) to ensure water cannot accumulate prior to backfilling noting that this will only occur where the risk has been assessed and deemed acceptable.
- On completion of works, water management system implemented for demolition will be maintained.
- Filling of pits and voids to the surrounding reduced level (RL) with crushed concrete from the demolition.

In addition, the onsite asbestos disposal facility is constructed in 3 x cells that are progressively constructed as the works progresses. Cell 1 is constructed first to facilitate direct loadout of ACM and SMF waste over an approximate 6 week duration and as the cell becomes full, the following cell is excavated to accommodate additional material. In accordance with condition A6 of the Consent, the total cell volume is to accommodate a maximum of 30,000 cubic metres of asbestos waste, asbestos containing material, synthetic mineral fibre and other associated wastes authorised by the Site auditor.

2.2.1 INDICATIVE SCHEDULE OF WORKS

Following is a high level indicative schedule of the demolition works:

Table 1 – High level indicative schedule of demolition works

Demolition Zone	Indicative Start Date	Indicative Finish Date
Zone 1 – Transformer Bay	July 2025	November 2026
Zone 2 – Turbine House	July 2025	February 2027
Zone 3 – Boiler Houses and Auxiliary Bay	July 2025	April 2027
Zone 4 – Fabric Filters	September 2025	April 2027
Zone 5 – Chimney Stacks	July 2025	May 2027
Zone 6 – Hazardous Storage Areas	February 2026	November 2026
Zone 7 – Minor Support Infrastructure	July 2025	February 2026
Zone 8 – Coal Handling Infrastructure	May 2026	April 2027
Zone 10 – Ash and Dust lines	January 2027	May 2027
Zone 11 – CW Pumping Station	November 2026	January 2027
Zone 12 – Hunter Valley Gas Turbines (HVGTs)	August 2025	April 2027

Note: The above dates are subject to change

In accordance with Part C, Condition C17 of the Consent, demolition must not commence until the DEMP is approved by the Planning Secretary.

In accordance with Statement of Commitment HR7 of the Consent, prior to any demolition or work being carried out that may impact on ACM, CMA Contracting will (refer to AMSP in Appendix C):

- Review the Asbestos Register and if deemed inadequate will be revised.
- Ensure that identified ACM that may be impacted by the demolition works are removed prior to the commencement of works, so far as reasonably practicable. Where deemed not reasonably practicable other controls must be considered, in accordance with the hierarchy of controls, as defined in the NSW WHS Regulations 2017.

2.2.2 HOURS OF OPERATION

As per condition A9 of the Consent, the maximum available operating hours are presented in Table 2 below:

Table 2 – Maximum Available Operating Hours

Activity	Permissible Hours
Demolition activities	- 7 am to 6 pm Monday to Friday - 8 am to 6 pm Saturday - At no time on Sundays or public holidays
Blasting	- 9 am to 5 pm Monday to Saturday - No blasting on public holidays
Maintenance, security, office work, cleaning, etc	May be conducted at any time, provided that these activities are not audible at any residence on privately owned land
- Delivery or dispatch of materials as requested by Police or other public authorities. - Emergency work to avoid loss of lives, property or to prevent environmental harm. - Delivery of oversized plant or structures	At any time, only after notifying DPHI.

2.3 OBJECTIVES

The objectives of the DEMP are to:

- Provide a framework for environmental management of the demolition component of the Demolition.
- Mitigate adverse impacts on various environmental components from Demolition.
- Mitigate adverse environmental impacts to the community as a result of project activities.
- Ensure compliance to relevant legislative and licensing requirements.

2.4 ROLES AND RESPONSIBILITIES

Following is a list of the roles and responsibilities for implementing the DEMP:

2.4.1 Director – AGL Closure Programs

The Director – AGL Closure Programs is responsible for:

- Managerial authority and responsibility for all environmental matters within LPS demolition and rehabilitation works.
- Management of Liddell Transition Team
- Regular review of environmental management programs including the establishment of environmental objectives and targets.
- Monitoring and improving environmental performance.
- Timely renewal of operating licences.
- Compliance with all licence conditions and regulatory reporting requirements
- Manage maintenance of plant and equipment

2.4.2 Site Manager Liddell Transition

The Site Manager Liddell Transition is responsible for:

- Provide adequate resources for the implementation of this DEMP
- Ensure all appropriate approvals have been obtained
- Ensuring that all staff and contractors under their control are aware of environmental compliance issues and environmental controls listed in the DEMP
- Oversee project implementation
- Order stop-work for any activity that may cause environmental harm
- Management of site-based Liddell Transition Team
- Manage demolition and rehabilitation works
- Manage maintenance of plant and equipment

2.4.3 Manager Environment and Approvals – Liddell Transition

The Manager Environment and Approvals – Liddell Transition is responsible for:

- Manage environmental approvals process.
- Ensure this DEMP is established, implemented, and maintained.
- Report to the Site Manager – Liddell Transition on the performance of the DEMP and recommendations for improvement.
- Planning for and responding to emerging environmental trends.
- Initiating the external independent environmental audit program.
- Liaising with Management in the setting of environmental objectives and targets, defining the context of the organisation and maintaining the interested parties register and all associated actions for the project.
- Communicating environmental performance.
- Assisting in the management and investigation, and reporting of major environmental incidents.

2.4.4 AGL Corporate Affairs

The AGL Corporate Affairs are responsible for:

- Co-ordinate, in the context of standing emergency plans and procedures, a public relations/communication strategy to deal with environmental incidents.
- Communicate with the public and/or Interested Parties on environmental issues and initiatives.

2.4.5 Liddell Transition Environment Team

The Liddell Transition Environment Team is responsible for:

- Assist the Manager Environment and Approvals in carrying out their environmental management responsibilities, by
- Provide necessary technical input for environmental decision making
- Co-ordinate environmental compliance.
- Assist in developing environmental objectives and targets and environmental management programs.
- Liaise with and provide information to the Independent Environmental Auditor.

2.4.6 AGLM personnel working on the Development

The AGLM personnel working on the Development are responsible for:

- AGLM personnel working on the development have a role in achieving a standard of environmental performance consistent with the documentation referenced in this DEMP, including:
- Comply with DEMP, including all relevant procedures, sub-plans, processes, operating standards.
- Complete environmental inductions and required training.

2.4.7 CMA Project HSEQ Manager

The CMA Project HSEQ Manager is responsible for:

- Provide advice and assistance on environmental matters to the Project Manager, Project Site Manager and employees.
- Identify key environmental risks and opportunities to ensure high environmental performance.
- Attendance at on-site meetings to ensure environment related issues are raised for review.
- Monitoring the effectiveness of environmental management measures.
- Manage and advise on training needs.
- Plan for and respond to emerging environmental trends.
- Support external independent environmental audits.
- Assisting in the management and investigation of major environmental incidents.
- Manage the contractor's environmental management responsibilities, including the following:
- Provide necessary technical input.
- Co-ordinate environmental compliance.
- Assist in developing and updating environmental objectives and targets and environmental management programs.
- Provide information to the Independent Environmental Auditor.
- Conduct investigations into incidents and non-conformance events.
- Lead by example to promote environmentally sound practices.
- Assist in developing Safe Work Method Statements (SWMS) for all tasks and ensuring the required environmental measures are included and the work is monitored throughout.

2.4.8 CMA Project Manager

The CMA Project Manager is responsible for:

- Ensure effective internal and external communication programs are in place.
- Ensure the DEMP meets AGLM and DPHI requirements for the project.
- Responsible to ensure the DEMP is implemented and maintained.
- Engage competent and licensed sub-contractors, as required by legislation, to undertake works
- Organisation of on-site personnel with regard to their responsibilities within the HSEMS.
- Accountable for the effectiveness, suitability, and adequacy of the contractor Environmental Management System.
- Promote continual improvement and provide support as required.
- Ensure the Environmental Management System achieves its intended outcomes.
- Ensure resources are available to support the Environmental Management System.
- Ensure employees are equipped with sufficient skills to comply with the DEMP throughout the delivery of the project.
- Responsible for resourcing employee activities and ensuring plant is operated and maintained in a manner that minimises risk to the environment.
- Input into regular reviews of HSEMS elements including the establishment and review of environmental objectives and targets.
- Monitoring and improving environmental performance at a project level.
- Compliance with all environmental and regulatory requirements and other reporting requirements.
- Lead by example to promote environmentally sound practices.

2.4.9 CMA Site Manager

The CMA Site Manager is responsible for:

- Assist in the implementation of the DEMP.
- Ensure all project staff have adequate training and experience to manage the risks associated with their roles.
- Assist in developing Safe Work Method Statements (SWMS) for all tasks and ensuring the required environmental measures are included and the work is monitored throughout.
- Ensure site inductions are conducted for all workers and sub-contactors.
- Undertake environmental related duties as directed by the Project Manager.
- Lead by example to promote environmentally sound practices.

2.4.10 CMA Area Supervisors

The CMA Area Supervisors are responsible for:

- Assist in the implementation of the DEMP.
- Other Environmental related duties as directed by the Project Site Manager.
- Lead by example to promote environmentally sound practices.

2.4.11 CMA Project Engineers

The CMA Project Engineers are responsible for:

- Comply with the DEMP.
- Other Environmental related duties as directed by the Project Manager.
- Lead by example to promote environmentally sound practices.

2.4.12 All CMA Workers

All CMA Workers are responsible for:

- Comply with the DEMP.
- Raise environmental issues or hazards.
- Report all environmental incidents, hazards, non-compliances and near misses in a timely manner.

2.4.13 Subcontractors

The Subcontractors are responsible for:

- Comply with the DEMP.
- Raise environmental issues or hazards.
- Report all environmental incidents, hazards, non-compliances and near misses in a timely manner.

3 STRATEGIC FRAMEWORK

3.1 LEGAL AND OTHER REQUIREMENTS

This DEMP has been developed in accordance with the following:

- Environmental Planning and Assessment (EPA) Act 1979.
- State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.
- Protection of the Environment and Operations (PoEO) Act 1997.
- Protection of the Environment Operations (General) Regulation 2021.
- Protection of the Environment Operations (Waste) Regulation 2014.
- Contaminated Land Management Act 1997.
- Waste Classification Guidelines (NSW EPA 2014).
- Managing Urban Stormwater: Soils and Construction Voll 1 (Landcom 2004).
- ISO 14001:2015 Environmental Management System.
- Australian Standard (AS) 2601:2001 – The demolition of structures.
- SafeWork NSW Code of Practice – Demolition Work August 2019
- NSW Work Health and Safety Act 2011
- NSW Work Health and Safety Regulation 2017
- SafeWork NSW Code of Practice – How to safely remove asbestos December 2022

LPS operates under Environment Protection Licence (EPL) No. 2122 issued by the Environment Protection Authority (EPA) under the PoEO Act.

Other Environmental legislative requirements not listed above are recorded in the CMA Legislation Library. CMA will maintain this information and ensure it is accessible on site. The Legislation Library is maintained by and can be accessed via the Project HSEQ Manager.

3.2 RELEVANT CONDITIONS AND STATEMENTS OF COMMITMENTS OF THE CONSENT

3.2.1 RELEVANT CONDITIONS OF CONSENT

Table 3 – Conditions relevant to the DEMP and associated sub plans

CONDITIONS OF THE CONSENT		
CONDITION		DEMP SECTION
Demolition	C14. All demolition must be carried out in accordance with Australian Standard AS 2601-2001 The Demolition of Structures.	Section 2.2
	C15. Prior to the commencement of demolition works, a clearance certificate from an occupational hygienist to certify that asbestos containing materials, PBC capacitors, and transformers have been removed before demolition work must be provided to the Department. Any hazardous materials that cannot be removed should be assessed in consultation with SafeWork NSW.	Appendix C
	C16. A **demolition environmental management plan** must be prepared for the development. The plan	This document. a. Section 4.4 and

	must: (a) be submitted to the Planning Secretary for approval prior to the commencement of demolition; (b) be prepared in consultation with SafeWork NSW and the Site auditor; (c) include a description and schedule of activities to be undertaken during demolition; (d) include a risk assessment; (e) addresses the commitments detailed in the documents listed in condition A2(c); (f) include the sub-plans detailed in conditions C19 to C22; and (g) include a TARP to respond to any exceedances of the relevant performance measures, objectives or performance indicators. *Note: The health and safety risks associated with demolition are regulated by the Work Health and Safety Regulation 2017.*	Appendix B b. Section 4.4 c. Section 2.2 d. Appendix A e. Section 3.2.1 f. Appendix C, D, E, F g. Sections 5.18.3, 5.18.4, 5.18.5
	C17. Demolition must not commence until the demolition environmental management plan is approved by the Planning Secretary.	Noted.
	C18. The demolition environmental management plan, as approved by the Planning Secretary, must be implemented for the duration of demolition.	Noted. Appendix B.
	C19. An **asbestos management sub-plan** must be prepared as part of the demolition environmental management plan. The plan must: (a) be prepared in accordance with the *SafeWork NSW 2022 Code of practice: How to safely remove asbestos, SafeWork: guidance on managing asbestos in soil,* Schedule B2 of the NEPM and any requirements of the Site auditor; (b) identify any known or potential areas of concern within the approved development area for asbestos containing materials and synthetic mineral fibre; (c) include: i. procedures for identifying, handling and disposing of asbestos waste, asbestos containing materials and synthetic mineral fibre; ii. procedures for interim storage of asbestos prior to disposal and disposal of asbestos; and iii. outline the relevant requirements of conditions C1 to C13 for the management of asbestos waste, asbestos containing materials and synthetic mineral fibre.	Appendix C
	C20. A **blast management sub-plan** must be	Appendix D

	prepared as part of the demolition environmental management plan. The plan must: (a) be prepared by a suitably qualified and experienced person/s; (b) include: i. an assessment of blasting impacts at sensitive receivers and infrastructure, including the Liddell Ash Dam. The assessment must include predicted airblast overpressure and ground vibration; ii. (ii) consultation with the relevant private landowners or infrastructure owners if the assessment predicts blasting by the development will impact sensitive receivers; and iii. a strategy to monitor, assess, mitigate or compensate for the effects of blasting at sensitive receivers identified by the assessment required by condition C20(b)(i); (c) describe the mitigation measures that will be implemented to: i. comply with the conditions of this consent; ii. manage the risks identified in the environmental risk assessment required by condition B1; and iii. manage blast generated dust and fumes, protect public safety and manage road closures; (d) include a monitoring, evaluation and reporting program that uses an approach that is consistent with the environmental management strategy required by condition B1.	
	C21. A **soil and water management sub-plan** must be prepared as part of the demolition environmental management plan. The plan must: (a) be prepared by a suitably qualified and experienced person/s; (b) identify the clean and dirty water management system; (c) describe the mitigation measures that will be implemented to: i. comply with the conditions of this consent, including the relevant performance measures identified in Table 3; ii. manage the risks identified in the environmental risk assessment required by condition B1; and iii. implement the commitments detailed in the documents listed in condition A2(c); (d) include a monitoring, evaluation and reporting program that uses an approach that is consistent with the environmental management strategy required by	Appendix E

	condition B1.	
	C22. A dust management sub-plan must be prepared as part of the demolition environmental management plan. The plan must: (a) be prepared by a suitably qualified and experienced person/s; (b) describe the mitigation measures that will be implemented to: i. comply with the conditions of this consent; and ii. (ii) manage the risks identified in the environmental risk assessment required by condition B1; (c) include a monitoring, evaluation and reporting program that uses an approach that is consistent with the environmental management strategy required by condition B1.	Appendix F

Table 4 – Other relevant conditions of the Consent

CONDITIONS OF THE CONSENT		
CONDITION		DEMP SECTION
PART A. ADMINISTRATIVE CONDITIONS		
Obligation to minimise harm to the environment	A1. In addition to meeting the specific performance measures and criteria established under this consent, all reasonable and feasible measures must be implemented to prevent, and if prevention is not reasonable and feasible, minimise, any material harm to the environment that may result from preliminary works, construction or any other part of the development including, any rehabilitation required under this consent.	Section 3 Section 0 Section 5 Section 6 Section 7
Terms of consent	A2. The Applicant may only carry out the development: (a) in compliance with the conditions of this consent; (b) in accordance with all written directions of the Planning Secretary; • generally in accordance with the EIS; and • generally in accordance with the Development Layout in Appendix 1	Section 3 Section 0 Section 5 Section 6 Section 7
	A3. Consistent with the requirements in this consent, the Planning Secretary may make written directions in relation to: (a) the content of any strategy, study, system, plan, program, review, audit, notification, report, or correspondence submitted under or otherwise made in relation to this consent, including those that are required to be, and have been, approved by the Planning Secretary; and (b) the implementation of any actions or measures contained in any such document referred to in condition A3(a).	Appendix B
	A4. The conditions of this consent and directions of the Planning Secretary prevail to the extent of any inconsistency, ambiguity or conflict between them and a document/s listed in condition A2(c). In the event of any inconsistency, ambiguity, or conflict between any of the document/s listed in condition	Noted.

<table>
<tr><td></td><td>A2(c), the most recent document prevails to the extent of the inconsistency, ambiguity, or conflict.</td><td></td></tr>
<tr><td>Asbestos disposal facility</td><td>A6. A maximum of 30,000 cubic metres of asbestos waste, asbestos containing material, synthetic mineral fibre and other associated wastes authorised by the Site auditor, may be disposed of at the asbestos disposal facility, unless otherwise agreed by the Planning Secretary.</td><td>Section 5.14.1
Appendix C</td></tr>
<tr><td>Development hours</td><td>A9. The development may only be undertaken during the hours set out in Table 1.
<table>
<tr><th>Activity</th><th>Permissible Hours</th></tr>
<tr><td>Development activities- other than as identified separately in this table.</td><td>• 7 am to 6 pm Monday to Friday
• 8 am to 6 pm Saturday
• At no time on Sundays or public holidays</td></tr>
<tr><td>Blasting</td><td>• 9 am to 5 pm Monday to Saturday
• No blasting on public holidays</td></tr>
<tr><td>Maintenance, security, office work, cleaning, etc</td><td>May be conducted at any time, provided that these activities are not audible at any residence on privately-owned land</td></tr>
<tr><td>Delivery or dispatch of materials as requested by Police or other public authorities
Emergency work to avoid the loss of lives, property or to prevent environmental harm
Delivery of oversized plant or structures</td><td>At any time, only after notifying the Department</td></tr>
</table></td><td>Section 2.2.1</td></tr>
<tr><td>Notification of commencement</td><td>A10. The Department must be notified, in writing, of the date of commencement of each of the following phases of the development:

(a) commencement of development under the consent;
(b) commencement of construction under the consent;
(c) commencement of demolition under the consent; and
(d) cessation of operations.
The notification must be provided at least two weeks before the commencement of each stage and no more than three months before the commencement of each stage.</td><td>Noted. AGLM to action.</td></tr>
<tr><td>Evidence of consultation</td><td>A16. Prior to submitting any environmental management document required by this consent to the Planning Secretary, any consultation with an identified party must be completed. Documentary evidence and a tabulated summary of the consultation must be submitted with the subject document via the Major Projects Website, including:
(a) dates of the consultation with the identified party, copies of the identified party's response, and a summary of the issues raised;
(b) the outcome of that consultation, including how the issues have been addressed in the subject document; and
(c) details of any disagreement remaining between the party consulted and the Applicant, and how the Applicant has addressed the matters not resolved.</td><td>Section 4.4</td></tr>
<tr><td rowspan="2">Applicability of guidelines</td><td>A17. References in the conditions of this consent to any guideline, protocol, Australian Standard or policy are to such guidelines, protocols, Standards or policies in the form they are in as at the date of this consent.</td><td>Noted.</td></tr>
<tr><td>A18. However, consistent with the conditions of this</td><td>Noted.</td></tr>
</table>

	consent and without altering any limits or criteria in this consent, the Planning Secretary may, when issuing directions under this consent in respect of ongoing monitoring and management obligations, require compliance with an updated or revised version of such a guideline, protocol, Standard or policy, or a replacement of them.	
Staging, combining and updating environmental management documents	A19. With the approval of the Planning Secretary, any environmental management document required by this consent may be staged, combined or updated.	Appendix B.
	A20. Staging requests made to the Planning Secretary must include a clear description of the trigger for staging, the specific stage and scope of the development to be staged and any future stages planned	Noted. AGLM to action.
	A21. If the Planning Secretary agrees, an environmental management document may be staged or updated without: (a) consultation being undertaken with all parties required to be consulted in the relevant condition in this consent; and/or (b) addressing particular requirements of the relevant condition of this consent if those requirements are not applicable to the particular stage.	Noted. AGLM to action.
Operation of plant and equipment	A24. All plant and equipment used by the development, or to monitor the performance of the development must be: (a) maintained in a proper and efficient condition; and (b) operated in a proper and efficient manner.	Section 5.8
PART B - GENERAL ENVIRONMENTAL CONDITIONS		
Aboriginal Heritage	Aboriginal heritage Protection of Aboriginal Objects B4. The Applicant must not directly or indirectly harm the Aboriginal objects AHIMS 37-2-6560 and 37-2-6559, or any Aboriginal objects located outside the approved development area.	Section 5.7
	B5. Prior to carrying out any development that could directly or indirectly harm the Aboriginal objects AHIMS 37-2-6561 and 37-2-6284, the Applicant must salvage the Aboriginal objects via surface collection and relocate the items that would be impacted to a suitable alternative location, in accordance with the Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (DECCW, 2010), or its latest version.	Section 5.7
Air quality and Greenhouse Gas	B6. All reasonable and feasible avoidance and mitigation measures must be implemented to prevent the generation of dust from the development.	Section 5.8 Appendix E
	B7. All reasonable and feasible avoidance and mitigation measures must be implemented to minimise greenhouse gas emissions from the development.	Section 5.8

<table>
<tr>
<td>Noise</td>
<td>B12. An out-of-hours work protocol must be submitted to the satisfaction of the Planning Secretary prior to the commencement of any out-of-hours construction work (other than the exceptions listed in conditions B11(a) and B11(b). The protocol must:
(a) include noise modelling of proposed activities including consideration of noise enhancing meteorological conditions, annoying noise characteristics and implementation of reasonable and feasible noise mitigation measures;
(b) identify a process for the consideration and management of construction which is outside the hours defined in Table 1;
(c) be consistent with the requirements of the Interim Construction Noise Guideline (DECC, 2009) (or its latest or final version);
(d) justify why the construction needs to be undertaken as out-of-hours construction, including consideration of consultation undertaken as part of the documents listed in condition A2(c);
(e) identify low, medium and high-risk out-of-hours work, proposed mitigation and management measures; and
(f) include written notification arrangements for affected residences for approved out-of-hours work.</td>
<td>Refer to EMS.</td>
</tr>
<tr>
<td>Water</td>
<td>B13. The development must comply with the performance measures in Table 3.
<table>
<tr><th>Feature</th><th>Performance measure</th></tr>
<tr><td>Water management – general</td><td>• Maintain separation between clean and dirty water management systems
• Minimise the use of clean and potable water by the development
• Maximise water recycling, reuse and sharing opportunities
• Design, install, operate and maintain water management systems in a proper and efficient manner</td></tr>
</table></td>
<td>Section 5.1
Appendix D</td>
</tr>
</table>

	<table><tr><th>Feature</th><th>Performance measure</th></tr><tr><td>Erosion and sediment control</td><td>• Design, install and maintain erosion and sediment controls generally 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 sediment dams generally in accordance with the guidance series Managing Urban Stormwater: Soils and Construction – Volume 1 (Landcom, 2004) and 2E Mines and Quarries (DECC, 2008)</td></tr><tr><td>Water diversion and storage</td><td>• Maximise the diversion of clean water around disturbed areas within the approved development area, except where clean water is captured for use by the development • Design, install and maintain water storage infrastructure to avoid unlicensed or uncontrolled discharge of water</td></tr><tr><td>Chemical and hydrocarbon storage</td><td>• Chemical and hydrocarbon products stored in bunded areas in accordance with the relevant Australian Standard</td></tr><tr><td>Aquatic and riparian ecosystems</td><td>• Negligible environmental consequences beyond those predicted in the documents listed in condition A2(c)</td></tr><tr><td>Alluvial aquifers</td><td>• Negligible impacts to the alluvial aquifer as a result of the development, beyond those predicted in the document/s listed in condition A2(c), including: ○ Negligible change in groundwater levels ○ Negligible change in groundwater quality ○ Negligible impact to other groundwater users</td></tr><tr><td>Works on waterfront land</td><td>• All works within waterfront land is managed in accordance with the guidance series for Controlled Activities on Waterfront Land (DPE, 2022) • Minimise disturbance of banks and implement appropriate stabilisation mitigation</td></tr></table>	
	B14. The performance measures in Table 3 apply to the entire approved development area, including all landforms constructed under previous development consents. However, these performance measures do not require any additional earthmoving works to be undertaken for landforms that have been approved and constructed under previous consents, except where those earthworks are required for the establishment of a stable and non-polluting landform.	Noted
Dangerous goods	B18. The quantities of dangerous goods stored and handled by the development must be below the threshold quantities listed in the Department's *Hazardous and Offensive Development Application Guidelines – Applying SEPP 33* at all times.	Section 5.10 Appendix F
	B19. Dangerous goods must be stored and handled strictly in accordance with: (a) all relevant Australian Standards; and (b) for liquids, the NSW EPA's Storing and Handling of Liquids: Environmental Protection – Participants Manual. In the event of inconsistency between the requirements of condition B19(a) and B19(b), the most stringent requirement must prevail to the extent of the inconsistency.	Section 5.10 Appendix F
Transport	B20. All heavy vehicle travel and transport used by the development must be undertaken in accordance with a Driver's Code of Conduct, prepared in consideration of registered industry codes of practice published by the National Heavy Vehicle Regulator.	Section 5.2 Refer to EMS.
	B21. All mine overburden material excavated from the Borrow Pit must be transported using private haul roads	Section 5.2
Meteorological monitoring	B22. Prior to the commencement of development activities and for the life of the development, a suitable meteorological station must operate in the vicinity of the development that: • complies with the requirements in the	Appendix E

	Approved Methods for Sampling and Analysis of Air Pollutants in New South Wales (DEC, 2007); (a) is capable of measuring meteorological conditions in accordance with the *NSW Industrial Noise Policy* (EPA, 2000) or *NSW Noise Policy for Industry* (EPA, 2017); and (a) (c) unless a suitable alternative is approved by the Planning Secretary following consultation with the EPA.	
Waste	B23. All waste generated by the development must be classified in accordance with the *Waste Classification Guidelines* (EPA, 2014) and disposed of at appropriately licensed waste facilities unless subject to condition B27 unless otherwise permitted by an EPL.	Section 5.14
	B24. No waste from outside the approved development area must be received, stored, treated, processed, re-processed or disposed of within the approved development area except as expressly permitted by an applicable EPL, specific resource recovery order or exemption under the *Protection of the Environment Operations (Waste) Regulation 2014*.	Section 5.14
	B25. Waste generated by the development must be secured and maintained within designated waste processing or storage areas at all times prior to disposal, re-use or recycling.	Section 5.14
	B26. Any concrete confirmed to be impacted with PCB above acceptable levels determined by the Site auditor must be disposed of at a licensed waste facility.	Section 5.14
	B27. Asbestos soils requiring disposal, asbestos containing materials, synthetic mineral fibre and other associated wastes authorised by the Site auditor must be disposed of at the asbestos disposal facility constructed within the Borrow Pit Area identified on Figure 1 in Appendix 1.	Section 5.14
Biodiversity	B28. The biodiversity credits specified in Table 4 and Table 5 must be retired in accordance with the Biodiversity Offset Scheme of the Biodiversity Conservation Act 2016, including the application of any ancillary rules published under Section 6.5 of the Biodiversity Conservation Regulation 2017, except as otherwise permitted by conditions B30 or B31. Evidence must be provided to the Department that the correct number and class of credits has been retired prior to undertaking the disturbance associated with each stage	Refer to the Biodiversity Management Plan
	B29. Prior to undertaking construction or operations within the: (a) Stage 1 impact area (as shown on Figure 4 in Appendix 4), the Applicant must retire the Stage 1 biodiversity credits as specified in Table 4 and Table 5; (b) Stage 2 impact area (as shown on Figure 4 in Appendix 4), the Applicant must retire the Stage 2 biodiversity credits as specified in Table 4 and Table 5; and	Section 5.3

	(c) Stage 3 impact area (as shown on Figure 4 in Appendix 4), the Applicant must retire the Stage 3 biodiversity credits as specified in Table 4 and Table 5.	
	B30. With the agreement of the Planning Secretary, the retirement of credits for the Hunter Valley Delma (Delma vescolineata) as listed in Table 5 may be carried out in an alternative timeframe to the timing specified in condition B29. Note: The option for an alternate timeframe is provided given the recent listing of the species under the Biodiversity Conservation Act 2016.	Section 5.3
	B31. The biodiversity credit requirements outlined in condition B28 may be reduced if the Applicant demonstrates, in consultation with CPHR that the biodiversity credit requirements in Table 4 and Table 5 do not accurately reflect the extent of impacts on these species as a result of the development physically avoiding areas of the PCTs assessed by the documents listed in condition A2(c). Any request made by the Applicant to reduce biodiversity credits must: (a) be submitted prior to the commencement of any works that will impact biodiversity values within the relevant stage impact area; (b) be in writing and addressed to the Planning Secretary; and (c) be supported by a report outlining the requested reduction in impact to biodiversity values which has been prepared by a person accredited under the Biodiversity Conservation Act 2016.	Section 5.3
	B32. A biodiversity management plan must be prepared for the development. The plan must: (a) be submitted to the Planning Secretary for approval prior to the commencement of construction; (b) be prepared: (i) by a suitably qualified and experienced person/s whose appointment has been endorsed by the Planning Secretary; (ii) in consultation with CPHR; in accordance with the Biodiversity Assessment Method and be consistent with the avoid and minimise commitments in the Biodiversity Development Assessment Report for the development (dated 22 October 2024); and (iv) with reference to any relevant biodiversity management plan guidance material provided by CPHR; (c) support the enhancement and composition of any threatened ecological community found within the approved development area including, the Central Hunter Grey Box – Ironbark Woodland; (d) implement measures to minimise the use of pesticides and herbicides within the approved development area; (e) support the integrity of habitat for insectivorous bat and amphibian species; (f) incorporate salt tolerant species as part of the	Section 5.3

	saline discharge rehabilitation works associated with the Liddell Ash Dam as outlined in the Statement of Environmental Effects prepared by Coffey Environments and dated 18 July 2011; (g) include a description of measures and timeframes that would be implemented to: (i) minimise clearing and avoiding unnecessary disturbance of vegetation by the development; (ii) minimise impacts on fauna, and implementing fauna recovery and management protocols; (iii) maximise the salvage of vegetative and soil resources within the approved disturbance area for beneficial reuse in the enhancement of rehabilitation of the approved development area; (iv) control weeds, feral pests, and pathogens; (v) manage any incidental threatened species discovered within the approved development area during construction, operation, upgrading or decommissioning of the development, including a protocol to identify the avoid and/or minimise and/or offset options to be implemented if additional threatened species are discovered within the approved development area; and (vi) retain, rehabilitate or restore vegetation connectivity and provide habitat for threatened species such as the squirrel glider.	
	B33. Construction must not commence until the biodiversity management plan is approved by the Planning Secretary.	Section 5.3
	B34. The biodiversity management plan, as approved by the Planning Secretary, must be implemented for the development.	Section 5.3
Rehabilitation	B35. The approved development area must be rehabilitated progressively, that is, as soon as practicable following disturbance associated with the development, to minimise the total area exposed at any time. Interim stabilisation and temporary vegetation strategies must be implemented in areas prone to dust generation, soil erosion and weed incursion that are not yet rehabilitated.	Section 5.5
	B36. The rehabilitation of the approved development area must comply with the rehabilitation objectives in Table 6 and the conceptual final landforms shown on Figure 5 and Figure 6 in Appendix 5.	Section 5.5

Feature	Objective
All areas of the approved development area affected by the development	• Safe and stable • Free draining • Fit for the intended post-closure land use/s • Negligible post-closure environmental impacts beyond predictions in the documents listed in condition A2(c)
Areas proposed for native vegetation	• Ecosystem function is self-sustaining • Vegetation composition and structure commensurate with native vegetation communities found in the local area • Habitat, feed and foraging resources for threatened fauna species established
Areas proposed for grassland	• Rehabilitated areas only requires maintenance consistent with intended post-closure land use/s
Crushed concrete	• Crushed concrete used as stabilisation material does not contain PCB above acceptable levels determined by the Site auditor
Asbestos wastes	• Asbestos containing material (excluding those contained in existing asbestos landfills subject to condition C27) and synthetic mineral fibre wastes are removed and encapsulated at the onsite asbestos disposal facility
Asbestos disposal facility	• Landfill capping completed generally in accordance with *NSW EPA Environmental Guidelines Solid Waste Landfills* (2016) requirements for special wastes
Borrow Pit and landfill area	• Rehabilitated with Woodland species commensurate with the Central Hunter Grey Box- Ironbark Woodland • Vegetation is connected to existing endangered communities, enhancing wildlife movement
Liddell Ash Dam	• Capped in-situ so that land is suitable for the intended post-closure land use • Minimise dust emissions from ash dam surface • Mitigate and manage seepage and leachate from the ash dam to surface water and groundwater
Temporary stabilisation	• Areas of land at risk of erosion due inactivity, grade or any other reason are stabilised with temporary groundcover or vegetation
Water quality	• Negligible changes in groundwater quality as a result of the development beyond those predicted in the documents listed in condition A2(c)
Community	• Ensure public safety

PART D - REPORTING AND AUDITING		
Auditing	D1. Independent Environmental Audits of the development must be conducted and carried out in accordance with the *Independent Audit Post Approval Requirements* (2020), or its latest version published on the Department's website.	Section 7.2
Compliance reporting	D2. By the end of March each year, after the date of commencement of development under this consent, or other timeframe agreed by the Planning Secretary, the Applicant must submit a Compliance Report to the Planning Secretary reviewing the environmental performance of the development.	Section 6
	D3. Compliance Reports must be prepared in accordance with the *Compliance Reporting Post Approval Requirements* (Department of Planning, Industry and Environment, 2020) or its latest version published on the Department's website and must also: (a) identify any trends in the monitoring data over the life of the development; (b) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and (c) describe what measures will be implemented over the next year to improve the environmental performance of the development.	Section 6
Compliance	**Non-compliance notification**	Section 6.3.1

	D4. Within seven days of becoming aware of a non-compliance, the Applicant must notify the Department of the non-compliance. The notification must: (a) be in writing; (b) submitted via the NSW planning portal (Major Projects); (c) identify the development (including the development application number and name); (d) set out the condition of this consent that the development is non-compliant with; (d) why it does not comply; (e) the reasons for the non-compliance (if known); and (f) what actions have been undertaken, or will be undertaken; and when, to address the non-compliance. *Note: A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.*	
	Incident notification D5. The Applicant must notify the Department within 24 hours of becoming aware of an incident. The notification must be made via the NSW planning portal (Major Projects) and address details of the incident including: (a) date, time and location; (b) a brief description of what occurred and why it has been classified as an incident; (c) a description of what immediate steps were taken in relation to the incident; and (d) identifying a contact person for further communication regarding the incident.	Section 6.3.2
	D6. The Applicant must provide the Department with a subsequent incident report in accordance with Appendix 6 (Incident Notification and Reporting Requirements).	Section 6.3.1
Revision of environmental management documents	D7. Within three months of the following events: (a) the submission of an incident report under conditions D5 or D6; (b) the submission of a compliance report under condition D3; (c) the submission of an Independent Environmental Audit under condition D1; (d) the approval of any modification of the conditions of this consent (unless the conditions require otherwise); or (e) notification of a change in the development phase under condition A10; The suitability of the existing environmental management documents required under this consent must be reviewed. If the review concludes an update to an environmental management document is required, or to comply with a directive, the relevant environmental management document must be revised and submitted to the Planning Secretary for approval within three months of the review. *Note: This is to ensure environmental management documents are updated regularly and to incorporate any recommended measures to improve the environmental performance of the development.*	Section 7.5

3.2.2 RELEVANT STATEMENT OF COMMITMENTS

Table 5 – Statement of Commitments

STATEMENTS OF COMMITMENTS OF THE CONSENT		
STATEMENTS OF COMMITMENT		DEMP SECTION
Soil and Contamination		
SC1	- Prior to construction/demolition commencing, a site-specific Soil and Water Management Plan (SWMP) will be prepared. The plan will include arrangements for managing wet weather events, specific controls, traffic controls and environmental inspection requirements. The SWMP will include an Erosion and Sediment Control Plan (ESCP) which will be prepared in accordance with the Blue Book -Managing Urban Stormwater: Soils and Construction Volume 1 (4th edition), (Landcom, 2004) and Volume 2 (DECC, 2008). Preparation of an Erosion and Sediment Control Plan (ESCP) as part of a SWMP will be in accordance with Blue Book - Managing Urban Stormwater: Soils and Construction (Volume 1 (4th edition) (Landcom, 2004) and Volume 2 (DECC, 2008). The ESCP must include the following: - All erosion and sediment control measures will be established before ground disturbance work commences and will remain in place until all surfaces have been fully restored and/or stabilised. - The process for stabilisation and progressive revegetation of all disturbed area inclusive of LPS, HVGTs, borrow pit area and the landfill area. - Include a maintenance and inspection program and checklist including: - Conditions that would trigger watering of exposed and revegetated areas. - Requirements for maintenance of revegetated areas. - Maintenance of erosion and sediment controls including clean out before 30% capacity remaining. - Progressive revegetation/stabilisation methodology for exposed areas that are susceptible to wind generated dust particles. Where vegetation is not yet possible, dust suppression by watering will occur. - Provide clean water diversions around disturbed areas. - Provide procedures for how any sediment laden water will be treated prior to leaving the project area. The ESCP must be prepared by appropriately qualified specialists (e.g. completed an International Erosion Control Association (IECA) endorsed course or passed the examination for Certified Professional in Erosion and Sediment Control (CPESC)) as a coordinated sub plan to the SWMP.	Appendix D
SC2	- Erosion and sediment controls will be established prior to works commencing.	Appendix D
SC3	- Temporary stabilisation of working areas as necessary in periods of inactivity which potentially may occur between stages. Borrow area design considers a staged approach and a range of smaller volumes to ensure a stable landform can be achieved if a smaller volume is required	Appendix D
SC5	- Spoil generated by the project will be reused where applicable. Excess spoil not required or able to be reused onsite will be disposed of appropriately as per the EPA's Waste Classification Guidelines (2014).	Appendix D
SC6	Visual monitoring for spontaneous combustion should still be undertaken during excavation of the borrow area and should involve: - Noting any area of spoil with a high carbonaceous/coal content.	Appendix D

	- If carbonaceous/coal rich layers are encountered during excavation, blending with non-carbonaceous material to avoid high concentration of combustible materials in the capping. - Looking for visible signs of heat haze, steam/vapour, smoke emissions, and flames or burning coal odour.	
SC7	If an area of spontaneous combustion is encountered during excavation, the following response process should be actioned: - Where possible, isolate the zone of spontaneous combustible material. - If practicable and safe to do so, excavate out the affected area and move to a safe area where the material can be spread out to cool or be saturated with water.	Appendix D
SC9	- A spill management plan will be prepared for demolition activities as part of the PEMS. The spill management plan will detail the requirements for management of potential spills and leaks from operational equipment during demolition activities	Section 5.11.4
SC10	- An unexpected finds protocol will be prepared and included in the PEMS for the project. The contamination management plan will detail the requirements for management of potentially contaminated materials demolition activities. Management of any waste material to be disposed of offsite will be managed in accordance with a separate waste management plan.	Appendix D
SC11	• Should any unexpected contaminated soils be identified during any ground works, seek advice from a suitably qualified environmental consultant and notify the project manager. Complete any additional investigations/abatement in general accordance with guidelines developed or endorsed by NSW EPA. Include contingency plans for unexpected finds protocols for contaminated soils in project management plans.	Appendix D
Non-Aboriginal Heritage		
HH1	In the unlikely event that unexpected historical (non Aboriginal) archaeological remains are discovered during works they will be managed with reference to the standard protocols and procedures of Section 146 of the Heritage Act 1977. An unexpected archaeological finds procedure should be included in relevant project documentation such as the Construction/Demolition Environmental Management Plan.	Section 5.16
Demolition		
DM1	- Use licenced Asbestos removal contractor -Class A licence. - Implement Asbestos Management Plan. - Complete Hazardous Materials survey. - Remove asbestos from structures in accordance with Division 8.6 of the NSW Work Health and Safety 2017 Regulation, where not safely possible to remove asbestos a risk assessment will be undertaken.	Appendix C
DM2	- Complete Hazardous Material Survey - Develop removal and handling plan	Appendix C
DM3	- Complete contamination assessment - Develop plans to control impact of contamination and demolition activities	Appendix C
DM4	- Confirm monitoring well locations and regulatory requirements impacted by the project will be decommissioned by a suitably qualified consultant.	Appendix D

	- Following decommissioning, the consultant will provide AGLM with a decommissioning report	
DM5	Dust management measures will be included in the PEMS, and implemented during demolition.	Appendix F
DM6	Inspect roads prior to mobilising heavy equipment to site.	Section 5.2
DM7	Identify any critical infrastructure that may be damaged by vibration and develop monitoring plan to be included in the PEMS.	Appendix F Noise & Vibration Management Plan (sub plan to EMS)
DM8	Compliance with Australian Standards for storage and handling of flammable and combustible liquids and hazardous materials.	Section 5.10
DM9	Develop a construction environmental management plan which includes a designated processing area.	Section 5.14
DM10	Develop a construction environmental management plan including specific stormwater and dirty water management plan.	Appendix D
DM11	- Develop and implement fire management and emergency response plan Implement Hot works permitting and control.	Section 5.17 Section 0
Water Quality and Hydrology		
WQ2	The PEMS will include the following Erosion and Sediment Control measures: - Project erosion and sediment control will be developed in accordance with the erosion and sediment control framework. Any activities that result in ground disturbance associated with the project will have a detailed Erosion and Sediment Control Plan (ESCP) prepared based on specific construction methodologies. The objective of the ESCP is to ensure that appropriate structures and programs of work are in place to: o • Identify activities that could cause erosion and generate sediment. o • Describe the location, function and capacity of erosion and sediment control structures required to minimise soil erosion and the potential for transport of sediment downstream. o • Ensure erosion and sediment control structures are appropriately maintained. o • Minimise areas of disturbance and ensure that progressive revegetation/stabilisation is undertaken. o • Fulfil the statutory conditions of the project approval. - Consider industry standard practice, specifically: o • Landcom 2004. Managing Urban Stormwater Soils and Construction, Volume 1, 4th Edition. o • Department of Environment and Climate Change (DECC) 2008. Managing Urban Stormwater Soils and Construction, Volume 2E Mines and Quarries	Appendix D
WQ3	The PEMS will include the following stockpile management measures: - Measures to manage stockpiles including locations, separation of waste types, sediment controls and stabilisation. - Minimising the quantity, lifespan and size of stockpiles. - Stabilising stockpiles, establishing appropriate sediment controls and suppressing dust as required.	Appendix D

	- Locating stockpiles away from drainage lines, waterways and areas where they may be susceptible to wind erosion.	
WQ4	The PEMS will include processes for dewatering of water that has accumulated on site and from sediment basins, including relevant discharge criteria.	Appendix D
WQ6	The PEMS will include details of exclusion zones that will be established for construction plant and equipment.	Appendix D
WQ7	The PEMS will include details of spill management measures to be implemented including: - Measures to manage accidental spills including the requirement to maintain materials such as spill kits. - Procedures for spill incident management. Containment of spills and leaks shall be in accordance with EPA's guidelines section 'Bunding and Spill Management'. - Provision of preventative controls for spills such as alarm systems, regular training and routine inspection of potential contamination sources. - Measures to clean up any contamination sources and where possible removal of the contamination source related to project spills.	Section 5.11.4
WQ9	Works within waterfront land will be managed in accordance with the relevant guideline as deemed appropriate.	Appendix D
WQ10	Implementing practices to minimise disturbance of banks and undertaken bank stabilisation.	Appendix D
WQ11	Appropriate drainage features will be incorporated into the design of the project elements by a suitably qualified and experienced professional. All project elements will be designed and constructed in accordance with relevant guidelines.	Appendix D
WQ14	Dewatering procedures from construction sediment basins will be outlined in the PEMS and will include (but not be limited to): - Routine and pre-discharge sampling and analysis to confirm absence of contaminants exceeding applicable criteria. - Pre-discharge confirmation of compliance with water quality performance criteria able to be analysed in real time. - The methodology for dewatering including use of amphibian friendly flocculants and pH balancing agents as required.	Appendix D
WQ15	Discharges from the project during construction and operation will occur in accordance with EPL 2122 and project approval along with the required water quality monitoring as specified below. Parameter Units Guideline value Comments (reference) pH pH units 6.5-9.0 EPL 2122 limit Oil and Grease mg/L 10 EPL 2122 limit It is recommended that monitoring is retained at existing EPL 2122 surface water monitoring locations for the activities associated with the project: - SW28, to monitor potential sedimentation impacts of Borrow Pit area. - SW30, to monitor surface water discharge quality from the LPS main infrastructure area.	Appendix D

	- SW32, to monitor surface water discharge quality from the LPS Infrastructure Area reporting to the outfall canal coal stockpile area. - SW42, to monitor surface water quality of Lake Liddell as a reference point. Where monitoring indicates a water quality exceedance in discharges off site, an investigation will be undertaken and a notification to the EPA shall be undertaken in accordance with the EPL. Monitoring will continue in accordance with the EPL until the site is suitably stabilised to an acceptable level as agreed with DPE and EPA.	
Air Quality		
AQ1	Prior to demolition commencing, a Dust Management Plan (DMP) will be prepared which would include details of: - Frequency of onsite and offsite inspections to monitor compliance with the air quality management strategy. - The name and contact details of the person(s) accountable for air quality and dust issues. - Procedure for receival of complaints. - Regular pre-wetting and watering requirements. - When to adjust works (including site inspections and watering) due to increased emission risk (e.g. during dry windy conditions). - Designated vehicle entries and exits, haulage routes and parking areas. - Other vehicle requirements including minimising idling of vehicles on site and covering loads on trucks transporting materials. - Maintenance and cleaning of equipment used on site. - Stabilisation of stockpiles when not in use and completed areas. - Removal of accumulation of dust before commencing work. - Trigger Action Response Plan. - Monitoring Program.	Appendix E
AQ2	Preparation of a Blast Management Plan and Asbestos Control Plan, which would including specific measures for minimising impacts during blasting and handling of ACM, including: • Soft-strip inside buildings before demolition - Pre-watering - Forecasting - Sprinklers Due to the potentially high emissions of dust during blasting events, a monitoring plan is recommended. This would include boundary and receptor monitoring. A report after each blasting event summarising the results of the air quality monitoring during and after the event would be prepared.	Appendix C Appendix F
Traffic		
TT1	A Traffic Management Plan (TMP) will be prepared for the project prior to construction commencing. The TMP will address traffic movements associated with the decommission phase of the project, in particular the impact of OSOM vehicles required for the project. The TMP and associated Traffic Control Plans (TCPs) will be prepared by suitably qualified persons and in accordance with the TfNSW Traffic Control at Work Sites Manual. The TMP will consider impacts related to the height of the Liddell overpass bridge as strike risks may be a safety issue for heavy vehicle operators which could also compromise structural integrity. Where road safety concerns are identified at a specific location along the proposed haulage routes, the TIA will be supported by a	Section 5.2

	targeted Road Safety Audit undertaken by suitably qualified persons in accordance with the Austroads Guidelines.	
TT2	All loading and unloading of materials will be limited to specific loading areas within the site. No loading or unloading will occur on public roads. Loading vehicles are generally expected to only use internal road network.	Section 5.2
TT3	Any public roads deemed to have been damaged by the project will be repaired to an acceptable standard, with all costs borne by AGLM or their appointed contractor.	Section 5.2
TT4	Truck deliveries to and from the site will be scheduled outside peak hours where possible.	Section 5.2
TT5	To increase awareness of the increased truck volumes and the presence of OSOM vehicles, truck warning signage will be installed where required to notify other road users. Traffic management, warning, and regulatory signs will be installed where appropriate.	Section 5.2
TT6	Throughout the project, AGLM will ensure the internal access road providing access to the LPS, the ash dam and the borrow pit area is maintained.	Section 5.2
TT7	All parking will occur within the site boundaries, in dedicated parking areas. All staff and drivers will be instructed not to park on public roads.	Section 5.2
TT8	All staff and contractors will be informed that animals often cross the New England Highway and to take necessary precautions when driving.	Section 5.2
TT9	Traffic controllers should be present where OSOM are required to make right-turning movements along the haulage route to the project site.	Section 5.2
TT10	The OSOM vehicle contractor is expected to undertake a preroute assessment of the proposed routes, to assess the route for any obstructions which they deem necessary to be removed.	Section 5.2
TT11	A permit from the NHVR will be required prior to the undertaking of any OSOM haulage trips. All trips will need to be undertaken in accordance with the permit conditions.	Section 5.2
Landscape and Visual		
LC1	Existing large trees and vegetation will be maintained and protected wherever possible.	Section 5.3
Waste Management		
WM1	A waste management plan for the project will be prepared prior to works commencing. The waste management plan will detail: Statutory requirements for waste in NSW Systems to sort and track the actual types and quantities of waste generated Measures for waste segregation and minimising cross contamination of waste streams including the use of coded bins Options for offsite reuse, reprocessing, recycling and energy recovery	Section 5.14
WM2	Awareness of waste minimisation practices will be included in the project induction.	Section 5.14
WM3	Waste will be classified, managed and disposed of in accordance with the Waste Classification Guidelines (EPA, 2014).	Section 5.14

WM4	Waste streams will continue to be managed in accordance with EPL 2122.	Section 5.14
WM5	Recycling and resource recovery activities will continue to be managed by a licenced service provider.	Section 5.14
Greenhouse Gas		
GG1	Sustainable procurement practices will be adopted where feasible.	Section 5.8
GG2	The project will maximise the reuse of materials won onsite for the backfilling of voids and ground levelling. Any raw materials required would be sourced locally where possible	Section 5.8
GG3	Investigate the use of biodiesel for trucks and equipment where suitable.	Section 5.8
GG4	All plant and equipment used during the project shall be regularly maintained to reduce emissions and comply with the relevant exhaust emissions guidelines	Section 5.8
GG5	Plant and equipment will be switched off when not in constant use and not left idling	Section 5.8
GG6	The project will be planned to ensure minimal movement of plant and equipment where practical.	Section 5.8
GG8	Maximise the reuse/recycling of demolition waste materials will be investigated and included in demolition management plans, where feasible.	Section 5.8
Hazard and Risk		
HR1	BMP is a risk control plan used to ensure blasts do not harm people in the area and limit damage to the environment. The BMP will describe the design of the blast necessary for the task and what procedures will ensure the charge is prepared and fired safely. This information includes: - Layout of the blast including any drilling pattern and hole depth. - Explosives type/quantity, firing equipment and method. - Procedures for loading and charging. - Detonation sequence/effective charge mass per delay (MIC) 'powder factor.' - Misfire procedures including assessment and actions for any foreseeable misfires. This includes any explosive/detonators found during blasted material pile loading by mobile plant. - Details of reports, drawings and records consulted. - Post blast assessment and inspection procedures. • The Blast Management Plan will be prepared.	Appendix F
HR2	Explosives will be stored in a non-ferrous receptacle clearly marked 'Explosives' that is kept closed and locked (except during use by authorised personnel) and stored in the original containers which are securely sealed. The storage area should be a well-ventilated magazine licenced for Inter-governmental Maritime Consultative Organisation (IMCO) Class 1.1 explosives, which protects the explosives from the weather, contamination, sources of ignition and access from unauthorised individuals. Storage will be isolated from other dangerous good stores and the area free of debris, waste and combustibles.	Appendix F

	The explosives containers should be protected against physical damage and regularly checked for spills and leaks.	
HR3	Magazines are required to comply with the requirements of AS2187.1 Explosives Storage, transport and use Storage which addresses issues with design and location of the magazine, security, inventory and management of the explosives, and safety concerns.	Appendix F
HR4	Where more than 2.5 kg of Class 1.1 explosives are stored on a site, every perimeter entrance to the site must be labelled with a 'Hazchem' placard in accordance with the Explosives Regulations. Adequate security needs to be provided for the explosive's storage area, and only those who are authorised for unsupervised access to the area may have means to unlock the explosive storage magazine	Appendix F
HR5	Explosive storage and use areas will be no smoking and not contain naked light, heat or ignition sources. The explosives stock will be rotated to prevent ageing (use on first in-first out basis).	Appendix F
HR6	The asbestos management plan will include information about the following: - The identification of asbestos and ACM, for example a reference or link to the Hazmat Audit for the site and locations of signs and labels - Decisions, and reasons for the decisions, safe work procedures and control measures - Procedures for detailing accidents, incidents or emergencies involving asbestos - Workers carrying out work involving asbestos, for example consultation, information and training responsibilities - An Asbestos Management Plan will be prepared	Appendix C
HR7	Prior to any demolition or work being carried out that may impact on asbestos, ACM, the responsible individual for management or control of a workplace will: - Review the HAZMAT Audit Report—if the register is considered inadequate for the proposed demolition, then it will be revised. - Provide a copy of the HAZMAT Audit Report to the contractor carrying out the demolition or refurbishment work. - Ensure asbestos or ACM that is likely to be disturbed is identified and so far, as is reasonably practicable, removed before the demolition or refurbishment commences. Where this may not be possible e.g., in the stacks, an alternative control will be implemented. Where asbestos cannot be safely removed an asbestos removal control plan will be developed.	Appendix C
HR8	The existing Bushfire Management Plan will be reviewed for adequacy and amended if required to ensure it includes measures to manage onsite fire risks associated with: - Hot works resulting in ignition of surrounding vegetation. - Equipment or vehicles being used in long grass. - Construction workers smoking or rubbish left at the site. - Storage of combustible materials and liquids on site. - The Bushfire Management Plan will also include measures to manage the potential risk that fire originating offsite pose to the projects.	Section 5.17
HR9	Implement the demolition management measures identified in the Demolition Impact Assessment Report (GHD, 2022c).	Refer to DM1 to DM11 above

3.2.3 RELEVANT CLAUSES OF EPL 2122

Table 6 – EPL Clauses relevant to the DEMP

EPL CLAUSES RELEVANT TO THE DEMP		
EPL Clause		**AMSP SECTION**
L4 Waste		
L4.3	Clause L4.3 of EPL 2122 is in the process of being updated to include disposal of ACM within the onsite asbestos disposal facility.	Appendix C

3.3 REFERENCE DOCUMENTS

This DEMP has been developed in accordance with the following:

Table 7 – Reference documents

Document Title	Document Location
Initial Risk Register	Appendix A
Asbestos Management Sub Plan	Appendix C
Soil & Water Management Sub Plan	Appendix D
Dust Management Sub Plan	Appendix E
Blast Management Sub Plan	Appendix F
Onsite Traffic Management Plan	Project document library
Traffic Management Plan for the Demolition	EMS Appendix 5
Biodiversity Management Plan	Stand alone document required by condition B32 of the consent
Rehabilitation Management Plan	Stand alone document required by condition B38 of the consent
Aboriginal Cultural Heritage Management Plan	Project document library
Noise and Vibration Management Plan	EMS Appendix 4
Hazardous Materials Removal Plan	Project document library
Change Management Register	Project document library
Emergency Response Management Plan	Project document library
Pollution Incident Response Management Plan	Project document library
Bushfire Management Plan	Project document library

3.4 LICENCES AND PERMITS

Following is a list of licences and permits relevant to the Demolition:

- SafeWork NSW Demolition Licence
- SafeWork NSW Class A Asbestos Removal Licence
- SafeWork NSW Notification of demolition work
- SafeWork NSW Notification of asbestos removal work
- EPL 2122

4 PLANNING

4.1 RISK REGISTER

As per condition C16 (d) of the Consent, a Risk Register will be maintained by CMA which will include Environmental Aspects and Impacts. The register will be reviewed quarterly at a minimum, and where additional works are introduced, when high-risk works change or if there is a reason to believe the risk control measures are not adequate. The Risk Register is used to record Risk Assessments, define controls and identify ways to eliminate or reduce to as low as reasonably practicable (ALARP) or a tolerable region using the Hierarchy of Control (refer to Appendix A for the initial Environmental Risk Assessment undertaken).

4.1.1 ASSESSMENT OF ENVIRONMENTAL IMPACTS

Environmental impacts are the consequences arising from environmental aspects. It is possible that from one aspect there may be a number of impacts on the environment. Impacts to all aspects of the environment should be considered.

Potential areas to be assessed at the Development include but are not limited to:

- Soil and Water Management.
- Traffic And Transport.
- Biodiversity.
- Social.
- Air Quality Controls.
- Noise And Vibration Controls.
- Hazardous Materials.
- Product And Material Management.
- Fill Material Controls.
- Stockpile Management.
- Waste Management.
- Rehabilitation.
- Landscaping and visual.
- Heritage.

4.2 OBJECTIVES AND TARGETS

CMA will operate in a manner that minimises harm to the environment and the community. To achieve this, CMA has defined a set of objectives and performance criteria, based on the requirements of statutory obligations, internal commitments and community expectations. Those objectives and performance criteria are outlined in the table below.

Table 8 – Objectives and performance criteria

Aspect	Objective	Performance Criteria
Compliance	Maintain compliance with all regulatory requirements	Nil non compliances
Water	Comply with the requirements of Table 3 of the Consent, and EPL 2122.	No adverse impacts or environmental consequences to groundwater, surface water and aquatic ecosystems as a result of the development outside those predicted in the environmental assessment documents listed in condition A2(c) of the consent. No complaints related to water quality. Refer to the Water Management Plan for specific performance criteria against the objectives.
Noise and Vibration	Comply with the requirements of Consent Part B Conditions B9-B10 for the operation of the asbestos disposal facility.	No exceedance of operational noise generated by the development at R21 and R28. Development undertaken generally in accordance with the predictions specified in the environmental assessment documents listed in condition A2(c) of the consent
Air Quality	Comply with the requirements of the Consent Part B Conditions B6 and B7, and EPL 2122.	Development undertaken generally in accordance with the predictions specified in the environmental assessment documents listed in condition A2(c) of the consent.
Biodiversity	Comply with the requirements of the Consent Part B Conditions B28 to B32.	Credits retired as specified. No incidents, non-compliances or complaints related to biodiversity. Refer to the Biodiversity Management Plan for specific performance criteria against the objectives.
Heritage	Comply with the requirements of the Consent Part B Conditions B4 and B5.	No incidents, non-compliances or complaints related to Aboriginal heritage and non-Aboriginal (Historic) Heritage.
Rehabilitation	Comply with the requirements of Table 7 of the Consent for Stage 1.	Development undertaken generally in accordance with the predictions specified in the environmental assessment documents listed in condition A2(c) of the consent.

Aspect	Objective	Performance Criteria
		Refer to the Rehabilitation Management Plan for specific performance criteria against the objectives.
Waste, hazardous materials or asbestos.	Comply with the requirements of the Consent Part B Conditions B23 to B27.	No incidents, non-compliances or complaints related to waste, hazardous materials or asbestos.
Community	Comply with the requirements of Statement of Commitment (SoC) SE1 to SE4.	Nil complaints received by community Nil adverse impact to surrounding private properties

4.3 TRAINING AND COMPETENCY

All CMA Project employees and subcontractors are required to undertake the Demolition specific inductions including those referencing environmental aspects and impacts including:

- Background to the Demolition.
- A summary of requirements including environmental commitments, legislation and regulations.
- The AGL and CMA Environmental Policies.
- Introduction to the DEMP - objective of providing guidance for complying with obligations.
- Description of key environmental issues, aspects, impacts and management strategies.
- The process for reporting environmental incidents, non-compliances, near misses and hazards.
- The responsibilities of employees about environmental management.
- Awareness of the potential penalties or consequences of non-conformances.

The induction will be updated as required following revision of the DEMP and possible outcomes of the results of audits, monitoring and incident reports.

The CMA Health, Safety Environment and Quality Manager is responsible for all workers being inducted into the DEMP.

4.3.1 OTHER ENVIRONMENTAL TRAINING

All personnel who undertake work activities involving environmental risks are to receive training targeting the management of these risks including requirements for compliance to environmental management procedures. This includes mitigation measures outlined in the Risk Register, Management Plans and Procedures including areas such as dust, noise and vibration.

A training needs analysis has been established for CMA personnel.

Contractors will ensure compliance to environmental induction and training requirements and undertake training needs analysis of contractors' personnel. This will be provided to CMA to ensure compliance and monitored through the audit schedule.

The Project HSEQ Manager will monitor training compliance and make recommendations to CMA's Project Management.

4.3.2 TRAINING RECORDS

Training records will be held on site on the project drive and will include:

- Records of attendance.

- Training materials.
- Records of competency assessment.

All records are to be stored and retained in accordance with statutory requirements.

4.4 CONSULTATION

The Consent outlines specific management plans that required consultation prior to being approved, those plans are summarised in the table below.

Part A Condition A16 of the Consent states that if consultation is required:

- Consultation with the relevant party must occur prior to submitting the document to the Planning Secretary for Approval; and
- Provide details of the consultation that took place, including the outcome, matters resolved or unresolved, and details of remaining disagreements and how the AGLM or the Contractor will address those matters.

Table 9 – Stakeholder consultation requirements

Consent Management Plan	Stakeholder
Demolition Environmental Management Plan (DEMP)	SafeWork NSW Site auditor

AGLM is responsible for submitting the DEMP to the Planning Secretary for approval.

5 IMPLEMENTATION

5.1 WATER MANAGEMENT

Water will be managed in accordance with the Soil and Water Management sub plan in Appendix D.

Discharge of water will be managed in accordance with the Environmental Protection License (EPL) No. 2122 (refer to Soil and Water Management sub plan).

5.2 TRAFFIC AND TRANSPORT

Traffic and Transport will be managed in accordance with the Onsite Traffic Management Plan and Traffic Management Plan for the Demolition.

5.3 BIODIVERSITY

Biodiversity will be managed in accordance with the Biodiversity Management Plan.

5.4 SOCIAL

Social aspects will be managed in accordance with the AGLM Community and Stakeholder Engagement Strategy.

5.5 REHABILITATION

Rehabilitation will be managed in accordance with the Rehabilitation Management Plan.

5.6 LANDSCAPE AND VISUAL

As per SoC LC1, where possible, CMA will protect and maintain existing large trees and vegetation. This will be done in consultation with AGLM and through the use of the AGLM Ground and Vegetation Disturbance Assessment (GVDA).

5.7 HERITAGE

5.7.1 HISTORIC HERITAGE

Historic Heritage items will be managed in accordance with CMA's unexpected finds procedure detailed in Section 5.16.

5.7.2 ABORIGINAL HERITAGE

Aboriginal Heritage will be managed in accordance with the Aboriginal Cultural Heritage Management Plan (ACHMP) and Section 5.6.8 of the Environmental Management Strategy.

In accordance with Condition B5 of the Consent, where Aboriginal objects are encountered, these are required to be managed in accordance with the Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (DECCW, 2010).

5.8 AIR QUALITY CONTROLS

Air Quality will be managed in accordance with the DMSP, the BMSP, and the AMSP.

Where feasible and reasonable, greenhouse gas will be managed in accordance with the requirements of SoCs GG1 to GG8, which include:

- Adoption of sustainable procurement practices.
- Maximisation of the reuse of materials won onsite for the backfilling of voids and ground levelling. Any raw materials required would be sourced locally where possible

- The use of biodiesel has been investigated and it has been determined that biodiesel is not feasible for the Project.Maintenance of all plant and equipment used during the project on a regular basis to reduce emissions and comply with the relevant exhaust emissions guidelines.
- Switching off plant and equipment when not in constant use and not leave them idling.
- Planning of the project so there is minimal movement of plant and equipment, where practical.
- Maximisation of the beneficial reuse of the carbon removed in vegetation, such as mulching and composting.
- Maximisation of the reuse/recycling of demolition waste materials.

5.9 NOISE AND VIBRATION CONTROLS

Noise and Vibration is managed in accordance with Noise and Vibration Management Plan (NVMP) and the Blast Management Plan sub plan (required prior to commencing blasting works).

5.10 HAZARDOUS MATERIALS

Hazardous materials to be managed in line with the details and requirements of the Hazardous Materials Removal Plan and the Asbestos Management sub plan.

In accordance with condition C15 of the Consent, hazardous materials, including ACM, PCB capacitors and PCB oils in transformers, that may be impacted by the demolition works are removed prior to the commencement of works, so far as reasonably practicable. Where deemed not reasonably practicable other controls must be considered, in accordance with the hierarchy of controls, as defined in the NSW WHS Regulations 2017, and in consultation with SafeWork NSW.

Multiple ACM clearance certificates will be obtained throughout the works for specific work areas and demolition of those work areas will commence once the clearance certificate is obtained.

5.11 PRODUCT AND MATERIAL MANAGEMENT

CMA recognises the importance of minimising the use of potentially hazardous substances and products wherever possible by effectively controlling their purchase, handling and storage on site.

5.11.1 PRODUCTS AND MATERIALS TO SITE

All chemicals require approval from the Project HSEQ Manager prior to being transported to site.

5.11.2 STORAGE

All hydrocarbons and chemicals will be secondarily contained regardless of capacity and volume. Secondary storage facilities will ensure 110% containment of the largest vessel and prevention of pollution in the event of breach of primary containment and will be in accordance with design specifications of the following Australian Standards (AS):

- Class 2 - Gases
    - AS 4332 – The storage and handling of gases in cylinders (*additional standards relating to gases in the next section of this post).
- Class 3 – Flammable and Combustible Liquids
    - AS 1940 – The storage and handling of flammable and combustible liquids.
- Chemical and hydrocarbon storage – Chemical and hydrocarbon products stored in bunded areas in accordance with relevant Australian Standards.
- Explosives
    - Refer to the Blast Management Plan (prepared prior to commencing blasting works).

5.11.3 PLANT and EQUIPMENT COMPLIANCE

CMA will inspect all plant and equipment to be used on the works for oil and fuel leakage before it enters the site and will inspect all plant and equipment during Prestart Inspections and regularly during operating hours. All leaks will be repaired when discovered with a record of repair retained at the site office.

Fuelling up of machinery will be undertaken in an area free of ignition points, free of waterways and environmentally sensitive areas, and preferably on a concrete laydown area and with spill kit and fire equipment available at hand.

5.11.4 SPILL MANAGEMENT

The Demolition will rely heavily on operational plant such as excavators, cranes, and generators, all of which pose a risk of spills and leaks of hydrocarbons (e.g. diesel fuel, hydraulic oil, engine oil, lubricants etc.).

Effective management of these potential releases is paramount to prevent soil and groundwater contamination, protect air quality, and maintain a safe working environment and will be managed as follows in accordance with SoC WQ7.

A key part for managing potential spills from operational plant is to ensure that the plant is properly maintained during the works. To achieve this, CMA will undertake inspections prior to each day of use and maintain scheduled servicing of the plant to identify any existing or potential leaks from hoses, seals, tanks, and engine components. Any identified defects which will be promptly repaired prior to recommencing works with the plant. Plant servicing requirements and records are maintained on CMA Contracting's online database which is managed by the CMA Contracting NSW Workshop Manager.

Refuelling and routine maintenance activities on demolition plant are a risk for spills. Designated refuelling and maintenance areas will be progressively established and will be away from sensitive environmental receptors such as drains, waterways, and areas of permeable ground (where possible). These areas will ideally have impermeable surfaces or be equipped with portable bunding or drip trays of sufficient capacity to contain any potential spills during these operations. During refuelling, trained personnel will be present to supervise the process, and appropriate spill kits will be readily accessible in these areas.

During maintenance involving the draining or changing of fluids, appropriate containers will be used to collect waste fluids, which will be stored securely with appropriate bunding until proper disposal can be arranged.

During the demolition works, incidental damage to plant (hydraulic hoses, etc.) is also a risk for spills. To manage this, mobile spill kits will be readily available in each work area. These spill kits will be appropriately sized for the type and capacity of fluids used by the plant.

Preventative controls will also include routine inspection of potential contamination sources, consideration of alarm systems where fixed tanks are in use and alarming would be appropriate, and ongoing training of staff in spill prevention practices. These measures are intended to reduce the risk of unplanned releases and support early detection.

All workers will be informed of the location and trained in proper use of spill kits and understand the immediate actions to take in the event of a leak or spill including:

- Stop the plant if safe to do so.
- Notify the Site Manager and AGLM
- Isolate the source of the leak (if possible).
- Deploy spill containment measures to prevent further spread.
- Clean up the contaminated area.
- Where possible, any contaminated materials or sources (e.g. damaged hoses or fittings) will be removed from site or replaced to eliminate ongoing risk of release.
- Dispose of contaminated materials offsite at an appropriately licenced facility.

For demolition works adjacent Lake Liddell, a floating boom will be installed to contain any oil in the event the works results in a spill into the waterway.

Any waste generated as a result of a spill, will be managed in accordance with Section 5.14 of this DEMP and where possible, associated identified contamination source is removed.

5.11.5 LABELLING

All containers containing chemicals will be clearly labelled identifying its contents. Further information is available by referencing the Safety Data Sheets (SDS), located in the site office, in the chemical storage area and with the chemical. Any decanted substances will be clearly labelled with the product name.

5.12 FILL MATERIAL CONTROLS

5.12.1 IMPORTED FILL

Prior to bringing any imported fill to site, it must first be certified by a suitably qualified environmental consultant in consultation with the site auditor as either:

- Virgin Excavated Natural Material (VENM) in accordance with the NSW EPA Waste Classification Guidelines (Part 1) 2014; or as
- Excavated Natural Material (ENM) in accordance with The Excavated Natural Material Order 2014 and The Excavated Natural Material Exemption 2014.

All imported material must be supported by reports from qualified environmental or geotechnical consultants confirming it is free from contaminants.

If needed, the environmental consultant should inspect the source site before importation.

After reviewing the reports, the consultant will issue written approval or provide recommendations to address before approval.

Imported materials must be inspected to ensure they match the approved type.

All imported material must be recorded in the material tracking register.

Documentation must be submitted to the environmental consultant for inclusion in the site validation report.

5.12.2 SOIL DISPOSAL

As per condition B23 of the Consent, prior to disposal of any soil, the material will be classified in accordance with the NSW EPA Waste Classification Guidelines (Part 1) 2014 and managed in accordance with the Protection of the Environment (Waste) Regulation 2014 and in accordance with Part C of the Consent.

5.12.3 SOIL REUSE

Internal movement and re-use of soil within the site boundary will be subject to an assessment of the suitability for reuse of the material onsite. The assessment would be undertaken by a suitably qualified environmental consultant in consultation with the site auditor taking into account conditions C1 to C13 of the Consent where relevant. Movement of soil onsite would be included in the material tracking register which would include details such as:

- Identification number
- Date material transport
- GPS coordinates of the location where the soil originated
- GPS coordinates of the location where the soil was reused

- Nature of the material and classification
- Estimated Quantity of the material reused.

Table 10 – Example of soil reuse tracking register

ID Number	Date	GPS coordinates (soil origin)	GPS coordinates (Reuse Location)	Nature of the material and classification	Estimated Quantity of the material reused (m3)
123987	15/8/26	**Latitude:** 32° 22' 25" S **Longitude:** 150° 58' 45" E	**Latitude:** 32° 22' 10" S **Longitude:** 150° 58' 50" E	Clay (ENM)	1,000
236765	15/9/26	**Latitude:** 32° 22' 25" S **Longitude:** 150° 58' 34" E	**Latitude:** 32° 22' 07" S **Longitude:** 150° 58' 42" E	Clay (VENM)	1,500
356875	15/10/26	**Latitude:** 32° 22' 15" S **Longitude:** 150° 58' 54" E	**Latitude:** 32° 22' 07" S **Longitude:** 150° 58' 37" E	Sand (ENM)	3,000

5.13 STOCKPILE MANAGEMENT

5.13.1 PLACEMENT AND MANAGEMENT OF STOCKPILES

Demolition material will need to be stockpiled during the works while awaiting dispatch from the site. The following stockpile management measures will be implemented:

- Stockpiles will be progressively removed from the site and managed to minimise sedimentation and dust generation.
    - Waste material will be segregated into like waste streams and stockpiled in designated areas away from drainage lines waterways and areas where they may be susceptible to wind erosion.
    - Designated stockpile areas will sign posted for the waste stream and communicated on site notice boards.
- The size of stockpiles will be minimised as far as reasonably practicable.
- Any batters which are created will be cut at a minimum angle as to reduce the risk of slope failure and erosion.
- Erosion and Sediment Control Plans will be developed and implemented for stockpile management, and regular inspections will be undertaken.
- Where necessary, control devices will be used to stabilise and control dust, erosion and sedimentation generated from stockpiles (refer to DMSP in Appendix E and SWMSP in Appendix D)
- Where stockpile material is suspected of being contaminated, the stockpile material will be placed on hardstand or black plastic to prevent cross contamination.

5.14 WASTE MANAGEMENT

5.14.1 GENERAL

As per condition B23 of the Consent and SoC 'WM3', all waste generated throughout the demolition works will be classified for disposal in accordance with the NSW EPA Waste Classification Guidelines Part 1: Classifying waste November 2014 and disposed of at and appropriately licenced facility. As per SoCs 'WM4' and 'WM5', CMA will manage waste streams in accordance with EPL 2122, and recycling and resource recovery activities will be managed by a licenced service provider. In accordance with condition B24 of the Consent, no waste from outside of the approved development area will be received, stored, treated, processed, re-processed or disposed of within the approved development area unless it is expressly referred to in the site EPL 2122.

For ACM and SMF waste, refer to AMSP in Appendix C.

In accordance with condition A6 of the Consent, a maximum of 30,000 cubic metres of asbestos waste, asbestos containing material, synthetic mineral fibre and other associated wastes authorised by the Site auditor, may be disposed of at the asbestos disposal facility, unless otherwise agreed by the Planning Secretary.

5.14.2 STORAGE

As per the condition B25 of the Consent, waste generated by the demolition works will be secured and maintained within a designated waste processing or storage area (defined as the work progresses) at all times prior to disposal, re-use or recycling.

5.14.3 TRACKING

As per SoC 'WM1', all waste will be tracked in accordance with the PoEO (Waste) Regulation 2014.

A waste tracking system will be implemented for all waste leaving the site or disposed of in the onsite asbestos disposal facility so as to track the waste from the site to the licenced disposal facility including the type and quantity of waste.

The waste tracking system for waste leaving the site will consist of the use of a site waste register to record each load of waste leaving the site to verify that each load of waste was disposed of at a licenced disposal facility and will include the use of a CMA Contracting "transport & disposal" docket for each load.

The waste register will record the following for each load of waste transported:

- Date waste transported
- CMA Contracting Docket Number
- Origin of the waste
- NSW EPA Waste Classification
- Disposal Facility
- Truck Registration
- Quantity

Table 11 – Example Waste Tracking Register

Date	CMA Docket #	Waste Origin	NSW EPA Waste Classification	Disposal Facility	Truck Registration	Quantity
01/08/2025	1025	Transformer Yard	GSW	Muswellbrook Waste & Recycling Facility	ABC 123	4 tonnes
04/08/2025	1026	Administration Building	GSW	Muswellbrook Waste & Recycling Facility	ABC 123	6 tonnes
05/08/2025	1027	Main Store	GSW	Muswellbrook Waste & Recycling Facility	ABC 123	10 tonnes

In addition to the above, for waste tyres, asbestos waste, and trackable waste (in accordance with the POEO (Waste) Regulation 2014) that is leaving the site and transported within NSW, CMA will utilise the NSW EPA Integrated Waste Tracking Solution (IWTS) – *Note: this excludes waste disposed of in the onsite asbestos disposal facility which is tracked under CMA's waste tracking system.*

For tracking of asbestos waste, asbestos containing material, and synthetic mineral fibre waste disposed of in the onsite asbestos disposal facility, refer to the AMSP in Appendix C.

5.14.4 DISPOSAL, REUSE AND RECYLING

Prior to commencing the demolition of a structure, all waste types will be identified including materials that can be recycled or salvaged for reuse.

Where practical, items that can be salvaged for reuse are removed from the structure either prior to or during the demolition works (e.g. hardwood timbers, Hunter Valley Gas Turbines, shelf racking, motors, pumps, etc).

During the course of the demolition works, all waste will be segregated into like waste streams to minimise contamination, maximise recycling and minimise materials going to landfill.

Metals will be taken offsite for recycling at a licenced facility, segregated as far as practical into like metals (e.g. ferrous, copper, brass, aluminium, etc). Clean concrete and brick will be crushed for reuse onsite, with any material deemed to be unsuitable for re-use, disposed of offsite at a licenced facility. Asbestos contaminated materials will be disposed of in the onsite asbestos disposal facility. All other waste will be taken offsite and disposed of at a licenced disposal facility.

In accordance with condition B26 of the Consent, any concrete confirmed to be impacted with PCB above acceptable levels as determined by the Site auditor will be disposed of at a licensed waste facility.

As per condition B27 of the Consent, asbestos soils requiring disposal, asbestos containing materials, synthetic mineral fibre and other associated wastes authorised by the Site auditor will be disposed of at the asbestos disposal facility.

5.14.5 WASTE RELATED TRAINING AND AWARENESS

As per SoC 'WM2' all workers will undergo training to provide awareness of waste minimisation practices to be employed on the Demolition which will include:

- All waste to be segregated into like waste streams to minimise contamination and maximise recycling and minimise materials going to landfill.
- All metals will be taken offsite for recycling at a licenced facility, segregated as far as practical into like materials (e.g. ferrous, copper, brass, aluminium, etc).
- All clean concrete and brick will be crushed for reuse onsite.
- Where practical, materials / plant will be recycled for reuse (e.g. hardwood timbers, Hunter Valley Gas Turbines, shelf racking, motors, pumps, etc).

5.15 GROUND DISTURBANCE

An AGLM Ground Vegetation Disturbance Approval (GVDA) and a CMA excavation permit largely focused on the consideration of services within the work area, will be required for all ground disturbances. All GDVA permits will be completed in accordance with the AGLM Ground Vegetation Disturbance Approval Procedure.

5.15.1 GROUND WATER WELLS

In accordance with SoC DM4, monitoring well locations will be confirmed and wells impacted by the project will be decommissioned by a suitably qualified consultant. Following decommissioning, the consultant will provide AGLM with a decommissioning report.

5.16 UNEXPECTED FINDS

There are occasions where unexpected finds may be uncovered on site. These include but are not limited to the following (refer to section 5.7 of the Environmental Management Strategy):

- Underground storage tanks / pits
- Asbestos lined infrastructure
- Soil that is odorous, stained, discoloured contains tar or contains asbestos
- Buried waste
- Potential human remains
- Heritage / Archaeological structures and/or artefacts

Where ever an unexpected find is encountered, the following shall be followed:

- Works will cease in that area, the CMA Site Manager notified and the affected area made safe and closed off where deemed required by the Site Manager (e.g. use of barrier tape or similar).
- The Site Manager is to notify AGLM who will determine if an environmental consultant is required.
- Where required, the environmental consultant will inspect the area and assess the significance of the find in terms of the potential impact to human health and the environment with reference to NSW EPA endorsed guidelines including:
    - National Environment Protection Council (NEPC) National Environment Protection
    - (Assessment of Site Contamination) Measure 1999, as amended 2013 (NEPC, 2013).

    - Western Australia Department of Health (2009) Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia (WA DoH, 2009).
    - The NSW Environment Protection Authority (EPA) Waste Classification Guidelines, Part 1: Classifying Waste, November 2014 (EPA, 2014).
- Assessment by the environmental consultant may include laboratory assessment.
- The environmental consultant is to assess and direct the Principal Contractor on the requirements of any exclusion zones.
- For minor remediation works, the environmental consultant will prepare a work method statement (WMS) detailing the laboratory results (if undertaken) and the extent and methods of remediation, as required.
- The agreed management/remedial strategy shall be implemented.
- The environmental consultant will validate the unexpected find.
- Any off-site removal of contaminated material must comply with Section 5.12 of the DEMP.
- A validation report must be prepared and submitted to the site auditor for review.

In some circumstances, specific legislation and Codes of Practice will apply in the management of the unexpected find (e.g. non-aboriginal heritage finds must be managed in accordance with Section 146 of the Heritage Act 1977, Aboriginal Heritage finds must be managed in accordance with the Code of Practice Archaeological investigations of Aboriginal Objects in NSW (DECCW, 2010), etc).

In the event potential human remains are found report to AGLM representative who will liaise with the relevant governing body and advise on actions.

5.17 FIRE PRECAUTIONS

CMA will provide, operate and maintain adequate firefighting equipment for the protection of the works and its plant and equipment.

For all Hot Works, CMA will work under a Hot Work permit which are raised for specific work areas and specific durations.

CMA will take all necessary measures to prevent fire during the execution of work under the Contract, which may damage or cause destruction by fire to the vegetation and surrounding areas.

CMA will comply with the requirements of the AGLM Bushfire Management Plan, NSW Rural Fire Service (RFS) and relevant legislation and will ensure that all persons on the site observe these requirements. This includes the monitoring of fire ratings throughout the works to ensure any adjustments to work activities are made. CMA will take notice of, and implement appropriate strategies for, any announcements by the RFS, particularly the notification of days of Total Fire Ban.

Where the RFS declares a Total Fire Ban, no Hot Works will be undertaken unless a specific written exemption has been issued by the RFS.

In accordance with SoC HR8, the existing AGLM Bushfire Management Plan will be reviewed for adequacy and amended if required to ensure it includes measures to manage onsite fire risks associated with:

- Hot works resulting in ignition of surrounding vegetation.
- Equipment or vehicles being used in long grass.
- Construction workers smoking or rubbish left at the site.

- Storage of combustible materials and liquids on site.
- Measures to manage the potential risk that fire originating offsite pose to the projects.

5.18 INCIDENT AND EMERGENCY RESPONSE

5.18.1 EMERGENCY MANAGEMENT

In the event of an emergency, CMA will comply with the Emergency Response Management Plan and the Pollution Incident Response Management Plan (PIRMP).

As part of the Demolition induction process, project personnel, including subcontractors will be briefed on whom to contact in the case of an emergency and procedures to follow in a range of potential emergency scenarios. This includes for incidents and near misses. Project personnel will be promptly advised of any changes to these contacts.

At all times CMA will have senior personnel available to prevent, prepare for, respond to, and recover from emergencies.

5.18.2 INCIDENT MANAGEMENT

Immediate action must be taken to control and / or minimise the impact/s and manage any environmental incident. This will include:

- Ensuring immediate hazards are adequately controlled.
- Preserving the scene and any evidence that may be required to allow a thorough investigation.
- Immediately notify CMA Emergency Response Team (ERT) and assess requirement for external assistance, if required.

Further to this, additional actions that may take place depending on the event include:

- AGLM representatives are to:
    - Stop all work activity.
    - Control and contain incidents as required.
    - Contact local authorities.
    - notify appropriate personnel as per the AGLM Pollution Incident Response Management Plan (PIRMP), if required.

CMA are to provide information to AGLM for the purpose of stakeholder communication, including potentially impacted community members.

5.18.3 AIR QUALITY

Specific details, procedures and processes for the management of air quality across the project is presented within the Dust Management Sub-plan including a Trigger Action Response Plan (TARP) as required in C16 (g) of the Consent.

5.18.4 WATER QUALITY

Specific details, procedures and processes for the management of water across the project is presented within the Soil and Water Management Sub-plan including a Trigger Action Response Plan (TARP) as required in C16 (g) of the Consent.

5.18.5 NOISE AND VIBRATION

Specific details, procedures and processes for the management of blast generated noise and vibration across the project is presented within the Blast Management Sub-plan including a Trigger Action Response Plan (TARP) as required in C16 (g) of the Consent.

6 RECORD KEEPING AND REPORTING

6.1 RECORD KEEPING

To meet EPL requirements all records required to be kept must be:

- in a legible form, or in a form that can readily be reduced to a legible form.
- kept for at least 4 years after the monitoring or event to which they relate took place.
- produced in a legible form to any authorised officer of the EPA who asks to see them.

The following records must be kept in respect of any samples required to be collected for the purposes of this licence:

- the date(s) on which the sample was taken.
- the time(s) at which the sample was collected.
- the point at which the sample was taken.
- the name of the person who collected the sample.

6.2 INCIDENT REPORTING (INTERNAL – CMA)

Any environmental incidents, near misses, hazards or non-conformance are reported to CMA's HSEQ department so an investigation can take place.

Incident reporting and investigation must commence within the same shift as the incident, or the same shift the incident is discovered.

CMA will ensure that incidents are reported to AGLM within the timeframes specified.

Following an Incident Investigation report, the Project Risk Assessment will be reviewed to determine if further controls are required and if the risk assessment needs to be updated.

6.3 INCIDENT REPORTING (EXTERNAL – AGLM)

6.3.1 NON-COMPLIANCE

In accordance with D4 of the Consent, within seven days of becoming aware of a non-compliance, the Applicant (AGLM) must notify DPHI of the non-compliance. The notification must:

(a) Be in writing.

(b) Submitted via the NSW planning portal (Major Projects).

(c) Identify the development (including the development application number and name).

(d) Set out the condition of this consent that the development is non-compliant with.

(e) Why it does not comply.

(f) The reasons for the non-compliance (if known).

(g) What actions have been undertaken, or will be undertaken; and when, to address the non-compliance.

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

6.3.2 INCIDENTS

Incidents at the Demolition that are deemed notifiable in accordance with the POEO Act must be reported to the NSW EPA immediately. These incidents are those that cause or threatening to cause material harm to the environment, as per section

148 of the POEO Act, the AGLM PIRMP and the site EPL. CMA will report Environmental ALL incidents to AGLM who will then report to the Regulatory body as required.

Incidents are to be reported as per Conditions R2 of EPL2122. Condition R2 requires notification to all relevant authorities of incidents causing, or threatening to cause material harm to the environment, immediately after becoming aware of the incident, by phoning 131555. A written report must then be provided to the EPA within 7 days of the date on becoming aware of the incident.

In accordance with D5 of the Consent, the Applicant (AGLM) must notify the DPHI within 24 hours of becoming aware of an incident. A notification must be made via the NSW planning portal (Major Projects) and address details of the incident including:

(a) Date, time and location.

(b) A brief description of what occurred and why it has been classified as an incident.

(c) A description of what immediate steps were taken in relation to the incident.

(d) Identifying a contact person for the further communication regarding the incident.

In accordance with D6 of the Consent, the Applicant (AGLM) must provide DPHI with a subsequent incident report in accordance with the nominated incident notification and reporting requirements in accordance with Appendix 6 of the Consent.

6.4 DEMOLITION REPORTING (AGLM)

Compliance reports must be completed for the Demolition in accordance with the minimum timeframes specified in the NSW Department of Planning, Industry and Environment – Post Approval Requirements – Compliance Reporting (May 2020) unless the conditions specify alternative time frames.

In the context of the Compliance Report, decommissioning is defined as *the deconstruction or demolition and removal of works and buildings installed as part of the development.*

Table 12 Minimum Frequency for Compliance Reporting

Compliance Report	Phase	Timing	Minimum Frequency
Operational Compliance Report	Operation Care and Maintenance	To be submitted by end of March annually in accordance with D2 of consent.	At intervals, no greater than 52 weeks from the date of commencement of operation of the onsite asbestos disposal facility and/or borrow pit (annually)
Post-Decommissioning Compliance Report	Decommissioning	Report to be submitted to the Planning Secretary within 12 weeks of completion of decommissioning	Single report only
Annual Return	Demolition works (ongoing)	Reporting required until EPL2122 has been surrendered.	Annually

7 REVIEW AND IMPROVEMENT

7.1 COMPLAINTS AND ENQUIRIES MANAGEMENT

An enquiry is a request of information on a matter whilst a complaint is a statement that something is unsatisfactory or unacceptable. A dispute is a disagreement between two or more parties.

Complaints are to be recorded as per Condition M7 of EPL 2122. The record must include details of the following:

(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, if no such details were provided, 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.

The record must be retained for a period of at least 4 years.

AGLM is committed to effectively manage complaints and resolve disputes for all existing and planned developments. AGLM aim to come to an early resolution on all feedback for complaints.

Community complaints can be made through the following:

- AGL Complaints and Enquiries Hotline: 1800 039 600
- AGL website: AGL Macquarie | About AGL
- Mail: AGL Community Complaints and Enquiries
- Locked Bag 14120 MCMC
- Melbourne, Vic 8001

If a complaint is received, or feedback is received onsite, or directly to a Contractor, the Contractor's environmental representative will not respond to the public or other stakeholders but will immediately forward details of complaints onto the AGLM Contract Manager, who will assign a Case Manager from the AGLM Government and Community Relations Team. The Case Manager will contact the complainant or enquirer and make a preliminary assessment (level of feedback required) of the type of feedback needed to resolve the issue. AGLM target feedback to the complainant or enquirer within five days for standard feedback, and thirty days for complex feedback.

CMA will support AGLM in investigating and addressing complaints.

7.2 INSPECTIONS AND AUDITING

7.2.1 INTERNAL AUDITS

The Demolition will be subject to Internal Environmental audits. Environment audits are intended to promote, improve, and then maintain good environmental performance. Environment audits are an instrument for the direct prevention of incidents as they immediately generate positive actions across the whole business activity.

7.2.2 POST-APPROVAL REQUIREMENTS FOR STATE SIGNIFICANT PROJECT – AUDIT FREQUENCY

The Independent Audit Post-Approval Requirements (PAR) (2020) establishes minimum timeframes for undertaking independent audits. These timeframes are:

- Within the 12 weeks of commencement of and during the construction phase of a project.
- Within 6 months of commencement of operations.
- At intervals no greater than three years from the initial operations audit.

Independent audits must be undertaken in accordance with D1 of the consent. The minimum timeframes are specified in the Independent Audit PAR (2020).

7.2.3 INSPECTIONS

Environmental inspections are driven by environment risk in each area with higher risk area receiving more regular oversight and include the following:

- Weekly overall site environmental inspections.
- Inspections pre and post rainfall events (refer to Soil and Water Management sub-plan).
- Inspections prior to extended site shut down periods.

7.3 NON-COMPLIANCE, NON-CONFORMANCE AND CORRECTIVE ACTION REPORT

If at any time a non-conformance poses an immediate risk to the Demolition, project personnel or the Environment, CMA may suspend the work associated with the unsafe practice or breach until it is rectified.

Each non-conformance will be noted in the audit form and documented in the Corrective Action Report where responsibility is assigned to a nominated person.

Non-compliance is an occurrence or a set of circumstances that is in breach of the Consent, EPL or relevant state or federal legislation.

Where incidents is deemed a non-compliance and results in pollution, they must be reported to the EPA and DPHI in accordance with the requirements of Part D Condition D5 of the Consent, EPL No. 2122 Condition R2, and Section 148 of the POEO Act.

Incidents determined to represent a potential non-compliance will be documented in a written report and submitted to DHPI and the EPA within seven days of the incident notification

7.4 MANAGEMENT OF CHANGE

Any changes to the DEMP and associated sub-plans will be recorded in a change management register.

All changes will be assessed for impact on the works and a risk assessment on the change undertaken where deemed necessary.

All changes to the DEMP must be consulted with AGLM and authorised by the Project Manager, and must be approved by DPHI following Site Auditor consultation.

Prior to implementing the change, workers will be inducted in the revised documentation.

7.5 MANAGEMENT PLAN REVIEW

The DEMP will be reviewed for effectiveness and updated when / if the following occur:

- a significant Environmental Incident.

- completion/change of a significant part of the work.
- a significant change in Site Conditions.
- a change in the applicable Environmental Laws.
- a request by the Principal to do so.

As outlined in condition D7 of the Consent, the plan will be updated within three months of the following events:

(a) The submission of an incident report under condition D5 or D6.

(b) The submission of a compliance report under condition D3.

(c) The submission of an Independent Environmental Audit under condition D1.

(d) The approval of any modification of the conditions of this consent (unless the conditions require otherwise).

(e) Notification of a change in the development phase under condition A10.

In accordance with condition D7 of the Consent, where an update to the DEMP is required, the DEMP will be revised and submitted to the Planning Secretary and the Site Auditor for approval within three months of the review.

8 ACCEPTANCE OF DEMOLITION ENVIRONMENTAL MANAGEMENT PLAN

This DEMP has been developed and viewed in consultation with the workers and it is read and signed by all persons involved in the plan. If a variation occurs to this DEMP, then management will communicate and re-induct the change to the work group whilst adjusting the work method methodology accordingly.

I hereby confirm that I have read and understand this Demolition Environmental Management Plan and I will ensure my work process is completed accordingly.

Table 13 – Acceptance of DEMP

Inductor Name:			
Position:			
Inductee Name	**Company/Title**	**Signature**	**Date**

Inductee Name	Company/Title	Signature	Date

9 APPENDICIES

APPENDIX A – INITIAL RISK REGISTER

FY 25 Liddell Stage 1 Environmental Risk Assessment

Risk Event	Risk Owner	Cause(s)	Consequence(s)	Controls	Residual Risk Rating	Residual Consequence	Residual Likelihood	Residual Score	Relevant Management Plan
Unauthorised discharge to surface water	AGLM	Overflow of sediment basin or containment area - less than adequate (LTA) basin sizing, LTA pumping, sediment build up, extreme weather event. Potential hydrocarbon or chemical spill. Overflow/seepage of ash dam. Chemical and hydrocarbon bunding/storage doesn't meet the requirements. LTA inspections and maintenance. LTA spill response.	Environmental incident from spill, overflow or seepage. Regulatory non-compliance (including penalty infringement notice (PIN)).	Removing unnecessary chemicals and hydrocarbons from site (to de-risk); secondary control basins (ie Oil and Grit Trap) to capture spill material before release to environment; Ash Dam seepage - pollution reduction study on the licence reducing requirement for regulatory involvement; EPL 2122 - authorised discharges in line with approved EPL criteria. Appropriate sizing, inspections and maintenance of sediment basins. Appropriate storage and bunding of chemicals and hydrocarbons in accordance with substance SDS Management plans and procedures (e.g. Erosion and sediment control plans).	High	Level 3	Possible	14	Environmental Management Strategy (EMS), Water Management Plan (WMP), Demolition Environmental Management Plan (DEMP) (Soil&Water MsP), Erosion & Sediment Control Plan (ESCP).
Unauthorised discharge to ground water	AGLM	Overflow of sediment basin or containment area - less than adequate (LTA) basin sizing, LTA pumping, sediment build up, extreme weather event. Potential hydrocarbon or chemical spill. Overflow/seepage of ash dam. Chemical and hydrocarbon bunding/storage doesn't meet the requirements. LTA inspections and maintenance. LTA spill response.	Environmental incident from spill, overflow or seepage. Regulatory non-compliance (PIN).	Removing unnecessary chemicals and hydrocarbons from site (to de-risk); secondary control basins (ie Oil and Grit Trap) to capture spill material before release to environment; Ash Dam seepage - pollution reduction study on the licence reducing requirement for regulatory involvement; EPL 2122 - authorised discharges in line with approved EPL criteria. Appropriate sizing, inspections and maintenance of sediment basins. Appropriate storage and bunding of chemicals and hydrocarbons in accordance with substance SDS Management plans and procedures (e.g. Erosion and sediment control plans). GDVA process.	Moderate	Level 3	Unlikely	11	EMS, WMP, DEMP (S&W MsP), ESCP.
Authorised discharges exceed discharge criteria (technical non-conformance)	AGLM	Analytes (e.g pH, electrical conductivity etc.) less than or greater than approval criteria limits.	Regulatory non-compliance (PIN). Impact on localised/operation environmental area.	Chemical/hydrocarbon storage will be compliant with the requirements of the site and product SDS; removing unnecessary chemicals and hydrocarbons from site (to de-risk). Approvals with discharge limits and criteria. Monitoring and reporting.	Moderate	Level 3	Unlikely	11	EMS, WMP, DEMP (S&W MsP), ESCP.

Emissions to the air (dust & air quality)	AGLM	Fugitive dust from surfaces, e.g. dust generation from vehicle/plant movements. Emissions from combustion engines (eg. diesel fumes, etc). LTA air quality and dust controls when crushing rock in borrow pit, or when mechanical and blast felling.	Regulatory non compliance (PIN). Human health & ecological risk. Reputation damage to AGL as community stakeholder or around technical expertise. Directors/officers found individually liable for regulatory breaches.	Site entry and exit controls including wheel washes and rumble grids as required; water carts and manual sprays in place to dampen and minimise dust generation on roadways and surfaces; operating of machinery and equipment in a proper and efficient manner; carrying out routine maintenance on plant and vehicles; reduce and/or cease operations in adverse weather; weather forecasting tool (4 day lookahead) to prepare for adverse weather/dust events; real time dust monitoring and early warning alarm system. Adequate assessment of goods and services under AGL Procurement policies and procedures. Pre use inspections. Daily inspections. SWMS for crushing.	High	Level 3	Possible	14	EMS, DEMP (Dust Management sub plan (DMP).
Unauthorised acceptance of waste, and/or disposal or storage of waste on site	AGLM	Material/waste brought to site by contractors. organics for rehab contain unauthorised material/waste. Other materials brought to site. Unauthorised/illegal dumping on site. Absence of consent and/or EPL approval to accept material/waste.	Regulatory action (PIN). Harm to the environment. Contamination of site.	Stringent procurement processes to award reputable and licensed contractors & include relevant contract clauses; project waste tracking; Site security protocols, including cameras and physical barriers (fences, gates); Site induction and training regarding expectations and obligations regarding waste (and enviro generally); Development consent and EPL approval to receive specified organics and resource recovery exempt waste; Review of SAQP and sampling by NSW EPA Site auditor, Organics application assessment and report; Project team ensuring products brought to site are verified through sampling and inspection.	Moderate	Level 3	Unlikely	11	EMS, DEMP.
Unauthorised removal of waste from site (classification/disposal method)	AGLM	Lack of ID of waste. Lack of tracking of waste. Lack of appropriate licences to remove waste from site / accept waste at the correct disposal facility.	Regulatory action (PIN). Harm to the environment. Human health impacts (eg. exposure to hazardous materials).	Stringent procurement processes to award reputable and licensed contractors & include relevant contract clauses; project waste tracking; Site induction and training regarding expectations and obligations regarding waste (and enviro generally); Hazardous materials audit; EPL approval to remove specified waste from site, where and how.	Moderate	Level 3	Unlikely	11	EMS, DEMP.
Unauthorised impact to biodiversity (BCD & EPBC) - non-approved disturbance or impact, or, disturbance and impacts to areas approved for disturbance without appropriate controls.	AGLM	Unauthorised clearing of vegetation. Lack of appropriate clearing. Failure to delineate limits of clearing. Direct and indirect project impacts. Deliberate/negligent non-approved disturbance and/or impact. Failure to conduct or poorly conducted pre clearance surveys.	Regulatory action (PIN). Harm to the environment.	Obtaining consent to disturb/impact vegetation and/or fauna; Survey and delineate limits of clearing for each project; Site induction and training regarding Enviro & Reg expectations and obligations; Relevant policies and site-specific procedures; Site mapping regarding biodiversity classification; Engaging suitably qualified experts to undertake due diligence assessments; Ground and vegetation disturbance approval (GVDA) permitting process; Communications plan to formalise and communicate obligations & changes. Pre clearance assessments and FSC onsite during clearing works, Site survey for SSD project area and boundary delination, Appropriate waste management. Management of environmental aspects which could cause a pollution risk.	Moderate	Level 3	Unlikely	11	Biodiversity MP (BioMP) including Microbat Managemet Plan (MMP) and Habitat Relocation Plan (HRP). EMS inc Traffic Management Plan (TMP). DEMP.
Unauthorised impact to cultural heritage Aboriginal objects AHIMS 37-2-6560 and 37-2-6559 or AHIMS 37-2-6561 and 37-2-6284.	AGLM	Unauthorised disturbance of indigenous heritage items. Failure to delineate limits of disturbance. Surveys fail to identify artifcacts and cultural sites. Deliberate/negligent non-approved disturbance and/or impact. Direct and indirect project impacts. Significant incident on site (e.g. dam failure, uncontrolled fire).	Regulatory action (PIN). Reputation impact (damage to local indigenous relationships).	Site induction and training regarding Enviro & Reg expectations and obligations; Cultural heritage assessments and surveys; Consultation with Registered Aboriginal Parties (RAPs) for each project (undertaken in the EIS phase and ACHMP preparation); Conduct works in accordance with the Cultural Heritage Code of Practice; Appointment of suitably qualified consultant to conduct due diligence assessments; Demarcation of approved disturbance areas; Cultural Heritage Management Plan approved for development. Demarcation of areas with known Aboriginal objects AHIMS 37-2-6560 and 37-2-6559. Unexpected finds protocols. Prior to disturbance, salvage AHIMS 37-2-6561 and 37-2-6284.	Moderate	Level 3	Unlikely	11	EMS, Aboriginal Cultural Heritage MP (ACHMP).

Non-compliance with Biosecurity Act (feral pests, noxious weeds, veg management)	AGLM	Inherited areas with priority weed infestations. Infestation with lack of access to manage priority weeds. Failure to manage priority weed infestations. Business concerns with potential health & safety impacts from glyphosate use. Limited approved methods for management of priority weed infestations. Non-compliance with development consent requiring management of weed spread. Inadequate pest control. Lack of adequate maintenance of rehab areas. Failure to meet rehab closure criteria. Importing a pest species during project works (e.g. in material). Personnel interaction with feral animals/pests.	Regulatory action under applicable legislation (PIN). Health & safety impacts. Reworks to damaged rehab areas.	Current rehab and veg management plans; Site induction and training regarding Enviro & Reg expectations and obligations; Pampas grass and general weeds management plan; contractor engaged to manually remove pampas grass and weeds in general; Pest management contractors; Rehab monitoring and surveys (identifies weeds and pests); Application assessment report to identify potential pests in organic materials.	Moderate	Level 3	Unlikely	11	EMS, BioMP. Vegetation Management Strategy (VMS).
Changes to legislation & regulations (Coal Ash/DSNSW/CLM Regs/EPL/etc) that in turn will impact personnel understanding and fulfilment of obligations relating to current project works.	AGLM	Missing a change in conditions. Lack of assurance to determine if works remain compliant. Project scope increases significantly to adapt to changes. Carry out works not in accordance to changed legislation or failure in communication chain (staff turnover or changes to roles).	Regulatory action (PIN). Reputational damage. Financial/commercial impact.	Subscriptions to regulatory communications (Sai Global, etc); Corporate teams (legal) providing enterprise wide comms; Environmental compliance uplift; regulatory engagement. Communication of changes to team members and contractors during meetings and other forums.	Moderate	Level 3	Unlikely	11	EMS.
Failure to comply with licence, consent and permit conditions	AGLM	Operating in a non efficient manner as per EPL / SSD requirement. LTA understanding of licence, consent and permit requirements. Inadequate storage and/or handling of chemicals, hazardous materials and dangerous goods. Spills/release of oils, fuels, etc from plant/storage during operations.	Reputation damage. HSE Event. Environmental impact. Regulatory action (PIN).	Removal of non-essential chemicals and hydrocarbons from site (to de-risk); Site induction and training regarding Enviro & Reg expectations and obligations; Work method statements and risk assessments; Management plans developed and implemented; Monitoring programs implemented and ongoing; Procurement process in line with contract requirements; Relevant environmental management plans. Audits, inspections, monitoring and reporting. GVDA.	Moderate	Level 3	Unlikely	11	EMS.
Unauthorised works completed on non-AGL land (roads, easements, agreements, consents, licences), or off site approval boundaries.	AGLM	Failure to identify non-AGL owned parcels of land during project. Failure to communicate acquisition or inaccurate mapping of AGL owned or acquired land. Deliberate or negligent action. Failure to obtain agreements to access non-AGL owned land.	Reputation damage. HSE Event. Environmental impact. Regulatory action (PIN).	Current mapping of AGL owned land and approval boundaries and non AGL owned land - geospatial database; Agreement with TFNSW covering AGL assets on TFNSW land; Ongoing consultation with Maxwell and other stakeholders. Land access agreements. Notifications. Site survey for SSD project area and boundary delineation, GVDA.	High	Level 3	Possible	14	Community and Stakeholder Engagement Strategy (CSES), EMS.
Failure to meet community expectations	AGLM	Inadequate stakeholder consult, exceedance of criteria (AQ, N&V), nuisance but within criteria AQ and N&V).	Reputation damage. Increase in complaints.	CCC/working groups, community newsletters, adequate enquiries/complaint management, regular internal communication (AGL monthly updates, bi-weekly SIMOPs meetings), regular regulatory engagement, website, monitoring, approvals (criteria).	Moderate	Level 2	Possible	9	CSES, EMS.

Noise and vibration exceed limits.	AGLM	Failure to monitor / meet criteria conditions, including notification requirements; inadequate modelling; inadequate methodology or timing of crushing of rock/concrete; blast felling of stacks non-compliant with the limitations and criteria outlined.	Reputation damage. Regulatory action (PIN). HSE Event.	Engineering studies; monitoring; sound power level testing; following notification protocols; blast design; third party engineering review; exclusion zones; SWMS for crushing activities. Out of Hours work Protocol	Moderate	Level 2	Possible	9	EMS - Noise and Vibration Management Plan (NVMP), DEMP.
Impact to non indigenous heritage (fence posts outside disturbance area to the north of the site).	AGLM	Failure to identify, demark and protect non indigenous heritage.	Reputation damage. Regulatory action (PIN). HSE Event.	GVDA. Clearly identifying, demarking and where necessary protecting items in the field. Area outside disturbance area. Mapping and archival photography, unexpected finds protocol.	Low	Level 2	Rare	4	EMS, DEMP.
Impacts caused by increase in traffic.	AGLM	Increase in light and heavy vehicle movement for demolition and construction activities; site vehicle inspections not carried out; site access protocols not followed	Reputation damage. Regulatory action (NSW police). HSE Event.	Traffic Management Plan; Site Access protocols, VOC/Training for vehicle operators; Site induction and training including Enviro & Reg expectations and obligations;	High	Level 3	Possible	14	EMS - TTMP. DEMP - Onsite TMP, Bio MP.
Impact or damage to public infrastructure.	AGLM	Less than adequate engineering, design, modelling. Failure to monitor.	Reputation damage. Regulatory action (PIN). HSE Event.	Engineering designs, monitoring and reporting, SWMS, competent contractors, stakeholder engagement.	Moderate	Level 3	Unlikely	11	EMS. DEMP.
Increased use and impact to local amenities (e.g. accommodation).	AGLM	Significant increase in workers for project activities or major demolition or construction events.	Reputation damage.	Utilise local workforce/personnel where possible; Additional workforce not anticipated to be large. The use or hire of temporary site services to minimise impact.	Low	Level 1	Unlikely	2	CSES.

APPENDIX B – DPHI APPROVAL, REGULATORY BODY CONSULTATION, AND STAGING APPROVAL

Department of Planning, Housing and Infrastructure

Our ref: SSD-24937520-PA-1

Matthew Parkinson
Manager Environment and Approvals
AGL Macquarie PTY Limited

03/04/2025

Liddell Future Landuse Project – Approval to Stage Management Plans

Dear Mr. Parkinson

I refer to your letter dated 27 March 2025, seeking approval for the staging of management plans in accordance with Conditions A19, A20, and A21, Schedule 2 of the consent for the Liddell Future Land Use (SSD-24937520).

The Department also notes that AGL Macquarie PTY Limited has agreed with the NSW Environment Protection Authority (EPA) that water management measures, following the completion of demolition, may require revisions prior to commencing works for Stage 2 and Stage 3. These revisions will depend on the findings from the additional assessments required by Conditions C1 to C8, Schedule 2.

Further to your request, I understand that the site requires preparation for blast events involved in demolition. In accordance with Part A, Condition A21(b); and the staging of the Blast Management sub-plan is also requested.

Accordingly, as nominee of the Planning Secretary, I approve the staging of the management plans as outlined in your request letter.

If you wish to discuss the matter further, please contact Charissa Pillay on 02 99955944.

Yours sincerely

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

Department of Planning, Housing and Infrastructure

Our ref: SSD-24937520-PA-8

Matthew Parkinson
Manager Environment and Approvals
AGL MACQUARIE PTY LIMITED
New England Highway
Muswellbrook New South Wales 2333

25/06/2025

Liddell Future Landuse Project - Demolition Environmental Management Plan (DEMP)

Dear Mr. Parkinson

Reference is made to your post approval matter, SSD-24937520-PA-8, DEMP, submitted as required by Schedule 2, Condition C16 of SSD-24937520 as modified (the consent) to the NSW Department of Planning, Housing and Infrastructure (NSW Planning).

NSW Planning has reviewed DEMP and considers more information is required to satisfy the condition of consent. Under the provisions of Schedule 2, Condition A3 of the consent, I, as nominee of the Planning Secretary, request that an amended DEMP be submitted as a response to this request for information (RFI-86672959) addressing the comments attached in the Review Table by 25 July 2025 (or as otherwise agreed by the Planning Secretary).

Should you wish to discuss the matter further, please contact Charissa Pillay, (Senior Planning Officer) on 02 99955944 Or email charissa.pillay@planning.nsw.au

Yours sincerely

Wayne Jones
Team Leader - Post Approval
Resource Assessments

As nominee of the Planning Secretary

Department of Planning, Housing and Infrastructure

Document: Demolition EMP
Revision: Version 2 dated XX Month Year/ version 3 June 2025
Reviewed: Charissa Pillay on June 2025/July 2025

Condition , Schedule XX	**Sufficient (Yes/No/Partial)**	**Document reference and comment**	**Action Required**	**Company Response**	**DPHI Response**
C14. Demolition C14. All demolition must be carried out in accordance with Australian Standard AS 2601-2001 The Demolition of Structures.	Yes	Section 2.2 addresses the requirement.	-		
C15. Prior to the commencement of demolition works, a clearance certificate from an occupational hygienist to certify that asbestos containing materials, PBC capacitors, and transformers have been removed before demolition work must be provided to the Department. Any hazardous materials that cannot be removed should be assessed in consultation with SafeWork NSW.	No	Appendix C does not contain a clearance certificate to address the requirement.	Include, a clearance certificate from an occupational hygienist to certify that asbestos containing materials, PBC capacitors, and transformers have been removed before demolition work must be provided to the Department.	The requirement for the clearance certificate is covered in Appendix C and 5.10 of the DEMP. Section 5.10 of the DEMP addresses all hazardous materials (including ACM, PCB capacitors and PCB oils) to be removed prior to demolition works where reasonably practicable. Section 5.1 and 7.6.3 of the AMSP address ACM clearance certificates and removal prior to demolition noting in accordance with NSW legislation, a clearance certificate is not required for PCB Capacitors or transformers. An ACM clearance certificate will not form part of the DEMP. Multiple ACM clearance certificates will be obtained throughout the works for specific work areas and demolition of those work areas will commence once the clearance certificate is obtained. Further, previously DPHI has approved the Asbestos Management Sub-Plan which addressed a similar requirement as follows: In accordance with NSW legislation, a clearance	Closed

				certificate is not required for PCB Capacitors or transformers and is only required for asbestos containing materials which is addressed in the Asbestos Management Sub Plan (Sections 5.1, 7.3 & 7.6.3 updated to reference C15). Note: multiple ACM clearance certificates will be progressively issued throughout the course of the works. It is also not relevant to be referring to PCB's in the AMSP. PCB removal prior to demolition has been addressed in Section 5.10 of the DEMP (updated to address).	
C16. A demolition environmental management plan must be prepared for the development. The plan must:					
(a) be submitted to the Planning Secretary for approval prior to the commencement of demolition;	Yes	Section 4.4 and Appendix B addresses the requirement.	-		
(b) be prepared in consultation with SafeWork NSW and the Site auditor;	No	The letter dated 30 May 2025 discusses SafeWork NSW is still waiting on CMa to provide a risk assessment to justify leaving asbestos in the chimney during blasting.	Provide details to confirm of Safework NSW is satisfied with the risk assessment.	The discussions with SafeWork NSW is ongoing. A meeting to present the Risk Assessment is scheduled for 7/7/25. This will form part of the Blast approval process with SafeWork NSW.	Include detail in the DEMP Closed Section2.1.5 updated.
(c) include a description and schedule of activities to be undertaken during demolition;	Yes	Section 2.2 addresses the condition requirement.	-		

(d) include a risk assessment;	Yes	Appendix A includes the requirement.	-		
(e) addresses the commitments detailed in the documents listed in condition A2(c);	no	Appendix C does not include a clearance certificate.	Include the	Refer to comments addressing C15 above.	Include a summary in the DEMP to address the condition. Closed
(f) include the sub-plans detailed in conditions C19 to C22; and	No	Appendix C, D, E, F do not contain the approved subplans	Attach the approved plans and update the document to reflect the plans have been approved by the Department.	DEMP updated with DPHI approved Dust Management SubPlan, Soil & Water Management Sub-Plan and Asbestos Management Sub-Plan attached. Blast Management Sub-Plan (BMSP) has been agreed with DPHI to a staged submission as per letter from DPHI dated 3/4/25 (ref. SSD-24937520-PA-1). Note: Multiple BMSP's will progressively be prepared for various parts of the works.	Closed
(g) include a TARP to respond to any exceedances of the relevant performance measures, objectives or performance indicators.	No	Sections 5.18.3, 5.18.4, 5.18.5 refers to subplans which are not included in the DEMP.	Include the relevant TARPs into the DEMP	Sections 5.18.3 refers to Dust Management Sub-Plan Sections 5.18.4 refers to Soil & Water Management Sub-Plan Sections 5.18.5 refers to Blast Management Sub-Plan TARP's are contained within the relevant sub-plans. All these plans are submitted separately to the DEMP for approval by DPHI. Note: Dust Management Sub-Plan and Soil & Water Management Sub-Plan have been approved by DPHI and the remaining Blast Management Plan has been agreed with DPHI to a staged submission.	Closed

C17. Demolition must not commence until the demolition environmental management plan is approved by the Planning Secretary	No	There is no commitment to address the condition	Include a commitment to not commence until the demolition environmental management plan is approved by the Planning Secretary	DEMP section 2.1.1 updated by adding: "In accordance with condition C17 of the Consent, Demolition will not commence until this DEMP is approved by the Planning Secretary."	Closed
C18. The demolition environmental management plan, as approved by the Planning Secretary, must be implemented for the duration of demolition	No	Appendix B does not include a commitment to implement the approved DEMP for the duration of demolition.	Include a commitment to implement the approved DEMP for duration of the Demoliton.	DEMP section 2.1.1 updated by adding: "In accordance with condition C18 of the Consent, this DEMP will be implemented for the duration of demolition works.	Closed
Condition XX, Schedule XX	**Sufficient (Yes/No/Partial)**	**Document reference and comment**	**Action Required**	**Company Response**	
Compliance Non-compliance notification D4. Within seven days of becoming aware of a non-compliance, the Applicant must notify the Department of the non-compliance. The notification must: (a) be in writing; (b) submitted via the NSW planning portal (Major Projects); (c) identify the development (including the development application number and name); (d) set out the condition of this consent that the development is non-compliant with; (e) why it does not comply; (f) the reasons for the non-compliance (if known); and (g) what actions have been undertaken, or will be undertaken; and when, to address the non-compliance.	Yes	Section 6.3.1 addresses the requirement.	-		
Incident notification D5. The Applicant must notify the Department within 24 hours of becoming aware of an	Yes	Section 6.3.2 addresses the requirement.	-		

incident. The notification must be made via the NSW planning portal (Major Projects) and address details of the incident including: (a) date, time and location; (b) a brief description of what occurred and why it has been classified as an incident; (c) a description of what immediate steps were taken in relation to the incident; and (d) identifying a contact person for further communication regarding the incident					
D6. The Applicant must provide the Department with a subsequent incident report in accordance with Appendix 6 (Incident Notification and Reporting Requirements).	Yes	Section 6.3.1 includes the requirement.	-		
Revision of environmental management documents D7. Within three months of the following events: (a) the submission of an incident report under conditions D5 or D6; (b) the submission of a compliance report under condition D3; (c) the submission of an Independent Environmental Audit under condition D1; (d) the approval of any modification of the conditions of this consent (unless the conditions require otherwise); or (e) notification of a change in the development phase under condition A10;	Yes	Section 7.5 addresses the requirement.	-		
General Comments			**Action Required**	**Company Response**	
The WMP is in draft version. Only final documents are to be submitted to the Department for review.			Update the management plan to plan.	The Water Management Plan (WMP is related to construction of the onsite asbestos disposal facility and not a Sub-Plan of the DEMP. Refer to DPHI approved Soil & Water Management SubPlan for demolition activities.	Closed

Revision Register is outdated with Rev O in March 2025	Update the Revision Table	This comment does not appear to relate to the DEMP as the Revision Register shows Rev 0 dated 7/4/2025 REVISION REGISTER REV | DATE | DESCRIPTION OF CHANGE | PAGE/S | R 0 | 07/04/2025 | Initial submission to DPHI | All	Closed
Section 2.2.1 refers to the asbestos subplan which has been approved by the Department.	Update the sections 2.1.2, 2.1.3, 2.1.4 with Department approval.	Section 2.1.2 updated with additional dot point: e) Has been approved by DPHI on 18 June 2025 [ref: SSD-24937520-PA-10] (refer to Appendix C) Section 2.1.3 updated with additional dot point: e) Has been approved by DPHI on 22 May 2025 [ref: SSD-24937520-PA-15] (refer to Appendix D) Section 2.1.4 updated with additional dot point: d) Has been approved by DPHI on 23 May 2025 [ref: SSD-24937520-PA-9] (refer to Appendix E)	Closed
There is some spelling errors throughout the document for example section 2.2	Revise document to address spelling errors	Spell check complete and document updated.	Closed
The plan contains a sentence “In accordance with Statement of Commitment HR7 of the Consent,” where is this from?	Provide clarity on the source of the information.	Please refer to the Amendment Report.	Closed
Other Agency Comments	**Action Required**	**Company Response**	
The Department name has been updated to the NSW Department of Planning, Housing and Infrastructure (DPIH). Please update in the document.		It is unclear what is being asked. The only reference other than Department of Planning, Housing, and Infrastructure (DPHI) is in section 6.4 of the DEMP - “NSW	Closed

		Department of Planning, Industry and Environment – Post Approval Requirements – Compliance Reporting (May 2020)". This Document referred to is dated May 2020, at which Department of Planning, Housing and Infrastructure (DPHI) was known as Department of Planning Industry and Environment (DPIE). Document reference from 2020 is under DPIE (not DPHI) and is correct	
EPA			

The EPA notes the Draft WMP incorporates advice the EPA provided during other stages of the Project, in particular: • a 'preliminary site water balance' including volumes from the catchments, water demands, and site water management • source controls, erosion and sediment control structures • the development of a Trigger Action Response Plan (TARP) which identifies appropriate triggers, notifications, response actions and protocols. Section 5.2.5 of the Draft WMP states that "*As per Condition A6 of the Consent, the Containment Cells are to be used for the storage of asbestos waste, ACM, SMF, and other associated waste authorised by the Site Auditor*". Further details should be provided regarding the 'other associate waste' planned for disposal in the Containment Cells, including identification of the waste and justification as to the appropriateness of the water management and monitoring program to handl the waste in an environmentally sound manner. Section 6.0 of the Draft WMP states that water collected in the Containment Cells will be retained on-site until tested and, if required, treated for the removal of asbestos fibres prior to removal or disposal. The EPA notes that limited information has been provided on monitoring and potential treatment options for asbestos-contaminated water. Further details should be provided regarding Containment Cell water management, analyte testing, treatment and compliance criteria. The EPA notes that the Skimmer Dam would receive discharges from the Borrow Pit area and fro the Borrow Pit Settlement Pond. The Skimmer Dam eventually discharges to Lake Liddell via the overflow spillway under the Licence. The EPA intends to review the Licence's monitoring progran to ensure that it appropriately aligns with the final WMP, including review of the monitoring frequency, analytes and limits. Complimentary to this, the EPA intends to include the outcomes of the water characterisation stu at the Liddell Power Station, prepared in accordance with Licence condition U1 - PRS 20, into the Licence to contemporise water monitoring requirements, which may alter the Licence water qualit monitoring program. The Draft/Final WMP may need to be reviewed and amended to ensure consistency with any variation to the Licence. If you have any further questions about this issue, please contact Nirmala Dharmarathne on 02 62229 7029 or at info@epa.nsw.gov.au.	Section 5.2.5 Section 6.0 and section 6.3 Section 8.2.3 Include a commitment to revise the WMP to address the EPA comment.	Water Management Plan (WMP) is not a Sub-Plan to the DEMP. The water characterisation study completed as part of U1 – PRS 20 referred to relates to the Liddell Ash Dam which is not included as part of the Stage 1a works. The water monitoring program associated with the outcomes of U1 – PRS 20 will be included in the Stage 2 Water Management Plan.	
Safe NSW			
Consent condition C19 - C22 requires the applicant to prepare as part of the DEMP sub plans.			

• Only sub plan C19 Asbestos Management Sub-plan was able to be reviewed, as this was requested outside of this DEMP review	No SafeWork NSW review requirement under the Conditions of Consent. Plan was provided for information and any other sub-plans can be provided outside the portal on request	Include the Department approval in the document. The DEMP Sub-Plans are required under separate conditions with separate consultation requirements. There is no SafeWork NSW review/consultation requirement under the Conditions of Consent for the SubPlans to the DEMP.	Closed Subplan approved
• Feedback for Asbestos Management sub-plan will be forwarded to the applicant directly	Noted. Feedback received, plan updated to address, and re-issued to SafeWork NSW.	Submit the changes to the Department Asbestos Management Sub-Plan (AMSP) has been attached to the DEMP in Appendix C which has a consultation section within this plan (refer to Appendix D of the AMSP).	Closed
Consent condition A6 allows for a maximum 30,000 cubic metres of asbestos and other wastes to be disposed of onsite. • There is only detail of the location of the disposal site in the DEMP			Include commitment consistent with condition A6. Updated Section 5.14.1 to address condition A6.
• There is no detail on its construction or when this will be implemented and how it will be secured	Construction is dealt with in a completely separate plan/documents required under conditions C24-C26 which are	Include construction of the disposal site, when this will be implemented and how it will be secured in the DEMP. These documents are required under separate consent conditions with no requirement for	What are the details on the construction include timelines. Updated Section 2.2 to address.

	required to be reviewed by the Site Auditor, EPA and approved by DPHI. These documents can be made available for information on request. Regarding security of the onsite disposal facility, the facility is located within the footprint of the greater AGLM site which is not readily accessible by the general public	consultation with SafeWork NSW. Reference to the asbestos disposal facility in made in Section 7.14.4 of the Asbestos Management Subplan which is included in Appendix C of the DEMP	
• There was no Appendix 1 provided for review with the DEMP.	References in the DEMP to "Appendix 1" are within the actual conditions of the Consent and relates to Appendix 1 of these conditions. A copy of the Consent is available on the Major Projects Portal.	Include the details on where appendix 1 in the DEMP if it has been referenced in the document. Appendix 1 is not an Appendix of the DEMP. The references to Appendix 1within the DEMP are found within Section 3.2.1 Relevant Conditions of Consent. These references to Appendix 1 relate to the Conditions of Consent where Appendix 1 is an Appendix to these conditions (refer to Conditions of Consent, Appendix 1).	Closed
Consent condition A16 requires the applicant to consult with SafeWork NSW prior to submitting the document to the Planning Secretary for Approval and provide details of the consultation that took place.	This review by SafeWork NSW via the major	Update the DEMP with all Safework NSW comments	Closed

• SafeWork has not been consulted specifically on the DEMP nor have any details been noted in the DEMP.	projects portal and AGLM's responses constitutes the "consultation" required under the conditions of the Consent.	Consultation undertaken through the DPHI Major Projects Portal. Comments provided by SafeWork NSW via the portal. Refer to DEMP Appendix B - DPHI Approval, Regulatory Body Consultation, and Staging Approval.	
Section 5.18.2 of the DEMP outlines when incidents are required to be reported under the POEO Act. • There is nothing in the DEMP as to the requirements for reporting incidents under the WHS Act.	This plan is an environmental management plan and covers only environmental reporting. Health & Safety reporting is covered in the site specific WHS management plans which are not required for approval by DPHI under the conditions of the Consent. Note Section 5.18.1 includes reference the Pollution Incident Response Management Plan (PIRMP). The PIRMP includes notification requirements to SafeWork NSW relating to pollution incidents	Closed	

Appendices C, D, E and F sub-plans were not attached with the document or available on the planning portal.	Note, the sub-plans to be included in Appendices C,D,E and F are required by separate conditions of consent. There is no SafeWork NSW review/consultation requirement under the Conditions of Consent. Plans can be provided for information outside the portal on request. (Note: There will be multiple Blast Management Plans (4 of) which will be progressively provided to SafeWork NSW outside the portal as they are prepared as previously discussed with SafeWork NSW)	The subplans form part of the DEMP which requires Safework NSW consultation. Submit subplans to Safework NSW. The DEMP Sub-Plans are required under separate conditions with separate consultation requirements. There is no SafeWork NSW review/consultation requirement under the Conditions of Consent for the SubPlans to the DEMP. Note: There will be multiple Blast Management Plans (4 of) which will be progressively provided to SafeWork NSW outside the portal as they are prepared as previously discussed with SafeWork NSW.	Include this detail into the DEMP Closed
Further, SafeWork NSW is still waiting on CMA to provide a risk assessment to justify leaving the asbestos in the chimney during blasting.	Work is progressing to finalise the risk assessment and communication is ongoing with	Include evidence that a risk assessment has been submitted to Safework NSW and they are satisfied.	Include the detail into the DEMP. *The discussions with SafeWork NSW is ongoing. Meeting to present the Risk*

	Jason Wall (SafeWork NSW State Inspector Asbestos & Demolition Services).	The discussions with SafeWork NSW is ongoing. Meeting to present the Risk Assessment is scheduled for 7/7/25. This will form part of the Blast approval process with SafeWork NSW.	*Assessment is scheduled for 7/7/25. This will form part of the Blast approval process with SafeWork NSW.* This was addressed in previous comments from 2 July 2025. Updated Section 2.1.5 of the DEMP to address (refer to last paragraph).

NSW GOVERNMENT

SafeWork

Matthew Parkinson

Department of Planning Industry & Environment

Via email: Matthew.parkinson@planning.nsw.gov.au

Dear Matthew,

SSD 24937520-PA-8 – Liddell Future Land Use Project

SafeWork NSW has reviewed the Demolition Environmental Management Plan (DEMP) and comments as follows on the consent conditions:

- Consent condition C19 - C22 requires the applicant to prepare as part of the DEMP sub plans.
  - Only sub plan C19 Asbestos Management Sub-plan was able to be reviewed, as this was requested outside of this DEMP review
  - Feedback for Asbestos Management sub-plan will be forwarded to the applicant directly.

- Consent condition A6 allows for a maximum 30,000 cubic metres of asbestos and other wastes to be disposed of onsite.
  - There is only detail of the location of the disposal site in the DEMP
  - There is no detail on its construction or when this will be implemented and how it will be secured
  - There was no Appendix 1 provided for review with the DEMP.

- Consent condition A16 requires the applicant to consult with SafeWork NSW prior to submitting the document to the Planning Secretary for Approval and provide details of the consultation that took place.
  - SafeWork has not been consulted specifically on the DEMP nor have any details been noted in the DEMP.

- Section 5.18.2 of the DEMP outlines when incidents are required to be reported under the POEO Act.
  - There is nothing in the DEMP as to the requirements for reporting incidents under the WHS Act.
- Appendices C, D, E and F sub-plans were not attached with the document or available on the planning portal

Further, SafeWork NSW is still waiting on CMA to provide a risk assessment to justify leaving the asbestos in the chimney during blasting.

Yours sincerely

Andrew Battye
Director, Authorisations and Verifications
30 May 2025

SafeWork NSW Comments	AGLM Responses
Consent condition C19 - C22 requires the applicant to prepare as part of the DEMP sub plans.	Noted.
• Only sub plan C19 Asbestos Management Sub-plan was able to be reviewed, as this was requested outside of this DEMP review	No SafeWork NSW review requirement under the Conditions of Consent. Plan was provided for information and any other sub-plans can be provided outside the portal on request.
• Feedback for Asbestos Management sub-plan will be forwarded to the applicant directly.	Noted. Feedback received, plan updated to address, and re-issued to SafeWork NSW.
Consent condition A6 allows for a maximum 30,000 cubic metres of asbestos and other wastes to be disposed of onsite.	Noted.
• There is only detail of the location of the disposal site in the DEMP	Noted
• There is no detail on its construction or when this will be implemented and how it will be secured	Construction is dealt with in a completely separate plan/documents required under conditions C24-C26 which are required to be reviewed by the Site Auditor, EPA and approved by DPHI. These documents can be made available for information on request. Regarding security of the onsite disposal facility, the facility is located within the footprint of the greater AGLM site which is not readily accessible by the general public.
• There was no Appendix 1 provided for review with the DEMP.	References in the DEMP to "Appendix 1" are within the actual conditions of the Consent and relates to Appendix 1 of these conditions. A copy of the Consent is available on the Major Projects Portal.
Consent condition A16 requires the applicant to consult with SafeWork NSW prior to submitting the document to the Planning Secretary for Approval and provide details of the consultation that took place. • SafeWork has not been consulted specifically on the DEMP nor have	This review by SafeWork NSW via the major projects portal and AGLM's responses constitutes the "consultation" required under the conditions of the Consent.

any details been noted in the DEMP.	
Section 5.18.2 of the DEMP outlines when incidents are required to be reported under the POEO Act. • There is nothing in the DEMP as to the requirements for reporting incidents under the WHS Act.	This plan is an environmental management plan and covers only environmental reporting. Health & Safety reporting is covered in the site specific WHS management plans which are not required for approval by DPHI under the conditions of the Consent. Note Section 5.18.1 includes reference the Pollution Incident Response Management Plan (PIRMP). The PIRMP includes notification requirements to SafeWork NSW relating to pollution incidents.
Appendices C, D, E and F sub-plans were not attached with the document or available on the planning portal.	Note, the sub-plans to be included in Appendices C,D,E and F are required by separate conditions of consent. There is no SafeWork NSW review/consultation requirement under the Conditions of Consent. Plans can be provided for information outside the portal on request. (Note: There will be multiple Blast Management Plans (4 of) which will be progressively provided to SafeWork NSW outside the portal as they are prepared as previously discussed with SafeWork NSW).
Further, SafeWork NSW is still waiting on CMA to provide a risk assessment to justify leaving the asbestos in the chimney during blasting.	Work is progressing to finalise the risk assessment and communication is ongoing with Jason Wall (SafeWork NSW State Inspector Asbestos & Demolition Services).

Senversa Pty Ltd
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28 May 2025

Matthew Parkinson
Manager Environment & Approvals Liddell Transition
AGL Macquarie Pty Ltd
Liddell Power Station
MUSWELLBROOK NSW 2333

Dear Matthew,

Re: Interim Audit Advice #44: Review of Demolition Environmental Management Plan (Updated)
AGL Liddell Power Station

1.0 Introduction

AGL Macquarie Pty Ltd (AGL) has engaged Jason Clay as a NSW Environment Protection Authority (EPA) site auditor, accredited under the *Contaminated Land Management Act 1997* (the CLM Act) for Liddell Power Station (LPS).

AGL has approval from the Department of Planning and Environment (DPE) for State Significant Development (SSD) 24937520 ('the Consent') for the integrated demolition and rehabilitation of LPS. Consent dated 31 January 2025 places a number of conditions of approval requiring and site audit to be conducted in accordance with the CLM Act.

The audit is therefore a statutory audit as defined by the CLM Act. As part of the broader LPS closure, AGL is closing and rehabilitating the Liddell Ash Dam (LAD) which was constructed on Saltwater Creek at Liddell in 1971 to provide an ash storage dam for LPS. It is also constructing an on-site containment facility to store, predominantly, asbestos waste from the decommissioning/demolition process.

It is understood that Muswellbrook Council DA 1/2011 Conditions 21 and 22 have been superseded by Condition 30 of the Consent and that AGL's ultimate aim is to surrender and consolidate DA 1/2011 in accordance with Condition A12 of the Consent.

The following review is of the Demolition Environmental Management Plan (DEMP) prepared to allow deconstruction works associated with the demolition of LPS and associated infrastructure.

2.0 Document Review

This letter provides site auditor review comments on the following document:

- *Demolition Environmental Management Plan, Liddell Power Station Demolition Project*, dated 7 April 2025 by CMA Contracting Pty Ltd ('the DEMP').

An IAA has been issued following initial review of the above demolition plan, as follows:

- *Interim Audit Advice #36: Review of Demolition Environmental Management Plan, AGL Liddell Power Station,* dated 16 April 2025 by Senversa Pty Ltd ('IAA#36').

3.0 Review Comments

The auditor has completed a review of the above report against NSW EPA made or approved guidelines including:

- The requirements specified in the NSW EPA Guidelines for the *NSW Site Audit Scheme (3rd Edition)* (NSW EPA 2017).
- *Consultants Reporting on Contaminated Land, Contaminated Land Guidelines* (NSW EPA 2020).
- *National Environment Protection (Assessment of Site Contamination) Measure 1999 as amended 2013* (NEPC 2013).

The auditor's preliminary review comments regarding the DEMP are provided in the grey box below:

<u>Comment Register (Item 3): p</u>lease provide a copy of the following appendices for auditor consideration to confirm Conditions C30 to C22 have been met:

- Soil and Water Management Sub-Plan (Appendix D)
- Dust Management Sub-Plan (Appendix E)
- Blast Sub-Management Plan (Appendix F)

<u>Comment Register (Item 4):</u> section 2.4 refers to *'this EMS'*. Please update to *'this DEMP'* to avoid confusion.

<u>Comment Register (Item 11):</u> please clearly state in the report that the DEMP is only relevant to the Stage 1 demolition works.

<u>Comment Register (Item 17):</u> noted. Please updated Section 4.4 to include this (i.e. acknowledge that AGL is responsible for submitting the DEMP to the Planning Secretary for approval).

<u>Comment Register (Item 19):</u> the unexpected finds requires additional information. Please update to include the following:

- Upon discovery of an unexpected find (UF), works will cease in that area, the site supervisor is to be notified and the affected area closed off by the use of barrier tape or similar.
- The site supervisor is to contact the Principal Contractor notify AGL and environmental consultant.
- The environmental consultant will inspect the area and assess the significance of the find in terms of the potential impact to human health and the environment with reference to NSW EPA endorsed guidelines including:
  - National Environment Protection Council (NEPC) *National Environment Protection (Assessment of Site Contamination) Measure 1999,* as amended 2013 (NEPC, 2013).
  - Western Australia Department of Health (2009) *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia* (WA DoH, 2009).
  - The NSW Environment Protection Authority (EPA) *Waste Classification Guidelines, Part 1: Classifying Waste, November 2014* (EPA, 2014).

The assessment may include laboratory assessment.

- The environmental consultant or is to assess and direct the Principal Contractor on the size, extent or exclusion zones.
- For minor remediation works, the environmental consultant will prepare a work method statement (WMS) detailing the laboratory results (if undertaken) and the extent and methods of remediation, as required.
- The agreed management/remedial strategy shall be implemented.
- The environmental consultant will validate the unexpected find.
- Any off-site removal of contaminated material must comply with Section 5.12 of the DEMP.
- A validation report must be prepared and submitted to the site auditor for review.

Comment Register (Item 24): the auditor notes that Section 5.12.1 has been updated to include any fill imported to the site must first be certified by a suitability qualified environmental consultant in consultation with the site auditor. Please add the following additional information to Section 5.12.1:

- All imported material must be supported by reports from qualified environmental or geotechnical consultants confirming it is free from contaminants.
- If needed, the environmental consultant should inspect the source site before importation.
- After reviewing the reports, the consultant will issue written approval or provide recommendations to address before approval.
- Imported materials must be inspected to ensure they match the approved type.
- All imported material must be recorded in the material tracking register.
- Documentation must be submitted to the environmental consultant for inclusion in the site validation report.

Comment Register (Item 36): please amend wording to make it clear that any changes made to the DEMP (and captured in the Change Management Register) must be reviewed *and approved* by the site auditor prior to implementation.

4.0 Closure

If you have any comments or questions, please do not hesitate to contact the undersigned at jason.clay@senversa.com.au or on 0410 431 674.

Yours sincerely,
On behalf of **Senversa Pty Ltd**

Jason Clay
NSW EPA Accredited Site Auditor (0801)

SK/JN/JC

Technical Limitations and Uncertainty *– This Interim Advice is not a Site Audit Report or a Site Audit Statement, as defined in the Contaminated Land Management Act 1997, but forms part of the Site Audit process*. It is intended that a Site Audit Statement and report will be issued at the completion of the site audit.
Consistent with NSW EPA requirements for staged "sign-off" of sites that are the subject of progressive assessment, remediation and validation, the auditor is required to advise that:

- *This site audit advice does not constitute a site audit report or statement.*
- *This letter is considered by the auditor to be consistent with NSW EPA guidelines and policies.*
- *This letter will be documented in the final Site Audit Statement and associated documentation.*

– *At the completion of the site audit, a Site Audit Statement will be prepared, for the consent agency to include the Site's property information, held by the local council.*

***Client Reliance** – Consultant work included limitations in the reports, and therefore this review will also be subject to those limitations. The auditor has prepared this document in good faith but is unable to provide certification outside of areas over which the auditor had some control or is reasonably able to check. The auditor has relied on the documents referenced in this letter in preparing the auditor's opinion. If the auditor is unable to rely on any of those documents, the conclusions of the audit could change.*

***Third Party Reliance** – This document has been prepared solely for the use of AGL Macquarie Pty Ltd. No responsibility or liability to any third party is accepted for any damages arising out of the use of this document by any third party.*

***Copyright and Intellectual Property** – This document is commercial in confidence. No portion of this document may be removed, extracted, copied, electronically stored or disseminated in any form without the prior written permission of Senversa. Intellectual property in relation to the methodology undertaken during the creation of this document remains the property of Senversa.*

AGL	Project Title:	Liddell Power Station Demoltion		Demolition Environment Management Plan		
	IAA	Design Organisation:		Issued	Comments Completed	Response Received
	44	CMA Contracting PTY LTD	Report	Demolition Environment Management Plan	03-June-2025	

Review Requested By:	Review Performed By:	Project Status:	Issue No:	Review Issue Date:
AGL	Site Auditor - Senversa 28/05/2025 letter	UNDER REVIEW		16-April-2025

Item	Page ref.	Section	Review Comments	Updated in report	Section ref. report	Comments	Action	Status	Auditor Status
3	N/A	N/A	Comment Register (Item 3): please provide a copy of the following appendices for auditor consideration to confirm Conditions C30 to C22 have been met: • Soil and Water Management Sub-Plan (Appendix D) • Dust Management Sub-Plan (Appendix E) • Blast Sub-Management Plan (Appendix F)	N/A	N/A	• Soil and Water Management Sub-Plan (Appendix D) – No Auditor review requirement under the Conditions of Consent (plan already approved DPHI). Plan will be provided via email for information. • Dust Management Sub-Plan (Appendix E) – No Auditor review requirement under the Conditions of Consent (plan already approved DPHI). Plan will be provided via email for information. • Blast Sub-Management Plan (Appendix F) – No Auditor review requirement under the Conditions of Consent. DPHI have approved to defer submission based on staged works. There will be multiple BMP's (4 of – 1 per event) which will be made available for information as they are progressively received.	Provide documents to the site auditor for information only.	Closed	
4	16-18	2.4	Comment Register (Item 4): section 2.4 refers to 'this EMS'. Please update to 'this DEMP' to avoid confusion.	Yes	Section 2.4	Updated Section 2.4 to address.	Update Section 2.4	Closed	
11	12	Section 2.2	Comment Register (Item 11): please clearly state in the report that the DEMP is only relevant to the Stage 1 demolition works.	Section 2.1	Section 2.1	Updated section 2.1 to address.	Update Section 2.1	Closed	
17	46	Section 4.4	Comment Register (Item 17): noted. Please updated Section 4.4 to include this (i.e. acknowledge that AGL is responsible for submitting the DEMP to the Planning Secretary for approval).	N/A	N/A	Section 4.4 updated to address.	Update Section 4.4	Closed	
19	54-55	Section 5.16	Comment Register (Item 19): the unexpected finds requires additional information. Please update to include the following: • Upon discovery of an unexpected find (UF), works will cease in that area, the site supervisor is to be notified and the affected area closed off by the use of barrier tape or similar. • The site supervisor is to contact the Principal Contractor notify AGL and environmental consultant. • The environmental consultant will inspect the area and assess the significance of the find in terms of the potential impact to human health and the environment with reference to NSW EPA endorsed guidelines including: ▪ National Environment Protection Council (NEPC) National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended 2013 (NEPC, 2013). ▪ Western Australia Department of Health (2009) Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia (WA DoH, 2009). ▪ The NSW Environment Protection Authority (EPA) Waste Classification Guidelines, Part 1: Classifying Waste, November 2014 (EPA, 2014). The assessment may include laboratory assessment. • The environmental consultant or is to assess and direct the Principal Contractor on the size, extent or exclusion zones. • For minor remediation works, the environmental consultant will prepare a work method statement (WMS) detailing the laboratory results (if undertaken) and the extent and methods of remediation, as required. • The agreed management/remedial strategy shall be implemented. • The environmental consultant will validate the unexpected find. • Any off-site removal of contaminated material must comply with Section 5.12 of the DEMP. • A validation report must be prepared and submitted to the site auditor for review.	Yes	Section 5.16	Section 5.16 updated to generally include the following wording, noting the following changes: • Environmental consultant would not be engaged for every unexpected find (only where deemed approriate by AGLM) • Changed "site superviser" to "CMA Site Manager" • Removed reference to Principal Contractor noting that CMA is the Principal Contractor	Update Section 5.16	Closed	

AGL	Project Title:	Liddell Power Station Demoltion		Demolition Environment Management Plan		
	IAA	Design Organisation:		Issued	Comments Completed	Response Received
	44	CMA Contracting PTY LTD	Report	Demolition Environment Management Plan	03-June-2025	

Review Requested By:	Review Performed By:	Project Status:	Issue No:	Review Issue Date:
AGL	Site Auditor - Senversa 28/05/2025 letter	UNDER REVIEW		16-April-2025

Item	Page ref.	Section	Review Comments	Updated in report	Section ref. report	Comments	Action	Status	Auditor Status
24	50	Section 5.12.1	Comment Register (Item 24): the auditor notes that Section 5.12.1 has been updated to include any fill imported to the site must first be certified by a suitability qualified environmental consultant in consultation with the site auditor. Please add the following additional information to Section 5.12.1: • All imported material must be supported by reports from qualified environmental or geotechnical consultants confirming it is free from contaminants. • If needed, the environmental consultant should inspect the source site before importation. • After reviewing the reports, the consultant will issue written approval or provide recommendations to address before approval. • Imported materials must be inspected to ensure they match the approved type. • All imported material must be recorded in the material tracking register. • Documentation must be submitted to the environmental consultant for inclusion in the site validation report.	Yes	Section 5.12.1	Section 5.12.1 updated to address	Update Section 5.12.1	Closed	
36	60	Section 7.4	Comment Register (Item 36): please amend wording to make it clear that any changes made to the DEMP (and captured in the Change Management Register) must be reviewed and approved by the site auditor prior to implementation.	Yes	Section 7.4	The Conditions of the Consent (C16b) requires Site Auditor consultation only (not approval). Section 7.4 updated to refer to consultation.	Update Section 7.4	Closed	

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16 April 2025

Matthew Parkinson
Manager Environment & Approvals Liddell Transition
AGL Macquarie Pty Ltd
Liddell Power Station
MUSWELLBROOK NSW 2333

Dear Matthew,

Re: Interim Audit Advice #36: Review of Demolition Environmental Management Plan
AGL Liddell Power Station

1.0 Introduction

AGL Macquarie Pty Ltd (AGL) has engaged Jason Clay as a NSW Environment Protection Authority (EPA) site auditor, accredited under the Contaminated Land Management Act 1997 for Liddell Power Station (LPS).

AGL has approval from the Department of Planning and Environment (DPE) for State Significant Development (SSD) 24937520 ('the Consent') for the integrated demolition and rehabilitation of LPS. Consent dated 31 January 2025 places a number of conditions of approval requiring and site audit to be conducted in accordance with the Contaminated Land Management Act 1997 (the CLM Act).

The audit is therefore a statutory audit as defined by the CLM Act. As part of the broader LPS closure, AGL is closing and rehabilitating the Liddell Ash Dam (LAD) which was constructed on Saltwater Creek at Liddell in 1971 to provide an ash storage dam for LPS. It is also constructing an on-site containment facility to store, predominantly, asbestos waste from the decommissioning/demolition process.

It is understood that Muswellbrook Council DA 1/2011 Conditions 21 and 22 have been superseded by Condition 30 of the Consent and that AGL's ultimate aim is to surrender and consolidate DA 1/2011 in accordance with Condition A12 of the Consent.

The following review is of the Demolition Environmental Management Plan (DEMP) prepared to allow deconstruction works associated with the demolition of LPS and associated infrastructure.

2.0 Document Review

This letter provides site auditor review comments on the following document:

- *Demolition Environmental Management Plan, Liddell Power Station Demolition Project*, dated 7 April 2025 by CMA Contracting Pty Ltd ('the DEMP').

3.0 Preliminary Review Comments

The auditor has completed a review of the above report against NSW EPA made or approved guidelines including:

- The requirements specified in the NSW EPA Guidelines for the *NSW Site Audit Scheme (3rd Edition)* (NSW EPA 2017).
- *Consultants Reporting on Contaminated Land, Contaminated Land Guidelines* (NSW EPA 2020).
- *National Environment Protection (Assessment of Site Contamination) Measure 1999 as amended 2013* (NEPC 2013).

The auditor's preliminary review comments regarding the DEMP are provided in the grey box below:

- Please address C15 of the consent conditions.
- The DEMP is heavily reliant upon the following management plans listed below. Please provide formal reference to such documents and provide as an Appendix to the DEMP for auditor consideration:
  - Onsite Traffic Management Plan
  - Traffic Management Plan for the Demolition
  - Biodiversity Management Plan
  - Rehabilitation Management Plan
  - Aboriginal Cultural Heritage Management Plan
  - Noise and Vibration Management Plan
  - Hazardous Materials Removal Plan
  - Change Management Register
  - Emergency Response Management Plan
  - Pollution Incident Response Management Plan
  - Bushfire Management Plan

  The following standalone management plans have been referred to throughout the DEMP:

  - Asbestos Management Sub Plan (Appendix C)
  - Soil and Water Management Sub Plan (Appendix D)
  - Dust Management Sub Plan (Appendix E)
  - Blast Management Sub Plan (Appendix F)

  Please provide formal reference (where possible) to each document and refer to relevant appendices when referred to throughout the DEMP. It is understood that the above management plans will be provided to the auditor for standalone review, with review comment to be provided in a separate IAA.
- Add a section in the DEMP that clearly outlines the roles and responsibilities of all parties, including those identified in Section 3 tables. Specify who is responsible for each task and the implementation of the DEMP.
- Add a standalone Section in the DEMP that provides context around the Blast Management Plan and requirements of the Consent (i.e. AQ2 and HR1 to HR5 & HR7 to HR8), including reference to Appendix F.
- Add a standalone Section in the DEMP that provides context around the Asbestos Management Sub Plan (i.e. Conditions DM1, AQ2, HR6 to HR7) including reference to Appendix C.
- Add a standalone section in the DEMP for Non-Aboriginal Heritage finds, as required by Condition HH1 of the Consent. This section should include procedures for managing unexpected historical

archaeological remains according to Section 146 of the Heritage Act 1977. Note that this is separate from the unexpected contamination finds protocol in Section 5.16.

- Consider if this document should outline OH&S requirements for various activities that may occur.
- It is a requirement for the demolition contractor to hold a SafeWork Class A asbestos removal licence. Please include this (i.e. Condition DM1 requirement) to DEMP.
- Section 2: Please provide further detail on relevant licenses and permits pertaining to the demolition works.
- Section 2.2:
  - Clarify what constitutes Stage 1 demolition works. Confirm whether the DEMP will be implemented throughout all future staged works (Stages 1 to 3) as required by Condition C18.
  - Condition C16 (c) requires a description *and schedule* of activities to be undertaken during demolition. Please provide a schedule of activities including specific timeframes for each activity etc.
  - Update to include reference to Condition C17 where *'Demolition must not commence until the demolition environmental management plan is approved by the Planning Secretary'*.
  - Add Condition HR7 to DEMP as this is an important hold point prior to the commencement of any demolition works that may impact asbestos.
  - Add a Section that lists emergency contact (including numbers).
- Section 4.3. State who is responsible for inductions into the DEMP.
- Section 4.4: Who is responsible for submitting the DEMP to the Planning Sectary for Approval and ensuring details (if any) of consultations that took place are provided as part of the submission?
- Section 5.7: The protection of Aboriginal Objects are not to be managed under the Unexpected Finds Protocol outlined in Section 5.16. Where Aboriginal objects are encountered, these are required to be managed in accordance with the Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (DECCW, 2010), as defined in Condition B5 of the Consent. Please update DEMP accordingly.
- Section 5.1.6: Include an unexpected finds flow chart showing the process to undertake. Discuss the process to follow after the area is made safe and AGLM notified. Please include specific requirements for asbestos related finds and include reference to Condition SC10 & SC11.
- Section 5.8: Include reference to the Blast Management Plan and Asbestos Control Plan in accordance with Conditions AQ2. Currently only the Dust Management Plan is referred to.
- Section 5.11.4:
  - Clarify the frequency of CMA's 'regular' inspections. How will CMA maintain scheduled servicing of the plant to identify existing or potential leaks? Will CMA complete and maintain inspection and maintenance registers?
  - Have all requirements of Condition WQ7 been captured in this section? It is noted that no reference to EPA's guidelines Section 'Bunding and Spill Management' has been made.
  - Include reference to Section 5.14 to ensure appropriate management and disposal of generated waste fluids.
- Section 5.12.1 Imported Fill. Discuss requirements for certification of ENM and VENM. Outline sampling methodology and handling, sampling density requirements and assessment criteria. Discuss who will undertake this work if required.
- Section 5.12.3. Please outline the specific conditions and requirements for soil reuse and movement here. Tracking of internal material movement is to also be undertaken using a tracking register, please attach an example register for auditor review.
- Section 5.13.1. Stockpiles should be placed on hardstand or black plastic to prevent cross contamination. Please list control devises to be used to stabilise, for dust control, erosion and sedimentation.
- Section 5.14.

- It is noted that no discussion is provided regarding the removal, management and disposal (including crushing) of asbestos pipes. Please update DEMP to include and make note of A6 *'a maximum of 30,000 m³ of asbestos waste, asbestos containing material, synthetic mineral fibre and other associated wastes authorised by the Site auditor, may be disposed of at the asbestos disposal facility, unless otherwise agreed by the Planning Secretary'.*
- It is noted that no discussion is provided regarding the removal and management of concrete confirmed to be impacted by PCBs. Please update DEMP to include and make note of B26 *'Any concrete confirmed to be impacted with PCB above acceptable levels determined by the Site auditor must be disposed of at a licensed waste facility'*.
- Prepare a Waste Management Plan for the project as required by Condition MW1 before works commence. Update the DEMP accordingly and include it as an Appendix.

- Section 5.14.3. The waste tracking register should also include time and date of waste disposal. Please attach an example waste tracking register for auditor review.
- Section 5.17: Update to include Condition HR8 requirements for the existing Bushfire Management Plan to be reviewed for adequacy and amended if required.
- Section 6.3.1: Please add '*The Applicant must provide the Department with a subsequent incident report in accordance with Appendix 6 (Incident Notification and Reporting Requirements)'*.
- Section 6.4: Include reference to Condition D2 requirement that the Compliance Report to be submitted by the end of March each year.
- Section 7.2: Add D1 requirement *'Independent Environmental Audits of the development must be conducted and carried out in accordance with the Independent Audit Post Approval Requirements (2020), or its latest version published on the Department's website'*.
- Section 7.2.3. Please specify the exact frequency for 'regular' environmental inspections.
- Section 7.4: What is the Change Management Register and CMA Change Management Procedures? Provide as an Appendix to the DEMP. Is the Risk Assessment process referenced in this Section the Risk Assessment provided as Appendix A? If so, please reference Appendix A in this section.
- Section 7.5:
  - The following requirements of Condition D7 appears to be missing. Please updated section to include them.
  - Section 7.5. Confirm if changes to the DEMP will require auditor review.
- Table 4 (Condition HR9): What are the demolition management measures identified in the Demolition Impact Assessment Report (GHD, 2022c). Provide context and reference relevant appendices to ensure these conditions is adequately addressed.
- Condition DM4 is not considered to fall within asbestos and/or soil and water management tasks and is considered to be a part of the demolition phase of works. As such, please update DEMP to include requirements for decommissioning groundwater wells.
- Condition DM7 isn't limited to blast activities (i.e. it is associated with damage to critical infrastructure associated from general vibrations). As such, please update the DEMP to include them.
- Appendix A: What is the Environmental Management Strategy (EMS)? How does this differ to PEMS references in tables throughout Section 3.2.2? Provide a copy of the EMS for auditor review and append to the DEMP.

4.0 Closure

If you have any comments or questions, please do not hesitate to contact the undersigned at jason.clay@senversa.com.au or on 0410 431 674.

Yours sincerely,
On behalf of **Senversa Pty Ltd**

Jason Clay
NSW EPA Accredited Site Auditor (0801)

SK/ES/JC

Technical Limitations and Uncertainty *– This Interim Advice is not a Site Audit Report or a Site Audit Statement, as defined in the Contaminated Land Management Act 1997, but forms part of the Site Audit process*. It is intended that a Site Audit Statement and report will be issued at the completion of the site audit.
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- *This letter is considered by the auditor to be consistent with NSW EPA guidelines and policies.*
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Client Reliance *– Consultant work included limitations in the reports, and therefore this review will also be subject to those limitations. The auditor has prepared this document in good faith but is unable to provide certification outside of areas over which the auditor had some control or is reasonably able to check. The auditor has relied on the documents referenced in this letter in preparing the auditor's opinion. If the auditor is unable to rely on any of those documents, the conclusions of the audit could change.*

Third Party Reliance *– This document has been prepared solely for the use of AGL Macquarie Pty Ltd. No responsibility or liability to any third party is accepted for any damages arising out of the use of this document by any third party.*

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AGL	Project Title:	Liddell Power Station Demoltion		Demolition Environment Management Plan		
	IAA	Design Organisation:		Issued	Comments Completed	Response Received
	36	CMA Contracting PTY LTD	Report	Demolition Environment Management Plan	30-April-2025	

Review Requested By:	Review Performed By:	Project Status:	Issue No:	Review Issue Date:
AGL	Site Auditor - Senversa 16/04/2025 letter	UNDER REVIEW		16-April-2025

Item	Page ref.	Section	Review Comments	Updated in	Section ref. report	Comments	Action	Status	Auditor Status
1	N/A	N/A	Please address C15 of the consent conditions.	No	N/A	Section 5.10 of the DEMP updated to address all hazardous materials (including ACM, PCB capacitors and PCB oils) to be removed prior to demolition works where reasonably practicable. Reference to Condition C15 added to Table 3 in Section 3.2.1. Section 5.1 and 7.6.3 of the AMSP updated to address ACM clearance certitifcates and removal prior to demolition noting in accordance with NSW legislation, a clearance certificate is not required for PCB Capacitors or transformers.		Closed	
2	N/A	Appendix	The DEMP is heavily reliant upon the following management plans listed below. Please provide formal reference to such documents and provide as an Appendix to the DEMP for auditor consideration: -Onsite Traffic Management Plan -Traffic Management Plan for the Demolition -Biodiversity Management Plan -Rehabilitation Management Plan -Aboriginal Cultural Heritage Management Plan -Noise and Vibration Management Plan -Hazardous Materials Removal Plan -Change Management Register -Emergency Response Management Plan -Pollution Incident Response Management Plan -Bushfire Management Plan	Yes	Section 3.3	Added Section 3.3 Reference Documents. Consent Conditions do not require all documents to be submitted for approval by the Planning Secretary. Documents can be made available to the site auditor for information.	Provide formal reference of management plans to DEMP	Closed	
3	N/A	N/A	The following standalone management plans have been referred to throughout the DEMP: -Asbestos Management Sub Plan (Appendix C) -Soil and Water Management Sub Plan (Appendix D) -Dust Management Sub Plan (Appendix E) -Blast Management Sub Plan (Appendix F) Please provide formal reference (where possible) to each document and refer to relevant appendices when referred to throughout the DEMP. It is understood that the above management plans will be provided to the auditor for standalone review, with review comment to be provided in a separate IAA. Add a section in the DEMP that clearly outlines the roles and responsibilities of all parties, including those identified in Section 3 tables. Specify who is responsible for each task and the implementation of the DEMP.	Yes	Section 3.3	Added Section 3.3 Reference Documents. Documents can be made available to the site auditor for information.	Provide formal reference of management plans to DEMP	Closed	
4	19	Table 3	Add a section in the DEMP that clearly outlines the roles and responsibilities of all parties, including those identified in Section 3 tables. Specify who is responsible for each task and the implementation of the DEMP.	Yes	Section 2.4	New section 2.4 Roles and Responsibilities has been added	Add a section that clearly defines the roles and responsibilities of all parties	Closed	
5	N/A	Appendix F	Add a standalone Section in the DEMP that provides context around the Blast Management Plan and requirements of the Consent (i.e. AQ2 and HR1 to HR5 & HR7 to HR8), including reference to Appendix F.	Yes	Section 2.1.5	Section 2.1.5 Blast Management Sub Plan added. AGL received approval from DPHI to defer submission of the Blast Management Plan. Notes: HR7 only applies to asbestos containing materials which is covered in the Asbestos Management Sub-Plan. As such this is not relevant in the preparation of the Blast Management Plan and has not been referenced. HR8 relates to the Bushfire Management Plan and is not relevant in the preparation of the Blast Management Plan and has not been referenced under this plan but has been referenced in Section 5.17 of the DEMP.	Add a standalone Section in the DEMP that provides context around the Blast Management Plan and requirements of the Consent	Closed	
6	N/A	Appendix C	Add a standalone Section in the DEMP that provides context around the Asbestos Management Sub Plan (i.e. Conditions DM1, AQ2, HR6 to HR7) including reference to Appendix C.	Yes	2.1.2	Section 2.1.2 Asbestos Management Sub Plan added	Add a standalone Section in the DEMP that provides context around the Asbestos Management Sub Plan	Closed	

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Review Requested By:	Review Performed By:	Project Status:	Issue No:	Review Issue Date:
AGL	Site Auditor - Senversa 16/04/2025 letter	UNDER REVIEW		16-April-2025

Item	Page ref.	Section	Review Comments	Updated in	Section ref. report	Comments	Action	Status	Auditor Status
7	N/A	N/A	Add a standalone section in the DEMP for Non-Aboriginal Heritage finds, as required by Condition HH1 of the Consent. This section should include procedures for managing unexpected historical archaeological remains according to Section 146 of the Heritage Act 1977. Note that this is separate from the unexpected contamination finds protocol in Section 5.16.	Yes	Section 5.7 and 5.16	Section 5.7 has been split into 2 x sub-sections (Historic Heritage and Aboriginal Heritage), with the section on Aboriginal Heritage updated to address the comments. Section 5.16 updated to include reference to the Heritage Act 1977.	Add a standalone section in the DEMP for Non-Aboriginal Heritage finds and procedures for managing unexpected historical archaeological remains according to Section 146 of the Heritage Act 1977	Closed	
8	N/A	N/A	Consider if this document should outline OH&S requirements for various activities that may occur.	No	N/A	Not considered nessesary as this is an Environmental Management Plan and WHS is addressed in other documents. As required by consent AGL is consulting with SafeWork NSW as part of the development of the DEMP.	Nil	Closed	
9	N/A	N/A	It is a requirement for the demolition contractor to hold a SafeWork Class A asbestos removal licence. Please include this (i.e. Condition DM1 requirement) to DEMP.	No	Asbestos Management Sub-plan	Addressed in the Asbestos Management Sub Plan	Nil	Closed	
10	8	Section 2	Please provide further detail on relevant licenses and permits pertaining to the demolition works.	Yes	Section 3.4	Added section 3.4 Licences and Permits	AddLicence and permit details to DEMP	Closed	
11	15	Section 2.2	Clarify what constitutes Stage 1 demolition works. Confirm whether the DEMP will be implemented throughout all future staged works (Stages 1 to 3) as required by Condition C18.	N/A	N/A	Stage 1 includes all demolition works. The DEMP is only relevant to Stage 1 and is not relevant to Stages 2 and 3 of the development.	Provide clarity - in comments	Closed	
12	15	Section 2.2	Condition C16 (c) requires a description and schedule of activities to be undertaken during demolition. Please provide a schedule of activities including specific timeframes for each activity etc.	Yes	Section 2.2.1	Section 2.2.1 Indicative Schedule of Works updated to include the zones of demolition and indicative high level program.	Update schedule of works	Closed	
13	15	Section 2.2	Update to include reference to Condition C17 where 'Demolition must not commence until the demolition environmental management plan is approved by the Planning Secretary'.	Yes	Section 2.2.1	Section 2.2.1 updated to include reference C17 requirements	Include reference to C17	Closed	
14	15	Section 2.2	Add Condition HR7 to DEMP as this is an important hold point prior to the commencement of any demolition works that may impact asbestos.	Yes	Section 2.2.1	Section 2.2.1 updated to include reference to HR7 requirements and reference to the AMP.	Include reference to HR7	Closed	
15	15	Section 2.2	Add a Section that lists emergency contact (including numbers).	N/A	Emergency Response Management Plan	Section 5.18 Incident and Emergency Response refers to the Emergency Response Management Plan which details relevant contact details including phone numbers.	Nil	Closed	
16	40	Section 4.3	State who is responsible for inductions into the DEMP.	Yes	Section 4.3	Section 4.3 has been updated to include: "The CMA Health, Safety Environment and Quality Manager is responsible for all workers being inducted into the DEMP."	Update responsibility in DEMP	Closed	
17	41	Section 4.4	Section 4.4: Who is responsible for submitting the DEMP to the Planning Sectary for Approval and ensuring details (if any) of consultations that took place are provided as part of the submission?	N/A	N/A	AGL has submitted the plan in the DPHI portal. Plan will be updated with consultation once finalised.	Comfirm AGL as Responsible	Closed	
18	43	Section 5.7	The protection of Aboriginal Objects are not to be managed under the Unexpected Finds Protocol outlined in Section 5.16. Where Aboriginal objects are encountered, these are required to be managed in accordance with the Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (DECCW, 2010), as defined in Condition B5 of the Consent. Please update DEMP accordingly.	Yes	Section 5.7.2	New Section 5.7.2 has been added and addresses comments and Section 5.16 Unexpected Finds has been updated to address the comments: "Wherever an unexpected find is encountered, work should cease in the area of impact and the Site Supervisor must be notified. The Site Supervisor will then make the area safe and AGLM notified. In some circumstances, specific legislation and Codes of Practice will apply in the management of the unexpected find (e.g. non-aboriginal heritage finds must be managed in accordance with Section 146 of the Heritage Act 1977, *Aboriginal Heritage finds must be managed in accordance with the Code of Practice Archaeological investigations of Aboriginal Objects in NSW (DECCW, 2010), etc)."*	Add new section to address comments in section 5.16	Closed	
19	48	Section 5.16	Include an unexpected finds flow chart showing the process to undertake. Discuss the process to follow after the area is made safe and AGLM notified. Please include specific requirements for asbestos related finds and include reference to Condition SC10 & SC11.	No	N/A	Unexpected finds is covered in section 5.16 which details the simple requirements without the need for a flowchart (i.e. stop work, notify Supervisor, make area safe, and notify AGLM). The process after the unexpected find is notified to AGLM is subject to the nature of the unexpected find. Specific requirements for unexpected ACM finds are detailed in the AMP.	Provide clarity on Unexpected finds process and Condition SC10 & SC11 requirements	Closed	

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20	43	Section 5.8	Include reference to the Blast Management Plan and Asbestos Control Plan in accordance with Conditions AQ2. Currently only the Dust Management Plan is referred to.	Yes	Section 5.8	Section 5.8 updated to include the Blast Management Sub Plan and the Asbestos Management Sub Plan. (Note: Reference to Asbestos Control Plan in AQ2 is an error and should refer to Asbestos Management Sub Plan)	Update DEMP to include reference to the BMP and AMP in accordance with Conditions AQ2	Closed	
21	45	Section 5.11.4	Clarify the frequency of CMA's 'regular' inspections. How will CMA maintain scheduled servicing of the plant to identify existing or potential leaks? Will CMA complete and maintain inspection and maintenance registers?	Yes	Section 5.11.4	Section 5.11.4 updated the word “regular” to “prior to each day of use”. 5.11.4 updated to include: “Plant servicing requirements and records are maintained on CMA Contracting’s online database which is managed by the CMA Contracting NSW Workshop Manager.”	Confirm frequency of inspections and clarify CMA scheduled servicing of plant process	Closed	
22	45	Section 5.11.4	Have all requirements of Condition WQ7 been captured in this section? It is noted that no reference to EPA’s guidelines Section ‘Bunding and Spill Management’ has been made.		Section 5.11.4	Review 5.11.4 against WQ7 (below) WQ7 The PEMS will include details of spill management measures to be implemented including: •Measures to manage accidental spills including the requirement to maintain materials such as spill kits. (already covered in section 5.11.4); •Procedures for spill incident management. Containment of spills and leaks shall be in accordance with EPA’s guidelines section ‘Bunding and Spill Management’. (No Guideline document exists. Guidance material is available on the EPA website (https://www.epa.nsw.gov.au/Your-environment/Water/The-drain-is-just-for-rain) . This information has been considered in preparing Section 5.11.4.) •Provision of preventative controls for spills such as alarm systems, regular training and routine inspection of potential contamination sources. (updated 5.11.4 to address); •Measures to clean up any contamination sources and where possible removal of the contamination source related to project spills. (updated 5.11.4 to address);		Closed	
23	45	Section 5.11.4	Include reference to Section 5.14 to ensure appropriate management and disposal of generated waste fluids.	Yes	Section 5.11.4	Section 5.11.4 updated with: “Any waste generated as a result of a spill, will be managed in accordance with Section 5.14 of this DEMP.”	Include reference as noted	Closed	
24	46	Section 5.12.1	Imported Fill. Discuss requirements for certification of ENM and VENM. Outline sampling methodology and handling, sampling density requirements and assessment criteria. Discuss who will undertake this work if required.			Section 5.12.1 updated to refer to the NSW EPA Waste Classification Guidelines (Part 1) 2014 and The Excavated Natural Material Order and Exemption 2014. These documents detial the assessment criteria. Wording also added to require consultation with the site auditor.		Closed	
25	46	Section 5.12.3	Please outline the specific conditions and requirements for soil reuse and movement here. Tracking of internal material movement is to also be undertaken using a tracking register, please attach an example register for auditor review.			Section 5.12.3 updated to include the requirements for soil movement and reuse onsite and requirement for tracking of the material movement. Example register also added. \		Closed	
26	46	Section 5.13.1	Stockpiles should be placed on hardstand or black plastic to prevent cross contamination. Please list control devises to be used to stabilise, for dust control, erosion and sedimentation.	Yes	Section 5.13.1	Section 5.13.1 updated to include additional dot point: “Where stockpile material is suspected of being contaminated, the stockpile material will be placed on hardstand or black plastic to prevent cross contamination.” Section 5.13.1 updated to refer to Dust Management Plan and Soil & Water Management Plan for control devices.	Update references to stockpile controls	Closed	

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27	46	Section 5.14	Interim Audit Advice #36: Review of Demolition Environmental Management Plan AGL Liddell Power Station S19449_LET36_16April2025 16 April 2025 Page 4 of 5 ▪ It is noted that no discussion is provided regarding the removal, management and disposal (including crushing) of asbestos pipes. Please update DEMP to include and make note of A6 'a maximum of 30,000 m3 of asbestos waste, asbestos containing material, synthetic mineral fibre and other associated wastes authorised by the Site auditor, may be disposed of at the asbestos disposal facility, unless otherwise agreed by the Planning Secretary'.	Yes	Section 5.14.1	Section 5.14.1 updated to include: "For ACM and SMF waste, refer to AMSP in Appendix C." In the Asbestos Management Sub Plan (AMSP), Condition A6 is addressed in section 7.14.1. Crushing of pipes is not intended to be undertaken. Potential settlement will be addressed in the cell design"	Section 5.14.1 updated to include reference relating to the removal, management and disposal of ACM & SMF	Closed	
28	46	Section 5.14	It is noted that no discussion is provided regarding the removal and management of concrete confirmed to be impacted by PCBs. Please update DEMP to include and make note of B26 'Any concrete confirmed to be impacted with PCB above acceptable levels determined by the Site auditor must be disposed of at a licensed waste facility'.	No	Section 5.14.4	Section 5.14.4 Disposal, Reuse and Recycling already addresses PCB contaminated concrete in paragraph 5: "In accordance with Consent Condition B26, any concrete confirmed to be impacted with PCB above acceptable levels as determined by the Site auditor will be disposed of at a licensed waste facility."	Nil	Closed	
29	46	Section 5.14	Prepare a Waste Management Plan for the project as required by Condition MW1 before works commence. Update the DEMP accordingly and include it as an Appendix.	No	Section 5.14	Section 5.14 addresses Waste Management. No separate plan is intended to be prepared as part of trhe DEMP. B23 to B27, and WM1 is addressed within this section. SoC WM1 is also covered in Section 5.6.15 of the Environmental Management Strategy.	Nil	Closed	
30	47	Section 5.14.3	The waste tracking register should also include time and date of waste disposal. Please attach an example waste tracking register for auditor review.	Yes	Section 5.14.3	Time is not considered relevant to the material tracking register considering that the bulk of disposal will occur on site. For offsite disposal time is captured on the docket issued by the disposal facility. Date is included in the material tracking register. Section 5.14.3 updated to include an example material tracking register. AGL to update as per AMP comment	Include and example of the tracking register	Closed	
31	48	Section 5.17	Update to include Condition HR8 requirements for the existing Bushfire Management Plan to be reviewed for adequacy and amended if required.	Yes	Section 5.17	Section 5.17 updated to include: "In accordance with SoC HR8, the existing AGLM Bushfire Management Plan will be reviewed for adequacy and amended if required to ensure it includes measures to manage onsite fire risks associated with: •Hot works resulting in ignition of surrounding vegetation. •Equipment or vehicles being used in long grass. •Construction workers smoking or rubbish left at the site. •Storage of combustible materials and liquids on site. •Measures to manage the potential risk that fire originating offsite pose to the projects."	Update to include Condition HR8 requirements for the existing Bushfire Management Plan	Closed	

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32	51	Section 6.3.1	Please add 'The Applicant must provide the Department with a subsequent incident report in accordance with Appendix 6 (Incident Notification and Reporting Requirements)'.	Yes	Section 6.3.2	Section 6.3.1 Non-Compliance deals with Non-compliances and Appendix 6 of the Consent is regarding "incidents". Section 6.3.2 Incidents updated to reference Appendix 6 "In accordance with D6 of the Consent, the Applicant (AGLM) must provide DPHI with a subsequent incident report in accordance with the nominated incident notification and reporting requirements in accordance with Appendix 6 of the concent ."	Update to reference Appendix 6	Closed	
33	52	Section 6.4	Include reference to Condition D2 requirement that the Compliance Report to be submitted by the end of March each year.	Yes	Section 6.4, Table 11	Section 6.4 Table 11 updated	Include reference to Condition D2	Closed	
34	54	Section 7.2	Add D1 requirement 'Independent Environmental Audits of the development must be conducted and carried out in accordance with the Independent Audit Post Approval Requirements (2020), or its latest version published on the Department's website'.	Yes	Section 7.2.2	Section 7.2.2 updated	Add D1 requirement to DEMP	Closed	
35	55	Section 7.2.3	Please specify the exact frequency for 'regular' environmental inspections.	Yes	Section 7.2.3	Section 7.2.3 updated by replacing the word "regular" with "weekly"	Clarify frequency for 'regular' environmental inspections.	Closed	
36	55	Section 7.4	What is the Change Management Register and CMA Change Management Procedures? Provide as an Appendix to the DEMP. Is the Risk Assessment process referenced in this Section the Risk Assessment provided as Appendix A? If so, please reference Appendix A in this section.	Yes	Section 7.4	Section 7.4 updated – reworded completely to simplify. The Change Management Register for the project is a register of all changes to management plans, work methods, scope, etc. for the project. In the revised DEMP section 7.4, changes refer to the DEMP document and associated sub-plans. The Change Management Register can be provided to the site auditor for information. No. The Risk Assessment in Appendix A is required by the condion C16 (e) of the consent. The Risk Assessment refered to in sectiojn 7.4 is an internal CMA process.	Clarify Change Management Process, provide the change manangemnet register for information and confirm the Risk Assessment detailed in Appendix A	Closed	
37	56	Section 7.5	The following requirements of Condition D7 appears to be missing. Please updated section to include them. Confirm if changes to the DEMP will require auditor review.	Yes	Section 7.5	Section 7.5 has been updated to include: "In accordance with condition D7 of the Consent, where an update to the DEMP is required, the DEMP will be revised and submitted to the Planning Secretary and the Site Auditor for approval within three months of the review."	Include requirements of Condition D7	Closed	
39	37	Table 4	Table 4 (Condition HR9): What are the demolition management measures identified in the Demolition Impact Assessment Report (GHD, 2022c). Provide context and reference relevant appendices to ensure these conditions is adequately addressed.	Yes	Table 7.1 and Table 5	The Management measures detailed in the Demolition Impact Assessment Report (GHD, 2022c) are detailed in Table 7.1 of the report which simply reproduce the Statements of Commitment D1 to D11 (note: the current GHD report is dated 3 March 2023 and can be found at the following link under "Appendix H – Demolition Assessment" https://www.planningportal.nsw.gov.au/major-projects/projects/liddell-future-land-use-and-enabling-works-project) Table 5 (formerly Table 4) has had the "DEMP SECTION" reference updated for HR9 and now states "refer to DM1 to DM11 above".	Provide context and reference relevant appendices to ensure these conditions is adequately addressed	Closed	
40	N/A	N/A	Condition DM4 is not considered to fall within asbestos and/or soil and water management tasks and is considered to be a part of the demolition phase of works. As such, please update DEMP to include requirements for decommissioning groundwater wells.	Yes	Section 5.15.1	Section 5.15.1 added.	update DEMP to include requirements for decommissioning groundwater wells	Closed	
41	N/A	N/A	Condition DM7 isn't limited to blast activities (i.e. it is associated with damage to critical infrastructure associated from general vibrations). As such, please update the DEMP to include them.	Yes	Table 5	Both the Blast Management Plan (for each Blast event) and the Noise and Vibration Management Plan (sub plan to the EMS) detail the critical infrastructure that may be damaged by vibration. Table 5 (formerly Table 4) has had the "DEMP SECTION" reference updated to include the following in addition to Appendix F (Blast Management Plan): "Noise and Vibration Management Plan (sub plan to the EMS)"	Update reference to include BMP and Noise and Vibration Management Plan	Closed	

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42	N/A	Appendix A	What is the Environmental Management Strategy (EMS)? How does this differ to PEMS references in tables throughout Section 3.2.2? Provide a copy of the EMS for auditor review and append to the DEMP.	Yes	N/A	The EMS is required under conditon B1 of the consent. The EMS and he PEMS are one and the same. PEMS was the terminology used in the environmental assessment documentation. This was superceeded by the wording required by the consent.	Confirm EMS and PEMS terminology	Closed	

APPENDIX C – ASBESTOS MANAGEMENT SUB PLAN

ASBESTOS MANAGEMENT SUB-PLAN

LIDDELL POWER STATION DEMOLITION PROJECT

cma contracting
a DELTA GROUP company

ASBESTOS MANAGEMENT SUB-PLAN

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Project Name	Liddell Power Station Demolition Project		
Client Name	AGLM		
Project Address	Liddell Power Station, New England Highway, Muswellbrook, NSW, 2333		
Project Description/ Scope	Demolition of Liddell Power Station		
Document Number	C0269-LPS-SSD-SP-Asbestos Management sub-plan		
Prepared By	Todd Solomon	Signature:	Date: 10/04/2025
Authorised By	Todd Solomon	Signature:	Date: 10/04/2025
Project Manager	Ruan Zaayman	Signature:	Date: 10/04/2025

DISCLAIMER

The following document has been prepared for the *Liddell Power Station Demolition Project*.
While every effort has been made to ensure the accuracy of the material in this document, this publication is not meant to substitute for the legislation. For the specific requirements on an issue covered in this document, persons shall refer directly to the relevant legislation in their location.
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Controlled Documents: The aforementioned company has been assessed and registered as complying with the requirements of ISO45001, ISO14001, ISO9001 and ISO3100, therefore all documents within the CMA Integrated Management System (IMS) are known as "Controlled Documents". Once a document is printed it becomes un-controlled, it is thereafter known as an "Un-controlled Document". Document revisions may be viewed in the document "Properties", documents will be reviewed on an as need basis. The controlled copy of all documents is on the computer network.

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REVISION REGISTER

REV	DATE	DESCRIPTION OF CHANGE	PAGE/S	REVIEWED BY	APPROVED BY
00	10/04/2025	Initial submission to DPHI	All	TS	RZ
01	28/04/2025	Updated to address Site Auditor Comments	11, 13, 14, 15, 18, 19, 20, 21, 22, 26, 27, 28, 29, 31, 32, 33, 34, 35, 38, 39, 42, 47	TS	RZ

1 GLOSSARY

ACM	Asbestos Containing Material
AES	alkaline earth silicate
AMSP	Asbestos Management Sub Plan
ARCP	Asbestos Removal Control Plan
AS	Australian Standard
BCAR	Baseline Contamination Assessment Report Liddell Future Land Use and Enabling Works Project, (SSD 24937520) Liddell Power Station, New England Highway, Muswellbrook 24000419.001A dated 13 February 2024
CMA	CMA Contracting Pty Ltd
DEMP	Demolition Environmental Management Plan
EIS	Environmental Impact Statement
EPA	NSW Environmental Protection Authority
EPandA Act	Environmental Planning and Assessment Act 1979
HVGT	Hunter Valley Gas Turbines
HEPA	High efficiency particulate air
IBC	Intermediate Bulk Container
IWTS	Integrated Waste Tracking Solution
LAA	Licensed Asbestos Assessor
LARC	Licensed Asbestos Removal Contractor
LPS	Liddell Power Station
NEPM	National Environmental Protetion Measure
PIRMP	Pollution Incident Response Management Plan
PPE	Personal Protective Equipment
Prensa	Prensa Pty Ltd
RtS	Response to Submissions
SMF	Synthetic Mineral Fibre
SSD	State Significant Development
WHS	Work, Health and Safety

2 INTRODUCTION

The Liddell Power Station (LPS) ceased power generation operation on 28th April 2023 as part of AGL Macquarie's (AGLMs) AGLMs transition towards a low-carbon future and commitment to the closure of its coal fired power stations at the end of their operating life.

The development has been declared a State Significant Development (SSD) in accordance with Section 4.36(2) of the Environmental Planning and Assessment Act 1979 (EPandA Act) and clause 2.5; 2.19 and 23(5) of Schedule 1 of State Environmental Planning Policy (Planning Systems) 2021 (Planning Systems SEPP). It is permissible with development consent.

An Environmental Impact Statement (EIS) was prepared and submitted to the Department of Planning, Housing, and Infrastructure (DPHI), which was exhibited 4 May to 31 May 2023. A Response to Submissions (RtS) Report (GHD, 2024a) was prepared 19 February 2024 to address submissions received during exhibition. An Amendment Report (GHD, 2024b) was subsequently submitted 11 June 2024 addressing minor changes to the development including a reduction in the disturbance footprint to reduce biodiversity and cultural heritage impacts. The EIS, RtS and Amendment Report will be collectively referred to in this EMS as the 'environmental assessments'.

The development was approved by DPHI on 31 January 2025, with Development Consent SSD 24937520 (the Consent) issued.

The Development will be conducted in compliance with conditions the Consent, relevant licenses and permits. This package of work enables demolition of the structures and infrastructure within the areas outlined in Figure 1, Figure 2 and Figure 3.

To enable the demolition of LPS and associated infrastructure (the Demolition), AGLM and relevant stakeholders are required to prepare management documents, strategies and procedures to support the works, with regards to environmental approvals and legislation.

LPS is located just outside of Muswellbrook, in the New South Wales Hunter Valley along the New England Highway. The station consists of 4 x 500-megawatt steam driven turbines, 4 x coal fired boilers and 2 x reinforced concrete chimneys stacks. The site was opened for operations in May 1971 and retired from service in 2023.

LPS also comprises of associated coal handling facilities, the Hunter Valley Gas Turbines (HVGTs), Transgrid Switchyard (not owned by AGL), Liddell Ash Dam (LAD) and associated support facilities and infrastructure. The site is spread across 960 Hectares and forms part of the greater AGL Macquarie (AGLM) operations.

Figure 1 – Development Area

Figure 2 – LPS Demolition Area

3 PURPOSE AND SCOPE

Condition C19 of the Consent requires the preparation of an Asbestos Management sub-plan (AMSP) to the Demolition Environmental Management Plan (DEMP) for the Liddell Power Station (LPS) Demolition Project required under condition C16 of the Consent.

This AMSP provides an overarching understanding of how asbestos containing material (ACM) and synthetic mineral fibre (SMF) related risks will be managed throughout the demolition of LPS and associated infrastructure (the Development) by CMA Contracting Pty Ltd (CMA).

The purpose of the AMSP is to ensure that ACM / SMF is managed in a well-planned, safe and professional manner, whilst fulfilling the requirements of the NSW Work Health and Safety (WHS) Regulations 2017, the condition C19 the Consent, and relevant clauses of the Environmental Protection Licence (EPL) 2122.

In accordance with condition C19 part (a) of the Consent, this AMSP has been prepared in accordance with the SafeWork NSW Code of Practice – How to safely remove asbestos, December 2022, SafeWork NSW: guidance on managing asbestos in or on soil, March 2014, Schedule B2 of the National Environmental Protetion Measure (NEPM), and any requirements of the Site Auditor.

Note: In addition to this AMSP, in accordance with the SafeWork NSW Code of Practice – How to safely remove asbestos, December 2022, a Asbestos Removal Control Plan/s (ARCP's) will be prepared for the works by the Licenced Asbestos Removal Contractors (LARCs) – refer to Appendix C for an example ARCP.

3.1 SCOPE AND OBJECTIVE OF THE AMSP

The scope of the AMSP includes management procedures and options for the removal of ACM / SMF from the Demolition area which has been segregated into the following zones, and includes the removal of both friable and non-friable ACM as well as SMF (refer to Figure 3 below):

- Zone 1 – Transformer Bay.
- Zone 2 – Turbine House.
- Zone 3 – Boiler Houses and Auxiliary Bay.
- Zone 4 – Fabric Filters.
- Zone 5 – Chimney Stacks.
- Zone 6 – Hazardous Storage Areas.
- Zone 7 – Minor Support Infrastructure.
- Zone 8 – Coal Handling Infrastructure.
- Zone 10 – Ash and Dust lines.
- Zone 11 – CW Pumping Station.
- Zone 12 – Hunter Valley Gas Turbines (HVGTs).

**Note: Zone 9 – Solar Plant is not applicable to the Development*

Collectively, the above zones are referred to as "the Site" and include, but are not limited to, the following main structures:

- Boiler Units (LD1, LD2, LD3, LD4).
- Turbine Hall (TH1, TH2, TH3, TH4).
- Water Bulk Storage Tanks.
- Administration Building.
- Workshop.
- Chimney Stack.

- PSV Workshop.
- Lime Storage Hopper.
- Flammable Gas Store.
- Ferric Chloride Water Treatment Plant.
- Cable Tunnels.
- Coal Processing.
- External Contractors and Plant Workshop.
- Canteen and Training Rooms.
- Staff Amenities.
- Diesel Generator.
- Transformer Yard Workshops.
- Transformer Yard.
- Gatehouse.
- Coal Conveyor Transfer Houses.
- Ash and Dust Plant (1-2 and 3-4).
- Stores Compounds (1, 2 and 3).
- Water Treatment Plant.

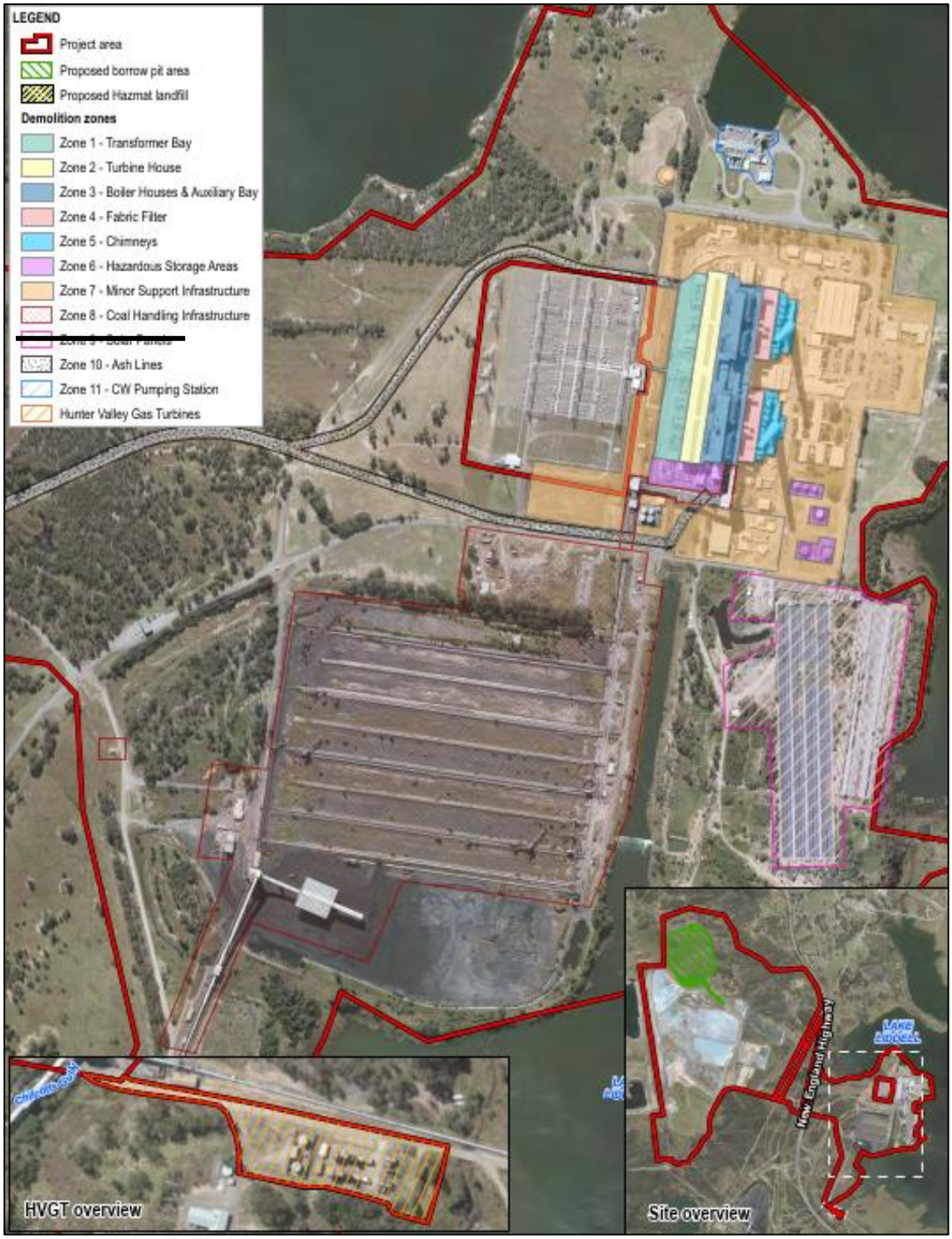


Figure 3 – LPS Demolition Zones

3.2 INDICATIVE SCHEDULE OF ACTIVITIES

Following is a high level indicative schedule of the ACM removal works:

Table 1 – High level indicative schedule of the ACM removal works

Demolition Zone	ACM Removal Indicative Start Date	ACM Removal Indicative Finish Date
Zone 1 – Transformer Bay	July 2025	November 2026
Zone 2 – Turbine House	July 2025	February 2027
Zone 3 – Boiler Houses and Auxiliary Bay	July 2025	April 2027
Zone 4 – Fabric Filters	September 2025	April 2027
Zone 5 – Chimney Stacks	July 2025	May 2027
Zone 6 – Hazardous Storage Areas	February 2026	November 2026
Zone 7 – Minor Support Infrastructure	July 2025	February 2026
Zone 8 – Coal Handling Infrastructure	May 2026	April 2027
Zone 10 – Ash and Dust lines	January 2027	May 2027
Zone 11 – CW Pumping Station	November 2026	January 2027
Zone 12 – Hunter Valley Gas Turbines (HVGTs)	August 2025	April 2027

Note: The above dates are subject to change

4 STRATEGIC FRAMEWORK

4.1 RELEVANT LEGISLATION AND CODES OF PRACTICE

The AMSP has been developed in accordance with the following legislation, industry standards, codes of practice and guidance documents:

- NSW Work Health and Safety Act, 2011.
- NSW Work Health and Safety Regulation, 2017.
- SafeWork NSW Code of Practice: How to Manage and Control Asbestos in the Workplace, 2022.
- SafeWork NSW Code of Practice: How to Safely Remove Asbestos, 2022.
- SafeWork NSW Code of Practice: Demolition Work, 2019.
- SafeWork NSW Code of Practice: Construction Work, 2019.
- Australian Standard (AS) 2601-2001 The demolition of structures.
- Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition [NOHSC:3003(2005)].
- AS 4964-2004 Method for the qualitative identification of asbestos in bulk samples.
- AS 2985-2009 Workplace atmospheres - Method for sampling and gravimetric determination of respirable dust.
- AS 3640-2009 Workplace atmospheres - Method for sampling and gravimetric determination of inhalable dust.
- National Code of Practice for the Safe Use of Synthetic Mineral Fibres [NOHSC:2006(1990)].
- SafeWork Australia Guide to Handling Refractory Ceramic Fibres, 2013.
- Protection of the Environment Operations Act, 1997.
- Protection of the Environment Operations (Waste) Regulation, 2014.
- AS ISO 31000:2018 Risk Management – Guidelines.
- AS 1319-1994 Safety signs for the Occupational Environment.
- AS/NZS 60335.2.69:2017 Household and similar electrical appliances — Safety, Part 2.69: Particular requirements for wet and dry vacuum cleaners, including power brush, for commercial use
- AS 4260-1997 High efficiency particulate air filters (HEPA) - Classification, Construction and Performance.
- AS/NZS 1716-2012 Respiratory Protective Devices.
- AS/NZS 1715-2009 Selection, Use and Maintenance of Respiratory Protective Equipment.
- Schedule B2 of the National Environment Protection Measure (NEPM).
- SafeWork NSW Managing asbestos in or on soil March 2014.
- NSW Environmental Planning and Assessment Act 1979.

NSW EPA Waste Classification Guidelines, Part 1: Classifying waste, November 2014

4.2 RELEVANT CONDITIONS AND STATEMENTS OF COMMITMENTS OF THE CONSENT

4.2.1 RELEVANT CONDITIONS OF THE CONSENT

Table 2 – Conditions relevant to the AMSP

CONDITIONS OF THE CONSENT		
CONDITION		**AMSP SECTION**
Demolition	C19. An asbestos management sub-plan must be prepared as part of the demolition environmental management plan. The plan must: a) be prepared in accordance with the SafeWork NSW 2022 Code of practice: How to safely remove asbestos, SafeWork: guidance on managing asbestos in soil, Schedule B2 of the NEPM and any requirements of the Site auditor; b) identify any known or potential areas of concern within the approved development area for asbestos containing materials and synthetic mineral fibre; c) include: i. procedures for identifying, handling and disposing of asbestos waste, asbestos containing materials and synthetic mineral fibre; ii. procedures for interim storage of asbestos prior to disposal and disposal of asbestos; and iii. outline the relevant requirements of conditions C1 to C13 for the management of asbestos waste, asbestos containing materials and synthetic mineral fibre.	a) Whole document b) Section 7.2 c) i) Section 3(ARCP's), 7.2(Prensa), and 7.3 (LARC) ii) Section 7.14.2 iii) Refer to Conditions below
Asbestos disposal facility	A6. A maximum of 30,000 cubic metres of asbestos waste, asbestos containing material, synthetic mineral fibre and other associated wastes authorised by the Site auditor, may be disposed of at the asbestos disposal facility, unless otherwise agreed by the Planning Secretary.	Section 7.14 DEMP
Site audit process	C1. A multi-stage site audit must be undertaken for the development. The audit must: a) be undertaken by a Site auditor; b) be undertaken in accordance with the Contaminated Land Guidelines; c) include the provision of interim audit advice by the Site auditor in relation to (as applicable): i. sampling analysis and quality plans; ii. detailed site investigation reports; iii. human health and ecological risk assessment reports; iv. remediation action plan; v. site validation reports; and vi. long-term environmental management plans; d) conclude with the Site auditor issuing either a Section A1 or Section A2 audit statement for the development.	Section 6.1 Section 7.14
Sampling analysis and quality planning	C2. Sampling analysis and quality plans must be prepared for all further contamination investigations proposed within the approved development area. The plans must: a) be prepared, or reviewed and approved, by consultants certified under either the CEnvP(SC) or the CPSS CSAM scheme; b) be prepared: i. in accordance with the Contaminated Land Guidelines; ii. before sampling for contamination investigations is conducted; c) address additional investigations identified by the Stage 2 detailed site investigation, for the proposed Stage 3 investigations and any unexpected finds; d) be accompanied by interim audit advice from the Site auditor; and	Section 6.2

	e) be provided to the Planning Secretary and the NSW EPA for information prior to the commencement of the detailed site investigation/s required under condition C4.	
	C3. A sampling analysis and quality plan must be prepared for the PCB contaminated material for the testing and reuse of concrete and/or any other recycled/re-used material during the development. The plan must: a) be prepared, or reviewed and approved, by consultants certified under either the CEnvP(SC) or the CPSS CSAM scheme; b) be prepared: i. in accordance with the Contaminated Land Guidelines; and ii. prior to the re-use, recycling or burying of PCB contaminated materials within the approved development area; c) be accompanied by interim audit advice from the Site auditor.	C3 – Not applicable for asbestos (refers to PCB contamination)
Detailed site investigations	C4. A detailed site investigation must be undertaken for the development. The investigation report must: a) be prepared, or reviewed and approved, by consultants certified under either the CEnvP(SC) or CPSS CSAM scheme; b) be prepared in accordance with the relevant Contaminated Land Guidelines; c) be accompanied by interim audit advice from the Site auditor confirming the investigation report is satisfactory; d) include, but not limited to, the following: i. all works outlined by Stage 3 detailed investigation scope included in the EIS; ii. a discussion on the characterisation of groundwater across the development and the ongoing groundwater monitoring of PFAS required under the existing PFAS Management Plan for the Liddell Power Station; iii. assessment of the background concentrations of metals and other contaminants so that the contamination associated with the former Liddell Power Station (including but not limited to the ash dam) can be distinguished from other sources and addressed in the remediation works; iv. assessment of the extent of PFAS in soils and groundwater in Key Areas 1 and 3 as mapped by Figure 2 in Appendix 1, noting that high concentrations have been detected in onsite groundwater so that the feasibility and benefits of PFAS treatments can be addressed in the remedial action plan/s; v. assessment of off-site migration of contaminants in accordance with the Guidelines for the NSW Site Auditor Scheme; vi. an updated conceptual site model and a discussion on contamination migration offsite and impacts to both onsite and offsite receptors; and vii. any other matter raised by the Site auditor; e) Include the EPL premises on all relevant plans; and f) be provided to the Planning Secretary and NSW EPA for information. Note: The detailed site investigation is required to assess areas that were inaccessible prior to the determination of the application.	Section 6.3
	C5. The detailed site investigation must commence within 12 months after the completion of demolition provided that the Site auditor has issued interim audit advice for the preceding sampling analysis and quality plan and be completed within 18 months of the completion of demolition, unless otherwise agreed by the Planning Secretary.	Section 6.3
Human health and ecological risk assessment	C6. If required by the Site auditor, a human health and ecological risk assessment must be prepared for the development. The assessment must: a) be prepared, or reviewed and approved, by consultants certified under either the CEnvP(SC) or CPSS CSAM scheme; b) be prepared in accordance with the Contaminated Land Guidelines;	Section 6.4

	c) be accompanied by interim audit advice from the Site auditor confirming the assessment is satisfactory; d) address the contamination assessment findings detailed in the EIS; e) assess the onsite and offsite environmental and human health risks associated with chemical contamination; f) detail any mitigations required to manage the identified risks; g) include a strategy detailing the actions to be taken based on the findings of the assessment; and h) be provided to the Planning Secretary and NSW EPA for information. Note: The human health and ecological risk assessment is required consider areas that were inaccessible prior to the determination of the application.	
	C7. The human health and ecological risk assessment must be completed following the completion of demolition and prior to the site validation report required by condition C10, unless otherwise agreed by the Planning Secretary.	Section 6.4
Remedial Action Plan	C8. If the Site auditor considers that remediation is required and feasible to make any areas of the approved development area suitable for an intended land use, a Remedial Action Plan/s must be prepared and implemented for the development. The plan must: a) be prepared, or reviewed and approved, by consultants certified under either the CEnvP(SC) or CPSS CSAM scheme. b) be prepared in accordance with the Contaminated Land Guidelines; c) include a remedial options assessment and provide the rationale for the selected remediation strategy; d) as a minimum, unless otherwise agreed by the Site auditor, include: i. an assessment of the suitability of the borrow pit material as remediation capping material ii. information on the leachability of contaminants in soils and assess if there is potential for contaminants to leach into groundwater; iii. an investigation of remediation options to mitigate and manage contaminated groundwater and ongoing seepage from the Liddell Ash Dam and within the Liddell Power Station; iv. an investigation of PFAS (including within Lake Liddell) to be undertaken concurrently with the remedial action plans to address onsite sources of PFAS within Key Area 1 and Key Area 3 identified by the EIS; and v. the remediation of previously unvalidated areas including, the former USTs in Key Area 3 and the former UST in Key Area 5.	Section 6.5
	C9. A remedial action plan must be prepared for all remediation undertaken as part of development. The remedial action plan/s must: a) be prepared prior to commencing the remediation identified in the plan; b) be submitted to the Planning Secretary and NSW EPA for information; and c) be accompanied by a Section B2 or B5 Site Audit Statement;	Section 6.5
Site Validation Report	C10. A site validation report detailing the outcome of any remediation must be prepared at the completion of remediation works undertaken in accordance with a remedial action plan and prior to the issue of a Section A1 or A2 site audit statement. The report must: a) be prepared, or reviewed and approved, by consultants certified under either CEnvP(SC) or CPSS CSAM scheme; b) be prepared in accordance with the Contaminated Land Guidelines; c) be accompanied by interim audit advice from the Site auditor confirming the report is satisfactory; d) include the validation of the former UST pits in Key Area 3 and the former UST in Key Area 5; and e) be provided to the Planning Secretary and NSW EPA for information.	Section 6.6

Long-term environmental management plan	C11. Where required by a site audit statement issued by the Site auditor, a long-term environmental management plan/s must be prepared for the development. The plan must: a) be prepared, or reviewed and approved, by consultants certified under CEnvP(SC) or CPSS CSAM scheme; b) be prepared in accordance with the with the Contaminated Land Guidelines; c) be accompanied by interim audit advice from the Site auditor confirming the plan is satisfactory; d) address the risks to human health and environment (onsite and offsite); e) include the asbestos disposal facility and other existing asbestos landfills within the approved development area; f) any other issue the Site auditor considers necessary; and g) be provided to the Planning Secretary and NSW EPA for information.	Section 6.7
	C12. If required by a Section A2 Site Audit Statement, the long-term environmental management plan must be implemented as required by the site audit statement.	Section 6.7
Site audit statements	C13. A Section A1 or Section A2 Site Audit Statement (accompanied by an Environmental Management Plan) and its accompanying Site Audit Report must be obtained for the development. The site audit statement(s) must: a) certify that the site is suitable for an intended land use; and b) be submitted to the Planning Secretary within 12 months of completing remediation and no later than one month prior to any post-remediation land use within the approved development area subject to the site audit statement. Note: Contaminated land must not be used for the purpose approved under the terms of this the SSD until a Section A1 or Section A2 Site Audit Statement is obtained which states that the land is suitable for that purpose.	Section 6.8
Demolition	C15. Prior to the commencement of demolition works, a clearance certificate from an occupational hygienist to certify that asbestos containing materials, PBC capacitors, and transformers have been removed before demolition work must be provided to the Department. Any hazardous materials that cannot be removed should be assessed in consultation with SafeWork NSW.	Section 5.1, 7.6.3
Asbestos disposal facility	C23. The asbestos disposal facility must be designed and constructed in accordance with the relevant requirements of the NSW EPA Environmental Guidelines Solid Waste Landfills (2016), unless otherwise agreed by the Site auditor and the Planning Secretary.	Section 7.14.4
	C24. A final design for the asbestos disposal facility must be prepared for the development. The design must: a) be accompanied by interim audit advice from the Site auditor; b) be prepared in consultation with the NSW EPA; c) be submitted to the Planning Secretary for approval prior to the commencement of construction of the asbestos disposal facility; and d) be implemented, as approved, by the Planning Secretary.	Section 7.14.4
	C25. A construction quality assurance plan must be prepared for the asbestos disposal facility. The plan must: a) be provided to the NSW EPA for review prior to the commencement of the construction of the asbestos disposal facility; and b) be prepared in accordance with the relevant requirements of the NSW EPA Environmental Guidelines Solid Waste Landfills (2016).	Section 7.14.4
	C26. A construction quality assurance report must be prepared for the asbestos disposal facility. The report must: a) be provided to the NSW EPA for review prior to the commencement of the operation of the asbestos disposal facility; and b) be prepared in accordance with NSW EPA Environmental Guidelines Solid Waste Landfills (2016).	Section 7.14.4

4.2.2 RELEVANT STATEMENT OF COMMITMENTS

Table 3 – Statement of Commitments relevant to the AMSP

STATEMENT OF COMMITMENTS OF THE CONSENT		
STATEMENT OF COMMITMENT		**AMSP SECTION**
Demolition		
DM1	- Use licenced Asbestos removal contractor -Class A licence. - Implement Asbestos Management Plan. - Complete Hazardous Materials survey. - Remove asbestos from structures in accordance with Division 8.6 of the NSW Work Health and Safety 2017 Regulation, where not safely possible to remove asbestos a risk assessment will be undertaken.	Section 5 Section 3 Section 7.4 Section 5.1
DM2	- Complete Hazardous Material Survey - Develop removal and handling plan	Section 7.4 Section 7.12
DM3	- Complete contamination assessment - Develop plans to control impact of contamination and demolition activities	Section 0 Section 6
Hazard and Risk		
HR6	The asbestos management plan will include information about the following: - The identification of asbestos and ACM, for example a reference or link to the Hazmat Audit for the site and locations of signs and labels - Decisions, and reasons for the decisions, safe work procedures and control measures - Procedures for detailing accidents, incidents or emergencies involving asbestos - Workers carrying out work involving asbestos, for example consultation, information and training responsibilities	Section 7.2, 7.4 Section 5, 5.1, 0, 7.8, 7.12 Section 9, 10 Section 5.1, 0, 7.9
HR7	Prior to any demolition or work being carried out that may impact on asbestos, ACM, the responsible individual for management or control of a workplace will: - Review the HAZMAT Audit Report—if the register is considered inadequate for the proposed demolition, then it will be revised. - Provide a copy of the HAZMAT Audit Report to the contractor carrying out the demolition or refurbishment work. - Ensure asbestos or ACM that is likely to be disturbed is identified and so far, as is reasonably practicable, removed before the demolition or refurbishment commences. Where this may not be possible e.g., in the stacks, an alternative control will be implemented. Where asbestos cannot be safely removed an asbestos removal control plan will be developed.	Section 5, 7.2, 7.4 Section 5.1 Section 5.1

4.2.3 RELEVANT CLAUSES OF EPL 2122

Table 4 – EPL Clauses relevant to the AMSP

EPL CLAUSES RELEVANT TO THE AMSP		
EPL Clause		**AMSP SECTION**
L4 Waste		
L4.3	Clause L4.3 of EPL 2122 is in the process of being updated to include disposal of ACM within the onsite asbestos disposal facility.	Section 7.14

4.3 REFERENCE DOCUMENTS

The following Table 5 lists the reference documents that are stated throughout the AMSP:

Table 5 – Reference documents throughout the AMSP

Document Title	AMSP reference	Document Location
Asbestos Register (online asbestos register prepared and maintained by Prensa)	Sections 7.2, 7.4	Online: https://liddellps.prensa.com.au/ Access has to be provided on a user by user basis and can be provided on request.
Destructive Hazardous Building Materials Assessment, Liddell Power Station, Musswellbrook, NSW, prepared by Prensa for CMA Contracting Pty Ltd, dated November 2024	Section 7.2	To be provided on request.
Demolition Environmental Management Plan	Sections 3, 4.2.1, 11	Main Management Plan that this AMSP is a sub-plan to.
Environmental Impact Statement	Sections 2, 4.2.1, 6.3, 6.4	https://www.planningportal.nsw.gov.au/major-projects/projects/liddell-future-land-use-and-enabling-works-project
Pollution Incident Response Management Plan	Sections 9.1.1, 10	To be provided on request.
Example Asbestos Removal Control Plan	Section 3	Appendix C

5 PROJECT TEAM, RESPONSIBILITIES AND CONTACT DETAILS

CMA is the Principal Contractor and licenced demolition contractor and has the overall management and control of the Site. CMA must therefore maintain an up to date "ACM register" for the Site under the NSW WHS Regulations 2017. During demolition works, controls must be implemented by CMA for the reduction of risk relating to disturbing materials containing ACM / SMF that have been assessed as not reasonably practicable to remove prior to demolition.

The asbestos removal license holder is the Licensed Asbestos Removal Contractor (LARC) who holds a 'Class A (Friable & Non-friable)' and/or 'Class B (Non-friable only)' license and they are required to conform to the licensing requirement under the NSW WHS Regulations 2017 and SafeWork NSW who is the state regulator.

The on-site Occupational Hygienist Prensa Pty Ltd (Prensa) who is engaged by CMA will provide a Licensed Asbestos Assessor (LAA) for Class A ACM removal work and a Competent Person for Class B ACM removal work and will perform asbestos air monitoring, visual clearances and provide clearance certification for the ACM removal works, in accordance with the NSW WHS Regulations 2017, and the guidance provided by SafeWork NSW.

5.1 DEMOLITION CONTRACTOR – CMA

CMA has several requirements and responsibilities under this AMSP. The following provides a summary of these requirements to be implemented at the Site:

- Ensuring this AMSP meets the requirements of the conditions of the Consent, requirements set by the nominated NSW Environment Protection Authority (EPA) Accredited Contamination Site Auditor (Site Auditor), and SafeWork NSW.
- Ensuring that this AMSP is implemented and maintained during the course of the project.
- Engagement of competent and licensed contractors, as required by the NSW WHS Regulations 2017, to undertake licensed ACM removal work.
- Inform employees, contractors and subcontractors of the typical locations of ACM at the Site through the implementation of Asbestos Awareness training, as part of the site specific induction process.

- Ensuring that identified ACM / SMF waste that may be impacted by the demolition works are removed prior to the commencement of works, so far as reasonably practicable. Where deemed not reasonably practicable other controls must be considered, in accordance with the hierarchy of controls, as defined in the NSW WHS Regulations 2017, and in consultation with SafeWork NSW in accordance with condition C15 of the Consent.
- Ensure that air monitoring is undertaken for ACM/SMF removal tasks in accordance with the NSW WHS Regulations 2017, and that site personnel are notified of air monitoring results during removal works:
    - For ACM removal, as required for background monitoring for friable work, clearance monitoring for friable work, exposure monitoring for risk assessments, and any other times as determined by the LAA.
    - For SMF removal, as required for exposure risk assessment only (exposure monitoring).
- Prior to commencing demolition works in a specific area, ensuring that the ACM register is read and understood by workers involved in the task prior to the commencement of the task.
- Ensure that ACM material related records are maintained and archived indefinitely. These records must be made available to SafeWork NSW, as the State Regulator, if requested.
- Provide the LARC access to the ACM register for the Site.

5.2 SITE OCCUPATIONAL HYGIENIST – PRENSA PTY LTD

The Occupational Hygienist will be appointed directly by CMA and will provide a LAA for Class A ACM removal works and a Competent Person for Class B ACM removal work. The following provides a summary of the work to be carried out by the LAA / Competent Person:

- Inspect the ACM /SMF removal work site prior to commencement of the removal works.
- Inspect and smoke test containments prior to works commencing to confirm containment is suitable for the removal works to commence.
- Daily checks of the negative air units and pressure differential in the containment to ensure adequate negative air pressure.
- Collect and analyse samples of materials suspected of being ACM during the course of the works.
- Prepare daily site diary to record events occurring during the works.
- Undertake air monitoring for ACM/SMF removal tasks in accordance with the NSW WHS Regulations 2017:
    - For ACM removal, as required for background monitoring for friable work, clearance monitoring for friable work, exposure monitoring for risk assessments, and any other times as determined by the LAA.
    - For SMF removal, as require for exposure risk assessment only (exposure monitoring).
- Undertake visual inspection in the areas where ACM has been removed and cleaned and provide clearance certificates.
- Maintain and update the ACM register on behalf of CMA during the course of the removal works.

The LAA / Competent Person has the right to stop works if prescribed air monitoring (ACM) results are exceeded. The LAA / Competent Person may also assist in the conduct of inductions, preparation of procedures and risk advice relating to the management of ACM /SMF at the Site.

5.3 LICENSED ASBESTOS REMOVAL CONTRACTORS (LARC)

CMA holds a current Friable Asbestos Removal Licence (Licence Number WUA166) with WorkSafe Western Australia which is recognised by SafeWork NSW under Automatic Mutual Recognition, and may employ other licenced asbestos removal contractors on the project to perform the licenced asbestos removal work. Such personnel will collectively be referred to in this document as the LARC.

The following summarises the duties of the LARC.

- Submit to SafeWork NSW a notification of asbestos removal work.
- Preparation of an ARCP in accordance with the SafeWork NSW Code of Practice – How to safely remove asbestos, December 2022
- Preparation of Safe Work Method Statements (SWMS).
- ACM work site establishment (i.e. installation of appropriate signage, barricades, etc.).
- Determination of removal methods which will reduce risk so far as is reasonably practicable and comply with the SafeWork NSW Code of Practice: How to Safely Remove Asbestos, December 2022.
- Removal of ACM under controlled conditions.
- Compliance with the LAA / Competent Person's requirements.
- Transportation and disposal of waste in accordance with applicable standards and guidelines.
- Compliance with all legislative requirements for the project.

5.4 COMPULSORY NOTIFICATIONS

The LARC will submit works notifications in accordance with SafeWork NSW requirements. The work is to be notified to SafeWork NSW a minimum of five (5) days prior to commencing licensed ACM removal work. CMA will maintain records of each notification submitted.

6 POTENTIAL SOIL CONTAMINATION RESULTING FROM THE WORKS

During both the demolition and ACM removal works, there is potential to contaminate soils with ACM in the vicinity of the works – examples below:

- Chimney Stacks are planned to be demolished with asbestos in place with potential to cause ACM contamination of the soil in the landing zone.
- During the removal of the ACM dust pipelines there is potential to contaminate the surrounding soil with ACM.

In the event the demolition or ACM removal works results in contaminated soil, it will be managed in accordance with the following sections.

6.1 SITE AUDIT PROCESS (C1)

In accordance with condition C1 of the Consent, an audit of the ACM contaminated area will be undertaken. The audit must:

a) be undertaken by the Site Auditor;
b) be undertaken in accordance with the Contaminated Land Guidelines;
c) include the provision of interim audit advice by the Site Auditor in relation to (as applicable):
    i. sampling analysis and quality plans;
    ii. detailed site investigation reports;
    iii. human health and ecological risk assessment reports;
    iv. remediation action plan;
    v. site validation reports; and
    vi. long-term environmental management plans;
d) conclude with the Site auditor issuing either a Section A1 or Section A2 audit statement that includes the ACM contaminated area.

6.2 SAMPLING ANALYSIS AND QUALITY PLANNING (C2)

In accordance with condition C2 of the Consent, a sampling analysis and quality plans will be prepared for investigations proposed within any ACM contaminated area. The plans will:

a) be prepared, or reviewed and approved, by consultants certified under either the CEnvP(SC) or the CPSS CSAM scheme;
b) be prepared:
    i. in accordance with the Contaminated Land Guidelines;
    ii. before sampling for contamination investigations is conducted;
c) address additional investigations identified by the Stage 2 detailed site investigation, for the proposed Stage 3 investigations and any unexpected finds;
d) be accompanied by interim audit advice from the Site Auditor; and
e) be provided to the Planning Secretary and the NSW EPA for information prior to the commencement of the detailed site investigation/s required under condition C4.

6.3 DETAILED SITE INVESTIGATIONS (C4, C5)

In accordance with condition C4 of the Consent, a detailed site investigation must be undertaken for any ACM contaminated area. The investigation report will:

a) be prepared, or reviewed and approved, by consultants certified under either the CEnvP(SC) or CPSS CSAM scheme;

b) be prepared in accordance with the relevant Contaminated Land Guidelines;
c) be accompanied by interim audit advice from the Site Auditor confirming the investigation report is satisfactory;
d) include, but not limited to, the following:
    i. all works outlined by Stage 3 detailed investigation scope included in the EIS;
    ii. assessment of off-site migration of contaminants in accordance with the Guidelines for the NSW Site Auditor Scheme;
    iii. an updated conceptual site model and a discussion on contamination migration offsite and impacts to both onsite and offsite receptors; and
    iv. any other matter raised by the Site auditor;
e) Include the EPL premises on all relevant plans; and
f) be provided to the Planning Secretary and NSW EPA for information.

In accordance with condition C5 of the Consent, the detailed site investigation will commence within 12 months after the completion of demolition provided that the Site Auditor has issued interim audit advice for the preceding sampling analysis and quality plan and be completed within 18 months of the completion of demolition, unless otherwise agreed by the Planning Secretary.

6.4 HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT (C6, C7)

In accordance with condition C6 of the Consent, if required by the Site Auditor, a human health and ecological risk assessment will be prepared for any ACM contaminated area. The assessment will:

a) be prepared, or reviewed and approved, by consultants certified under either the CEnvP(SC) or CPSS CSAM scheme;
b) be prepared in accordance with the Contaminated Land Guidelines;
c) be accompanied by interim audit advice from the Site auditor confirming the assessment is satisfactory;
d) address the contamination assessment findings detailed in the EIS;
e) assess the onsite and offsite environmental and human health risks associated with chemical contamination;
f) detail any mitigations required to manage the identified risks;
g) include a strategy detailing the actions to be taken based on the findings of the assessment; and
h) be provided to the Planning Secretary and NSW EPA for information.

In accordance with condition C7 of the Consent, the human health and ecological risk assessment will be completed following the completion of demolition and prior to the site validation report required by condition C10 of the Consent, unless otherwise agreed by the Planning Secretary.

6.5 REMEDIAL ACTION PLAN (C8, C9)

In accordance with condition C8 of the Consent, if the Site auditor considers that remediation any ACM contaminated area is required and feasible to make the area suitable for an intended land use, a Remedial Action Plan/s will be prepared and implemented for the ACM contaminated area. The plan will:

a) be prepared, or reviewed and approved, by consultants certified under either the CEnvP(SC) or CPSS CSAM scheme.
b) be prepared in accordance with the Contaminated Land Guidelines;
c) include a remedial options assessment and provide the rationale for the selected remediation strategy;
d) as a minimum, unless otherwise agreed by the Site Auditor, include:
    i. an assessment of the suitability of the borrow pit material as remediation capping material

In accordance with condition C9 of the Consent, a remedial action plan will be prepared for all remediation undertaken in ACM contaminated areas. The remedial action plan/s will:

a) be prepared prior to commencing the remediation identified in the plan;
b) be submitted to the Planning Secretary and NSW EPA for information; and
c) be accompanied by a Section B2 or B5 Site Audit Statement;

6.6 SITE VALIDATION REPORT (C10)

In accordance with condition C10 of the Consent, a site validation report detailing the outcome of any remediation must be prepared at the completion of remediation works undertaken in accordance with a remedial action plan and prior to the issue of a Section A1 or A2 site audit statement. The report must:

a) be prepared, or reviewed and approved, by consultants certified under either CEnvP(SC) or CPSS CSAM scheme;
b) be prepared in accordance with the Contaminated Land Guidelines;
c) be accompanied by interim audit advice from the Site auditor confirming the report is satisfactory;
d) be provided to the Planning Secretary and NSW EPA for information.

6.7 LONG-TERM ENVIRONMENTAL MANAGEMENT PLAN (C11, C12)

In accordance with condition C11 of the Consent, where required by a site audit statement issued by the Site Auditor, a long-term environmental management plan/s must be prepared for relevant areas of the site such as the asbestos disposal facility. The plan must:

a) be prepared, or reviewed and approved, by consultants certified under CEnvP(SC) or CPSS CSAM scheme;
b) be prepared in accordance with the with the Contaminated Land Guidelines;
c) be accompanied by interim audit advice from the Site auditor confirming the plan is satisfactory;
d) address the risks to human health and environment (onsite and offsite);
e) include the asbestos disposal facility and other existing asbestos landfills within the approved development area;
f) any other issue the Site Auditor considers necessary; and
g) be provided to the Planning Secretary and NSW EPA for information.

In accordance with condition C12 of the Consent, if required by a Section A2 Site Audit Statement, the long-term environmental management plan must be implemented as required by the site audit statement.

6.8 SITE AUDIT STATEMENTS (C13)

In accordance with condition C13 of the Consent, a Section A1 or Section A2 Site Audit Statement (accompanied by an Environmental Management Plan) and its accompanying Site Audit Report must be obtained for the ACM contaminated areas. The site audit statement(s) must:

a) certify that the ACM contaminated area is suitable for an intended land use; and
b) be submitted to the Planning Secretary within 12 months of completing remediation and no later than one month prior to any post-remediation land use within the ACM contaminated area subject to the site audit statement.

7 ASBESTOS MANAGEMENT

7.1 ASBESTOS AND ITS USES

Asbestos is defined as the fibrous form of mineral silicates. There are two major groups of asbestos:

- Serpentine group of minerals: chrysotile (white asbestos).
- Amphibole group of minerals: amosite (brown asbestos), crocidolite (blue asbestos) and within less commercially used forms including actinolite, tremolite and anthophyllite.

Asbestos minerals can be split into elongated long fibres that are strong, flexible and heat resistant. Because of these characteristics, asbestos has been historically used for a wide range of manufactured goods, mostly in building materials, friction products, heat-resistant fabrics, gaskets, and coatings.

ACM can be classified into two main groups, **friable** and **non-friable**. ACM considered to be **friable** can be crumbled, pulverised or reduced to powder by hand pressure when dry. Friable ACMs are considered higher risk materials as they are more readily damaged, and thus have a greater potential to release fibres into the air.

All other ACM are considered to be **non-friable** and are generally considered to be 'low' risk if properly handled. Non-friable ACM are bound in a matrix such as cement (e.g. cement sheeting) or various resins/binders (e.g. vinyl floor tiles).

For ACM requiring removal, the ACM removal works must be completed by an appropriately licensed asbestos contractor. The following licences will apply for the following types of ACM:

- Friable – Class A licensed asbestos contractor is licensed to remove both friable and non-friable ACM.
- Non-friable – Class B licensed asbestos contractor is licensed to remove non-friable ACM only.

7.2 CURRENT STATE OF ASBESTOS MANAGEMENT ON THE SITE

The Site is currently non-operational and an intrusive Asbestos Audit has been completed by Prensa in 2024 (*Destructive Hazardous Building Materials Assessment, Liddell Power Station, Muswellbrook, NSW prepared by Prensa for CMA Contracting Pty Ltd, dated November 2024*). The audit found that friable and non-friable ACM is currently either enclosed or deemed to be in a condition that does not pose a risk to Site occupants provided the materials are not disturbed.

The current Asbestos Register is managed by Prensa and is accessible via an on-line database system. The database system allows the register to be updated as additional items are identified by CMA during the demolition process, as well as to be noted as removed once Clearance certification is issued for each line item.

The Asbestos Register includes, but not limited to, the following:

- Material sample item number
- Location
- Feature
- Item Description
- Hazard Status (Asbestos)
- Photo (where applicable)
- Friability
- Approximate Quantity Inspection Date

7.3 REMAINING SCOPE OF WORK IN RELATION TO ASBESTOS

In accordance with condition C15 of the Consent, prior to demolition, all identified ACM will be removed, so far as is reasonably practicable, by the LARC and cleared by the LAA / Competent Person. This will allow for demolition materials to be recycled or disposed of off-site. ACM risks will be managed together with other demolition risks in developing appropriate demolition methods. In particular a full analysis of whole of process risks will be undertaken to ensure the most practicable demolition method is selected for the following items:

- Chimneys.
- Boilers.
- Pipework / Ductwork.

SafeWork NSW will be consulted in the early stages of the planning and analysis of risks associated with the demolition of these structures and items of plant.

Each of the defined work areas will be provided with a Clearance Certificate in accordance with the standard described in *NSW WHS Regulations 2017*, and the *SafeWork NSW Code of Practice: How to Safety Remove Asbestos, December 2022*.

In addition, the LAA / Competent Person will conduct inspections of items where historical ACM removal is known to have been undertaken to validate the standard of removal prior to off-site disposal or recycling of demolition materials.

7.4 LOCATION OF ASBESTOS-CONTAINING MATERIAL (ACM)

A hazardous materials survey has been undertaken by Prensa in 2024. Due to the extensive number of samples (over 6,000), and an online register has been developed that is compliant to the CoP has been and will be managed by Prensa throughout the course of the works.

The location of known ACMs has been identified in the Prensa managed on-line asbestos register for the Site (over 6000 samples).

Prior to any demolition or work being carried out that may impact ACM, CMA will review the asbestos register and where considered inadequate for the proposed demolition, the asbestos register will be revised.

Locations of asbestos-containing soils

As detailed in the Baseline Contamination Assessment Report Liddell Future Land Use and Enabling Works Project, (SSD 24937520) Liddell Power Station, New England Highway, Muswellbrook 24000419.001A dated 13 February 2024 (BCAR), within the 4 km corridor of the Liddell ash pipeline, ACM contaminated soil has been identified and will be managed during Stage 3 in accordance with conditions C1, C2, C4, C6, C8, C9, C10, C13 of the Consent.

No other known locations for ACM relevant to the Demolition works have been identified at the Site to date. Should such locations be uncovered during the demolition works in previously inaccessible areas, such as subfloors below buildings, the Site's unexpected finds protocol will be implemented and the area isolated for further investigation. All unexpected finds will be managed in accordance with the unexpected finds protocol (refer to Section 5.13 and Appendix A) and added to the asbestos register.

7.5 AIR MONITORING PROGRAM

As ACM poses a risk to health by inhalation when asbestos fibres are airborne, all exposure should be prevented. The current workplace exposure standard for all forms of Amphibole (brown and blue) and Serpentine (white)

asbestos fibres is 0.1 fibres/mL of air as per Safework Australia Workplace Exposure Standard for Airborne Contaminants dated January 2024.

This workplace exposure standard should **never** be exceeded outside an ACM work area.

The membrane filter method (Guidance note on the membrane filter method for estimating airborne asbestos fibres 2ND Edition [NOHSC:3003(2005)]) is used throughout Australia for conducting airborne asbestos fibre monitoring. The detection limit for this method is 0.01 fibres/mL of air. This detection limit is also the primary control level in relation to asbestos removal and abatement works. Control measures should be reassessed whenever air monitoring indicates that control levels of 0.01 fibres/mL or above have been reached. Refer to **Section 11.1.6** for further information.

In accordance with the NSW WHS Regulations 2017, during Class A ACM Removal Work (friable) airborne asbestos fibre monitoring (air monitoring) is required to be conducted before the work commences and for the duration of the work.

An LAA will undertake air monitoring during all friable works to validate the implemented control measures outlined in this AMSP and the ARCP. As a minimum, air monitors will be set up in the following locations:

- Along each boundary of the ACM work areas.
- Within/adjacent the decontamination area (where applicable).
- Adjacent negative air unit outlets (where applicable).
- Within the floors/levels directly above/below the ACM Work Areas (where applicable).
- Within the lunch room and site shed area (i.e. asbestos worker facilities).

This monitoring will validate the adequacy of controls in place and highlight any areas where controls may need to be increased. The air monitoring results will be obtained and reported daily.

Air monitoring during the removal of non-friable ACM is not mandatory, and the requirements for any such programs will be determined by the LAA / Competent Person in conjunction with CMA, and LARC as part of regular risk assessments of work areas.

All asbestos air monitoring analysis will be conducted by a NATA accredited laboratory in accordance with *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres.* 2nd Edition. [NOHSC:3003(2005)];

Where air monitoring control levels are exceeded during ACM removal works, it indicates that there is a need to review the LARC's control measures. The control levels are occupational hygiene 'best practice' and are not health-based standards i.e. they are more prudent than the Workplace Exposure Standard for asbestos (Reference SafeWork Australia: *Workplace exposure standards for Airborne Contaminants, 2024*).

The control levels provided below in **Table 6** should be used for the purposes of determining the effectiveness of control measures:

Table 6 – Control Levels and Required Actions

Control Level (fibres/mL)	Control/Action
< 0.01	Continue with control measures

≥ 0.01 and ≤ 0.02	Investigate the cause of asbestos fibre levels; Implement further controls to prevent exposure of any worker to asbestos; Prevent the further release of respirable asbestos fibres
> 0.02	Immediately halt asbestos removal works; Notify SafeWork NSW of exceedance of the respirable asbestos fibre level; Investigate the cause of asbestos fibre levels; Implement further controls to prevent exposure of any worker to asbestos; Prevent the further release of respirable asbestos fibres

7.6 CLEARANCE INSPECTION

7.6.1 VISUAL CLEARANCE INSPECTION

At the conclusion of any ACM removal/remedial works, a visual clearance inspection must be conducted. It is mandatory that a visual clearance inspection is undertaken for any friable ACM remedial works and that this inspection is conducted by a LAA (as per NSW *Work Health and Safety Regulation,* 2017). For non-friable removal works, the mandatory visual clearance inspection may be undertaken by a Competent Person.

The visual clearance inspection will determine whether the ACM remedial works have been completed to a satisfactory standard, in accordance with relevant legislation, and there is no visual evidence of dust and debris throughout the work area.

7.6.2 CLEARANCE AIR MONITORING

The need for clearance air monitoring should be assessed by a an LAA / Competent Person prior to the commencement of ACM removal/remedial works. It is also a mandatory requirement that clearance air monitoring is undertaken for any friable ACM remedial works and that this must be conducted by a LAA (as per NSW *Work Health and Safety Regulation,* 2017). However, it is at the discretion of the Competent Person/LAA whether clearance air monitoring is undertaken for any non-friable ACM remedial works.

Clearance air monitoring will be undertaken after the removal/remedial works have been completed and the work area is dry i.e. representing a normal workplace.

The air monitoring equipment should be placed in the ACM work area. For jobs involving a temporary enclosure, air monitoring equipment should be placed within the enclosure, following the completion of work, but prior to the enclosure being removed.

The removal/remedial works enclosure is only considered to be cleared and completed once an airborne fibre result of <0.01 fibres/mL is achieved. When airborne fibre results ≥ 0.01 fibres/mL are returned for a clearance monitoring shift, the work area is to be re-cleaned by the LARC and another clearance monitoring shift shall be undertaken until an airborne fibre result of <0.01 fibres/mL is achieved.

7.6.3 CLEARANCE CERTIFICATE

Following the successful completion of a visual clearance inspection and/or clearance air monitoring, a clearance certificate will be issued by the person performing the clearance work. The clearance certificate will be generally in accordance with the SafeWork NSW Code of Practice – How to safely removal asbestos,December 2022 and should state:

- That the ACM have been removed to the appropriate legislative requirements;

- All air monitoring results below the reporting limit have been achieved;
- The name of the LARC that removed the asbestos materials; and
- That the area is safe for re-occupation by unprotected personnel.

The clearance certificate should include a description of all the ACM removed, together with a unique description of the area from where they were removed.

In accordance with condition C15 of the Consent, the clearance certificates will be provided to the Department prior to commencement of the demolition works in the relevant area pertaining to the clearance certificate (note: clearance certificates will be issued progressively to facilitate progressive demolition).

7.7 EQUIPMENT AND RELEVANT CONTROLS

The works will involve the use of heavy equipment including excavators, boom lifts and scissor lifts. All equipment used within an ACM removal area will be thoroughly decontaminated by the LARC prior to leaving the area and will be inspected and issued with a Clearance Certificate prior to leaving the work area. All personnel operating the above mentioned equipment will be suitably trained and licensed to operate such equipment.

In addition to the abovementioned heavy equipment, the removal works will involve the use of the following equipment:

- Wet decontamination unit(s).
- Negative Air Pressure Units (NPU's).
- Mobile Scaffolding.
- Platform ladders.
- 200 micron plastic.
- HEPA vacuums.
- Hand tools.

Where plant operators do not have SafeWork NSW certified training for asbestos removal, they will require a minimum of asbestos awareness training (refer to section 5.8) from a Competent Person and respirator fit test (where respirator required to be used), and are required to work under the supervision of the Asbestos Supervisor (i.e. Asbestos Supervisor must be present when plant is operating in their work area and must provide direction on fitting of PPE, decontamination process, access and egress of asbestos work areas).

7.8 SITE INDUCTION CONTENT IN RELATION TO ASBESTOS MATTERS

CMA will develop and deliver Site Induction training for all personnel entering the Site. Site specific Asbestos Awareness Training that incorporates example materials from the Site will be provided by a Competent Person. The following topics will be covered in the CMA induction for all personnel involved in the demolition:

- Nature of the ACM materials at the Site.
- Roles and Responsivities of various stakeholders.
- Health Risks associated with ACM Removal activities.
- Controls used to mitigate the risk associated with ACM Removal activities.
- Location of ACM Removal Work Areas.
- CMA unexpected finds procedure (refer to section 5.14 and Appendix A).
- Air monitoring and reporting.

7.9 PERSONNEL EMPLOYED FOR ASBESTOS REMOVAL AND REQUIRED TRAINING

The LARC will employ personnel who are suitably trained and experienced to perform the ACM removal work. Personnel involved in the removal works will operate in accordance with the Class A and/or Class B Asbestos Removal License and legislative requirements. All personnel will have received suitable training by their LARC employer to ensure the work is performed in a safe manner. Training records for all LARC personnel will be made available on request.

7.10 PPE AND CONTROL MEASURES

The use of Personal Protective Equipment (PPE) and Respiratory Protective Equipment (RPE) is mandatory for personnel entering the work area during active ACM removal works.

7.10.1 FRIABLE ASBESTOS REMOVAL WORK

In accordance with the SafeWork NSW Code of Practice: How to Safety Remove Asbestos, December 2022, AS/NZS 1715 *Selection, use and maintenance of respiratory protective equipment* and AS/NZS 1716 *Respiratory protective devices,* workers involved with the removal of **friable** ACM must adopt the following PPE and RPE:

- Disposable category 3, type 5/6 polyethylene coveralls.
- RPE options:
    - Full face, powered air purifying particulate respirator with P3 filter.
    - Full face, positive pressure demand air-line respirator with P3 filter.
    - Negative pressure full-face, P3 particulate filter (cartridge) respirator.
- Safety gloves (disposable nitrile as a minimum, and where high protection is required non-disposable style which are not removed from the ACM work area and disposed of at the completion of works).
- Footwear that can be appropriately decontaminated prior to removal from the work area (i.e. gumboots without laces, disposable boot covers disposed of as ACM waste, etc.).
- Only where a risk assessment, undertaken by the LAA / Competent Person has shown it safe to do so, can the abovementioned PPE requirements be altered.

7.10.2 NON-FRIABLE ASBESTOS REMOVAL WORK

In accordance with the SafeWork NSW Code of Practice: How to Safety Remove Asbestos, December 2022, AS/NZS 1715 *Selection, use and maintenance of respiratory protective equipment* and AS/NZS 1716 *Respiratory protective devices,* workers involved with the removal **non-friable** ACM must adopt the following PPE and RPE:

- Disposable category 3, type 5/6 polyethylene coveralls.
- Half face (non-disposable) respirator with P2 particulate filter.
- Safety glasses.
- Safety gloves (disposable nitrile gloves) (where applicable).
- Footwear that can be appropriately decontaminated prior to removal from the work area (i.e. gumboots that are lace less, disposable boot covers disposed of as ACM waste, etc.).

7.10.3 ADDITIONAL TESTING REQUIREMENTS

All PPE and RPE (most notably respirators) will be used in accordance with the manufacturer's specifications. Additionally, a quantitative fit test will be undertaken on an annual basis for all personnel required to wear respirators to ensure the effectiveness of the respirator to the individual. The results of the fit tests for persons performing ACM removal work will be kept on site and will be available to demonstrate that such testing has been successfully undertaken. If an individual has previously completed quantitative fit testing within twelve (12) months,

the results will be considered valid and documentation should be kept on-site. Fit testing will be undertaken by a Competent Person for those contactors who have not completed quantitative fit testing within the past twelve (12) months.

7.11 ON SITE LABORATORY

Prensa, who hold a NATA accreditation to ISO 17025 Testing and calibration laboratories, will provide an on-Site laboratory which is capable of performing NATA endorsed asbestos in air analysis. The establishment of the on-site laboratory will be in accordance with Prensa's NATA accreditation.

7.12 TASK MANAGEMENT PROCESSES INCLUDING ASBESTOS REMOVAL CONTROL PLANS AND SWMS

The LARC will prepare an ARCP for the ACM removal works which will include removal methods of the different types of ACM that are to be removed from the Site and will also progressively develop SWMSs for the ACM removal work.

7.13 UNEXPECTED FINDS

It is possible that ACM may be identified which may have been concealed within inaccessible areas/voids, or which may not have been located during previous inspections. During the course of any works that uncover any materials that are suspected of being ACM, works in that area will cease **immediately** and the Unexpected Finds Procedure described in **Appendix A** should be enacted immediately.

Where ACM products are suspected to be contaminated, a process will be developed in consultation with the NSW EPA accredited Site Auditor. This will include a Sampling Analysis Quality Plan (SAQP) in accordance with condition C3 of the Consent to confirm if the waste is suitable for disposal in the onsite asbestos disposal facility. Where the waste is deemed unsuitable, the waste will be classified in accordance with the NSW EPA Waste Classification Guidelines, Part 1: Classifying waste, November 2014 for offsite disposal at an appropriately licensed facility.

7.14 WASTE MANAGEMENT

During the removal of ACM, where practical, systems of work/procedures will be implemented to separate non-porous inert material such as concrete, bricks, metal etc. from the ACM. The ability to separate waste streams will assist CMA in achieving a sustainable waste management outcome in accordance with NSW EPA Waste Hierarchy.

The ability for material to be separated will be determined by the LAA / Competent Person following visual inspection of the work area and inert materials during removal works. If it is deemed practicable by the LAA / Competent Person to recover inert material, the material must undergo suitable clearance inspection and/or decontamination. Where decontamination of any inert materials, the material will be inspected by the LAA / Competent Person in accordance with the *NSW WHS Regulations 2017* and the *SafeWork NSW Code of Practice: How to Safely Remove Asbestos, December 2022.*

ACM waste will be suitably packaged and inspected by the LAA (for Class A work) or Competent Person (for Class B work) prior to removal from the ACM Removal Area so far as reasonably practicable.

Examples of suitable packaging include the following (note: the examples generally apply to both friable and non-friable ACM and will be assessed on a case by case basis in consultation with the LAA):

- Wrapped and sealed in 200µm polyethylene sheet (or placed in an asbestos waste bag and sealed) and then placed in an asbestos waste Bulka Bag (HAZIBAG) and sealed.
- Wrapped and sealed in 200µm polyethylene sheet (or placed in an asbestos waste bag and sealed) and then placed into an open top Intermediate Bulk Container (IBC) and sealed (IBC top removed, single bagged ACM placed inside, top replaced and sealed with tape) – IBC to be inspected prior to use and any debris inside removed.
- Double wrapped and sealed in 200µm polyethylene sheet and placed on a pallet
- Placed in asbestos waste bags and sealed and then placed in another asbestos waste bag and sealed and secured onto pallets.
- Wrapped and sealed in 200µm polyethylene sheet (or placed in an asbestos waste bag and sealed) and then placed into polyethylene sheet lined skip and sealed.
- Wrapped and sealed in 200µm polyethylene sheet (or placed in an asbestos waste bag and sealed) and then placed into a metal drum and sealed.
- Place directly into a skip bin lined with 2 x layers of 200µm polyethylene sheet, and once the bin is full, the sheets are individually folded over and sealed to wrap the ACM waste.
- Using a pre-lined Bulka Bag (HAZIBAG), an additional layer of 200µm polyethylene sheet is placed inside, and the ACM material is placed directly into the bag.

7.14.1 ONSITE TRANSPORT, DISPOSAL AND TRACKING OF ASBESTOS WASTE

Condition C23 of the Consent includes for the construction of an onsite asbestos disposal facility to dispose of ACM waste from the works. In accordance with condition A6 of the Consent, a maximum of 30,000 cubic metres of ACM, SMF, and other associated wastes authorised by the Site auditor, may be disposed of at the asbestos disposal facility, unless otherwise agreed by the Planning Secretary.

Once the construction of the onsite asbestos disposal facility is completed, all ACM waste deemed suitable, will be disposed of permanently within the onsite asbestos disposal facility.

While it is anticipated that the majority of ACM will be packaged prior to transport, some materials may require transport without fully contained packaging, for example:

- Asbestos containing concrete waste and impacted soils generated from the chimney stack felling.
- Duct flanges from large ductwork.

The transport of un-packaged ACM waste will be subject to an exposure risk assessment that considers the route of the waste transport, as well as the workers involved in the task, other workers and the general public. Where this is required, documented controls will be implemented to reduce the risk of airborne asbestos fibres, so far as reasonably practicable (e.g. PVC tarpaulin to cover the loads, wet dust controls during loading, etc.).

Waste transport that uses public access roads will be undertaken by a company holding a NSW EPA environment protection licence for the transport of Category 1 trackable waste.

A material tracking system shall be implemented to track the ACM waste from the source location to the onsite asbestos disposal facility, with a material tracking register set up and progressively populated throughout the ACM

removal works (note: NSW EPA Integrated Waste Tracking Solution (IWTS) is not intended to be used for tracking waste to the onsite asbestos disposal facility). The following minimum detail will be collected:

- Date ACM package is transported
- Work Area from which ACM originated.
- Package type (e.g. pallet, lined skip bin, IBC).
- Number of packages transported.
- Destination (onsite asbestos disposal facility).

Table 7 – Example of the material tracking register

Date	Asbestos Removal Work Area (Origin)	Package Type	# Packages	Destination
15/08/2025	Transformer Yard	IBC	3	Onsite asbestos disposal facility
15/08/2025	Transformer Yard	Pallet	5	Onsite asbestos disposal facility
15/08/2025	Transformer Yard	Skip Bin	1	Onsite asbestos disposal facility

7.14.2 ONSITE TEMPORARY STORAGE OF ASBESTOS WASTE

Subject to approval by SafeWork NSW, the ACM waste generated from the ACM removal works undertaken prior to the construction of the onsite asbestos disposal facility that is not disposed of offsite will be temporarily stored onsite in the former Main Store warehouse (refer to marked up site map below) until the onsite asbestos disposal facility is available to facilitate permanent disposal.

Asbestos warning signage will be installed around the Main Store building, and the temporary storage facility will be secured so that only authorised personnel wearing the required PPE can enter the area.

Figure 4 – Main Store location

Once the onsite asbestos disposal facility has been constructed, all ACM waste that has been placed in the former Main Store warehouse for temporary storage will be transported for permanent disposal in the onsite asbestos disposal facility (refer to section 7.14.1 above for Transport, disposal and tracking of ACM Waste).

Similar to the ACM transported directly to the onsite asbestos disposal facility, a material tracking system shall be implemented to track the ACM waste from the source location to the Main Store, with a material tracking register set up and progressively populated throughout the ACM removal. The following minimum detail will be collected:

- Date ACM package is transported
- Work Area from which ACM originated.
- Package type (e.g. pallet, lined skip bin, IBC).
- Number of packages transported.
- Destination (onsite asbestos disposal facility).

Table 8 – Example of the material tracking register

Date	Asbestos Removal Work Area (Origin)	Package Type	# Packages	Destination
15/08/2025	Transformer Yard	IBC	3	Main Store
15/08/2025	Transformer Yard	Pallet	5	Main Store
15/08/2025	Transformer Yard	Skip Bin	1	Main Store

Inspections

The LARC will undertake a documented weekly inspection of the temporary storage facility to confirm the security, vandalism or other damage of the facility.

The LARC will undertake a documented monthly inspection of the packages within the temporary storage facility to confirm the secureness of packaged asbestos.

The LARC will undertake documented event-based inspections of the temporary storage facility and the packages within following adverse weather events to assess if any damage to the building or packaging, and if any stormwater leaks or inflows occurring. Events that would trigger these inspections would include rain events greater than 10mm in 24 hours; strong winds greater than 50km/h; recorded earthquake/tremor; or any other natural disasters as applicable.

In the event that observations of concern are identified, the LAA and LARC will be consulted for direction.

Clearance Inspection and Clearance Certificate

Following the relocation of all ACM from the Main Store to the onsite asbestos disposal facility, the LAA will complete a visual inspection and prepare a Clearance Certificate.

Contingency Plan

The contingency plan is outlined in the table below and would only be applied in the event unexpected or scenarios occur at the Site and require that a contingency mechanism to be implemented to achieve asbestos management.

Table 9 –Contingency Plan

Scenario	Contingency Response
Deterioration of packaging occurs whilst asbestos is still in temporary storage	CMA shall inspect the stored packaged asbestos monthly. CMA shall assess packaging materials that are deteriorating and identify a solution, such as additional packaging surrounding deteriorating packaging or placement of asbestos into new packaging.
Vandalism of the Main Store building or packaged asbestos within the Main Store occurs	CMA will have sufficient controls in place to deter vandals from entering the Site and the Main Store. In the unlikely instance that vandalism does occur, CMA shall assess the damage, re-package materials as required and decontaminate the floor or other areas where vandalism has occurred and secure the temporary storage area in the facility.
Damage to the Main Store building or packaged asbestos in the Main Store due to adverse weather, unexpected structural failure, or natural disaster (such as an earthquake)	CMA will inspect the temporary storage facility after a rain event greater than 10mm, strong winds (greater than 50km/h) or a recorded earthquake/ tremor to assess if any damage to the building or packaging, and if any stormwater leaks/ inflow occurring. If damage and/ or stormwater leaks/ inflow identified, CMA shall assess the damage, re-package materials as required, clean areas impacted by building damage, and resolve how to address building damage.
Unforeseen emergency	CMA will follow the Unexpected Finds Procedure (Appendix A) in consultation with the LAA.

7.14.3 OFFSITE TRANSPORT, DISPOSAL AND TRACKING OF ASBESTOS WASTE

The transportation and disposal of ACM waste is regulated and must be disposed of at an appropriately licenced facility. ACM transporters and facilities in NSW receiving ACM waste weighing more than 100 kilograms, or consisting or more than 10 square metres of ACM sheeting in one load must track and report this waste to the NSW EPA using Integrated Waste Tracking Solution (IWTS).

Companies transporting ACM waste must hold a NSW EPA Environment Protection Licence for Transport of Category 1 trackable waste. Tipping receipts must be retained and maintained with the Site's ACM records.

7.14.4 ONSITE ASBESTOS DISPOSAL FACILITY

Condition C23 of the Consent includes for the construction of an onsite asbestos disposal facility to dispose of ACM waste from the works which will be located as detailed in Figure 1 in Section 2 above (refer to "Containment Cell" in Figure 1).

In accordance with condition A6 of the Consent, a maximum of 30,000 cubic metres of ACM, SMF, and other associated wastes authorised by the Site auditor, may be disposed of at the asbestos disposal facility, unless otherwise agreed by the Planning Secretary.

In accordance with condition C23 of the Consent, the asbestos disposal facility will be designed and constructed in accordance with the relevant requirements of the NSW EPA Environmental Guidelines Solid Waste Landfills (2016), unless otherwise agreed by the Site auditor and the Planning Secretary.

In accordance with condition C24 of the Consent, a final design for the asbestos disposal facility will be prepared for the development. The design will:

a. be accompanied by interim audit advice from the Site auditor;

b. be prepared in consultation with the NSW EPA;

c. be submitted to the Planning Secretary for approval prior to the commencement of construction of the asbestos disposal facility; and

d. be implemented, as approved, by the Planning Secretary.

In accordance with condition C25 of the Consent, a construction quality assurance plan will be prepared for the asbestos disposal facility. The plan will:

a. be provided to the NSW EPA for review prior to the commencement of the construction of the asbestos disposal facility; and

b. be prepared in accordance with the relevant requirements of the NSW EPA Environmental Guidelines Solid Waste Landfills (2016).

In accordance with condition C26 of the Consent, a construction quality assurance report will be prepared for the asbestos disposal facility. The report will:

a. be provided to the NSW EPA for review prior to the commencement of the operation of the asbestos disposal facility; and

b. be prepared in accordance with NSW EPA Environmental Guidelines Solid Waste Landfills (2016).

8 SYNTHETIC MINERAL FIBRE MANAGEMENT

Synthetic mineral fibre (SMF) is a generic term used to collectively describe a number of amorphous (non-crystalline) fibrous materials, commonly referred to as "man-made mineral fibres" (MMMF).

8.1 TYPES OF SYNTHETIC MINERAL FIBRE MATERIALS

As per the *National Code of Practice for the Safe Use of Synthetic Mineral Fibres* [NOHSC: 2006 (1990)], SMF materials include fibreglass, Rockwool and ceramic fibre based products. These products are used in a number of areas throughout buildings. These materials are generally used as insulation within ceilings and walls, as well as heating hot water heaters, pipework and associated mechanical equipment.

8.2 CLASSIFICATION OF SMF

SMF materials are classified as bonded and un-bonded materials.

Bonded SMF materials contain adhesives, cements or other bonding agents and have a set form or shape, these materials include sectional fibreglass and Rockwool pipe insulation; ceiling batts, duct blankets (lined and unlined with mesh/foil), dry wall batts insulation and acoustic mineral fibre ceiling tiles etc.

Un-bonded SMF materials contain no binding agent and include loose fill fibreglass or Rockwool dry wall or ceiling insulation, and sprayed Rockwool to structural steel and acoustic finishes e.g. Roberts M34.

Further classification is based on the bio-persistence of the fibres within the organs of the body, which can be generally derived from the manufacture date.

- Older styles of SMF – typically developed and installed prior to early 1990's.
- Modern styles of SMF – typically developed and installed post early 1990's, with a higher percentage of lower bio-persistence types.

8.2.1 OLDER STYLES OF SMF

Older styles of SMF can be further delineated into two groups, 'Continuous Fibre' and 'Mineral Wool'. Mineral wool is further subdivided based on their composition and use:

- Continuous Filaments – thine drawn continuous strands usually of glass or alumina silicate. Typical mean diameters of 6 – 15 µm. Typical uses include reinforcing filaments, spinning and weaving applications.
- Mineral Wool – randomly oriented SMF fibres, used for insulation and fire protection:
    - Glass Wool Fibre – blown or spun from molten glass. Typical mean diameters of 3 - 5µm.
    - Rock Wool Fibre – blown or spun from molten rock, and for products manufactured in Australia, this was typically basalt with minor amounts of slag and ceramic wastes. Typical mean diameters of 2 -7µm.
    - Slag Wool – blown or spun from metallurgical furnace slag. Typical mean diameters of 2-7µm.
    - Refractory Ceramic Fibre – High temperature performance SMF, blown or spun from the aluminosilicate mineral kaolin or synthetic mix of alumina and refined beach sand. Typical mean diameters of 1µm.

8.2.2 MODERN STYLES OF SMF

Developments in industry through the 1980's and 1990's lead to the use of high temperature alkaline earth silicate (AES) materials in the manufacture of SMF. Additional requirements were also introduced in Europe, regarding the bio-persistence properties of SMF, which resulted in the widespread adoption of these materials.

By 2002, the vast majority of forms of SMF manufactured in Australia met the requirements of the European Standards for low bio-persistence properties. Exceptions include speciality high temperature performance products.

8.3 OVERALL STRATEGY

Action should be taken on a continuing basis to achieve the lowest workable exposure levels of SMF. The provision of engineering controls, and the containment of waste material may achieve this. Additionally, the use of binders or work practices which reduce the liberation of fibres (e.g. water mist during removal) and the provision of appropriate PPE can help reduce SMF levels to personnel and the environment.

8.3.1 PIPEWORK HANDLING

Due to the risks of unsatisfactory ACM removal undertaken previously, the pipework beneath the SMF lagging may potentially contain asbestos residues.

The SMF lagged pipework is separated from the surrounding structure by mechanical demolition or oxy cutting, minimising the disturbance of the SMF lagging. These works are undertaken under standard demolition practices (not an asbestos removal work area or under asbestos removal conditions) and the materials picked up by an excavator with grab attachment and placed in a designated area (this designated area becomes an ACM removal work area with associated asbestos removal controls in consultation with the LAA).

SMF products will be stripped by a combination of mechanical and manual means within the ACM removal work area, and the item inspected by the LAA / Competent Person for residues representative of unsatisfactory ACM removal works undertaken previously in the plant's history.

If asbestos residues are found to pipework, the reside is either removed under asbestos conditions or the pipe disposed of as ACM waste (refer to Section 7.14). Where the residue is removed, the steel is inspected by the LAA and ACM clearance issued prior to removal from the work area and offsite recycling.

SMF waste will be packaged, transported and disposed of in the same manner as ACM waste (refer to section 7.14).

8.4 HANDLING OF SMF MATERIAL

Caution is required when handling SMF products in order to minimise airborne SMF levels. It is recommended that the *Code of Practice for the Safe Use of Synthetic Mineral Fibres* [NOHSC:2006(1990)] and SafeWork Australia *Guide to Handling Refractory Ceramic Fibres,* 2013 be closely adhered to when handling such materials.

Essentially, SMF materials should be handled in such a way as to minimise dust and disturbance of the materials. Where SMF materials are installed or removed, then suitable controls and appropriate personal protection are to be provided. Consultation should be sought from the LAA / Competent Person with regard to appropriate procedures prior to the handling of such materials.

8.4.1 PPE AND CONTROL MEASURES

Same PPE and control measures can be implemented as for friable or non-friable ACM works (See **Section 7.10**).

8.5 AIR MONITORING PROGRAM

An air monitoring program will be implemented to determine the exposure risk to workers during demolition tasks where SMF materials are deemed not practical to remove prior to the demolition of the item (personal exposure monitoring). During removal of SMF materials, the following workplace exposure standards must be adhered to:

Table 10 – Workplace Exposure Standards for SMF

SMF Type	Exposure Standards
Refractory Ceramic Fibres	**0.5 fibres/mL** - *Method for Estimating Airborne Asbestos Fibres.* 2nd Edition. *[NOHSC:3003(2005)]* **And** **2 mg/m^3** - *Workplace Atmospheres – Method for sampling and gravimetric determination of inhalable dust (AS3640-2009)*
Special Purpose Glass Fibres	
High Bio-persistence SMF	
Glass Wool	**2 mg/m^3** - *Workplace Atmospheres – Method for sampling and gravimetric determination of inhalable dust (AS3640-2009)*
Rock Wool	
Slag Wool	
Continuous Filament	
Low Bio-persistence SMF	

The two complimentary methods will be used until it can be shown with confidence that the worker will not be exposed at more than half of the relevant exposure standard for the tasks being undertaken.

8.6 DISPOSAL OF SYNTHETIC MINERAL FIBRE

Typically, uncontaminated SMF products can be disposed of as General Solid Waste (Non-Putrescible) so long as the material is packaged securely to prevent dust emissions. All uncontaminated SMF materials will be disposed of at the onsite asbestos disposal facility.

Where SMF products are suspected to be contaminated, a process will be developed in consultation with the NSW EPA accredited Site Auditor. This will include a Sampling Analysis Quality Plan (SAQP) in accordance with condition C3 of the Consent to confirm if the waste is suitable for disposal in the onsite asbestos disposal facility. Where the waste is deemed unsuitable, the waste will be classified in accordance with the NSW EPA Waste Classification Guidelines, Part 1: Classifying waste, November 2014for offsite disposal at an appropriately licensed facility.

9 ENVIRONMENTAL INCIDENTS

9.1.1 INCIDENTS

Incidents involving ACM that are deemed notifiable in accordance with the POEO Act must be reported to the NSW EPA immediately. These incidents are those that cause or threatening to cause material harm to the environment, as per section 148 of the POEO Act, the AGLM PIRMP and the site EPL. CMA will report Environmental ALL incidents to AGLM who will then report to the Regulatory body as required.
Incidents are to be reported as per Conditions R2 of EPL2122. Condition R2 requires notification to all relevant authorities of incidents causing, or threatening to cause material harm to the environment, immediately after becoming aware of the incident, by phoning 131555. A written report must then be provided to the EPA within 7 days of the date on becoming aware of the incident.

In accordance with D5 of the Consent, the Applicant (AGLM) must notify the DPHI within 24 hours of becoming aware of an incident. A notification must be made via the NSW planning portal (Major Projects) and address details of the incident including:

- Date, time and location.
- A brief description of what occurred and why it has been classified as an incident.
- A description of what immediate steps were taken in relation to the incident.
- Identifying a contact person for the further communication regarding the incident.

In accordance with D6 of the Consent, the Applicant (AGLM) must provide DPHI with a subsequent incident report in accordance with the nominated incident notification and reporting requirements.

9.1.2 NON-COMPLIANCE

In accordance with D4 of the Consent, within seven days of becoming aware of a non-compliance, the Applicant (AGLM) must notify DPHI of the non-compliance. The notification must:

- Be in writing.
- Submitted via the NSW planning portal (Major Projects).
- Identify the development (including the development application number and name).
- Set out the condition of this consent that the development is non-compliant with.
- Why it does not comply.
- The reasons for the non-compliance (if known).
- What actions have been undertaken, or will be undertaken; and when, to address the non-compliance.

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

10 EMERGENCY PROCEDURE

Environmental emergencies will be dealt with in accordance with AGLM's Pollution Incident Response Management Plan (PIRMP).

Where an incident occurs during ACM removal works in an ACM removal area, the Asbestos Supervisor is the first point of contact.

If an incident occurs within a non-friable ACM removal work area, the injured person is to be removed from the ACM removal area as soon as possible and first aid is to be administered. If required, emergency services will be contacted.

If the incident occurs within a friable containment, it may be necessary to cut/dismantle a containment wall to get the injured person out. Repairs should be carried out immediately after the person has been removed.

Minor incidents within an asbestos containment:

- If the injury is of a minor nature the injured person with/without the assistance of a co-worker should undertake the full decontamination procedure and proceed to the first aid room for treatment.

If a worker MUST be removed from the asbestos containment due to a major incident:

- If the determination is a major incident, the injured person is to be removed from the containment (if safe to do so).
- If the containment has to be breached all action must be taken to ensure unprotected persons are kept away from the area.
- Once the injured person has been removed to a safe location for decontamination and medical treatment the breached containment is to be repaired.
- Ensure the repaired containment is visually checked. The LAA will determine whether any further containment integrity tests (i.e. smoke test) are required.
- To decontaminate the injured worker and if safe to do so remove coveralls by either rolling in a downwards manner or if impracticable use a scissors to cut away the coveralls. Place the coveralls in a labelled waste bag.
- Use care to thoroughly wash and rinse the contaminated skin of the injured person.
- Wet wipe the respirator and dispose of pre-filters before removing.
- Move the injured person to a clean area where emergency medical treatment can be provided.
- If not safe to remove the injured person from the containment or to decontaminate the person due to the injury sustained, notify emergency services on arrival that the person is situated within an asbestos containment. Provide the necessary PPE for the emergency services personnel to enter the area.
- The area surrounding the breach should not be occupied by unprotected personnel where reasonably practicable and not impacting the care of the injured worker, until such time as the area can be inspected by the LAA, any clean-up/make safe works undertaken by the LARC, and a clearance certificate (including air monitoring) is provided by the LAA.

11 RECORD KEEPING AND REPORTING

CMA will maintain all records associated with ACM removal work in accordance with the NSW Work Health and Safety Regulation 2017 and the SafeWork NSW Code of Practice – How to safely remove asbestos, December 2022.

In addition to the above, refer to section 6 of the DEMP for environmental reporting requirements.

12 REVIEW AND IMPROVEMENT

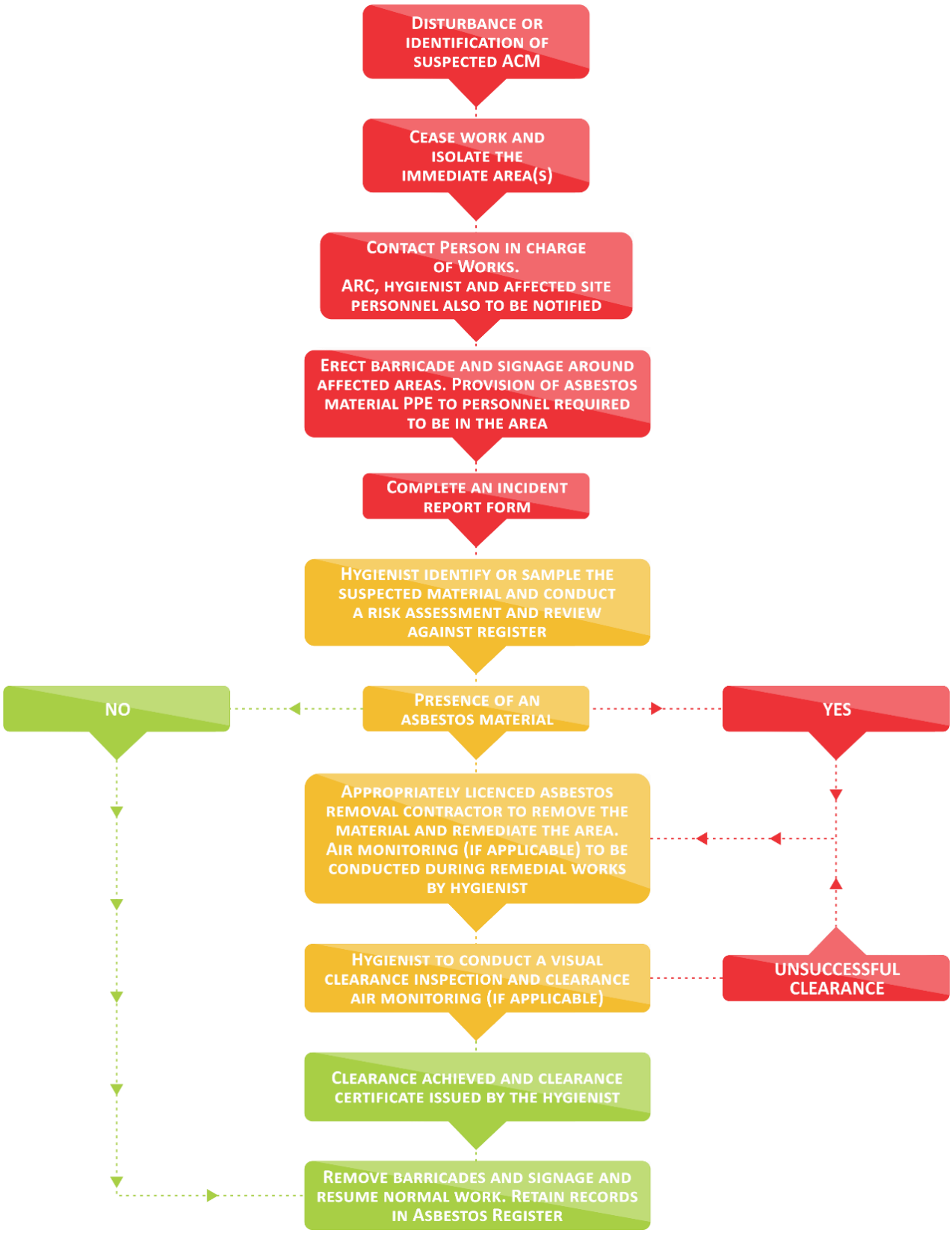
The AMSP will be reviewed for effectiveness and updated when / if the following occur:

- a significant incident.
- completion/change of a significant part of the work.
- a significant change in Site Conditions.
- a change in the applicable legislation.

Further, refer to section 7.5 of the DEMP.

APPENDICIES

APPENDIX A – UNEXPECTED FINDS PROCEDURE



APPENDIX B - ACCEPTANCE OF ASBESTOS MANAGEMENT SUB-PLAN

This Asbestos Management sub-plan has been developed and viewed in consultation with the workers and it is read and signed by all persons involved in the plan. If a variation occurs to this Asbestos Management sub-plan, then management will communicate and re-induct the change to the work group whilst adjusting the work method methodology accordingly.

I hereby confirm that I have read and understand this Asbestos Management sub-plan and I will ensure my work process is completed accordingly.

Inductor Name:			
Position:			
Inductee Name	**Company/Title**	**Signature**	**Date**

Inductee Name	Company/Title	Signature	Date

APPENDIX C – EXAMPLE ASBESTOS REMOVAL CONTROL PLAN

ASBESTOS REMOVAL CONTROL PLAN LIDDELL POWER STATION (WHOLE OF SITE)

Delta Pty Limited ABN: 67 007 069 794

Head Office: 577 Plummer Street, Port Melbourne,
Victoria, Australia. 3207
Telephone– +61 3 9 646 8277

"Safety is no accident!"

Project Name	Liddell Power Station Demolition Project		
Client Name	AGLM		
Project Address	Liddell Power Station, New England Highway, Muswellbrook NSW 2333		
Project Description/ Scope	Liddell Power Station – Removal of Asbestos from Lidell Power Station (Whole of Site)		
Document Number	C0269-LPS-WOP-P-Asbestos Removal Control Plan (Whole of Site)-LPS		
Prepared By	Todd Solomon	Signature:	Date: 25/03/2025
Authorised By	Aaron Britt	Signature:	Date: 25/03/2025
Project Manager	Ruan Zaayman	Signature:	Date: 25/03/2025

DELTA GROUP

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DISCLAIMER

This document has been developed to assist Delta Pty Ltd and any related entities to better understand and manage quality issues in the workplace. While every effort has been made to ensure the accuracy of the material in this document, this publication is not meant to substitute for the legislation. For the specific requirements on an issue covered in this document, persons should refer directly to the relevant legislation in their location.

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REVISION REGISTER

REV	DATE	DESCRIPTION OF CHANGE	PAGE/S	REVIEWED BY	APPROVED BY
0	25/03/2025	Document prepared for Whole of Project – supersedes all previous ARCP's for CDC works	All	RZ	TS

1.0. INTRODUCTION

Delta has been engaged by CMA Contracting to carry out the removal of Asbestos Containing Material (ACM) from the former Liddell Power Station which is licenced asbestos removal work (Class A and Class B asbestos).

This Asbestos Removal Control Plan (ARCP) identifies the specific control measures that will be implemented to ensure workers and other people are not at risk when the licenced asbestos removal work is being undertaken and helps ensure the asbestos removal work is well planned and carried out in a safe manner and has been developed in accordance with the following:

- NSW Work Health & Safety Regulation 2017 (NSW WHS Reg 2017)
- SafeWork NSW Code of Practice "How to safely remove asbestos" dated December 2022;
- SafeWork NSW Code of Practice "How to manage and control asbestos in the workplace" dated December 2022;
- SafeWork NSW Code of Practice "Demolition Work" dated August 2019

2.0. SCOPE OF WORK

This ARCP covers the removal of ACM from all areas of the Liddell Power Station site including:

- Zone 01 – Transformer Bay
- Zone 02 – Turbine House
- Zone 03 – Boiler House & Auxiliary Bay
- Zone 04 – Fabric Filters
- Zone 05 – Chimney Stacks
- Zone 06 – Hazardous Storage Areas
- Zone 07 – Minor Support Infrastructure
- Zone 08 – Coal Handling Infrastructure
- Zone 09 – Solar Plant (previously demolished as pre works for the LD BESS project)
- Zone 10 – Ash and Dust Lines
- Zone 11 – CW Pumping Station
- Zone 11 – CW Outlets and Outfall Canal
- Zone 12 – Hunter Valley Gas Turbines

Zones 1 to 11 (Excluding Zone 9) Power Station Overview

Zone 9 – Solar Plant

Zone 12 – Hunter Valley Gas Turbines

3.0. IDENTIFICATION

The Asbestos Register for the Liddell Power Station demolition works is an online register that has been prepared and maintained by Prensa and is updated following any material sampling from the site:

- https://liddellps.prensa.com.au

3.1. Verification of Asbestos Register

Prior to the commencement of ACM removal works to a specific area of the site, an inspection of the specific area shall be undertaken by the nominated Asbestos Supervisor to identify the location of all ACM detailed in the Asbestos Register.

3.2. Unexpected finds

If during the ACM removal works, any material encountered that is not identified in the Asbestos Register that is suspected of containing asbestos (unexpected find), the following procedure is to be adhered to:

1. Immediately make safe and notify the Asbestos Supervisor and Client (CMA Contracting).
2. LAA (Class A) or Competent Person (Class B) to inspect/sample the material to confirm if ACM or not.
3. If suspicious material confirmed to be ACM, Delta will continue to remove the ACM (once all hazards & risks assessed), decontaminate area, obtain clearance certificate from LAA (Class A) or Competent Person (Class B) and dispose of material in accordance with this ARCP.
4. Following issue of a clearance certificate, workers can resume work under normal conditions.

4.0. LICENSING AND COMPETENCY REQUIREMENTS

4.1. Licencing for asbestos removal works

Delta holds a Class A asbestos removal license issued by SafeWork NSW which allows removal of Class A and Class B ACM (refer to Appendix B for copy of licence).

4.2. Asbestos Supervisor

The nominated Asbestos Supervisor undertaking the ACM removal work must hold the appropriate certification to supervise the type of licensed ACM removal work being undertaken (i.e. Class A or Class B) and must be attached to the SafeWork NSW Asbestos Removal Licence.

Where the asbestos removal work being undertaken requires a Class A licence (e.g. Friable asbestos), the nominated Asbestos Supervisor must be present at the Class A asbestos removal area whenever the work is being undertaken.

Where the asbestos removal work being undertaken requires a Class B licence (e.g. non-friable asbestos), the nominated Asbestos Supervisor must be readily available to any personnel undertaking the Class B asbestos removal works being undertaken (i.e. within 20 minutes from the asbestos removal area).

The nominated Asbestos Supervisor for the works is:

- Aaron Britt - Class A & B

Where the nominated Asbestos Supervisor is not available for any reason during licenced asbestos removal work, another Asbestos Supervisor that holds the appropriate certification and named on Delta's SafeWork NSW Class A asbestos licence to supervise the type of licensed ACM removal work being undertaken will be readily available.

4.3. Licenced Asbestos Assessor

In accordance with the NSW WHS Reg 2017, a Licenced Asbestos Assessor (LAA) is required to carry out the following:

- air monitoring during Class A asbestos removal work;
- clearance inspections for Class A asbestos removal work;
- issuing clearance certificates in relation to Class A asbestos removal work;

The nominated LAA's for the ACM removal work are as follows:

- Jack Barlow (Prensa) – Licence No. LAA002119
- Jack Wearne (Prensa) – Licence No. LAA001469
- Will Chandler (Prensa) – Licence No. LAA001580
- Dylan Burdett (Prensa) – Licence No. LAA002130

Note: If the above LAA's are unavailable, another LAA shall be used in their place.

4.4. Asbestos Removal Workers

All workers undertaking asbestos removal work must hold a certification in relation to the specified VET course for asbestos removal relevant to the class of licensed asbestos removal work being undertaken by the worker (i.e. Class A or Class B asbestos removal).

Prior to commencing asbestos removal work, the Asbestos Supervisor will provide all asbestos removal workers training to ensure the work is carried out in accordance with this ARCP which is additional training to the general training that is provided on the identification, safe handling and appropriate controls for asbestos referred to in section 6.3 of the Code of Practice: How to manage and control asbestos in the workplace. This training must be provided prior to commencement of asbestos removal work and includes:

- the nature of the hazards and risks

- how asbestos can affect a person's health
- the risks arising from exposure to airborne asbestos
- the control measures in place and maintenance of the asbestos removal control plan for that job
- the methods and equipment that will be used to do the job properly
- choosing, using and caring for PPE and RPE
- decontamination procedures
- waste disposal procedures
- emergency procedures, and
- any other legal requirements (for example contaminated sites).

Records of certification and induction training shall be readily accessible at the asbestos removal area and will be available for inspection in accordance with the NSW WHS Reg 2017.

Where plant operators do not have SafeWork NSW certified training for asbestos removal, they will require a minimum of asbestos awareness training from a Competent Person and respirator fit test (where respirator required to be used), and are required to work under the supervision of the Asbestos Supervisor (i.e. Asbestos Supervisor must be present when plant is operating in their work area and must provide direction on fitting of PPE, decontamination process, access and egress of asbestos work areas).

5.0. ROLES & RESPONSIBILITIES

5.1. Person Conducting Business or Undertaking (PCBU)

The Person Conducting Business or Undertaking (PCBU) is responsible for:

- Informing employees, contractors and subcontractors of the locations of the ACM at the site through the implementation of awareness training, as part of the induction process etc
- Engaging an appropriately licensed removal contractor, as required by legislative requirements, to conduct ACM abatement works and notify site personnel of air monitoring results (if applicable) during abatement or refurbishment works;
- Ensuring ACM related records are maintained. Documentation must be archived indefinitely and be accessible to any government health and safety regulatory representatives, if requested. Records such as the ACM register updates, ACM removal specifications, contractor licences, SWMS, air monitoring reports, clearance inspection certificates and waste disposal documents are to be included in documents to be retained.

5.2. Licenced Asbestos Assessor (LAA) / Competent Person

The Licenced Asbestos Assessor (LAA) / Competent Person is responsible for:

- Being appropriately trained for the tasks undertaken, and hold appropriate licence for Class A works
- Submitting air monitoring samples to a NATA accredited laboratory for Analysis
- Providing hygiene services during abatement works
- Providing written asbestos clearance certificates in accordance with the minimum requirements of the NSW Code of Practice: How to Safely Remove Asbestos 2022

5.3. Asbestos Project Manager

The Asbestos Project Manager is responsible for:

- Ensuring the overall smooth running of the asbestos removal works.
- Client liaison.
- Safety management.
- Ensuring the works are carried out in accordance with the relevant Codes of Practice and Regulations.

5.4. Asbestos Supervisor

The Asbestos Supervisor is responsible for:

- Overall control and responsibility of the asbestos removal works.
- Ensuring works are undertaken in accordance with the ARCP
- Ensuring the works are carried out in accordance with the relevant Codes of Practice and Regulations.
- Safety management
- Consultation with the LAA (Class A) or Competent Person (Class B)

6.0. NOTIFICATIONS

6.1. Notification to SafeWork NSW

SafeWork NSW shall be notified in in writing at least five days before the licensed asbestos removal work commences, and a copy of the notification shall be held onsite.

SafeWork NSW will issue acknowledgement that they have received the notification, and the work can commence 5 calendar days after the notification was issued and not before.

The following information shall be included in the notification:

- name, registered business name, Australian Business Number, licence number and business contact details
- name and business contact details of the supervisor who will oversee the removal work
- name of the licensed asbestos assessor or competent person engaged to carry out a clearance inspection and to issue a clearance certificate for the work
- client name and contact details
- name, including registered business or corporate name, of the person with management or control of the workplace
- address of the workplace, including the specific location if it is a large workplace
- kind of workplace where the removal work will be performed (for example an office building or construction site)
- date of notification
- the start date of the removal work and an estimation of how long it will take
- whether the asbestos to be removed is friable or non-friable
- if the asbestos is friable, the way the asbestos removal area will be enclosed
- estimated quantity of asbestos to be removed
- number of workers who will perform the removal work, and
- details of each worker's competency to carry out removal work.

The notification may also include information on:

- the type of work that is carried out at the workplace, and
- the type of asbestos or ACM that are being removed (for example, asbestos cement (AC) sheeting, vinyl tiles, lagging, gaskets).

6.2. Notification to stakeholders

In accordance with the Cl 467 of the WHS Reg 2017, Delta shall inform the person with control and management of the workplace (CMA Contracting) about the asbestos removal work and the date it is to commence.

In accordance with the Cl 468 of the WHS Reg 2017, the person with management or control of workplace must inform persons about asbestos removal work

(1) The person must ensure that the following persons are informed that asbestos removal work is to be carried out at the workplace and when the work is to commence, before the work commences:
    a. the persons workers and any other persons at the workplace,
    b. the person who commissioned the asbestos removal work.

(2) The person must take all reasonable steps to ensure that the following persons are informed that asbestos removal work is to be carried out at the workplace and when the work is to commence, before the work commences:
    a. anyone conducting a business or undertaking at, or in the immediate vicinity of, the workplace,
    b. anyone occupying premises in the immediate vicinity of the workplace.

7.0. CONSULTATION

Delta will keep all stakeholders advised on the works to be undertaken and the associated program. Consequently Delta will ensure that the following people are regularly consulted with:

- Client (CMA Contracting) site team must be advised of all details of the work, the steps taken to ensure the safety of personnel, the anticipated program of the works, and status of the asbestos removal areas.
- LAA (Class A) or Competent Person (Class B) for implementation of necessary site set up inspections including decontamination units (if required) prior to commencement of asbestos removal works, asbestos control monitoring to parameters of the site and access routes where necessary during remediation activity, visual clearance inspection, sampling and monitoring following completion of removal activity per site area. Co-ordination shall be at the discretion of the Asbestos Supervisor.
- Delta and Client (CMA Contracting) site personnel by means of a documented daily toolbox talk prior to start of works each day.

8.0. PROGRAM OF WORKS

Program	Date
Planned ACM removal start date	17 March 2025
Planned ACM removal completion date	16 March 2027

9.0. HEALTH MONITORING

In accordance with the NSW WHS Reg 2017 and SafeWork NSW CoP – *'How to safely remove asbestos'*, health monitoring shall be provided to all asbestos removal workers:

- prior to the worker undertaking asbestos removal work
- at regular intervals (at least once every two years) after the worker commences asbestos removal

Health monitoring forms part of administrative controls to ensure workers are able bodied for the intended work and to measure and identify changes that may indicate injury or disease. Early identification can assist in limiting injury or disease and provide remedial measure or exclude workers from the environment to limit and prevent further aggravation and development of respiratory disease.

Records shall be kept as a confidential record for at least 40 years and be made available to parties under a duty of professional confidentially, where required to ensure protection of worker health.

9.1. Baseline Health Monitoring

Prior to commencement of first asbestos removal works, Delta shall ensure that asbestos workers undertake baseline health monitoring by a registered medical practitioner, which shall include:

- Collection of demographic data;
- Work history;
- Medical History including standardised respiratory questionnaire based on the MRC (UK) Respiratory Questionnaire 1986;
- Physical Examination;
- Investigation including, standardised respiratory function tests will be conducted to determine the worker's baseline respiratory function. Current evidence does not support screening for lung cancer with chest radiography or sputum cytology;
- Advice as to the frequency of health monitoring.

9.2. Ongoing Health Monitoring

Delta shall ensure that workers undertake ongoing health monitoring by a registered medical practitioner that shall not exceed a period of two years. Reports provided by the registered medical practitioner shall include:

- The name and date of birth of the worker;
- The name and registration number of the registered medical practitioner;
- The name and address of the person conducting the business or undertaking who commissioned the health monitoring;
- The date of the health monitoring;
- Any advice that test results indicate the worker may have contracted a disease, injury or illness as a result of carrying out the work that triggered the need for health monitoring;
- Any recommended remedial measures, including whether medical counselling is required for the worker;

10.0. EMERGENCY PROCEDURE

10.1. Site Emergency Evacuation Procedure

Delta will follow the client's (CMA Contracting) Emergency Response Management Plan for the site.

10.2. Asbestos Removal area Emergency Evacuation Procedure

Where an incident occurs during asbestos removal works in an asbestos removal area, the Asbestos Supervisor is the first point of contact.

If an incident occurs **within a non-friable asbestos removal work area**, the injured person is to be removed from the asbestos removal area as soon as possible and first aid is to be administered. If required, emergency services will be contacted.

If the incident occurs **within a friable containment**, it may be necessary to cut/dismantle a containment wall to get the injured person out. Repairs should be carried out immediately after the person has been removed.

Minor incidents within an asbestos containment:

- If the injury is of a minor nature the injured person with/without the assistance of a co-worker should undertake the full decontamination procedure and proceed to the first aid room for treatment.

If a worker MUST be removed from the asbestos containment due to a major incident:

- If the determination is a major incident, the injured person is to be removed from the containment (if safe to do so).
- If the containment has to be breached all action must be taken to ensure unprotected persons are kept away from the area.
- Once the injured person has been removed to a safe location for decontamination and medical treatment the breached containment is to be repaired.
- Ensure the repaired containment is visually checked and air monitoring is undertaken by the nominated asbestos assessor.
- To decontaminate the injured worker and if safe to do so remove coveralls by either rolling in a downwards manner or if impracticable use a scissors to cut away the coveralls. Place the coveralls in a labelled waste bag.
- Use care to thoroughly wash and rinse the contaminated skin of the injured person.
- Wet wipe the respirator and dispose of pre-filters before removing.
- Move the injured person to a clean area where emergency medical treatment can be provided.
- If not safe to remove the injured person from the containment or to decontaminate the person due to the injury sustained, notify emergency services on arrival that the person is situated within an asbestos containment. Provide the necessary PPE for the emergency services personnel to enter the area.

11.0. CONTROL OF HAZARDS

Delta will work in accordance with CMA Contracting's Integrated Management System (IMS) including CMA Contracting's Health & Safety Management Plan for the Liddell Power Station project.

Site and task specific hazards (WHS and Environmental), including those not specifically relating to control of exposure to asbestos, are to be identified, managed and documented within Safe Work Method Statements (SWMS's).

At the start of each shift, the Asbestos Supervisor will assess, in consultation with the asbestos removal workers, the adequacy of the SWMS's in use with respect to current site conditions and will update the SWMS's accordingly with any additional hazards not documented or detailed within the existing SWMS.

It is the responsibility of the Asbestos Supervisor to ensure that the control measures adopted are monitored in both their implementation and also their ongoing adequacy for the activity. It is also the responsibility of all workers undertaking the asbestos removal work to inform the Asbestos Supervisor if the proposed controls are inappropriate.

Safe Work Method Statements (SWMS) to be developed to cover all hazards associated with the specific works (including overhead hazards, underground services, electrical services, etc) and all workers to be inducted into the SWMS's prior to commencing the works.

12.0. ASBESTOS REMOVAL BOUNDARIES – BARRICADES & SIGNAGE

The site is not considered to be under normal occupation and is a secure demolition site. Access into the asbestos removal areas is controlled by Delta in consultation with the Client (CMA Contracting), subsequently hard barriers are not required to each asbestos removal area within the site.

All people who have access to the asbestos removal area shall comply with any reasonable direction given by Delta. Delta shall also ensure that access to the asbestos removal area/s is limited to the following people:

- Designated asbestos workers who are engaged to carry out the removal work
- Other people who are associated with the removal work and appropriately trained
- People who are allowed under the NSW WHS Reg 2017 or another law to be in the asbestos removal area (e.g. inspector, emergency service workers, etc)

The boundary of each asbestos removal area shall have asbestos awareness signage installed to alert all personnel of the asbestos removal activity. Asbestos danger tape shall be utilised as required to around the perimeter of each asbestos removal area to provide a barricade between the general demolition area and the specific asbestos removal area/s.

Signs and barricades are to remain, until an asbestos clearance certificate has been issued for the asbestos removal area/s.

13.0. PERSONAL PROTECTIVE EQUIPMENT

13.1. Respiratory Protection:

A respirator shall be selected and maintained in accordance with *AS/NZS 1716-2012 Respiratory Protective Devices*, and *AS/NZS 1715-2009 Selection, use and maintenance of respiratory equipment*.

For **Class A** asbestos removal works, a minimum of P3 filter type full-face, particulate filter (cartridge) respirator shall be worn.

For **Class B** asbestos removal works, a minimum of P2 filter type half-face particulate respirator shall be worn.

Maintenance of RPE to be conducted by trained/competent persons only. Examinations and tests should be carried out at regular intervals in line with the manufacturers specifications.

Basic checks to ensure that the RPE is fit for use:

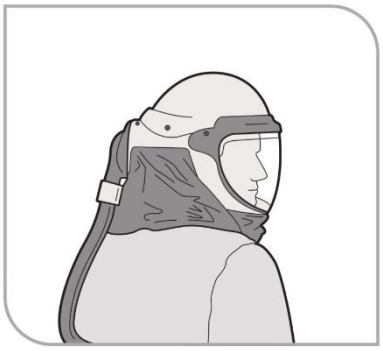
- Inspect respirator before & after use and during routine cleans
- Replace all components that are cracked, torn, broken, missing or worn
- Ensure there are no visible holes or tears
- Clean/disinfect according to manufacturer's instructions
- Replace filters before end of service life or when the filter is visibly dirty or damaged

Records of RPE inspection/issues, uses and maintenance, shall be kept up to date and be made available complete with fit testing records (refer to Appendix C of the SafeWork NSW CoP – *'How to safely remove asbestos'*).

The figures below provide examples of some respirators that can be used. The protection afforded by each device depends not only on the design and fit of the respirator but also upon the efficiency of the filters (for instance P1, P2 or P3). These figures are indicative only. In order to show the correct respirator fit, they do not show the use of hoods. Respirators must always be worn under a hood.

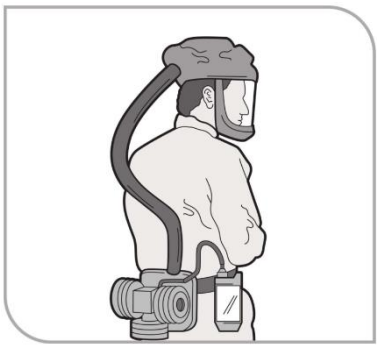
Disposable, half-face particulate respirator

Half-face particulate filter (cartridge) respirator

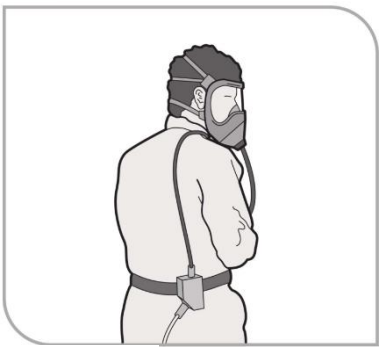


Powered, air purifying ventilated respirator

Full-face particulate filter (cartridge) respirator



Full-face, powered air purifying particulate respirato



Full-face, positive pressure demand air-line respirator

13.2. Fit Testing and clean shaven policy

Where wearing a negative-pressure respirator, to gain an adequate seal around the respirator, the wearer must undertake fit testing and be clean shaven whilst wearing the mask.

All project personnel required to wear respiratory protection that relies on a positive seal against the wearers face shall participate in quantitative fit testing in accordance with the requirements specified in AS/NZS1715:2009 and shall include each RPE type and size selected for use by the individual.

Results of all fit tests, along with RPE issued for use shall be recorded in Delta's online training matrix, with records maintained with the individuals' personal records.

Quantitative fit testing shall be conducted by persons deemed competent to do and reassessed on a yearly basis.

To conduct a full- or half-face respirator fit check:

- close off inlet to filter
- inhale gently
- hold for 10 seconds, and
- check that the face piece remains slightly collapsed, as it should be.

Conducting a fit check for a full-face, particulate filter (cartridge) respirator

13.3. Coveralls

Delta shall provide asbestos workers with disposable coveralls, which are:

- disposable coveralls rated type 5, category 3 (EN ISO 13982–1)
- one size too big, to prevent ripping at the seams, and
- fitted with hood and cuffs, ensuring that:
  - if cuffs are loose, they are sealed with adhesive (cloth or duct) tape
  - coverall legs are worn over footwear as tucking them in lets the dust in, and
  - the fitted hood is worn over the respirator straps.

Coveralls should:

- not be made of material that is easily torn
- not have external pockets or Velcro fastenings because these are easily contaminated and difficult to decontaminate
- never be taken home
- never be reused, and
- be disposed of as asbestos waste after a single use.

13.4. Gloves

Single-use disposable gloves shall be worn for asbestos removal works when undertaking removal works.

Gloves used for asbestos removal work should be disposed of as asbestos waste.

Workers should clean their hands and fingernails thoroughly whenever leaving the asbestos removal area.

13.5. Safety footwear

Steel-capped, rubber-soled work shoes (either lace less or with overboot covers) or gumboots shall be worn by all asbestos removal workers when undertaking removal works.

The footwear should remain inside the barricaded area or dirty decontamination area for the duration of the asbestos removal work and should not be shared for hygiene reasons.

When safety footwear is not in use, it should be stored upside down to minimise asbestos contamination inside the footwear.

Storage facilities shall be provided for the shoes and the end of the removal work, and each time the worker leaves the asbestos removal area, safety footwear shall be:

- decontaminated
- sealed in containers (e.g. double bags) for use on the next asbestos removal area (but not for any other type of work), or
- sealed in containers (e.g. double bags) and disposed of as asbestos waste.

14.0. ASBESTOS CLEARANCE INSPECTIONS AND CERTIFICATES

In accordance with the NSW WHS Reg 2017, when the licensed asbestos removal work is completed in any area, a clearance inspection of the asbestos removal area is carried out by:

a) if the asbestos removal work must be carried out by the holder of a Class A asbestos removal licence—an independent LAA, or
b) in any other case—an independent Competent Person.

Each asbestos removal area is not to be re-occupied for normal use, demolition, or other work, and all signs and barricades are to remain in place, until an asbestos clearance inspection and certification is received.

Clearance certificates are to be issued by the LAA (Class A) or Competent Person (Class B) and will clearly state the specific ACM removed and the specific location it was removed from that corresponds to the site asbestos register.

The site asbestos register shall be progressively updated as each asbestos clearance is received.

15.0. ASBESTOS AIR MONITORING

15.1. Air Control Monitoring

Air monitoring involves collecting air samples to assist in assessing the levels of airborne asbestos fibres present in either:

- the asbestos removal area to assess the effectiveness of controls (control monitoring), or
- the worker's breathing zone to assess exposures to asbestos (exposure monitoring).

Air monitoring must be conducted in accordance with the Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres, 2nd Edition [NOHSC: 3003 (2005)]. (the membrane filter method) via a NATA accredited laboratory.

Control monitoring requirements will vary depending on the type of asbestos being removed, the location and position of the asbestos, if an enclosure is used and whether the asbestos removal work is within a building or outside, with the extent and location to be determined by an LAA (Class A removal works) or a Competent Person (Class B removal works):

- Friable asbestos removal—control monitoring is mandatory for all friable asbestos removal. This includes prior to dismantling an enclosure and for the purposes of the clearance inspection.
- More than 10 m2 of non-friable asbestos removal—control monitoring is not required but may be carried out by an independent licensed asbestos assessor or competent person to ensure that controls being used to eliminate or minimise exposure to airborne asbestos are effective.
- Public location—Air monitoring should be considered where the asbestos removal work is being undertaken in or next to a public location.

Control monitoring must be conducted immediately before and during Class A asbestos removal work however, is not required immediately before friable asbestos removal work commences when the glove bag removal technique is used. Control monitoring must be carried out within the enclosure used for removing friable asbestos before it can be dismantled, as well as outside the enclosure prior to, during and after the removal.

Control monitoring <u>may</u> be carried out before and during Class B asbestos removal work to ensure that controls being used to eliminate or minimise exposure to airborne asbestos are effective (Note: Control monitoring results cannot be compared to the exposure standard for asbestos. Where there are concerns about possible worker exposure, exposure monitoring should be undertaken to ensure compliance with Part 8.2 of the WHS Reg 2017).

Asbestos air monitoring reports shall be provided to the client (CMA Contracting) who shall make the reports available to:

- Workers at the workplace;
- Health and safety representatives for the workplace;
- Persons conducting businesses or undertakings at the workplace;
- Other persons at the workplace;

15.2. Calibration

Calibration of equipment shall be conducted by a calibration facility accredited to AS ISO 17025 by NATA or equivalent as recognized by the NATA Mutual Recognition Agreement (MRA). The calibration facility shall include the service under the scope of its accreditation. Calibrations shall be traceable to primary standards and adhere to the NATA's policy on metrological traceability (NATA Policy Circular 11 - Policy on Metrological Traceability). The frequency of calibrations, assurance checks and maintenance shall adhere to the following publications, in consultation with CMA Contracting's nominated LAA:

- NATA Policy Circular 12 - NATA Policy on equipment assurance, in-house calibration and equipment verification

- NATA document Reference equipment - calibration and checks
- NATA document General Equipment - Calibration and Checks, Technical Note 7 - Electronic measuring equipment as reference standards
- Australian or international standards, as applicable

15.3. Action Levels

Action shall be taken depending on the respirable fibre levels reported in control monitoring results. Where the results show that respirable asbestos fibre levels exceed the action levels outlined in the table below, regardless of whether removal has commenced, action must be taken immediately.

Action level	Control	Action
Less than 0.01 fibres/ml	No new control measures are necessary	Continue with control measures
At 0.01 fibres/ml or more than 0.01 fibres/ml ***but less*** than or equal to 0.02 fibres/ml	1. Review	Review control measures
	2. Investigate	Investigate the cause
	3. Implement	Implement controls to eliminate or minimise exposure and prevent further release
More than 0.02 fibres/ml	1. Stop removal work	Stop removal work
	2. Notify SafeWork NSW	Notify SafeWork NSW by phone followed by a written statement that work has ceased and the results of the air monitoring
	3. Investigate the cause	For example, conduct a thorough visual inspection of the enclosure (if used) and associated equipment in consultation with all workers involved with the removal work
	4. Implement controls to eliminate or minimise exposure and prevent further release	For example, extend the isolated/barricaded area around the asbestos removal area/enclosure as far as reasonably practicable until fibre levels are at or below 0.01 fibres/ml, wet wipe and vacuum the surrounding area, , seal any identified leaks (e.g. with expandable foam or adhesive (cloth or duct) tape) and smoke test the enclosure until it is satisfactorily sealed.
	5. Do not recommence removal work until further air monitoring is conducted	Do not recommence until fibre levels are at or below 0.01 fibres/ml

15.4. Air Exposure Monitoring

Delta shall ensure that the exposure standard for asbestos is not exceeded at the workplace, unless:

- the asbestos removal area is enclosed to prevent the release of respirable asbestos fibres, and
- negative pressure is used (except where a glove bag is used for the removal).

In consultation with an LAA, exposure monitoring shall be carried to determine an asbestos removal worker's exposure to airborne asbestos if there is uncertainty as to whether the exposure standard may be exceeded at the workplace. Where exposure monitoring is carried out, Delta shall keep records of the

results for 30 years and shall ensure that the results of air monitoring are readily accessible to persons at the workplace who may be exposed to asbestos.

16.0. TOOLS, PLANT & EQUIPMENT

16.1. Indicative tools used for removal

The following is an indicative list of tools, plant and equipment to be used during the ACM removal:

- Transport vehicles/Waste Bins
- Intermediate Bulk Containers (IBC's)
- Drums
- Hand tools
- 200µm polyethylene sheeting
- Geofabric material
- Asbestos Waste Bags
- PVA spray
- Hoses/Water
- Oxy cutting equipment
- Cordless Drill
- Handheld grinder
- Reciprocating saw
- RCD Boxes
- HEPA filtered H-Class industrial vacuum cleaner (HEPA Vacuum)
- Airless Sprayer
- Bunting tape
- Hazard signs
- 1t - 50t excavators
- Skidsteer loader

Note 1: High speed power tools such as grinders, reciprocating saws will not be used on ACM unless within an enclosure

Note 2: Where plant has enclosed cabs, operator may choose not to wear asbestos PPE if plant is fitted with HEPA Filters (H Class) within air conditioning system and doors and windows remain closed during works and associated seals maintained in good condition (this should be validated by asbestos air monitoring inside the cabin during the works).

16.2. Maintenance:

All tools, plant & equipment used for the removal of asbestos shall be inspected before the commencement of the asbestos removal work, after any repairs, and at least once every seven days when it is continually being used.

For enclosed cab plant where asbestos PPE is not intended to be worn during the works, daily inspections on HEPA Filters (H Class) within air conditioning systems along with door and window seals shall be undertaken to ensure they are maintained to the required standard.

16.3. Electrical equipment

All electrical equipment will be inspected, tested and tagged prior to its arrival on site by a ticketed and competent person. At monthly intervals, electrical equipment will be again inspected, tested and tagged.

16.4. HEPA Vacuums

HEPA vacuums used in ACM removal works are to be H-Class.

HEPA vacuums will have current DOP certificates. They will be serviced as per the Australian Standard for HEPA Filter Maintenance AS/NZ 60335.2.69 (12-month intervals). All units will be inspected and tagged prior to their arrival on site.

HEPA vacuums are to be cleaned externally by wet wiping and the contaminated content within the vacuum bags is to be removed and placed in 200µm plastic bags within the asbestos removal work area at the completion of works.

All cleaning works or inspections of the HEPA vacuums is to be conducted within the asbestos removal area wearing full PPE.

Before removing HEPA vacuums from the asbestos removal area, the HEPA vacuums are to be placed in 200µm bags (goose-neck sealed).

17.0. ENCLOSURE FOR FRIABLE ACM REMOVAL

17.1. Designing and installing an enclosure

The design of the enclosure shall be developed in consultation with the LAA and shall:

- be constructed of heavy-duty polyethylene sheeting (200 µm minimum thickness) and enclose all the walls, windows and doors. Wooden cleats may be used to anchor the polyethylene sheeting to walls. Recycled polyethylene sheeting should not be used.
- have viewing panels or clear 200µm polyethylene sheet placed in appropriate locations so that the asbestos removal work area can be seen from outside the enclosure, and
- have adequate lighting within the enclosure, either:
    a. naturally, using clear plastic or perspex panels in the enclosure walls, or
    b. artificially, preferably from outside the enclosure using clear plastic or perspex panels.

During the masking up and later removal of the enclosure sheeting, all workers must wear full Class A PPE

Where the asbestos removal work area connects either to the outside environment or to the rest of the building (for example through windows, ducts, wall cavities and lift entrances), the work area shall be enclosed so that an airtight seal is maintained for the duration of the asbestos removal work.

All movable items shall be removed from the asbestos removal area, and where this is not possible, the items shall be moved from the immediate asbestos removal work area and covered with two layers of polyethylene sheeting with a minimum overlap of 300 mm between the layers, double taping both layers.

All non-movable items such as fixtures and fittings shall be covered with polyethylene sheeting and the joints sealed.

Airlocks shall be placed at the entry points to the decontamination/change area and constructed using double sets of overlapping polyethylene with suitable provisions for ensuring a seal.

All floors shall be protected with at least one layer of woven polyethylene to prevent penetration during the asbestos removal work and the joints shall overlap by 300 mm and be sealed with double-sided tape and adhesive (cloth or duct) tape.

Where platforms and fixed scaffolding are required, they shall be erected during the early stages of the work. These structures shall ideally be erected on the outside of the enclosed area. Any platforms or fixed scaffolding within the enclosed area must be decontaminated and visually inspected at the end of the asbestos removal work.

All tools and equipment used for asbestos removal work, including HEPA-filtered H-Class industrial vacuum cleaners, must remain within the asbestos removal work area until the completion of the job.

All the polyethylene sheeting and tape used for the enclosure must be disposed of as asbestos waste. Temporary structures must be disposed of as asbestos waste if they cannot be decontaminated. An inspection by a competent person will confirm if the structures are free of any visible asbestos or ACM.

Work methods shall be adapted for the work environment within the enclosure (e.g. rest breaks need to be based on a risk assessment taking into account factors such as the weather and heating/cooling requirements).

17.2. Testing and enclosure

Prior to the asbestos removal work commencing, the Delta shall ensure the enclosure is tested by an independent LAA, and shall ensure that any enclosure used in removing friable asbestos is tested for leaks.

An independent LAA shall visually inspect and conduct smoke testing to ensure there are no leaks or deficiencies in the enclosure before the asbestos removal work commences.

- While smoke is generated within the enclosure, a worker must be outside the enclosure to check for leaks.
- Only smoke-generating devices incorporating non-oil-based, non-toxic smoke fluids shall be used. Flares will not be used.
- Smoke (fire) detection devices in the immediate vicinity of the asbestos removal area shall be isolated for the duration of the smoke test.
- The results of the smoke test shall be documented and a copy provided to Delta.

Negative pressure exhaust units shall not be used while the smoke test is being conducted. The effectiveness of the enclosure shall be regularly monitored while asbestos removal work is underway (for example, a visual examination, air-monitoring results and negative pressure readings).

If leaks or deficiencies are found during the initial testing of the enclosure they must be rectified. An expandable foam sealant, adhesive (cloth or duct) tape or equivalent may be used. Additional smoke tests must be performed until no leaks or deficiencies are identified.

Following a visual examination of the enclosure and surrounding area, if a leak of asbestos is detected, and Class A asbestos removal work is being conducted, Delta will:

- If more than 0.01 fibres/mL but less than 0.02 fibres/mL is detected, immediately, before work recommences:
    a. investigate the cause of the respirable asbestos fibre level
    b. implement controls to prevent exposure of anyone else to asbestos, and
    c. prevent the further release of respirable asbestos fibre.
- In addition to the immediate action Delta shall:
    a. seal the leaks in the enclosure
    b. re-test the enclosure by smoke testing until the enclosure is effective again
    c. clean any contaminated areas
    d. conduct visual inspections
    e. conduct an air monitoring test specific to the incident (air monitoring)
    f. re-assess the boundaries of the asbestos removal work area and site.

If more than 0.02 fibres/mL is detected, Delta shall immediately, before work recommences:

- order the asbestos removal work to stop
- notify the regulator (SafeWork NSW)
- investigate the cause of the respirable asbestos fibre level
- implement controls to prevent exposure of anyone to asbestos, and
- prevent the further release of respirable asbestos fibre.

The asbestos removal work must stop until any defects have been rectified. Work cannot recommence until it can be ensured that air-monitoring results show the recorded respirable asbestos fibre level is below 0.01 fibres/mL.

A supply of expandable foam sealant, polyester insulation or equivalent shall be kept on site for sealing leaks.

17.3. Negative pressure exhaust units

To prevent the escape of airborne asbestos fibres from an enclosed asbestos removal work area, exhaust extraction fans shall be installed to create a 'negative' air pressure of approximately 12 Pa (water gauge) within the enclosed area. Note: This may require the use of more than one negative pressure exhaust unit and shall be determined in consultation with the LAA.

Units shall incorporate warning devices for filter integrity/overload and power failure, and shall have a manometer or magnehelic gauge and an audible and visual alarm system.

The negative pressure exhaust unit shall be positioned opposite the decontamination unit to enable laminar (smooth) air flow, with the location determined in consultation with the LAA.

- The air entering the asbestos removal work area passes through the decontamination unit or point-of-entry while the air extracted passes through a HEPA filter to remove any asbestos before it is discharged to the outside.
- Where this is not possible, consideration shall be given to how to set up the enclosure, decontamination unit and negative pressure exhaust unit to enable optimum smooth flow of air through the enclosure so as to minimise dead air pockets. Discharge of the air from the enclosure shall be at a location away from other working areas, air-conditioning inlets or breathing air compressors.

The HEPA filter must comply with AS 4260–1997: High efficiency particulate air (HEPA) filters – Classification, construction and performance or its equivalent.

- A coarse pre-filter shall be installed on the air intake side of the negative air unit to prolong the useful life of the HEPA filter (Note: These pre-filters may need to be changed once per work shift or more frequently depending on dust loads).
- Used pre-filters must be disposed of as asbestos waste.
- A process of regular inspection of the integrity of the HEPA filter and seal fittings in conjunction with a static pressure alarm shall indicate failures in the system.

The negative air units shall operate continuously (24 hours a day) until all asbestos removal work and decontamination within the enclosure has been completed, a clearance certificate issued and the enclosure dismantled. If the units stop during removal work, Delta will ensure all removal work ceases immediately until the problem is rectified and the required number of units are in operation. To minimise the risk of airborne asbestos fibres escaping the enclosure, the delay shall be as short as possible to avoid interruption. Consideration shall be given to backup negative pressure exhaust units and the use of a generator.

Maintenance work on these units shall only be performed after they have been thoroughly decontaminated, or the work may be carried out under controlled conditions, such as in an asbestos removal enclosure while wearing appropriate PPE.

17.4. Dismantling an asbestos removal enclosure

The structure used to enclose an asbestos removal area shall only be dismantled once all of the following are done:

- asbestos removal work has been completed
- visual inspection by an independent competent person is satisfactory, and
- air monitoring by a LAA, in the case of friable asbestos removal, is found to be less than 0.01 fibres/mL.

The polyethylene sheeting that formed the enclosure must be disposed of as asbestos waste along with any other contaminated material that assisted in forming the enclosure. In some cases, structures used in building the enclosure (other than the polyethylene sheeting that formed the enclosure) may be wrapped and sealed in polyethylene sheeting and not opened until in a similar controlled environment, such as another asbestos removal enclosure (for example collapsible rods used to form the enclosure frame).

The area from which the enclosure was dismantled must be thoroughly cleaned and inspected.

Ropes, warning signs and protective polyethylene sheeting isolating public areas shall not be removed until:

- the enclosure has been dismantled and removed as asbestos waste
- satisfactory air-monitoring results have been achieved, and
- the removal area and its surrounds have been visually inspected by an independent competent person and found to be satisfactory for reoccupation.

17.5. Security and checks when using an enclosure

Delta will ensure an employee is stationed outside the asbestos work area for the duration of the asbestos removal work to:

- liaise with the project supervisor
- check and maintain negative air units, compressor units, decontamination units and hot water service
- ensure security of the area is maintained
- communicate with personnel inside the work enclosure, and
- instigate emergency or evacuation procedures if necessary.

Records of these checks shall be made on a daily basis and kept.

18.0. DECONTAMINATION

18.1. Decontamination Units (For specific Friable Asbestos removal only) – "Wet Decontamination"

A Decontamination unit will be positioned at an appropriately designated area at discretion of the Asbestos Supervisor following consultation with the CMA Demolition Supervisor and LAA, immediately adjacent to, and jointed to, the designated asbestos removal area.

The decontamination unit shall include a dirty decontamination area, a clean decontamination area and a clean changing area. These areas need to:

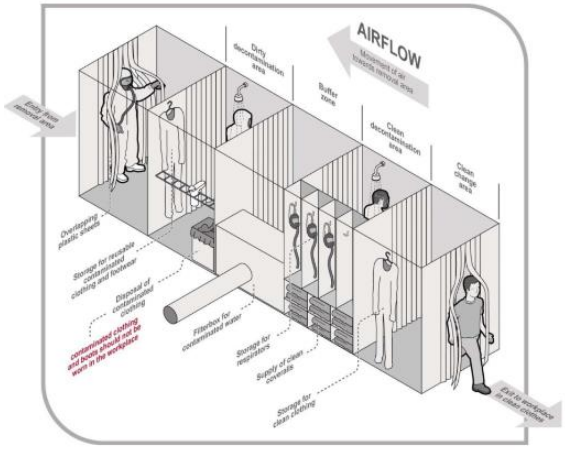
- be large enough to enable workers to adequately decontaminate themselves
- be separated by suitable airlocks or buffer zones, and
- have doors with large openings with overlapping, hinged flaps operating as a one-way valve to ensure there is sufficient airflow through the decontamination unit.

Towels and soap shall be provided to allow workers to appropriately decontaminate themselves.

All water discharge from the decontamination unit will be passed through an interceptor box fitted with a filter system approved for asbestos filtration (capable of capturing down to 5 microns) redirected and discharged into nearest sewage line.

At demobilisation, the filter box, filter, and waste hoses shall be sealed and labelled as asbestos contaminated.

Delta shall have a worker stationed outside an enclosure for the duration of the asbestos removal work to liaise with the Asbestos Supervisor, communicate with personnel inside the work enclosure, and instigate emergency/evacuation procedures if necessary.



Example Decontamination Unit Equipment:

Negative Air Equipment

Decontamination Trailer

Modular Shower Units

Water Management Systems

18.2. Remote Decontamination units

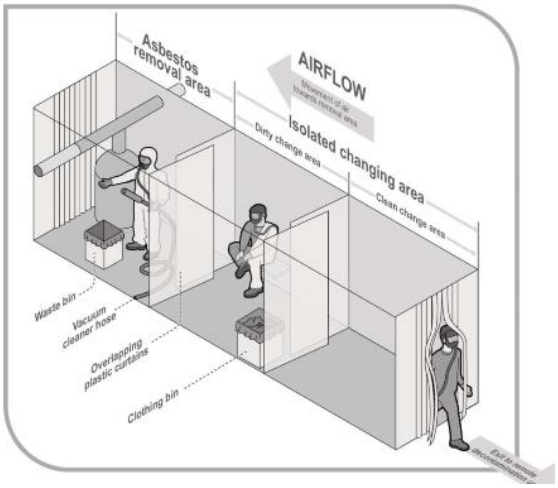
Remote decontamination units are decontamination units that are not located next to the asbestos removal area and can only be used if a decontamination unit cannot be located immediately adjacent to the asbestos removal area. A decision to use a remote decontamination is made by the Asbestos Supervisor in consultation with an LAA.

When a remote decontamination unit is to be used, additional transiting procedures are to be implemented to minimise asbestos contamination of pathways leading from the enclosure to the decontamination unit which involve the use of 'transiting' PPE and additional facilities to enable the worker to carry out preliminary decontamination before travelling to the decontamination unit for full decontamination which may include a three-stage airlock isolated changing area (specially constructed and made of heavy duty polyethylene sheeting (minimum 200 µm thickness)). The area shall be attached to the enclosure and should comprise three compartments separated by weighted sheets to minimise the spread of dust between the compartments.

Before asbestos removal workers enter this changing area, all obvious signs of asbestos dust must be removed from their protective clothing using a HEPA filtered H-Class industrial vacuum cleaner in the enclosure. The isolated changing area is then used to discard outer garments, including coveralls and overshoes, before workers put on fresh outer/protective clothing for the journey to the remote decontamination unit. RPE should be worn until the appropriate phase of the decontamination procedure within the remote decontamination unit.

The route of access from the asbestos removal area to the decontamination unit should be suitably signposted and barricaded to restrict public access.

Air monitoring shall be conducted in the immediate vicinity of this access route and at other suitable locations outside the asbestos removal area as determined by the LAA.



18.3. Equipment, Tools & Plant

All tools or equipment used during the asbestos removal work must be decontaminated before they are removed from the asbestos removal area.

The decontamination process will be completed in the following steps:

1. Where appropriate, tools or equipment are to be fully dismantled.
2. The tools will be wet wiped using damp rags to remove any visible dust or debris.
3. Place the damp cloths into 200µm thick plastic asbestos waste bags.
4. Seal all asbestos waste bags with duct tape and place each into a second bag and seal.

5. Plastic and any debris removed in the decontamination process is to be wrapped and sealed with duct tape and is to be transferred to transport vehicles ready for disposal.

If tools or equipment are unable to be decontaminated or are to be reused in another asbestos removal area the following procedure will apply:

1. Tools to be tagged to indicate asbestos contamination.
2. Tools are to be double bagged & sealed in 200µm thick plastic asbestos bags before being removed from the asbestos removal area
3. The bags containing the tools must remain sealed until the commencement of the next asbestos removal task.
4. PPE must be worn when opening sealed bags and bags shall only be opened in a controlled environment
5. If not appropriate to decontaminate tools, dispose of the bagged tools as asbestos waste.

18.4. Personal Decontamination – Decontamination Unit (Specific Friable works)

For Friable asbestos removal works where an enclosure and decontamination unit are used, the following decontamination procedures will be used from commencement of asbestos removal work until asbestos clearance notification has been given:

1. Remove any obvious signs of asbestos residue from protective clothing in the asbestos removal area immediately prior to entering the decontamination unit. An approved vacuum cleaner (HEPA) will be used in this procedure. Remove gum boots and leave inside the asbestos removal area adjacent to the decontamination unit.
2. Shower in the first section of the decontamination unit whilst wearing the protective equipment and the respirator. Remove protective clothing and place into the waste bags provided;
3. leaving the respirator on, pass through the airlock into the next section of decontamination unit.
4. Remove the respirator after commencing to shower in this section of the decontamination unit. Special attention is required to cleaning hands, fingernails, face, body hair, head and the respirator.
5. Pass through into the clean change area, where clean work clothes can be put on. Store the respirator in a suitable container which will facilitate drying.

For persons entering or re-entering the asbestos removal area the procedure is as follows:

1. Change out of street clothing or clean work clothes in the clean change area.
2. Change into protective clothing and fit the respirator. Check that the respirator is working properly and that there is a good facial seal.
3. Pass through the decontamination unit into the asbestos removal area where work boots shall be fitted, ensuring coveralls pass over the top of the work boots.

18.5. Personal Decontamination – Dry Decontamination (Non-Friable works and specific Friable works)

For persons leaving the non-friable asbestos removal area (and for removal of specific Friable ACM), the following decontamination procedures will be used from commencement of asbestos removal work until asbestos clearance notification has been given:

1. Remove any visible asbestos dust/residue from protective clothing including RPE using an approved HEPA filtered vacuum or wiping down with damp cloths. Do not reuse or re-soak damp cloths.
2. Place used cloths into 200µm thick asbestos waste bags.
3. Take off disposable coveralls, eyewear and gloves, and place into 200µm thick asbestos waste bags. (PPE must still be worn
4. Use damp cloths to wipe down footwear and place used cloths into 200µm thick asbestos waste bags.
5. Seal all asbestos waste bags with duct tape and place each into a second bag
6. Seal this second bag and label/mark as ‘Asbestos Waste’.

7. Remove non-disposable PPE and place in container labelled as containing Asbestos.
8. Remove RPE filters and place into 200µm thick asbestos waste bags.
9. Remove half face RPE and place into protective plastic case for later re-use.
10. Use damp rags to wipe external surfaces of the disposable bags to remove any dust before it is removed from the asbestos removal area
11. Place the damp cloth into disposable bags.
12. Disposable PPE is to be treated as asbestos waste and taken to bulk bin for disposal.

19.0. ASBESTOS WASTE

19.1. Asbestos Waste Bags

Asbestos waste bags shall be new, heavy duty polyethylene bags minimum 200 µm thickness, that are no more than 1200 mm long and 900 mm wide to prevent manual handling injuries. When sealing the bags, they must be twisted tightly, the neck folded over and then secured with adhesive (cloth or duct) tape (goose-necking).

To minimise the risk of a bag tearing or splitting and to assist in manual handling, asbestos waste bags should not be filled more than half full and excess air should be gently evacuated from the waste bag in a way that does not cause the release of dust.

The bags should be labelled in accordance with the Globally Harmonized System of Classification and Labelling of Chemicals, 7th revised edition (GHS) to indicate they contain asbestos and that dust creation and inhalation should be avoided.

19.2. Polyethylene sheeting for containing asbestos waste

When using polyethylene sheeting to wrap ACM, the polyethylene sheeting must be new and minimum 200 µm thickness. Adhesive (cloth or duct) tape must be applied to the entire length of every overlap to secure the bundles and minimise the risk of the polyethylene sheeting tearing or splitting.

19.3. Labels for waste containers and drums

All containers containing a ACM must comply with labelling elements of the GHS. Waste drums or bins should be lined with heavy duty polyethylene sheeting (minimum 200 µm thickness), and labels warning of the asbestos waste should be placed on the top and side of each drum or bin with the words, 'Danger: Asbestos Do not break seal' or a similar warning.

19.4. Packaging of ACM Waste

ACM Waste is progressively packaged for loadout as it is removed in a number of methods as follows:

- Wrapped and sealed in 200µm polyethylene sheet (or placed in an asbestos waste bag and sealed) and then placed in an asbestos waste Bulka Bag (HAZIBAG) and sealed.
- Wrapped and sealed in 200µm polyethylene sheet (or placed in an asbestos waste bag and sealed) and then placed into an open top IBC and sealed (IBC top removed, single bagged ACM placed inside, top replaced and sealed with tape) – IBC to be inspected prior to use and any debris inside removed.
- Double wrapped and sealed in 200µm polyethylene sheet and placed on a pallet
- Placed in asbestos waste bags and sealed and then placed in another asbestos waste bag and sealed and secured onto pallets.
- Wrapped and sealed in 200µm polyethylene sheet (or placed in an asbestos waste bag and sealed) and then placed into polyethylene sheet lined skip and sealed.
- Wrapped and sealed in 200µm polyethylene sheet (or placed in an asbestos waste bag and sealed) and then placed into a metal drum and sealed.
- Place directly into a skip bin lined with 2 x layers of 200µm polyethylene sheet, and once the bin is full, the sheets are individually folded over and sealed to wrap the ACM waste.
- Using a pre-lined Bulka Bag (HAZIBAG), an additional layer of 200µm polyethylene sheet is placed inside, and the ACM material is placed directly into the bag.
- lined with 2 x layers of 200µm polyethylene sheet, and once the bin is full, the sheets are individually folded over and sealed to wrap the ACM waste.

Note: Palletised packaged asbestos waste and containers with asbestos waste must have labels on the top and side of package / container warning of the asbestos waste with the words 'Danger: Asbestos Do not break seal' or a similar warning.

19.5. Offsite transport, disposal & tracking of packaged ACM waste

Where ACM waste is disposed of offsite, the waste shall be transported by a company holding a NSW EPA Environmental Protection License (EPL) for Transport of Category 1 trackable waste and disposed of at a facility with an appropriate EPL to receive the waste.

The waste shall be tracked and reported to the EPA using KPMG Origins Integrated Waste Tracking Solution (IWTS) which is a digital tool that enables waste consignors, transporters and receivers to track and report on the transport of hazardous and regulated waste.

19.6. Onsite transport, temporary storage, disposal & tracking of packaged ACM waste

19.6.1. Onsite temporary storage and disposal

The State Significant Development (SSD) for the demolition (including hazardous materials removal) of the Liddell Power Station includes for the construction of an onsite asbestos containment cell to dispose of all ACM waste from the works.

For asbestos removal works undertaken prior to the construction of the onsite asbestos containment cell, the ACM waste that is not disposed of offsite is temporarily stored onsite in the former Stores Warehouse until the onsite asbestos containment cell is available to facilitate permanent disposal.

Once the onsite asbestos containment cell has been constructed, all asbestos waste that has been placed in the former Stores Warehouse for temporary storage will be transported for permanent disposal in the onsite asbestos containment cell and all new asbestos generated will be transported directly to the onsite asbestos containment cell for permanent disposal.

19.6.2. Tracking of onsite packaged ACM waste

For packaged ACM waste being stored temporarily in the Stores Warehouse, a material tracking system shall be implemented to track the packaged ACM waste from source location into temporary storage at the Stores Warehouse, with a material tracking register set up and progressively populated throughout asbestos removal works with the following minimum detail:

- Work Area from which asbestos originated (Start Location)
- Package type (e.g. pallet, skip, IBC etc)
- Number of packages
- Destination (Stores Warehouse)

For packaged ACM waste that is stored in the Stores Warehouse being transported to the onsite asbestos containment cell, a material tracking system shall be implemented to track the packaged ACM waste from the Stores Warehouse to the onsite asbestos containment cell. A Material Tracking Register shall be set up and progressively populated throughout asbestos removal works with the following minimum detail:

- Work Area from which asbestos originated (Stores Warehouse)
- Package type (e.g. pallet, skip, IBC etc)
- Number of packages
- Destination (Onsite Asbestos Containment Cell)

For packaged ACM waste being taken directly to the onsite asbestos containment cell, a material tracking system shall be implemented to track the packaged ACM waste from source location to the onsite asbestos containment cell, with a material tracking register set up and progressively populated throughout asbestos removal works with the following minimum detail:

- Work Area from which asbestos originated (Start Location)
- Package type (e.g. pallet, skip, IBC etc)

- Number of packages
- Destination (Onsite Asbestos Containment Cell)

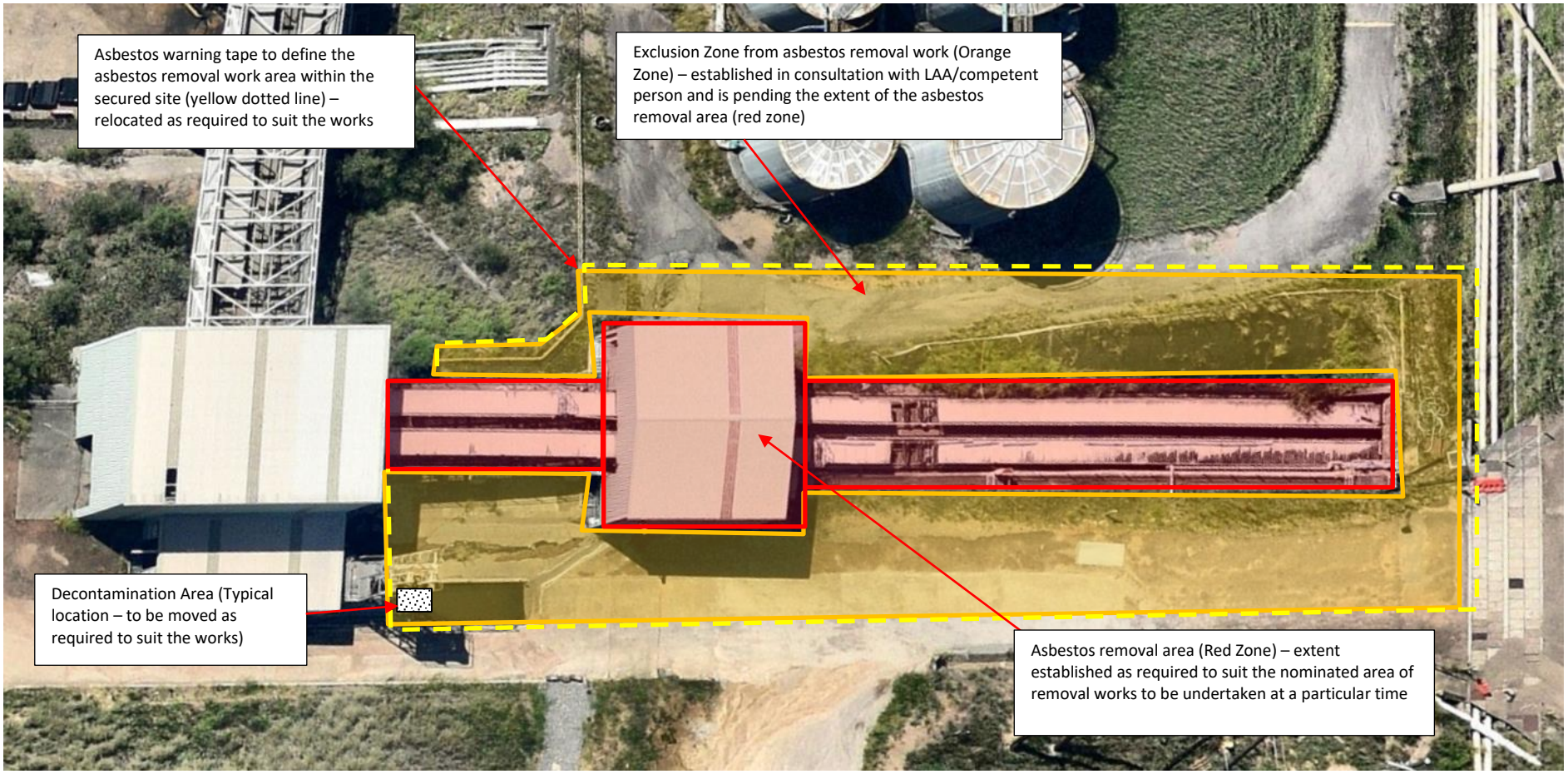
19.6.3. Onsite transport of packaged ACM waste

- Packaged ACM waste transported from the respective asbestos removal areas to the Stores Warehouse shall be undertaken by a combination of truck (flatbed, bin truck, etc), manitou, forklift, etc (small plant), using the existing roadways within the site and communicated at the daily pre-start meetings;
- Packaged ACM waste disposed of either directly from the respective asbestos removal areas or from the Stores Warehouse, and taken to the onsite asbestos containment cell, shall be transported using tipper trucks, and will use the existing roadways within the site and communicated at the daily pre-start meetings;

20.0. SITE SPECIFIC ACM REMOVAL

20.1. Typical Site Setup Plan for Asbestos Removal Works

The following marked up site plan provides a typical setup to be established at each asbestos removal area around the site:



**Note: Dry or Wet decontamination areas are established as required in consultation with an LAA / competent person*

**Note: Setup of Negative air units where required are established in consultation with an LAA*

**Note: Specific setup for each asbestos removal work area to be identified within the SWMS or the Demolition Work Method Statement for the work*

20.2. Site Establishment & Asbestos Removal Area Set Up

The following applies for each asbestos removal area established around the site:

- Ensure all parties have been notified of the commencement of works in the area.
- Ensure that all access-ways are sealed to prevent unauthorised access
- All personnel are to attend the site induction.
- Safe Work Method Statements will be discussed, agreed on and amended if necessary, in conjunction with the workers, the project manager and the asbestos supervisor prior to the commencement of any asbestos materials removal.
- All tools and equipment are to be tested by a qualified tradesperson to confirm that they are in working order.
- Adequate water and power supplies are to be available prior to the commencement of any work.
- Establish boundaries and erect asbestos signs around the asbestos removal area and the work site boundary (red and orange zones). Exclusion zone limits (orange area) will be determined in consultation with the LAA (Class A) or Competent Person (Class B) – Note: Areas may be adjusted as required to suit the works (e.g. may only be removing ACM to one individual building and would only setup around that building and not the whole area as detailed on the site setup plans).
- The signs shall conform to the AS1319 – Safety Signs for the Occupational Environment.
- Check that water is available to the asbestos removal area.
- Ensure that there is a sign-off in place confirming that all live service has been terminated in the asbestos removal area.
- For all ACM removal works where a dry Decontamination process will be implemented (refer to section 18 above) , a Dry Decontamination area will be established immediately adjacent to and directly connected to the asbestos removal area which may be relocated as required to suit the works (note: this applies to some materials that defined as Friable asbestos but do not require an enclosure or wet decontamination).
- For all ACM removal works where a Wet Decontamination process will be implemented (refer to section 17 and 18 above):
    a. A containment will be constructed around the specific asbestos removal work area using 200µm polyethylene sheet
    b. Negative pressure units (NPUs) will be attached to the containment to ensure that negative pressure of approx. 12 Pa (water gauge) is maintained throughout the asbestos removal work area.
    c. The negative pressure units will remain in use throughout the asbestos removal works.
    d. The LAA will inspect the containment and carry out a smoke test before works are allowed to commence.

20.3. Plant decontamination

- Prior to removing any plant from the asbestos removal zone to a clean area, the plant is to be washed or wiped down as required.
- Where washing down plant, a specific washdown area will be established with geofabric material on the ground from which to wash the plant on, with any geofabric material used to be disposed of as asbestos waste.
- Subject to a clearance inspection by the LAA (Class A) or Competent Person (Class B), the plant can be removed from the asbestos work area into a clean area.
- Plant may be transferred from one asbestos work area to an adjacent asbestos work area so long as it does not traverse through a clean area.

20.4. Clearance inspection & certificate

- Once the ACM removal work is complete, the area will be independently inspected by the LAA (Class A) or Competent Person (Class B).

- Once notified by the LAA (Class A) or Competent Person (Class B), the exclusion zones will be removed.
- All material used to construct the exclusion zones will be disposed of as asbestos waste or for non-porous materials, inspected by the LAA (Class A) or Competent Person (Class B) and a clearance certificate issued prior to reuse.
- The area will then be handed back to the client (CMA Contracting)

20.5. ACM Removal Methods

The different types of ACM and the associated removal methods that are covered by this ARCP are progressively added to "Annexure A – ACM Removal Methods", which workers involved in the ACM removal work shall be inducted into prior to commencing the removal work.

"Annexure A – ACM Removal Methods" is progressively updated to cover the removal of the specific type of ACM prior to commencing its removal or when there is a change in methodology.

For each update to "Annexure A – ACM Removal Methods", workers associated with the ACM removal work shall be inducted into the new revision of the Annexure prior to commencing the removal work.

Appendices

Appendix A - HEPA Vacuum Maintenance Procedure

Purpose and Scope

To ensure that the correct method and process is used when emptying and maintaining the HEPA vacuum.

Responsibility

- The Operations / HESQ Manager ensures the relevant staff shall be trained in this process.
- The Operations / HSEQ Manager and nominated staff shall ensure timely corrective action of any non- conformance.

References

- Change Management Procedure.
- Control of non-conformance procedure.
- Records.

Procedure

This procedure outlines the maintenance plan for the HEPA Vacuum both after finishing work and replacement of bags and filters when required.

All work shall be undertaken within full friable negative air pressure enclosure conditions when used for friable work.

On Completion of Works

The dirt tank must be emptied at the end of each use. The method used for completing the task is

1. Remove the upper section of the cleaner from the dirt tank.
2. Using one hand take hold of the dirt tank underneath and tip out the dirt into an approved Asbestos Labelled Bag.
3. Dispose of the waste as per the legal regulations.
4. Clean the rim of the tank before refitting the upper section of the cleaner.
5. Clean the inlet fitting and hose collar before reinserting the suction hose.

Maintenance

When required the waste bag can be replaced using the following method:

1. Open the retaining clamps and remove the upper section of the cleaner from the dirt tank.
2. Carefully remove the waste bag connection from the inlet fitting.
3. Close the waste bag connection with the slid located on the side of the bag.
4. Close the waste bag using the cable binder.
5. Dispose of the dirt in accordance with legal requirements.
6. Insert a new filter bag into the clean tank.

The safety filter bag can be replaced when required using the following method. During execution of this part of the maintenance wear a P3 breathing mask and ensure that dust is not spread around unnecessarily

1. Clean the filter element
2. Only perform this type of maintenance after waiting a minimum of five minutes for all dust to settle
3. Open the retaining clamps and remove the upper section of the cleaner from the dirt tank
4. Remove the filter bag connection from the inlet fitting
5. Close the safety filter bag connection with the slide
6. Remove the plastic sleeve from the tank rim and close it using the cable binder
7. Remove the safety filter bag from the tank and dispose of it in accordance with legal regulations

8. Insert a new safety filter bag into the tank making sure the filter bag connection is pressed on the inlet fitting as far as possible

Replacement of the filter element can be executed using the following process, During performance of this part of the maintenance wear a P3 breathing mask and ensure the dust is not spread around unnecessarily

1. Clean the filter element
2. Only perform this type of maintenance after waiting a minimum of five minutes for all dust to settle
3. Open the retaining Clamps and remove the upper section of the cleaner from the dirt tank, lay the upper section of the cleaner down with the filter element facing upwards
4. Using the tool supplied turn the filter holder anti clockwise and remove it
5. Place the protect filter bag over the element
6. Carefully remove the filter element and close the protective filter bag with a knot
7. Clean the filter seal, check it for damage and replace it if necessary
8. Check the anti-static clamp for damage and if damaged send to the manufacturer for replacement
9. Fit a new filter element
10. Check that the float work correctly (When the filter holder is turned, the float inside must move freely)
11. Using the tool supplied turn the filter holder clockwise and lock it
12. Dispose of the used filter element in accordance with legal regulations

4.4 Control of Non-Conformance

a) Any non-conformance or incidents will be recorded on an IR and dealt with according to the Change Management Procedure.

5.0 Records

a) Inspection Checklist, Maintained by the Operations/ HSEQ Manager (Held 3 Years)
b) Improvement Request, Refer Change management procedure

Appendix B – Delta Friable Asbestos Licence

NSW GOVERNMENT

SafeWork

Friable Asbestos Removal Licence

Issued under *Work Health and Safety Regulations 2017 (NSW)*.

This licence is not transferable.

Licence:	AD211811		
Licence period:	From: 07/02/2014	To:	06/02/2029
Licence holder name:	Delta Pty Ltd		
Licence Type:	Friable Asbestos Removal Licence		
Duration:	5 Years		
ABN	67007069794		

Description of the work that can be undertaken under this licence:

1.All friable asbestos removal work
2.All non-friable asbestos removal work

Licence Holder Obligations

A supervisor must be present at the site whenever licensed friable asbestos removal work is being carried out and readily available to attend the site when licensed non friable asbestos removal work is carried out.
This licence must be available for inspections at all times.
All licensed asbestos removal work is to be notified to SafeWork NSW at least five days prior to the work commencing.
The licence holder must notify SafeWork NSW in writing of any changes to the licence or supervisor details within 14 days.

Locked Bag 2906, Lisarow NSW 2252 | 13 10 50 | safework.nsw.gov.au | ABN 81 913 830 179

Appendix C- Asbestos Register

The asbestos register for the Liddell Power Station demolition works is an online register that has been prepared and maintained by Prensa and is updated following any material sampling from the site:

- https://liddellps.prensa.com.au

Appendix D - Acceptance of ARCP

This ARCP has been developed and viewed in consultation with the workers and it is read and signed by all persons involved in the plan. If a variation occurs to this ARCP, then management will communicate and re-induct the change to the work group whilst adjusting the work method methodology accordingly.

I hereby confirm that I have read and understand this ARCP and I will ensure my work process is completed accordingly.

Inductor Name:			
Position:			
Inductee Name	Company/Title	Signature	Date

DELTA GROUP

Inductee Name	Company/Title	Signature	Date

Inductee Name	Company/Title	Signature	Date

ASBESTOS REMOVAL CONTROL PLAN
LIDDELL POWER STATION
(WHOLE OF SITE)
ANNEXURE A - ACM REMOVAL METHODS

Delta Pty Limited ABN: 67 007 069 794

Head Office: 577 Plummer Street, Port Melbourne,
Victoria, Australia. 3207
Telephone– +61 3 9 646 8277

"Safety is no accident!"

Project Name	Liddell Power Station Demolition Project		
Client Name	AGLM		
Project Address	Liddell Power Station, New England Highway, Muswellbrook NSW 2333		
Project Description/ Scope	Liddell Power Station – Removal of Asbestos from Lidell Power Station (Whole of Site)		
Document Number	C0269-LPS-WOP-P-Asbestos Removal Control Plan (Whole of Site) Annexure A-LPS		
Prepared By	Todd Solomon	Signature:	Date: 25/03/2025
Authorised By	Aaron Britt	Signature:	Date: 25/03/2025
Project Manager	Ruan Zaayman	Signature:	Date: 25/03/2025

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APPENDIX A - ACCEPTANCE OF ANNEXURE A – ACM REMOVAL METHODS **30**

DISCLAIMER

This document has been developed to assist Delta Pty Ltd and any related entities to better understand and manage quality issues in the workplace. While every effort has been made to ensure the accuracy of the material in this document, this publication is not meant to substitute for the legislation. For the specific requirements on an issue covered in this document, persons should refer directly to the relevant legislation in their location.

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REVISION REGISTER

REV	DATE	DESCRIPTION OF CHANGE	PAGE/S	REVIEWED BY	APPROVED BY
0	25/03/2025	Document prepared for Whole of Project – supersedes all previous ARCP's for CDC works	All	RZ	TS

1.0. INTRODUCTION

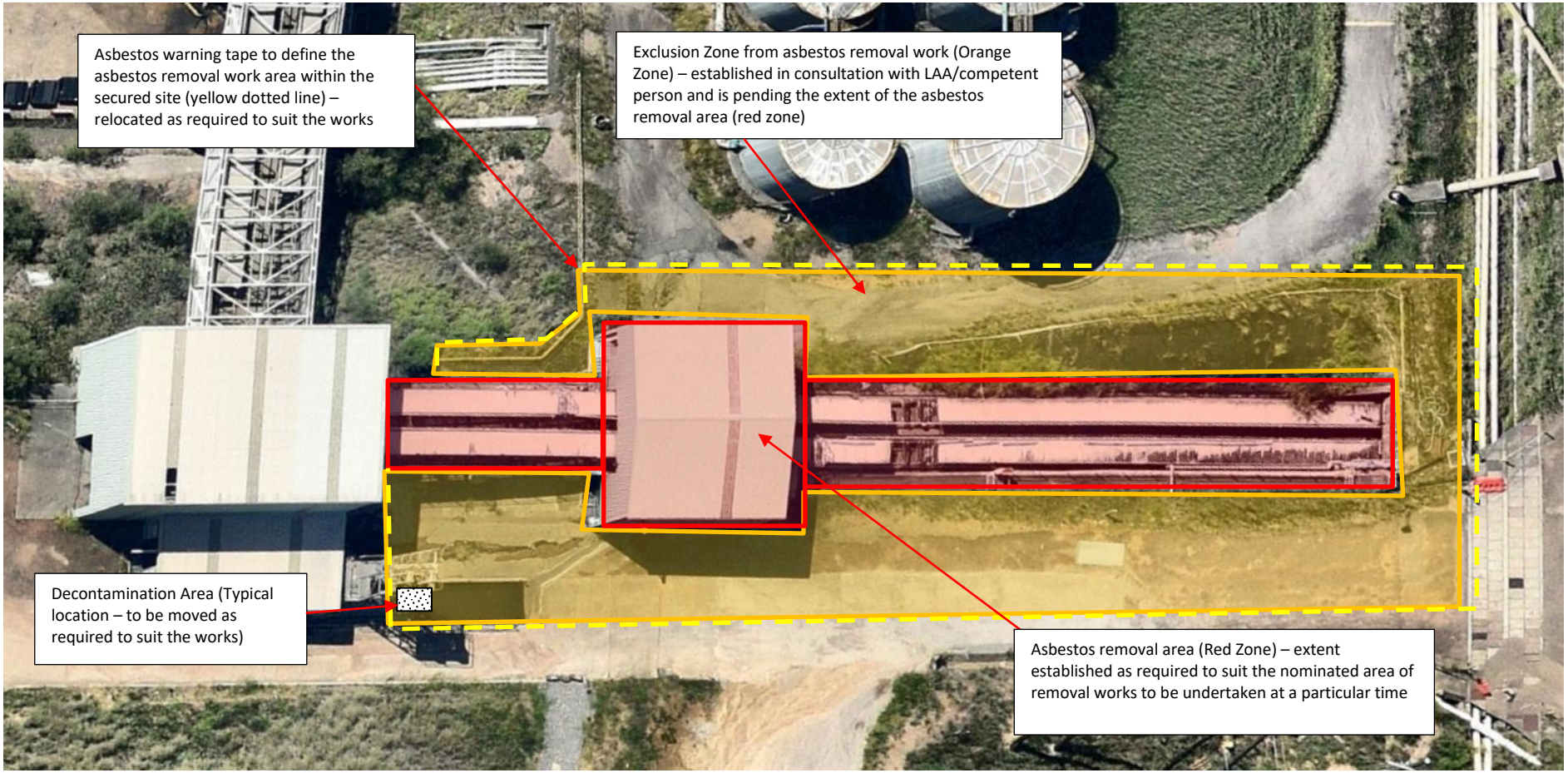
This document is an Annexure to the Asbestos Removal Control Plan *(CMA document C0269-LPS-WOP-P-Asbestos Removal Control Plan-LPS Rev 00)* and details the removal methods of the different types of Asbestos Containing Material (ACM) that are covered by this ARCP.

This Annexure shall be progressively updated to cover the removal of the specific type of ACM prior to commencing its removal or when there is a change in methodology.

For each update to this Annexure, workers associated with the ACM removal work shall be inducted into the new revision prior to commencing the removal work.

2.0. TYPICAL SITE SETUP PLAN FOR ASBESTOS REMOVAL WORKS

The following marked up site plan provides a typical setup to be established at each asbestos removal area around the site:



**Note: Dry or Wet decontamination areas are established as required in consultation with an LAA / competent person*

**Note: Setup of Negative air units where required are established in consultation with an LAA*

**Note: Specific setup for each asbestos removal work area to be identified within the SWMS or the Demolition Work Method Statement for the work*

3.0. ACM REMOVAL METHODS

3.1. Rope seal to electrical switch (Friable)

Example: Nilsen Switch with asbestos rope seal

- Dry decontamination process to be used (refer to section 18 of the ARCP).
- High areas are accessed via a combination of scissor lift, EWP, mobile scaffold or platform ladder.
- Where Friable woven material is visible, PVA Glue is sprayed over the exposed surface to seal the material.
- The switches are removed whole (with Friable ACM intact) by a combination of removing fixings by hand or using hand tools to separate switch from the wall.
- As the switches are removed, they are progressively packaged for loadout.
- Using a HEPA vacuum, the remaining structure and surrounding ground to the removal area is vacuumed to remove any remaining fibres.

3.2. Fuse Packing (Friable)

Example: Fuses in electrical board with friable fuse packing

- Dry decontamination process to be used (refer to section 18 of the ARCP).
- Friable Asbestos containing fuses will be removed by hand in whole units from their sockets to eliminate the risk of the release of asbestos fibres.
- As the fuses are removed, they are placed into 200µm plastic asbestos waste bags and sealed once the bag is to capacity, and progressively packaged for loadout.
- Using a HEPA vacuum, the remaining structure and surrounding ground to the removal area is vacuumed to remove any remaining fibres.

3.3. Arc Shields within electrical box (Non-Friable)

Example: Electrical arc shield within electrical box in transformer

- Dry decontamination process to be used (refer to section 18 of the ARCP).
- Where Arc Shields are identified as present inside electrical boxes, they are assumed to be Non-Friable ACM.
- The electric boxes are removed whole (with Non-Friable ARC shields intact) by hand by removing fixings using hand tools and packaged for loadout.
- Using a HEPA vacuum, the remaining structure and surrounding ground to the removal area is vacuumed to remove any remaining fibres.

3.4. Friction pads (Non-Friable)

Example: Friction pads in conveyor motors

Example: Friction pads in elevator motors

- Dry decontamination process to be used (refer to section 18 of the ARCP).
- Asbestos containing friction pads are removed by hand by unbolting the brakes to expose the pads and then removing the pads in whole units.
- As the pads are removed, they are placed into 200µm plastic asbestos waste bags and sealed once the bag is to capacity, and progressively packaged for loadout.
- Using a HEPA vacuum, the remaining structure and surrounding horizontal surfaces below the removal area is vacuumed to remove any remaining fibres.

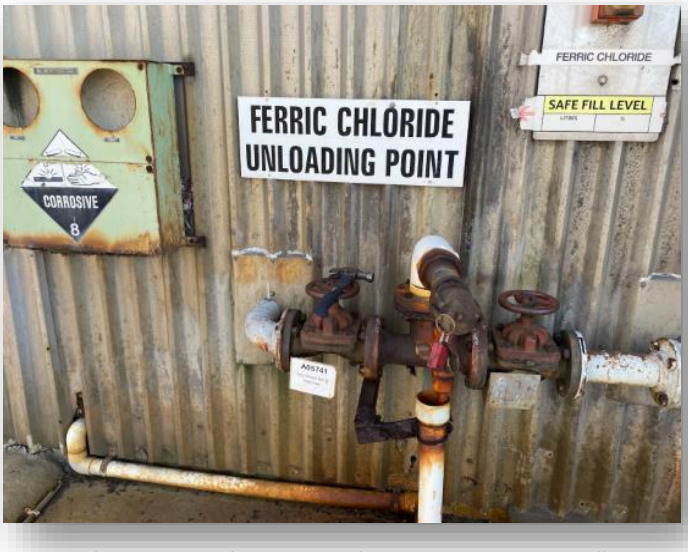
3.5. Asbestos Cement Pipes – Dust Lines (Non-Friable)

Example: Asbestos Cement Pipes – Ash & Dust Lines

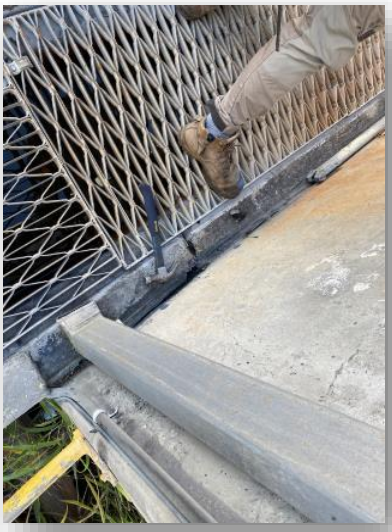
- Prior to commencing the pipe removal work, the removal area is inspected by the LAA / competent person to review potential historical ground contamination. If historical ground contamination is identified, AGLM is notified for direction on how to proceed.
- Dry decontamination process to be used (refer to section 18).
- The pipe is separated into manageable sized sections by either of the following options:
  - **a. Option 1:**
    - Removing the existing steel clamps by oxy cutting or grinding the fixing on the clamps and then removing the clamp by hand using hand tools
      - Workers to wear Powered Air Purifying Respirator (PAPR)
      - Water mist spray to be used during the cutting works
      - Fire blanket to be positioned beneath the pipe and under the clamp being cut
      - On completion of the cutting works, fire blanket to be vacuumed with a HEPA Vac to remove any potential released asbestos
    - The section of pipe being removed is pulled apart at joints using an excavator with grab attachment or slinging the sections to be removed to the excavator, lifting the sections out of position and minimising breakage.
  - **b. Option 2:**
    - Breaking the pipe at the required separation point using an excavator with grab attachment:
      - At the breaking point, the pipe is wrapped with plastic
      - Excavator breaks the pipe within the plastic wrapped section
    - Plastic wrapping is pulled apart and section of pipe being removed lifted out using an excavator with grab attachment or slinging the section to be removed to the excavator and lifting out of position and minimising breakage
    - Any residual pieces of asbestos that are freed during the breaking of the pipe to be wrapped in the plastic and packaged for loadout.

- As the sections of pipe are removed, they are placed directly into a skip bin lined with 2 x layers of 200µm polyethylene sheet, and once the bin is full, the sheets are individually folded over and sealed to wrap the ACM waste ready for loadout.
- During the pipe removal process, water mist spray is used to wet down sections being removed to minimise the creation of dust and the release of fibres. Aim to achieve maximum saturation with minimum run-off to minimise any subsequent clean-up and slip hazards.
- On completion of the pipe removal work, any requirement for soil scrape will be determined by the LAA / competent person and will generally be required in the following circumstances, and generally limited to the immediate vicinity of any breakage (~50mm scrape will likely be sufficient for the majority of circumstances and ~1m surrounding the location of the breakage):
    a. Damaged sections are identified prior to removal
    b. Pipe is damaged during removal and not contained within plastic wrapping
    c. Encapsulating plastic proves ineffective during breaking of pipes
- During the soil removal, a mist spray is used to wet down the material to minimise the creation of dust and the release of fibres.
- All ground sheets are sprayed with PVA and disposed of as ACM waste.

3.6. Mastic sealant (Non-Friable)



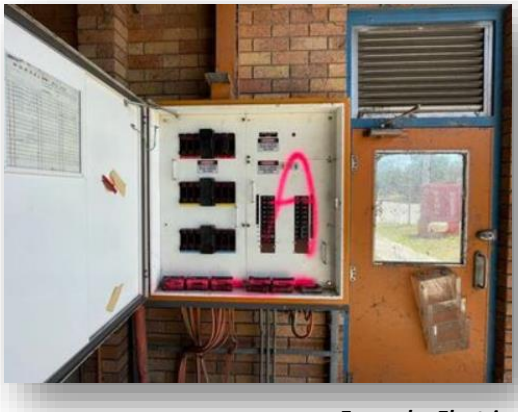
Example: Mastic sealant – around pipe penetration in wall



Example: Mastic sealant – Between pathway and wall of building

- Dry decontamination process to be used (refer to section 18 of the ARCP).
- High areas are accessed via a combination of scissor lift, EWP, mobile scaffold or platform ladder.
- ACM mastic between path and walls is progressively removed by hand using hand tools (scrapers etc) and progressively packaged for loadout.
- ACM mastic to pipe penetrations in walls is either progressively removed by hand using hand tools (scrapers etc) or sections of the wall around the mastic is removed by cutting using hand tools, and progressively packaged for loadout.
- A chemical solvent (e.g. Orange-Sol) may be used to soften the material to make it easier to remove.
- During the removal process, water mist spray is used to wet down ACM being removed to minimize the creation of dust and the release of fibres. Aim to achieve maximum saturation with minimum run-off to minimise any subsequent clean-up and slip hazards.
- Using a HEPA vacuum, the remaining structure and surrounding ground to the removal area is vacuumed to remove any remaining fibres.

3.7. Electrical backing boards (switchboard)



Example: Electrical backing boards throughout

- Dry decontamination process to be used (refer to section 18 of the ARCP).
- Where possible, electrical backing boards are removed whole by hand using hand tools, removing fixings as required to minimise any breakage.
- As the boards are removed they are progressively packaged for loadout.
- Using a HEPA vacuum, the remaining structure and surrounding ground to the removal area is vacuumed to remove any remaining fibres.

3.8. Asbestos Fire Doors (Friable)

Example: Fire Doors

- Dry decontamination process to be used (refer to section 18 of the ARCP)
- The doors are removed whole by removing fixings by hand using hand tools (e.g. unscrew hinges, knock out hinge bolt etc), leaving all door hardware in place so as not to expose the internal ACM.
- As the doors are removed, they are progressively packaged for loadout.
- Using a HEPA vacuum, the remaining structure and surrounding ground to the removal area is vacuumed to remove any remaining fibres.
- Note: Should any internal ACM to the door be exposed, PVA to be sprayed on exposed area and the area taped up to cover the exposure prior to removing door.

3.9. Asbestos Containing Sprayed Vermiculite to Ceiling (Friable)

Example: Asbestos Containing Sprayed Vermiculite to ceiling

- All loose items (e.g. lockers, clothing, general rubbish etc.) will be stripped and removed prior to commencing any asbestos removal works.
- Wet decontamination process to be used (refer to section 17 and 18 of the ARCP), with enclosure setup to be in consultation with an LAA (refer to section 17 and 18 of the ARCP).
- Access to undertaker the removal work is via mobile scaffolds or platform ladders.
- The ceiling material (Gyproc or asbestos cement sheet) with vermiculite intact is removed in sections by hand using hand tools in as large a section as manageable/possible, minimising breakage, and progressively lowered to the ground for packaging and loadout, with any glue remaining on structural elements to be removed by scraping using hand tools or the elements being removed as asbestos waste.
- During the removal process, water mist spray is used to wet down sections being removed to minimize the creation of dust and the release of fibres. Aim to achieve maximum saturation with minimum run-off to minimise any subsequent clean-up and slip hazards.
- As the material is removed, it is wrapped in 200µm polyethylene sheet and sealed and placed in a designated area within the enclosure.
- On completion of the removal works, the both the wrapped material and the polyethylene sheet forming the enclosure vacuumed using a HEPA Vacuum, wet wiped, and then sprayed with PVA to seal any remaining fibres.
- On direction from the LAA that the enclosure can be removed, the enclosure is stripped and the enclosure material along with the wrapped ACM waste is packaged for loadout.

3.10. Bituminous lining (sink, urinal)

Example: Bituminous material under sink

- Dry decontamination process to be used (refer to section 18 of the ARCP).
- The bituminous material is removed by hand using small hand tools including chisels, knives, scrapers, wire brushes etc. to remove the materials carefully from the substrate, ensuring that it is always kept wet down to minimise the release of fibres.
- A chemical solvent (e.g. Orange-Sol) may be used to soften the material to make it easier to remove.
- As the material is removed, it is progressively packaged for loadout.
- Using a HEPA vacuum, the remaining structure and surrounding ground to the removal area is vacuumed to remove any remaining fibres.

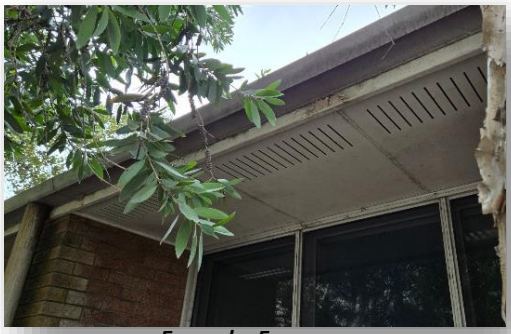
3.11. Mastic sealant - ceiling (Non-Friable)

Example: Mastic sealant at corner of ceiling

- Asbestos containing mastic ceiling sealant exists where there is vermiculite ceilings present, and as such will be removed as part of the vermiculite removal process (refer above). Timber corner trims will be removed in whole with hand tools and packaged for loadout.
- Where mastic is identified elsewhere (i.e. not attached to ACM ceiling material), the following method is undertaken:
    1. Dry decontamination process to be used (refer to section 18 of the ARCP).
    2. Access to high areas will be via EWP, mobile scaffolds, or platform ladders as required.
    3. The mastic material is removed by hand using small hand tools including chisels, knives, scrapers, wire brushes etc. to remove the materials carefully from the substrate, ensuring that it is always kept wet down to minimise the release of fibres.
    4. As the material is removed, it is progressively packaged for loadout.
    5. Using a HEPA vacuum, the remaining structure and surrounding ground to the removal area is vacuumed to remove any remaining fibres.

3.12. Fibre Cement Sheet – Eaves, Walls, Ceilings, Fume hood linings (Non-Friable)

Example: Soffit of awnings



Example: Eaves

Example: Fume hood

Example: Soffit of walkways

- Dry decontamination process to be used (refer to section 18 of the ARCP).
- Where exposed ground is in the vicinity of the removal area, 200 µm plastic will be placed on the ground, acting as a ground sheet (note: ground sheet not required where there is concrete or asphalt).
- High areas are accessed via a combination of scissor lift, EWP, mobile scaffold or platform ladder.
- ACM sheets are progressively removed in sections by hand using hand tools in as large a section as manageable/possible, minimising breakage, and progressively lowered to the ground for packaging and loadout, with any glue remaining on structural elements to be removed by scraping using hand tools or elements removed and disposed of as ACM waste.
- During the removal process, water mist spray is used to wet down sections being removed to minimize the creation of dust and the release of fibres. Aim to achieve maximum saturation with minimum run-off to minimise any subsequent clean-up and slip hazards.
- Using a HEPA vacuum, the remaining structure and surrounding ground to the removal area is vacuumed to remove any remaining fibres.
- All ground sheets are sprayed with PVA and disposed of as ACM waste.

3.13. Fibre Cement Sheet – Wall packer (Non-Friable)

Example: AC Wall packer

- Dry decontamination process to be used (refer to section 18 of the ARCP).
- Where exposed ground is in the vicinity of the removal area, 200 µm plastic will be placed on the ground, acting as a ground sheet (note: ground sheet not required where there is concrete or asphalt).
- High areas are accessed via a combination of scissor lift, EWP, mobile scaffold or platform ladder.
- ACM packers are progressively removed by hand using hand tools, removing surrounding bricks as required for access to the packers, progressively packaging for loadout (any contaminated bricks to be loaded out as ACM waste).
- During the removal process, water mist spray is used to wet down ACM being removed to minimize the creation of dust and the release of fibres. Aim to achieve maximum saturation with minimum run-off to minimise any subsequent clean-up and slip hazards.
- Using a HEPA vacuum, the remaining structure and surrounding ground to the removal area is vacuumed to remove any remaining fibres.
- All ground sheets are sprayed with PVA and disposed of as ACM waste.

3.14. Mastic sealant - ductwork (Non-Friable)

Example: Mastic at joins in ductwork

- Dry decontamination process to be used (refer to section 18 of the ARCP).
- Using a combination of excavator with shear attachment and by hand using hand tools (e.g. reciprocating saw), ductwork sections will be cut and dropped to the ground beneath, accessing high areas using a combination of scissor lift, EWP, mobile scaffold or platform ladder.
- Once on the ground, using a combination of excavator with shear attachment and hand tools (e.g. reciprocating saw) the duct connection joints that contain the asbestos containing mastic are separated from the surrounding ductwork and packaged for loadout.
- Using a HEPA vacuum, the remaining structure and surrounding ground to the removal area is vacuumed to remove any remaining fibres.

3.15. Mastic sealant - doors & window frames (Non-Friable)

Example: Of windows and doors with mastic to windows

- Dry decontamination process to be used (refer to section 18 of the ARCP).
- Where exposed ground is in the vicinity of the removal area, 200 µm plastic will be placed on the ground, acting as a ground sheet (note: ground sheet not required where there is concrete or asphalt).
- Using an excavator with bucket or grab attachment working from outside the buildings, the window/door frame/s are progressively pushed into the building with asbestos containing mastic intact.
- Once on the ground, the resulting material is progressively packaged for loadout, using a combination of skidsteer loader as required to facilitate loading directly into 200µm polyethylene sheet double lined skip bins and by hand.
- Using a HEPA vacuum, the remaining structure and surrounding ground to the removal area is vacuumed to remove any remaining fibres.
- All ground sheets are sprayed with PVA and disposed of as ACM waste.

3.16. Mastic sealant - wall (Non-Friable)

Example: Mastic sealant on the wall (opening edge)

- Dry decontamination process to be used (refer to section 18 of the ARCP).
- High areas are accessed via a combination of scissor lift, EWP, mobile scaffold or platform ladder.
- ACM wall mastic is progressively removed by hand using hand tools (scrapers etc), removing surrounding bricks as required for access to the mastic, progressively packaging for loadout (any contaminated bricks to be loaded out as ACM waste).
- During the removal process, water mist spray is used to wet down ACM being removed to minimize the creation of dust and the release of fibres. Aim to achieve maximum saturation with minimum run-off to minimise any subsequent clean-up and slip hazards.
- Using a HEPA vacuum, the remaining structure and surrounding ground to the removal area is vacuumed to remove any remaining fibres.

3.17. Asbestos Loose Rope (Friable)

Example: Asbestos Rope

- Dry decontamination process to be used (refer to section 18 of the ARCP).
- High areas are accessed via a combination of mobile scaffold or platform ladder.
- The area immediately surrounding the asbestos rope is vacuumed using a HEPA vacuum.
- The exposed rope is sprayed with PVA and unwound from the pipe beneath by hand or with disposable tools, avoiding breakage, and placed directly into an asbestos waste bag and sealed.
- The pipe beneath is sprayed with PVA and removed by hand using hand tools (e.g. reciprocating saw) and packaged for loadout.
- Using a HEPA vacuum, the remaining structure and surrounding ground to the removal area is vacuumed to remove any remaining fibres.

3.18. Asbestos Millboard Insulation – Safes and Strip Heaters (Friable)

Example: Asbestos Millboard insulation to Safe

Example: Asbestos Millboard backing to Strip Heaters

- Dry decontamination process to be used (refer to section 18 of the ARCP).
- High areas are accessed via a combination of mobile scaffold or platform ladder.
- Where ACM millboard is exposed, spray with PVA.
- Safes are removed whole and packaged for loadout, using skidsteer loader as required to lift and move the safe.
- Strip heaters are removed whole using hand tools to separate from the ceiling or wall they are fixed to and packaged for loadout.
- Using a HEPA vacuum, the remaining structure and surrounding ground to the removal area is vacuumed to remove any remaining fibres.

3.19. Asbestos Millboard Insulation –Incinerators (Friable)

Example: Asbestos Millboard to Incinerator

- Dry decontamination process to be used (refer to section 18 of the ARCP).
- The incinerator is removed whole using hand tools to separate from wall they are fixed to and packaged for loadout.
- Where millboard is exposed behind the incinerator, the exposed millboard is sprayed with PVA, the incinerator removed by hand using hand tools and packaged for loadout. The resulting millboard is then removed by hand using hand tools and packaged for loadout.
- Using a HEPA vacuum, the remaining structure and surrounding ground to the removal area is vacuumed to remove any remaining fibres.

3.20. Woven material to electrical switches (Friable)

Example: Electrical switch with Asbestos woven rope

- Dry decontamination process to be used (refer to section 18 of the ARCP).
- High areas are accessed via a combination of scissor lift, EWP, mobile scaffold or platform ladder.
- Where Friable woven material is visible, PVA Glue is sprayed over the exposed surface to seal the material.
- The electric switches are removed whole (with Friable woven ACM intact) by a combination of removing fixings by hand and oxy cutting or using hand tools to separate switch from the support structure as required.
- As the switches are removed, they are progressively packaged for loadout.
- Using a HEPA vacuum, the remaining structure and surrounding ground to the removal area is vacuumed to remove any remaining fibres.

3.21. Gaskets to pipework (Friable & Non-Friable)

Exposed orange pipe (302-7) - Friable

Yellow pipework (301-26) - Friable

Pipework (202-16) – Non-Friable

Gasket Types:

1. Gaskets to pipework between connected flanges to pipes (Non-Friable)
2. Gasket to exposed flange to pipes (Friable)

Removal Procedure – Type 1 Gaskets (Non-Friable)

- Dry decontamination process to be used (refer to section 18 of the ARCP).
- The pipework is separated from the surrounding structure by mechanical demolition or oxy cutting. These works are undertaken under standard demolition practices (not an asbestos removal work area or under asbestos removal conditions) and the materials tracked over by excavator and placed in a designated area (this designated area becomes the asbestos removal work area)
- In the designated asbestos removal work area, the flanges with gaskets in place are separated from the associated pipework by a combination of shearing with excavator and oxy-cutting
- The flanges with gasket in place are then packaged for loadout as asbestos waste
- The remaining pipework is inspected by the LAA/competent person and cleared for loadout as asbestos free material
- Using a HEPA vacuum, the remaining structure and surrounding ground to the removal area is vacuumed to remove any remaining fibres.

Removal Procedure – Type 2 Gaskets (Friable)

- Dry decontamination process to be used (refer to section 18 of the ARCP).
- These works are undertaken under asbestos removal conditions (i.e. asbestos removal work area)
- PVA Glue is sprayed over the exposed gaskets, to seal the gasket.
- The gasket is separated from the pipework by mechanical demolition or oxy cutting.
- The flanges with gasket in place are then packaged for loadout
- Using a HEPA vacuum, the remaining structure and surrounding ground to the removal area is vacuumed to remove any remaining fibres.

Note: Prior to commencing any oxycutting works, the lead content in the paint is assessed. Where the paint contains more than 1% lead by dry weight, the oxy cutting works is defined as a lead process (NSW WHS Reg 2017) and a task specific risk assessment is undertaken by a competant person to determined if the works are classified as lead risk work and the appropriate control measures to be implemented (refer to the Hazardous Materials Removal Plan Section 6.5).

3.22. Bituminous material (Non-Friable)

Metal chamber (302-8)

Removal Procedure:

- Dry decontamination process to be used (refer to section 18 of the ARCP).
- Access to high areas will be via EWP, mobile scaffolds, or platform ladders as required.
- The bituminous material is removed by hand using small hand tools including chisels, knives, scrapers and wire brushes to remove the materials carefully from the substrate, ensuring that it is kept wet down at all time to minimise the release of fibres.
- A chemical solvent (e.g. Orange-Sol) may be used to soften the material to make it easier to remove.
- As the material is removed, it is progressively placed into 200µm plastic asbestos waste bags and sealed once the bag is to capacity, and progressively packaged for transport.

APPENDIX A - ACCEPTANCE OF ANNEXURE A – ACM REMOVAL METHODS

This Annexure to the ARCP has been developed and viewed in consultation with the workers and it is read and signed by all persons involved in the plan. If a variation occurs to this Annexure to the ARCP, then management will communicate and re-induct the change to the work group whilst adjusting the work method methodology accordingly.

I hereby confirm that I have read and understand this Annexure to the ARCP and I will ensure my work process is completed accordingly.

Inductor Name:			
Position:			
Inductee Name	Company/Title	Signature	Date

DELTA GROUP

Inductee Name	Company/Title	Signature	Date

Inductee Name	Company/Title	Signature	Date

APPENDIX D – CONSULTATION

Documents: Asbestos Sub management Plan"
Revision: Rev 00 April 2025
Reviewed: Charissa Pillay April 2025
Schedule

Schedule	**Sufficient (Yes/No/ Partial)**	**Document reference and comment**	**Action Required**	**Company Response**	**DPHI Response**
Schedule 2					
Asbestos disposal facility A6. A maximum of 30,000 cubic metres of asbestos waste, asbestos containing material, synthetic mineral fibre and other associated wastes authorised by the Site auditor, may be disposed of at the asbestos disposal facility, unless otherwise agreed by the Planning Secretary.	Yes	Section 7.14.1 addresses the requirement.	-Nil	-N/A	
B27. Asbestos soils requiring disposal, asbestos containing materials, synthetic mineral fibre and other associated wastes authorised by the Site auditor must be disposed of at the asbestos disposal facility constructed within the Borrow Pit Area identified on Figure 1 in Appendix 1.	No	The sub-plan does not include the requirement.	Include a commitment consistent with condition B27.	Condition B27 is referenced in Table 4 of the DEMP. Condition B27 is addressed in Section 5.14 of the DEMP	
C15. Prior to the commencement of demolition works, a clearance certificate from an occupational hygienist to certify that asbestos containing materials, PBC capacitors, and transformers have been removed before demolition work must be provided to the Department. Any hazardous materials that cannot be removed should be assessed in consultation with SafeWork NSW.	Partial	The requirement and timeframe has not been documented in the plan.	Include the requirement of condition C15	In accordance with NSW legislation, a clearance certificate is not required for PCB Capacitors or transformers and is only required for asbestos containing materials which is addressed in the Asbestos Management Sub	

				Plan (Sections 5.1, 7.3 & 7.6.3 updated to reference C15). *Note: multiple ACM clearance certificates will be progressively issued throughout the course of the works.* It is also not relevant to be referring to PCB's in the AMSP. PCB removal prior to demolition has been addressed in Section 5.10 of the DEMP (updated to address).	
C19. An asbestos management sub-plan must be prepared as part of the demolition environmental management plan. The plan must:					
(a) be prepared in accordance with the SafeWork NSW 2022 Code of practice: How to safely remove asbestos, SafeWork: guidance on managing asbestos in soil, Schedule B2 of the NEPM and any requirements of the Site auditor;	No	There is no clear detail to confirm the sub-plan was prepared	Include the requirement of the condition.	Updated section 3 of the AMSP to fully address requirement	

Documents: Asbestos Sub management Plan"
Revision: Rev 00 April 2025
Reviewed: Charissa Pillay April 2025
Schedule

(b) identify any known or potential areas of concern within the approved development area for asbestos containing materials and synthetic mineral fibre;	Yes	Section 3 and Figure 3 address the condition.	-	N/A	
(c) include: (i) procedures for identifying, handling and disposing of asbestos waste, asbestos containing materials and synthetic mineral fibre;	No	There is no clear detail on who is responsible to identify, and handle asbestos or a clear procedure to address the requirement.	Discuss the procedure to identify, handle and dispose of asbestos.	Already addressed throughout the AMSP: 1) Who is responsible to identify ACM - Section 7.2 (Prensa Asbestos Audit on behalf of CMA) 2) Who is responsible to handle ACM - Section 7.3 (LARC) 3) Procedure to address the requirement - Section 3 (ARCP's)	
(ii) procedures for interim storage of asbestos prior to disposal and disposal of asbestos; and	No	The sub-plan does not discuss a procedure for interim storage of asbestos prior to disposal and disposal of asbestos	Include a procedure for interim storage of asbestos prior to disposal and disposal of asbestos	Covered in section 7.14.2	
(iii) outline the relevant requirements of conditions C1 to C13 for the management of asbestos waste, asbestos containing materials and synthetic mineral fibre.	Yes	Section 6 addresses the requirement	-	N/A	

Documents: Asbestos Sub management Plan"
Revision: Rev 00 April 2025
Reviewed: Charissa Pillay April 2025
Schedule

Asbestos disposal facility C23. The asbestos disposal facility must be designed and constructed in accordance with the relevant requirements of the NSW EPA Environmental Guidelines Solid Waste Landfills (2016), unless otherwise agreed by the Site auditor and the Planning Secretary.	No	The requirement was not included in the sub-plan	Include the requirement of C23	Added Section 7.14.4 Onsite Asbestos Disposal Facility	
C24. A final design for the asbestos disposal facility must be prepared for the development. The design must:	No	The sub-plan does not include requirement.	As above	Added Section 7.14.4 Onsite Asbestos Disposal Facility	
(a) be accompanied by interim audit advice from the Site auditor;	No	There is no information on the final design for the asbestos disposal facility must be prepared for the development	As above	Added Section 7.14.4 Onsite Asbestos Disposal Facility	
(b) be prepared in consultation with the NSW EPA;	No	There is no consultation evidence to support the requirement.	Include evidential records to confirm the requirement.	Added Section 7.14.4 Onsite Asbestos Disposal Facility	
(c) be submitted to the Planning Secretary for approval prior to the commencement of construction of the asbestos disposal facility; and	No	There are no details to confirm if the design submitted to the Planning Secretary for approval prior to the commencement of construction of the asbestos disposal facility	Include the requirement condition	Added Section 7.14.4 Onsite Asbestos Disposal Facility	
(d) be implemented, as approved, by the Planning Secretary.	No	There is no detail to address the condition.	Include a commitment to implement the approved sub-plan	Added Section 7.14.4 Onsite Asbestos Disposal Facility	

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Schedule

C25. A construction quality assurance plan must be prepared for the asbestos disposal facility. The plan must:				Added Section 7.14.4 Onsite Asbestos Disposal Facility	
(a) be provided to the NSW EPA for review prior to the commencement of the construction of the asbestos disposal facility; and	No			Added Section 7.14.4 Onsite Asbestos Disposal Facility	
(b) be prepared in accordance with the relevant requirements of the NSW EPA Environmental Guidelines Solid Waste Landfills (2016)	No			Added Section 7.14.4 Onsite Asbestos Disposal Facility	
Schedule 5	**Sufficient (Yes/No/ Partial)**	**Document reference and comment**	**Action Required**	**Company Response**	
C26. A construction quality assurance report must be prepared for the asbestos disposal facility. The report must: (a) be provided to the NSW EPA for review prior to the commencement of the operation of the asbestos disposal facility; and (b) be prepared in accordance with NSW EPA Environmental Guidelines Solid Waste Landfills (2016).	No	There are no details to address the conditions under C26	Provide a summary to address condition C26.	Added Section 7.14.4 Onsite Asbestos Disposal Facility	
Existing asbestos landfills C27. A verification of the existing asbestos landfills identified in the EIS must be undertaken for the development. The assessment must:				The existing asbestos landfills are not part of Stage 1 and are not relevant to the current Asbestos Management Plan which is a subplan of the demolition environment management plan. The existing asbestos landfills are part of Stage 3 of the works and	

Schedule

				will be covered by separate plans at the appropriate time.	
(a) be prepared: (i) by a suitably qualified and experienced person/s; and	No	There are no details to address the conditions of C27.	Provide a summary to address condition C27.	As above	
(ii) within 2 years of the date of commencement of development under this consent, unless otherwise agreed by the Planning Secretary;	No		See above	As above	
(b) determine the suitability of the existing capping to achieve final closure requirements identified by the NSW EPA;	No		See above	As above	
(c) be accompanied by interim advice from the Site auditor; and	No			As above	
(d) include any recommendations to supplement the existing capping in required by the Site auditor and an implementation plan for the recommendations.	No			As above	
C28. The recommendations required by the Site auditor must be implemented as outlined in the assessment required by condition C27.	No			As above	
Part D					
Compliance Non-compliance notification D4. Within seven days of becoming aware of a non-compliance, the Applicant must notify the Department of the non-compliance. The notification must: (a) be in writing; (b) submitted via the NSW planning portal (Major Projects); (c) identify the development (including the development application number and name); (d) set out the condition of this consent that the development is non-compliant with; (e) why it does not comply; (f) the reasons for the non-compliance (if known); and (g) what actions have been undertaken, or will be	No	The plan does not include the requirement.	Include the requirements of condition D4	Covered by 6.3.1 of the DEMP. Added section 9.1.2 to reflect same.	

undertaken; and when, to address the non-compliance.					
Incident notification D5. The Applicant must notify the Department within 24 hours of becoming aware of an incident. The notification must be made via the NSW planning portal (Major Projects) and address details of the incident including: (a) date, time and location; (b) a brief description of what occurred and why it has been classified as an incident; (c) a description of what immediate steps were taken in relation to the incident; and (d) identifying a contact person for further communication regarding the incident.	Yes	The plan includes the requirement.	-Nil	-N/A	
D6. The Applicant must provide the Department with a subsequent incident report in accordance with Appendix 6 (Incident Notification and Reporting Requirements).	Yes	The plan includes the requirement.	-Nil	N/A-	
General Comments	***Action Required***		***Company Response***	***Company Response (XX/XX/XX)***	
Other Agency Comments	***Action Required***		***Company Response***	***Company Response (XX/XX/XX)***	

Department of Planning, Housing and Infrastructure

Our ref: SSD- 24937520-PA-10

Matthew Parkinson
Manager Environment and Approvals
AGL Macquarie Pty Limited

18/06/2025

Liddell Future Landuse Project – Abestos Management Subplan

Dear Mr. Parkinson

Thank you for submitting the Asbestos Subplan in accordance with Condition C19, Schedule 2 of the consent for the Liddell Future Landuse Project (SSD-24937520-PA-10). I also acknowledge your response to the Department's review comments and request for additional information.

I note the Asbestos Subplan contains the information required by the conditions of approval.

Accordingly, as nominee of the Planning Secretary, I approve the revised Asbestos Subplan (Rev. 01, May 2025).

You are reminded that if there are any inconsistencies between the Subplan and the conditions of approval, the conditions prevail.

Please ensure you make the document publicly available on the project website at the earliest convenience.

If you wish to discuss the matter further, please contact Charissa Pillay on 02 99955944.

Yours sincerely

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

APPENDIX D – SOIL AND WATER MANAGEMENT SUB PLAN

Intended for
AGL Macquarie Pty Ltd

Document type
Report

Date
May 2025

Soil and Water Management Plan

Liddell Power Station Demolition

Bright ideas.
Sustainable change.

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Soil and Water Management Plan

Liddell Power Station Demolition

Project name	**Liddell Power Station Demolition – Soil and Water Management Plan**
Project no.	**318002057**
Recipient	**AGL Macquarie Pty Ltd**
Document type	**Management Plan**
Version	**Final 1.0**
Date	**02/05/2025**
Description	**This document comprises the soil and water management plan to support the demolition the former Liddell Power Station.**

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Revision	Date	Prepared by	Checked by	Approved by	Description
Draft 1.0	07/04/2025	J Connor	K. Greenfield CEnvP SC40104	K. Greenfield CEnvP SC40104	Working Draft for AGLM Review
Draft 2.0	17/04/2025	J Connor	K. Greenfield CEnvP SC40104	K. Greenfield CEnvP SC40104	Working Draft for AGLM Review
Draft 3.0	29/04/2025	J Connor	K. Greenfield CEnvP SC40104	K. Greenfield CEnvP SC40104	Working Draft for AGLM Review
Final 1.0	02/05/2025	J Connor	K. Greenfield CEnvP SC40104	K. Greenfield CEnvP SC40104	Final Version

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ABN 49 095 437 442

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Appendix 1
Trigger Action Response Sub-Plan

Appendix 2
Water Discharge Sub-Plan

Appendix 3
Water Reuse Sub-Plan

Appendix 4
Water Monitoring Sub-Plan

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Glossary

Term	Description
The Development	The Liddell Future Land Use and Enabling Works Project as detailed in the approval applications documents for State Significant Development (SSD) 24937520 (referred to as the 'Development Consent'). An overview of the Development Area is shown in Figure 1-1.
Catchment Areas	This plan is specific to management of soil and water in the following Catchment Areas: • Main Power Block • Coal Handling Plant • Water Intake Pump Station • Hunter Valley Gas Turbines (HVGTs) • Ash Pipeline • M1/M1a Conveyor An overview of the Catchment Areas is shown in Figure 1-2.
Development Stage 1a / 'Demolition Works'	Refers to: • Demolition of Liddell Power Station (LPS) and redundant associated infrastructure. • Demolition of the HVGTs and any associated transmission infrastructure. The demolition of the above include the following Catchment Areas: • Main Power Block • Coal Handling Plant • Water Intake Pump Station • HVGTs • Ash pipeline • M1/M1a Conveyor This plan is specific to Development Stage 1a works, hereby referred to as the 'demolition works'.
Development Stage 1b	Refers to: • Construction and use of asbestos disposal facility containment cells, including access road. • Construction and use of a borrow pit for the extraction of up to 1.5 million m^3 including establishment of the access road and associated water management controls. • Rock crushing associated with Liddell Ash Dam (LAD) capping works

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Term	Description
	• Rerouting of the existing dual water supply pipeline from the Tinkers Creek area along the existing ash pipeline corridor to the LAD to supply water for dust suppression and rehabilitation works.
Development Stage 2	LAD ancillary works to manage surface water including works on the Skimmer Dam.
Development Stage 3	Remediation (as required), recontouring and final landform works. LPS: Following completion of the demolition works the site will be prepared for ongoing industrial use. Borrow pit area and asbestos disposal facility: The borrow pit area and asbestos disposal facility will be rehabilitated to a safe, stable and non-polluting landform. Additional works associated with extraction from the Borrow Pit (up to a total of 13.5 million m3). Works associated with the LAD to maintain the structural integrity of the ash retaining structures

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Acronyms and Abbreviations

Acronym/Abbreviation	Description
AGLM	AGL Macquarie Pty Ltd
Amendment Report	Amendment Report - Liddell Future Land Use and Enabling Works (GHD, 2024)
BPS	Bayswater Power Station
CoPC	Contaminant of Potential Concern
The Department	New South Wales Department of Planning, House and Infrastructure
DGV	Default Guideline Values
EIS	Environmental Impact Statement - Liddell Future Land Use and Enabling Works Project (GHD, 2023a)
EPA	New South Wales Environment Protection Authority
EP&A Act	*Environmental Protection and Assessment Act 1979*
EP&A Regulation	*Environmental Protection and Assessment Regulation 2021*
EPL	Environment Protection License
ESCP	Erosion and Sediment Control Plan
HVGTs	Hunter Valley Gas Turbines
LAD	Liddell Ash Dam
LOSP	Level of species protection
LPS	Liddell Power Station
NSW	New South Wales
PCT	Plant Community Type
POEO Act	*Protection of the Environment Operations Act 1997*
SEARs	Secretary's Environmental Assessment Requirements
SWMP	Soil and Water Management Plan (this document)
TSS	Total suspended solids
RtS	Response to Submission Report Liddell Future Land Use and Enabling Works Project (GHD, 2024)
WM Act	*Water Management Act 2000*

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1. Introduction

1.1 Preamble

This Soil and Water Management Plan (SWMP) has been prepared by Ramboll Australia Pty Ltd on behalf of AGL Macquarie Pty Ltd (AGLM) to support the demolition works at the former Liddell Power Station (LPS) located approximately 15 kilometres southeast of Muswellbrook, New South Wales (NSW), adjoining the Bayswater Power Station (BPS), refer
Figure 1-1.

1.2 Background

LPS operated from the 1970s until it ceased operation in April 2023. AGLM acquired both LPS and BPS from NSW Government owned Macquarie Generation in September 2014. The LPS site (the Site) includes the Hunter Valley Gas Turbines (HVGTs) (now decommissioned) and a range of supporting water supply, water management, coal ash management, coal supply, power supply and control system infrastructure.

The Liddell Future Land Use and Enabling Works Project (the Development) is declared State Significant Development (SSD) (application number SSD 24937520) under section 4.5(a) of the *Environmental Planning and Assessment Act 1979* (EP&A Act). Key milestones in the Development's approvals process include:

- An EIS (GHD, 2023a) was prepared for the Development in accordance with the Secretary's Environmental Assessment Requirements (SEARs) and was exhibited from 4 May to 31 May 2023.
- A *Response to Submissions Report* (RtS) (GHD, 2024) was submitted to the Department of Planning, Housing and infrastructure (the Department) on 15 February 2024.
- Following the submission of the RtS, the NSW Environment Protection Authority (EPA) provided further feedback and advice to AGLM on 2 April 2024 relating to various aspects, including surface water, soil and erosion control (EPA, 2024).
- An *Amendment Report* (GHD, 2024) was prepared for the Development and submitted to the Department on 7 June 2024.
- The Development was approved by the Department on 31 January 2025, subject to the application of the conditions specified in Schedule 2 of the Development Consent.

Ramboll has been engaged by AGLM to prepare this SWMP in accordance with Condition C21 of the Development Consent, which requires:

"A soil and water management sub-plan must be prepared as part of the demolition environmental management plan. The plan must:

(a) be prepared by a suitably qualified and experienced person/s;

(b) identify the clean and dirty water management system;

(c) describe the mitigation measures that will be implemented to:

(i) comply with the conditions of this consent, including the relevant performance measures identified in Table 3;

(ii) manage the risks identified in the environmental risk assessment required by condition B1; and

(iii) implement the commitments detailed in the documents listed in condition A2(c);

(d) *include a monitoring, evaluation and reporting program that uses an approach that is consistent with the environmental management strategy required by condition B1.*"

Further details and references for the Development Consent is provided in Section 2.2.1.

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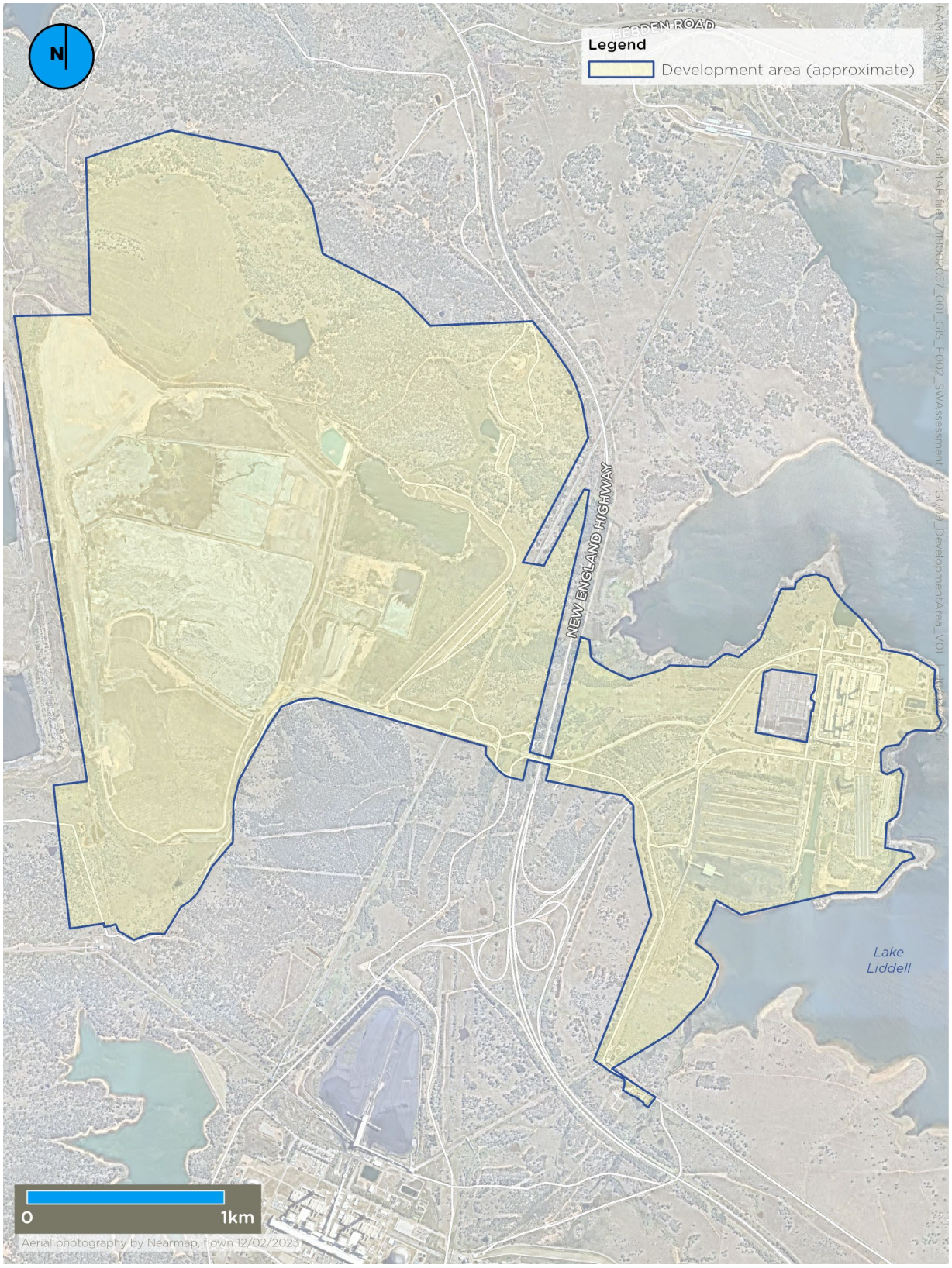

Figure 1-1: Overview of the Development Area

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1.3 Objectives

This SWMP has been prepared to address potential risks associated with soil disturbance and site water management associated with the demolition works for the Project, and specifically to address requirements of Condition C21 of the Consent.

This SWMP is a sub plan to the Demolition Environmental Management Plan (DEMP), required under Condition C16 of the Consent.

The objectives of this SWMP and associated sub-plans are to:

- Outline how water resources will be managed, used and conserved in the Catchment Areas throughout the demolition process.
- Detail the controls to be implemented to manage soil and water impacts, including erosion, sedimentation and contamination of the land and the adjacent waterbodies (including Lake Liddell and associated tributaries).
- Establish the roles and responsibilities of all parties involved in soil and water quality management.
- Provide a framework for monitoring and assessing the effectiveness of management measures.
- Define actions to be implemented in the event of non-conformances, incidents or exceedances.
- Align soil and water management practices with relevant legislation and industry best practices to assist AGLM uphold environmental standards and meet regulatory obligations under the Development Consent, Environment Protection Licence (EPL), and relevant legislation such as the *Protection of the Environment and Operations Act 1997* (POEO Act).

1.4 Scope

The scope of this SWMP is relevant to the demolition works of LPS, which includes:

- LPS and redundant associated infrastructure
- HVGTs and associated transmission infrastructure

This scope includes above ground infrastructure (except for items being retained) and removal to bottom of slab, with foundations removed to the equivalent bottom of slab level. Below ground structures would be removed as required during Stage 3 of the Development. Stage 1 works will not include removal and/or remediation of soils, as this will be undertaken as part of Development Stage 3.

The SWMP is specifically relevant to the following areas (herby referred to as ‘Catchment Areas’):

- Main Power Block
- Coal Handling Plant
- Water Intake Pump Station
- HVGTs
- Ash Pipeline
- M1/M1a Conveyor

Based on historical operations and/or nature of the proposed demolition works, these Catchment Areas have been identified as higher risk based on the proposed activities in the area and potential to mobilise sediment or contaminants. As such, majority of these areas require 'dirty water' management systems to direct and contain surface water run-off to ensure water meets discharge criteria prior to discharging to Lake Liddell. Figure 1-2 provides an overview of the ‘clean water’ and ‘dirty water’ management systems within the Catchments.

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The Catchment Areas subject to this SWMP for demolition works are shown in Figure 1-2 (referred to as 'the Site'), with further details provided in Section 3 and 4. It is noted that the ash pipeline and M1/M1a conveyor areas have been separated into sub-catchment areas based on topography and natural flow paths.

It is noted that areas outside of these Catchment Areas are not managed under this SWMP for the demolition works, and will continue to operate as 'clean water' management systems, with surface water run-off infiltrating through the ground or being directed to stormwater systems.

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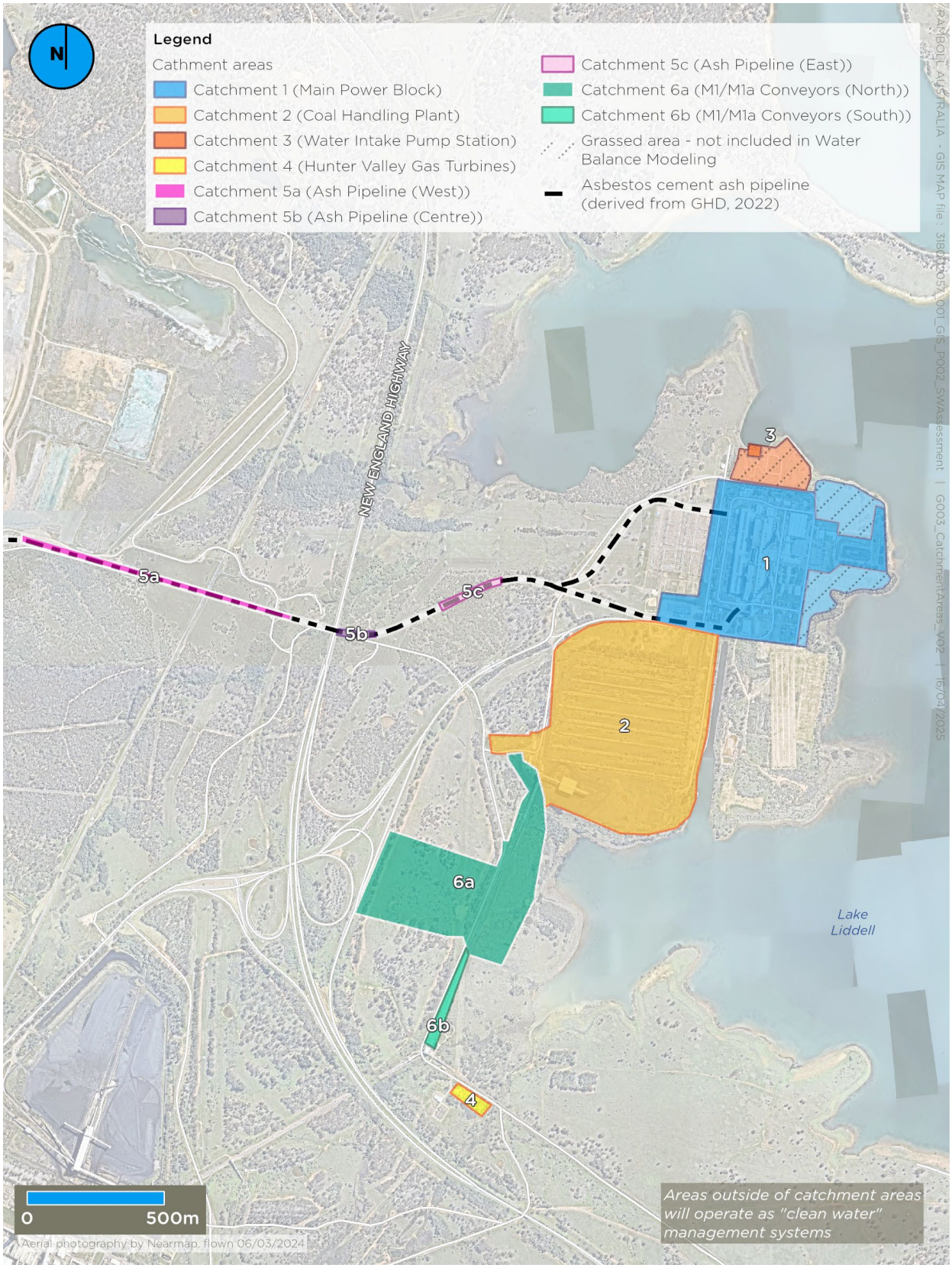

Figure 1-2: Areas applicable to SWMP for above ground demolition

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1.5 Authoring

This SWMP has been developed by suitably qualified and experience persons in the field of water management, contamination and remediation. The authors' experience has been provided as follows:

- Kirsty Greenfield: Kirsty is a Senior Managing Environmental Consultant with over 20 years of experience in contaminated land. She has extensive expertise in soil and groundwater contamination assessments and remediation projects for the decommissioning and closure of large industrial facilities. Kirsty is a Certified Environmental Practitioner: Site Contamination Specialist (No. SC40104) with the Environment Institute ANZ (EIANZ) and holds a Bachelor of Environmental Science (Hons) from Monash University.
- Jacqui Connor: Jacqui is a Senior Environmental Consultant with five years of experience in contaminated land investigation, remediation, and management. She has had extensive experience in groundwater and surface water contamination management for industrial and commercial sites. Jacqui holds a Bachelor of Advanced Science (Chemistry and Environmental Science) from the University of Sydney.

1.6 Consultation requirements

Consultation with the Department is required for the DEMP, for which this SWMP is a sub plan.

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2. Regulatory Framework

2.1 Environmental Legislation and Guidelines

The following legislation and guidelines are relevant to this SWMP:

- *Environmental Planning and Assessment Act 1979* (EP&A Act)
- *Environmental Planning and Assessment Regulation 2021* (EP&A Regulation)
- *Protection of the Environment and Operations Act 1997* (POEO Act)
- *Protection of the Environment Operations (Waste) Regulation 2014* (POEO Regulation)
- *Water Management Act 2000* (WM Act)
- *Water Management (General) Regulation 2018 (*WM Regulation)
- *Contaminated Land Management Act 1997* (CLM Act)
- *Work Health Safety Act* 2011
- *Work Health Safety Regulation* 2017
- *Environmentally Hazardous Chemicals Act 1995* (EHC Act)
- *Environmentally Hazardous Chemicals Regulation 2017* (EHC Regulation)
- *Managing Urban Stormwater: Soils and Construction, Volume 1: Blue Book* (Landcom, 2004)

2.2 Development Approval and Licensing

2.2.1 Development Consent

The Development Consent relevant to the demolition of the LPS, including C21 and its relevant references are included in Table 2-1. Table 3 of the Development Consent (referenced in C21) is provided in Table 2-2.

Table 2-1: Relevant Development Consent Conditions

Condition	Description	Where Addressed
Demolition *(relevant conditions only)*		
C16	A demolition environmental management plan must be prepared for the development. The plan must: (a) be submitted to the Planning Secretary for approval prior to the commencement of demolition; (b) be prepared in consultation with SafeWork NSW and the Site auditor; (c) include a description and schedule of activities to be undertaken during demolition; (d) include a risk assessment; (e) addresses the commitments detailed in the documents listed in condition A2(c); (f) include the sub-plans detailed in conditions C19 to C22; and (g) include a TARP to respond to any exceedances of the relevant performance measures, objectives or performance indicators. Note: The health and safety risks associated with demolition are regulated by the Work Health and Safety Regulation 2017	The DEMP to which this SWMP is a sub-plan to.

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Condition	Description	Where Addressed
C21	A soil and water management sub-plan must be prepared as part of the demolition environmental management plan.	This SWMP
	The plan must: (a) be prepared by a suitably qualified and experienced person/s	Section 1.5
	(b) identify the clean and dirty water management system	Section 1.4 Figure 1-2 Section 4.2
	(c) describe the mitigation measures that will be implemented to:	
	(i) comply with the conditions of this consent, including the relevant performance measures identified in Table 3 (*refer* **Table 2-2**)	Section 7
	(ii) manage the risks identified in the environmental risk assessment required by condition B1	Section 6 Section 7
	(iii) implement the commitments detailed in the documents listed in condition A2(c)	Section 2.2.2 Section 7
	(d) include a monitoring, evaluation and reporting program that uses an approach that is consistent with the environmental management strategy required by condition B1	Section 9
Terms of consent (*relevant conditions only*)		
A2 (c)	*Condition relevant to C21 (c)(iii):* The Applicant may only carry out the development: (C) generally in accordance with the EIS; and generally in accordance with the Development Layout in Appendix 1.	Section 6 Section 7
Environmental management strategy (*relevant conditions only*)		
B1	*Condition relevant to C21 (c)(ii):* An environmental management strategy must be prepared for the development. The strategy must: (d) include an environmental risk assessment of the development activities and specific risk management controls and mitigations to: (i) comply with statutory requirements, limits or performance measures and criteria; (ii) manage the predicted impacts identified in the documents listed in condition A2(c); and	Section 6 Section 7

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Condition	Description	Where Addressed
	(iii) manage any other environmental risk or impact that has been subsequently identified after the documents in condition A2(c) were submitted; *Note: Environmental risk assessment cannot be used to identify and assess physical changes to the development or an increase in impacts that are not described and assessed in the approved EIS. These may require a new planning approval and may need to be referred to the Department.*	
	Condition relevant to C21 (d): An environmental management strategy must be prepared for the development. The strategy must: (e) include processes to review the environmental risk assessment annually and determine whether the measures implemented to manage the risks are effective; (f) include an adaptive management process to be implemented if the review of the risk assessment indicates that any measure that has been implemented is not effective in managing the identified risk(s) and a process to update the measure; (g) include a clear plan depicting all the monitoring to be carried out under the conditions of this consent; (h) include processes to report and review environmental performance that: (i) provides for an annual review of the environmental risk assessment with consideration of the evaluation findings; (ii) respond to any non-compliance and/or incident; (iii) address the findings of any audit undertaken for the development; (iv) provide for adaptive management mechanisms that enable continuous improvement; and (v) keep the local community and relevant agencies informed about the operation and environmental performance of the development; (i) include procedures to: (i) receive record, handle and respond to complaints; (ii) resolve any disputes that may arise during the course of the development; and (iii) respond to emergencies.	Section 8 Section 9

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Table 2-2: Development Consent Table 3

Feature	Performance measure	Where Addressed
Water management – general	• Maintain separation between clean and dirty water management systems • Minimise the use of clean and potable water by the development • Maximise water recycling, reuse and sharing opportunities • Design, install, operate and maintain water management systems in a proper and efficient manner	Section 7 Appendix 3
Erosion and sediment control	• Design, install and maintain erosion and sediment controls generally 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 sediment dams generally in accordance with the guidance series Managing Urban Stormwater: Soils and Construction – Volume 1 (Landcom, 2004) and 2E Mines and Quarries (DECC, 2008)	Appendix 5 Referenced in Section 7
Water diversion and storage	• Maximise the diversion of clean water around disturbed areas within the approved development area, except where clean water is captured for use by the development • Design, install and maintain water storage infrastructure to avoid unlicensed or uncontrolled discharge of water	Section 7
Chemical and hydrocarbon storage	• Chemical and hydrocarbon products stored in bunded areas in accordance with the relevant Australian Standard	Section 7
Aquatic and riparian ecosystems	• Negligible environmental consequences beyond those predicted in the documents listed in condition A2(c)	Section 7

Alluvial aquifers	• Negligible impacts to the alluvial aquifer as a result of the development, beyond those predicted in the document/s listed in condition A2(c), including:
	  • Negligible change in groundwater levels
	  • Negligible change in groundwater quality
	  • Negligible impact to other groundwater users.
		Section 7
		Section 8

Works on waterfront land	• All works within waterfront land is managed in accordance with the guidance series for Controlled Activities on Waterfront Land (DPE, 2022) • Minimise disturbance of banks and implement appropriate stabilisation mitigation	Section 7

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2.2.2 Statement of Commitments

The statement of commitments from the Amendment Report (GHD, 2024) that are relevant to the demolition works have been outlined within Table 2-3.

Section 7 provides further mitigation strategies to comprehensively address the management measures as well.

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Table 2-3: Relevant Statement of Commitments and Management Measures from the Amendment Report

Aspect	ID	Management Measures	Relevant to SWMP?
Biodiversity			
Impacts to surface water and groundwater quality and quantity due to sediment runoff and/or runoff into adjacent water courses	BIO3	• Source controls such as sediment fences, mulching and jute matting will be utilised where appropriate. • Site-based vehicles will carry spill kits. Dedicated refuelling and storage places will be constructed away from watercourses/wetland areas (>50 m). • Erosion and sediment control will be required for the development generally in accordance with Managing Urban Stormwater: Soils and Construction (Landcom, 2004) prior to commencement of construction. • Limit the use of pesticides in the project footprint where possible to avoid contamination of nearby watercourses/wetland areas.	Yes – Section 7, as well as the DEMP
Soil and Contamination			
Erosion and Sediment	SC1	The SWMP will include an Erosion and Sediment Control Plan (ESCP) which will be prepared in accordance with the Blue Book -Managing Urban Stormwater: Soils and Construction Volume 1 (4th edition), (Landcom, 2004) and Volume 2 (DECC, 2008). Preparation of an Erosion and Sediment Control Plan (ESCP) as part of a SWMP will be in accordance with Blue Book - Managing Urban Stormwater: Soils and Construction (Volume 1 (4th edition) (Landcom, 2004) and Volume 2 (DECC, 2008).	No – Progressive Erosion and Sediment Control Plans (PESCP) will be prepared as a separate document. However, overarching erosion and sediment controls provided in Section 7
	SC2	Erosion and sediment controls will be established prior to works commencing.	
	SC3	Temporary stabilisation of working areas as necessary in periods of inactivity which potentially may occur between stages.	

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Aspect	ID	Management Measures	Relevant to SWMP?
Contamination	SC9	A spill management plan will be prepared for demolition activities as part of the PEMS. The spill management plan will detail the requirements for management of potential spills and leaks from operational equipment during demolition activities.	Provided in the DEMP, as well as Section 7 of this document and additional procedures provided in the TARP (Appendix 1)
	SC10	An unexpected finds protocol will be prepared and included in the PEMS for the Development. The contamination management plan will detail the requirements for management of potentially contaminated materials demolition activities. Management of any waste material to be disposed of offsite will be managed in accordance with a separate waste management plan.	No – covered under the DEMP Unexpected Finds Protocol and Waste Management Plan, however, additional procedures for unexpected finds provided in the TARP (Appendix 1)
	SC11	Should any unexpected contaminated soils be identified during any ground works, seek advice from a suitably qualified environmental consultant and notify the project manager. Complete any additional investigations/abatement in general accordance with guidelines developed or endorsed by NSW EPA. Include contingency plans for unexpected finds protocols for contaminated soils in project management plans.	
Demolition			
Groundwater monitoring- non-compliance with licensing conditions	DM4	Confirm monitoring well locations and regulatory requirements impacted by the project will be decommissioned by a suitably qualified consultant. Following decommissioning, the consultant will provide AGLM with a decommissioning report.	Yes – Section 7
Environmental Spills	DM8	Compliance with Australian Standards for storage and handling of flammable and combustible liquids and hazardous materials.	Yes – Section 7, as well as the DEMP
Uncontrolled offsite releases	DM10	Develop a construction environmental management plan including specific stormwater and dirty water management plan.	Yes – throughout this document. Note, a DEMP has been prepared for the demolition works.
Water Quality and Hydrology			

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Aspect	ID	Management Measures	Relevant to SWMP?
Erosion and Sediment Control Plans	WQ1	A Project Environmental Management Strategy (PEMS), inclusive of a site water management plan, will be prepared for the Development with measures to mitigate the impact of soil and water associated with construction works.	This SWMP is specific to soil and water management throughout demolition works. As required by the consent, an EMS has been prepared for Stage 1 works.
	WQ2	Project erosion and sediment control will be developed in accordance with the erosion and sediment control framework. Any activities that result in ground disturbance associated with the Development will have a detailed Erosion and Sediment Control Plan (ESCP) prepared based on specific construction methodologies.	No - PESCP to be prepared as a separate document. However, overarching erosion and sediment controls provided in Section 7
Stockpile Management	WQ3	The PEMS will include the following stockpile management measures: • Measures to manage stockpiles including locations, separation of waste types, sediment controls and stabilisation. • Minimising the quantity, lifespan and size of stockpiles. • Stabilising stockpiles, establishing appropriate sediment controls and suppressing dust as required. • Locating stockpiles away from drainage lines, waterways and areas where they may be susceptible to wind erosion.	Yes – Section 7
Sediment Basin Management	WQ4	The PEMS will include processes for dewatering of water that has accumulated on site and from sediment basins, including relevant discharge criteria.	Yes – Water Discharge Plan (Appendix 2) and Water Reuse Plan (Appendix 3)
Monitoring	WQ5	The PEMS will include details of surface water and groundwater quality monitoring to be undertaken prior to, throughout, and following construction.	The Water Monitoring Plan (Appendix 4) is specific to monitoring of surface water prior to and following discharge activities during demolition works
Exclusion Zones	WQ6	The PEMS will include details of exclusion zones that will be established for construction plant and equipment.	Yes – Section 7

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Aspect	ID	Management Measures	Relevant to SWMP?
Spill Management	WQ7	The PEMS will include details of spill management measures to be implemented including: • Measures to manage accidental spills including the requirement to maintain materials such as spill kits. • Procedures for spill incident management. Containment of spills and leaks shall be in accordance with EPA's guidelines section 'Bunding and Spill Management'. • Provision of preventative controls for spills such as alarm systems, regular training and routine inspection of potential contamination sources. • Measures to clean up any contamination sources and where possible removal of the contamination source related to project spills.	Provided in the DEMP, as well as Section 7 of this document and additional procedures provided in the TARP (Appendix 1)
Water Reuse Strategy	WQ8	The current water reuse strategy will be amended for both construction and operational phases. This strategy will be updated during the detailed design stage and implemented throughout the Development and will outline the construction and operational water requirements. Alternative water supply options to potable water will be investigated, with the aim of reusing water using recycled water where feasible. No additional water is deemed to be required for the Development outside of AGLM's Water License Package.	The Water Reuse Plan (Appendix 3) is specific to the reuse of surface water run-off retained onsite during demolition works
Riparian and Waterfront Land	WQ9	Works within waterfront land will be managed in accordance with the relevant guideline as deemed appropriate.	Yes – Section 7
	WQ10	Implementing practices to minimise disturbance of banks and undertaken bank stabilisation.	Yes – Section 7
	WQ11	Appropriate drainage features will be incorporated into the design of the project elements by a suitably qualified and experienced professional. All project elements will be designed and constructed in accordance with relevant guidelines.	No – to be included in the PESCP
Groundwater	WQ12	Unexpected interactions with groundwater will include the following actions: • Works will cease in the immediate area and the date, location, level and depth of groundwater interception will be recorded. • Unexpected interactions will be notified to the project hydrogeologist.	Covered under the DEMP Unexpected Finds Protocol and additional procedures for unexpected groundwater finds provided in the TARP (Appendix 1)

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Aspect	ID	Management Measures	Relevant to SWMP?
		• The project hydrogeologist will review and determine an appropriate course of action in consultation with AGL Staff. • Consideration is to be given to re-locating excavation work to areas of higher elevation and/or deeper groundwater. • Consideration to undertaking routine monitoring of the monitoring bores in the vicinity of the works.	
Surface Water Monitoring	WQ14	Dewatering procedures from construction sediment basins will be outlined in the PEMS and will include (but not be limited to): • Routine and pre-discharge sampling and analysis to confirm absence of contaminants exceeding applicable criteria. • Pre-discharge confirmation of compliance with water quality performance criteria able to be analysed in real time. • The methodology for dewatering including use of amphibian friendly flocculants and pH balancing agents as required.	Yes – Water Discharge Plan (Appendix 2) and Water Monitoring Plan (Appendix 4)

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Aspect	ID	Management Measures	Relevant to SWMP?
Surface Water Monitoring	WQ15	Discharges from the project during construction and operation will occur in accordance with EPL 2122 and project approval along with the required water quality monitoring. It is recommended that monitoring is retained at existing EPL 2122 surface water monitoring locations for the activities associated with the project: • SW28, to monitor potential sedimentation impacts of Borrow Pit area (*noting that this is not relevant to this plan*) • SW30, to monitor surface water discharge quality from the LPS main infrastructure area. • SW32, to monitor surface water discharge quality from the LPS Infrastructure Area reporting to the outfall canal coal stockpile area. • SW42, to monitor surface water quality of Lake Liddell as a reference point. Where monitoring indicates a water quality exceedance in discharges off site, an investigation will be undertaken and a notification to the EPA shall be undertaken in accordance with the EPL. Monitoring will continue in accordance with the EPL until the site is suitably stabilised to an acceptable level as agreed with DPE and EPA.	Yes – Water Discharge Plan (Appendix 2) and Water Monitoring Plan (Appendix 4)

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2.2.3 Environment Protection Licence

EPL 2122 exists for the Site, and the Development will continue to be regulated under the EPL. The EPL will be amended prior to discharges associated with the demolition works and as required during the Development.

As documented in the EIS (GHD, 2023a) and noted within the NSW EPA Advice (EPA, 2024), during the Response to Submissions phase, the Development will require an amendment to the existing EPL 2122 under the POEO Act to reflect the changes to the activities undertaken at the site.

The EPL includes requirements for the sampling, monitoring and reporting of discharges into Lake Liddell. A summary of relevant conditions in the EPL is provided in Table 2-4, note these will be subject to change as the Development progresses through amendments to the EPL undertaken separately to this SWMP.

Table 2-4: Summary of Applicable EPL Requirements

Condition	Description
Water Discharge Locations	
P1.3	The following points are identified in this license for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point (outlined in Figure 4-1): • Discharge from oil and grit trap weir overflow to Lake Liddell marked and shown as EPL Monitors ID No. 17 *As part of the EPL variation, a new discharge point will be added for discharge from the Coal Handling Plant.*
Limit Conditions	
L1.1	Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.
Concentration Limits	
L3.1	For each monitoring/discharge point, the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table. • Oil and grease: 10 mg/L • pH: 6.5 – 9.0 *It is noted that the criteria will be updated as part of the EPL variation.*
Monitoring Requirements	
M.2.1	For each monitoring/discharge point, the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in the EPL and in accordance with the sampling method, units of measure and frequency specified.
M2.5	Discharge Point 16 and 17 are required to be monitored for pH and oil and grease weekly during any discharge, in addition to the following analytes on a fortnightly basis, through a grab sample method (unless specified otherwise): • Ammonia • Conductivity • Phosphorous • Antimony • Copper • Selenium

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Condition	Description
	• Arsenic • Barium • Beryllium • Boron • Cadmium • Chlorine • Chromium (trivalent) • Chromium (VI) compounds • Cobalt • Fluoride • Lead • Manganese • Mercury • Methylene Blue Active Substances • Molybdenum • Nickel • Nitrogen • Sulfur • Temperature (in-situ) • Tin • Total Dissolved Solids • Total Organic Carbon • Total Suspended Solids • Vanadium • Zinc

The EPL also includes general conditions for reporting and notification to the NSW EPA.

2.2.4 Other Licensing

As detailed within the EIS (GHD, 2023a) and Amendment Report (GHD, 2024), approval is not required for water use approvals, water management works approvals or activity approvals under the WM Act for SSD projects. Water will be reuse as far as reasonably practical and there are not additional requirements to take water, associated with the Demolition Works.

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3. Development Staging

3.1 Development Overview

The SWMP applies to the following elements of the Stage 1 works:

- Demolition of the LPS and redundant associated infrastructure.
- Demolition of the HVGTs and any associated transmission lines and infrastructure.

3.2 Catchment Areas and Staging

An outline of the 'demolition zones' are defined in the EIS Amendment Report (GHD, 2024) is provided in Figure 3-1 and a comparison of the zones for each Catchment Area are outlined in Table 3-1.

The approximate demolition staging and timelines for demolition works in each Catchment area is outlined in Table 3-2.

Table 3-1: Comparison of zones and catchment areas

Main Catchment Area	**Associated demolition zones as per planning approvals** (GHD, 2023a; GHD, 2024)	**Catchment number defined in the Water Balance Assessment** (Ramboll, 2025a)
Main Power Block	Zones 1, 2, 3, 4, 5, 6, 7	Catchment 1
Coal Handling Plant	Zone 8	Catchments 2 and partially 6a
Water Intake Pump Station	Zone 10	Catchment 3
Hunter Valley Gas Turbines	Zone 11	Catchment 4
Ash Pipeline	Zone 9	Catchments 1, 5a, 5b, and 5c
M1/M1a conveyor	Not defined	Catchments 6a and 6b

Table 3-2: Approximate Staging and Timelines for Demolition Works

Main Catchment Area	**Approximate Staging and Timelines**
Main Power Block	Quarter 3 2025 to Quarter 3 2027
Coal Handling Plant	Quarter 3 2026 to Quarter 3 2027
Water Intake Pump Station	Quarter 1 2027 to Quarter 3 2027
Hunter Valley Gas Turbines	Quarter 2 2027 to Quarter 3 2027
Ash Pipeline	Quarter 2 2027 to Quarter 3 2027
M1/M1a conveyor	Quarter 3 2026 to Quarter 3 2027

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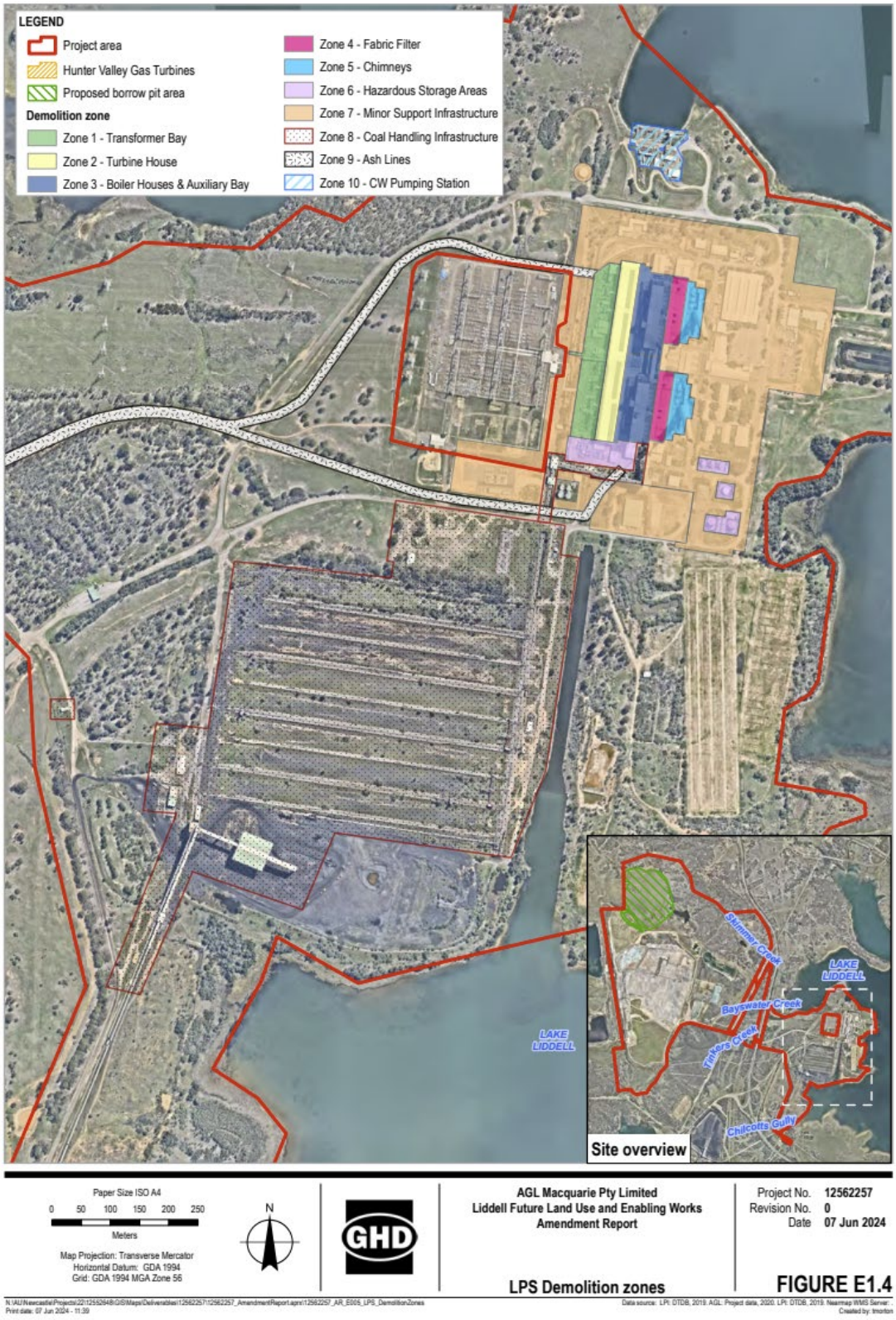

Figure 3-1: Demolition zones defined by the Amendment Report.

Source: Appendix A of the Amendment Report (GHD, 2024)

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3.3 Other Work Areas

As detailed within the Amendment Report (GHD, 2024), ancillary facilities required to support the demolition activities would be imported to the site and located within previously disturbed areas, where existing facilities such as the external plant workshop cannot be utilised. Temporary ancillary facilities would include the following:

- Construction offices
- Parking areas
- Stores and laydown areas
- Equipment assembly areas
- Fuel facilities
- Power
- Communications or water and wastewater

These ancillary facilities would not be managed under this SWMP as they are defined as preliminary works under SSD 24937520.

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4. Site Overview Existing Environment

4.1 Existing Environment

The existing environment of the Site has been summarised in Table 4-1.

Table 4-1: Existing environment

Component	Description
Location and Site Context	The Site is located approximately 15 kilometres southeast of Muswellbrook, NSW and comprises of the following parcels of land: Lot 2 DP774681 / Lot 18 DP247944 / Lot 2 DP966589 / Lot 601 DP1019325 Lot 11 DP247944 / Lot 19 DP752468 / Lot 2 DP1022827 / Lot 2 DP1095515 Lot 19 DP247944 / Lot 18 DP752468 / Lot 163 DP752486 / Lot 1 DP1095515 Lot 4 DP1193430 / Lot 29 DP247944 / Lot 116 DP752486 / Lot 162 DP752486 The area surrounding the Site comprises of the following: • Agricultural land, including rural living • Remnant vegetation • Lake Liddell • Heavy rail • Bayswater Power Station • Coal mining (open and underground) • New England Highway, which runs through the Site
Topography	The elevation of the Site varies approximately between 260 metres Australian Height Datum (AHD) and 130 metres AHD (GHD, 2023a). The topography of the Site is generally undulating, resulting in variable hillslope directions occurring across the Site. The topography of the areas applicable to this SWMP have been further described: • Main Power Block: generally flat, with the area immediately surrounding it sloping from west to east and north toward Lake Liddell. The land immediately west of the MPB is elevated and is occupied by the TransGrid switchyard. • Water Intake Pump Station: located in an inlet on the lake shore, the area immediately surrounding the Pump Station slopes from south to north.

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Component	Description
	• Coal Handling Plant: generally flat area immediately adjacent to Lake Liddell to the south and the dam located immediately east. • Ash Lines: traverses the undulating landscape with the elevation varying from approximately 190 metres AHD to the west, falling to approximately 130 metres AHD near the New England Highway, and rising to approximately 160 metres AHD in the east. • M1/M1a Conveyor: traverses an undulating hill that slopes from west to east into the adjacent Lake Liddell. • Hunter Valley Gas Turbines: is generally flat, with the area immediately surround it having a gentle fall present from the west to east.
Geology and Soils	The Site is located on Liddell Soil Landscape (SH1d) (GHD, 2023a). As per the EIS (GHD, 2023a), the Site is underlain by Permian aged materials of the Mulbring Siltstone and Branxton Formation with lithology summarised as siltstone, claystone and minor fine-grained sandstone and siltstone, claystone and minor fine-grained sandstone respectively. The Site is underlain by the Liddell soil landscape characterised by undulating low hills and undulating hills with a typical slope gradient of four to seven percent (GHD, 2023a). The EIS noted the soil landscape to consist of fine sandy and silty clays with massive structure while containing key limitations of moderate to high erosion hazard, high soil salinity and hard setting (GHD, 2023a). The Site is noted to be located within low probably of occurrence for acid sulphate soils (GHD, 2023a).
Surface Water	The Site comprises of both natural and modified waterways, dams and the artificial Lake Liddell (GHD, 2023a). Numerous waterways traverse the Site including Tinkers Creek and several unnamed waterways (GHD, 2023a). The existing water management systems, including surface water management at the site have been further detailed in Table 4-2.
Groundwater	A conceptual hydrogeological model was developed by GHD (reference) for the LAD (GHD, 2023a). As detailed in the EIS (GHD, 2023a), the conceptual model consisted of three hydro stratigraphic units: • *Colluvial/alluvial aquifer, up to seven metres thick, discontinuous in the LAD area.* • *Shallow weathered bedrock/regolith aquifer (dark-grey shale and sandstone of the Mulbring Siltstone and pebbly sandstone and silty sandstone and siltstone of the Branxton Formation – Maitland Group), three to 10 m thick.* • *Permian aquifers (sandstone, siltstone, shale and mudstone with coal seams of the Rowan Formation – Greta Coal Measures).* The results of the hydrogeological model have been further detailed within the EIS summary contained in Table 4-3 .
Climate and Rainfall	The closest long-term operational weather station to the Site is the Bureau of Meteorology's Scone Airport weather station (061363) and collected data between 1991 and 2022 (GHD, 2023a). As per the EIS (GHD, 2023a), the maximum monthly temperature recorded ranged between 16.7 degree Celsius (°C) to 31.8 (°C) in July and January respectively, while the minimum temperatures ranged between 3.4 (°C) and 17.2 (°C) in July and January respectively. The monthly mean rainfall ranged between 77.6 millimetres and 32.9 millimetres in November and August respectively, while the mean annual rainfall of 639.9 millimetres occurred between October and March (GHD, 2023a).

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4.2 Existing Water Management Systems

Existing water management systems have been identified in Table 4-2 and shown in Figure 4-1.

Table 4-2: Summary of Existing Water Management System

Component	Description
Water Supply and Demand	The Development will aim to manage water efficiently and re-use it as far a reasonably practicable for demolition works. Existing potable water supplies will be utilised for general uses across the Site, such as in offices, kitchens and within amenities. Additional water supply would be required for dust minimisation and would be sourced through existing licence allocations of, principally sources from catchment runoff from disturbed catchments captured in the sediment basins (GHD, 2023a).
Clean and Dirty Water Management Systems	Based on the historical operations and/or the nature of the proposed demolition works, the following six Catchment Areas have been identified as higher risk, requiring 'dirty water' management systems to prevent the mobilisation of contaminants or sediments: • Main Power Block • Coal Handling Plant • Water Intake Pump Station • HVGTs • Ash Pipeline • M1/M1a Conveyor Areas outside of these Catchment Areas are not managed under this SWMP for the demolition works, and will continue to operate as 'clean water' management systems, with surface water run-off likely infiltrating through the ground or being directed to stormwater systems.
Licensed Discharge Points	LPS has two existing discharge point under the EPL which will be utilised in the demolition activities, which are discharge from point 16 relating to the Coal Handling Plant and point 17 for discharge from the oil and grit trap weir overflow to Lake Liddell (from the Main Power Block) (refer Figure 4-1). An additional discharge point in proximity to the Coal Handling Plant will be added to the EPL prior to works beginning in this area.
Site Drainage and Sediment Basins	The following water infrastructure currently exists within each Catchment Area: **Main Power Block** • Subsurface drainage lines • Oil and grit trap • Decommissioned sewerage treatment plant ponds x 3

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Component	Description
	Coal Handling Plant • Subsurface drainage lines • Bennit Pit 1 and Bennit Pit 2 • Concrete lined surface drains • Coal plant eastern holding pond • Coal plant western holding pond **Water Intake Pump Station** • Circuit water pump discharge conduit pit • Concrete lined vee drains • Stormwater drains **Hunter Valley Gas Turbines** • Oil / water separator x 2 • Sediment basin **Ash Pipeline** • Concrete lined surface drains **M1/M1a Conveyor** • Sediment basin x 2 The proposed infrastructure to be retained and utilised as part of the water management for the demolition works is outlined in Section7.2.

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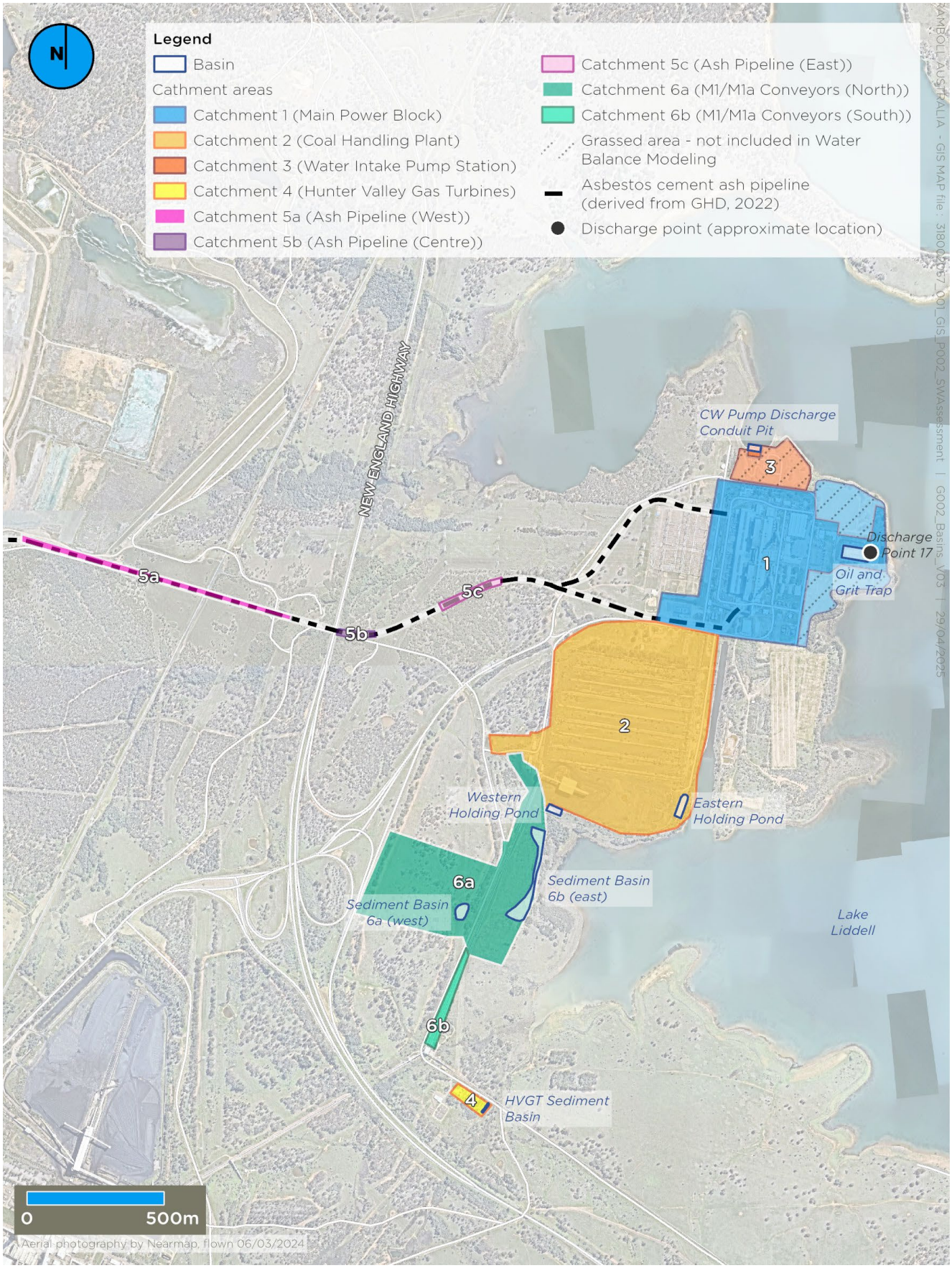

Figure 4-1: Existing Water Management System

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4.3 Summary of Previous Reports

A summary of the relevant finds for previous relevant reports have been provided in **Table 4-3.**

Table 4-3: Summary of previous reports

Report	Summary of relevant findings
Environmental Impact Statement (GHD, 2023a)	Relevant findings of the EIS to this SWMP have been summarised as follows: **Soil and contamination** • A Baseline Contamination Assessment Report (BCAR) (Kleinfelder, 2024) was prepared for the Development. The assessment identified that there was potential for contamination to occur during the demolition of infrastructure, and a potential risk of spills and leaks from operational equipment during demolition, and noted the highest risk would be from encountering asbestos and hydrocarbons in soils. **Demolition management** • Several hazardous materials were noted as located within infrastructure to be demolished, including asbestos, polychlorinated biphenyls (PCBs), and hydrocarbons. Key hazards identified for demolition include: structural instability; exposure to hazards, such as asbestos or other hazardous materials; spread of contamination; damage to monitoring infrastructure; damage to adjacent public and private infrastructure; dust, noise, vibration and overpressure impacts; flora and fauna impacts; hazards associated with demolition waste handling; fire; and trespass. **Water quality and hydrology** • A Water Impact Assessment was prepared for the Development. A conceptual hydrogeological model was generated for groundwater at the site and consisted of three units. The assessment found that demolition works may mobilise contaminants of potential concern that can impact water quality, and work in riparian zones (particularly around Lake Liddell) has potential for impacts such as increased turbidity decreased dissolved oxygen, increased nutrients and toxicants which can cause increased weed growth and algal blooms. Groundwater may be encountered during removal of subsurface infrastructure during the demolition works, if required. • Water would be required for dust mitigation during the project, which would be principally sourced from catchment water runoff contained within the sediment basins. All water usage for the project will be undertaken under existing licence allocations and therefore no additional water licences or approvals are required for demolition works. **Air Quality** • An Air Quality Impact Assessment was prepared for the Development. There were 32 sensitive receptors identified within five kilometres of the LPS with the closest located approximately 1.8 kilometres north. Air and dust emissions have the potential to occur as a result of the LPS Demolition particularly during staged removal of asbestos; demolition/collapsing of structures; felling; sorting, handling, transporting and temporary stockpiling of material from demolished structures; crushing of concrete; and earthworks. The key source of

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Report	Summary of relevant findings
	dust during the demolition was identified as the removal of concrete slabs/hardstands. The Development was found to generate less annual emissions than the annual operational emissions of the LPS (when compared to the last five years of operation) and therefore they would have a positive impact when compared to its operation. **Waste** • Waste streams generated by the Development include: ferrous metals; non-ferrous metals; concrete; brick; general demolition waste; asbestos; synthetic fibre material (SMF); PCB contaminated concrete; and asbestos containing soils. Recycling or retaining of materials will be maximised with hazardous material disposed of in the proposed landfill site. Small amounts of general waste, wastewater and green waste would also be generated and disposed of at appropriately licenced facilities.
Amendment Report (GHD, 2024)	The Amendment proposes the following changes to the Development, relevant to this SWMP: • Reduced disturbance footprint to previously disturbed area • Reroute an existing dual water supply pipeline from Fresh Water Dam to the LAD to be used during ongoing capping of LAD, including dust suppression • Approval for rock crushing of material extracted from borrow put over the current approval limit (from 30,000 tonnes to 200,000 tonnes per annum) • Relocation of purpose-built asbestos disposal facility • Items no longer being proposed for demolition under this approval (i.e. transformer bays, turbines and generators, north services buildings, external buildings (hazmat material removal), coal tower and associated conveyors and structures). The following assessments, relevant to this SWMP, were updated as a result of the proposed amendments: • Soils and contamination • Water quality
Baseline Contamination Assessment Report (Kleinfelder, 2024)	The preliminary Site characterisation is outlined below: • Elevated concentrations of contaminants, which exceeded the ecological assessment criteria, were detected in areas across the Site. Contaminants noted included metals, petroleum hydrocarbons and Poly-fluoro alkyl substances (PFAS) (PFOA, PFOS and PFHxS+PFOS). • Groundwater exceedances were recorded broadly across Key areas, elevated concentration of petroleum hydrocarbons and PFAS (PFOA, PFOS and PFHxS+PFOS) were detected in groundwater, predominantly within the main power block. • Surface water and sediment samples along the foreshore of Lake Liddell detected exceedances of the ecological criteria for metals, with one sample recording PFOS exceedance

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Report	Summary of relevant findings
	• Further sampling was recommended to be undertaken during the Stage 3 Detailed Site Investigations.
Draft Water Balance Modelling (Ramboll, 2025a)	The Water Balance Assessment for the LPS demolition project provides estimates of catchment runoff and frequency of discharge to Lake Liddell for various scenarios of rainfall, evaporation, and basin sizes to facilitate decision making. Key conclusions drawn from the assessment are: **Main Power Block** • The existing oil and grit trap / sedimentation basin discharges to Lake Liddell when major rain events occur, this may mean the basin has the potential to discharge to Lake Liddell more than 63 days per year. • The water management methodology was aimed at collecting the 90th percentile rain event, in an effort to contain contaminants and prevent water discharge into the lake. However, subsequent water quality review has shown that construction sediment was the key contaminant of concern and a smaller sedimentation basin could be built in line with the Blue Book methodology. • The current storage has design capacity for approximately one-third of the design rainfall event. **Coal Handling Plant** • The existing sedimentation basin discharges to Lake Liddell when major rain events occur, this may mean the basin discharges to Lake Liddell more than 71 days per year. • Adding an additional sedimentation basin of 72 megalitres would provide sufficient area to contain the stormwater in the 90% wet year without discharge. It is likely that this is possible within the former coal storage area adjacent to the sedimentation basins. • The current storage has design capacity for approximately one-third of the design rainfall event. **Water Intake Pump Station** • During demolition, runoff from hard stand areas in the vicinity of the water intake pump station would be directed to the pump pit. The runoff collected in this pit will then be transferred to the Main Power Block drainage system by the demolition contractor, either using water trucks, or via the setup of a temporary pumping system. A large rain event would most likely disrupt work activities; however, runoff water could be contained within the existing pit. **HVGTs** • The HVGT area drains to two oil water separators, which discharge into a containment dam. The existing containment dam discharges to Lake Liddell when major rain events occur, this may mean the basin discharges to Lake Liddell more than 28 days per year. • Expanding the existing containment dam to 2.71 megalitres would provide sufficient volume to contain the stormwater in the 90% wet year without discharge. • The current storage has full design capacity for the design rainfall event.

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Report	Summary of relevant findings
	Ash Pipeline • To contain stormwater from the steep portions of the ash pipeline during demolition work, it is proposed to isolate the ash pipeline areas from the wider catchment area and use temporary sedimentation traps for Catchments 5a, 5b, and 5c. • There are no current storages. Volumes of 990 cubic metres, 125 cubic metres and 240 cubic metres respectively would provide design capacity for sedimentation during the design rainfall event. **M1/M1a Conveyors** • The water balance assessment included modelling of the existing sediment basin within the catchment area (Catchment 6a), however, to maintain the separation between the clean and dirty water catchment areas, the sediment basin will not be utilised. Rather localised sediment traps can be used for small, delineated catchments. The large basin can also act as a secondary containment area where required. • The current storage has design capacity for approximately half of the design rainfall event. • For the southern conveyor catchment area (Catchment 6b), it is proposed to isolate the conveyor area from the wider catchment area and contain runoff in a new temporary sedimentation trap. A volume of 520 cubic metres would provide design capacity for sedimentation during the design rainfall event. Where smaller catchments can be isolated, the sediment trap size may be reduced.
Draft Water Quality Assessment (Ramboll, 2025b)	Potential contamination of surface water across the demolition works and accompanying catchments has been systematically studied, identifying Contaminants of Potential Concern (CoPC) at different locations. These include: • Physicochemical parameters • Metals and metalloids • Nutrients and others. Previous studies have also identified assessment criteria to be used for determining acceptability of discharge concentrations. These are generally based on the ANZG (2018) 95% level of species protection (LOSP), relevant for slightly to moderately disturbed freshwater ecosystems application, and as agreed with NSW EPA ((EPA, 2025). However, a site-specific assessment of data for the ambient environment (Kleinfelder, 2024) and Lake Liddell shows that the lake has levels of certain CoPC (metals and chlorine) that exceed the Default Guideline Values (DGVs) for slightly to moderately disturbed ecosystems (i.e. 95% LOSP). This supports that Lake Liddell and surrounding waterways are indicative of highly disturbed ecosystems and that the DGVs for 90% LOSP are reasonable to apply as short-

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Report	Summary of relevant findings
	term discharge criteria to the demolition stage, when applied in conjunction with the water management plans and associated mitigation measures being developed (i.e. reasonable and practical water management to ensure the condition of the lake is not worsened). For the demolition stage of the Development, it is proposed that the short-term water quality management objective is to maintain the current ecological condition of Lake Liddell. Based on a consideration of the guidance in ANZG (2018) water quality management framework it is considered that Lake Liddell is a highly disturbed ecosystems and that the DGVs for the 90% LOSP are reasonable to apply as short-term criteria in the context of maintaining the existing water quality of the lake. Routine monitoring of stormwater exiting the oil and grit trap provides a dataset to assess likely migration of contaminants into the stormwater system. Analysis of this dataset indicates that most CoPCs are likely to be less than the assessment criteria set. Concentrations of many contaminants in the LPS decommissioning phase have been lower than during operation phase, and are typically lower than in the receiving waters (Lake Liddell). Stormwater management measure effectiveness in controlling total suspended solids (TSS) discharge needs to be monitored to ensure that TSS continues meeting the assessment criteria when the LPS demolition activities start. Chlorine concentrations are consistently above the assessment criteria in the stormwater samples. The majority of chlorine found at basins within the LPS area is free chlorine residual which does not persist for extended periods in water. It is recommended to modify chlorine assessment criteria following site-specific information from the additional samples collected between November 2024 and January 2025. Combined chlorine residual is generally not exceeding the proposed modified assessment criteria. Zinc and copper concentrations in stormwater have both been consistently observed above the 95% LOSP, and higher than the concentrations in Lake Liddell. The majority of zinc and copper found at basins within the LPS area are in particulate form. Dissolved zinc and copper are reported in concentrations that are typically less than the assessment criteria. The additional samples collected between November 2024 and January 2025 show that Lake Liddell is having 'extremely hard' surface water hardness. Therefore, it is recommended to modify both the zinc and copper assessment criteria of the receiving environment (Lake Liddell) based on the water hardness in Lake Liddell. Total zinc and copper do not exceed the hardness-modified assessment criteria and the assessment of chlorine concluded there is a low risk of causing adverse biological effects in those studied locations. Therefore, chlorine, zinc, and copper are not further considered as CoPCs.
Draft Water Treatment (Ramboll, 2025c)	Water quality objectives were identified for each CoPC, based on the 90% LOSP. CoCs were identified as TSS and chlorine. TSS will be managed through sedimentation basins and localised source controls.

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Report	Summary of relevant findings
	Reference should be made to the technical notes summarised below, specifically noting that active treatment of water is not proposed as part of the overarching water management strategy (noting that the water quality is expected to meet the short-term discharge criteria with the proposed passive treatment strategies).
Technical Note – Water Quality Assessment Criteria (Ramboll, Water Quality Assessment Criteria, 2025d)	The technical note provides proposed short-term water quality management goals and discharge criteria relevant to the demolition stage. For the demolition stage of the Development, it is proposed that the short-term water quality management objective is to maintain the current ecological condition of Lake Liddell. Based on a consideration of the guidance in ANZG (2018) water quality management framework it is considered that Lake Liddell is a highly disturbed ecosystems and that the DGVs for the 90% LOSP are reasonable to apply as short-term criteria in the context of maintaining the existing water quality of the lake. *It is acknowledged that the water discharge criteria summarised in this report will be incorporated into the Water Discharge Plan (Appendix 2).*
Technical Note – Surface Water Management, Basin Design and Discharge (Ramboll, 2025e)	The Technical Note was prepared to address EPA's correspondence to AGLM in relation to stormwater management during demolition of LPS and associated infrastructure as part of the Project. In summary, the technical note provides a summary of the following stormwater management measures proposed for the Project to contribute to the environmental values of Lake Liddell: • Preparation of site-specific management plans, including a Soil and Water Management Sub-Plan, Trigger Action Response Plan, On-Site Reuse Plan, Discharge Plan, Water Monitoring Plan and Erosion and Sediment Control Plans. • Dirty water run-off will be directed and contained within each Catchment Area to prevent the mobilisation of contamination and sediment into the surrounding environment and Lake Liddell. Sediment basins and traps will be utilised to contain water and allow solids to settle. Practical measures will be applied to enlarge / resize the storage capacities and functioning of the sediment basins for each Catchment Area to match design storm events. • Clean water run-off diversions up-gradient of the Catchment Areas will be established to maximise the diversion of clean water run-off around work sites, reducing the volume of water requiring management. • Soil and water management measures will be applied throughout to prevent contamination, erosion and mobilisation of soil/sediment at the Site. These measures will include source controls in the work areas, as well as general erosion and sediment controls aimed at preserving site integrity. • Water discharge events will be minimised as far as reasonably practicable. Where water discharge from the sediment basins is required, water will be re-used where feasible. Where water re-use is not possible, water will be discharged to Lake Liddell under controlled conditions in accordance with EPL 2122. • Contingency measures will be applied to minimise stormwater discharge and prevent negative impacts on Lake Liddell.

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Report	Summary of relevant findings
	It was considered that the proposed management measures will effectively manage water onsite and minimise the environmental impact on Lake Liddell during the short-term demolition activities. These strategies will contribute significantly to protecting and restoring the lake's environmental values over time.

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5. Roles and Responsibilities

The roles and responsibilities to implement the controls outlined in this SWMP for the demolition works is outlined in **Table 5-1**.

Table 5-1: Roles and responsibilities

Role	Responsibility
AGLM Environmental Representative	• Review this SWMP. • Ensure works are conducted in accordance with regulatory requirements. • Manage relationships with Principal Contractor as required. • Track and report on environmental performance against the management actions identified in this SWMP. • Notify incidents or non-compliances to relevant authorities as per Section 9. • Investigate incidents or non-compliances and ensure corrective actions are implemented to prevent a reoccurrence.
AGLM Project Manager	• Manage relationships with Principal Contractor as required. • Ensure that any proposed works or changes to existing activities, which may have an impact on the environment or the community (including soil and water quality), have the necessary legislative approval prior to the commencement of works. • Review and approve the SWMP as per condition D7 in the Development Consent. • Facilitate implementation of the SWMP.
Principal Contractor	• Ensure the overall implementation of the SWMP. • Provide adequate resources for the implementation of this SWMP. • Comply with the requirements of the SWMP during demolition works. • Implement the environmental measures and actions as described in the SWMP and associated sub-plans. • Implement and maintain an induction package to be provided to all personnel working at the Site, which will include information relevant to the environmental and community management (including soil and water quality). • Report potential or actual environmental incidents associated with demolition activities at the Site to AGLM, and assist as required in the investigation, implementation of corrective actions and recording of the incident. • Maintain a record of personnel induction and training records.
Principal Contractor Site Supervisor	• Verify that the work of contractors and AGLM personnel on the demolition works are undertaken in accordance with this SWMP, relevant environmental management plans, procedures and standards. • Provide appropriate training to contractors and AGLM personnel on the demolition works regarding environment and community requirements and responsibilities. • Review and approve the contractors' environmental management documentation prior to commencement of activities and inform contractors of changes to the SWMP. • Complete worksite inspections and investigations and complete accurate and timely reporting.
All Personnel	• Comply with the requirements of the SWMP as it applies to site environmental management and control. • Implement the environmental measures and actions as described in the SWMP.

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6. Environmental Risk Assessment

6.1 Summary of Impacts and Proposed Mitigation Strategies

The EIS (GHD, 2023a), Amendment Report (GHD, 2024) and the Stage 1 Environmental Risk Assessment (ERA) (AGLM, 2025), identified potential impacts to the soil and hydrologic features of Lake Liddell and its associated tributaries during demolition activities.

Table 6-1 provides an overview of these impacts for soil and water relevant to the Catchment Areas in the Stage 1a Development Works.

Section 7 provides further mitigation strategies to comprehensively address these concerns as well.

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Table 6-1: Potential soil and water quality impacts referenced by the EIS

Aspect	Activity	Impact Description	Mitigation Strategy Relevant to SWMP?
Erosion and Sedimentation	Demolition and removal of infrastructure	The demolition and removal of infrastructure at the site is not expected to be subject to major earth works. Increased vehicle movement and equipment usage will disturb the area, and shallow excavations may lead to soil erosion.	Yes – Section 7
Acid Sulfate Soils	Excavation works	The EIS (GHD, 2023a) indicated that acid sulfate soils (ASS) are unlikely to be encountered within the site and as such, impacts associated with ASS would not occur.	Not required
Spontaneous Combustible Materials	Stockpiling soils	Spontaneous combustion can occur in overburden material stockpiles with high concentrations of carbonaceous material present, however spontaneous combustion testing on material within the borrow pit area indicate that spontaneous combustion is unlikely.	No - Unexpected Finds Protocol in DEMP
Contamination	Demolition works	Previous investigation reports identified contamination in soil, groundwater, and surface water, posing potential risks to on-site maintenance workers, terrestrial ecosystems, and aquatic ecology. These risks are managed by a Long Term Site Management Plan (LTSMP). Remediation is not required at this stage as risks can be managed through an LTSMP and site preparatory works.	No – this does not fall under the demolition works covered by this management plan. Further investigation and remediation will be undertaken as part of later stages.
		There is potential for contamination during demolition of infrastructure, with the highest risk from encountering asbestos and hydrocarbons in soils. There is also a potential risk of spills and leaks during demolition activities.	Provided in the DEMP Additional procedures provided in Section 7 and the TARP (Appendix 1)
Surface Water	Removal of vegetation and general earthworks	Removing vegetation reduces resistance to overland flow, while earthworks can change water flow paths and concentrate flows, both leading to increased flow velocities. Higher flow velocities raise the risk of stream bank erosion.	Yes – Section 7 Also covered under the PESCP (to be prepared as a separate document)

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Aspect	Activity	Impact Description	Mitigation Strategy Relevant to SWMP?
	Transportation and Stockpiling of Excavated Material	Earthworks and the movement of construction vehicles could increase erosion and sediment deposition in waterways, as well as introduce contaminants such as oil and greases or disturb contaminated sediments. The stockpiling of excavated material can divert existing surface water flow path and alter flow regimes for tributaries.	Yes – Section 7 Also covered under the PESCP (to be prepared as a separate document)
	Instream disturbance through works in riparian zones	The removal of infrastructure such as the ash lines may lead to direct instream soil and bank erosion of Lake Liddell and associated tributaries. This can increase turbidity, decrease dissolved oxygen, increase nutrients and toxicants which can cause increased weed growth and algal blooms.	Yes – Section 7 Also covered under the PESCP (to be prepared as a separate document)
	Potential for leaks and spills	Accidental spills or leaks of petroleum, oils, and other toxic substances from machinery, equipment, refuelling, storage tanks, and vehicles may occur during the demolition works. These spills could reach downstream waterways, forming oily films, reducing visual amenity, decreasing biodiversity, and harming aquatic habitats and species due to elevated toxicant levels.	Provided in the DEMP Additional procedures provided in Section 7 and the TARP (Appendix 1)
	Removal of infrastructure	Demolition works have the potential to impact surface water quality of Lake Liddell through: • Increasing bare soil exposure during removal of hardstand, causing sedimentation in receiving waters • Mobilising potentially contaminated soils in hazardous substance storage and operation areas during earthworks Mobilising sediments within surface water storages (i.e. sediment basins) during desilting and decommissioning activity	Yes – Section 7 Also covered under the PESCP (to be prepared as a separate document)
	Unauthorised discharge to surface water or groundwater	Unauthorised discharges to groundwater and surface water can occur from overflows of sediment basins, hydrocarbon spills, inadequate chemical bunding/storage, which may impact the receiving water body.	Yes - Section 7 Water Discharge Plan (Appendix 2)

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Aspect	Activity	Impact Description	Mitigation Strategy Relevant to SWMP?
	Unauthorised discharge exceeding discharge criteria	Discharge of water containing contaminant concentrations which are greater than approval criteria limits, which may harm aquatic habitats and species due to elevated toxicant levels.	Yes - Section 7 Water Discharge Plan (Appendix 2) Water Monitoring Plan (Appendix 4)
Flooding	Demolition Works	The demolition works is not expected to significantly alter flooding or downstream watercourse stability, as it does not change Lake Liddell's catchment delineation. As outlined above, during demolition works, the Site will be progressively stabilised for ongoing industrial use with flooding impacts equal to or less than current conditions. Flood modelling undertaken for the Development also indicates minimal changes in flood behaviour and suggests flooding is unlikely to affect the Development works.	Yes - TARP (Appendix 1)
Groundwater	Removal of Subsurface Infrastructure	The removal of subsurface infrastructure is expected to be limited and shallow, mainly around concrete slabs, however, may encounter groundwater. Groundwater from the alluvial/colluvial aquifer of Lake Liddell is quickly recharged and discharged into the lake, and as such, it was considered that groundwater interception would have minimal impact on groundwater in the Site. Groundwater quality might be affected by contact with potentially contaminated soils during demolition.	Not required as it was considered that groundwater interception would have minimal impact on groundwater in the Site. Covered under the DEMP Unexpected Finds Protocol Additional procedures for unexpected groundwater find provided in the TARP (Appendix 1)
Cumulative Impacts	Demolition Works	Based on the impact assessment, potentially significant impacts are limited to temporary water quality impacts of elevated sediment loads, which are expected to be mitigated by typical construction management measures.	DEMP Section 7

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6.2 Approach to Soil and Water Management

This SWMP addresses the risks outlined in Table 6-1 by presenting a risk-based approach to soil and water management that:

- Utilises the existing site drainage system and basins to the extent possible to manage run-off from the Catchment Areas. Where feasible and appropriate, the sediment basin sizes will be expanded to increase storage capacity.
- Manages direct and indirect discharge of run-off from the Catchment Areas to Lake Liddell.
- Minimises the potential for soil erosion and mobilisation/transport of sediment off-site through application of a combination of area specific and source controls, including use of localised drainage, sediment basins and erosion and sediment controls throughout.
- Identifies feasible contingency measures to assist with management of impacts to soil and/or water at the Site. This proactive approach will minimise the potential for pollution of soil and Lake Liddell and associated tributaries.
- Implements regular inspections, monitoring and assessment of site activities related to soil and water management, to ensure compliance with EPL 2122 and applicable regulatory requirements.

It is noted that overarching erosion and sediment controls are provided in Section 7, however, site-specific controls will be detailed in a PESCP.

Specific management and mitigation measures to achieve the above are described in Section 7.

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7. Soil and Water Management and Mitigation Measures

The EIS (GHD, 2023a), Amendment Report (GHD, 2024) and the Stage 1 ERA (AGLM, 2025), identified that proper soil and water management and mitigation measures are essential to prevent contamination, erosion and mobilisation of soil/sediment at the Site.

Section 7.1 outlines the overarching strategies to manage soils and surface water during the demolition process and Section 7.2 provides an overview of area specific controls to be applied during the demolition works.

Controls should be inspected and maintained for the duration of demolition works in each area.

The Principal Contractor Site Supervisor is responsible for the implementation and ongoing monitoring and maintenance of the controls.

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7.1 Overarching Management Measures

Table 7-1: Soil and Water Management and Mitigation Measures

Component	Objective	Controls and Actions	Monitoring and Records
Site Preparation	Prepare the site in a way that allows for effective soil and water management from the onset of works	• Identify and decommission groundwater monitoring well locations potentially impacted by the demolition works by a suitably qualified consultant. • Undertake maintenance works for water drainage infrastructure and sediment basins (as per Section 7.2). • Install temporary drainage, erosion and sediment control measures prior to the commencement of demolition works. This should include 'dirty water' temporary drainage measures to direct water to the sediment basins and 'clean water' temporary diversions around the Catchment Areas, which are positioned up-gradient of disturbance areas. • Establish work zones, including access points and roadways / paths for machinery and vehicles. This should also include star picket, flagging and signage for no-go zones and exclusion zones (i.e. for riparian zones). • Stabilise entry / exit points to reduce tracking of sediments (i.e. with the use of crushed concrete, gravels or metal grid), in accordance with the PESCP and *Managing Urban Stormwater: Soils and Construction – Volume 1* (Landcom, 2004). • Designate and prepare stabilised areas for material laydown and waste storage, away from drainage lines and sensitive receptors. • Install spill kits at key locations, including near fuel and chemical storage areas. • Ensure all plant and machinery are inspected and maintained, and free of fluid leaks before entering the site. • Identify and protect existing stormwater inlets and drainage lines from sediment-laden runoff using inlet protection (e.g. filter socks, geofabric barriers).	• Pre-demolition inspection to confirm all mitigation measures are in place

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Component	Objective	Controls and Actions	Monitoring and Records
		• Personnel to undertake an environmental induction covering soil and water management responsibilities, response protocols and incident reporting, prior to commencing works. • Conduct a pre-commencement demolition inspection to confirm all mitigation measures as outlined above are in place.	
Soil Movement and Disturbance	Minimise soil disturbance during demolition	**Limit soil disturbance:** As part of the demolition works, limit demolition to the bottom of slab and ground disturbance works are to be limited to necessary activities only (noting that the investigation and remediation of soils don't fall into the works covered by this management plan): • Where practicable, stage the works to reduce the amount of exposed soil at any one time. • Avoid or limit below-ground excavations. • Where soil excavations are required, designate a soil stockpiling area and record soil movement locations / volumes. • Maintain existing site topography where feasible. **Designate works zones:** • Define work zones to prevent unnecessary soil disruption. Establish stabilised entry and exit points for plant and machinery with hardstand surface or crushed concrete / gravels. • Vehicles leaving designated work areas are to be free of mud and dirt. Vehicles that do not meet this requirement will be manually cleaned. **Contaminated Materials:** • Where potentially contaminated soils or lubricants are identified during demolition works, implement the Unexpected Finds Protocol in the DEMP and follow the 'Uncovering Potential Contamination' response procedure outlined in the Trigger Action Response Plan (TARP) (Appendix 1).	• Regular inspections of work areas and vehicles leaving these areas (as required). • Record of soil movement locations and volumes. • Record of incidents / unexpected finds in accordance with Section 9.5.

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Component	Objective	Controls and Actions	Monitoring and Records
		• Proper handling, removal and disposal of hazardous materials (including asbestos, PCBs and hydrocarbons) in accordance with the DEMP and Asbestos Management Plan (where applicable). Hazardous materials to be removed separately to other materials and prior to demolition work occurring in a given work zone. Segregate waste per the DEMP to prevent contamination spread. Refer to mitigation measures within this table for stockpiling contaminated soils. • Where spontaneous combustible materials are encountered, isolate the zone and if practicable and safe to do so, excavate out the affected area and move to a safe area where the material can be spread out to cool or be saturated with water. • Provide on-site training for workers on contamination prevention and response measures. Conduct regular briefings to update on any changes in protocols.	

Surface Cover Stabilisation	Reduce erosion and dust generation from exposed soils.	• Where practicable, progressively stage the works to reduce the amount of exposed soil at any one time.
		• Where soils become exposed and present an erosion or dust generation risk, stabilise the surface to prevent erosion and dust generation:
		  ○ Where further investigation / remediation works is **not** be required in the exposed soil area (as part of later stages in the Project), crushed concrete or cover crop will be utilised as a surface stabiliser (depending on the future use of the area).
		  ○ Where further investigation / remediation works may be required in the exposed soil area, utilise temporary covers such as geotextiles, jute mesh, mulch or vegetation.
		• Where surface cover stabilisation is not yet possible, utilise water spraying or dust suppressants to minimise airborne soil particles.
		It is acknowledged that later stages of the Development will include earthworks and recontouring of the landform to facilitate a stable and free draining surface.
			• Daily inspections of surface cover where works are occurring.
			• Undertake maintenance for the surface stabiliser (as required).
			• Maintain records of exposed areas and stabilisation method applied.

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Component	Objective	Controls and Actions	Monitoring and Records
Erosion and Sediment Control	Prevent erosion and sedimentation	The Site has numerous existing water management infrastructure that provide sediment control, including the oil and grit trap and sediment basins. The existing infrastructure will be utilised and upgraded as required for settling of solids from run-off across the Site (see Section 7.2). Additional local source erosion and sediment control measures should be installed in accordance with the ESCP, including: • Install and maintain silt fences and sediment basins to capture and settle suspended particles of water run-off, prior to demolition works beginning in the catchment area. Erosion and sediment controls should be implemented in accordance with *Managing Urban Stormwater: Soils and Construction – Volume 1* (Landcom, 2004). • Where works are in proximity to the water body, install and maintain water body controls to prevent sediment run-off, this should include measures such as silt fences, silt curtains, vegetative covers etc. • Monitor weather forecasts and adjust work plans accordingly. Stop soil disturbance activities during forecasted and current wet weather events (i.e. >10 mm of rain in 24 hours) to prevent excessive sediment movement. In preparation for wet weather events, check and reinforce erosion and sediment controls and confirm proper functioning of the water management infrastructure. A procedure for response actions is provided in the TARP (Appendix 1). • Maintain a buffer zone of at least 20 m from water bodies. • Regularly maintain erosion control measures, ensuring their effectiveness and adjusting as necessary based on weather conditions and project progress. • Ongoing stabilisation of exposed soil areas, including roadways and access points.	Monitor as per requirements of the ESCP, including: • Inspection of Catchment Areas to determine the need for erosion and sediment controls. • Inspection and maintenance of erosion and sediment controls implemented.
Dirty Water Run-Off and Drainage Control	Prevent uncontrolled surface water	**Drainage infrastructure:** • Implement and maintain surface water diversion drains, berms and swales to direct run-off away from Catchment Areas to the sediment basins designated for each area.	• Daily inspections and maintenance of water drainage infrastructure.

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Component	Objective	Controls and Actions	Monitoring and Records
	movement and minimise erosion.	Proposed diversion drains and sediment basins specific to each area is outlined in Section 7.2. • Any temporary drains constructed for the demolition works will be appropriately lined or stabilised, i.e. with geotextiles such as geofabric to enhance the stability of the drain, control soil erosion and assist in filtering out sediments. This includes drain inlets and outlets. • Stabilise diversion channels using geofabric, rock lining, grassing, crushed concrete or other erosion-resistant materials. • Where required, disconnect or block water drainage infrastructure which will not be utilised during demolition works, i.e. stormwater drains and outlet within the Water Intake Pump Station (see Section 7.2.3) to prevent discharge waters that do not meet the discharge criteria to Lake Liddell. **Site maintenance:** • Maintain site grading to prevent concentrated run-off. • Regularly inspect and clean drainage channels to remove sediment build-up and prevent blockages. **Flood prevention:** • Refer to the TARP (Appendix 1) for flood procedures during heavy rain events to prevent uncontrolled water accumulation.	
Clean Water Run-Off	To prevent clean surface water from flowing into disturbed areas by diverting it around the Catchment Areas, thereby reducing	• Identify clean water catchment drains in up-gradient Catchment Areas and disturbance activities. • Existing clean water diversions will be utilised, and new or enhanced clean water diversions will be established where practical, to maximise the diversion of clean run-on water movement around work sites. • Where existing clean water diversions are not available, install diversion drains, earth bunds, or swales up-gradient to divert clean water around areas of soil disturbance.	• Daily inspections and maintenance of water drainage infrastructure.

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Component	Objective	Controls and Actions	Monitoring and Records
	the volume of water requiring treatment	Ensure clean water drainage systems discharge safely into stable, non-erodible areas or existing natural drainage lines. Clean water diversion lines should be clearly marked. • Stabilise diversion channels using geofabric, rock lining, grassing, or other erosion-resistant materials. • Inspect clean water diversion structures regularly, particularly after rainfall events, to ensure they remain functional and free of blockages or damage.	
Collection and Storage of Surface Water	Correct storage and containment of surface water	• Maintain the designated infrastructure for each Catchment Area as per Section 7.2 (i.e. local controls, water drainage lines and sediment basins), to direct, collect and retain surface water run-off. The controls, including sediment basin design, storage capacity and discharge frequencies is also outlined in Section 7.2. • Prevent overflows by implementing level monitoring systems and controlled discharge or re-use protocols (Appendix 2 and Appendix 3). • Regular inspections of sediment basins for structural integrity and sediment / debris build-up. • Maintenance of sediment build up to maintain the design capacity of the sediment basin.	• Daily inspections of water drainage infrastructure for structural integrity and debris build up. • Maintain records of water levels, re-use/discharge activities, and any maintenance actions performed.
Surface Water Discharge	Mitigate potential negative impacts to Lake Liddell from discharge water	Surface water discharge events are to be controlled and undertaken in accordance with the Water Discharge Plan in Appendix 2 and EPL (2122), including: • Appropriate treatment (i.e. sedimentation or flocculation) and pre-discharge assessment to confirm appropriateness for discharge. • Implement controlled discharge procedures, including management of the discharge location, rate and scheduling of discharge to limit the environmental impact. • Ongoing monitoring of the quality and quantity of water to be discharged, as well as routine (monthly) monitoring of Lake Liddell.	• Monitoring requirements as per the Water Monitoring Plan (Appendix 4).
Surface Water Re-Use	Appropriate utilisation and re-use of water	The demolition works will aim to re-use water as far as reasonably practical for purposes such as dust suppression or irrigation.	• Monitoring requirements as per the Water

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Component	Objective	Controls and Actions	Monitoring and Records
		The re-use of surface water is to be controlled and undertaken in accordance with the Water Re-Use Plan in Appendix 3. This includes: • Review of water use records to identify potential opportunities to minimise the use of potable water. • Appropriate treatment of surface water (i.e. sedimentation) and pre-discharge assessment to confirm appropriateness for re-use. • Implementation of controlled re-use procedures, including management of the discharge location and rate of application to limit potential erosion impacts. • Ongoing monitoring of the quality and quantity of water to be re-used, as well as inspections of the re-use areas for pooling, erosion or signs of contamination.	Monitoring Plan (Appendix 4). • Daily inspections of the re-use areas for pooling, erosion, or signs of contamination.

Riparian Waterfront Land	Minimise disturbance of waterfront areas and stabilise banks	• Undertake works inline with the general guidance provided in the Controlled Activities on Waterfront Land (DPE, 2022) (however, noting that the Development is exempt from requiring controlled activities). General guidance includes:
		  ○ Define the vegetated riparian zone on a map, using specific widths for different watercourses
		  ○ Protect and vegetate the inner 50% of vegetated riparian zone with native riparian plant species
		  ○ Use vegetation within the vegetated riparian zone to trap sediment, nutrients, and contaminants
		• Plan detention basins and other infrastructure to support floodplain management
		• Maintain a buffer zone (>20 m) from the banks and minimise disturbance of the banks during demolition works.
		• Where works near banks cannot be avoided, use bank stabilisation methods, such as biodegradable erosion control mats, geotextiles, rock armouring or planting vegetation.
		• Use temporary barriers such as silt curtains or coir logs during in-water works to prevent sediment migration.
		• Limit the use of pesticides across the Site, particularly near water bodies.
			• Daily inspections of waterfront areas and bank stabilisation measures where works are occurring.

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Component	Objective	Controls and Actions	Monitoring and Records
		Where works are to occur within the buffer zone (i.e. <20 m from the banks), area and activity specific control measures should be planned and implemented. For example, where works are being undertaken immediately adjacent to Lake Liddell and the outfall canal, enhanced at-source controls such as berms and floating water quality curtains will be utilised.	
Chemical Storage and Spill Response	Prevent chemical spills and contamination of soil, surface water and groundwater	**Machinery and equipment:** • Conduct regular maintenance and inspections for leaks on all plant and machinery. • Refuel or service machinery in designated areas with a sealed surface and spill containment measures (e.g., drip trays, bunded fuel stations). Refuelling areas to be >50 m from waterways. Where this is not practicable, an area-specific risk assessment will be undertaken to determine the appropriate controls such as silt booms, bunding etc. • Spill kits are to be kept near refuelling stations and maintenance areas for quick response. • Store fuel and lubricants in bunded areas away from waterways and/or water drainage infrastructure. • Exclusion zones should be established for construction plant and equipment operating near water bodies or 'clean water' infrastructure. Vehicles and machinery to remain on designated access roads / in areas. Where this is not practicable, additional measures such as bunding, spill kits, oil/silt booms should be applied (where relevant). **Chemical storage:** • Store chemicals in designated areas with secondary containment to prevent spills in accordance with the safety data sheets (SDS). Storage areas are to be impermeable and roofed to prevent rainwater ingress. Secondary containment systems should be designed for 'no-discharge', in the event of a chemical liquid in accordance with Australian Standard (AS) 1940 *The storage and handling of flammable and combustible*	• Daily inspections of chemical storage areas and spill response equipment. • Records of equipment maintenance and inspections.

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Component	Objective	Controls and Actions	Monitoring and Records
		liquids. This includes the requirement for the secondary containment system to hold at least 110% of the volume of the largest stored liquid. • Clearly label all chemical containers and storage areas. Use signage to indicate hazardous materials and spill response procedures. Maintain SDS in proximity to the chemical storage area. **Spill kits and equipment:** • Equip chemical storage areas with spill kits and necessary equipment, including absorbent materials, neutralizing agents, and personal protective equipment (PPE). Spill containment booms, absorbent materials, and neutralising agents should be placed in high-risk areas, where considered necessary. • Spill skits should be placed in strategic locations across the work areas. Site based vehicles are to carry spill kits. • As part of the induction, contractors will receive training on proper handling, storage, and spill response procedures, including how to use spill kits effectively. **Spill response:** In the event of a spill, follow the spill management procedure outlined in the DEMP, including: • Stop the source / plant if safe to do so. • Notify the Principal Contractor Site Manager and AGLM Project Manager. • Isolate the source of the leak (if possible). • Deploy spill containment measures to prevent further spread using the spill kit, spill booms, absorbents, or barriers to prevent migration into stormwater or natural water bodies. • Clean up the contaminated area. • Dispose of contaminated materials offsite at an appropriately licenced facility. • In the event of a large or hazardous spill, enact the Pollution Incident Response Management Plan. This will include procedures for notification of the fire brigade, police, ambulance and EPA, where required.	

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Component	Objective	Controls and Actions	Monitoring and Records
Alluvial Aquifers	Prevent impacts to the alluvial aquifer	• Implement soil and water controls outlined in this SWMP to prevent contamination of groundwater. • Where groundwater is encountered during excavation, follow the TARP response actions for 'groundwater ingress' (Appendix 1). • Do not extract groundwater for any purpose.	• Daily inspections of activities occurring onsite.
Soil Stockpile Management	Manage temporary soil stockpiling to prevent contamination spread and run-off from stockpiles	**Location considerations:** • Designate soil stockpiling areas within each Catchment Area. • Where possible, soil stockpiles should be located away from water bodies and water drainage infrastructure to prevent sediment displacement and potential water contamination. Where this is not practical, source controls such as silt fences, sediment barriers, and containment berms should be implemented. **Waste segregation:** • Identify and segregate contaminated soil from clean soil for appropriate handling. • Clearly segregate different waste types and materials (i.e. contaminated soil, clean soil, demolition debris, concrete etc.), to prevent cross contamination and assist in the overall waste management. • Physical barriers and signage can be used to segregate waste areas. • Follow the principles and procedures outlined in the DEMP. **Stockpile controls:** • Limit the height of the soil stockpile to 2.0 m. • Stabilise soil stockpiles through compaction, geotextile covers, polymer or vegetative covers to minimise erosion, turbid run off and dust generation. • Implement dust suppression strategies to minimise airborne soil particles. • Where soils/material is suspected or confirmed to be contaminated, place stockpiles on impermeable liners or a hardstand surface to prevent potential for leachate infiltration. **Drainage Controls:**	• Daily inspections of stockpile integrity. • Maintain records of stockpile locations, protection measures and transport routes. • Documentation of soil classification and disposal records. • Compliance with requirements in the Waste Management Plan

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Component	Objective	Controls and Actions	Monitoring and Records
		• Ensure temporary drainage controls around soil stockpiles (i.e. using perimeter berms, grading, silt fences, temporary drainage channels, geotextile fabric), to prevent pooling of water and contamination spread. • Implement localised sediment controls surrounding the stockpiles, such as silt fences, bunds, sandbags, as well as diversion channels for rainfall run-off / clean water which should be directed to appropriate sediment basins. **Soil Disposal:** • Management of waste in accordance with the DEMP, including: • Limit the lifespan of stockpiles and re-use clean soil where appropriate. Excess soil not required or able to be used on-site will be classified and disposed of in accordance with the NSW EPA (2014) Waste Classification Guidelines. • Ensure all waste handling, transport, and disposal activities are documented for regulatory compliance.	

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7.2 Area Specific Controls

In addition to the overarching management measures to be implemented across the Site, the area specific soil and water controls to be applied for each Catchment Area are detailed below.

As outlined in Section 3.2, the demolition works will be staged across the Site and each Catchment Area. The installation and/or modification of the water management infrastructure for 'dirty water' in each area will only occur prior to demolition activities commencing in the specific catchment area

The controls should be progressively reviewed throughout the demolition works and updated to reflect changing site conditions.

7.2.1 Main Power Block

The overarching management methodology for the Main Power Block Catchment Area will be to direct surface water to the existing oil and grit trap via a network of existing and temporary drains. Surface water run-off in the grassed areas will be managed by passive management controls (i.e. source controls).

Prior to demolition works, drainage lines that are directly connected to Lake Liddell should be disconnected and/or blocked, to prevent potentially contaminated water being discharged to the Lake.

Table 7-2 provides details of the proposed infrastructure to be utilised as part of the water management for the area, with a visual overview provided in Figure 7-1.

Table 7-2: Proposed water infrastructure – Main Power Block

Water Management Infrastructure	Existing infrastructure?	Purpose and Details	Maintenance Requirements
Subsurface drainage lines connecting to the oil and grit trap	Existing infrastructure	To direct surface water run-off to the oil and grit trap. The drainage lines will be retained during the duration of the demolition works.	Not required. Ongoing maintenance may be required as part of the demolition works.
Oil and Grit Trap	Existing infrastructure	To capture and store surface water and allow solids to settle. The oil and grit trap will be upgraded to have a size of 30,286 m^3.	Prior to demolition works, maintenance of the oil and grit traps; removing water and sediment, is required to increase the storage capacity. Ongoing maintenance may be required as part of the demolition works.
Temporary diversion channels / banks	Temporary infrastructure to be installed as part of the demolition works.	To direct local surface water run-off to the oil and grit trap. Temporary pumping of water may be required where gravity drainage is not feasible.	Ongoing maintenance may be required as part of the demolition works.

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Water Management Infrastructure	Existing infrastructure?	Purpose and Details	Maintenance Requirements
		The specific location and details of the diversion drains will be included in the PESCP.	
Temporary sediment controls	Temporary sediment controls to be installed as part of the demolition works.	To prevent sediment mobilisation into other areas and water drainage infrastructure / bodies of water. Sediment controls may include but not limited to silt fences, coir log sediment traps, gravel bags etc. The specific location and details of the erosion and sediment controls will be included in the PESCP.	Ongoing maintenance may be required as part of the demolition works.

The sewerage treatment ponds are not proposed to be utilised as part of the overall management strategy for the Main Power Block as these have been decommissioned and would require significant engineering / maintenance to be utilised as a sediment basin.

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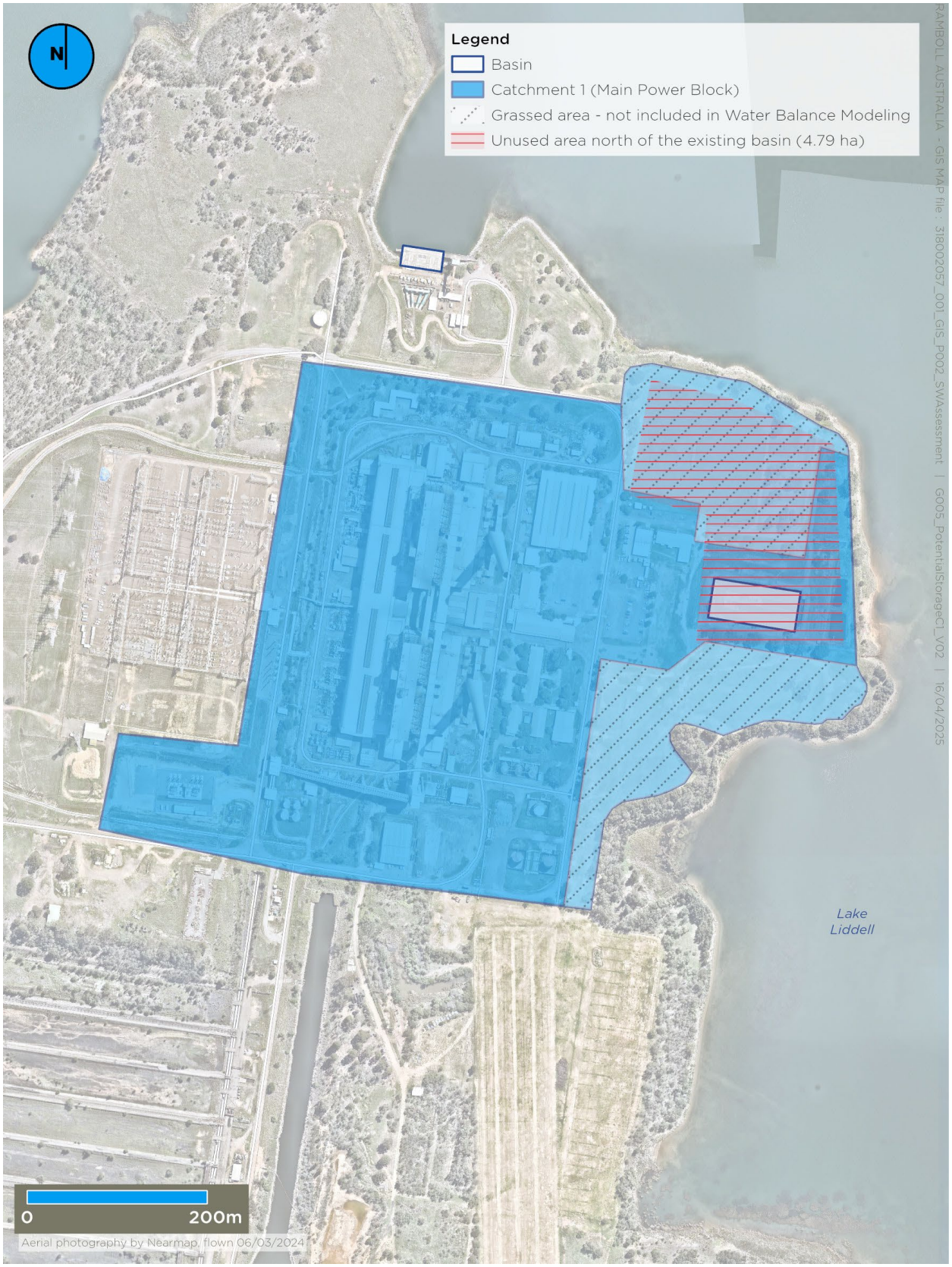

Figure 7-1: Overview of proposed water management infrastructure – main power block

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7.2.2 Coal Handling Plant

The overarching management methodology for the Coal Handling Plant Catchment Area will be to direct surface water to the two existing sediment basins via a network of drains.

Table 7-3 provides details of the proposed infrastructure to be utilised as part of the water management for the area, with a visual overview provided in Figure 7-2.

Table 7-3: Proposed Water Infrastructure – Coal Handling Plant

Water Management Infrastructure	Existing infrastructure?	Purpose and Details	Maintenance Requirements
Concrete lined surface drains	Existing infrastructure	To direct surface water run-off to the eastern and western holding ponds. The drainage line extends for approximately 500 m between and connects the eastern and western holding ponds.	Repair to the drainage channel is required where concrete is reported to be collapsing. Prior to demolition works maintenance works is required to remove debris. Ongoing maintenance may be required as part of the demolition works.
Western Holding Pond	Existing infrastructure	To capture and store surface water and allow solids to settle. The western and eastern holding ponds will be upgraded to have a combined capacity of 29,290 m^3.	Prior to demolition works maintenance of the basin is required to increase storage capacity. This can be achieved by the removal of accumulated sediment and debris, as well as removal of vegetation that may block water flow into the basin. Ongoing maintenance may be required as part of the demolition works.
Eastern Holding Pond	Existing infrastructure	To capture and store surface water and allow solids to settle prior to discharge. The western and eastern holding ponds will be upgraded to have a combined capacity of 29,290 m^3.	Prior to demolition works maintenance of the basin is required to increase storage capacity. This can be achieved by the removal of accumulated sediment

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Water Management Infrastructure	Existing infrastructure?	Purpose and Details	Maintenance Requirements
			and debris, as well as removal of vegetation that may block water flow into the basin. Ongoing maintenance may be required as part of the demolition works.
Temporary diversion channels / banks	Temporary infrastructure to be installed as part of the demolition works.	To direct local surface water run-off to the concrete lined surface drain and/or the holding ponds. . The specific location and details of the diversion channels will be included in the PESCP.	Ongoing maintenance may be required as part of the demolition works.
Temporary sediment controls	Temporary sediment controls to be installed as part of the demolition works.	To prevent sediment mobilisation into other areas and water drainage infrastructure / bodies of water. Sediment controls may include but not limited to silt fences, coir log sediment traps, gravel bags etc. The specific locations and details of the erosion and sediment controls will be included in the PESCP.	Ongoing maintenance may be required as part of the demolition works.

The following existing infrastructure will not be utilised as part of the overall management strategy for the Coal Handling Plant Catchment Area:

- The Bennet Pit 1 and Bennet Pit 2 as these will be removed during demolition works
- Subsurface drainage lines as these will be compromised during demolition works.

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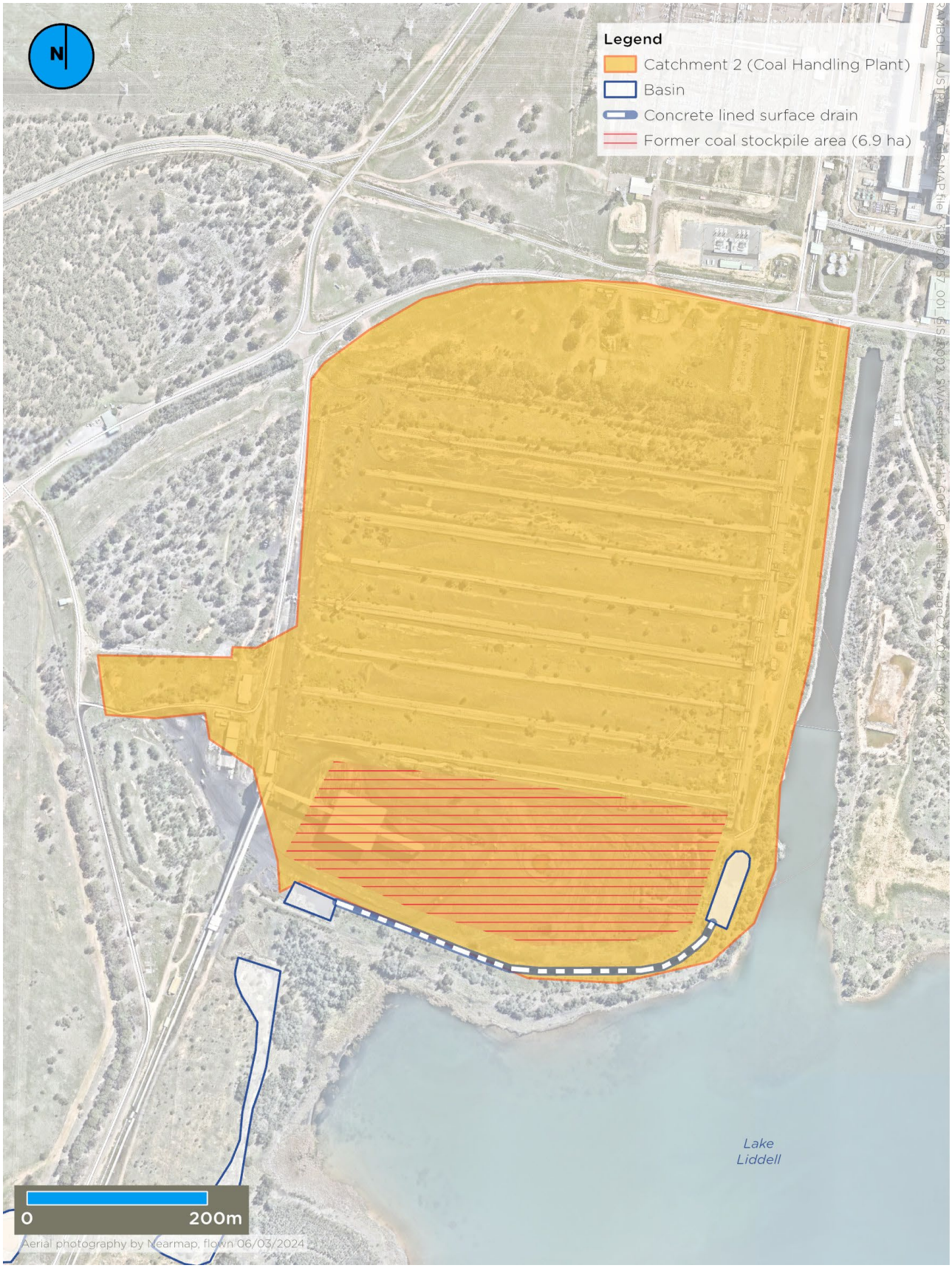

Figure 7-2: Overview of proposed water management infrastructure – coal handling plant

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7.2.3 Water Intake Pump Station

The overarching management methodology for the Water Intake Pump Station Catchment Area will be to capture water within the designated storage basin (CW pump discharge conduit pit) and transfer water to the oil and grit trap (located in the Main Power Block). Surface water run-off in the grassed areas will be managed by passive management controls (i.e. source controls).

Prior to demolition works, it is proposed that the inlet/outlet drains to Lake Liddell be disconnected, to prevent potentially contaminated water being discharged to the Lake. Given these works will be undertaken immediately adjacent to Lake Liddell, enhanced at-source controls such as silt curtains will be utilised. Works will not be undertaken in this area during periods of wet weather.

Table 7-4 provides details of the proposed infrastructure to be utilised as part of the water management for the area, with a visual overview provided in Figure 7-3.

Table 7-4: Proposed Water Infrastructure – Water Intake Pump Station

Water Management Infrastructure	Existing infrastructure?	Purpose and Details	Maintenance Requirements
Concrete lined VEE drains	Existing infrastructure	To direct surface water run-off to the storage basin. The drains extend along the roadway access point to the water intake pump station.	Prior to demolition works, maintenance works is required to remove debris. Ongoing maintenance may be required as part of the demolition works.
CW pump discharge conduit pit (Storage Basin)	Existing infrastructure	To capture and store surface water and allow solids to settle. The storage basin has an area of 500 m^2.	Prior to demolition works, maintenance of the storage basin is required to remove water and accumulated sediment and/or debris. Ongoing maintenance may be required as part of the demolition works.

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Water Management Infrastructure	Existing infrastructure?	Purpose and Details	Maintenance Requirements
Temporary diversion channels / banks	Temporary infrastructure to be installed as part of the demolition works.	To direct local surface water run-off to the storage basin. The collected water will then be transferred to the oil and grit trap (Main Power Block) either using water trucks or via the setup of a temporary pumping system. The specific location and details of the diversion channels will be included in the PESCP.	Ongoing maintenance may be required as part of the demolition works.
Temporary sediment controls	Temporary sediment controls to be installed as part of the demolition works.	To prevent sediment mobilisation into other areas and water drainage infrastructure / bodies of water. Sediment controls may include but not limited to silt fences, coir log sediment traps, gravel bags etc. The specific location and details of the erosion and sediment controls will be included in the PESCP.	Ongoing maintenance may be required as part of the demolition works.
Enhanced source controls	Additional temporary source controls such as silt curtains to be installed when working in direct proximity to Lake Liddell (i.e. within 20 m)	Additional source controls such as silt curtains water quality curtains are to be temporarily established to control the migration of sediment into water ways. The specific location and details of the additional source controls will be included in the PESCP.	Ongoing maintenance may be required as part of the demolition works.

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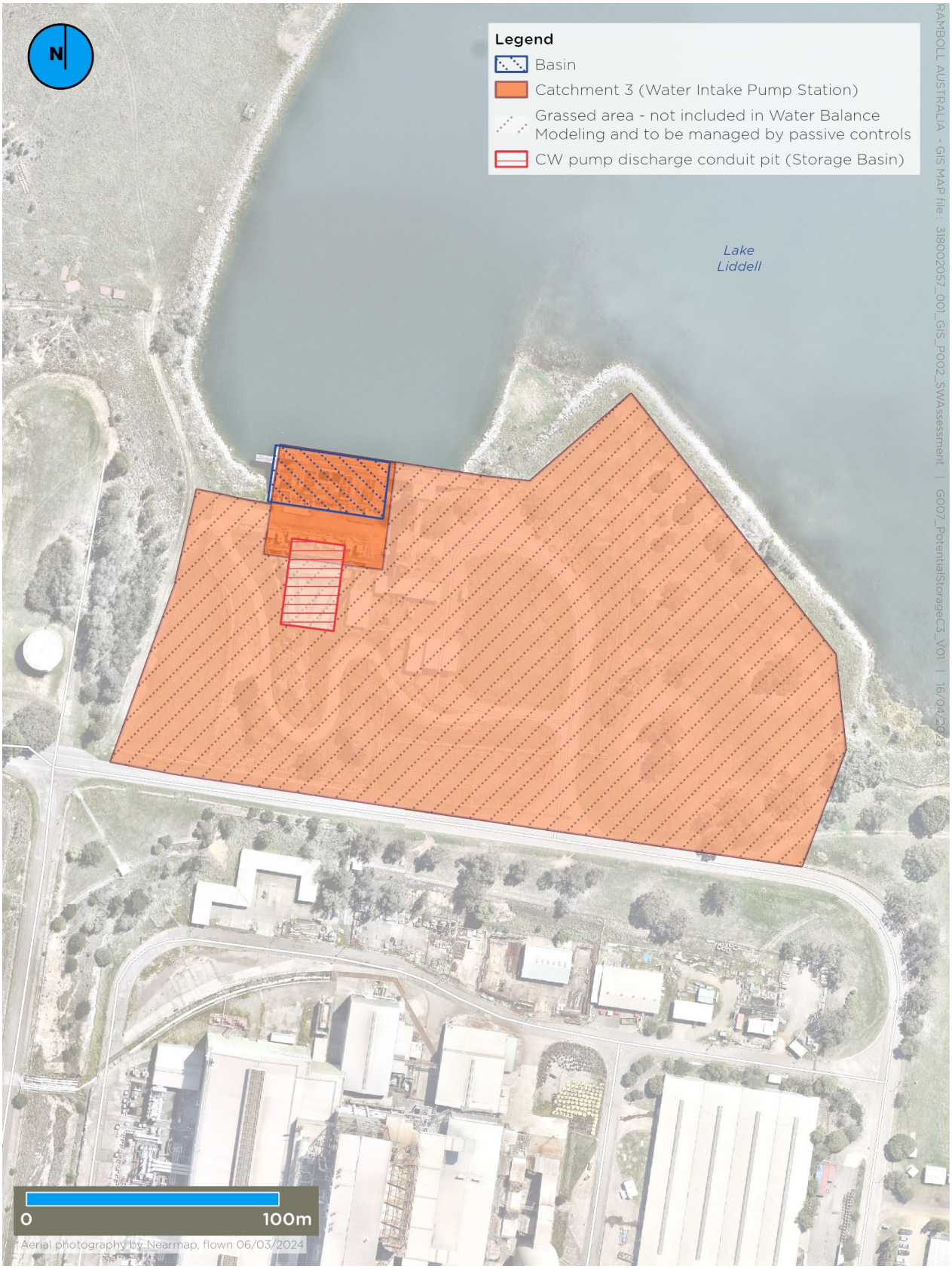

Figure 7-3: Overview of proposed water management infrastructure – water intake pump station

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7.2.4 Hunter Valley Gas Turbines

The overarching management methodology for the HVGTs Catchment Area will be to capture water within the sediment basin.

Table 7-5 provides details of the proposed infrastructure to be utilised as part of the water management for the area, with a visual overview provided in Figure 7-4.

Table 7-5: Proposed Water Infrastructure – HVGTs

Water Management Infrastructure	Existing infrastructure?	Purpose and Details	Maintenance Requirements
Sediment basin	Existing infrastructure	To capture and store surface water and allow solids to settle. The storage basin currently has an estimated size of 762 m^3 and the basin sizing is not required to be increased.	Prior to demolition works maintenance of the basin, i.e. remove accumulated sediment and debris, as well as removal of vegetation that may block water flow into the basin. Ongoing maintenance may be required as part of the demolition works.
Temporary diversion channels / banks	Temporary infrastructure to be installed as part of the demolition works.	To direct local surface water run-off to the storage basin. The specific location and details of the diversion channels will be included in the PESCP.	Ongoing maintenance may be required as part of the demolition works.
Temporary sediment controls	Temporary sediment controls to be installed as part of the demolition works.	To prevent sediment mobilisation into other areas and water drainage infrastructure / bodies of water. Sediment controls may include silt fences, coir log sediment traps, gravel bags etc. The specific location and details of the erosion and sediment controls will be included in the PESCP.	Ongoing maintenance may be required as part of the demolition works.

The two oil / water separators will not be utilised as part of the overall management strategy for the HVGTs area as these will be compromised and removed during works.

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Figure 7-4: Overview of proposed water management infrastructure – HVGTs

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7.2.5 Ash Pipeline

The overarching management methodology for the Ash Pipeline Catchment Area will be to stage the works and implement local controls at the source of the demolition and disturbance footprint.

Due to the linear nature of the ash pipeline Catchment Area, the area has been split into three sub-catchment areas based on the topography and natural water flows designated as:

- Ash pipeline west (5a)
- Ash pipeline centre (5b)
- Ash pipeline east (5c)

Table 7-6 provides details of the proposed infrastructure to be utilised as part of the water management for the area (including all sub-areas), with a visual overview provided in Figure 7-5.

Table 7-6: Proposed water infrastructure – Ash Pipeline (Catchment Area 5a, 5b and 5c)

Water Management Infrastructure	Existing infrastructure?	Purpose and Details	Maintenance Requirements
Concrete lined VEE drains	Existing infrastructure	To direct surface water run-off to the temporary sediment traps. The drains concrete lined drains runs along the ash pipeline in sloped areas, where erosion is likely due to the steeper paths.	Prior to demolition works maintenance works is required to remove debris. Ongoing maintenance may be required as part of the demolition works.
Sediment traps	Where required, temporary infrastructure may be installed as part of the demolition works.	Where required, localised sediment traps may be installed at the base of the three sloped areas (5a, 5b and 5c), to capture and store surface water and allow solids to settle. The proposed sediment trap sizes are outlined below: • Ash pipeline west (5a): 990 m^3 • Ash pipeline centre (5b): 125 m^3 • Ash pipeline east (5c): 240 m^3	Ongoing maintenance may be required as part of the demolition works.

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Water Management Infrastructure	Existing infrastructure?	Purpose and Details	Maintenance Requirements
Temporary diversion channels / banks	Temporary infrastructure to be installed as part of the demolition works.	To direct local surface water run-off to the storage basin. The specific location and details of the diversion channels will be included in the PESCP. Given the steep roads, additional erosion control measures may be necessary.	Ongoing maintenance may be required as part of the demolition works.
Temporary sediment controls	Temporary sediment controls to be installed as part of the demolition works.	To prevent sediment mobilisation into other areas and water drainage infrastructure / bodies of water. Sediment controls may include but are not limited to silt fences, coir log sediment traps, gravel bags etc. The specific location and details of the erosion and sediment controls will be included in the PESCP. Enhanced controls should be specifically located along the sloped areas.	Ongoing maintenance may be required as part of the demolition works.
Access Route Stabilisation	Temporary infrastructure to be installed as part of the demolition works.	Given the unsealed surface cover across the Ash Pipeline, access routes along the sloped areas should be stabilised (e.g., with crushed gravel or mesh) to effectively prevent erosion.	Ongoing maintenance may be required as part of the demolition works.

In addition to the above controls, given the surface along the Ash Pipeline is unsealed, access routes should be established and stabilised on the sloped areas (i.e. with crushed gravels or mesh) to prevent erosion effectively.

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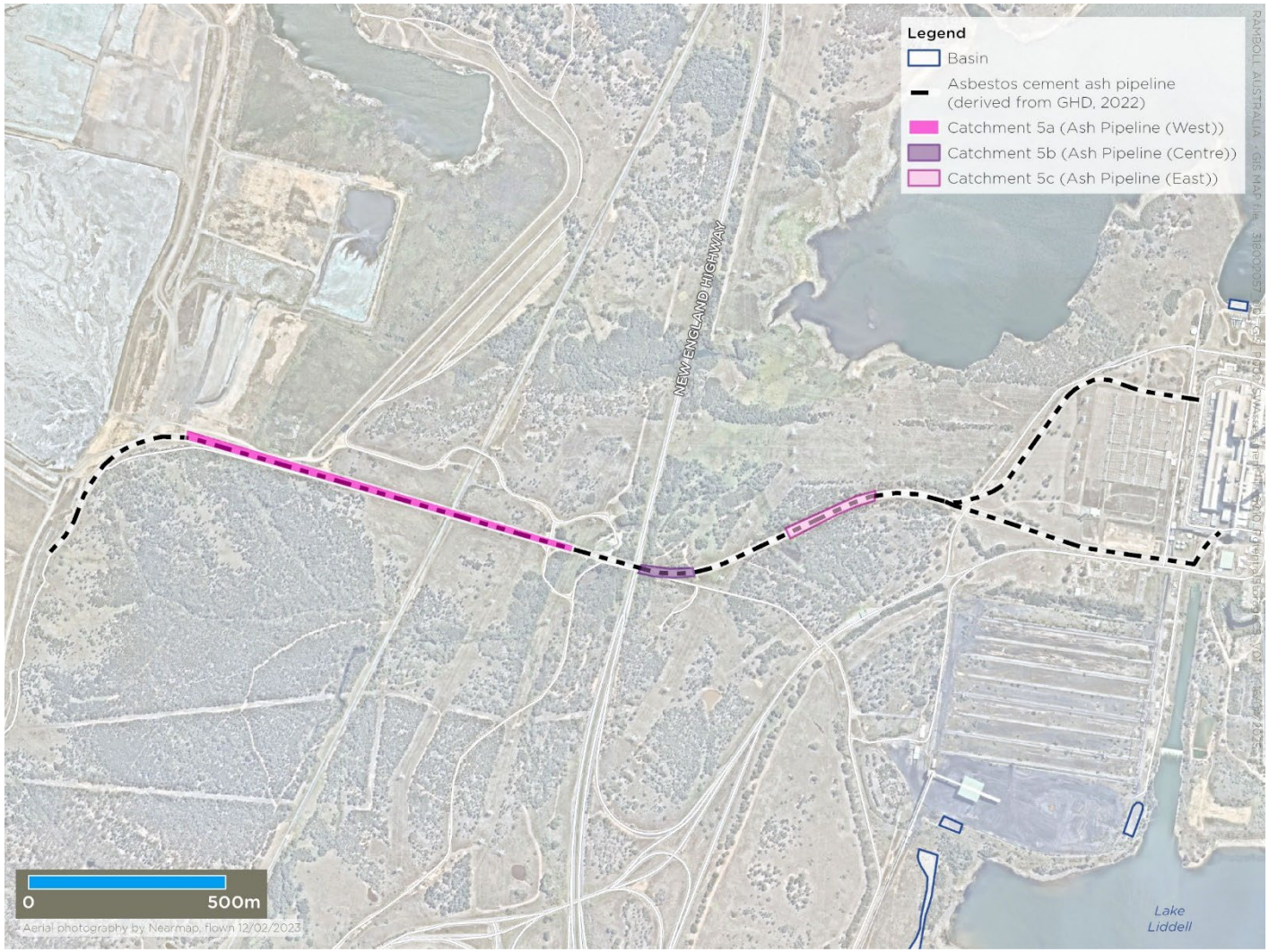

Figure 7-5: Overview of proposed water management infrastructure – ash pipeline

7.2.6 M1/M1a Conveyor

The overarching management methodology for the M1/M1a Conveyor Catchment Area will be to stage the works and implement local controls at the source of the demolition and disturbance footprint. Where required, localised sediment traps will also be utilised to capture excess water run-off.

Due to the linear nature of the M1/M1a conveyor Catchment Area, the area has been split into two sub-catchment areas based on the topography and natural water flows designated as:

- M1/M1a conveyor north (6a)
- M1/M1a conveyor south (6b)

Table 7-7 provides details of the proposed infrastructure to be utilised as part of the water management for the area (including all sub-areas), with a visual overview provided in Figure 7-6.

Table 7-7: Proposed Water Infrastructure – M1/M1a conveyor (6a and 6b)

Water Management Infrastructure	Existing infrastructure?	Purpose and Details	Maintenance Requirements
Sediment trap(s) (6a)	Temporary infrastructure to be installed as part of the demolition works.	Localised sediment trap(s) to be installed in the area of 6a, to capture and store surface water and allow solids to settle. The trap(s) should be located outside any natural drainage channels. The sizing of the sediment trap(s) is approximately 1,000 m^3 in total and can be split into multiple smaller match the landform and smaller sub catchments. The specific location and details of the sediment trap will be included in the PESCP.	Ongoing maintenance may be required as part of the demolition works.
Sediment trap (6b)	Temporary infrastructure to be installed as part of the demolition works.	Localised sediment trap to be installed in the area of 6b, to capture and store surface water and allow solids to settle. The trap should be located outside any natural drainage channels.	Ongoing maintenance may be required as part of the demolition works.

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Water Management Infrastructure	Existing infrastructure?	Purpose and Details	Maintenance Requirements
		The sediment trap is proposed to have a size of 520 m^3. This can be split into smaller multiple traps to suit the landform and smaller sub catchments. The specific location and details of the sediment trap will be included in the PESCP.	
Temporary diversion channels / banks	Temporary infrastructure to be installed as part of the demolition works.	To direct local surface water run-off to the sediment basin. The specific location and details of the diversion channels will be included in the PESCP.	Ongoing maintenance may be required as part of the demolition works.
Temporary sediment controls	Temporary sediment controls to be installed as part of the demolition works.	To prevent sediment mobilisation into other areas and water drainage infrastructure / bodies of water. Sediment controls may include but not limited to silt fences, coir log sediment traps, gravel bags etc. The specific location and details of the erosion and sediment controls will be included in the PESCP.	Ongoing maintenance may be required as part of the demolition works.

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Figure 7-6: Overview of proposed water management infrastructure – M1/M1a conveyor

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8. Trigger Action Response Plan

The Trigger Action Response Plan (TARP) for the demolition works is provided in Appendix 1. The objective of the TARP is to set out procedures to be followed and actions to be implemented should a non-compliance, incident or emergency event. The TARP outlines different levels of notification and actions required to mitigate, repair or offset adverse water quality impacts that may occur as a result of the construction works.

9. Monitoring and Review

9.1 Inspections

Site inspections will be undertaken by the Principal Contractor Site Supervisor on a daily basis to monitor the implementation, effectiveness and suitability of soil and water management measures. AGLM Environmental Representatives should routinely attend inspections (i.e. on a weekly basis), particularly when high risk works are being undertaken.

The inspections will focus on the soil and water controls outlined in Section 7, with specific attention given to the following:

- Sediment basins: Verify the effective functioning and capacity of the basins. Inspect for signs of water overflow or nearing capacity, sediment build-up, and the structural integrity of the basins including embankments and inlet/outlet structures. Confirm the proper functioning and flow of outlets for discharge.
- Drainage infrastructure: Verify the connectivity, effectiveness and function of the infrastructure. Inspect the drains and culverts for any blockages, sediment / debris build up or damage that may impede flow. Where applicable, assess the pumps and other mechanical components for operational efficiency and need of maintenance or repair. Check for signs of erosion around the infrastructure that may compromise its effectiveness or impact the surrounding environment.
- Erosion and Sediment controls: Verify that temporary and permanent controls are appropriately installed and maintained in line with project requirements. Inspect silt fences, sediment traps and barriers to ensure that they are intact and functioning as intended, i.e. confirm placement and stability, check for undercutting or wash outs. Confirm appropriate coverage on exposed soil areas.
- General work areas: Confirm that activities are not adversely impacting soil and water management measures. Identify potential areas of concern (i.e. observed erosion or pooling of water), or any activities that may comprise existing controls, or require additional controls to be implemented.

Inspections of soil and water management measures will be undertaken:

- Daily by the Principal Contractor Site Supervisor during construction hours
- Prior to significant rainfall events (i.e. >10 mm in 24 hours)
- Daily during periods of significant rainfall, where access is safe
- Within 24 hours following a rainfall event of >10 mm
- Following a change in activities onsite
- Following an environmental event (i.e. chemical spill)

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Following the inspection:

- Where a failure in the adopted control measures is identified, the source of the failure will be investigated and appropriate amendments made to the controls. Site-specific management plans and PESCPs will be updated, where required.
- Hazards identified shall be made safe where practical, and details of rectification or actions required recorded.
- Actions arising from these inspections shall be communicated by the Principal Contractor to AGLM. The actions should be addressed by the Principal Contractor to ensure items are addressed in a timely matter.
- Where required, an incident report will be completed by the Principal Contractor and reviewed by AGLM in accordance with Section 9.5.

Records are to be taken and filed during these inspections in accordance with Section 9.5.

9.2 Water Monitoring

Monitoring will be undertaken as per the Water Monitoring Plan (Appendix 4) and Water Discharge Plan (Appendix 2).

9.3 Maintenance Practices

All soil and water controls will be inspected, and maintained in proper working order at all times until their function is no longer required.

The requirement for further maintenance will be triggered following the Principal Contractor daily site inspections and any additional monitoring works being undertaken (i.e. based on water monitoring results) (Section 9.1 and 9.2).

All debris and sediment removed from the sediment basins, drainage lines or erosion and sediment control measures must be disposed of in accordance with the Waste Management Plan.

Appropriate equipment and methods should be utilised for maintenance works to ensure thorough cleaning, without causing additional disturbance to soil and water management systems, or adjacent water bodies.

9.4 Incidents and Complaints

Reference should be made to the DEMP for Incidents Reporting (Section 6.2 and Section 6.3 of the DEMP), and Complaints (Section 7.1).

9.5 Record Keeping and Reporting

Reference should be made to Section 6 of the DEMP for Record Keeping and Reporting for the demolition works.

9.6 Evaluation

The effectiveness of soil and water management measures will be evaluated throughout the project to ensure compliance with environmental standards and to identify areas for improvement. This evaluation process will incorporate the measures included in Section 9 and specifically include the following components:

- Performance Monitoring: Regular inspections and assessments of soil and water management systems to confirm their effectiveness. This also includes water quality monitoring requirements in accordance with the Surface Water Management Plan.

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- Compliance Audits: Internal and external audits to ensure adherence to regulatory requirements (as per the requirements of the DEMP). Any deficiencies will be addressed through corrective actions.
    - Continuous Improvement: Analysis of incidents, non-compliances, and complaints to identify recurring issues and root causes. Management practices will be updated as site conditions change and more effective methodologies emerge.

9.7 Management Plan Review and Improvement

Reference should be made to Section 7 of the DEMP for review and improvement.

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11. Limitations

This report is produced by Ramboll Australia Pty Ltd at the request of AGL Macquarie Pty Ltd for the purposes detailed herein.

Site conditions may change over time. This report is based on the conditions encountered at the site at the time of its creation, and Ramboll Australia Pty Ltd disclaims responsibility for any changes that may have occurred after this time.

Ramboll Australia Pty Ltd did not independently verify all of the written or oral information provided to Ramboll Australia Pty Ltd during the course of this report. While Ramboll Australia Pty Ltd has no reason to doubt the accuracy of the information provided, the completeness and accuracy of the report are dependent on the extent to which the information given to Ramboll Australia Pty Ltd was itself complete and accurate.

This report, along with any accompanying documents, is intended solely for the use and benefit of the client and the NSW EPA for the stated purpose. It may not be used by or disclosed to any other person, in whole or in part, without the express written consent of Ramboll. Ramboll neither owes nor accepts any duty to any third party and shall not be liable for any loss, damage, or expense of any nature caused by their reliance on the information contained in this report.

This report does not provide legal advice. Legal advice should only be sought from qualified legal advisors.

Appendix 1

Trigger Action Response Sub-Plan

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Intended for
AGL Macquarie Pty Ltd

Document type
Report

Date
May 2025

Soil and Water Sub-Plan: Trigger Action Response Plan

Liddell Power Station Demolition

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Soil and Water Sub-Plan: Trigger Action Response Plan

Liddell Power Station Demolition

Project name	**Liddell Power Station Demolition – Soil and Water Trigger Action Response Plan**
Project no.	**318002057**
Recipient	**AGL Macquarie Pty Ltd**
Document type	**Action Response Plan**
Version	**Final**
Date	**05/05/2025**
Description	**The document comprises a sub-plan to the Soil and Water Management Plan to support the demolition of the former Liddell Power Station. The document presents a set of procedures to be followed and actions to be implemented should a non-conformance, incident or emergency event occur.**

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Revision	Date	Prepared by	Checked by	Approved by	Description
Draft 1.0	17/04/2025	J Connor	M. Dixon K. Greenfield CEnvP SC40104	A. Gibson	Working Draft for AGLM Review
Draft 2.0	30/04/2025	J Connor	M. Dixon K. Greenfield CEnvP SC40104	A. Gibson	Working Draft for AGLM Review
Final 1.0	05/05/2025	J Connor	M. Dixon K. Greenfield CEnvP SC40104	A. Gibson	Final version

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1. Introduction

1.1 Preamble

This Trigger Action Response Plan (TARP) has been prepared by Ramboll Australia Pty Ltd on behalf of AGL Macquarie Pty Ltd (AGLM) as a sub-plan to the Soil and Water Management Plan (SWMP).

These Management Plans have been prepared to support the proposed demolition works at the former Liddell Power Station (LPS) located approximately 15 kilometres southeast of Muswellbrook, New South Wales (NSW), adjoining the Bayswater Power Station (BPS) .

1.2 Background

LPS operated from the 1970s until it ceased operation in April 2023. AGLM acquired both LPS and BPS from NSW Government owned Macquarie Generation in September 2014. The LPS site (the Site) includes the Hunter Valley Gas Turbines (HVGTs) (now decommissioned) and a range of supporting water supply, water management, coal ash management, coal supply, power supply and control system infrastructure.

The Liddell Future Land Use and Enabling Works Project (the Development) is declared State Significant Development (SSD) (application number SSD 24937520) under section 4.5(a) of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

A SWMP has been prepared by Ramboll to address potential risks associated with soil disturbance and site water management associated with demolition works for the Project, and specifically to address requirements of ConditionC21 in the Conditions of Consent, which requires:
"A soil and water management sub-plan must be prepared as part of the demolition environmental management plan. The plan must:

- *(a) be prepared by a suitably qualified and experienced person/s;*
- *(b) identify the clean and dirty water management system;*
- *(c) describe the mitigation measures that will be implemented to:*
  - *(i) comply with the conditions of this consent, including the relevant performance measures identified in Table 3;*
  - *(ii) manage the risks identified in the environmental risk assessment required by condition B1; and*
  - *(iii) implement the commitments detailed in the documents listed in condition A2(c);*
- (d) *include a monitoring, evaluation and reporting program that uses an approach that is consistent with the environmental management strategy required by condition B1*."

This document serves as an appendix to the SWMP as the 'response plan', providing a set of procedures and actions to be implemented in the event of a non-conformance, incident, or emergency.

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The SWMP and this TARP are specific to the demolition works of LPS, which includes the LPS and Hunter Valley Gas Turbines (HVGTs) and redundant associated infrastructure. This specifically includes the following 'Main Catchment Areas':

- Main Power Block
- Coal Handling Plant
- Water Intake Pump Station
- Hunter Valley Gas Turbines
- Ash Pipeline
- M1/M1a Conveyor

Reference should be made to the SWMP for details on the demolition works and proposed soil and water management measures to be implemented.

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2. Objective and Approach

2.1 Objective

The overall objectives of the SWMP and associated sub-plans are to address potential risks associated with soil disturbance and site water management associated with demolition works for the Project, and specifically to address requirements of Condition C21 of the Consent.

The specific objective of this TARP is to provide a structured and proactive framework for identifying, responding to, and managing potential key risks to soil and water quality during the demolition works.

2.2 Approach

This TARP establishes a systematic approach with clear trigger levels and response actions to ensure timely and effective mitigation of adverse impacts, maintain compliance with regulatory requirements, and protect surrounding environmental values.

The TARP is provided in **Section 3** and covers the following key risks to soil and water quality:

- Weather events
- Sediment basin water levels
- Sediment basin sediment levels
- Discharge events
- Water quality exceedance
- Erosion and sedimentation events
- Chemical spill
- Uncovering potential soil or water contamination

Each event is categorised into three levels which is based on their severity and impact. Each level has specific triggers / indicators, and corresponding response actions to ensure effective management. An overview of the TARP levels is provided in **Table 2-1** below.

Table 2-1: Summary of TARP Levels

Level	Summary
Low	The low level refers to minor events that typically involve minimal impact to the works and the environment, and can be managed through routine procedures. These events have localised effects and do not pose a significant risk to the overall stability at a Catchment Area or environmental compliance. The response to low level events focuses on monitoring, minor adjustments, and maintaining standard controls.
Medium	The medium level covers moderate events that may cause noticeable disruptions to the works or moderate environmental impact. These events require proactive measures to prevent escalation and ensure containment. Response actions for medium level events include enhanced monitoring, implementation of additional control measures, and thorough assessments to identify and address the root causes.
High	The high level encompasses severe events that pose substantial risks to site stability and environmental safety. These events demand immediate and robust actions to mitigate their impact and prevent further damage. High level response actions include activating emergency response plans, such as the EPL Pollution

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Level	Summary
	Incident Response Plan (PIRMP), engaging external contractors if necessary, and conducting comprehensive site assessments and remediation efforts.

Additional contingency measures for unexpected events are provided in **Section 4**, including:

- Site shutdown procedures
- General contamination event
- Groundwater ingress
- Unexpected finds.

2.3 Overarching Water Management Strategy

A summary of the overarching water management strategy to be implemented for the demolition works is outlined below:

- Direct dirty water run-off within each Catchment Area and collect sediments, to prevent mobilisation of contamination and sediment into the surrounding environment and Lake Liddell. Divert clean water run-off around work sites to minimise the amount of water needing management. The demolition works will be staged across each area and water management infrastructure for dirty water will be installed or modified prior to demolition activities in each Catchment Area.
- Implement soil and water management measures (as per the Soil and Water Management Plan), as well as the Progressive Erosion and Sediment Control Plans (PESCP).
- Manage the water contained within the sediment basins and minimise discharge events. Re-use water where feasible for purposes such as irrigation. Where water re-use is not possible, discharge water to Lake Liddell under controlled conditions in accordance with the EPL 2122 (which is to be updated as part of the Project).
- Use this TARP to assist in managing unforeseen circumstances to ensure ongoing compliance with the above management strategy.

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3. Trigger Action Response Plans

3.1 Weather Events

Procedures to manage soil and water controls in the event of sudden weather changes or periods of prolonged or heavy rainfall are provided in **Table 3-1**.

The Principal Contractor - Site Supervisor is responsible for the implementation and ongoing monitoring and maintenance of the controls.

Table 3-1: TARP – Weather Events

Level	Trigger / Indicator	Response Action	Reporting Notification
Low – Normal	Dry conditions. <10 mm of rainfall in past 24 hours. No rainfall forecast in next 24-48 hours. Sediment basins at <25% of settling capacity (based on visual observations).	• Monitor weather forecasts prior to works commencing each day, and adjust work plans accordingly. • Routine maintenance of soil and water controls, including drainage infrastructure, sediment basins and erosion and sediment controls, as required.	Findings to be detailed in the routine inspection reports. No formal notification required.
Moderate – Rain Forecasted	Rainfall occurring or forecasted to occur in next 24-48 hours (10-20 mm in 24 hours). Sediment basins at ~50% of settling capacity (based on visual observations).	• Monitor weather forecasts prior to works commencing each day, and adjust work plans accordingly. • Pre-rainfall inspection of erosion and sediment controls, followed by daily inspections for extended periods of rain. • Check and reinforce erosion and sediment controls. • Ensure all drainage channels and outlets are clear of debris. • Check and maintain stormwater management systems to ensure they can handle increased rainfall. • Stop demolition works in high-risk areas and reschedule any washdown or irrigation activities. • Cover exposed stockpiles and stockpiles. • Prepare water discharge systems and check operational readiness for potential water management needs (i.e. discharge to Lake Liddell or removal of water off-site via trucks).	Notification to the AGLM Project Manager. Findings of the inspection and additional maintenance controls applied to be included in the routine inspection report.
High – Storm Event / Heavy Rainfall	Rainfall occurring or forecasted to occur in next 24-48 hours (>20 mm in 24 hours). Storm or flooding events. Sediment basins at >90% of settling capacity or nearing overflow (based on visual observations).	• Monitor weather forecasts prior to works commencing each day, and adjust work plans accordingly. • Check and reinforce erosion and sediment controls. Ensure sediment traps have been desilted. • Check site drainage systems for blockages and clear them as necessary to ensure proper flow. • Where required, deploy additional emergency controls to divert water flow away from critical areas, including sandbags, silt socks, temporary barriers etc. • Stop demolition works in unsealed areas, cease earthworks and excavations, reschedule any washdown or irrigation activities. • Secure loose materials and equipment to prevent displacement by heavy rain or flooding. • Where applicable, move spoil from high-risk areas (i.e. areas near water bodies / drainage infrastructure), stabilise unprotected soil stockpiles and erosion prone embankments with covers or soil stabilising polymers. • Ensure sediment basins have required settling and storage capacity, and that they are operating effectively. Where required, implement discharge procedures to prevent overflow or organise removal of water off-site (i.e. via trucks). • Inspect the Site and waterways continuously for any signs of erosion or water damage and take immediate corrective actions (e.g., apply soil stabilisers, reinforce eroded areas). • Maintain communication with the onsite team to coordinate actions and ensure safety.	Notification to the AGLM Project Manager. Detailed findings of the Site and additional maintenance controls applied to be included in the inspection report. Follow the reporting procedure outlined in the Demolition Environmental Management Plan (DEMP), i.e. including: • In the event of an incident, complete an incident report containing the date, time, description of the incident, mitigation actions taken, root cause analysis, and recommendations for future prevention. • Notify the NSW EPA in case of a rainfall design exceedance and/or pollution event. • If controlled discharge is necessary, complete the Water Movement Permit as required by the Water Discharge Plan, which includes relevant details such as quantity discharged, water quality etc.

3.2 Sediment Basin Water Levels

Procedures to manage sediment basin water levels and prevent overflow are provided in **The Principal** Contractor - Site Supervisor is responsible for the implementation and ongoing monitoring and maintenance of the controls. Table 3-2.

The Principal Contractor - Site Supervisor is responsible for the implementation and ongoing monitoring and maintenance of the controls.

Table 3-2: TARP – Sediment Basin Water Levels

Level	Trigger / Indicator	Response Action	Reporting Notification
Low – Normal Operation	Sediment basin water level at <25% of settling capacity (based on visual observations). No immediate need to discharge or reuse water. No significant rainfall events forecasted (i.e. <10 mm).	• Monitor sediment basin water levels weekly. • Ensure weekly inspections include sediment basins and surrounding water infrastructure. • Routine maintenance of sediment basins as required (i.e. removal of debris or sediment, desilting). • Document water levels and maintenance actions in inspection reports.	Findings to be detailed in the routine inspection reports. No formal notification required.
Moderate – Pre-emptive Management	Sediment basin water level at ~50% of settling capacity (based on visual observations). Potential need for controlled discharge or reuse water if moderate rainfall events are forecasted (10-20 mm), or if site activities are expected to contribute significant amounts of water.	• Increase monitoring frequency of basin water levels and weather forecasts (i.e. daily). • Prepare pumping systems for potential water management needs. • Assess the quality of water for potential reuse options (e.g. dust suppression, discharge through the EPL). • If water quality is compliant with the discharge or reuse criteria (refer to the Water Discharge Sub-Plan and Water Reuse Sub-Plan), initiate procedures to free the basin capacity. If water quality is non-compliant, prepare for treatment such that environmental standards in the EPL and Water Discharge Plan met. • Investigative response to determine causes of high water levels not reduced in 5-day window and implement new actions to prevent future occurrences where possible.	Notification to the AGLM Project Manager. Findings and additional maintenance controls applied to be included in the inspection report.
High – Critical Capacity	Sediment basin water level at >90% of settling capacity or nearing overflow (based on visual observations). Heavy rainfall occurring or recently occurred (>20 mm). Risk of uncontrolled discharge (sediment basin overtopping). Immediate need to discharge or reuse water to free capacity before next rainfall event.	• Stop any activities contributing to water run-off and levels in the sediment basins. • Assess the quality of water for potential reuse options (e.g., irrigation, dust suppression) or discharge through the EPL. • Removal of water from the basins. Depending on the water quality results, implement immediate pumping and water discharge procedures ensuring compliance with the EPL and Water Discharge Plan. Alternatively, engage external water management contractor if necessary. • Where an overflow is likely to occur, implement pre-emptive containment measures to mitigate overflow impact on the surrounding environment and Lake Liddell. This should include additional sediment and erosion control measures around the sediment basin, as well as upstream and downstream controls. • Investigative response to determine causes of high water levels not reduced in 5-day window and implement new actions to prevent future occurrences where possible. • Where an uncontrolled discharge occurs, follow the Discharge Event TARP (Section 3.3).	Notification to the AGLM Project Manager. Follow the reporting procedure outlined in the DEMP, i.e. including: • In the event of an incident, complete an incident report containing the date, time, description of the incident, mitigation actions taken, root cause analysis, and recommendations for future prevention. • Notify the NSW EPA in case of a rainfall design exceedance and/or pollution event. • If water discharge is necessary, fill out the complete the Water Movement Permit as required by the Water Discharge Plan, which includes relevant details such as quantity discharged, water quality etc.

3.3 Sediment Basin Sediment Levels

Procedures for the pre-emptive management of sediment levels in the sediment basins is provided in Table 3-3.

The Principal Contractor - Site Supervisor is responsible for the implementation and ongoing monitoring and maintenance of the controls.

Table 3-3: TARP – Sediment Basin Sediment Levels

Level	Trigger / Indicator	Response Action	Reporting Notification
Low – Normal Operation	Sediment level at <50% of storage capacity (based on depth measurements / marker poles).	• Monitor sediment levels weekly. • Routine maintenance of sediment basins as required (i.e. removal of debris or sediment, desilting). • Document sediment levels and maintenance actions in inspection reports.	Findings to be detailed in the routine inspection reports. No formal notification required.
Moderate – Pre-emptive Management	Sediment level at 50-75% of storage capacity (based on depth measurements / marker poles).	• Increase monitoring frequency of sediment levels and weather forecasts (i.e. daily). • Prepare equipment and personnel for potential sediment removal needs. • If further significant sediment deposition is expected based on site activities or weather forecasts, initiate procedures to remove sediment to free basin capacity.	Notification to the AGLM Project Manager. Findings and additional maintenance undertaken to be included in the inspection report.
High – Critical Capacity	Sediment level at >75% of storage capacity (based on depth measurements / marker poles).	• Reduce activities contributing to sediment deposition in the sediment basin. • Initiate sediment removal procedures to increase the sediment storage capacity of the sediment basin. • Where an overflow of water or sediment is likely to occur, implement pre-emptive containment measures to mitigate overflow impact on the surrounding environment.	Notification to the AGLM Project Manager. Findings and additional maintenance undertaken to be included in the inspection report.

3.4 Discharge Event

An overview of the response actions to manage controlled discharge events to Lake Liddell is provided in **Table 3-4**. An extract of the water discharge and sampling process from the Water Discharge and Water Monitoring Plan has also been provided in **Figure 3-1**, as this provides further details for the discharge, sampling and reporting procedure to follow.

The Principal Contractor - Site Supervisor is responsible for the implementation and ongoing monitoring and maintenance of the controls.

Table 3-4: TARP – Discharge Event

Level	Trigger / Indicator	Response Action	Reporting Notification
Low – Compliant Discharge	Discharge within permitted levels and conditions outlined in environmental approval. No visible pollution or contamination within the discharge waters or receiving waters.	• Monitor discharge rates and quality to ensure compliance with EPL 2122, Water Monitoring Plan and Water Discharge Plan. • Perform monitoring of the discharge water and receiving waters in accordance with the Water Monitoring Plan. • Document discharge volumes and quality parameters in the Water Movement Permit provided in the Water Discharge Plan. • Perform routine maintenance of discharge equipment to ensure proper functioning as required by the equipment production documents.	Fill out the water discharge form as required by the Water Discharge Plan, which includes relevant details such as quantity discharged, water quality etc. Routine water monitoring reporting requirements for discharge waters and Lake Liddell, as outlined in the Water Monitoring Plan. No formal notification required.
Moderate – Potential Non-Compliance or Risk	Concentrations in the discharge waters are approaching the discharge criteria levels. Minor exceedances in discharge quality parameters without immediate environmental impact. Potential visual evidence of contamination in discharge water or Lake Liddell (i.e. sheen or elevated turbidity levels).	• Cease water discharges and re-sample discharge water to confirm water quality exceedances. • Where required, implement immediate corrective actions to bring water quality back within the discharge limits (i.e. pH correction, flocculation). • Increase monitoring frequency of discharge rates and quality. This should also include ambient water quality monitoring in Lake Liddell. • Identify potential causes for water exceedances, i.e. potential change in activities onsite, weather event, chemical spill etc. • Perform maintenance checks on discharge equipment. Increase the maintenance checks and schedule as required. • Review and adjust operational procedures as needed, i.e. onsite demolition practices, soil and water management controls, flocculation requirements etc.	Notification to the AGLM Project Manager. Fill out the Water Movement Permit as required by the Water Discharge Plan, which includes relevant details such as quantity discharged, water quality etc. Routine water monitoring reporting requirements for discharge waters and Lake Liddell, as outlined in the Water Monitoring Plan. Investigative response to determine root cause and implement new actions to prevent future occurrences. Where required, complete an incident report in accordance with the DEMP.
High – Uncontrolled or Unlicensed Discharge	Discharge waters exceeds the discharge criteria / EPL limits. Elevated concentrations of contaminants in Lake Liddell (i.e. outside of current background levels). Visible pollution or contamination in discharge water or Lake Liddell. Potential or actual environmental damage in Lake Liddell.	• Stop discharge activities immediately. Re-sample discharge water to confirm water quality exceedances. • Implement containment measures to prevent further environmental impact, i.e. implement deploy booms, sandbags, or temporary barriers. • Undertake water quality monitoring in the receiving environment to assess the potential impact of the uncontrolled discharge. • Conduct an immediate assessment to identify the source and cause of the uncontrolled discharge. • Where required, undertake remediation or make-good works. • Perform maintenance checks on discharge equipment. Repair and stabilise any damaged equipment or infrastructure that may have contributed to the discharge. Increase the maintenance checks and schedule as required. • Enhance discharge control measures to prevent recurrence, such as installing additional monitoring equipment, treatment procedures and revising discharge protocols. • Review and adjust operational procedures as needed.	Notification to the AGLM Project Manager. Fill out the Water Movement Permit as required by the Water Discharge Plan, which includes relevant details such as quantity discharged, water quality etc. Follow the reporting procedure outlined in the DEMP, i.e. including: • Complete an incident report containing the date, time, description of the incident, mitigation actions taken, root cause analysis, and recommendations for future prevention. • Notify the NSW EPA in case of a rainfall design exceedance and/or pollution event.

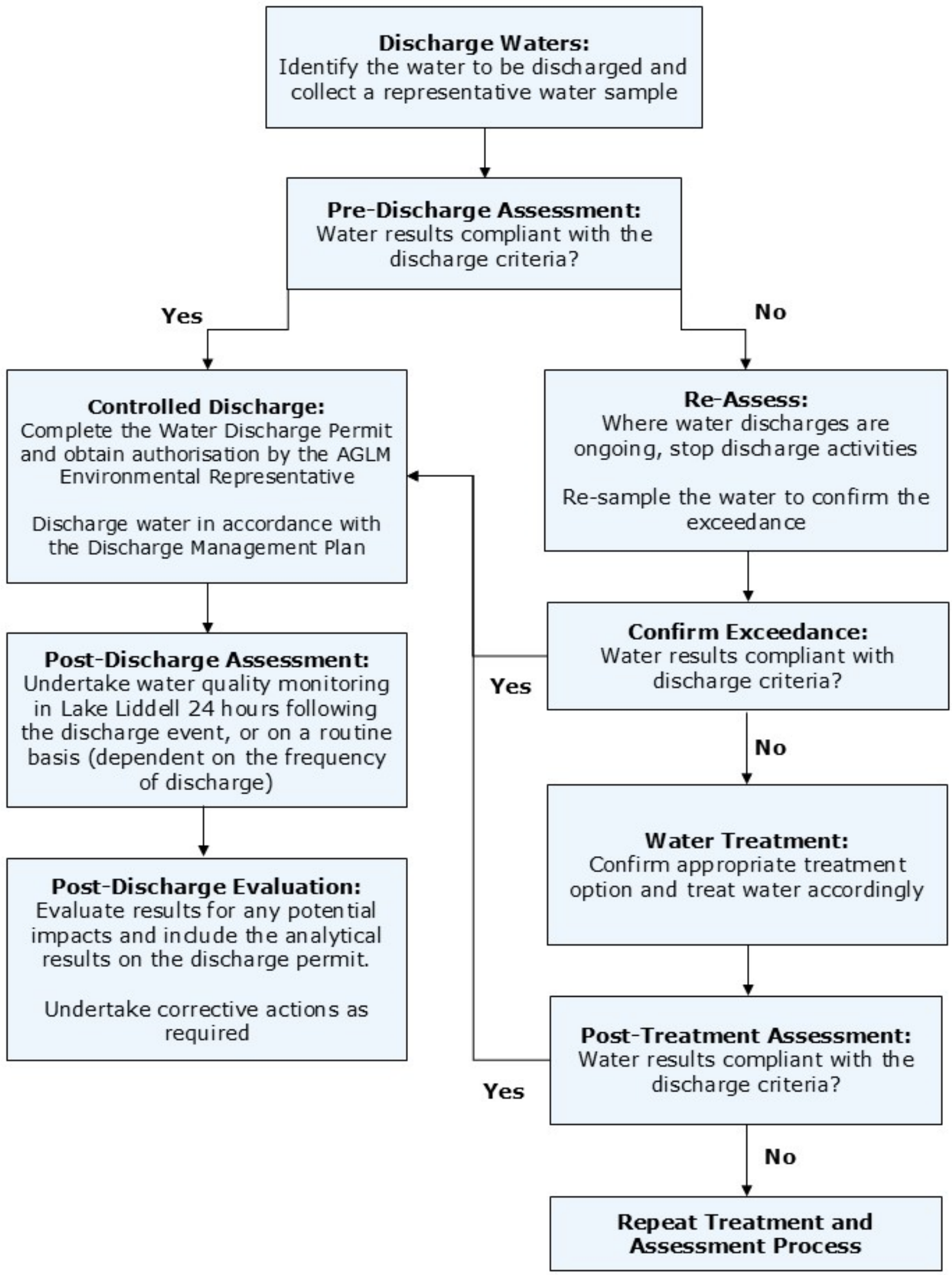

Figure 3-1: Flow Chart Outlining the Water Discharge and Sampling Processes

3.5 Water Quality Exceedance in Lake Liddell

An overview of the response actions in the event of a water quality exceedance in Lake Liddell is provided in **Table 3-4**. An extract of the water discharge and sampling process from the Water Discharge and Water Monitoring Plan has also provided in **Figure 3-1**, as this provides further details for the discharge, sampling and reporting procedure to follow. It is acknowledged that where a water quality exceedance is identified in the discharge waters (during the pre-discharge assessment), the waters will not be discharged to Lake Liddell (refer to the Water Discharge Plan).

The Principal Contractor - Site Supervisor is responsible for the implementation and ongoing monitoring and maintenance of the controls.

Table 3-5: TARP – Water Quality Exceedance

Level	Trigger / Indicator	Response Action	Reporting Notification
Low – No Exceedances	Water monitoring within Lake Liddell indicates that water quality parameters are within the Lake Liddell water monitoring criteria (outlined in the Water Monitoring Plan).	• Monitor water quality in accordance with the Water Monitoring Plan. • Where elevated concentrations of contaminants are identified, identify the source of the near exceedance and implement minor adjustments to mitigate it. • Perform routine maintenance on water quality management systems.	Routine water monitoring reporting requirements for discharge waters and Lake Liddell, as outlined in the Water Monitoring Plan. No formal notification required.
Moderate – One Exceedance	Water monitoring within Lake Liddell indicates that water quality parameter(s) exceed the Lake Liddell water monitoring criteria (outlined in the Water Monitoring Plan), in one monitoring event.	• Undertake an additional water monitoring event in Lake Liddell. • Where water discharges are occurring, cease water discharges and re-sample discharge water to confirm water quality in discharge waters. • Identify the source of exceedance i.e. potential change in activities onsite, discharge event, weather event, chemical spill etc. • Implement additional control measures to mitigate the cause of the exceedance. Where discharge waters are the source of potential pollution, refer to the Discharge Event Tarp (Section 3.4). • Review and adjust operational procedures as needed.	Notification to the AGLM Project Manager. Investigative response to determine root cause and implement new actions to prevent future occurrences. Where required, complete an incident report in accordance with the DEMP. Routine water monitoring reporting requirements for discharge waters and Lake Liddell, as outlined in the Water Monitoring Plan.

High – Two or More Consecutive Exceedances	Water monitoring within Lake Liddell indicates that water quality parameter(s) are within the Lake Liddell water monitoring criteria (outlined in the Water Monitoring Plan), in two or more consecutive monitoring events.	• Identify and stop activities contributing to water quality exceedance immediately.
		• Where necessary, containment measures to prevent further environmental impact, i.e. implement deploy booms, sandbags, or temporary barriers.
		• Undertake additional water quality monitoring in in Lake Liddell to assess trends in contamination and the potential impact. The results should be reviewed in the context of the following:
		  ○ Trends in recent water quality results for Lake Liddell
		  ○ Water quality results from up-gradient and down-gradient sampling locations
		  ○ Recent discharge events (including quantity and quality of discharge waters)
		  ○ Rainfall events
		  ○ Activities occurring onsite and effectiveness of soil and water management measures being implemented
		  ○ Potentially contaminating activities occurring off-site This should include a comparison of upstream and downstream water quality results.
		• Conduct an immediate assessment to identify the source of the potential source of contamination.
		• Where required, undertake remediation or make-good works.
		• Implement additional control measures to mitigate the cause of the exceedance. Where discharge waters are the source of contamination, refer to the Discharge Event Tarp (Section 3.4).
		• Review and adjust operational procedures as needed.
			Notification to the AGLM Project Manager.
			Additional water monitoring reporting requirements for Lake Liddell, as outlined in the Water Monitoring Plan.
			Follow the reporting procedure outlined in the DEMP, i.e. including:
			• Complete an incident report containing the date, time, description of the incident, mitigation actions taken, root cause analysis, and recommendations for future prevention.
			• Notify the NSW EPA in the event a rainfall design exceedance and/or pollution event.

3.6 Erosion Event

Procedures to manage the occurrence and impact of erosion events is provided in Table 3-6. This is particularly relevant to Catchment Areas without sediment basins present to capture and manage sediment.

The Principal Contractor - Site Supervisor is responsible for the implementation and ongoing monitoring and maintenance of the controls.

Table 3-6: TARP – Erosion Event

Level	Trigger / Indicator	Response Action	Reporting Notification
Low – Minor Surface Disturbance	Small areas (i.e. <25 m^2) of exposed soil with minor erosion occurring. No impact on stormwater systems or nearby water bodies. No migration of soil from Catchment Area. Erosion sediment controls installed and operating adequately.	• Monitor work areas and erosion-prone areas regularly. • Stabilise exposed soil with temporary covers, crush concrete or cover crop. • Perform routine maintenance of erosion control measures (i.e. silt fences, straw bales).	Findings to be detailed in the routine inspection reports. No formal notification required.
Moderate – Moderate Erosion or Drainage Issues	Larger areas (i.e. 25-50 m^2) of exposed soil with noticeable erosion and without sufficient controls. Potential impact on stormwater systems or nearby water bodies. Soil movement observable but confined to the Catchment Area. Erosion and sediment control failure.	• Review work activities occurring in the area and adjust the Project plan as required. • Increase monitoring frequency of work areas and erosion-prone areas. • Implement additional erosion control measures (i.e. erosion-control mats, silt fences). • Reinforce existing control measures (i.e. repairing or replacing damaged silt fences). • Apply soil stabilisers or hydroseeding to affected areas. • Repair and stabilise damaged infrastructure that may contribute to erosion. • Investigative response to determine root cause of erosion and implement new actions to prevent future occurrences. Review and adjust the Progressive Erosion Control Plan (PESCP).	Notification to the AGLM Project Manager. Findings and additional maintenance controls applied to be included in the inspection report.
High – Severe Erosion or Off-site Transport	Extensive areas (i.e. >50 m^2) of exposed soil with severe erosion. Impact on stormwater systems or nearby water bodies. Soil movement observable with potential migration from Catchment Area. Erosion and sediment control failure.	• Stop work activities in erosion-affected areas immediately if safe to do so. • Implement immediate containment measures to prevent further erosion (e.g., deploying erosion control barriers, stabilising embankments, coir logs, hay bales etc.). • Repair and stabilise damaged infrastructure that may contribute to erosion. • Stabilise exposed soil subject to erosion using mulch, crushed concrete, erosion blankets, or with vegetation. • Conduct soil/water quality testing of impacted area onsite or off-site. • Conduct a clean-up of sediment in stormwater systems or nearby water bodies using appropriate methods. • Investigative response to determine root cause of erosion and implement new actions to prevent future occurrences. Review and adjust the PESCP. • Enhance erosion control measures to prevent recurrence, such as installing additional monitoring equipment and revising control protocols.	Notification to the AGLM Project Manager. Follow the reporting procedure outlined in the DEMP, i.e. including: • Ion the event of an incident, complete an incident report containing the date, time, description of the incident, mitigation actions taken, root cause analysis, and recommendations for future prevention. • Notify the NSW EPA in the event of a rainfall design exceedance and/or pollution event.

3.7 Chemical Spill

Procedures to manage the impact on soil and water at the Site in the event of a chemical spill from equipment failure, refuelling spills, leaks etc is provided in Table 3-7.

The Principal Contractor - Site Supervisor is responsible for the implementation and ongoing monitoring and maintenance of the controls.

Table 3-7: TARP – Chemical Spill

Level	Trigger / Indicator	Response Action	Reporting Notification
Low – Minor Spill	<1 L spill (i.e. oil, hydraulic fluid) Spill contained on impervious surface No contact with soil, water drainage line, basin or Lake Liddell	• Stop source of spill if safe to do so. • Contain the spill. • Apply absorbent material. • Clean surface using spill kit. • Dispose of waste in hazardous bin. • Replenish spill kit.	Findings to be detailed in the routine inspection reports. No formal notification required.
Moderate – Medium Spill	1–50 L spill on hardstand, soil or less than 5 m from water drainage line, basin or Lake Liddell No migration from Catchment Area	• Stop source of spill if safe to do so. • Isolate area with bunds or booms and prevent entry into watercourses or drains. • Apply absorbent material. • Remove affected soil for off-site disposal. • Replenish spill kit. • Review cause of spill and provide recommendations for future prevention to be discussed in toolbox training.	Notification to the AGLM Project Manager. Investigative response to determine root cause and implement new actions to prevent future occurrences. Where required, complete an incident report in accordance with the DEMP.
High – Major Spill	>50 L spill that enters soil, water drainage line, basin or Lake Liddell Potential for migration from Catchment Area	• Stop source of spill if safe to do so. • Initiate site emergency response plan. • Contain spill with absorbents or booms. • Prevent entry into watercourses or drains. • Engage external spill response contractor. • Where required, engage an environmental consultant to undertake soil/water quality testing of impacted area. • Engage external spill response contractor. Implement recommendations based on the soil / water quality testing for remediation, where required. • Review cause of spill and provide recommendations for future prevention to be discussed in toolbox training. • Review the identity and properties of the spilled chemical to determine notification requirements (noting that these will vary depending on the chemical's hazard classification and environmental or health risks).	Notification to the AGLM Project Manager. Follow the reporting procedure outlined in the DEMP, i.e. including: • In the event of an incident, complete an incident report containing the date, time, description of the incident, mitigation actions taken, root cause analysis, and recommendations for future prevention. • Based on the review of the chemical, where required, notify the NSW EPA in the event of a pollution event.

3.8 Uncovering Potential Soil or Water Contamination

Procedures to manage the impact on soil and water at the six Main Catchment Areas in the event potential soil or water contamination is uncovered during demolition works is provided in Table 3-8.

The Principal Contractor - Site Supervisor is responsible for the implementation and ongoing monitoring and maintenance of the controls.

Table 3-8: TARP – Uncovering Potential Soil or Water Contamination

Level	Trigger / Indicator	Response Action	Reporting Notification
Low – No Evidence of Contamination	No visible or suspected evidence of contamination in soil and/or water during demolition works	• Continue routine inspections of soils following demolition of areas. • Maintain standard practices, including removal of hazardous materials prior to demolition works and standard soil and water management practices.	Findings to be detailed in the routine inspection reports. No formal notification required.
Moderate – Suspected Potential Contamination	Discovery of indicators suggesting potential contamination in soil or water, i.e. visual staining or discolouration, phase separated oils, odorous materials, suspected asbestos-containing material or other fibrous material. Potential contamination identified to be localised in a small area (i.e. <25 m^2) and not migrating from a Catchment Area.	• Stop work in the affected area immediately. • Establish an initial exclusion zone to limit access. • Implement precautionary containment measures. For example, fencing, temporary barriers, sediment barriers (e.g., silt fences, sandbags, coir logs), barriers to divert water flow away from disturbed areas or contain and treat contaminated water. • Survey the area to confirm the location and extent of potential contamination. • Engage the Project environmental consultant to assess the area and undertake testing to confirm the presence and extent of contamination. • Coordinate with the environmental consultant to assess an appropriate course of action in consultation with AGLM, including development of remediation steps and staging for the works. Where remediation works cannot be undertaken immediately, limit tracking of plant through the area. • Document findings, containment measures, and actions taken in inspection reports.	Notification to the AGLM Project Manager. Investigative response to determine root cause and implement new actions to prevent future occurrences. Where required, complete an incident report in accordance with the DEMP.
High – Suspected Significant Contamination	Discovery of strong indicators of significant contamination in soil and/or water i.e. widespread discoloration, strong chemical odours, evidence of groundwater contamination or phase separated oils. Contamination identified to be over a large area (i.e. >25 m^2) and potentially migrating off-site.	• Stop all work in the affected area immediately. • Establish a substantial exclusion zone to ensure safety. • Implement precautionary containment measures. For example, fencing, temporary barriers, sediment barriers (e.g., silt fences, sandbags, coir logs), barriers to divert water flow away from disturbed areas or contain and treat contaminated water. • Survey the area to confirm the location and extent of potential contamination. • Engage the Project environmental consultant to assess the area and undertake testing to confirm the presence and extent of contamination. • Coordinate with the environmental consultant to determine an appropriate course of action in consultation with AGLM. Develop and execute a detailed remediation plan in collaboration. Remediation works should be undertaken as soon as reasonably practicable. • Coordinate with NSW EPA and other relevant authorities for guidance and assistance as required. • Engage external environmental response contractors and specialists if necessary. • Document findings, containment and remediation measures and actions taken in inspection reports, as well as relevant validation reports.	Notification to the AGLM Project Manager. Reporting as required for investigation, remediation and validation works etc. Follow the reporting procedure outlined in the DEMP, i.e. including: • Complete an incident report containing the date, time, description of the incident, mitigation actions taken, root cause analysis, and recommendations for future prevention. • Notify the NSW EPA in of the event of a rainfall design exceedance and/or pollution event.

4. Other Contingency Measures

Unexpected events may occur during the Project that require implementation of contingency measures. Contingency measures to manage potential impact on soil and water at the six Main Catchment Areas due to unexpected events are outlined in **The Principal** Contractor - Site Supervisor is responsible for the implementation and ongoing monitoring and maintenance of the controls.
Table 4-1. It is acknowledged that Unexpected finds during the Project should be managed in accordance with the Unexpected Finds Protocol in the PDEMP.

The Principal Contractor - Site Supervisor is responsible for the implementation and ongoing monitoring and maintenance of the controls.

Table 4-1: TARP – Other Contingency Measures

Event Type	Potential Cause(s)	Contingency Procedure
Site Shutdown Procedures	Planned closure, extreme weather events, safety concerns	• Monitor weather forecasts and adjust work plans accordingly. • Secure hazardous materials, equipment and chemical storage areas. • Cover exposed soil areas to prevent erosion. • Ensure stormwater drainage, erosion and sediment controls are functioning properly. • Monitor water levels in storage basins to determine if they need to be discharged or if there is a risk of overflow. Where appropriate, implement discharge procedures to prevent overflow or organise removal water off-site (i.e. via trucks). • Conduct final site inspection before departure.
General Contamination Event (caused by onsite activities)	Unauthorised discharge, heavy rainfall, sediment release and failure of sediment controls	• Refer to the relevant TARP tables (i.e. chemical spill or discharge event), however, general procedure outlined below: • Identify source of contamination and stop work / activity associated with the contamination event. • Where applicable, contain sediment with barriers (e.g., silt fences, sandbags, coir logs), stop water discharges, divert water flow away from disturbed areas or contain and treat contaminated water • Notify the Site Environment Team or delegate to determine an appropriate course of action in consultation with AGLM. • Inspect and repair failed controls / procedures and implement corrective actions. • Where required, undertake water quality monitoring of impacted area. For unauthorised discharges, follow the procedure outlined in the Water Discharge Plan.
Groundwater Ingress	Unexpected groundwater ingress into excavations	• Stop work in affected area. • Assess, monitor and record the date, location, level, depth and quantity of groundwater. Where required, implement drainage measures • Where required, assess and reinforce excavation stability. • Notify the project environmental consultant to determine an appropriate course of action in consultation with AGLM. • Where required, test the groundwater quality to assess the appropriate discharge procedure, i.e. storage in sediment basins, removal off-site via trucks, discharge or re-use. Where the groundwater is to be transferred to a sediment basin, this basin should be labelled as 'higher risk', with appropriate testing and treatment to be applied (where applicable). • Adjust work plans for future excavations as required, with consideration given to re-locating excavation work to areas of higher elevation and/or deeper groundwater. • Consider undertaking routine monitoring of the groundwater wells in the vicinity of the works.
Unexpected Finds	Excavation or site work uncovering unexpected hazards (i.e. contaminated soils/water identified as staining, odorous soil, discoloured soil or fibrous material; heritage items; unexploded ordinance; human remains)	• Undertake in accordance with the Unexpected Finds Protocol in the DEMP, including: • Stop works in the affected area and establish an exclusion zone to prevent further access into the area. • Notify the AGLM Environmental Representative. • Engage a suitably qualified consultant to inspect the Unexpected Find, including sampling and analysis where required. • Confirm the appropriate investigation / management procedure with the suitably qualified consultant in accordance with the relevant guidelines developed and/or endorsed by the NSW EPA. • Adjust site management plans as required.

5. Preparedness and Continuous Improvement

5.1 Training and Awareness

As part of the induction, site personnel will receive training to ensure effective handling of unexpected events. The training will help familiarise relevant staff with the established contingency procedures and emergency protocols, reinforcing the importance of readiness and timely response.

5.2 Communication

Clear communication lines are crucial during unexpected events. Ensure all personnel have access to emergency contact information and that emergency contact numbers are posted in visible locations throughout the site. Define communication channels and procedures to ensure swift and clear communication during emergencies.

5.3 Resource Allocation

Having the necessary resources readily available is vital for effective emergency response. The Principal Contractor is responsible for ensuring equipment, supplies, and trained personnel are accessible and in good condition.

The Principal Contractor should also regularly check and maintain emergency resources to ensure they are ready for use.

5.4 Regular Checks and Audits

Follow the inspections and auditing procedure outlined in the DEMP to maintain a high level of readiness and compliance.

Address any issues discovered during audits to improve preparedness.

5.5 Post Event Review

Following any significant event, it is crucial to conduct a thorough review of the response actions taken and their effectiveness. This should include:

- Review the response actions and their effectiveness following any significant event. This should include identification of strengths and weaknesses in current protocols through detailed post-event analysis.
- Document lessons learned to enhance future responses.
- Organise debrief sessions with all involved personnel to gather feedback and suggestions.
- Adjust the relevant management plans based on collective inputs.
- Integrate findings from the post-event review into future planning and training.
- Ensure continuous improvement by evolving practices based on practical experiences and best practices.

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6. Limitations

This report is produced by Ramboll Australia Pty Ltd at the request of AGL Macquarie Pty Ltd for the purposes detailed herein.

Site conditions may change over time. This report is based on the conditions encountered at the site at the time of its creation, and Ramboll Australia Pty Ltd disclaims responsibility for any changes that may have occurred after this time.

Ramboll Australia Pty Ltd did not independently verify all of the written or oral information provided to Ramboll Australia Pty Ltd during the course of this report. While Ramboll Australia Pty Ltd has no reason to doubt the accuracy of the information provided, the completeness and accuracy of the report are dependent on the extent to which the information given to Ramboll Australia Pty Ltd was itself complete and accurate.

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This report does not provide legal advice. Legal advice should only be sought from qualified legal advisors.

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Appendix 2

Water Discharge Sub-Plan

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Intended for
AGL Macquarie Pty Ltd

Document type
Report

Date
May 2025

Soil and Water Sub-Plan: Water Discharge Plan

Liddell Power Station Demolition

RAMBOLL Bright ideas. Sustainable change.

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Soil and Water Sub-Plan: Water Discharge Plan

Liddell Power Station Demolition

Project name	**Liddell Power Station Demolition – Water Discharge Plan**
Project no.	**318002057**
Recipient	**AGL Macquarie Pty Ltd**
Document type	**Discharge Management Plan**
Version	**Final**
Date	**05/05/2025**
Description	**The document comprises a water discharge management plan, which is a sub-plan to the Soil and Water Management Plan to support the demolition of the former Liddell Power Station.**

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Revision	Date	Prepared by	Checked by	Approved by	Description
Draft 1.0	17/04/2025	J Connor	M. Dixon K. Greenfield CEnvP SC40104	A. Gibson	Working Draft for AGLM Review
Draft 2.0	30/04/2025	J Connor	K. Greenfield CEnvP SC40104	A. Gibson	Working Draft for AGLM Review
Final 1.0	05/05/2025	J Connor	K. Greenfield CEnvP SC40104	A. Gibson	Final version

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Appendices

Appendix A
Water Movement Permit

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Acronyms and Abbreviations

Acronym/Abbreviation	Description
AGLM	AGL Macquarie Pty Ltd
Amendment Report	Amendment Report - Liddell Future Land Use and Enabling Works (GHD, 2024)
BPS	Bayswater Power Station
CoPC	Contaminant of Potential Concern
The Department	New South Wales Department of Planning, Housing and Infrastructure
EIS	Environmental Impact Assessment - Liddell Future Land Use and Enabling Works Project (GHD, 2023a)
EPA	New South Wales Environment Protection Authority
EP&A Act	*Environmental Protection and Assessment Act 1979*
EP&A Regulation	*Environmental Protection and Assessment Regulation 2021*
EPL	Environmental Protection License
HVGTs	Hunter Valley Gas Turbines
LAD	Liddell Ash Dam
LOSP	Level of species protection
LPS	Liddell Power Station
NSW	New South Wales
POEO Act	*Protection of the Environment Operations Act 1997*
RtS	Response to Submission Report Liddell Future Land Use and Enabling Works Project (GHD, 2024)
SEARs	Secretary's Environmental Assessment Requirements
SWMP	Soil and Water Management Plan (this document)
WM Act	*Water Management Act 2000*

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1. Introduction

1.1 Preamble

This Water Discharge Plan has been prepared by Ramboll Australia Pty Ltd on behalf of AGL Macquarie Pty Ltd (AGLM) as a sub-plan to the Soil and Water Management Plan (SWMP).

These Management Plans have been prepared to support the proposed demolition works at the former Liddell Power Station (LPS) located approximately 15 kilometres southeast of Muswellbrook, New South Wales (NSW), adjoining the Bayswater Power Station (BPS). Refer to **Figure 1-1**.

1.2 Background

LPS operated from the 1970s until it ceased operation in April 2023. AGLM acquired both LPS and BPS from NSW Government owned Macquarie Generation in September 2014. The LPS site (the Site) includes the Hunter Valley Gas Turbines (HVGTs) (now decommissioned) and a range of supporting water supply, water management, coal ash management, coal supply, power supply and control system infrastructure.

The Liddell Future Land Use and Enabling Works Project (the Development) is declared State Significant Development (SSD) (application number SSD 24937520) under section 4.5(a) of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

A SWMP has been prepared by Ramboll to address potential risks associated with soil disturbance and site water management associated with demolition works for the Development, and specifically to address requirements of Condition C21 in the Consent, which requires:
"A soil and water management sub-plan must be prepared as part of the demolition environmental management plan. The plan must:

- *(a) be prepared by a suitably qualified and experienced person/s;*
- *(b) identify the clean and dirty water management system;*
- *(c) describe the mitigation measures that will be implemented to:*
  - *(i) comply with the conditions of this consent, including the relevant performance measures identified in Table 3;*
  - *(ii) manage the risks identified in the environmental risk assessment required by condition B1; and*
  - *(iii) implement the commitments detailed in the documents listed in condition A2(c);*
- (d) *include a monitoring, evaluation and reporting program that uses an approach that is consistent with the environmental management strategy required by condition B1.*"

The SWMP outlines that the overarching water management strategy for the demolition works will be to direct and retain surface water run-off within designated sediment basins and minimise discharges to Lake Liddell where possible.

This document serves as an Appendix to the SWMP, and is relevant for events where controlled discharge to Lake Liddell is required. It outlines a strategy for managing discharges from sediment basins at the Main Catchment Areas to Lake Liddell, in accordance with Environment Protection License (EPL) 2122. It is noted that a separate management plan is in place for the reuse of water on-site (refer to the Reuse Sub-Plan).

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The SWMP and this Water Discharge Plan are specific to the demolition works of LPS, which includes the LPS and Hunter Valley Gas Turbines (HVGTs) and redundant associated infrastructure. This specifically includes the following 'Main Catchment Areas':

- Main Power Block
- Coal Handling Plant
- Water Intake Pump Station
- Hunter Valley Gas Turbines
- Ash Pipeline
- M1/M1a Conveyor

Reference should be made to the SWMP for details on the demolition works and proposed soil and water management measures to be implemented.

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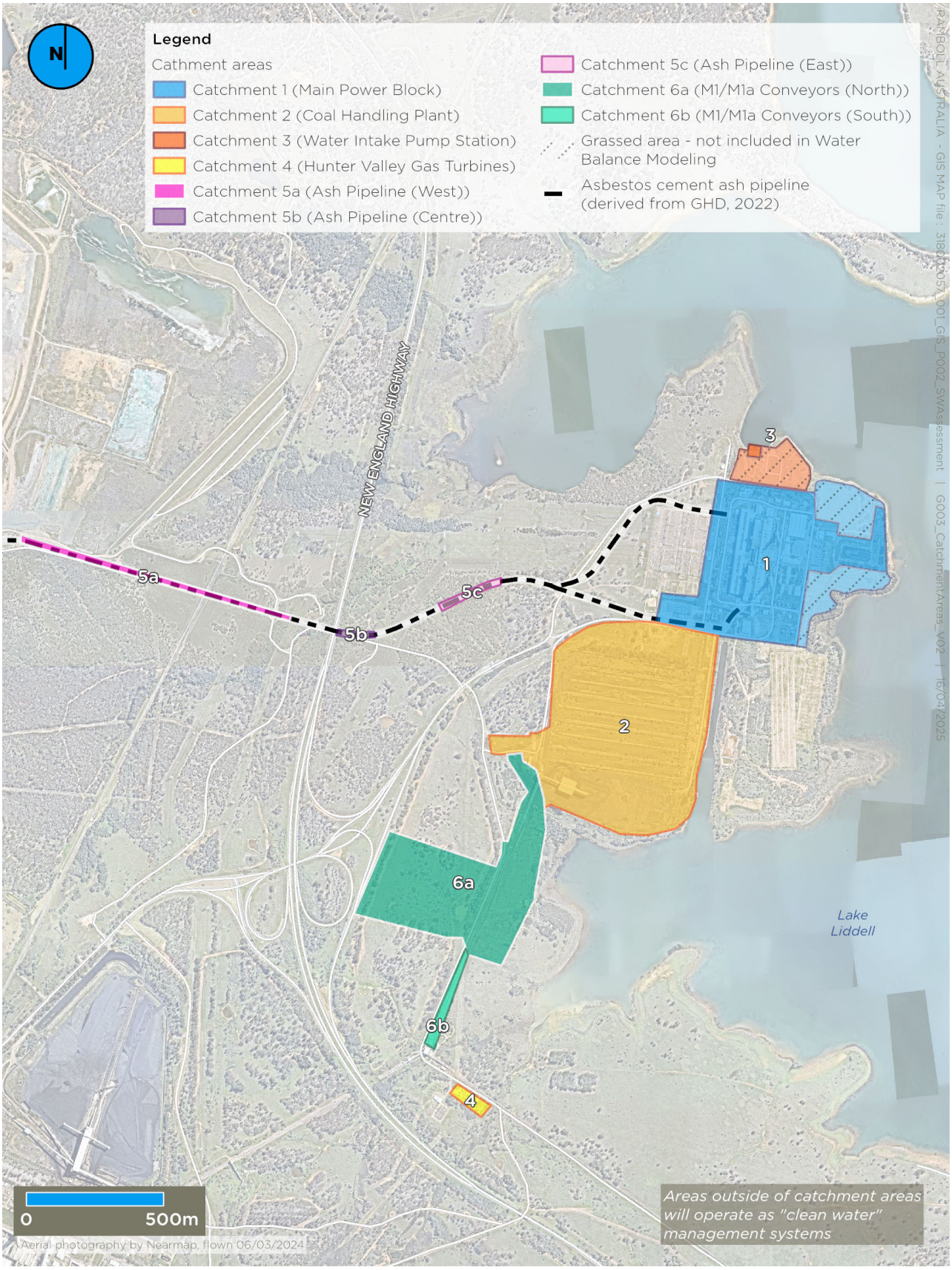

Figure 1-1: Site location and Overview of Catchment Areas

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1.3 Objectives

The overall objectives of the SWMP and associated sub-plans are to address potential risks associated with soil disturbance and site water management associated with the demolition works, and specifically to address requirements of Condition C21 of the Consent.

The specific objectives of this Water Discharge Plan are to outline procedures for the management and controlled discharge of water to Lake Liddell, when required during the demolition works, in a manner that minimises environmental impact and complies with EPL 2122.

The specific areas relevant to this management plan are outlined in **Section 3**.

1.4 Consultation requirements

Consultation with SafeWork NSW and the Site Auditor is required for the DEMP, for which this SWMP is a sub plan.

2. Regulatory Framework

2.1 Environmental Legislation and Guidelines

The following legislation and guidelines are relevant this plan:

- *Environmental Planning and Assessment Act 1979* (EP&A Act)
- *Environmental Planning and Assessment Regulation 2021* (EP&A Regulation)
- *Protection of the Environment and Operations Act 1997* (POEO Act)
- *Protection of the Environment Operations (Waste) Regulation 2014* (POEO Regulation)
- *Water Management Act 2000* (WM Act)
- *Water Management (General) Regulation 2018* (WM Regulation)
- *Contaminated Land Management Act 1997 (*CLM Act)
- *Managing Urban Stormwater: Soils and Construction, Volume 1: Blue Book* (Landcom, 2004)
- *Australian Fresh and Marine Water Quality Guidelines* (ANZG, 2018)
- *Environment Protection License 2122* (NSW EPA, 2023)

2.2 Application and Environment Protection License (EPL 2122)

Water discharge activities associated with the demolition works will be undertaken in accordance with the requirements of EPL 2122 for LPS, which is issued under the POEO Act 1997.

It is acknowledged that the Development will require variation to the existing EPL to reflect the changes to the activities undertaken at LPS.

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3. Project Water Management Strategy

3.1 Overarching Management Strategy

The overarching water management strategy for the demolition works will be to direct and contain 'dirty water' run-off into designated sediment basins or traps within each Main Catchment Area. Discharge events will be minimised where possible, however, where required, water may be discharged from the sediment basins to Lake Liddell under controlled conditions in accordance with the EPL and this management plan.

3.2 Area Specific Discharge Requirements

Table 3-1 provides a summary of the overarching water management strategy for each Catchment Area, including whether discharge management may be required for the specific area.

Table 3-1: Area Specific Discharge Requirements

Catchment Area	Overarching Management Strategy	Discharge Requiring Management Under this Plan
Main Power Block	Direct surface water to the existing oil and grit trap via a network of drains.	Yes – where required, discharge of water to Lake Liddell from the oil and grit trap via Discharge Point 17.
Coal Handling Plant	Direct surface water to the two existing sediment basins via a network of drains.	Yes – where required, discharge of water to Lake Liddell. New discharge point to be added to the EPL.
Water Intake Pump Station	Capture water within the designated storage basin (Circuit Water pump discharge conduit pit) and transfer water to the oil and grit trap (located in the Main Power Block).	Not specific to this area - discharge will be managed through the Main Power Block oil and grit trap (and discharge Point 17).
Hunter Valley Gas Turbines	Capture water within the sediment basin.	Not specific to this area - where required, discharge may be managed via the sediment basins in the Coal Handling Plant or Main Power Block oil and grit trap (and discharge point 17).
Ash Pipeline	Implement local controls at the source of the demolition.	No – discharge not proposed. If sediment traps are constructed then protocols as per other traps will apply.
M1/M1a Conveyor	Implement local controls at the source of the demolition and utilise the existing sediment basin and proposed sediment trap to capture excess water run-off.	Not specific to this area - where required, discharge may be managed via the sediment basins in the Coal Handling Plant .

An outline of the sediment basins in each Catchment Area and the EPL discharge points is provided in Figure 3-1.

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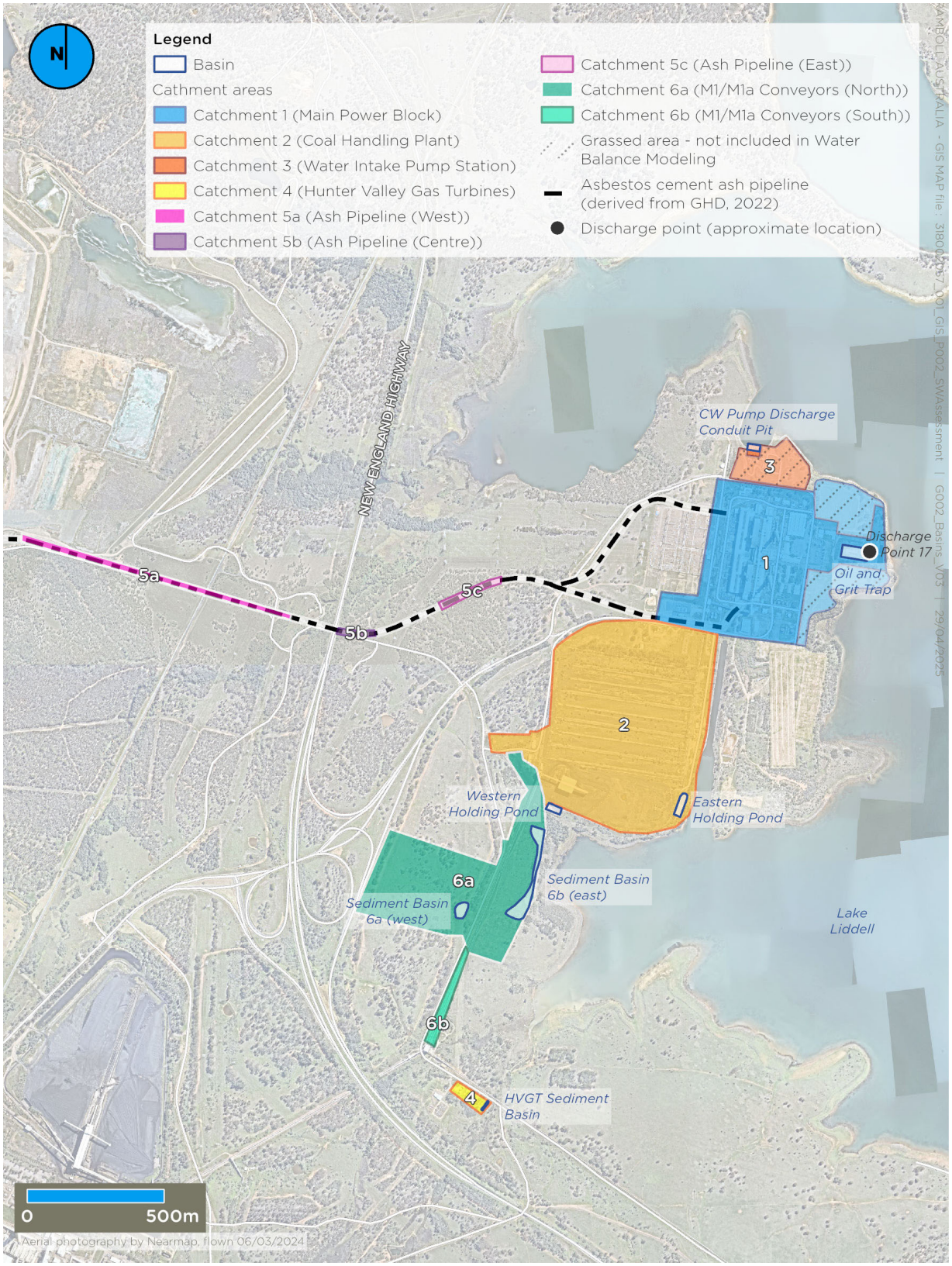

Figure 3-1: Overview of Sediment Basins and EPL Discharge Points

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4. Discharge Scenarios

Controlled discharge of waters from the Oil and Grit Trap and Coal Handling Plant sediment basins to Lake Liddell may be required where sediment basins levels are nearing capacity:

- To prevent overflow, or
- In preparation for a wet weather event.

In the first instance, water will be re-used onsite where feasible (in accordance with the Reuse Management Plan). Discharge events to Lake Liddell will be minimised where possible.

Potential scenarios where discharges of water to Lake Liddell are required are outlined in **Table 4-1**.

Table 4-1: Potential Discharge Scenarios from Sediment Basins

Scenario	Description	Triggers / Indicators
Normal Operations	Routine diversion of surface water run-off for storage in sediment basins.	Sediment basin water level at <25% capacity. No immediate need to discharge or reuse water. No significant rainfall events in the past 24 hours or next 24-48 hours (i.e. <10 mm).
Pre-emptive Management	Monitoring and proactive management when sediment basins are nearing their capacity to initiate discharge protocols. Consider whether controlled discharge is required.	Sediment basin water level at ~50% capacity. Potential need for discharge or reuse water if rainfall is forecasted (i.e. 10-20 mm in 24 hours), or if site activities are expected to contribute significant amounts of water.
Critical Capacity	Enhanced protocols to manage heavy run-off from rain or storms and initiation of controlled discharge process.	Sediment basin water level at >90% capacity or nearing overflow with risk of uncontrolled discharge. Heavy rainfall occurring or recently occurred (>20 mm in 24 hours). Immediate need to discharge or reuse water to free capacity before next rainfall event.

Section 3.3 of the TARP also provides a series of response actions for management of discharge events.

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5. Sediment Basins and Water Treatment

5.1 Basin Details

Details of the sediment basins from which water may be discharged from are detailed in **Table 5-1** below.

Table 5-1: Basin Details

Catchment Area	Basin Details
Main Power Block	The main power block has one sediment basin, referred to as the 'oil and grit trap' to capture and store surface water and allow solids to settle. The oil and grit trap will be increased to a size of 30,286 m^3. Where required, water from the water intake pump station may also be transferred to the oil and grit trap for management.
Coal Handling Plant	The Coal Handling Plant has two sediment basins referred to as the 'western holding pond' and 'eastern holding pond' to capture and store surface water and allow solids to settle. These ponds will be increased to have a combined size of 29,290 m^3. Where required, water from the HVGT's and M1/M1a conveyor may also be transferred to the western and eastern holding ponds for management.

5.2 Expected Water Quality

The contamination status of the water quality in the sediment basins will be based off the activities occurring onsite and weather events.

Based on previous routine monitoring datasets, the Water Quality Assessment (Ramboll, 2025b) and Water Quality Assessment Criteria (Ramboll, 2025d) found that majority of the contaminants of potential concern will be less than the discharge criteria set (Section 6.1). The discharge criteria are predominantly based on the ANZG 2018 95% Default Guideline Value (DGV) for the 90% Level of Species Protection (LOSP) in a freshwater ecosystem (Ramboll, 2025d).

It is acknowledged that ongoing monitoring of discharge waters and the ambient environment will be required as part of the Water Monitoring Plan.

5.3 Treatment Details

Water runoff from the Catchment Areas will be directed to sediment basins designated for each area.

Water treatment will primarily rely on sedimentation, which is expected to be sufficient due to the water quality and nature of the contaminants anticipated. Sediment basins will be strategically designed to maximise sediment capture and settlement.

Flocculation and pH correction may be required prior to discharge to promote the removal of suspended solids and neutralise waters. Additional chemical treatment or filtration has not been proposed as part of the water discharge procedure as it is anticipated that the water within the sediment basins will meet the required discharge criteria.

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5.4 Maintenance and Operation

The SWMP requires routine inspections of sediment basins to ensure their effective functioning and capacity, by the Principal Contractor.

Inspections are to include:

- Checking for signs of water overflow or nearing capacity,
- Sediment build-up,
- Structural integrity (including embankments and inlet/outlet structures), and
- The proper functioning and flow of discharge outlets.

Maintenance work should be conducted based on inspection findings and routine schedules.

The TARP also outlines a series of response actions to be undertaken following significant weather events or failure of controls.

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6. Discharge Protocols and Monitoring

6.1 Discharge Criteria

The proposed discharge criteria for the demolition works was determined in consultation with the NSW EPA (NSW EPA, 2025), and outlined in the Water Quality Assessment Criteria Technical Note (Ramboll, 2025d).

The discharge criteria has been developed based on criteria set in EPL 2122 and the ANZG (2018) DGV for the 90% Level of Species Protection (LOSP) for freshwater ecosystems, as outlined in Table 6-1.

Table 6-1: Proposed Short-Term Discharge Criteria

Parameter	Unit	Discharge Criteria	Source
Electrical Conductivity (EC)	uS/cm	3,000	Site-specific value
pH	-	6.5-9	EPL 2122
Total Suspended Solids (TSS)	mg/L	50	Landcom (2004)
Antimony	mg/L	0.009	ANZG (2018)
Arsenic (V)	mg/L	0.042	ANZG (2018)
Boron	mg/L	1.5	ANZG (2018)
Cadmium	mg/L	0.0004	ANZG (2018)
Chromium (III)	mg/L	0.0033	ANZG (2018)
Chromium (VI)	mg/L	0.006	ANZG (2018)
Cobalt	mg/L	0.0014	ANZG (2018)
Copper	mg/L	0.0279	ANZG (2018)
Lead	mg/L	0.0056	ANZG (2018)
Manganese	mg/L	2.5	ANZG (2018)
Mercury	mg/L	0.0019	ANZG (2018)
Molybdenum	mg/L	0.034	ANZG (2018)
Nickel	mg/L	0.013	ANZG (2018)
Selenium	mg/L	0.018	ANZG (2018)
Vanadium	mg/L	0.006	ANZG (2018)
Zinc	mg/L	0.2324	ANZG (2018) (adjusted based on site-specific hardness)
Ammonia (as N)	mg/L	1.43	ANZG (2018)
NOx	mg/L	3.8	ANZG (2013)

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Parameter	Unit	Discharge Criteria	Source
Anionic surfactants as MBAS	mg/L	0.52	ANZG (2018)
Oil and grease	mg/L	10	EPL 2122
Fluoride	mg/L	3.4	ANZG (2018)
Chlorine	mg/L	0.003	ANZG (2018)
Cyanide	mg/L	0.011	ANZG (2018)
Anthracene	mg/L	0.0015	ANZG (2018)
Benzo(a)pyrene	mg/L	0.0004	ANZG (2018)

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6.2 Discharge Volumes and Flow Rates

The quantity of water discharged to Lake Liddell should be minimised through reuse onsite where possible.

Discharge volumes and rates should be managed as per the following, to prevent erosion or scouring at the discharge location and potential negative impacts on Lake Liddell:

- Discharge Rates: Flow control structures (e.g., flow spreaders, outlet control devices, adjustable valves or energy dissipators) may be used to ensure steady and controlled discharge, preventing sudden surges that could cause erosion or sediment suspension.
- Discharge Volumes: Discharge volumes will be measured or estimated using appropriate flow meters, weirs, or pump logs. Water discharges should continue until the sediment basin has reached the desired capacity dependent on the scenario / event (i.e. <25% of settling volume in normal conditions).

Flow rates and final discharge volumes should be recorded on the AGLM Water Movement Permit in **Appendix A**.

6.3 Integration with Water Monitoring Plan

Water quality monitoring before discharge will be conducted in accordance with the Water Monitoring Plan. Reference should be made to the Water Monitoring Plan for monitoring requirements as part of proposed discharge procedures.

6.4 Reporting and Records Management

Details of the water discharge procedure should be included on the Water Movement Permit in Appendix A, including:

- Permit number.
- Date.
- Time.
- Weather conditions, including any relevant rainfall events within the past or next 48 hours.
- Site activities description.
- Discharge location (including sediment basin and discharge point).
- Summary of pre-discharge analytical results with an evaluation of compliance against the water discharge criteria.
- Estimate quantity of water to be discharged.
- Relevant management / maintenance notes on the sediment basins, water discharge points and controls.
- Observations of the receiving environment (Lake Liddell), including water levels and visual signs of contamination or sheen prior to discharge.
- Approval of permit by the AGLM Environmental Representative or delegate, including signature and date.
- Following completion of the discharge event: Final quantity of water discharged and any additional notes.

Reference should be made to the Water Monitoring Plan for reporting requirements as part of proposed discharge procedures. This includes monitoring of the receiving environment, Lake Liddell.

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7. Discharge and Sampling Procedure

The discharge and sampling procedure has been provided as a flow chart in **Figure 7-1**.

This procedure is relevant to both the Water Discharge Plan and the Water Monitoring Plan.

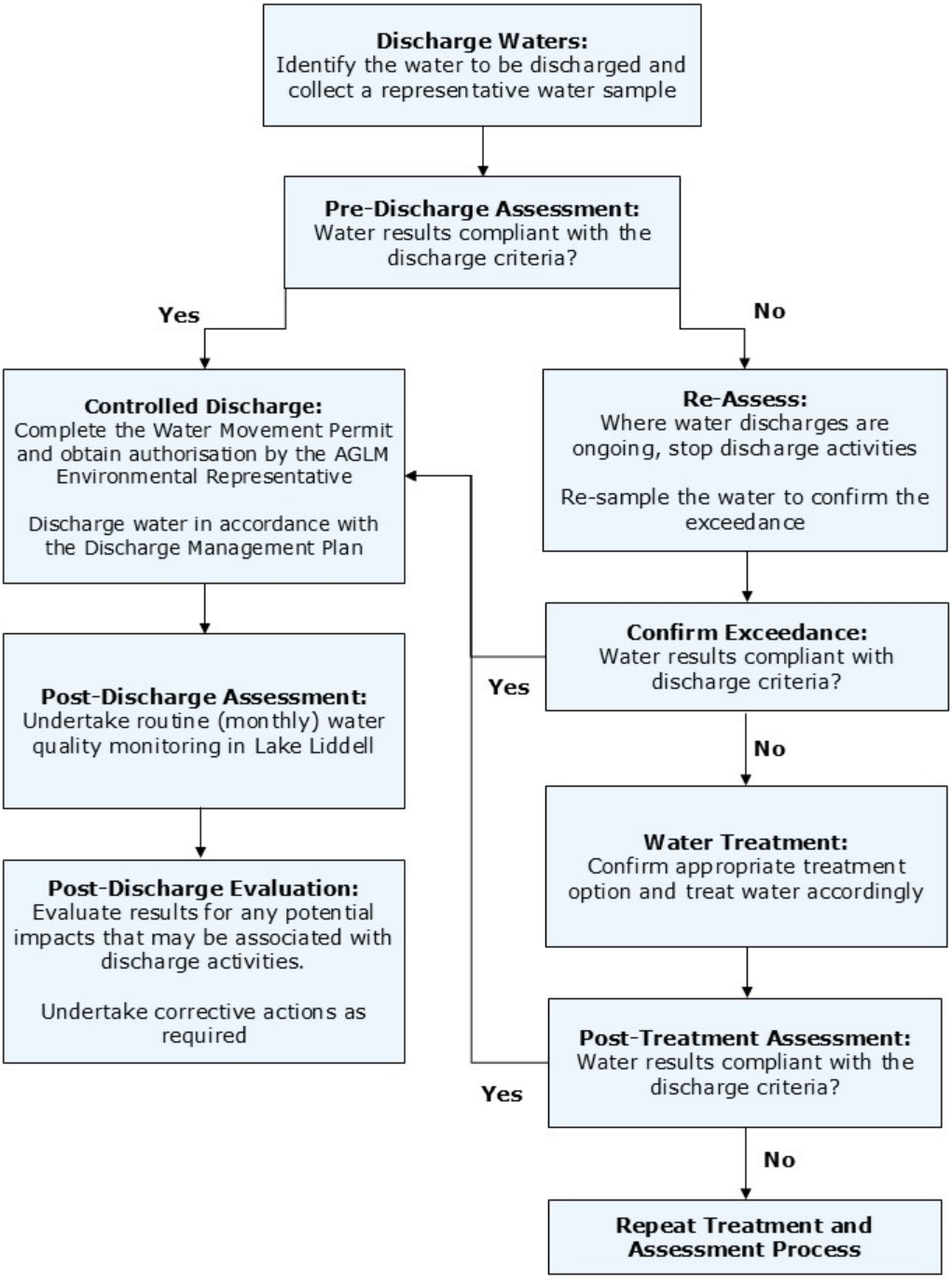

Figure 7-1: Water Discharge and Sampling Procedure

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8. Uncontrolled Discharges Protocol

Section 3.3 of the TARP identifies a protocol for unexpected discharge events.

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10. Limitations

This report is produced by Ramboll Australia Pty Ltd at the request of AGL Macquarie Pty Ltd for the purposes detailed herein.

Site conditions may change over time. This report is based on the conditions encountered at the site at the time of its creation, and Ramboll Australia Pty Ltd disclaims responsibility for any changes that may have occurred after this time.

Ramboll Australia Pty Ltd did not independently verify all of the written or oral information provided to Ramboll Australia Pty Ltd during the course of this report. While Ramboll Australia Pty Ltd has no reason to doubt the accuracy of the information provided, the completeness and accuracy of the report are dependent on the extent to which the information given to Ramboll Australia Pty Ltd was itself complete and accurate.

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This report does not provide legal advice. Legal advice should only be sought from qualified legal advisors.

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Appendix A

1.Water Movement Permit

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Water Movement Permit

Site Notes:

Component	Details
Water Discharge or Reuse?	
Permit Number	
Date	
Time	
Weather Conditions	
Water Discharge / Reuse Location and Basin	
Estimated Quantity of Water to be Discharged / Reused	
Additional water treatment anticipated or undertaken?	
Site Activity Description	
Additional maintenance or mitigation measures identified to be required? (i.e. for sediment basins, discharge points etc.)	
Observations of the receiving environment (i.e. water levels in Lake Liddell, exposed soils or pooled water, visual signs of contamination etc.) (where relevant)	

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Pre-Discharge or Reuse Water Quality Results

Parameter	Unit	Discharge Criteria	Reuse Criteria	Result	Compliant with Relevant Criteria?
Electrical Conductivity (EC)	uS/cm	3,000	3,000		Yes / No
pH	-	6.5-9	6.5-9		Yes / No
Total Suspended Solids (TSS)	mg/L	50	50		Yes / No
Antimony	mg/L	0.009	0.03		Yes / No
Arsenic (total)	mg/L	-	0.07		
Arsenic (V)	mg/L	0.042	-		Yes / No
Boron	mg/L	1.5	0.5		Yes / No
Cadmium	mg/L	0.0004	0.02		Yes / No
Chromium (III)	mg/L	0.0033	-		Yes / No
Chromium (VI)	mg/L	0.006	0.5		Yes / No
Cobalt	mg/L	0.0014	-		Yes / No
Copper	mg/L	0.0279	5		Yes / No
Lead	mg/L	0.0056	0.1		Yes / No
Manganese	mg/L	2.5	5		Yes / No
Mercury	mg/L	0.0019	0.002		Yes / No
Molybdenum	mg/L	0.034	0.05		Yes / No
Nickel	mg/L	0.013	0.2		Yes / No
Selenium	mg/L	0.018	0.05		Yes / No
Vanadium	mg/L	0.006	0.5		Yes / No
Zinc	mg/L	0.2324	3		Yes / No
Ammonia (as N)	mg/L	1.43	0.4		Yes / No
NOx	mg/L	3.8	-		Yes / No
Anionic surfactants as MBAS	mg/L	0.52	-		Yes / No
Oil and grease	mg/L	10	-		Yes / No
Fluoride	mg/L	3.4	15		Yes / No
Chlorine	mg/L	0.003	-		Yes / No
Cyanide	mg/L	0.011	0.8		Yes / No
Anthracene	mg/L	0.0015	-		Yes / No

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Parameter	Unit	Discharge Criteria	Reuse Criteria	Result	Compliant with Relevant Criteria?
Benzo(a)pyrene	mg/L	0.0004	0.0001		Yes / No

Evaluation

Component	Details
Water Compliant to Discharge or Reuse?	
Additional Sampling Required?	
Additional Treatment Required?	
Additional Notes	

Pre-Water Movement Approval (Environmental Representative or Delegate)

Component	Details
Name	
Signature	
Date	

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Post Water Movement Evaluation

Component	Details
Quantity of Water Discharged / Reused	
Water Discharge / Reuse Undertaken in Accordance with Discharge / Reuse Management Plan?	
Follow Up Actions or Maintenance Required?	
Additional Notes	

Post Water Movement Evaluation Approval (Environmental Representative or Delegate)

Component	Details
Name	
Signature	
Date	

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Appendix 3

Water Reuse Sub-Plan

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Intended for
AGL Macquarie Pty Ltd

Document type
Report

Date
May 2025

Soil and Water Sub-Plan: Water Reuse Plan

Liddell Power Station Demolition

RAMBOLL Bright ideas. Sustainable change.

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Soil and Water Sub-Plan: Water Reuse Plan

Liddell Power Station Demolition

Project name	**Liddell Power Station Demolition – Water Reuse Plan**
Project no.	**318002057**
Recipient	**AGL Macquarie Pty Ltd**
Document type	**Water Reuse Management Plan**
Version	**Final**
Date	**05/05/2025**
Description	**The document comprises a water reuse management plan, which is a sub-plan to the Soil and Water Management Plan to support the demolition of the former Liddell Power Station.**

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Revision	Date	Prepared by	Checked by	Approved by	Description
Draft 1.0	29/04/2025	J Connor	M. Dixon K. Greenfield CEnvP SC40104	A. Gibson	Working Draft for AGLM Review
Draft 2.0	02/05/2025	J Connor	M. Dixon K. Greenfield CEnvP SC40104	A. Gibson	Working Draft for AGLM Review
Final 1.0	05/05/2025	J Connor	K. Greenfield CEnvP SC40104	A. Gibson	Final Version

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Appendix A
Water Movement Permit

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Acronyms and Abbreviations

Acronym/Abbreviation	Description
AGLM	AGL Macquarie Pty Ltd
Amendment Report	Amendment Report - Liddell Future Land Use and Enabling Works (GHD, 2024)
BPS	Bayswater Power Station
CoPC	Contaminant of Potential Concern
The Department	New South Wales Department of Planning, Housing and Infrastructure
EIS	Environmental Impact Assessment - Liddell Future Land Use and Enabling Works Project (GHD, 2023a)
EPA	New South Wales Environment Protection Authority
EP&A Act	*Environmental Protection and Assessment Act 1979*
EP&A Regulation	*Environmental Protection and Assessment Regulation 2021*
EPL	Environmental Protection License
HVGTs	Hunter Valley Gas Turbines
LAD	Liddell Ash Dam
LOSP	Level of species protection
LPS	Liddell Power Station
NHMRC	National Health and Medical Research Council
NSW	New South Wales
POEO Act	*Protection of the Environment Operations Act 1997*
RtS	Response to Submission Report Liddell Future Land Use and Enabling Works Project (GHD, 2024)
SEARs	Secretary's Environmental Assessment Requirements
SWMP	Soil and Water Management Plan
WM Act	*Water Management Act 2000*

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1. Introduction

1.1 Preamble

This Water Reuse Plan has been prepared by Ramboll Australia Pty Ltd on behalf of AGL Macquarie Pty Ltd (AGLM) as a sub-plan to the Soil and Water Management Plan (SWMP).

These Management Plans have been prepared to support the demolition works at the former Liddell Power Station (LPS) (The Site), located approximately 15 kilometres southeast of Muswellbrook, New South Wales (NSW), adjoining the Bayswater Power Station (BPS). Refer to **Figure 1-1**.

1.2 Background

LPS operated from the 1970s until it ceased operation in April 2023. AGLM acquired both LPS and BPS from NSW Government owned Macquarie Generation in September 2014. The LPS site (the Site) includes the Hunter Valley Gas Turbines (HVGTs) (now decommissioned) and a range of supporting water supply, water management, coal ash management, coal supply, power supply and control system infrastructure.

The Liddell Future Land Use and Enabling Works Project (the Development) is declared State Significant Development (SSD) (application number SSD 24937520) under section 4.5(a) of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

A SWMP has been prepared by Ramboll to address potential risks associated with soil disturbance and site water management associated with demolition works for the Development, and specifically to address requirements of Condition C21 in the Consent, which requires:
"A soil and water management sub-plan must be prepared as part of the demolition environmental management plan. The plan must:

- *(a) be prepared by a suitably qualified and experienced person/s;*
- *(b) identify the clean and dirty water management system;*
- *(c) describe the mitigation measures that will be implemented to:*
  - *(i) comply with the conditions of this consent, including the relevant performance measures identified in Table 3;*
  - *(ii) manage the risks identified in the environmental risk assessment required by condition B1; and*
  - *(iii) implement the commitments detailed in the documents listed in condition A2(c);*
- (d) *include a monitoring, evaluation and reporting program that uses an approach that is consistent with the environmental management strategy required by condition B1*."

The SWMP outlines that the overarching water management strategy for the demolition works will be to direct and retain surface water run-off within designated sediment basins. Accumulated water will be reused onsite where possible, or discharged to Lake Liddell through the Environment Protection Plan (EPL).

This document serves as an Appendix to the SWMP to manage the reuse of water onsite for purposes such as dust suppression or vehicle wash down. It is noted that separate management plans are in place for water quality monitoring and for the management of off-site water discharge in accordance with the EPL 2122.

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The SWMP and this Water Reuse Plan are specific to the 'Development Stage 1a' demolition works of LPS, which includes the LPS and HVGTs and redundant associated infrastructure. This specifically includes the following 'Main Catchment Areas':

- Main Power Block
- Coal Handling Plant
- Water Intake Pump Station
- HVGTs
- Ash Pipeline
- M1/M1a Conveyor

Reference should be made to the SWMP for details on the Development Stage 1a Works and proposed soil and water management measures to be implemented.

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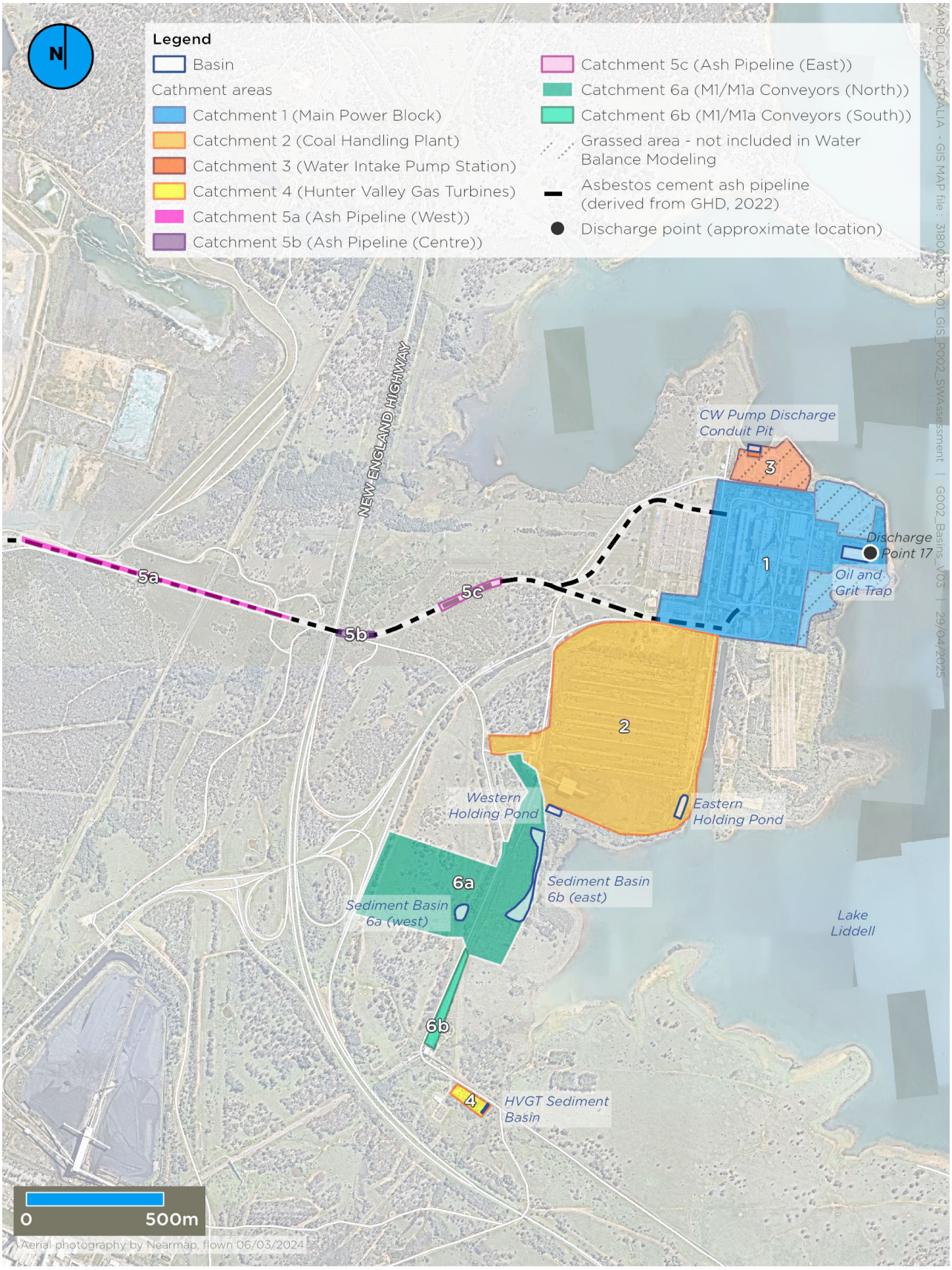

Figure 1-1: Site location and Overview of Catchment Areas

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1.3 Objectives

The overall objectives of the SWMP and associated sub-plans are to address potential risks associated with soil disturbance and site water management associated with the demolition works, and specifically to address requirements of Condition C21 of the Consent.

The specific objectives of this Water Reuse Plan are to outline procedures for the management and controlled reuse of water onsite during the demolition works, in a manner that enhances water resource efficiencies onsite and minimises environmental impact.

The specific areas relevant to this management plan are outlined in **Section 3**.

2. Regulatory Framework

The following legislation and guidelines are relevant this plan:

- *Environmental Planning and Assessment Act 1979* (EP&A Act)
- *Environmental Planning and Assessment Regulation 2021* (EP&A Regulation)
- *Protection of the Environment and Operations Act 1997* (POEO Act)
- *Protection of the Environment Operations (Waste) Regulation 2014* (POEO Regulation)
- *Water Management Act 2000* (WM Act)
- *Water Management (General) Regulation 2018* (WM Regulation)
- *Contaminated Land Management Act 1997 (*CLM Act)
- *Work Health and Safety Act* 2011 (WHS Act)
- *Managing Urban Stormwater: Soils and Construction, Volume 1: Blue Book* (Landcom, 2004)
- *Guidelines for Managing Risks in Recreational Water* (NHMRC, 2008)
- *Australian Fresh and Marine Water Quality Guidelines* (ANZG, 2018)

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3. Project Water Management Strategy

3.1 Overarching Management Strategy

The overarching water management strategy for the demolition works will be to direct and contain dirty water run-off into designated sediment basins or traps within each Main Catchment Area. Water will be re-used where feasible, for purposes such as dust suppression, to enhance resource efficiency in accordance with the Water Re-Use Management Plan.

3.2 Area Specific Reuse Sources

Table 3-1 provides a summary of the overarching water management strategy for each Catchment Area, including specific areas where water may be reused from.

Table 3-1: Area Specific Sources for Water Reuse

Catchment Area	Overarching Management Strategy	Sources for Water Reuse
Main Power Block	Direct surface water to the existing oil and grit trap via a network of drains.	Water may be reused from the water stored within the oil and grit trap. The oil and grit trap will be upgraded to have a capacity of 30,286 m^3.
Coal Handling Plant	Direct surface water to the two existing sediment basins via a network of drains.	Water may be reused from the water stored within the sediment basins. The basins will be upgraded to have a combined capacity of 29,290 m^3.
Water Intake Pump Station	Capture water within the designated storage basin (Circuit Water pump discharge conduit pit) and transfer water to the oil and grit trap (located in the Main Power Block).	Water may be reused from the water stored within the circuit water pump discharge conduit pit. The pit has an area of 500 m^2. Where the water has been transferred, this will be managed via the Main Power Block oil and grit trap.
Hunter Valley Gas Turbines	Capture water within the sediment basin.	Water may be reused from the sediment basin. The sediment basin currently has a capacity of 762 m^3.
Ash Pipeline	Implement local controls at the source of the demolition. Where required, localised sediment traps may be installed at the base of the three sloped areas.	Not proposed. Where required, water may be reused from temporary sediment traps. The sediment trap sizes are 990 m^3, 125 m^3 and 240 m^3.
M1/M1a Conveyor	Implement local controls at the source of the demolition and utilise the existing sediment basin and proposed sediment trap to capture excess water run-off.	Water may be reused from the sediment basin and trap. The sediment trap sizes are to be confirmed.

An outline of the sediment basins in each Catchment Area is provided in Figure 1-1.

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4. Water Reuse Opportunities and Scenarios

Water will be reused onsite wherever feasible to enhance water resources efficiencies onsite and reduce the use of potable water.

For the demolition works, water may be reused for dust suppression during the following activities and conditions:

- Routine dust suppression during demolition works and activities across the Site
- During dry or windy weather conditions
- During and following activities that involve dusty materials (e.g. earthworks, soil loading, application of crushed concrete)
- Watering of stockpiles
- Stabilisation of exposed soil areas
- Prior to and following periods of high traffic
- Around site access points and haul roads to prevent dust tracking off-site
- When visible dust emissions are observed
- Vehicle washing

These reuse scenarios are intended to reduce dust-related impacts and support compliance with the DEMP and SWMP.

Increased water reuse, beyond routine operations, may also be required to manage water levels in the sediment basins, in order to prevent water overflow or in preparation for a wet weather event.

Scenarios that may trigger increased water reuse are outlined in **Table 4-1**. These scenarios also apply to potential discharge events to Lake Liddell under the EPL (as detailed in the Water Discharge Plan).

Table 4-1: Increased Water Reuse Scenarios from Sediment Basins

Scenario	Description	Triggers / Indicators
Normal Operations	Routine diversion of surface water run-off for storage in sediment basins.	Sediment basin water level at <25% capacity. No immediate need to discharge or reuse water. No significant rainfall events in the past 24 hours or next 24-48 hours (i.e. <10 mm).
Pre-emptive Management	Monitoring and proactive management when sediment basins are nearing their capacity to initiate discharge protocols. Consider whether controlled discharge is required.	Sediment basin water level at ~50% capacity. Potential need for discharge or reuse water if rainfall is forecasted (i.e. 10-20 mm in 24 hours), or if site activities are expected to contribute significant amounts of water.
Critical Capacity	Enhanced protocols to manage heavy run-off from rain or storms and initiation of controlled discharge process.	Sediment basin water level at >90% capacity or nearing overflow with risk of uncontrolled discharge. Heavy rainfall occurring or recently occurred (>20 mm in 24 hours). Immediate need to discharge or reuse water to free capacity before next rainfall event.

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5. Sediment Basins and Water Treatment

5.1 Basin Details

Details of the sediment basins from which water may be reused from in each Catchment Area are detailed in Section 3.2.

5.2 Expected Water Quality

The contamination status of the water quality in the sediment basins will be based off the activities occurring onsite and weather events.

Based on previous routine monitoring datasets, the Water Quality Assessment (Ramboll, 2025b) and Water Quality Assessment Criteria (Ramboll, 2025d) found that majority of the contaminants of potential concern will be less than the discharge criteria set, which is generally more conservative than the reuse criteria set (Section 6.1).

It is acknowledged that ongoing monitoring of waters to be reused are required as part of the Water Monitoring Plan.

5.3 Treatment Details

Water runoff from the Catchment Areas will be directed to sediment basins designated for each area.

Water treatment will primarily rely on sedimentation, which is expected to be sufficient due to the water quality and nature of the contaminants anticipated. Sediment basins will be strategically designed to maximise sediment capture and settlement.

Flocculation and pH correction may be required prior to discharge to promote the removal of suspended solids and neutralise waters. Additional chemical treatment has not been proposed as part of the water reuse procedure as it is anticipated that the water within the sediment basins will meet the required reuse criteria.

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6. Water Reuse System Operation

6.1 Reuse Criteria

The proposed water reuse criteria for the demolition works were determined based on the ANZG (2018) *Short-term Irrigation* trigger values and the National Health and Medical Research Council (NHMRC) (2008) *Guidelines for Managing Risks in Recreational Waters*, with the most conservative value selected.

This approach ensures protection of both human health and the environment by accounting for potential short-term exposure scenarios in dust suppression applications, while also addressing risks associated with incidental human contact during reuse activities. The use of the most conservative values provides a precautionary basis for managing water quality and risks in the reuse strategy. Given that water reuse activities will be managed in a way to ensure that water runoff is not generated, and water will not come into contact with Lake Liddell, water quality criteria specifically protective of the lake have not been considered.

The proposed reuse criteria are outlined in Table 6-1.

Table 6-1: Proposed Water Reuse Criteria

Parameter	Unit	Reuse Criteria	Source
Electrical Conductivity (EC)	uS/cm	3,000	Site-specific value
pH	-	6.5-9	EPL 2122
Total Suspended Solids (TSS)	mg/L	50	ANZG (2018) Irrigation
Antimony	mg/L	0.03	NHMRC (2008)
Arsenic (total)	mg/L	0.07	NHMRC (2008)
Arsenic (V)	mg/L	-	-
Boron	mg/L	0.5	NHMRC (2008)
Cadmium	mg/L	0.02	NHMRC (2008)
Chromium (III)	mg/L	-	-
Chromium (VI)	mg/L	0.5	NHMRC (2008)
Cobalt	mg/L	-	-
Copper	mg/L	5	ANZG (2018) Irrigation
Lead	mg/L	0.1	NHMRC (2008)
Manganese	mg/L	5	NHMRC (2008)
Mercury	mg/L	0.002	ANZG (2018) Irrigation
Molybdenum	mg/L	0.05	ANZG (2018) Irrigation
Nickel	mg/L	0.2	NHMRC (2008)
Selenium	mg/L	0.05	ANZG (2018) Irrigation

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Parameter	Unit	Reuse Criteria	Source
Vanadium	mg/L	0.5	ANZG (2018) Irrigation
Zinc	mg/L	3	NHMRC (2008)
Ammonia (as N)	mg/L	-	-
NOx	mg/L	-	-
Anionic surfactants as MBAS	mg/L	-	-
Oil and grease	mg/L	-	-
Fluoride	mg/L	15	NHMRC (2008)
Chlorine	mg/L	-	-
Cyanide	mg/L	0.8	NHMRC (2008)
Anthracene	mg/L	-	-
Benzo(a)pyrene	mg/L	0.0001	NHMRC (2008)

Criteria references:

- EPL 2122 Concentration Limits
- Site-specific value based on ambient water quality results (Ramboll, 2025b)
- *Managing Urban Stormwater: Soils and Construction, Volume 1: Blue Book* (Landcom, 2004)
- ANZG (2018) *Irrigation – Short-term trigger values*
- NHMRC (2008) *Guidelines for Managing Risks in Recreational Waters*

6.2 Reuse Application Controls

To manage the safe and effective reuse of water for dust suppression, the application controls are outlined in Table 6-2 should be applied.

Table 6-2: Reuse Application Controls

Category	Control Description
Water Storage	Water will be stored in the sediment basins outlined in Section 3.2. Sediment basins will be managed as per the SWMP.
Water Quality Monitoring	Confirm that the water quality is suitable for reuse onsite and follow the procedure outlined in the Water Monitoring Plan, which includes the pre-reuse water quality assessments, comparison against the water reuse criteria and treatment of water where required. Only water meeting the water reuse criteria will be approved for water reuse.
Water Transport	Water will be transported from sediment basins to the application areas using appropriate trucks or tankers equipped with adequate storage capacity and pumping systems for controlled water application. To prevent accidental spillage, transport vehicles will be loaded to appropriate levels, ensuring no overfilling. Regular maintenance and checks of transport equipment will be conducted to ensure functionality and prevent malfunctions that could lead to water spillage.
Dust Suppression - Controlled	Water will be applied using low-pressure systems (e.g., water carts or sprinklers with fan-spray nozzles) to minimise runoff and aerosol generation.

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Category	Control Description
Application and Volume Control	The application rate and water volumes will be controlled to avoid oversaturation and prevent runoff or erosion. The volume will be determined based on the surface area requiring watering, dust level, and soil conditions.
Weather Considerations	Reuse activities will be suspended during or immediately after rainfall events to avoid additional water runoff. Water application will also be adjusted based on weather conditions, such as wind speed or temperature, to prevent the water from dispersing and to maximise dust suppression
Visual Monitoring	Ongoing monitoring will be conducted during water application to observe for signs of pooled water, water runoff, oversaturation or erosion. Where issues are observed, immediate adjustments to the application rates should be made. Effectiveness will also be assessed by monitoring dust levels and the visible reduction in dust. Adjustments to water volume and application methods will be made as necessary to ensure optimal dust suppression without excess water use.
Exclusion Zones	Water will only be applied to designated areas where there is no risk of contamination to sensitive receptors such as clean water drainage lines, watercourses, or Lake Liddell. Where vehicle washing is undertaken, this will be conducted in a designated wash bay equipped with appropriate drainage or containment for water runoff. These controls ensure that reused water remains contained within the Catchment Areas and does not affect surrounding environments.

6.3 Integration with Water Monitoring Plan

Water quality monitoring before reuse will be conducted in accordance with the Water Monitoring Plan. Reference should be made to the Water Monitoring Plan for monitoring requirements as part of proposed reuse procedures.

6.4 Reporting and Records Management

Details of water reuse activities should be included on the Water Movement Permit in Appendix A, including:

- Permit number.
- Date.
- Time.
- Weather conditions, including any relevant rainfall events within the past or next 48 hours.
- Site activities description.
- Reuse locations (including source of water / sediment basin and application area).
- Summary of pre-reuse analytical results with an evaluation of compliance against the water reuse criteria.
- Estimate quantity of water to be reused.
- Relevant management / maintenance notes on the sediment basins and water reuse controls.
- Approval of permit by the AGLM Environmental Representative or delegate, including signature and date.
- Following completion of the reuse: Final quantity of water reused and any additional notes.

The permit should be filled out following each water sampling event. Where the reuse activities are ongoing, the permit may be filled out on a weekly basis.

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7. Water Reuse and Sampling Procedure

The water sampling procedure for water reuse and monitoring has been provided as a flow chart in Figure 7-1. Reference should be made to the Water Monitoring Plan for further details.

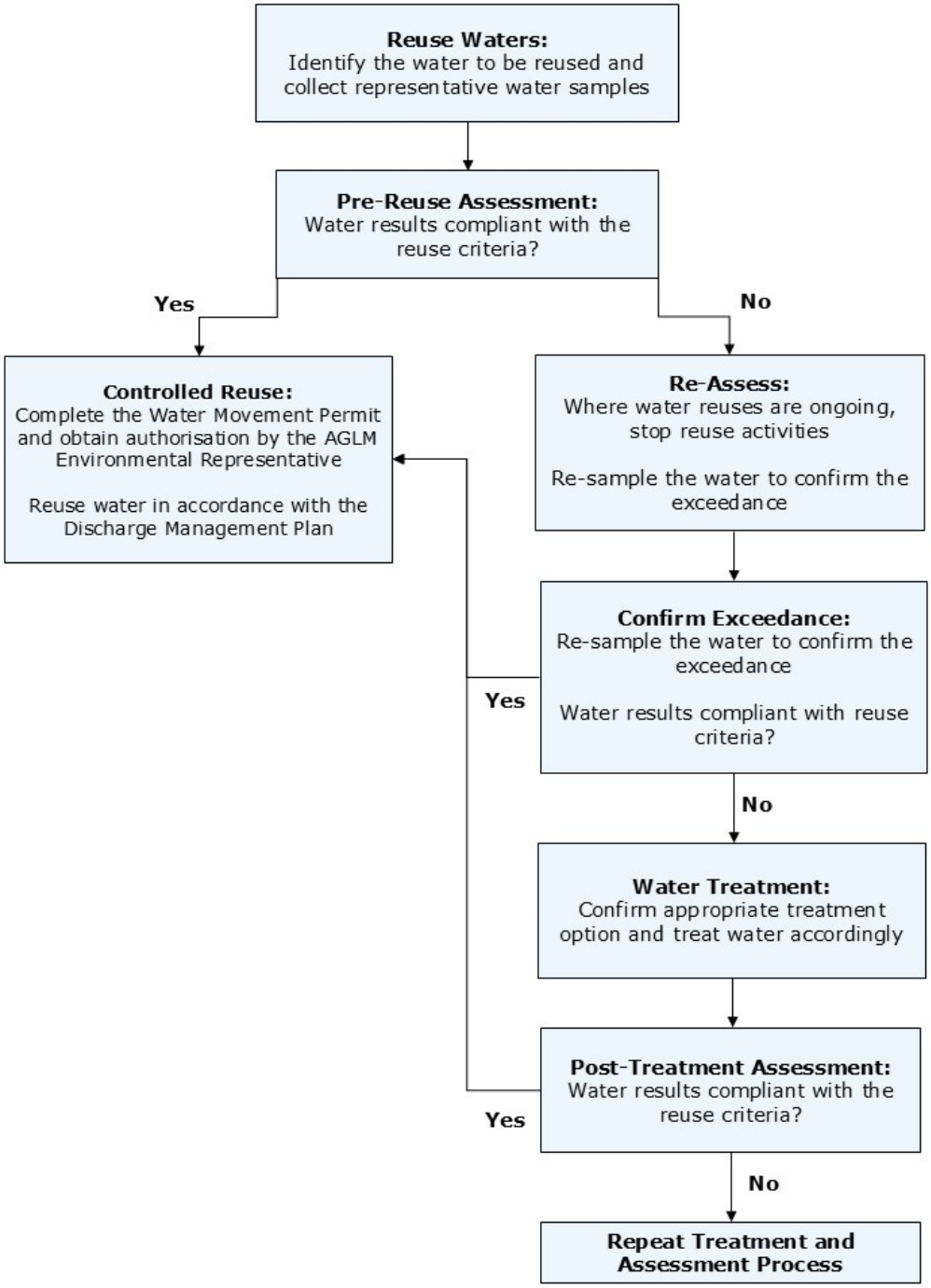

Figure 7-1: Water Reuse and Sampling Procedure

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Ramboll. (2025d). *Water Quality Assessment Criteria.*

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9. Limitations

This report is produced by Ramboll Australia Pty Ltd at the request of AGL Macquarie Pty Ltd for the purposes detailed herein.

Site conditions may change over time. This report is based on the conditions encountered at the site at the time of its creation, and Ramboll Australia Pty Ltd disclaims responsibility for any changes that may have occurred after this time.

Ramboll Australia Pty Ltd did not independently verify all of the written or oral information provided to Ramboll Australia Pty Ltd during the course of this report. While Ramboll Australia Pty Ltd has no reason to doubt the accuracy of the information provided, the completeness and accuracy of the report are dependent on the extent to which the information given to Ramboll Australia Pty Ltd was itself complete and accurate.

This report, along with any accompanying documents, is intended solely for the use and benefit of the client and the NSW EPA for the stated purpose. It may not be used by or disclosed to any other person, in whole or in part, without the express written consent of Ramboll. Ramboll neither owes nor accepts any duty to any third party and shall not be liable for any loss, damage, or expense of any nature caused by their reliance on the information contained in this report.

This report does not provide legal advice. Legal advice should only be sought from qualified legal advisors.

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Appendix A

1.Water Movement Permit

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Water Movement Permit

Site Notes:

Component	Details
Water Discharge or Reuse?	
Permit Number	
Date	
Time	
Weather Conditions	
Water Discharge / Reuse Location and Basin	
Estimated Quantity of Water to be Discharged / Reused	
Additional water treatment anticipated or undertaken?	
Site Activity Description	
Additional maintenance or mitigation measures identified to be required? (i.e. for sediment basins, discharge points etc.)	
Observations of the receiving environment (i.e. water levels in Lake Liddell, exposed soils or pooled water, visual signs of contamination etc.) (where relevant)	

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Pre-Discharge or Reuse Water Quality Results

Parameter	Unit	Discharge Criteria	Reuse Criteria	Result	Compliant with Relevant Criteria?
Electrical Conductivity (EC)	uS/cm	3,000	3,000		Yes / No
pH	-	6.5-9	6.5-9		Yes / No
Total Suspended Solids (TSS)	mg/L	50	50		Yes / No
Antimony	mg/L	0.009	0.03		Yes / No
Arsenic (total)	mg/L	-	0.07		
Arsenic (V)	mg/L	0.042	-		Yes / No
Boron	mg/L	1.5	0.5		Yes / No
Cadmium	mg/L	0.0004	0.02		Yes / No
Chromium (III)	mg/L	0.0033	-		Yes / No
Chromium (VI)	mg/L	0.006	0.5		Yes / No
Cobalt	mg/L	0.0014	-		Yes / No
Copper	mg/L	0.0279	5		Yes / No
Lead	mg/L	0.0056	0.1		Yes / No
Manganese	mg/L	2.5	5		Yes / No
Mercury	mg/L	0.0019	0.002		Yes / No
Molybdenum	mg/L	0.034	0.05		Yes / No
Nickel	mg/L	0.013	0.2		Yes / No
Selenium	mg/L	0.018	0.05		Yes / No
Vanadium	mg/L	0.006	0.5		Yes / No
Zinc	mg/L	0.2324	3		Yes / No
Ammonia (as N)	mg/L	1.43	0.4		Yes / No
NOx	mg/L	3.8	-		Yes / No
Anionic surfactants as MBAS	mg/L	0.52	-		Yes / No
Oil and grease	mg/L	10	-		Yes / No
Fluoride	mg/L	3.4	15		Yes / No
Chlorine	mg/L	0.003	-		Yes / No
Cyanide	mg/L	0.011	0.8		Yes / No
Anthracene	mg/L	0.0015	-		Yes / No

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Parameter	Unit	Discharge Criteria	Reuse Criteria	Result	Compliant with Relevant Criteria?
Benzo(a)pyrene	mg/L	0.0004	0.0001		Yes / No

Evaluation

Component	Details
Water Compliant to Discharge or Reuse?	
Additional Sampling Required?	
Additional Treatment Required?	
Additional Notes	

Pre-Water Movement Approval (Environmental Representative or Delegate)

Component	Details
Name	
Signature	
Date	

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Post Water Movement Evaluation

Component	Details
Quantity of Water Discharged / Reused	
Water Discharge / Reuse Undertaken in Accordance with Discharge / Reuse Management Plan?	
Follow Up Actions or Maintenance Required?	
Additional Notes	

Post Water Movement Evaluation Approval (Environmental Representative or Delegate)

Component	Details
Name	
Signature	
Date	

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Appendix 4

Water Monitoring Sub-Plan

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Intended for
AGL Macquarie Pty Ltd

Document type
Report

Date
May 2025

Soil and Water Sub-Plan: Water Monitoring Plan

Liddell Power Station Demolition

RAMBOLL Bright ideas. Sustainable change.

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Soil and Water Sub-Plan: Water Monitoring Plan

Liddell Power Station Demolition

Project name	**Liddell Power Station Demolition – Water Monitoring Plan**
Project no.	**318002057**
Recipient	**AGL Macquarie Pty Ltd**
Document type	**Discharge Monitoring Plan**
Version	**Final**
Date	**05/05/2025**
Description	**The document comprises a water monitoring plan, which is a sub-plan to the Soil and Water Management Plan to support the demolition of the former Liddell Power Station.**

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Appendices

Appendix A
Water Movement Permit

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Acronyms and Abbreviations

Acronym/Abbreviation	Description
AGLM	AGL Macquarie Pty Ltd
Amendment Report	Amendment Report - Liddell Future Land Use and Enabling Works (GHD, 2024)
BPS	Bayswater Power Station
CoPC	Contaminant of Potential Concern
The Department	New South Wales Department of Planning, House and Infrastructure
DEMP	Demolition Environmental Management Plan
EIS	Environmental Impact Assessment - Liddell Future Land Use and Enabling Works Project (GHD, 2023a)
EPA	New South Wales Environment Protection Authority
EP&A Act	*Environmental Protection and Assessment Act 1979*
EP&A Regulation	*Environmental Protection and Assessment Regulation 2021*
EPL	Environmental Protection License
HVGTs	Hunter Valley Gas Turbines
LAD	Liddell Ash Dam
LOSP	Level of species protection
LPS	Liddell Power Station
MCA	Main Catchment Area
NHMRC	National Health and Medical Research Council
NSW	New South Wales
POEO Act	*Protection of the Environment Operations Act 1997*
RtS	Response to Submission Report Liddell Future Land Use and Enabling Works Project (GHD, 2024)
SEARs	Secretary's Environmental Assessment Requirements
SSD	State Significant Development
SWMP	Soil and Water Management Plan
TSS	Total Suspended Solids
WM Act	*Water Management Act 2000*

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1. Introduction

1.1 Preamble

This Water Monitoring Plan has been prepared by Ramboll Australia Pty Ltd on behalf of AGL Macquarie Pty Ltd (AGLM) as a sub-plan to the Soil and Water Management Plan (SWMP).

The Management Plans have been prepared to support the proposed decommissioning and demolition works at the former Liddell Power Station (LPS) located approximately 15 kilometres southeast of Muswellbrook, New South Wales (NSW), adjoining the Bayswater Power Station (BPS). Refer to **Figure 1-1**.

1.2 Background

LPS operated from the 1970s until it ceased operation in April 2023. AGLM acquired both LPS and BPS from NSW Government owned Macquarie Generation in September 2014. The LPS site (the Site) includes the Hunter Valley Gas Turbines (HVGTs) (now decommissioned) and a range of supporting water supply, water management, coal ash management, coal supply, power supply and control system infrastructure.

The Liddell Future Land Use and Enabling Works Project (the Development) is declared State Significant Development (SSD) (application number SSD 24937520) under section 4.5(a) of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

A SWMP has been prepared by Ramboll to address potential risks associated with soil disturbance and site water management associated with demolition works for the Development, and specifically to address requirements of Condition C21 in the of the Consent, which requires:
"A soil and water management sub-plan must be prepared as part of the demolition environmental management plan. The plan must:

- *(a) be prepared by a suitably qualified and experienced person/s;*
- *(b) identify the clean and dirty water management system;*
- *(c) describe the mitigation measures that will be implemented to:*
  - *(i) comply with the conditions of this consent, including the relevant performance measures identified in Table 3;*
  - *(ii) manage the risks identified in the environmental risk assessment required by condition B1; and*
  - *(iii) implement the commitments detailed in the documents listed in condition A2(c);*
- (d) *include a monitoring, evaluation and reporting program that uses an approach that is consistent with the environmental management strategy required by condition B1*."

The SWMP outlines that the overarching water management strategy for the demolition works will be to direct and retain surface water run-off within designated sediment basins, and minimise discharges to Lake Liddell where possible.

This document serves as an appendix to the SWMP, which outlines the water monitoring requirements for controlled discharge events and onsite reuse, as well monitoring of the discharge receiving waters in Lake Liddell. It is noted that separate management plans are in place for the reuse of water on-site and discharge of water off-site in accordance with Environment Protection License (EPL) 2122.

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The SWMP and this Water Monitoring Plan are specific to surface water monitoring associated with the demolition works of LPS, which includes the LPS and HVGTs and redundant associated infrastructure. This specifically includes the following 'Catchment Areas':

- Main Power Block
- Coal Handling Plant
- Water Intake Pump Station
- HVGTs
- Ash Pipeline
- M1/M1a Conveyor

Reference should be made to the SWMP for details on the demolition works and proposed soil and water management measures to be implemented.

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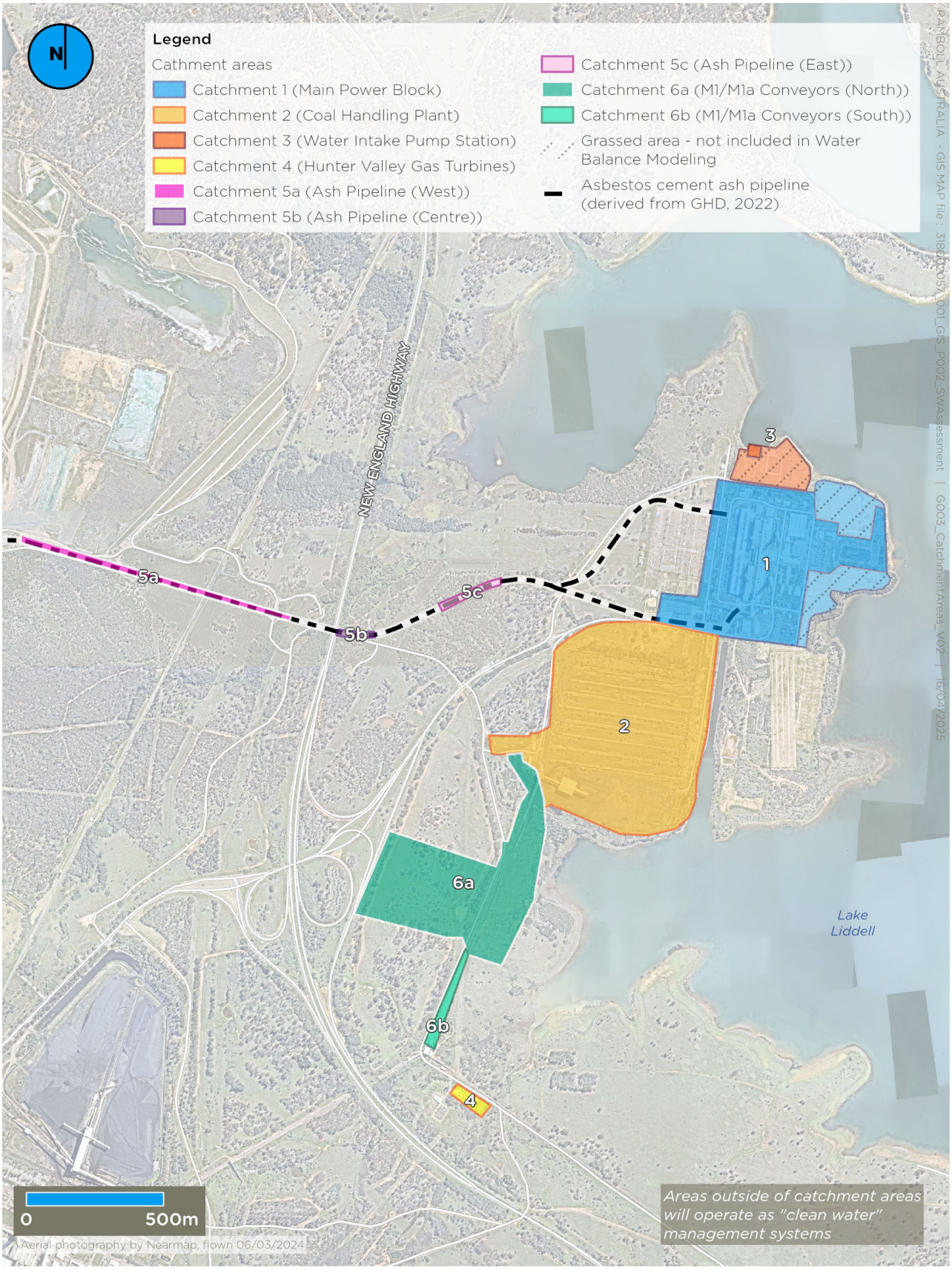

Figure 1-1: Site location and Overview of Catchment Areas

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1.3 Objectives and Scope

The overall objectives of the SWMP and associated sub-plans are to address potential risks associated with soil disturbance and site water management associated with demolition works, and specifically to address requirements of Condition C21 in the of the Consent.

The specific objectives of this plan are to create a monitoring framework that aims to:

- Characterise water quality prior to controlled water discharge or reuse events to ensure compliance with relevant discharge criteria and EPL 2122.
- Monitor the receiving water quality in Lake Liddell to assist in evaluating the effectiveness of soil and water management measures, including discharge procedures outlined in the Discharge Management Plan and source controls outlined in the SWMP.
- Contribute to protecting and restoring the environmental values in Lake Liddell over the course of the Development.

This plan specifically addresses the following monitoring activities:

- Water discharge monitoring: To assess the quality of water stored in sediment basins and determine its suitability for controlled discharge to Lake Liddell, in accordance with EPL 2122.
- Water reuse monitoring: To assess the quality of water stored in sediment basins and determine its suitability for reuse onsite, such as for dust suppression.
- Lake Liddell monitoring: To routinely assess water quality in Lake Liddell to support evaluation of onsite soil and water management measures. Monitoring will be conducted regularly and in response to specific triggers, including controlled or unplanned discharge events, exceedances of water quality criteria, or incidents such as chemical spills.

Groundwater monitoring is not included in this plan.

2. Regulatory Framework

2.1 Environmental Legislation and Guidelines

The following legislation and guidelines are relevant this plan:

- *Environmental Planning and Assessment Act 1979* (EP&A Act)
- *Environmental Planning and Assessment Regulation 2021* (EP&A Regulation)
- *Protection of the Environment and Operations Act 1997* (POEO Act)
- *Protection of the Environment Operations (Waste) Regulation 2014* (POEO Regulation)
- *Water Management Act 2000* (WM Act)
- *Water Management (General) Regulation 2018* (WM Regulation)
- *Contaminated Land Management Act 1997 (*CLM Act)
- *Managing Urban Stormwater: Soils and Construction, Volume 1: Blue Book* (Landcom, 2004)
- *Australian Fresh and Marine Water Quality Guidelines* (ANZG, 2018)
- *Environment Protection License 2122* (NSW Environment Protection Agency (EPA), 2022)

2.2 Application and Environment Protection License

The water monitoring associated with the demolition works will be undertaken in accordance with the requirements of EPL 2122, which is issued under the POEO Act 1997.

The EPL will be amended prior to discharges associated with the Demolition works and as required during the Development.

As documented in the EIS (GHD, 2023a) and noted within the NSW EPA Advice (EPA, 2024), during the Response to Submissions phase, the Development will require an amendment to EPL 2122 under the POEO Act to reflect the changes to the activities undertaken at the site.

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EPL 2122 includes requirements for the sampling, monitoring and reporting of discharges into Lake Liddell.

3. Project Water Management Strategy

3.1 Overarching Management Strategy

The overarching water management strategy for the demolition works will be to direct and contain 'dirty water' run-off into designated sediment basins or traps within each Main Catchment Area. Water captured within the sediment basins may be reused onsite or discharged to Lake Liddell under EPL 2122. Water quality monitoring of water within the sediment basins will be undertaken to determine whether the water is suitable for discharge or reuse onsite. Routine monitoring of the water quality in Lake Liddell will also be undertaken to support the evaluation of onsite soil and water management measures.

3.2 Area Specific Monitoring Requirements

Table 3-1 provides a summary of the overarching water management strategy for each Catchment Area, including the relevant monitoring requirements for the specific area.

Table 3-1: Area Specific Management and Monitoring Requirements

Catchment Area	Overarching Management Strategy	Relevant Monitoring Requirements for the Area
Main Power Block	Direct surface water to the existing oil and grit trap via a network of drains. Water will be stored in the oil and grit trap and may be reused onsite, or discharged off-site to Lake Liddell via the EPL Discharge Point 17.	Pre discharge or reuse monitoring of water within the oil and grit trap. Post discharge monitoring of Lake Liddell (where applicable).
Coal Handling Plant	Direct surface water to the two existing sediment basins via a network of drains. Water will be stored in the sediment basins and may be reused onsite, or discharged off-site to Lake Liddell via the new EPL Discharge Point proposed in this area.	Pre discharge or reuse monitoring of water within the sediment basins. Post discharge monitoring of Lake Liddell (where applicable).
Water Intake Pump Station	Capture water within the designated storage basin (circuit water pump discharge conduit pit) and transfer water to the oil and grit trap in the Main Power Block (as required).	Not specific to this area. Where water has been transferred, refer to the main power block oil and grit trap monitoring requirements.
Hunter Valley Gas Turbines	Capture water within the sediment basin. Where required, water may be transferred to the sediment basins in the Coal Handling Plant.	Not specific to this area. Where water has been transferred, refer to the Coal Handling Plant sediment basins or Main Power Block oil and grit trap monitoring requirements (where relevant).
Ash Pipeline	Implement local controls at the source of the demolition. Where required, localised sediment traps may be installed at the base of the three sloped areas.	Not proposed. Where required, water may be reused from the sediment basin / trap.

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Catchment Area	Overarching Management Strategy	Relevant Monitoring Requirements for the Area
M1/M1a Conveyor	Implement local controls at the source of the demolition and utilise the existing sediment basin and proposed sediment trap to capture excess water run-off.	Not specific to this area. Where water has been transferred, refer to the Coal Handling Plant sediment basins monitoring requirements. Alternatively, water may be reused from the sediment basin / trap.

The Water Discharge Plan and the Water Reuse Plan outline the specific scenarios where increased water reuse or discharge may be necessary, particularly in relation to the management of water levels within the sediment basins.

An outline of the sediment basins in each Catchment Area and EPL 2122 discharge points is provided in Figure 3-1.

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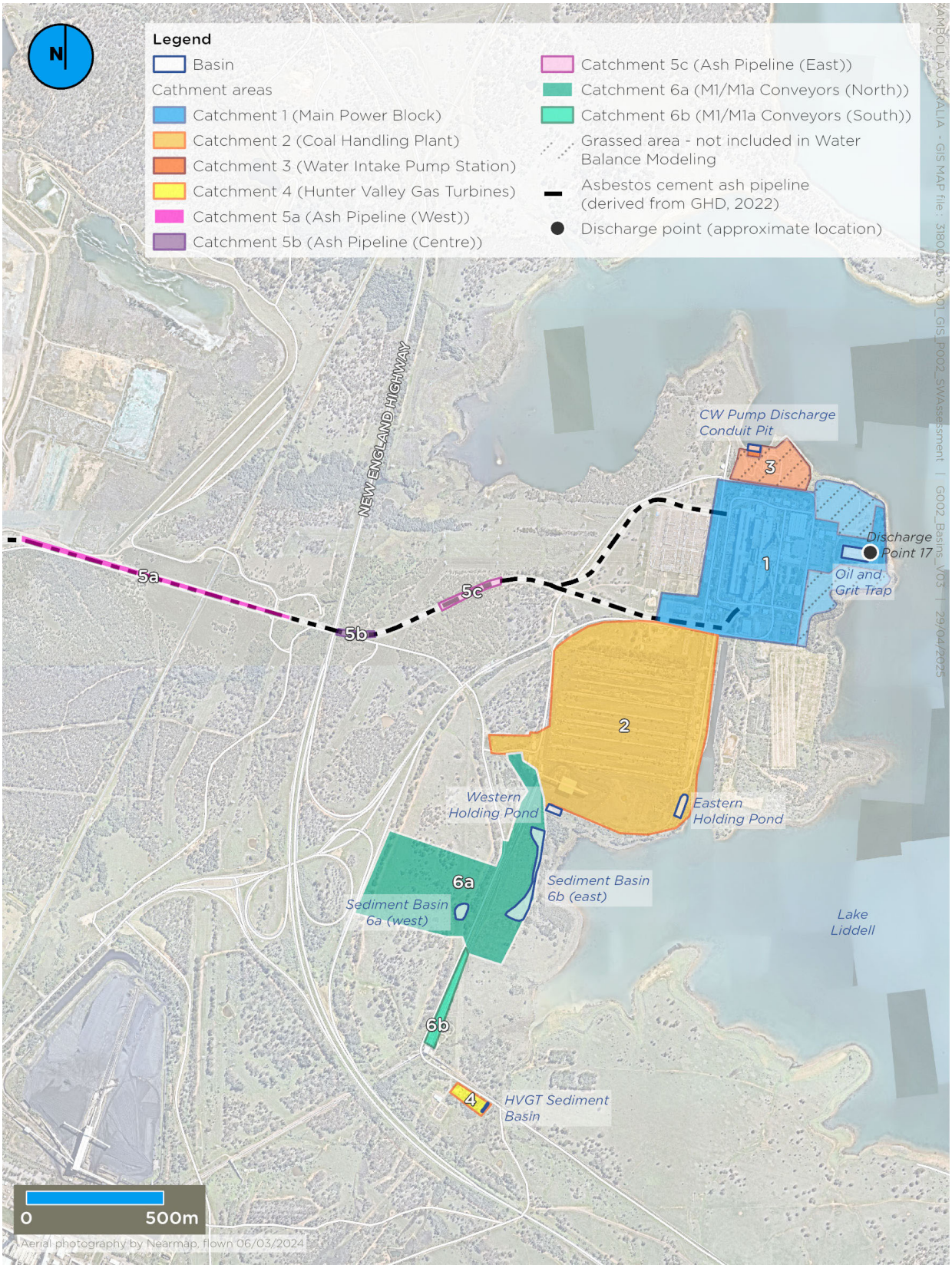

Figure 3-1: Overview of Sediment Basins and EPL Discharge Points

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4. Water Quality

4.1 Expected Water Quality

The water quality in the sediment basins will be largely based on the activities occurring onsite and weather events.

Based on previous routine monitoring datasets, the Water Quality Assessment (Ramboll, 2025b) and Water Quality Assessment Criteria (Ramboll, 2025d) found that majority of the contaminants of potential concern will be less than the discharge criteria set (Section 6.1). The discharge criteria are predominantly based on the ANZG 2018 Default Guideline Value (DGV) for the 90% Level of Species Protection (LOSP) in a freshwater ecosystem.

Primary CoPC in the discharge waters were considered to include:

- Antimony
- Boron
- Chlorine
- Copper
- Molybdenum
- Zinc

Reference should be made to the Water Quality Assessment (Ramboll, 2025b) and Water Quality Assessment Criteria (Ramboll, 2025d) for further detail.

4.2 Treatment Details

Water runoff from the Catchment Areas will be directed to sediment basins designated for each area.

Water treatment will primarily rely on sedimentation, which is expected to be sufficient due to the water quality and nature of the contaminants anticipated. Sediment basins will be strategically designed to maximise sediment capture and settlement.

Flocculation and pH correction may be required prior to discharge to promote the removal of suspended solids and neutralise waters. Additional chemical treatment has not been proposed as it is anticipated that the water within the sediment basins will meet the required discharge criteria.

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5. Water Quality Criteria

Water quality criteria is provided for the following scenarios:

- Water discharge monitoring: Assessment of water quality within the sediment basins prior to discharge to Lake Liddell through EPL 2122. Where the contaminants are below the specified criteria, the water is deemed suitable for discharge, with the appropriate procedure followed.
- Water reuse monitoring: Assessment of water quality within sediment basins prior to reuse for activities such as dust suppression. If contaminant levels meet the specified criteria, the water is deemed suitable for reuse, with the appropriate procedure followed.
- Lake Liddell monitoring: Assessment of water quality in Lake Liddell to evaluate the effectiveness of soil and water management measures, including discharge procedures (as outlined in the Discharge Management Plan) and source controls (as outlined in the SWMP). If contaminant levels are within the specified criteria, the short-term environmental values of the lake are considered to be maintained. Monitoring will be conducted monthly, and also in response to controlled or unplanned discharge events, or when water quality exceedances are identified during routine monitoring.

5.1 Discharge and Reuse Criteria

The water discharge and reuse criteria are provided in Table 5-1.

The short-term water discharge criteria have primarily been based on the EPL and the ANZG (2018) 90% LOSP for freshwater ecosystems, which is indicative of the receiving water quality in Lake Liddell. This was determined in consultation with the NSW EPA (Letter reference DOC25/213852-1, dated 1 April 2025), and outlined in the Water Quality Assessment Criteria Technical Note (Ramboll, 2025d).

The water reuse criteria have primarily been based on the ANZG (2018) *Short-term Irrigation* trigger values and the National Health and Medical Research Council (NHMRC) (2008) *Guidelines for Managing Risks in Recreational Waters*, with the most conservative value selected.

Table 5-1: Water Quality Criteria – Discharge and Reuse Criteria

Parameter	Unit	Water Discharge Criteria	Water Reuse Criteria
Electrical Conductivity (EC)	uS/cm	3,000(4)	3,000(4)
pH	-	6.5-9(1)	6.5-9(1)
Total Suspended Solids (TSS)	mg/L	50(5)	50(6)
Antimony	mg/L	0.009(2)	0.03(7)
Arsenic (total)	mg/L	-	0.07(7)
Arsenic (V)	mg/L	0.042(2)	-
Boron	mg/L	1.5(2)	0.5(7)
Cadmium	mg/L	0.0004(2)	0.02(7)
Chromium	mg/L	-	-
Chromium (III)	mg/L	0.0033(2)	-

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Parameter	Unit	Water Discharge Criteria	Water Reuse Criteria
Chromium (VI)	mg/L	0.006(2)	0.5(7)
Cobalt	mg/L	0.0014(2)	-
Copper	mg/L	0.0279(2)	5(6)
Lead	mg/L	0.0056(2)	0.1(7)
Manganese	mg/L	2.5(2)	5(7)
Mercury	mg/L	0.0019(2)	0.002(6)
Molybdenum	mg/L	0.034(2)	0.05(6)
Nickel	mg/L	0.013(2)	0.2(7)
Selenium	mg/L	0.018(2)	0.05(6)
Vanadium	mg/L	0.006(2)	0.5(6)
Zinc	mg/L	0.2324(3)	3(7)
Ammonia (as N)	mg/L	1.43(2)	-
NOx	mg/L	3.8(2)	-
Anionic surfactants as MBAS	mg/L	0.52(2)	-
Oil and grease	mg/L	10(1)	-
Fluoride	mg/L	3.4(2)	15(7)
Chlorine	mg/L	0.003(2)	-
Cyanide	mg/L	0.011(2)	0.8(7)
Anthracene	mg/L	0.0015(2)	-
Benzo(a)pyrene	mg/L	0.0004(2)	0.0001(7)

Source of criteria:
(1) EPL 2122 Concentration Limits
(2) ANZG (2018) Freshwater Ecosystems 90% LOSP
(3) ANZG (2018) adjusted based on site-specific hardness
(4) Site-specific value based on ambient water quality results (Ramboll, 2025b)
(5) *Managing Urban Stormwater: Soils and Construction, Volume 1: Blue Book* (Landcom, 2004)
(6) ANZG (2018) Irrigation – Short-term trigger values
(7) NHMRC (2008) Guidelines for Managing Risks in Recreational Waters

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5.2 Lake Liddell Water Quality Monitoring Criteria

The criteria for monitoring Lake Liddell are provided in Table 5-1. Reference should be made to the Water Quality Assessment Criteria Technical Note (Ramboll, 2025d) for detail on the criteria selection.

Table 5-2: Water Quality Criteria – Lake Liddell Water Quality Criteria

Parameter	Unit	Lake Lidell Water Quality Criteria
Electrical Conductivity (EC)	uS/cm	3,000(4)
pH	-	6.5-9(1)
Total Suspended Solids (TSS)	mg/L	50(5)
Antimony	mg/L	0.009(2)
Arsenic (total)	mg/L	-
Arsenic (V)	mg/L	0.042(2)
Boron	mg/L	1.5(2)
Cadmium	mg/L	0.0004(2)
Chromium	mg/L	-
Chromium (III)	mg/L	0.0033(2)
Chromium (VI)	mg/L	0.006(2)
Cobalt	mg/L	0.0014(2)
Copper	mg/L	0.0279(2)
Lead	mg/L	0.0056(2)
Manganese	mg/L	2.5(2)
Mercury	mg/L	0.0019(2)
Molybdenum	mg/L	0.034(2)
Nickel	mg/L	0.013(2)
Selenium	mg/L	0.018(2)
Vanadium	mg/L	0.006(2)
Zinc	mg/L	0.2324(3)
Ammonia (as N)	mg/L	1.43(2)
NOx	mg/L	3.8(2)
Anionic surfactants as MBAS	mg/L	0.52(2)
Oil and grease	mg/L	10(1)
Fluoride	mg/L	3.4(2)
Chlorine	mg/L	0.003(2)

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Parameter	Unit	Lake Lidell Water Quality Criteria
Cyanide	mg/L	0.011(2)
Anthracene	mg/L	0.0015(2)
Benzo(a)pyrene	mg/L	0.0004(2)

Source of criteria:
(1) EPL 2122 Concentration Limits
(2) ANZG (2018) Freshwater Ecosystems 90% LOSP
(3) ANZG (2018) adjusted based on site-specific hardness
(4) Site-specific value based on ambient water quality results (Ramboll, 2025b)
(5) *Managing Urban Stormwater: Soils and Construction, Volume 1: Blue Book* (Landcom, 2004)

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6. Water Quality Monitoring Program

6.1 Monitoring Program

The monitoring program is specific to water quality monitoring water within the sediment basins and surface water in Lake Liddell. Reference should be made to the Water Discharge Plan and Water Reuse Plan for monitoring requirements related to water capacity in the sediment basins and discharge volumes.

An overview of the water monitoring program, including sampling locations, monitoring frequencies, interpretation and reporting requirements is provided in **Table 6-1.** An outline of the relevant sampling locations in **Figure 6-1.**

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Table 6-1: Water Monitoring Sampling Locations and Frequencies

Category	Event Type	Monitoring Type and Purpose	Sampling Locations	Monitoring Frequency	Results Interpretation	Reporting Requirements*
Controlled Water Discharge	Single discharge event	Pre-discharge assessment to determine whether the water quality is suitable for discharge and whether any treatment is required prior to release.	Representative water sampling location within the relevant sediment basin to be discharged. The sampling location should be located in proximity to the basin discharge point.	Prior to discharge event.	Where the results are less than the Water Discharge Criteria (Section 5.1), the water is deemed suitable for discharge, with the appropriate procedure followed. Where the results are greater than the Water Discharge Criteria, the results should be reviewed, water re-sampled, and where required consideration should be given to an appropriate and/or alternative treatment methodology. Consideration should also be given to the cause of the exceedance, i.e. change in site activities, rainfall event etc.	Water movement permit (refer to Appendix A), which includes a summary of the pre-discharge analytical results. Permit to be completed for each monitoring event undertaken for discharges. Discharge results to be included in annual return report as required by the EPL.
	Ongoing discharges	Regular monitoring during extended periods of discharge to confirm water quality is compliant.	Relevant EPL discharge point: • Discharge point 17 for the oil and grit trap in the Main Power Block. • Discharge point for the sediment basins in the Coal Handling Plant (*location to be confirmed)*.	As per EPL 2122 requirements: • Weekly for pH and oil and grease. • Fortnightly for the remainder of analytes. *Following the EPL variation, the monitoring frequency will be updated where required.*		
	Following treatment (if required)	Post-treatment assessment (where applicable), to confirm the effectiveness of treatment and determine whether the water quality is suitable for discharge.	Representative sampling location for the water being treated. The sampling location should be located in proximity to the basin discharge point.	Following treatment.		
Water Reuse	Single reuse event	Pre-reuse assessment to determine whether the water quality is suitable for reuse and whether any treatment is required prior to reuse.	Representative water sampling location within the relevant sediment basin to be reused. The sampling location should be located in proximity to the extraction point.	Prior to reuse event.	Where the results are less than the Water Reuse Criteria (Section 5.1), the water is deemed suitable for reuse, with the appropriate procedure followed. Where the results are greater than the Water Reuse Criteria, the results should be reviewed, water re-sampled, and where required consideration should be given to an appropriate and/or alternative treatment methodology. Consideration should also be given to the cause of the exceedance, i.e. change in site activities, rainfall event etc.	Water movement permit (refer to Appendix A), which includes a summary of the pre-reuse analytical results. Permit to be completed for each monitoring event conducted for water reuses.
	Ongoing reuse	Regular monitoring during extended periods of reuse to confirm water quality is compliant.	Representative sampling location within the relevant basin being reused. The sampling location should be located in proximity to the extraction point.	Weekly for pH and oil and grease. Fortnightly for the remainder of analytes.		
	Following treatment (if required)	Post-treatment assessment (where applicable), to confirm the effectiveness of treatment and determine whether the water quality is suitable for reuse.	Representative sampling location for the water being treated. The sampling location should be located in proximity to the extraction point.	Following treatment.		

Category	Event Type	Monitoring Type and Purpose	Sampling Locations	Monitoring Frequency	Results Interpretation	Reporting Requirements*
Lake Liddell Monitoring	Routine monitoring	Regular water monitoring to assess water quality trends and potential impacts to Lake Liddell.	As per the surface water locations outlined in Figure 6-1 to monitor surface water quality for the SSD demolition works, including (whereby 'MCA' refers to Main Catchment Area): • SSD_MCA1 in proximity to the EPL discharge point 17 and the Main Power Block (Catchment Area 1) • SSD_MCA2 in proximity to the Coal Handling Plant (Catchment Area 2) • SSD_MCA3 in proximity to the Water Intake Pump Station (Catchment Area 3) • SSD_MCA4 in proximity to the Hunter Valley Gas Turbines • SSD_MCA5 in proximity to the Ash Pipeline (Catchment Area 5) • SSD_MCA6 in proximity to where Tinkers Creek connects with the Lake, noting that Tinkers Creek is in proximity to the M1/M1a Conveyors (Catchment Area 6) • SSD_Lake which provides a reference point for the centre portion of Lake Liddell • SSD_Ref which provides a reference point for water quality in Lake Liddell *Following the EPL variation, an additional sampling point may be required based on the new discharge location for the Coal Handling Plant sediment basins.*	Monthly	Where the results are less than the Liddell Water Quality Monitoring Criteria (Section 5.2), the discharge event and/or site activities are not considered to have significantly impacted the lakes water quality. Where the results are greater than the criteria, an investigative procedure should be implemented (Section 7), which includes re-sampling and review of the water quality exceedance. The results should be reviewed in the context of the following: • Trends in recent water quality results for Lake Liddell • Water quality results from up-gradient and down-gradient sampling locations • Discharge events (including quantity and quality of discharge waters) • Rainfall events • Activities occurring onsite and effectiveness of soil and water management measures being implemented • Potentially contaminating activities occurring off-site	Monthly water monitoring reports, which includes a summary of routine surface water monitoring in Lake Liddell, as well as the results from relevant discharge or reuse events. This report will also include investigation and interpretation of water quality results, identification of any exceedances or trends and recommendations for corrective actions if required.
Unexpected Event	As required	Assessment following an unexpected event, such as unplanned discharges, exceedances of water quality criteria, chemical spill onsite, failure of soil/water management measures etc.	Representative sampling location(s) within the receiving water body based on incident details.	As required following the unexpected event.	Where the results are less than the Liddell Water Quality Monitoring Criteria (Section 5.2), the unplanned event is not considered to have significantly impacted the lakes water quality. Where the results are greater than the criteria, an investigative and corrective procedure should be implemented in accordance with Section 7.	Investigative water quality reports documenting the analysis and findings from the unexpected event.

* Reference should be made to Section 6 of the DEMP for Record Keeping and Reporting for the demolition works.

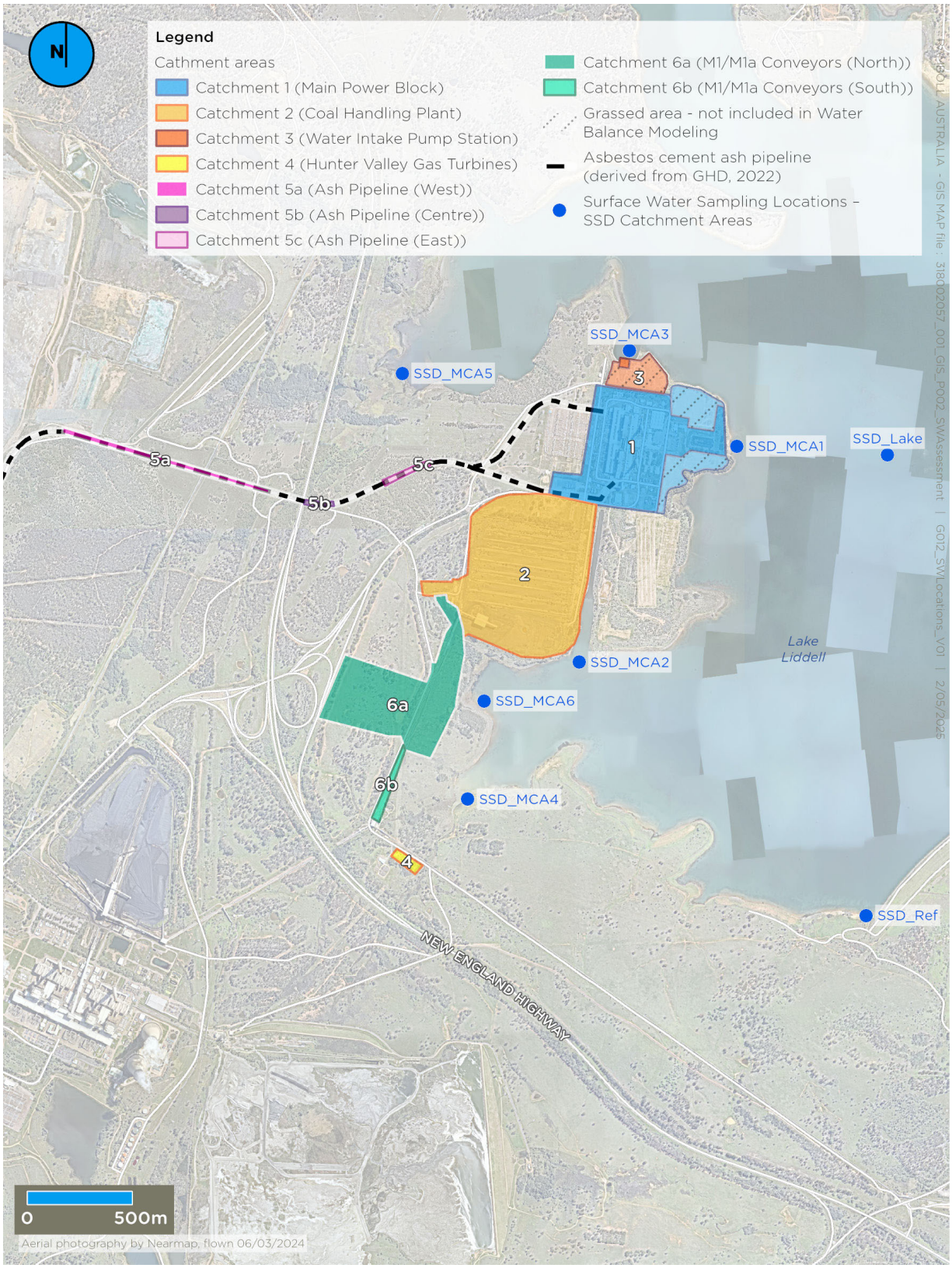

Figure 6-1: Overview of Sampling Locations

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6.2 Sampling Methodology

The methodology for sample collection, handling and decontamination is provided below.

Sample collection:

- Each sample will be collected as a grab sample using dedicated nitrile gloves.
- Samples will be placed in clean laboratory-supplied bottles with relevant preservatives, as required.
- Field filter samples for dissolved metals with a single-use disposable 0.45-micron filter.

Field measurements and observations:

- Obtain physiochemical parameters (pH, electrical conductivity, dissolved oxygen, temperature and turbidity) in the field with a calibrated water quality and turbidity meter for all locations.
- Record site observations during monitoring, including signs of contamination such as sheen on the surface, discoloration, or odours.

Decontamination of sampling equipment:

- Any reusable sampling equipment will be washed between sample collections. Equipment should be cleaned using a diluted phosphate-free detergent to remove any residues.
- After washing, the equipment will be thoroughly rinsed with de-ionised water to remove any remaining cleaning agents.

Sample storage and laboratory submission:

- Store samples under cool conditions in an esky with ice while in the field and in transit to the laboratory.
- Submit samples to National Association of Testing Authorities (NATA) accredited laboratories for analytical testing in accordance with Section 6.3, along with a Chain of Custody (CoC).

6.3 Analytical Schedule

The analytical schedule for all monitoring events, is outlined below:

- Electrical Conductivity (EC)
- pH
- Total Suspended Solids (TSS)
- Antimony
- Arsenic (total)
- Arsenic (V)
- Boron
- Cadmium
- Chromium
- Chromium (III)
- Chromium (VI)
- Cobalt
- Copper
- Lead
- Manganese
- Mercury
- Molybdenum
- Nickel
- Selenium
- Vanadium
- Zinc
- Ammonia (as Nitrogen)

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- NOx
- Anionic surfactants as methylene blue active substances (MBAS)
- Oil and grease
- Fluoride
- Chlorine
- Cyanide
- Anthracene
- Benzo(a)pyrene

The following physiochemical parameters should also be collected onsite using a calibrated water quality meter:

- pH
- EC
- Temperature
- Turbidity

6.4 Quality Control Procedures

Quality assurance/quality control (QA/QC) samples should be collected as part of the routine monthly monitoring program in Lake Liddell to increase confidence in the results. These samples include the following:

- One set of field duplicate and field triplicate per every twenty samples to be analysed. These duplicates will be collected at the same location and time as the primary sample but using separate containers. The purpose of duplicates is to assess the precision and reproducibility of the sampling and analytical procedures. Results from duplicate samples will be reviewed alongside primary data to identify any anomalies, analytical inconsistencies, or sampling errors. Where significant discrepancies are observed, additional investigation may be required to verify results and determine the cause of variability.
- One rinsate blank should be collected and analysed where reusable equipment was utilised during sample collection, to assess decontamination procedures and cross contamination. Rinsate blanks are collected by running laboratory purified water over non dedicated equipment after the final decontamination rinse. Where reusable equipment is not utilised in sample collection, collection of a rinsate blank is not required.

Copies of the equipment calibration logs for the water quality meter from each monitoring round should also be retained.

QA/QC samples are not required for the pre-discharge assessments in the sediment basins.

7. Water Quality Exceedance Protocol

The EIS Amendment Report (GHD, 2024) Statement of Commitments (WQ15) requires, "*Where water monitoring indicates a water quality exceedance, an investigation will be undertaken and a notification to the EPA shall be undertaken in accordance with the EPL. Monitoring will continue in accordance with the EPL until the site is suitably stabilised to an acceptable level as agreed with Department of Planning and Environment, and EPA*."

Reference should be made to the Trigger Action Response Plan (TARP) for the protocol on water quality exceedances in Lake Liddell.

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8. Discharge and Reuse Water Sampling Procedures

The water sampling procedures for discharge and reuse have been provided as a flow chart in Figure 8-1 and Figure 8-2. Reference should be made to the both the Water Discharge Plan and Water Reuse Plans as well.

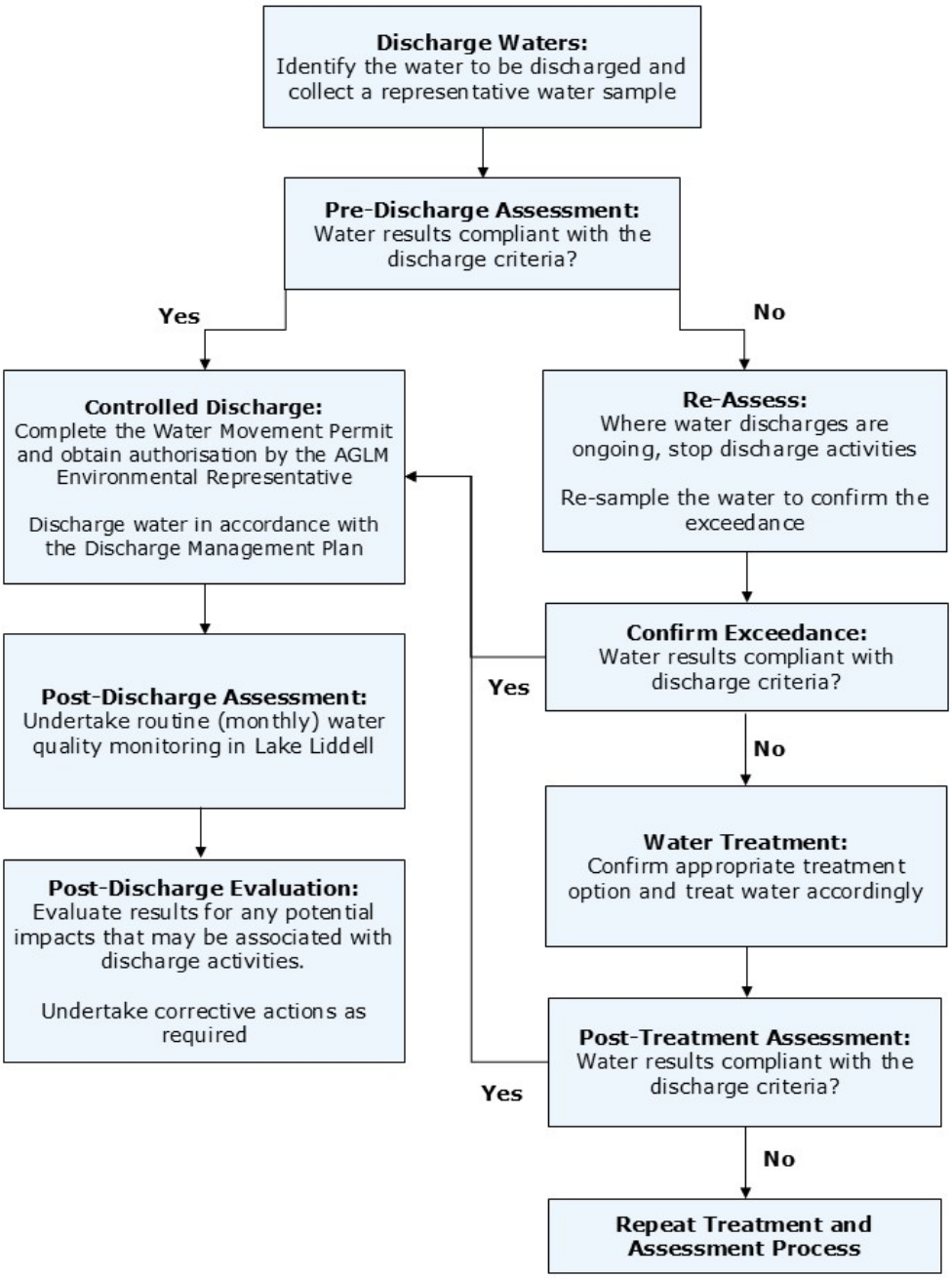

Figure 8-1: Water Discharge and Sampling Procedure

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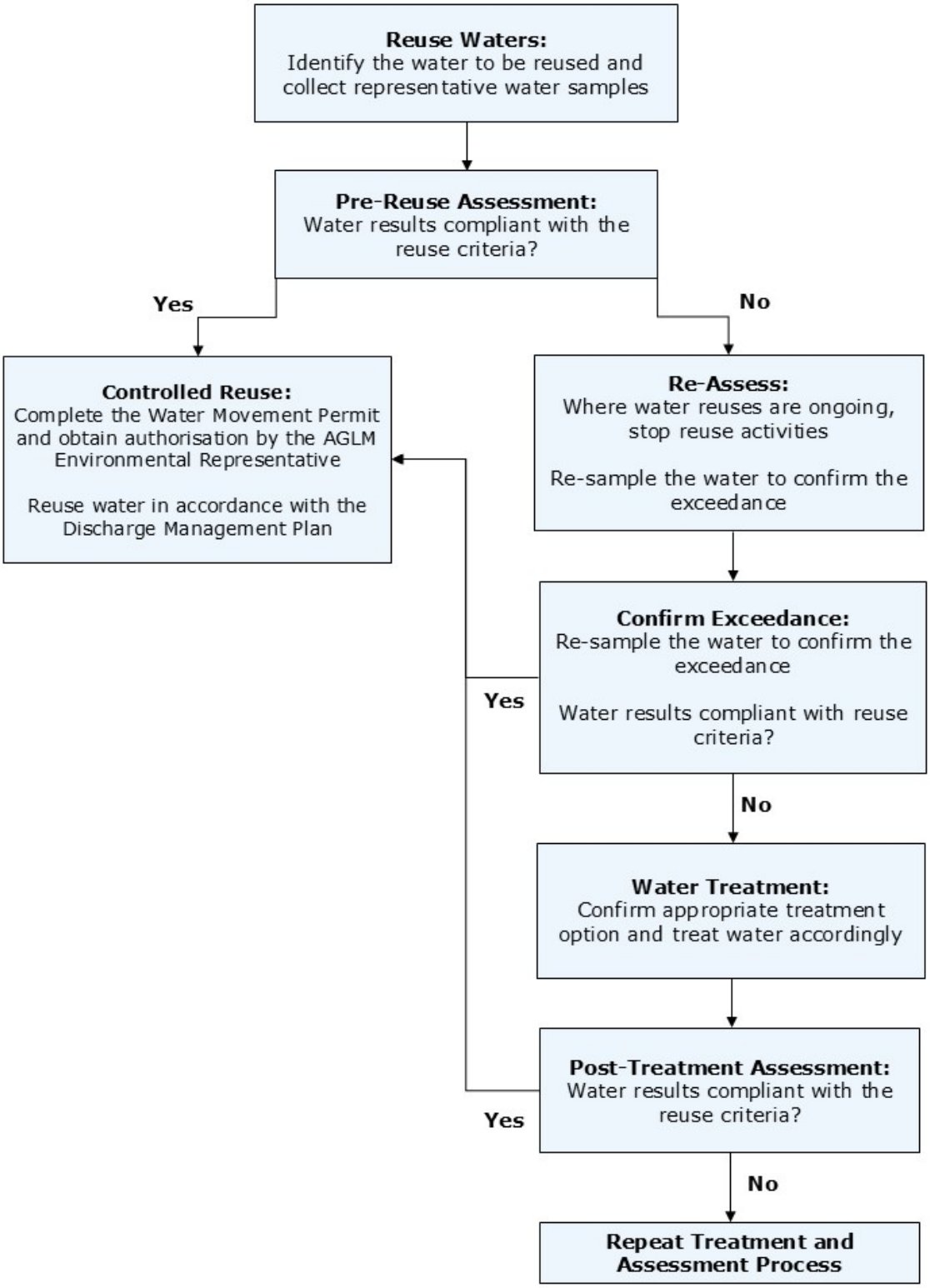

Figure 8-2: Water Reuse and Sampling Procedure

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10. Limitations

This report is produced by Ramboll Australia Pty Ltd at the request of AGL Macquarie Pty Ltd for the purposes detailed herein.

Site conditions may change over time. This report is based on the conditions encountered at the site at the time of its creation, and Ramboll Australia Pty Ltd disclaims responsibility for any changes that may have occurred after this time.

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This report does not provide legal advice. Legal advice should only be sought from qualified legal advisors.

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Appendix A
1.Water Movement Permit

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Water Movement Permit

Site Notes:

Component	Details
Water Discharge or Reuse?	
Permit Number	
Date	
Time	
Weather Conditions	
Water Discharge / Reuse Location and Basin	
Estimated Quantity of Water to be Discharged / Reused	
Additional water treatment anticipated or undertaken?	
Site Activity Description	
Additional maintenance or mitigation measures identified to be required? (i.e. for sediment basins, discharge points etc.)	
Observations of the receiving environment (i.e. water levels in Lake Liddell, exposed soils or pooled water, visual signs of contamination etc.) (where relevant)	

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Pre-Discharge or Reuse Water Quality Results

Parameter	Unit	Discharge Criteria	Reuse Criteria	Result	Compliant with Relevant Criteria?
Electrical Conductivity (EC)	uS/cm	3,000	3,000		Yes / No
pH	-	6.5-9	6.5-9		Yes / No
Total Suspended Solids (TSS)	mg/L	50	50		Yes / No
Antimony	mg/L	0.009	0.03		Yes / No
Arsenic (total)	mg/L	-	0.07		
Arsenic (V)	mg/L	0.042	-		Yes / No
Boron	mg/L	1.5	0.5		Yes / No
Cadmium	mg/L	0.0004	0.02		Yes / No
Chromium (III)	mg/L	0.0033	-		Yes / No
Chromium (VI)	mg/L	0.006	0.5		Yes / No
Cobalt	mg/L	0.0014	-		Yes / No
Copper	mg/L	0.0279	5		Yes / No
Lead	mg/L	0.0056	0.1		Yes / No
Manganese	mg/L	2.5	5		Yes / No
Mercury	mg/L	0.0019	0.002		Yes / No
Molybdenum	mg/L	0.034	0.05		Yes / No
Nickel	mg/L	0.013	0.2		Yes / No
Selenium	mg/L	0.018	0.05		Yes / No
Vanadium	mg/L	0.006	0.5		Yes / No
Zinc	mg/L	0.2324	3		Yes / No
Ammonia (as N)	mg/L	1.43	0.4		Yes / No
NOx	mg/L	3.8	-		Yes / No
Anionic surfactants as MBAS	mg/L	0.52	-		Yes / No
Oil and grease	mg/L	10	-		Yes / No
Fluoride	mg/L	3.4	15		Yes / No
Chlorine	mg/L	0.003	-		Yes / No
Cyanide	mg/L	0.011	0.8		Yes / No

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Parameter	Unit	Discharge Criteria	Reuse Criteria	Result	Compliant with Relevant Criteria?
Anthracene	mg/L	0.0015	-		Yes / No
Benzo(a)pyrene	mg/L	0.0004	0.0001		Yes / No

Evaluation

Component	Details
Water Compliant to Discharge or Reuse?	
Additional Sampling Required?	
Additional Treatment Required?	
Additional Notes	

Pre-Water Movement Approval (Environmental Representative or Delegate)

Component	Details
Name	
Signature	
Date	

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Post Water Movement Evaluation

Component	Details
Quantity of Water Discharged / Reused	
Water Discharge / Reuse Undertaken in Accordance with Discharge / Reuse Management Plan?	
Follow Up Actions or Maintenance Required?	
Additional Notes	

Post Water Movement Evaluation Approval (Environmental Representative or Delegate)

Component	Details
Name	
Signature	
Date	

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Department of Planning, Housing and Infrastructure

Our ref: SSD-24937520-PA-15

Matthew Parkinson
Manager Environment and Approvals
AGL Macquarie PTY Limited
New England Highway
Muswellbrook, NSW, 2333

22 May 2025

Liddell Future Landuse Project – Soil and Water Sub-plan

Dear Mr. Parkinson

Thank you for submitting the Soil and Water Subplan Condition C21, Schedule 2 of the consent for the Liddell Future Landuse Project (SSD-24937520).

I note the Soil and Water Sub-plan contains the information required by the conditions of approval.

Accordingly, as nominee of the Planning Secretary, I approve the Soil and Water Subplan (Rev1.0, May 2025).

You are reminded that if there are any inconsistencies between the sub-plan and the conditions of approval, the conditions prevail.

Please ensure you make the document publicly available on the project website at the earliest convenience.

If you wish to discuss the matter further, please contact Charissa Pillay on 02 99955944.

Yours sincerely

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

APPENDIX E – DUST MANAGEMENT SUB PLAN

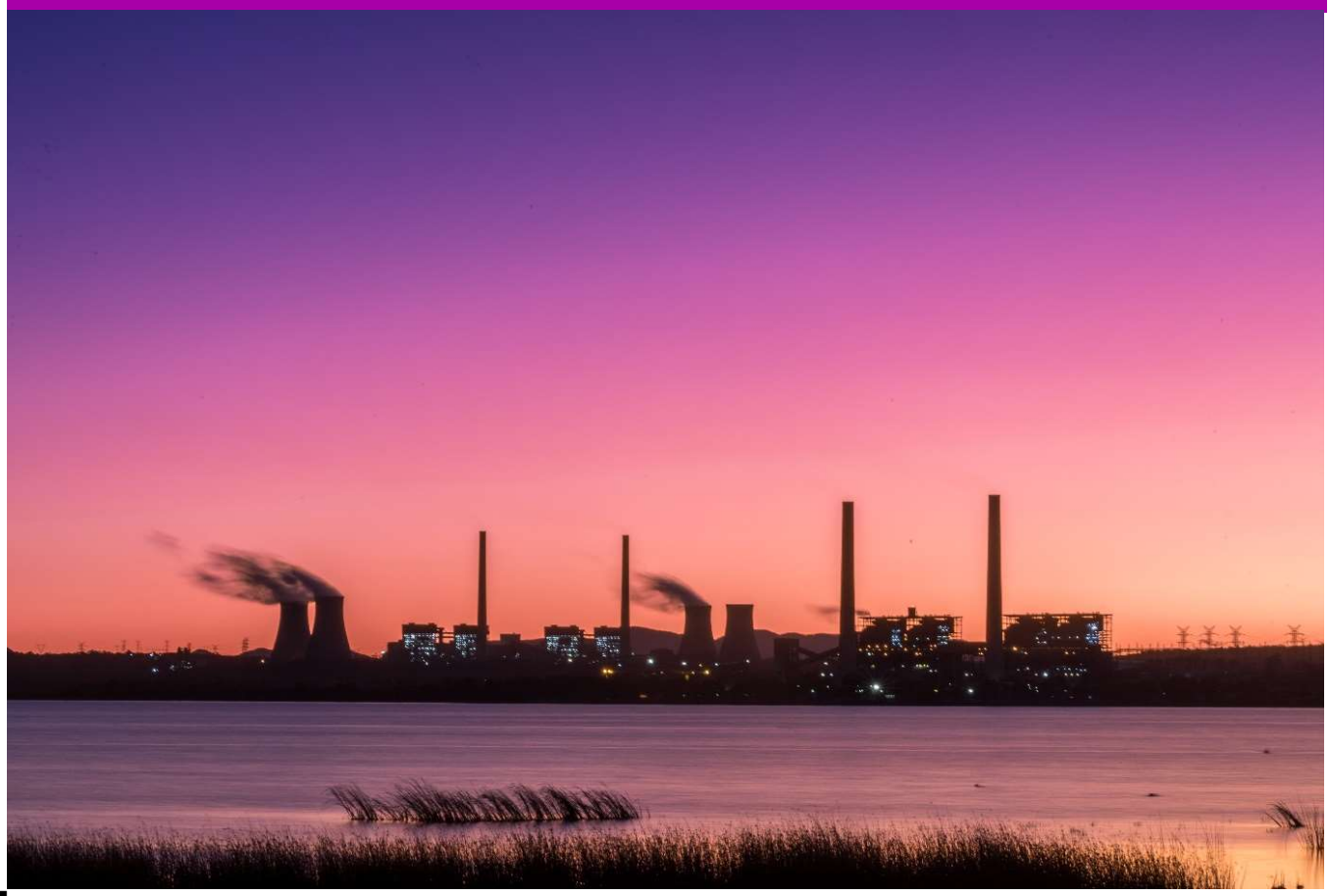
Jacobs Challenging today. Reinventing tomorrow.

Liddell Future Land Use and Enabling Works – Dust Management Sub-Plan

AGL Macquarie Limited

SSD-24937520 Post Approval Documentation

30 January 2026



Liddell Future Land Use and Enabling Works – Dust Management Plan

Client name:	AGL Macquarie Limited		
Project name:	Liddell Future Land Use and Enabling Works Project		
Client reference:	AGL	**Project no:**	IS501900
Version:	D0v5	**Project manager:**	Luke Spencer
Date:	30 January 2026	**Prepared by:**	Luke Spencer, Sam Putland, Trescinda Brown
File name:	IS501900_DMP_D0v6.docx		

Document history and status

Version	Date	Description	Author	Checked	Reviewed	Approved
D0v0	30/09/2024	Initial draft	Sam Putland	Luke Spencer	Luke Spencer	Luke Spencer
D0v1	21/02/2025	2nd draft	Asha Niddrie	Luke Spencer	Luke Spencer	Luke Spencer
D0v2	03/04/2025	3rd draft	Asha Niddrie	Luke Spencer	Luke Spencer	Luke Spencer
D0v3	07/04/2025	4th draft	Luke Spencer	Peter Horn	Peter Horn	Peter Horn
D0v4	02/05/2025	5th draft	Luke Spencer	Peter Horn	Peter Horn	Peter Horn
D0v5	15/05/2025	6th Draft (Final)	Luke Spencer	Peter Horn	Peter Horn	Peter Horn
F2	30/01/2026	Final 2	Trescinda Brown	Trescinda Brown	Trescinda Brown	Trescinda Brown

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Acronyms and abbreviations

Term	Definition
ACMs	Asbestos Containing Materials
AGLM	AGL Macquarie Pty Limited
AMP	Asbestos Management Sub-Plan
BMP	Blast Management Sub-Plan
BPS	Bayswater Power Station
DEMP	Demolition Environmental Management Plan
Development	Liddell Future Land Use and Enabling Works
DMP	Dust Management Sub-Plan
DPHI	Department of Planning, Housing and Industry
EIS	Environmental Impact Statement
EMS	Environmental Management Strategy
EP&A Act	Environmental Planning and Assessment Act 1979
EPA	Environment Protection Authority
EPL	Environment Protection Licence
HVGTs	Hunter Valley Gas Turbines
LAD	Liddell Ash Dam
LPS	Liddell Power Station
NEPM	National Environment Protection Measure
PM_{10}	Particulate matter with an aerodynamic diameter less than 10 microns
$PM_{2.5}$	Particulate matter with an aerodynamic diameter less than 2.5 microns
RtS	Response to Submissions Report
SEARs	Secretary's Environmental Assessment Requirements
SEPP SRD	State Environmental Planning Policy (State and Regional Development) 2011
SMF	Synthetic Mineral Fibre
SSD	State Significant Development
TARP	Trigger Action Response Plan
TSP	Total Solid Particulates

1. Introduction

1.1. Overview

Jacobs Australia Pty Limited (Jacobs) was commissioned by AGL Macquarie Pty Limited (AGLM) to prepare a Dust Management Sub-Plan (DMP) for the Liddell Future Land Use and Enabling Works (the development). The development involves demolition of Liddell Power Station (LPS) and associated infrastructure including the Hunter Valley Gas Turbines (HVGTs); ancillary works to the approved Liddell Ash Dam (LAD); construction and use of a borrow pit and asbestos disposal facility; Recontouring and revegetation of the site landform; and administrative updates to existing consent arrangements. The development would be delivered in stages, with Stage 1 involving demolition of LPS and associated infrastructure; site establishment and preliminary works; construction of asbestos disposal facility; and establishment, stabilisation and commencement of extraction of borrow pit. A description of the development as relevant to the DMP is provided in **Section 2**.

The development was classified as a State Significant Development (SSD) under the *State Environmental Planning Policy (State and Regional Development) 2011* (SEPP SRD) being subject to Part 4, Division 4.7 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and required an Environmental Impact Statement (EIS) to be prepared in accordance with the Secretary's Environmental Assessment Requirements (SEARs).

An EIS was prepared and submitted, which was exhibited 4 May to 31 May 2023. A Response to Submissions (RtS) Report (GHD, 2024a) was prepared 19 February 2024 to address submissions received during exhibition. An Amendment Report (GHD, 2024b) was subsequently submitted 11 June 2024 addressing minor changes to the development. The development was approved by the Department of Planning, Housing, and Infrastructure's (DHPI's) Executive Director Energy, Resource and Industry Assessments on 31st of January 2025, and Development Consent SSD-24937520 was issued.

1.2. Purpose

This DMP was prepared to specifically address condition C22 of Development Consent SSD-24937520. The DMP is a sub-plan to the Demolition Environmental Management Plan (DEMP) required by condition C16. Condition C22 requires the development of a DMP to control and effectively manage dust emissions during Stage 1 demolition activities (the 'demolition').

1.3. Scope

The scope of this DMP is to detail how potential dust issues during the demolition would be mitigated or otherwise effectively managed so that the requirements Development Consent SSD-24937520 are met. The 'Definitions' provided in Development Consent SSD-24937520 lists 'demolition' as including "the deconstruction and removal of the structures as described in the documents listed in Condition A2 (c); does not include preliminary works". Further, the 'Definitions' define 'preliminary works as including:

"Development activities required for site establishment and temporary services that do not impact native vegetation (excluding native vegetation within garden beds), including environmental mitigation measures, laydown areas, emergency muster points, mobilisation of plant and personnel, removal of hazardous materials proposed for demolition delineation of assets for retention and dilapidation surveys of adjacent plant and structures to be retained".

The documents referred to in Condition A2 (c) from the definition for 'demolition above include the EIS, RtS and Amendment Report (i.e., assessment documents), as well as the requirements of Development Consent SSD-24937520.

1.4. Objectives

This DMP describes the measures that are implemented to comply with the relevant conditions of Development Consent SSD-24937520 (identified above), as well as other requirements including Environment Protection Licence (EPL) No.2122, and relevant commitments detailed in the assessment documents, including details of associated monitoring, evaluation and reporting.

1.5. Authoring

Consistent with condition C22 a) of Development Consent SSD-24937520, this DMP was prepared by suitably qualified and experienced persons. The DMP lead authors were Luke Spencer, who is a member of CASANZ and Chartered Professional Engineer (CPEng), with more than 16 years' experience in air quality impact assessment and management and Sam Putland, who is a Certified Air Quality Practitioner (CAQP) with the Clean Air Society of Australia and New Zealand (CASANZ) with more than 10 years' experience.

1.6. Related plans

The following documents are related and shall be read in conjunction with this DMP:

- The DEMP describes how all environmental matters would be managed during demolition activities, The DMP is one of a suite of sub-plans to the DEMP, which also includes the BMP.
- Environmental Management Strategy (EMS). The EMS provides the overall environmental management strategy for the development. It details how emissions to air would be managed for all other aspects of Stage 1 (i.e., activities other than demolition).

2. Development demolition description

As per condition C16 (c), the DEMP includes a detailed description and schedule of all activities to be undertaken during demolition. The location of LPS, HVGTs and other infrastructure to be demolished and that are the subject of this DMP are displayed below in **Figure 2-1**.

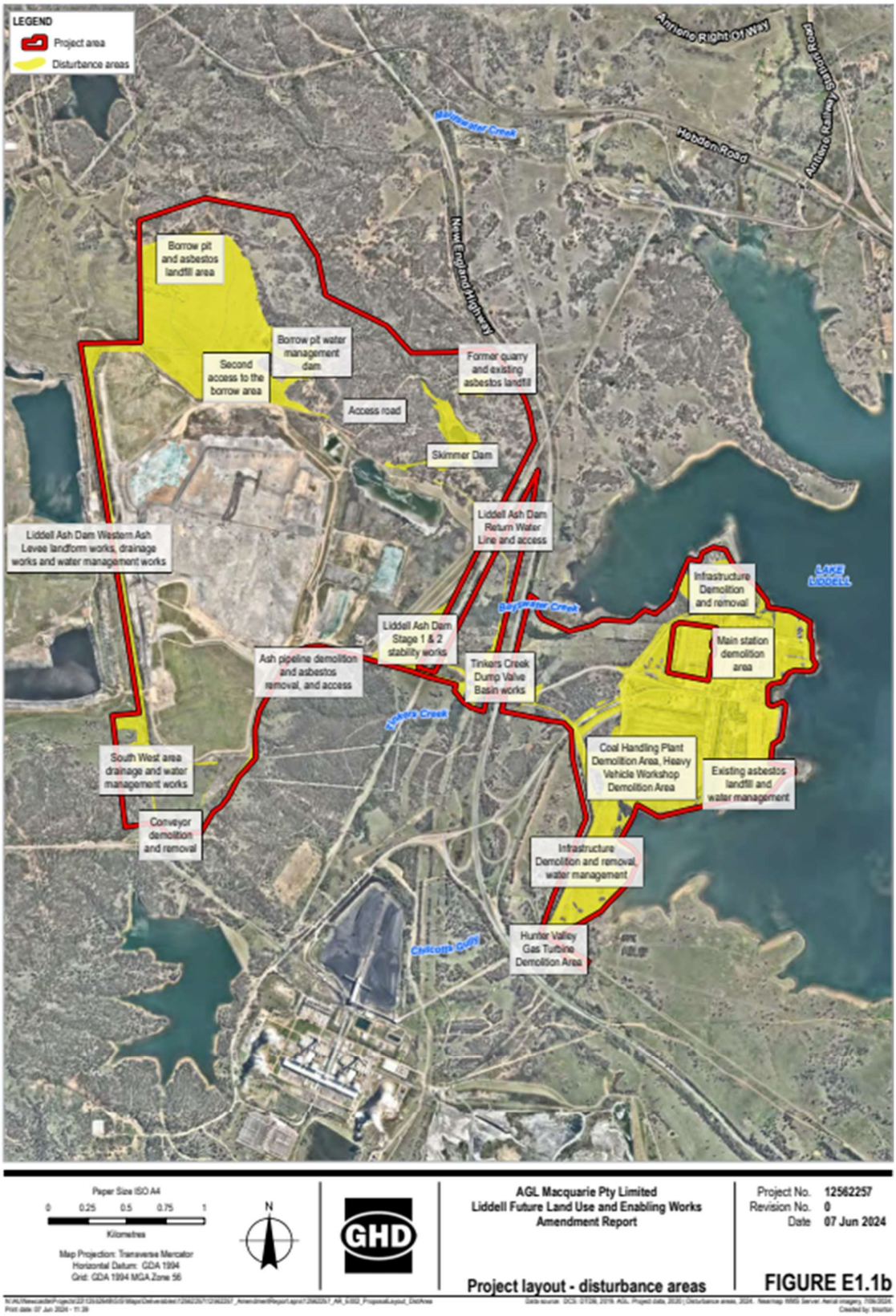

Figure 2-1. Disturbance areas (GHD,2024)

Table 2-1. Demolition overview

Stage 1	▪ Demolition of LPS, HVGTs and associated infrastructure, including. - Asbestos removal. - Mechanical and explosive demolition of above ground infrastructure. - Removal of infrastructure to the bottom of slab and foundations to the equivalent level. - Collection, materials handling and processing, crushing and removal/disposal (including transport) of demolition materials - Earthworks and re-grading of demolition areas to final landform. ▪ Excavation of containment cells for receipt of demolition waste materials ▪ Transport and disposal of demolition materials to on-site (i.e., temporary asbestos storage facility and asbestos disposal facility) or off-site (suitably licenced) disposal locations ▪ Establishment, stabilisation and commencement of extraction of borrow pit (up to 1.5 million m^3). ▪ Loading and transport of borrow pit materials to the demolished infrastructure locations to construct the final landform.

3. Environmental management framework

3.1. Overview

This section outlines the relevant requirements for the DMP and how they are incorporated in the document. These include the relevant conditions of Development Consent SSD-24937520, from EPL No. 2122, and the Statement of Commitments (SoCs).

3.2. Development Consent SSD-24937520

This DMP was prepared to specifically address condition C22 of Development Consent SSD-24937520. The DMP is a sub-plan to the Demolition Environmental Management Plan (DEMP) required by condition C16. Condition C22 requires the development of a DMP to control and effectively manage dust emissions during Stage 1 demolition activities (the 'demolition').

Table 3-1. Development Consent SSD-24937520 DMP-related conditions and where they are addressed in this document

Consent requirement	Section/reference where addressed in the DMP
C22. A dust management sub-plan must be prepared as part of the demolition environmental management plan. The plan must: (a) be prepared by a suitably qualified and experienced person/s; (b) describe the mitigation measures that will be implemented to: (i) comply with the conditions of this consent; (ii) manage the risks identified in the environmental risk assessment required by condition B1; and (c) include a monitoring, evaluation and reporting program that uses an approach that is consistent with the environmental management strategy required by condition B1.	This document, with (a) addressed in **Section 1.5**, (b) as detailed here and in **Section 7.2**, and (c) in **Section 0**.
B6. All reasonable and feasible avoidance and mitigation measures must be implemented to prevent the generation of dust from the development.	**Section 7.2**
B7. All reasonable and feasible avoidance and mitigation measures must be implemented to minimise greenhouse gas emissions from the development	**Section 7.2**
B22. Prior to the commencement of development activities and for the life of the development, a suitable meteorological station must operate in the vicinity of the site that: (a) complies with the requirements in the Approved Methods for Sampling and Analysis of Air Pollutants in New South Wales (DEC, 2007); (b) is capable of measuring meteorological conditions in accordance with the NSW Industrial Noise Policy (EPA,	**Section 5.3**

Consent requirement	Section/reference where addressed in the DMP
2000) or NSW Noise Policy for Industry (EPA, 2017); and (c) unless a suitable alternative is approved by the Planning Secretary following consultation with the EPA.	
C19. An asbestos management sub-plan must be prepared as part of the demolition environmental management plan. The plan must: (a) (a) be prepared in accordance with the SafeWork NSW 2022 Code of practice: How to safely remove asbestos, SafeWork: guidance on managing asbestos in soil, Schedule B2 of the NEPM and any requirements of the Site auditor; (b) identify any known or potential areas of concern within the approved development area for asbestos containing materials and synthetic mineral fibre; (c) include: (i) procedures for identifying, handling and disposing of asbestos waste, asbestos containing materials and synthetic mineral fibre; (ii) procedures for interim storage of asbestos prior to disposal and disposal of asbestos; and (iii) outline the relevant requirements of conditions C1 to C13 for the management of asbestos waste, asbestos containing materials and synthetic mineral fibre.	Addressed separately in the Asbestos Management Sub-Plan (AMP) to the DEMP
C20. A blast management sub-plan must be prepared as part of the demolition environmental management plan. The plan must: … (d) describe the mitigation measures that will be implemented to: … (iii) manage blast generated dust and fumes, protect public safety and manage road closures	Specific measures provided separately in the BMP (sub-plan) to the DEMP. General measures to manage blast generated dust and fumes, protect public safety and manage road closures are provided in **Section 7.2**

Condition C22 (b) (ii) refers to the environmental risk assessment undertaken as part of the EMS, as part of Development Consent SSD-24937520 condition B1. The risks as relevant to the DMP from the environmental risk assessment are detailed below in Section 4.

3.3. Environmental Protection Licence

EPL No. 2122 includes conditions relating to the management of dust and would also apply (as relevant) to Stage 1 demolition activities. These conditions are reproduced below in **Table 3-2**, including details of where they are addressed in the DMP.

Table 3-2. EPL 2122 - AQ management requirements

Condition	Where addressed in the DMP
O1.1 – Licensed activities must be carried out in a competent manner. This includes: a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and b) and the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.	**Section 7.2**
O3.1 - The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises	**Section 7.2**
O3.2 - All operations and activities occurring at the premises must be carried out in a manner that will minimise the emission of dust from the premises.	**Section 7.2**
O3.3 - Trucks entering and leaving the premises that are carrying loads of dust generating materials must be covered at all times, except during loading and unloading.	**Section 7.2**
P1.1 - Meteorological weather monitoring – Meteorology weather station marked and shown as EPL monitors ID No. 15 on 'The Plans'.	**Section5.3**

3.4. Statement of Commitments

Recommendations written into the SoCs contained in the environmental assessment documents must also be adhered to. Two dust management requirements were recommended in the SoCs. These commitments as relevant to dust are detailed in **Table 3-3**.

Table 3-3. EIS, RtS and Amendment Report dust commitments and where addressed in the DMP

Source	Condition Requirements	Timing	Where addressed in the DMP
AQ1	Prior to demolition commencing, a Dust Management Plan (DMP) will be prepared which would include details of: – Frequency of onsite and offsite inspections to monitor compliance with the air quality management strategy. – The name and contact details of the person(s) accountable for air quality and dust issues. – Procedure for receival of complaints. – Regular pre-wetting and watering requirements. – When to adjust works (including site inspections and watering) due to increased emission risk (e.g. during dry windy conditions). – Designated vehicle entries and exits, haulage routes and parking areas.	Prior to works commencing	**Section 7.2** and **Section 0** Complaints processes are detailed separately in the DEMP and EMS Designated vehicle entries

Source	Condition Requirements	Timing	Where addressed in the DMP
	– Other vehicle requirements including minimising idling of vehicles on site and covering loads on trucks transporting materials. – Maintenance and cleaning of equipment used on site. – Stabilisation of stockpiles when not in use and completed areas. – Removal of accumulation of dust before commencing work. – Trigger Action Response Plan. – Monitoring Program.		and exits, haulage routes and parking areas are described separately in the TMP
AQ2	Preparation of a Blast Management Plan and Asbestos Control Plan, which would including specific measures for minimising impacts during blasting and handling of ACM, including: – Soft-strip inside buildings before demolition – Pre-watering – Forecasting – Sprinklers. Due to the potentially high emissions of dust during blasting events, a monitoring plan is recommended. This would include boundary and receptor monitoring. A report after each blasting event summarising the results of the air quality monitoring during and after the event would be prepared.	Prior to works commencing	Refer to the BMP and Asbestos Management Sub-Plans (AMP) forming part of the DEMP

3.5. Other relevant standards and guidelines

The following guidelines, standards and policies are also relevant to the DMP:

- 'Approved Methods for the Modelling and Assessment of Air Pollutants in NSW' (Approved Methods), (EPA, 2022a)
- 'Approved Methods for Sampling and Analysis of Air Pollutants in NSW', (EPA, 2022b).

These contain guidance that was applied as part of the impact assessment undertaken in the environmental assessment documents. Aspects from these documents relevant during demolition are reproduced below.

3.5.1. Approved Methods for the Modelling and Assessment of Air Pollutants in NSW

The EPA's 'Approved methods for the modelling and assessment of air pollutants' (2022a) provide criteria for air pollutants. The impact assessment criteria are considered to be the concentration at which if exceeded, could result in dust impacts beyond an acceptable level. These criteria are listed in **Table 3-4**, and were considered in the development of management measures below in **Section 7**.

Table 3-4. NSW EPA dust impact assessment criteria

Pollutant	Averaging period	Concentration	Units
Dust			

Particulate matter as PM_{10}	24-hours	50	µg/m^3
	Annual	25	µg/m^3
Particulate matter as $PM_{2.5}$	24-hours	25	µg/m^3
	Annual	8	µg/m^3
Particulate matter as total solid particulates (TSP)	Annual	90	µg/m^3
Deposited Dust	Maximum monthly incremental average	2	g/m^2/month
	Maximum monthly average	4	g/m^2/month

It is noted that applicable guidance related to the assessment and management of airborne asbestos is provided in the AMP.

3.5.2. 'Approved Methods for Sampling and Analysis of Air Pollutants in NSW'

The Approved Methods for Sampling and Analysis of Air Pollutants in NSW (EPA, 2022b) provides guidance for the monitoring and analysis of air pollutants in NSW. Relevant guidance from this document has been included in the monitoring requirements below in **Section 7.3.3**.

4. Environmental risk assessment and details of the demolition activities relevant to the DMP

4.1. EMS Environmental risk assessment

As noted above in **Section 3.2**, Condition C22 (b) (ii) details how the DMP must describe the measures that will be implemented to manage to relevant risks identified in the environmental risk assessment completed as part of the EMS, as per Development Consent SSD-24937520 condition B1. The risks as relevant to the DMP from the environmental risk assessment have been reproduced below in **Table 4-1**.

Table 4-1. EMS environmental risk assessment as relevant to the DMP (Source: AGL, 2025)

Risk event	Cause(s)	Consequence(s)	Controls	Residual risk rating
Emissions to air (dust and air quality)	Fugitive dust from surfaces, e.g. dust generation for vehicle movements. Emissions from combustion engines (e.g., diesel fumes, etc). Less than adequate air quality and dust controls when crushing rock in the borrow pit, and when mechanical and blast felling	Regulatory non-compliance, impact on localised/operation environment area	Site entry and exit controls including rumble grids as required; water carts and manual sprays in place to dampen and minimise dust generation on roadways and surfaces; operation of machinery and equipment in a proper and efficient manner; carrying out routine maintenance on plant and vehicles; reduce and/or cease operations in adverse weather; weather forecasting tool (4 day lookahead) to prepare for adverse weather/dust events; real time dust monitoring and early warning system. Adequate assessment of goods and services under AGL Procurement policies and procedures. Pre use inspections. Daily inspections. SWMS for crushing.	High based on 'Level 3' residual consequence and 'possible' residual likelihood

It is noted that the DMP details with the dust emissions only, and specifically from activities associated with Stage 1 demolition activities.

Consistent with condition C22 (b) (ii), the relevant controls from the EMS the environmental risk assessment from column four of **Table 4-1** above have been incorporated into the dust mitigation and management measures below in **Section 7**.

4.2. Demolition activities as relevant to the DMP

As described above in **Section 1.3**, the DMP only applies to Stage 1 'demolition' activities. The key dust-generating activities that are the subject of the DMP include:

- Demolition and mechanical felling of key structures at LPS, HVGTs and ancillary assets (including redundant utilities)

- Demolition of associated concrete hardstands
- Collection, materials handling and processing, crushing and disposal (including transport) of demolition materials either on-site to the asbestos disposal facility or otherwise for on-site re-use or off-site disposal to a suitably licenced facility
- Excavation of containment cells for receipt of demolition waste materials at the asbestos disposal facility
- Earthworks, re-grading and finishing, including extraction, handling and transport of filling materials from the borrow pit at the demolition locations.

Table 4-2 details how dust may arise from each of these activities which informs the management measures below in **Section 7**.

Table 4-2. Stage 1 demolition activities relevant to DMP

Location(s)	Activities	Potential dust issues
LPS including, HVGTs and ancillary infrastructure (including redundant utilities but excluding activities under the CDC)	Demolition and mechanical felling of structure and hardstands	- Dust resulting from residual materials left on demolished structures as well as from the impact of demolished structures when they hit the ground and broken apart/disassembled, and from handstands when they are broken up.
	Collection, materials handling and processing, crushing and removal/disposal (including transport) of demolition materials	- Dust generated from the movement, handling, processing, crushing, storing and loading of demolished materials - Dust resulting from the movement of vehicles, plant and equipment on demolished materials and exposed surfaces - Windborne dust arising from exposed demolition areas
	Unloading, placement, earthworks, compaction and re-grading of materials at demolished infrastructure locations	- Dust from vehicle movements, exposed surfaces and materials handling - Dust resulting from the unloading, placement, earthworks, compaction and regrading of materials to produce the final landform at the demolished infrastructure locations - Windborne dust arising from exposed final landform at the demolished infrastructure locations prior to effective revegetation
Asbestos disposal facility	Excavation of containment cells for receipt of demolition waste materials	- Windborne dust arising from exposed areas and stockpiled materials - Dust arising from the unloading of demolition waste materials from trucks
	Transport of demolition materials to and disposal to asbestos management facility	- Wheel-generated dust generated from traffic movements along unsealed internal roads from the demolished infrastructure locations to the asbestos disposal facility - Dust arising from the unloading of demolition waste materials from trucks into the containment cells - Dust from earthworks associated with the capping of the demolition waste materials, as well as wind generated dust from the associated exposed capping surface (prior to effective revegetation)

Location(s)	Activities	Potential dust issues
Borrow pit	Extraction, processing (including crushing), storage and loading of materials for re-grading and finishing of the demolition locations	- Dust resulting from disturbance and handling of soils - Windborne dust arising from exposed areas and stockpiled materials - Dust arising from the processing (including crushing) of materials - Dust generated during the loading of materials to trucks for transport to the demolished infrastructure locations
	Transport of materials to the demolished infrastructure locations	- Wheel-generated dust generated from traffic movements along unsealed internal roads from the borrow pit to the demolished infrastructure locations - Loose materials from loading materials that are not removed and/or covered prior to transport being dispersed

5. Existing environment

5.1. Overview

Local environmental conditions with direct implications for dust management for demolition include the proximity of sensitive receptors, prevailing meteorology and dust conditions. These three aspects are described in the following **Sections 5.2** to **5.4**.

5.2. Sensitive receptors

Receptors that are sensitive to dust include residences, schools, and hospitals. A total of 32 sensitive receptor locations were identified within the vicinity of demolition activities as part of the environmental assessment documents. All are located to the north of the development area. These nearest sensitive receptors to the development area are presented below in **Figure 5-1**.

Recent aerial imagery (up to May 2024) from MetroMap was reviewed which confirmed no new nearby sensitive receivers since these assessments.

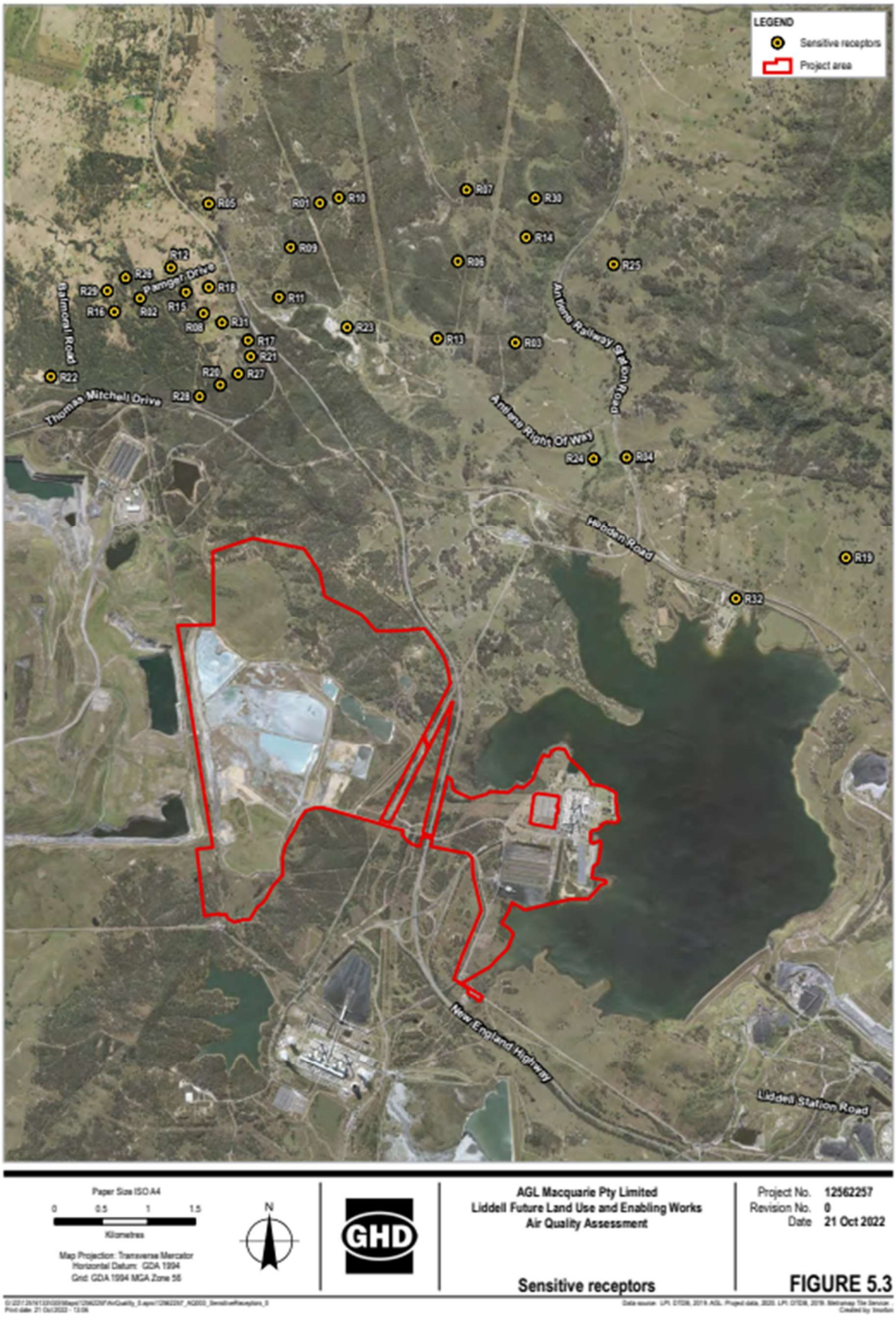

Figure 5-1. Surrounding sensitive receptors (GHD, 2023)

5.3. Meteorological conditions

Meteorological conditions are important for determining the direction and rate at which dust emissions will disperse. The key meteorological parameters for dust management are wind speed and wind direction.

The prevailing winds in the vicinity of the development area are from the northwest and southeast, with minimal winds from the northeast or southwest, which is likely due to the orientation of the Hunter Valley terrain. This is demonstrated by the wind roses shown in **Figure 5-2**, which summarise the EIS wind data developed by the CALMET model for the development location. Based on these winds, the sensitive receptors at most risk of dust impacts from the development location will be those to the northeast.

The meteorological conditions that most commonly lead to elevated dust concentrations include:

- Warm weather and extended periods without rainfall, resulting in lower surface moisture.
- Wind speeds greater than 6 m/s. These winds are conducive to higher wind erosion rates.
- Stable conditions, such as at night with light winds and when a temperature inversion is present.

The existing environment is characterised by higher rainfall in summer and autumn and lower rainfall in winter and spring. The commonly experienced south easterly winds mean that the sensitive receptors to the north of the development area will be downwind of activities for significant periods during the year. It is noted that these south easterly winds do occur significantly less often during the winter months (as per **Figure 5-2**).

Dust mitigation measures in this DMP have been developed with a focus on controlling dust emissions under unfavourable meteorological conditions, such as dry and windy conditions, stable night-time conditions and/or when winds are blowing from the development area towards sensitive receptors.

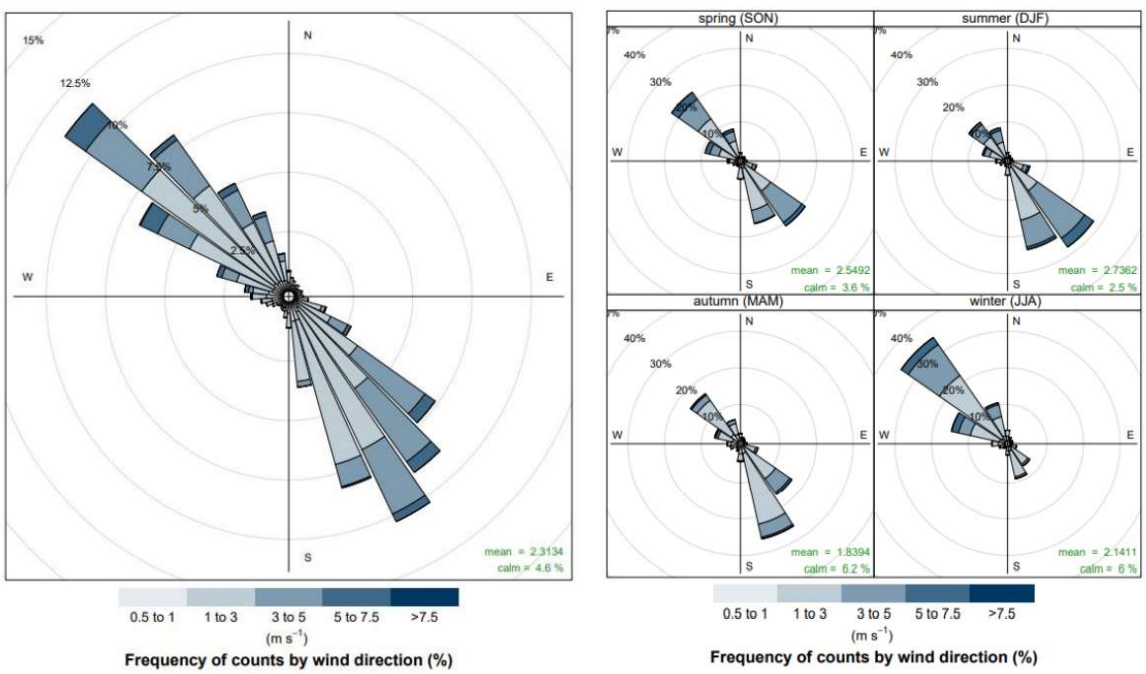

Figure 5-2. CALMET generated wind roses onsite for all of 2017 (left) and by season (right).

Figure notes:

1. Wind roses sourced from GHD (2023)

As per Conditions B22 of Development Consent SSD-24937520 and M5 of EPL No. 2122, AGLM operates an on-site meteorological station 'AGL08' (EPL No. 2122 Monitoring Point 15). The location of this station is displayed below in **Figure 5-3**.

The meteorological station is a requirement of Condition M5.1 of EPL 2122. This condition lists sampling methods AM-1, AM-2 and AM-4 from the now superseded Approved Methods for Sampling and Analysis of Air Pollutants in New South Wales (DEC, 2007) which are also referred to in Condition B22 of Development Consent SSD-24937520.As such, it is considered that meteorological station 'AGL08' meets the requirements of Condition B22.

Figure 5-3. AGLM dust and meteorological monitoring locations (GHD, 2024a)

5.4. Background air quality

The environmental assessment documents established background dust conditions around the Development (including demolition). An understanding of wider background air quality conditions is important as the criteria from the EPA's Approved Methods (2022) are cumulative; i.e., they consider the total of background levels and contributions from the development, including demolition. The environmental assessment documents established background dust conditions around the development area using information from the following stations:

- Three DPHI stations at Muswellbrook, Camberwell and Jerrys Plains
- Two on-site monitoring stations, AGL03 and AGL04.

These stations at and around the development area, as well as AGLM's meteorological station AGL08 are displayed in **Figure 5-3** above.

Long-term background dust conditions from data collected at these stations from 2017 to 2021 were presented in the environmental assessment documents. This information has been reproduced below in **Table 5-1**.

Table 5-1. Background PM_{10} and $PM_{2.5}$ conditions (GHD, 2024a)

Pollutant	Averaging period	2017	2018	2019	2020	2021
Muswellbrook (µg/m³)						
PM_{10}	24-hr maximum	54.1	185.9	231.3	181.0	43.5
	Maximum 24-hr below assessment criterion	47.6	49.6	48.3	49.2	43.5
	Annual average	21.5	26.8	34.1	22.2	18.1
$PM_{2.5}$	24-hr maximum	31.1	26.5	77.4	49.1	19.7
	Maximum 24-hr below assessment criterion	20.0	19.9	19.8	19.6	19.7
	Annual average	9.3	9.3	11.8	9.2	7.2
Camberwell (µg/m³)						
PM_{10}	24-hr maximum	101.5	243.9	294.4	103.4	75.5
	Maximum 24-hr below assessment criterion	49.8	50.0	49.8	49.7	47.0
	Annual average	27.0	31.0	39.5	24.1	20.4
$PM_{2.5}$	24-hr maximum	23.3	22.6	80.0	44.1	18.7
	Maximum 24-hr below assessment criterion	19.6	19.1	19.8	19.3	18.7
	Annual average	7.3	8.3	10.1	7.2	5.6
Jerrys Plains (µg/m³)						
PM_{10}	24-hr maximum	50.5	201.4	217.5	134.5	42.8
	Maximum 24-hr below assessment criterion	47.4	49.8	49.6	50.0	42.8
	Annual average	17.9	23.5	31.5	20.1	13.3
AGL03 (µg/m³)						
PM_{10}	24-hr maximum	62.1	86.5	609.5	270.3	59.2
	Maximum 24-hr below assessment criterion	49.1	49.3	49.5	47.3	48.9
	Annual average	17.1	22.2	39.0	24.0	15.5
AGL04 (µg/m³)						
PM_{10}	24-hr maximum	14.5	23.7	40.2	26.0	17.0
	Maximum 24-hr below assessment criterion	58.2	131.7	639.0	284.4	65.6
	Annual average	47.1	49.3	49.9	46.9	48.5

These data above in **Table 5-1** indicate:

- Occasional measured exceedances of 24-hour averaged PM_{10} and $PM_{2.5}$ criteria. Higher maximum 24-hour averaged concentrations in 2019 and 2020 were noted as being a result of dry conditions leading into an unprecedented 2019 and 2020 bushfire season in Eastern Australia
- Local annually averaged PM_{10} and $PM_{2.5}$ criteria generally being met, with some exceptions.

A review of more recent data from the DPHI stations confirmed that more recent 2022 to 2024 background dust conditions are generally consistent or lower than the results presented in the environmental assessment documents.

An indicative annually averaged TSP concentration of 43 $\mu g/m^3$ was also established in the environmental assessment documents. Using the same estimation approach applied, the 2022 and 2023 annual TSP concentrations for DPHI's Muswellbrook, Camberwell and Jerrys Plains stations ranged between 27 and 42 $\mu g/m^3$. Again, this review confirmed that estimated TSP conditions are generally consistent or lower than the results presented in the environmental assessment documents.

6. Predicted impacts from environmental assessment documents

The EIS, environmental assessment documents determined that the primary air quality risk for the development (including from demolition activities) is emissions of dust particulates, including TSP, PM_{10}, and $PM_{2.5}$. Comparisons of reported annual emissions from the operating LPS with emissions from the development showed a significant reduction in PM_{10} and $PM_{2.5}$ emissions. Still, the assessment did predict exceedances of the EPA's assessment criteria from the Approved Methods (2022), with the following impacts determined:

> *"There were no exceedances of the PM_{10} or TSP annual average criteria.*
>
> *The background annual average criterion for $PM_{2.5}$ was already significantly exceeded during the model period. Exceedances of the annual average $PM_{2.5}$ criterion are likely associated with contributions from various sources, including existing operations and external factors such as bushfires. The maximum predicted incremental impact was approximately 7% of the criterion. Given a reduction in background concentrations is expected upon decommissioning of the LPS, this does not represent a significant increase in annual average $PM_{2.5}$ concentrations at the nearest receptor.*
>
> *Exceedances of the 24-hour average $PM_{2.5}$ criterion were predicted to occur on a single day, where the background concentration was 98% of the criterion. Consequently, the predicted exceedances of the $PM_{2.5}$ criterion cannot reasonably be considered to be associated with the project. The average wind speed and direction recorded at the Muswellbrook DPE station on this day was 0.8 m/s from the southwest.*
>
> *Exceedances of the 24-hour average PM_{10} criterion were predicted to occur on two days at the most affected sensitive receptor, with exceedances predicted at a total of three receptors. On the exceeding days at the most affected sensitive receptor, the background concentrations made up 72% and 32% of the criterion. The average wind speed and direction recorded at the DPE Muswellbrook station on each of these days was 0.5 m/s from the southeast and 0.6 m/s from the southwest, respectively. In general, the incremental concentration makes up only a small proportion of the total concentration. Incremental impacts during exceedance events are primarily associated with dust emissions at the borrow pit location."*

As a result of these findings, two management and mitigation measures were recommended (refer to AQ1 and AQ2 in **Section 3.4**), of which this plan constitutes AQ1, with AQ2 addressed separately in the BMP and AMP.

7. Dust Management

7.1. Overview

Dust from the demolition activities is to be managed to minimise dust emissions, including those from relevant risks identified in the environmental risk assessment, so that the EPA's impact assessment criteria at surrounding sensitive receptors are met.

The strategy for mitigating and managing dust during demolition activities includes:

- Elimination and substitution approaches
- Engineering controls
- Administrative and planning measures
- Proactive and reactive controls.

Section 7.2 details the measures to be applied to effectively manage dust, consistent with the requirements of condition C22 (b) of Development Consent SSD-24937520 and the relevant requirements of SoC AQ1. The monitoring, evaluation and reporting requirements of C22 (c) and the trigger action response plan (TARP) and monitoring components of SoC AQ1 are provided below in **Section 0**.

7.2. Management measures

Consistent with condition B6, all reasonable and feasible avoidance and mitigation measures will be implemented to prevent the generation of dust during Stage 1 demolition-related activities. **Table 7-1** lists the measures that are to be applied for controlling and minimising dust emissions from Stage 1 demolition-related activities for the development. These measures are intended to:

- Minimise dust generation
- Prevent visible dust emissions
- Manage visible dust
- Prevent dust issues beyond the development area.

Details of who would be responsible for each measure is also included in **Table 7-1**.

Table 7-1. Dust management measures

Emission source	Management measures	Responsibility
All demolition activities	Conduct daily inspections to verify that the requirements of the DMP are being implemented and remain effective.	AGLM Environment Team
	Apply water or polymer to minimise wind-generated dust from disposed and exposed surfaces.	Site Manager / Supervisor
	Wherever possible, minimise the extent of exposed areas through progressive rehabilitation and/or stabilisation.	Site Manager / Supervisor
	Cover or stabilise stockpiles when not in use and completed areas.	Site Manager / Supervisor
	Limit the drop height of materials that can lead to dust generation when loading and unloading.	Site Manager / Supervisor

	Adjust work intensity in response to increased emission risks (e.g. strong winds). Further details are provided in **Section 0.**	Site Manager / Supervisor
	Implement a dust and meteorological monitoring program to identify adverse weather conditions and potential air quality impacts. Further details are provided in **Section 0.**	Site Manager / Supervisor, AGLM Environment Team
	Implement a change management process for responding to evolving dusk risks and ensure compliance with **Trigger Action Response Plans (TARP)** (i.e., **Section 7.3.5**).	Site Manager / Supervisor, AGLM Environment Team
	Use non-potable water for dust suppression where possible.	Site Manager / Supervisor
	Apply compaction techniques as necessary to control dust emissions.	Site Manager / Supervisor
	Conduct routine dust suppression inspections and monitor effectiveness (refer to methods below in **Section 0**).	Site Manager / Supervisor, AGLM Environment Team
Blasting	Dust and fume generated during blast events will be managed through a range of mitigation measures including: ▪ Wetting down techniques and water sprays. ▪ Public safety will be managed through exclusion zones and spotters for each Blast event. ▪ Stakeholder engagement for road closures including consultation with the Police and Transport for NSW The dust management measures for blasts outlined above are general only. Blast events will be managed the BMP in accordance with Condition C20.	Site Manager / Supervisor
Haulage routes, entries and exits and parking areas associated with Stage 1 demolition activities	Reduce on-site speed limits to limit the generation of dust from vehicle movements.	Site Manager / Supervisor
	Limit traffic movements to designated areas, and wherever possible, along sealed surfaces	Site Manager / Supervisor
	Apply water or polymer to reduce wind from unsealed haulage routes and parking areas.	Site Manager / Supervisor
	Stabilise entry and exit points to minimise dust generation from vehicle movements and improve site access conditions.	Site Manager / Supervisor
	Ensure all heavy vehicles are inspected prior to leaving site. Inspections must ensure that all heavy vehicles are free of any debris and loose materials, as well as that all loads are covered for all trucks transporting materials. Trucks carrying materials,	Site Manager / Supervisor

	with the exception of scrap steel,must be covered at all times except during loading and unloading.	
LPS and associated infrastructure, including HVGTs (excluding activities under the CDC)	Remove accumulated dust and apply pre-wetting before commencing demolition work where reasonably practicable. Apply watering during mechanical demolition of structures and hardstands as required and where practicable.	Site Manager / Supervisor
	Complete in a staged manner to limit the extent of dust emissions at any given time.	Site Manager / Supervisor
	Apply watering to any localised processing, crushing or break-up of materials as required, as well as during unloading, placement, earthworks, compaction and re-grading of materials at demolished infrastructure locations	Site Manager / Supervisor
Disposal of demolition waste to asbestos disposal facility	Where practical, transfer ACM demolition waste directly into the landfill to reduce emissions (including any dust) from storage and double handling. In instances where ACM storage is required it must be completed in accordance with the methodology outlined in the AMP. All ACM transported to the cell, except for ACM-contaminated soil, will have been pre-packaged for transport in accordance with regulatory requirements. Apply watering as required to suppress and dust generated	Site Manager / Supervisor, AGLM Environment Team
	Stabilise and rehabilitate the cap covering the filled containment cells storing the demolition waste as soon as possible	Site Manager / Supervisor
Borrow pit	Apply watering as required to minimise dust generated from the extraction, storage, handling, and loading of materials to be used to develop the final landform at the demolished infrastructure locations.	Site Manager / Supervisor

Following consultation with DPHI in the development of this plan, measures to minimise greenhouse gas emissions as per condition B7 have also been included. These are reproduced below in **Table 7-2** from the EMS:

Table 7-2. EMS GHG management measures

Emission source	Management measures	Responsibility
All relevant activities	GG1: Sustainable procurement practices will be adopted where feasible.	AGLM Environment Team
	GG2: The project will maximise the reuse of materials won onsite for the backfilling of voids and ground levelling. Any raw materials required would be sourced locally where possible	Site Manager / Supervisor
	GG3: Investigate the use of biodiesel for trucks and equipment, where suitable.	Site Manager / Supervisor
	GG4: All plant and equipment used during the project shall be regularly maintained to reduce emissions and comply with the relevant exhaust emissions guidelines	Site Manager / Supervisor

	GG5: Plant and equipment will be switched off when not in constant use and not left idling	Site Manager / Supervisor
	GG6: The project will be planned to ensure minimal movement of plant and equipment where practical.	Site Manager / Supervisor
	GG7: Maximise the beneficial reuse of the carbon removed in vegetation, such as mulching and composting, will be included in management plans, where feasible	Site Manager / Supervisor
	GG8: Maximise the reuse/recycling of demolition waste materials will be investigated and included in demolition management plans, where feasible.	Site Manager / Supervisor

7.3. Monitoring, evaluation and reporting program

7.3.1. Overview

The measures outlined in **Section 7.2** are to be implemented as standard, as part of normal operations. That said, as **Table 7-1** notes, the nature and/or intensity of site activities and the application of these controls should also be informed by a combination of visual monitoring, meteorological monitoring, ambient dust monitoring and proactive management (e.g., forecasting). These processes are summarised below in **Figure 7-1.** Further details of each aspect provided in the following sub-sections, including TARP that explains how information from each, as well as enquiries and complaints is to be used inform activities and management measures.

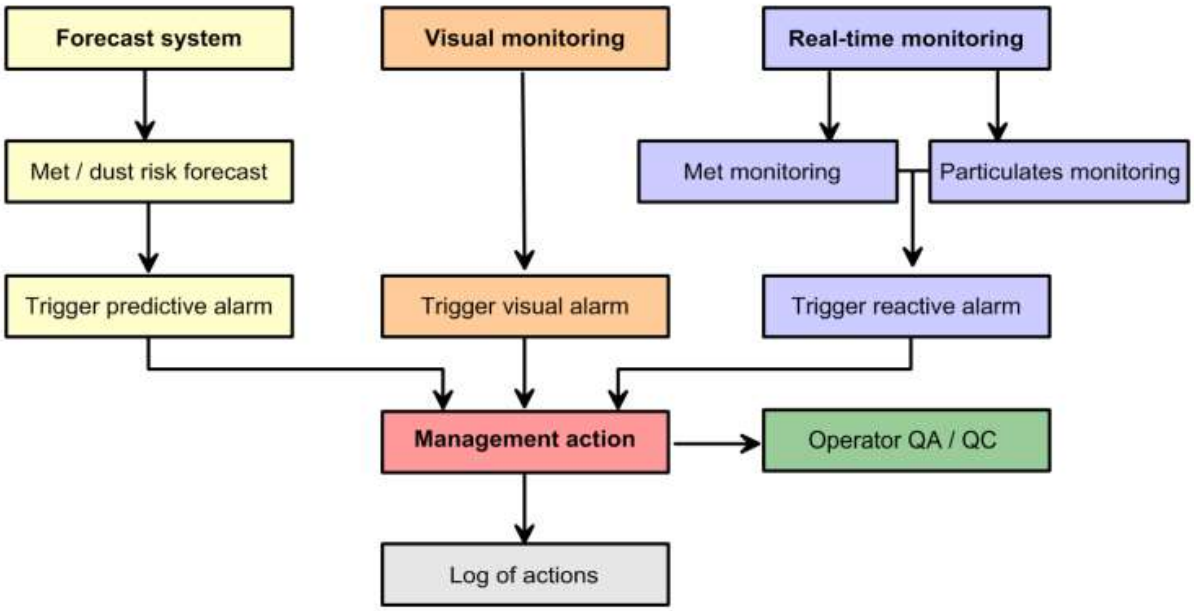

Figure 7-1. Dust monitoring and proactive management processes

7.3.2. Visual monitoring

Monitoring of visual dust conditions will be conducted daily by the Site Manager / Supervisor and AGLM Environment Team. Inspections will assess visual triggers that indicate increasing dust generation and potential off-site impact:

1. Loose dust present but not mobilised.
2. Dust has mobilised but is local and not travelling beyond the development area.
3. Dust has mobilised and has moved beyond the development area.

Any occurrence of triggers 2 and 3 must be reported to the Site Manager / Supervisor and addressed as part of the TARP (refer to **Section 7.3.5**)

7.3.3. Real-time dust and meteorological monitoring

As noted in **Section 5** AGLM operates two dust monitors on and near-site measuring PM_{10} (AGL03 and AGL04). Additionally, an on-site meteorological station is operated at AGL08. AGL03 and AGL04 provide useful information regarding dust conditions at the site. Noting the key work locations across the development area, and the direction of nearby sensitive receptors in relation to the site and prevailing local wind conditions (refer to **Sections 5.2** and **5.3**) the following additional monitoring is to be undertaken:

- Installation and operation of a real-time monitors to measure $PM_{10:}$
  - 1) at or around the nearest sensitive receptor to the northwest; and
  - 2) at or near the northwest boundary of the development area. Both locations are displayed below in **Figure 7-2**
- The monitors are to be installed consistent with 'AS/NZS 3580.9.11:2022 'Methods for sampling and analysis of ambient air,

The results from the monitoring at or near the northwest boundary of the development area are to be used to identify dust conditions on-site and leaving the demolition area. Results from the off-site monitoring at or around the nearest sensitive receptor are to be used to understand conditions at surrounding sensitive receptors. These data would be used together with meteorological data measured at AGL08, as well as data from other surrounding stations operated by DHPI to determine:

- How activities at the site, as well as wider background conditions are influencing cumulative concentrations at surrounding sensitive receptors, and whether the demolition is meeting the required limits
- Whether conditions are such that demolition activities and controls need to be reviewed.

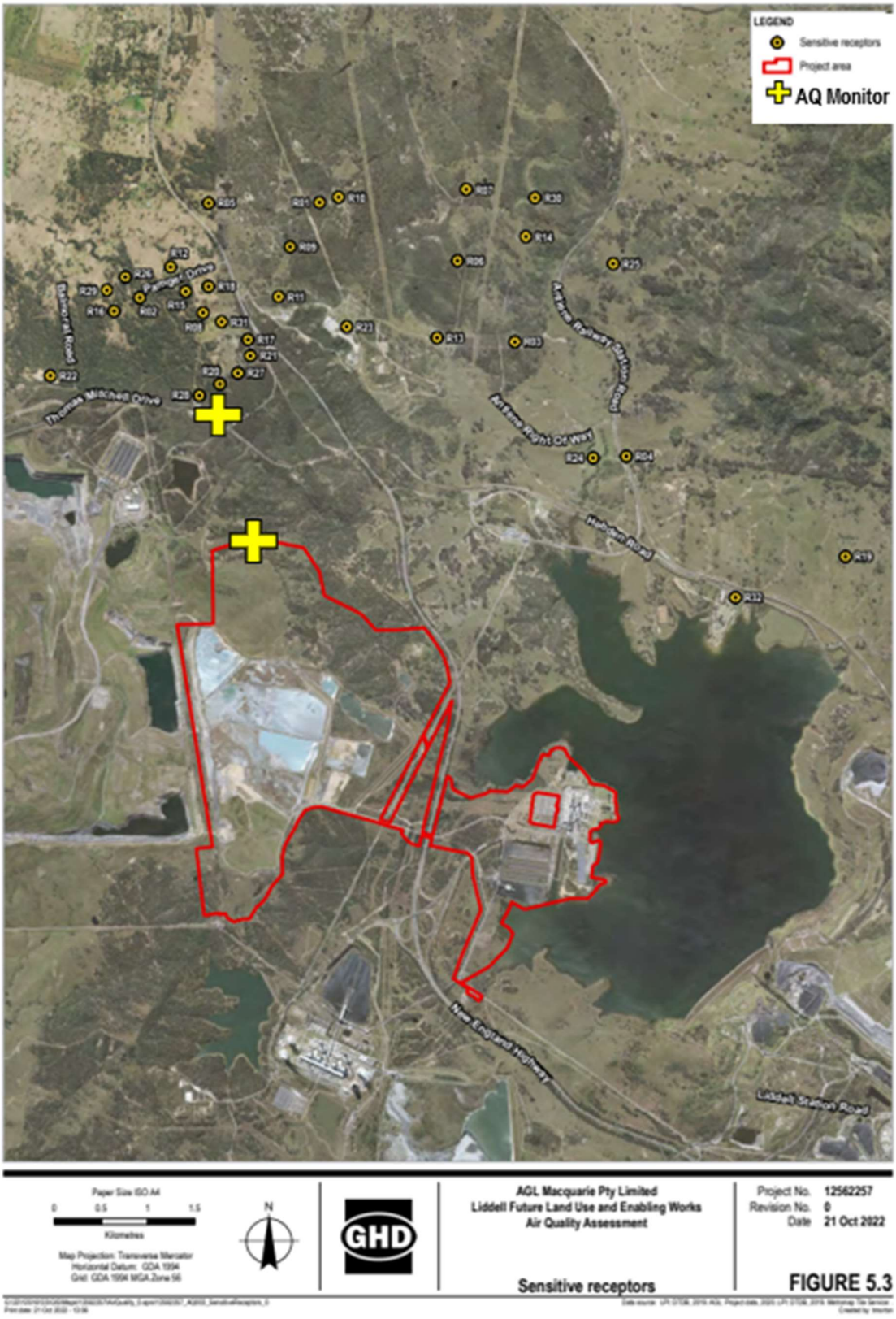

Figure 7-2. Indicative Dust Monitoring Locations

7.3.4. Proactive management

AGLM operates a meteorological and air quality forecasting system for LPS. This system aims to provide early warning of adverse meteorological conditions and potential dust risks, thus facilitating proactive management of activities to reduce the potential for dust generation.

Automated meteorological and dust risk forecasts are issued via email to AGLM and the Principal Contractor each morning. The forecasts include two-day forecasts of site-specific meteorological conditions and dust dispersion. **Figure 7-3** shows an example of the site-specific daily environmental forecast.

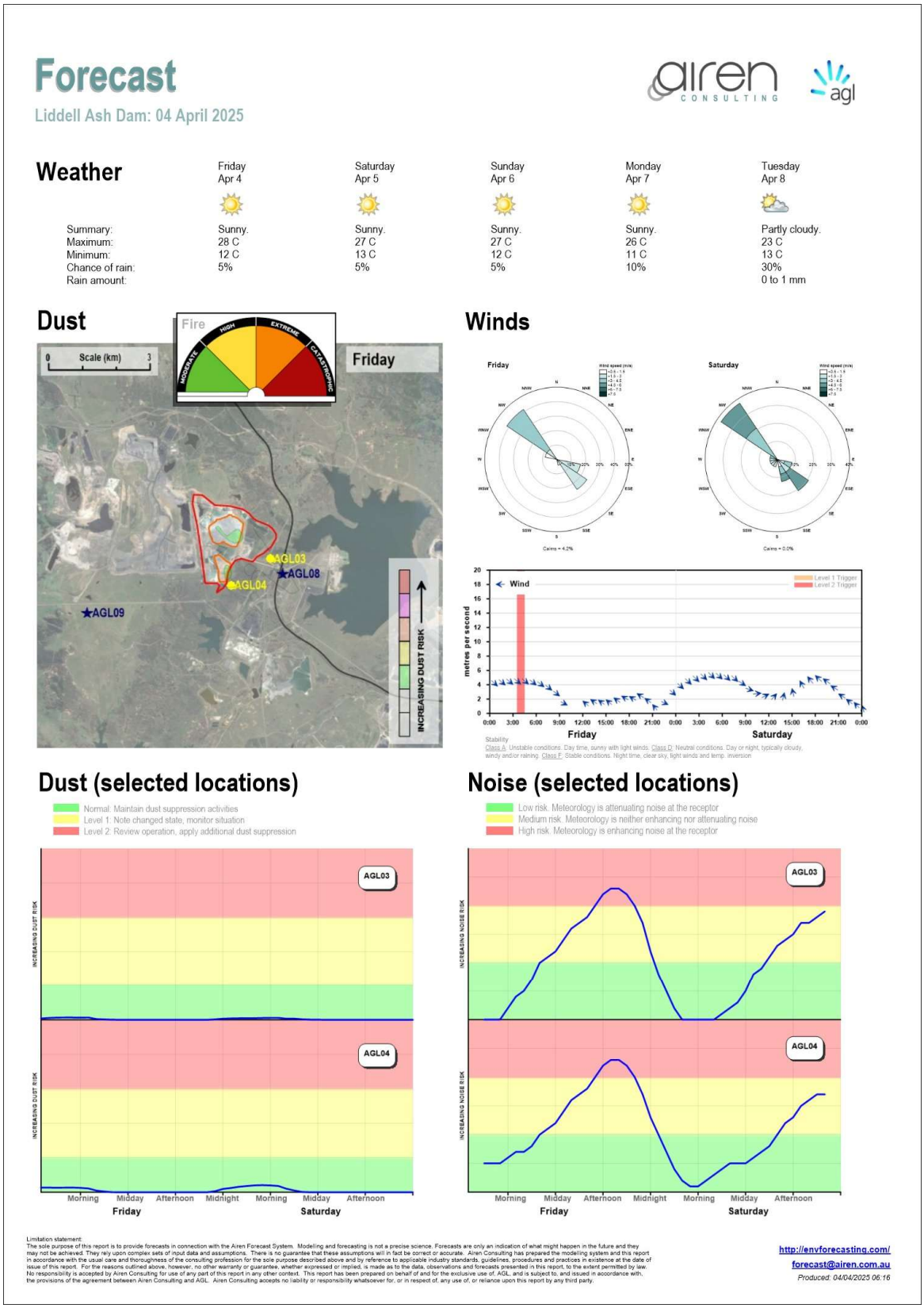

Figure 7-3. Example daily forecast

The meteorological and dust risk forecasts are discussed at the start of each day as part of Toolbox Talks. This allows the workers and Site Manager / Supervisor to prepare for dust management, as per the TARP (see below in **Section 7.3.5**), if adverse meteorological conditions that could result in ash dam dust emissions are to develop as forecast.

7.3.5. Dust TARP

As noted above, the dust TARP defines clear actions that will be taken to address changing risk of potential dust impacts informed by meteorological and dust monitoring data, visual observations, forecast system and related enquiries and complaints. The dust TARP is shown below in **Table 7-3**.

Table 7-3. Trigger, Action, and Response Plan for Dust Emissions

TARP Level	Normal	Level 1 – Alert	Level 2 – High Alert
Indicator			
Complaint	No dust complaint	Dust complaint (unvalidated, i.e., dust complaint has been received but has not yet been confirmed as being associated with the demolition)	Dust complaint (validated, i.e., dust complaint received and has been confirmed via monitoring data, site inspection, or visual verification)
Visual observations	Loose dust present but not mobilised	Dust has mobilised but remains within the site boundary	Dust has mobilised and has moved beyond the site boundary
Measured and forecast meteorological conditions	Principal Contractor to review wind speed forecast at Daily Pre-Start Meeting: Wind speed less than 18km/hr Observed wind speeds less than 18km/hr at AGLM08	Principal Contractor to review wind speed forecast at Daily Pre-Start Meeting: Wind speed greater than 18km/hr Observed wind speeds greater than 18km/hr at AGLM08	Principal Contractor to review wind speed forecast at Daily Pre-Start Meeting: - Wind speed greater than 36km/hr OR - Wind speed greater than 18km/hr AND wind direction from the SE Observed wind speeds to be reviewed against these triggers throughout the day
Air quality monitoring	'Boundary' hourly PM_{10} below 150 µg/m^3 and 'Off-site receptor' hourly PM_{10} below 40 µg/m^3	'Boundary' hourly PM_{10} between 150 and 200 µg/m^3 trigger limit or 'Off-site receptor' hourly PM_{10} between 40 and 50 µg/m^3	'Boundary' hourly PM_{10} above 200 µg/m^3 trigger limit or 'Off-site receptor' hourly PM_{10} above 50 µg/m^3
Trigger Actions Responses			
Activities	Normal activities	Continue activities and evaluate additional	Review activities and evaluate additional

TARP Level	Normal	Level 1 – Alert	Level 2 – High Alert
		standard controls to suppress dust	controls to suppress dust, and modify/suspend relevant activities as required
Responsibilities			
Actions	Principal Contractor to: Maintain standard dust suppression activities, continue monitoring operations	Principal Contractor to: Assess site conditions, meteorological factors, and air quality data to determine if increased dust controls are required Evaluate effectiveness of controls through activity-based monitoring Plan and execute remedial actions as required, including: additional watering, relocation of activities	Principal Contractor to: Maintain and evaluate effectiveness of controls throughout activity Plan and execute remedial actions as required, including: additional watering, relocation of activities, and/or reducing activities
Complaint Handling	No complaints present	If a complaint is received: Conduct visual inspection to identify dust generating activities Investigate complaint considering meteorological conditions and visual observations Validate complaint if supported by evidence Provide verbal response to complaint Record in complaints register	If a validated complaint is received: Conduct visual inspection Investigate complaint as per Level 1 Implement further dust suppression or modify activities as required Communicate lessons learned to demolition personnel

The allowable limit from the EPA's Approved Methods (2022) applies on a 24-hour averaged basis. Higher short-term hourly averaged PM_{10} trigger values are included in the TARP so that conditions that could lead to a non-compliance are identified early before an attributable instance occurs.

8. Compliance Management

Compliance with the processes and outcomes of this plan would be ensured through the roles and responsibilities, inspections and review of controls, training, monitoring, stakeholder engagement, incident and complaint investigation and response processes, non-compliance approaches, record keeping and reporting procedures and adaptive management actions outlined below.

8.1. Roles and responsibilities

The specific roles and responsibilities are applicable to the activities and actions outlined in this plan are summarised in **Section 8** of the DEMP.

8.2. Inspections

Dust emissions from Stage 1 demolition activities, and confirmation of the implementation of relevant controls listed above in **Section 7** would be reviewed as part of the weekly environmental inspections completed for the development, including demolition activities. Where opportunities for improvement in control measures arise, these would be documented in the inspection reports and promptly actioned on-site.

8.3. Training

Workers and visitors are required to undergo training and awareness programs regarding environmental management requirements, including dust management, and the importance adhering to related requirements during activities. Details of this are provided in Section 4.4 of the EMS.

8.4. Monitoring

Monitoring as relevant to the DMP is to be completed as described above in **Section 0**.

8.5. Community and stakeholder engagement

Community and stakeholder engagement related to dust management will align with the DEMP. This includes public notifications, stakeholder consultation, and complaints management for dust-related concerns. Refer to Sections 4 and 5.1 of the DEMP for detailed engagement processes.

8.6. Enquiries and complaints

Incidents, complaints and enquiries, including those related to dust will be managed in accordance with the process outlined in Section 6.5 of the DEMP.

8.7. Hazards, near misses, incidents and non-compliances

Any demolition dust-related hazards, near miss, incident and non-compliances will be managed in accordance with the process outlined in Section 6.3 of the DEMP.

8.8. Record keeping and reporting

8.8.1. Compliance reporting

Compliance reporting will be undertaken as per Section 6.2 of the DEMP.

8.8.2. Environmental audits

Routine audits will be conducted to assess compliance with the DEMP and regulatory requirements. Audit procedures are detailed in Section 6.4 of the DEMP

8.8.3. Record keeping

In accordance with Condition M6.1 of EPL No. 2122, reports associated with dust monitoring, incidents, non-compliances or complaints are to be maintained for a period of at least four years from when they were produced.

9. Review and improvement

9.1. Management Plan update and review

Refer to Section 9.1 of the DEMP for the requirements relating to the plan review and updates.

9.2. Continuous improvement

Refer to Section 9.2 of the DEMP for information relating to continuous improvement.

Appendix A – Curricular Vitae

EDUCATION/QUALIFICATIONS

BE (Env) Hon. Class 1 (UoN, 2010)

Masters Env & Bus M (UoN, 2018)

MIEAUST CPEng (3481081)

Certificates (3) in General Acoustics & Vibration, Building Acoustics and measurement (University of NSW / AAAC, 2013, 2014 and 2015)

MEMBERSHIPS AND AFFILIATIONS

Engineers Australia, CASANZ

OTHER

- Class C Drivers Licence
- OH&S General Induction White Card
- Baseline Australian Security Clearance (inc. YC)
- Certificate of Competency in 4WD Operations
- CET Cert. Erosion & Sediment Control for Main Roads Construction
- Work eligibility information

WORK HISTORY

Available at www.linkedin.com/in/luke-spencer-4674a1104

Luke Spencer

SENIOR ASSOCIATE ENVIRONMENTAL ENGINEER, TEAM LEADER ENVIRONMENTAL MANAGEMENT (NEW SOUTH WALES AND NEW ZEALAND)

Summary of competencies

Luke is a Chartered Environmental Engineer with 17 years' experience in environmental management and assessment with specialist skills in the fields of acoustics and vibration, air quality and environmental remediation. Luke also has experience in environmental due diligence and development feasibility assessment.

Regarding air quality, Luke has conducted multiple quantitative and qualitative assessments (recent projects highlighted below) and is proficient in the use of AUSPLUME, AERMOD, TAPM, TRAQ (CALINE), CAL3QHCR and CALPUFF/CALMET. Luke has also completed training at the *Institute for Internal Combustion Engines and Thermodynamics*, Graz Austria in the use of the GRAMM/GRAL meteorological and dispersion model. Luke is an approved air quality technical reviewer within Jacobs Technical leaders framework.

Areas of Expertise

- Air quality and odour
- Acoustics & vibration
- Environmental compliance, management and due diligence

Relevant Project Experience

Air quality, odour and meteorology experience (141+ Projects)

Newcastle Reservoirs Dense Gas Modelling, Newcastle NSW (Jan-Jun 2025)

Client: Hunter Water Corporation

Role: Environmental Engineer

Key achievements:

Luke led the air dispersion modelling assessment of potential risks, consequences and responses for accidental chlorine release emergency reviews for seven reservoir sites across the lower Hunter. Modelling was completed using US EPA's SLAB and CALPUFF models. The outcomes of this assessment are informing HWC's emergency response planning for these facilities

Torrens to Darlington, Adelaide SA (Jan-May 2025)

Client: DTP

Role: Environmental Engineer

Key achievements:

Luke completed a preliminary plume rise screening assessment and review for optimisation of the exit velocity of the tunnel VSOs for the Project. Luke also co-ordinated inputs for the 50% Design Report.

Quakers Hill WRRF and Prospect Reservoir Pipeline Projects, Sydney SA (Jan-May 2025)

Client: SWC

Role: Lead Environmental Engineer

Key achievements:

Luke led the completion of two air quality assessments for the Quakers Hill WRRF secondary upgrades and brine pipeline, and Quakers Hill advanced water treatment facility and recycled water pipeline to Prospect Reservoir projects. The assessments included detailed dispersion modelling of changes in odour arising from the Quakers Hill WRRF, including review of potential control options, and was completed in accordance with the EPA's Approved Methods (2022)

Confidential air quality due diligence assessment for potential gas turbine project, Goulburn NSW (Dec 2024)

Client: Confidential

Role: Environmental Engineer

Key achievements:

Luke conducted CALPUFF air dispersion modelling and preliminary plume rise reviews to assess potential constraints associated with a new gas turbine development being considered in central NSW.

Dust suppression water needs review for New England Renewable Energy Zone (REZ), New England Region, NSW (Nov 2024)

Client: Confidential

Role: Environmental Engineer

Key achievements:

Luke provided preliminary calculations to estimate expected dust suppression water needs for several renewable energy projects planned across the NE REZ. These calculations formed part of an overall water security review evaluating water capacity across the region.

Confidential desalination plant and water pipeline project, Air quality assessment, Gladstone QLD (Oct-Nov 2024)

Client: Confidential

Role: Technical Reviewer

Key achievements:

Luke completed technical reviews of the air quality assessment completed as part of a preliminary environmental assessment to inform a business case for a desalination plant and associated pipeline infrastructure around Gladstone, QLD.

PSIQuantum datacentre Air quality assessment, Brisbane QLD (Sep 2024)

Client: Brisbane Airport Corporation

Role: Technical Reviewer

Key achievements:

- Luke completed an initial risk-based air quality assessment for a datacentre development proposed near Brisbane Airport.

Prospect Hill EfW Plume rise assessment, Lara VIC (Sep 2024)

Client: Prospect Hill Pty Ltd

Role: Environmental Engineer

Key achievements:

- Luke conducted plume rise modelling using TAPM to predict the heights above ground level that CASA's critical vertical plume velocities would be exceeded. Results were evaluated by comparing against gazetted Protected Airspace requirements for the nearby certified Aerodrome.

Caboolture-Bribie Island Road to Steve Irwin Way (South) Air Quality Complaints Investigation Review, Elimbah QLD (Sep 2024)

Client: TMR

Role: Environmental Engineer

Key achievements:

- Luke reviewed air quality and meteorological data to assess an air quality complaint received from a nearby resident in relation the Project. Advice was provided regarding potential causation and the implications of the air pollution levels mesasured, in line with TMR's 'Road Traffic Air Quality Management Manual' (RTAQM) (2014).

PSIQuantum datacentre plume rise assessment, Brisbane QLD (Aug 2024)

Client: Brisbane Airport Corporation

Role: Technical Reviewer

Key achievements:

- Luke conducted a technical review of a plume rise screening review prepared using TAPM for a datacentre development proposed near Brisbane Airport.

Hunter Economic Zone air quality review for EPL modification, Abermain NSW (Sep 2024)

Client: SHL

Role: Environmental Engineer

Key achievements:

- Luke conducted CALPUFF air dispersion modelling assessment for the HEZ power station to inform an application to amend particulate matter licence limits.

Hunter Power Project air quality review for Modification3, Kurri Kurri NSW (Aug 2024)

Client: SHL

Role: Environmental Engineer

Key achievements:

- Modification 3 seeks extended operation on diesel during the first year post-commissioning. Luke reviewed potential changes to air quality

impacts associated with this change, noting updates to EPA assessment requirements since the original EIS.

Hunter Power Project EPL Amendment, Kurri Kurri NSW (Aug 2024)

Client: SHL

Role: Environmental Engineer

Key achievements:

- Luke completed a POEO Act S248 EPL licence Condition exemption application for HPP during their commissioning phase. The application involved air dispersion modelling to review GLCs for CO, NO2 and PM2.5 at surrounding sensitive receptors during commissioning operations. All works were completed in accordance with the EPA's Approved Methods (2022).

Belmont Desalination Plant Roadside air quality review, Belmont NSW (Apr 2024)

Client: Hunter Water Corporation

Role: Environmental Engineer

Key achievements:

- Luke assessed potential changes in air quality along local roads from additional traffic during construction using TfNSW's RSAQT. Impacts were assessed against TfNSW guidance, as well as relevant guidance from the NSW EPA's Approved Methods.

Victoria Park Redevelopment Project, Kelvin Grove QLD (Apr 2024)

Client: Brisbane City Council

Role: Environmental Engineer, Technical Reviewer

Key achievements:

- The Victoria Park Redevelopment Project involves the repurposing of Victoria Park as a Brisbane Olympics venue. Luke reviewed the construction and operational air quality assessment prepared for the project. Construction impacts were assessed in line with CASANZ' assessment methodology, with operations qualitatively assessed.

Sunshine Coast Public Transit Project Desktop Air Quality Impact Assessment for Option 3 (Rapid Bus Network), Allenby QLD (Feb-Mar 2024)

Client: Department of Transport and Main Roads

Role: Environmental Engineer, Technical Reviewer

Key achievements:

- Luke reviewed the construction and operational air quality assessment prepared for the SCPT project. Construction impacts were assessed in line with VIC EPA requirements, with operations quantitatively assessed using the CALINE4 screening model. Impacts were assessed with reference to TMR's RTAQM.

Granges Road, Holbrooks Road and East Avenue Intersection Upgrade Operational Air Quality Impact Assessment, Allenby SA (Jan 2024)

Client: Department of Infrastructure and Transport

Role: Environmental Engineer

Key achievements:

- Operational air quality assessment of changes in air quality conditions around the Granges Road, Holbrooks Road and East Avenue was completed using the CAL3QHCR dispersion model. This model was selected on the basis of its suitability for assessing emissions associated with traffic effects (e.g., delays and queues) that occur at intersections. An emissions inventory was developed using available traffic inputs, with emission estimation guidance referred to from 'Road Tunnels: Vehicle Emissions and Air Demand for Ventilation' (PIARC, 2012); consistent with guidance presented in the AQAG (DIT, 2021).

Stone Ridge Quarry Air Quality Impact Assessment, Seaham NSW (Jan-Mar 2024)

Client: Umwelt Australia Pty Ltd

Role: Environmental Engineer

Key achievements:

- Update of previous Air Quality Impact Assessment to account for amendments to design following exhibition of Development Application.

Colongra Power Station Combustion Tuning Maintenance Air Quality Review CT2 and CT3, Colongra NSW (Oct 2023)

Client: Snowy Hydro Ltd

Role: Environmental Engineer

Key achievements:

- Assessment of ground-level NO_2 concentrations from combustion tuning maintenance at Colongra Power station on diesel. The assessment was completed using CALPUFF, and results were evaluated against impact assessment criteria established in accordance with the EPA's Approved Methods.

Gippsland Preliminary Environmental Assessment, Gippsland VIC (Aug 2023)

Client: VicGrid

Role: Environmental Engineer

Key achievements:

- Luke led preliminary air quality and noise investigations for construction of a new transmission line between Loy Yang Power Station and the Gippsland Coast. Both assessments were completed with reference to applicable state legislation and regulations, as well as relevant EPA guidelines.

Woolloongabba Station Redevelopment Preliminary Environmental Assessment, Woolloongabba QLD (Aug 2023)

Client: Brisbane City Council

Role: Environmental Engineer

Key achievements:

- Luke led preliminary air quality and noise investigations for the redevelopment of Woolloongabba Station and the associated bus layover area. The station included several overpass and flyerovers. Air quality impacts were reviewed with references to the EPP (Air) and other relevant guidance.

Ipswich Motorway Upgrade Stage 2 and 3 Preliminary Environmental Assessments, Ipswich QLD (Jul 2023)

Client: Department of Transport and Main Roads

Role: Environmental Engineer

Key achievements:

- Luke led preliminary air quality investigations for redevelopment Stages 2 and 3 of Ipswich Motorway. The project included various bridge underpasses. Air quality impacts were reviewed with references to the EPP (Air) and other relevant guidance.

Flyers Creek Wind Farm Meteorological Review, Flyers Creek NSW (Jun 2023)

Client: Iberdrola

Role: Environmental Engineer

Key achievements:

- TAPM modelling to review expected changes across project study area to inform the quantity and placement of operational meteorological monitoring stations. Results were statistically validated against observational data.

EPL Annual Returns, Kooragang Island NSW (Apr 2023)

Client: Park Fuels Pty Ltd

Role: Environmental Engineer

Key achievements:

- Estimation of load-based emissions to air for reporting against EPL Annual Returns for Kooragang Island EPL using US EPA TANKS.

Colongra Power Station Combustion Tuning Maintenance Air Quality Review CT1 and CT4, Colongra NSW (Apr 2023)

Client: Snowy Hydro Ltd

Role: Environmental Engineer

Key achievements:

- Assessment of ground-level NO_2 concentrations from combustion tuning maintenance at Colongra Power station on diesel The assessment was completed using CALPUFF, and results were evaluated against impact assessment criteria established in accordance with the EPA's Approved Methods.

Birkdale Community Precinct Air Quality Review, Birkdale QLD (Mar 2023)

Client: Redland city Council

Role: Environmental Engineer

Key achievements:

- Technical review of AQIA and AQMp prepared to evaluate potential impacts associated with a new multi-use precinct at Birkdale, QLD forming part of the Brisbane 2032 Brisbane Olympics venues.

Stone Ridge Quarry Air Quality Impact Assessment, Seaham NSW (Jul 2022 to Jan 2023)

Client: Umwelt Australia Pty Ltd

Role: Environmental Engineer

Key achievements:

- Detailed Air Quality Impact Assessment for new 1.5 MTPA hard rock quarry with a 30-year operational life north of Newcastle, NSW. The assessment considered dust, as well as blast fume and exhaust impacts, as well as crystalline silica. The assessment was completed using the CALPUFF dispersion model.
- Attendance of community engagement sessions to explain air quality matters associated with the proposal.

Webstar Masterton Air Discharge Permit Renewal Technical Review, Masterton NZ (Nov 2022)

Client: Greater Wellington Regional Council

Role: Environmental Engineer

Key achievements:

- Techincal review of an application to renew air discharge permit WAR070015 [25847] for Webstar's printing press facility at 43-45 Ngaumutawa Road, Masterton. The review considered all technical air quality aspects of the application and evaluated the potential for effects in-line with GWRC's evaluation processes. Recommendations regarding updated conditions for the new consent were made.

Middle Creek Quarry Air Quality Impact Assessment, Oberon NSW (Aug to Oct 2022)

Client: Umwelt Australia Pty Ltd

Role: Environmental Engineer

Key achievements:

- AQIA for a quarry and resource recovery centre near Oberon, NSW using the CALPUFF dispersion model.

Independent Air Quality Review, Taupo NZ (Aug 2022)

Client: Waikato Regional Council

Role: Technical Reviewer

Key achievements:

- Independent review of technical modelling methods and inputs applied for an Air Quality Impact Assessment prepared to support the application for an Air Discharge Permit for Oriented Strand Board Plant in Taupo, New Zealand.

Fuel Change Colongra Power Station Air Quality Review, Colongra NSW (Aug 2022)

Client: SHL

Role: Environmental Engineer

Key achievements:

- Assessment of ground-level NO_2 concentrations from the permitted short-term use of the four GT's at Colongra Power station on diesel with 50% demineralised water supply. The assessment was completed using CALPUFF, and results were evaluated against impact assessment criteria established in accordance with the EPA's Approved Methods.

Betio Hospital Medical Waste Incinerator Detailed Air Quality Review, Kiribati (Jul 2022)

Client: MFAT and GoK

Role: Environmental Engineer

Key achievements:

- Detailed assessment of different options for a new medical waste incinerator to support the new hospital at Betio. These reviews were completed in-line with WHO and relevant international requirements and were undertaken using the CALPUFF dispersion model.

Boggo Road Pedestrian Crossing Scoping Report Air Quality Review, Brisbane QLD (Jun 2022)

Client: MFAT and GoK

Role: Environmental Engineer

Key achievements:

- Preliminary assessment of potential air quality impacts associated with the construction of a new pedestrian crossing, and recommendations for further assessment as part of the Project Business Case.

Technical review of S127 Application to modify Air Discharge Consent for Waitoa Dairy Manufacturing Site, New Zealand (Feb 2022)

Client: Waikao Regional Council

Role: Environmental Engineer

Key achievements:

- Technical review of an application to modify operations at Waitoa Dairy Manufacturing Site on behalf of WRC. Proposed modifications involved decommissioning of a 30 MW coal-fired boiler with a 30 MW wood biomass-fired boiler.

Ravensworth Void 5 Modification Application AQIA, Hunter Valley NSW (Jan 2022 to Apr 2022)

Client: AGL Macquarie

Role: Environmental Engineer

Key achievements:

- Assessment of whether emissions to air associated with modified void 5 filling and capping activities would meet current (EPA Approved Methods) requirements.

Betio Hospital AQIA, Kiribati (Nov 2021 to May 2022)

Client: MFAT and GoK

Role: Environmental Engineer

Key achievements:

- Assessment of potential air quality impacts during construction and operation of a new hospital at Betio in Kiribati. The assessment was completed in accordance with Local Kiribati, World Bank Group and relevant international requirements, and included an assessment of potential impacts associated with a new medical waste incineration unit.

Independent technical review for Hamptons Compositing Facility Air Discharge Permit Application NZ (Nov 2021)

Client: Waikato Regional Council

Role: Technical Reviewer

Key achievements:

- Technical review of the process, outcomes and conclusions of an application prepared to support process modifications (and consent updates) sought for an existing composting facility.

Air Quality Impact Assessment for Western Victoria Transmission Line Project VIC (Oct 2021 to Dec 2022)

Client: AusNet

Role: Environmental Engineer

Key achievements:

- Assessment of potential air quality impacts associated with the construction, operational and decommissioning phases of a proposal to construct approximately 190 km of new transmission line, including support infrastructure and new terminal stations, as well as upgrades at several existing terminal stations. The assessment was undertaken using the UK IAQM, 2014 methodology, and was undertaken to meet the relevant Victorian legislative and guideline requirements.

Yanco Delta Wind farm EIS Scoping Report Air Quality Review, (Dec 2021)

Client: Yanco Delta

Role: Environmental Engineer

Key achievements:

- Preliminary assessment of potential air quality issues and requirements for assessment as part of the EIS for a new wind farm on the NSW/VIC border.

Emergency Generator Air Quality Review, Upper Hutt New Zealand (Nov 2021)

Client: MSD Animal Health

Role: Environmental Engineer

Key achievements:

- Screening assessment of potential air quality issues associated with the installation of an emergency generator at MSD Animal Health New Zealand's Upper Hutt Manufacturing Facility. The key pollutant of concern was NO2, and the assessment was completed in-line with 'Rule 12: Emergency power generators – permitted activity' of the Proposed Natural Resources Plan for the Wellington Region, Appeals Version

(2019). The AUSPLUME dispersion model listed in the 'Good Practice Guide for Atmospheric Dispersion Modelling' (NIWAR, 2004) was used to complete the assessment.

Independent technical review for Waikato Hospital Air Discharge Permit Application NZ (Sep-Oct 2021)

Client: Waikato Regional Council

Role: Environmental Engineer

Key achievements:

- Technical review of the process, outcomes and conclusions of the AEE and AQIA prepared to support an application to renew the Air Discharge Permit for the emergency generators and boilers at Waikato Hospital.

Air Quality Impact Assessment for The Driftway, Richmond NSW (Aug 2021)

Client: Transport for NSW

Role: Environmental Engineer

Key achievements:

- Assessment of potential air quality impacts associated with the construction and operational phases of a proposal to widen The Driftway in Richmond, NSW. Operational impacts were quantitatively assessed using the TRAQ (CALINE) model, with a risk-based approach based on the guidance presented in AS/NZS ISO 31000: 2009 Risk Management – Principles and Guidelines applied to evaluate potential air quality risks during construction.

Hurstville pump station Odour Review, Blakehurst NSW (Jun 2021)

Client: Sydney Water

Role: Environmental Engineer

Key achievements:

- CALPUFF odour modelling for SWC's Hurstville pump station to address complaints received from the NSW EPA.

Whyalla WWTP and WRP Odour Supplementary Review, Whyalla SA (Jul 2021)

Client: South Australia Water

Role: Environmental Engineer

Key achievements:

- Supplementary CALPUFF odour modelling for SA Water's Whyalla Waste Water Treatment Plant (WWTP) and Water Recycling Plant (WRP) in accordance with South Australian Environment Protection Authority's 'Ambient air quality assessment' (AAQA), (2016) and in Schedule 3 of the Environmental Protection (Air Quality) Policy 2016 (South Australia), (EPP AQ).

Sydney Metro West Stage 2 AQIA, Sydney NSW (Jul 2021 to Aug 2021)

Client: Sydney Metro Authority

Role: Environmental Engineer

Key achievements:

- Assessment of potential air quality impacts associated with the construction of stations at The Bays, Pyrmont and the Sydney CBD as part of the Sydney Metro West Project. Potential dust impacts during construction were evaluated using the UK IAQM, 2014 methodology.

Great Western Highway AQIA, Lithgow NSW (May 2021 to Aug 2021)

Client: Transport for NSW

Role: Environmental Engineer

Key achievements:

- Assessment of potential air quality impacts associated with the construction and operational phases of a proposal to widen approximately 34 kilometres of the Great Western Highway between Lithgow and Katoomba. Operational impacts were quantitatively assessed using the TRAQ (CALINE) model, with a risk-based approach based on the guidance presented in AS/NZS ISO 31000: 2009 Risk Management – Principles and Guidelines applied to evaluate potential air quality risks during construction.

Cessnock STP Upgrades AQIA, Cessnock NSW (May 2021)

Client: Umwelt Australia Pty Ltd

Role: Environmental Engineer

Key achievements:

- Review of potential changes in odour arising from operations at Cessnock STP from the decommissioning of trickling bed filters and installation of a sequential batching reactor.

Whyalla WWTP and WRP Odour review, Whyalla SA (Apr 2021 to May 2021)

Client: South Australia Water

Role: Environmental Engineer

Key achievements:

- CALPUFF modelling of potential odour impacts from SA Water's Whyalla Waste Water Treatment Plant (WWTP) and Water Recycling Plant (WRP) in accordance with South Australian Environment Protection Authority's 'Ambient air quality assessment' (AAQA), (2016) and in Schedule 3 of the Environmental Protection (Air Quality) Policy 2016 (South Australia), (EPP AQ).

BeneVap AEE, Southlands NZ (Mar 2021 to Apr 2021)

Client: AB Lime

Role: Environmental Engineer

Key achievements:

- Quantitative CALPUFF-based assessment to support an AEE of potential air quality impacts for a trial leachate evaporation unit proposed at AB Lime's landfill in Southlands, NZ.

Mt Owen IEA, Hunter Valley NSW (Jan 2021)

Client: Glencore

Role: Environmental Engineer

Key achievements:

- Review of operations compliance with air quality requirements a listed in their conditions of approval, EPLs, management plans, statement of commitments and EIS.

Liddell Battery, Decoupling and Bayswater Ancillary Works EIS, Liddell NSW (Dec 2020 to Jan 2021)

Client: AGL Macquarie

Role: Environmental Engineer

Key achievements:

- AQIA of potential changes in air quality impacts from the proposed Liddell battery, Decoupling and Bayswater Ancillary Works, including cumulative impacts associated with the Bayswater Water and Other Associated Operational Works Project using the CALPUFF dispersion model.

Manchester Place Asphalt Batching Plant AEE, Hamilton NZ (Nov 2020 to Mar 2021)

Client: Downer

Role: Environmental Engineer

Key achievements:

- Quantitative CALPUFF-based assessment to support an AEE of potential air quality impacts for a hot mix asphalt batching plant proposed in Hamilton, NZ.

Berakee Quarry Expansion, Collie NSW (Oct 2020 to Jan 2021)

Client: Umwelt Australia Pty Ltd

Role: Environmental Engineer

Key achievements:

- AQIA of potential changes in air quality impacts from the proposed expansion of Berakee Quarry in Central NSW using the CALPUFF dispersion model.

Hexham Strait, Hexham NSW (Sep 2020 to Jan 2021)

Client: Transport for NSW

Role: Environmental Engineer

Key achievements:

- Assessment of potential air quality impacts associated with proposed upgrades of the Pacific Highway between Hexham and Sandgate, NSW using the GRAL dispersion model.

Transmission Gully Asphalt batching plant AQIA, Paekakariki. New Zealand (Aug 2020)

Client: Fulton Hogan

Role: Environmental Engineer

Key achievements:

- Quantitative CALPUFF-based assessment of potential air quality impacts associated with a hot mix asphalt batching plant proposed in Paekakariki, NZ.

Project Voldemort, NSW (Jun-Nov 2020)

Client: Confidential

Role: Environmental Engineer

Key achievements:

- Quantitative CALPUFF-based assessment of potential air quality impacts associated with the construction and operation of a proposed major water desalination asset in NSW.

Coomera Connector, Coomera QLD (Feb 2020 to Jan 2021)

Client: Department of Transport and Main Roads

Role: Environmental Engineer

Key achievements:

- Assessment of potential air quality impacts associated with a new highway in Coomera, QLD using the GRAMM/GRAL meteorological and dispersion model. Assessment was undertaken in accordance with the TMR's RTAQM.

AQIA for Sydney Speedway EIS, Eastern Creek NSW (Feb-Jun 2020)

Client: Sydney Metro Authority

Role: Environmental Engineer

Key achievements:

- Assessment of potential air quality impacts associated with the construction and operation of a new speedway racing facility in Western Sydney.

M12RT AQIA, Heatherbrae NSW (Jul 2020 to Aug 2020)

Client: Transport for NSW

Role: Environmental Engineer

Key achievements:

- Assessment of potential air quality impacts associated with the construction of the new M12RT motorway.

Sydney Metro Precast facility, NSW (Apr-May 2020)

Client: Sydney Metro Authority

Role: Environmental Engineer

Key achievements:

- Assessment of potential air quality impacts associated with a precast concrete batching facility to support the Sydney Metro West Project.

Bathurst Asphalt Plant AQIA, Bathurst NSW (Feb 2020 to Mar 2020)

Client: Downer

Role: Environmental Engineer

Key achievements:

- Quantitative AUSPLUME-based assessment of potential air quality impacts associated with a hot mix asphalt batching plant proposed in Bathurst, NSW.

Park Fuels Kooragang Island Bulk Fuels Distribution Terminal Modification , Kooragang Island NSW (Feb 2020 to Mar 2020)

Client: Umwelt

Role: Environmental Engineer

Key achievements:

- Review of changes in air quality-related risks from a minor modification to add an addition diesel storage tank at the existing bulk fuels terminal.

M12 Motorway Amendments Report, Badgerys Creek NSW (Jan 2020 to Apr 2020)

Client: TfNSW

Role: Environmental Engineer

Key achievements:

- Review of changes in air quality impacts from the M12 Motorway from the project as assessed in the EIS.

Plainlands Pump Station, Plainlands QLD (Feb 2020 to Apr 2020)

Client: QUU

Role: Environmental Engineer

Key achievements:

- Quantitative CALPUFF-based assessment of potential odour impacts associated with a new pumping station at Plainlands, QLD.

West Wyalong Quarry AQIA, West Wyalong NSW (Jan 2020 to Mar 2020)

Client: Umwelt

Role: Environmental Engineer

Key achievements:

- Quantitative CALPUFF-based assessment of potential air quality impacts associated with expansion of operations at West Wyalong Quarry, NSW.

Project Chestnut Environmental Due Diligence, Hunter Valley NSW (Nov to Dec 2019)

Client: Confidential

Role: Environmental Engineer

Key achievements:

- Review of air quality performance and operational and regulatory risks for a large-scale open-cut coal mine in the Hunter Valley as part of an investment due diligence review.

Orbost Gas Plant Upgrade and Commissioning, Orbost VIC (Dec 2019)

Client: APA Group

Role: Environmental Engineer

Key achievements:

- Assessment of potential plume rise constraints from operations at Orbost Gas Plant in accordance with Civil Aviation Safety Authority (CASA) Advisory Circular titled 'AC 139-05v3.0 - Plume Rise Assessments', (CASA, 2019) using TAPM.

Upgrade of Norwest Boulevard, Norwest NSW (Nov 2019)

Client: NSW Roads and Maritime Services

Role: Environmental Engineer

Key achievements:

- Assessment of potential air quality impacts associated with the construction and operational phases of a proposal to widen Norwest Boulevard around the intersection with Lexington Drive. Operational impacts were quantitatively assessed using the TRAQ (CALINE) model, with a risk-based approach based on the guidance presented in AS/NZS ISO 31000: 2009 Risk Management – Principles and Guidelines applied to evaluate potential air quality risks during construction.
- Evaluation of changes in GHG emissions from the upgraded road segment using the 'Carbon Gauge' prediction tool, as well as TRAQ (CALINE) for predicting operational road traffic emissions.

Boydtown Stage 1A West AQ review, Boydtown NSW (Nov 2019)

Client: Lyon group

Role: Environmental Engineer

Key achievements:

- Technical review of assessment of potential issues associated with new residential development within the vicinity of an existing approved extractive industry.

Palmerston North Asphalt Plant, New Zealand (Nov 2019)

Client: Fulton Hogan

Role: Environmental Engineer

Key achievements:

- Quantitative CALPUFF-based assessment of potential air quality impacts associated with a mobile asphalt plant at Stringfellows Quarry, Palmerston North.

Cessnock STP Upgrades AQIA, Cessnock NSW (Oct 2019)

Client: Umwelt Australia Pty Ltd

Role: Environmental Engineer

Key achievements:

- Review of potential changes in odour arising from operations at Cessnock STP from the installation of two new oxidation ditches, a new clarifer and decommissioning of trickling bed filters.

NorthConnex Independent Review MCoA E12, Sydney NSW (Sep to Nov 2019)

Client: NorthConnex Company Pty Ltd

Role: Environmental Engineer

Key achievements:

- Independent review of potential air quality outcomes against approved impacts assessed in the NorthConnex EIS and Submissions Report in accordance with condition E12 of the MCoA.

Middle Creek Quarry, Odour Literature Review NSW (Sep 2019)

Client: Oberon Earthmoving Pty Ltd

Role: Environmental Engineer

Key achievements:

- Technical review of literature review of potential odour impacts associated with composting and fertiliser manufacturing activities at Middle Creek Quarry.

Costco LBL Annual Returns 2018/19, Casula and Marsden Park NSW (Nov 2019)

Client: Costco

Role: Environmental Engineer

Key achievements:

- Technical review of LBL total VOC and benzene estimates using US EPA's TANKS and LBL fee rate calculations in accordance with the EPA's calculation protocols.

Bayswater Water Improvements Project Air Quality Assessment, Bayswater NSW (Aug 2019 to Nov 2019)

Client: AGL Macquarie

Role: Environmental Engineer

Key achievements:

- Quantitative CALPUFF-based assessment of potential air quality impacts associated with ash dam augmentation and various water improvement activities at Bayswater Power Station, NSW.

John Gorton Drive Preliminary Air Quality Review, Canberra ACT (Aug 2019)

Client: Macquarie Energy

Role: Environmental Engineer

Key achievements:

- Preliminary review of potential air quality impacts from John Gorton Drive Stage 3C Upgrades using TRAQ (CALINE).

Odour Impact Review, Gladstone STP, Gladstone QLD (Apr 2019)

Client: Gladstone Regional Council

Role: Environmental Engineer

Key achievements:

- Review of potential odour impacts associated with a new gas flare planned at Gladstone STP, including the development of an odour inventory to review the magnitude of potential changes.

EPL Annual Returns, Port Kembla NSW (Mar 2019, Apr 2020, Apr 2021)

Client: Park Fuels Pty Ltd

Role: Environmental Engineer

Key achievements:

- Estimation of load-based emissions to air for reporting against EPL Annual Returns for Port Kembla EPL using US EPA TANKS.

Maroota Quarry AQIA, Maroota NSW (Mar 2019 to May 2019)

Client: Umwelt

Role: Environmental Engineer

Key achievements:

- Quantitative CALPUFF-based assessment of potential air quality impacts associated with a new quarry at Maroota, NSW.

National Pollution Inventory Review and Reporting, Various (Mar 2019 to present)

Client: Department of Defence

Role: Environmental Engineer

Key achievements:

- Jacobs conducted a detailed review of Handbooks I and II to improve their usability; the assumptions and techniques used to estimate reportable environmental emissions (including Defence internal co-ordination processes), so that the data could be most effectively used to inform environmental improvement measures across Defence's sites nationally.
- Preparation and consolidation of data for the 2017/18 and 2018/19 NPI reporting periods. This was done to ensure Defence continued to meet their NPI reporting obligations.

Air Quality Impact Assessment for Sydney Metro West, Parramatta NSW (Nov 2018 to Sep 2019)

Client: Sydney Metro West

Role: Environmental Engineer

Key achievements:

- Risk-based assessment of potential air quality impacts associated with the construction of Stage 1 of the Sydney Metro West Proposal, as well as a high-level review of potential impacts associated with the overall Concept Design.

Air Quality Impact Assessment for Brisbane Metro Depot, Roachedale QLD (Dec 2018 to Feb 2019)

Client: Brisbane City Council

Role: Environmental Engineer

Key achievements:

- Quantitative TRAQ (CALINE)-based assessment of potential air quality impacts from Metro vehicle operations at a new depot planned at Roachedale, QLD.

Oxley STP Odour assessment, Oxley QLD (Nov 2018 to Mar 2019)

Client: Queensland Urban Utilities (QUU)

Role: Environmental Engineer

Key achievements:

- Quantitative CALPUFF-based assessment of potential odour impacts associated with existing and proposed operations at Oxley STP, QLD.

United Mine Independent Audit NSW (Feb 2019)

Client: United Collieries Pty Ltd

Role: Environmental Engineer

Key achievements:

- Review of compliance against Development Consent and EPL air quality requirements as part of an Independent Environmental Audit (IEA).

NCIA Compliance Audit, Rutherford NSW (Jan 2019)

Client: NCIA

Role: Environmental Engineer

Key achievements:

- Review of compliance against Development Consent and EPL air quality requirements as part of an Independent Environmental Audit (IEA).

Northridge Waste Disposal Facility EIS Dust Impact Assessment, Wagga Wagga NSW (Nov 2018)

Client: NGH Environmental

Role: Environmental Engineer

Key achievements:

- Quantitative AUSPLUME-based assessment of potential dust impacts associated with a new landfill proposed north of Wagga Wagga, NSW.

Unwin St Odour Control Unit Assessment, Tempe NSW (Aug-Oct 2018)

Client: ADW Johnson

Role: Environmental Engineer

Key achievements:

- Quantitative evaluation of a new OCU at Tempe NSW using the CALPUFF dispersion model.

Woolgoolga to Ballina (W2B) Temporary asphalt batching plants AQIAs, Various, Mid-North Coast NSW (Jul-Nov 2018)

Client: Pacific Complete

Role: Environmental Engineer

Key achievements:

- Quantitative assessment of potential air quality impacts associated with a new asphalt batching plant and associated bulk materials storage

areas using the CALPUFF dispersion model. Assessment of four locations at Mororo West (2), Harwood, and Tyndale NSW.

SP0080 and SP0081 Educt ventilation shafts Odour assessments, Earlwood NSW (Jul 2018)

Client: Sydney Water

Role: Environmental Engineer

Key achievements:

- Quantitative evaluation of different ventilation shaft design options for the wet well of two pump stations at Earlwood, NSW using the AUSPLUME dispersion model.

Spring Farm Parkway AQIA, Spring Farm NSW (Aug-Sep 2018)

Client: NSW Roads and Maritime Services

Role: Environmental Engineer

Key achievements:

- Assessment of potential air quality impacts associated with the construction and operational phases of the road upgrade using a risk-based approach based on the guidance presented in AS/NZS ISO 31000: 2009 Risk Management – Principles and TRAQ (CALINE) respectively.

Colongra AQIA, Colongra NSW (Jul-Aug 2018)

Client: Snowy Hydro Limited

Role: Environmental Engineer

Key achievements:

- CALPUFF modelling of different fuel usage and change-over scenarios at Colongra Power Station, NSW

PDF Foods Facility AQIA, Tweed Heads NSW (Jul 2018)

Client: Queensland Airports Limited

Role: Environmental Engineer

Key achievements:

- Assessment of potential odour impacts at a proposed cold products storage and distribution facility adjacent to a WWTP.

Kyeemagh AQIA, Odour assessment NSW (Apr-May 2018)

Client: Sydney Water

Role: Environmental Engineer

Key achievements:

- Quantitative evaluation of different ventilation shaft design options for the wet well of a pump station at the Kyeemagh pumping station using the AUSPLUME dispersion model.

Gundamain Feedlot OIA, Gundamain NSW (Apr-Oct 2018)

Client: Geolyse

Role: Environmental Engineer

Key achievements:

- Assessment of potential odour impacts associated with upgrades to an existing feedlot facility in Gundamain, NSW using the MLA method and the CALPUFF dispersion model

Teven Quarry Expansion AQ review, Teven, NSW (Mar-Jun 2018)

Client: Holcim Australia Pty LTd

Role: Environmental Engineer

Key achievements:

- Quantitative assessment of potential air quality impacts associated with the construction and operation of a new asphalt plant at Teven quarry using CALMET/CALPUFF.

Dubbo Regional Rail Yard, Dubbo NSW (Feb-Jun 2018)

Client: Transport for NSW

Role: Environmental Engineer

Key achievements:

- Quantitative assessment of potential air quality impacts associated with the construction and operational phases of a planned rail maintenance facility in Dubbo NSW using the CALMET/CALPUFF meteorological and dispersion model.

M12 Elizabeth Drive Upgrade, Badgerys Creek NSW (Oct 2017 to Jun 2019)

Client: NSW Roads and Maritime Services

Role: Environmental Engineer

Key achievements:

- Quantitative assessment of potential air quality impacts associated with the construction and operational phases of the new M12 motorway.

M12RT Initial AQIA, Heatherbrae NSW (June 2016 to Feb 2019)

Client: NSW Roads and Maritime Services

Role: Environmental Engineer

Key achievements:

- Quantitative assessment of potential air quality impacts associated with the construction and operational phases of the concept of the new M12RT motorway.

Stacey Street NSW (Nov-Dec 2017)

Client: NSW Roads and Maritime Services

Role: Environmental Engineer

Key achievements:

- Preparation of meteorological inputs for use in the GRAL dispersion model to evaluate portal emissions associated with a new tunnel concept design around the Hume Highway and Stacey Street, St Marys.

Berrys Bay Marine repair facility upgrade, Berrys Bay NSW (Nov-Dec 2017)

Client: Hamptons Property Services

Role: Environmental Engineer

Key achievements:

- Quantitative assessment of potential air quality impacts associated with the construction and operational phases of an upgrade of a marine repairs facility set in a highly urbanised environment using the AUSPLUME dispersion model.

White Bay Truck Marshalling Area Exempt Development Air Quality Review, Rozelle NSW (Oct-Nov 2017)

Client: Transport for NSW

Role: Environmental Engineer

Key achievements:

- Assessment of potential air quality impacts associated with the construction and operational phases of the proposal using a risk-based approach based on the guidance presented in *AS/NZS ISO 31000: 2009 Risk Management – Principles* and TRAQ (CALINE) respectively.

Upgrade of Norwest Boulevard, Norwest NSW (Oct-Nov 2017)

Client: NSW Roads and Maritime Services

Role: Environmental Engineer

Key achievements:

- Assessment of potential air quality impacts associated with the construction and operational phases of a proposal to widen Norwest Boulevard around the intersection with Lexington Drive. Operational impacts were quantitatively assessed using the TRAQ (CALINE) model, with a risk-based approach based on the guidance presented in *AS/NZS ISO 31000: 2009 Risk Management – Principles and Guidelines* applied to evaluate potential air quality risks during construction.
- Evaluation of changes in GHG emissions from the upgraded road segment using the 'Carbon Gauge' prediction tool, as well as TRAQ (CALINE) for predicting operational road traffic emissions.

Laidley STP Odour Review, Laidley QLD (Aug-Sep 2017)

Client: QUU

Role: Environmental Engineer

Key achievements:

- CALPUFF assessment of odours arising from present and proposed operations at the Laidley STP using the CALMET/CALPUFF meteorological and dispersion model.

Yeppoon STP Odour Review, Laidley QLD (Aug 2017)

Client: QUU

Role: Environmental Engineer

Key achievements:

- CALPUFF assessment of odours arising from proposed operational changes at the Yeppoon STP (installation of an odour control unit at the

inlet works) using the CALMET/CALPUFF meteorological and dispersion model.

Brisbane Metro Preliminary EIS Air Quality Assessment, Brisbane QLD (Jul-Sep 2017)

Client: Confidential

Role: Environmental Engineer

Key achievements:

- Quantitative assessment of potential air quality impacts associated with The Brisbane Metro Project using TRAQ (CALINE) for the evaluation of operational impacts and the method outlined in *Guidance on the assessment of dust from demolition and construction Version 1.1,* (UK IAQM, 2014) for evaluating potential air quality issues during construction.

Park Fuels Bulk Fuel Terminal Modification EIS Air Quality Impact Assessment, Kooragang Island QLD (Jul 2017 to Feb 2018)

Client: Umwelt

Role: Environmental Engineer

Key achievements:

- Quantitative assessment of potential air quality impacts associated with a proposed modification to Park Fuels Bulk Fuel Facility at Kooragang Island, NSW using the CALMET/CALPUFF meteorological and dispersion model. The assessment supported an EIS being prepared for the modification, as well as an application to update the load-based conditions for the site Environment Protection Licence (EPL).

Colongra Power Station Diesel Application Air quality review, Colongra NSW (Sep 2017)

Client: Snowy Hydro Ltd

Role: Environmental Engineer

Key achievements:

- CALMET/CALPUFF meteorological and dispersion modelling of multiple gas and diesel operational scenarios, including start-up and shuts-down sequences.
- Post-processing of NO_x to NO_2 outputs using the OLM method.

Camellia remediation project air quality assessment, Parramatta NSW (Jun-Jul 2017)

Client: Transport for NSW

Role: Environmental Engineer

Key achievements:

- AUSPLUME based assessment of soil vapour, dust and odours associated with the excavation and handling of contaminated soils as part of the Camellia PLR stabling yard remediation project.

Northridge Waste Disposal Facility EIS Operational Odour Assessment, Wagga Wagga NSW (Jun-Sep 2017)

Client: NGH Environmental

Role: Environmental Engineer

Key achievements:

- Quantitative AUSPLUME-based assessment of potential odour impacts associated with a new landfill proposed north of Wagga Wagga, NSW.

Alexandria to Moore Park Project Air quality review, Sydney NSW (Mar 2017)

Client: NSW Roads and Maritime Services

Role: Environmental Engineer

Key achievements:

- Risk-based assessment of potential air quality impacts associated with the proposal completed using metrics developed based on guidance from *AS/NZS ISO 31000: 2009 Risk Management – Principles and Guidelines.*

Bruce Highway Upgrade (Caloundra Road to Sunshine Motorway), Sippy Downs QLD (Feb-Mar 2017)

Client: Queensland Department of Transport and Main Roads

Role: Environmental Engineer

Key achievements:

- Identification of assessment criteria in accordance with guidance presented in *Environmental Protection (Air) Policy 2008* (Air EPP) Queensland and the RTAQM.
- Development of emissions in accordance with the traffic emissions database developed by Brisbane City Council.
- Quantification of roadside air quality using the TRAQ (CALINE) model.
- Development of mitigation measures as identified to be necessary as per directives detailed in the RTAQM.

Parramatta Light Rail, Parramatta NSW (Jan-Mar 2017)

Client: Transport for NSW

Role: Environmental Engineer

Key achievements:

- Risk-based assessment of potential air quality impacts associated with the proposal completed using metrics developed based on guidance from *AS/NZS ISO 31000: 2009 Risk Management – Principles and Guidelines.*
- Development of mitigation and management measures to effectively limit and reduce air quality-related impacts during all phases of the development.

Hurstville Odour Control Unit Upgrade, South Hurstville NSW (Jan-Feb 2017)

Client: Sydney Water Corporation

Role: Environmental Engineer

Key achievements:

- Quantitative assessment of potential odour impacts associated with the replacement of the odour control unit (OCU) at SY044 using the AUSPLUME dispersion model.
- Development of emissions with reference to *Odour Control Unit Standard Specification* (OCUSS), (Sydney Water, 2011)

Belmont WWTW Clarifier Upgrade, Belmont NSW (Jan 2017)

Client: Umwelt (for Hunter Water Corporation)

Role: Environmental Engineer

Key achievements:

- Assessment of potential changes to odour emissions arising from the Belmont WWTP as a result of the addition of two new secondary clarifiers.
- Quantification of significance of changes utilising reference data from the Sydney Water Corporation *Sydney Water Odour Emissions Database*

Brisbane Metro Subway System REF, Brisbane QLD (Oct-Dec 2016)

Client: Mott McDonald

Role: Environmental Engineer

Key achievements:

- Assessment of potential construction and operational air quality impacts associated with the proposed Brisbane Metro Subway System (BMSS). Impacts were assessed using a semi-quantitative risk-based approach against relevant local (*Brisbane City Plan 2014 – Air quality planning scheme policy,* [BCC, June 2014]) and state (*Environmental Protection (Air) Policy 2008* [Queensland]) criteria and requirements.

Port of Townsville AQIA, Townsville QLD (Sep-Oct 2016)

Client: Northern Stevedoring Services Pty Ltd

Role: Environmental Engineer

Key achievements:

- Modelling of potential air quality impacts associated with proposed changes to product bulk handling at the Port of Townsville to inform an application to amend an Environmental Authority for operations at the facility.

NPI 2015/16 Reporting, Townsville QLD (Aug-Sep 2016)

Client: Glencore Copper Refineries Limited

Role: Environmental Engineer

Key achievements:

- Assistance with the submission of 2015/16 NPI data to the national database for Glencore's Bowen, CRL and Townsville Port facilities including update of assessment tool and data analysis support.

NPI 2015/16 Reporting, Townsville QLD (Aug-Sep 2016)

Client: Northern Stevedoring Services Pty Ltd

Role: Environmental Engineer

Key achievements:

- Development of a bespoke NPI reporting tool for NSS' Townville Port Bulk handling operations and calculation and submission of 2015/16 NPI reporting data to the online facilities database

Lowood/Ferdale Sewage Schemes Upgrade, Detailed odour assessment, Lowood QLD (Aug-Sep 2016)

Client: Queensland Urban Utilities

Role: Environmental Engineer

Key achievements:

- Detailed assessment off odour associated with a new WWTP at Lowood, QLD against criteria outlined in *Guideline: Odour Impact Assessment for Developments,* (Department of Environment and Heritage Protection) using TAPM and CALPUFF air quality and meteorological models.

Cox Peninsula Remediation Project Direct Thermal Desorption Plant Air Quality Assessment, Cox Peninsula NT (Aug-Oct 2016)

Client: Department of Finance

Role: Environmental Engineer

Key achievements:

- Quantitative assessment of potential air quality impacts associated with the use of a Direct Thermal Desorption Plant for contaminated soil remediation at Cox Peninsula, NT against the NSW Approved Methods using the AUSPLUME dispersion model to address Typical Assessment Requirements issued by the NT EPA.
- Assessment of potential work health and safety impacts using refined assessment approach and review of impacts against human health exposure criteria.

Lowood/Ferdale Sewage Schemes Upgrade, Odour screening assessment, Lowood QLD (June 2016)

Client: Queensland Urban Utilities

Role: Environmental Engineer

Key achievements:

- Screening level assessment using the AUSPLUME dispersion model of odour associated with a new WWTP at Lowood, QLD against criteria outlined in *Guideline: Odour Impact Assessment for Developments,* (Department of Environment and Heritage Protection).

The Northern Road Upgrade EIS, Badgerys Creek, NSW (May 2016)

Client: NSW Roads and Maritime Services

Role: Environmental Engineer

Key achievements:

- TRAQ (CALINE) modelling of changes in operation air quality associated with the proposed upgrade.
- Qualitative risk-based assessment of potential impacts to air quality during construction.
- Recommendation of suitable mitigation and measures to manage potential impacts during both phases of the proposal.

The Northern Road Upgrade REF, Kingswood, NSW (Mar- Apr 2016)

Client: NSW Roads and Maritime Services

Role: Environmental Engineer

Key achievements:

- TRAQ (CALINE) modelling of changes in operation air quality associated with the proposed upgrade.
- Qualitative risk-based assessment of potential impacts to air quality during construction.
- Recommendation of suitable mitigation and measures to manage potential impacts during both phases of the proposal.

Colongra Power Station air quality assessment, Colongra NSW (Feb-Mar 2016)

Client: Snowy Hydro Ltd

Role: Environmental Engineer

Key achievements:

- Detailed quantitative air quality assessment using TAPM and CALPUFF of a proposal to modify the fuel inputs from gas to diesel of the Colongra power station, including impacts during fuel changeover transitions.
- Statistical review of the impacts of the closure of Munmorah Power Station on surrounding ambient air quality conditions.

Supplementary air quality modelling, Townsville QLD (Sep 2015)

Client: Northern Stevedoring Services Pty Ltd

Role: Environmental Engineer

Key achievements:

- Supplementary CALPUFF air dispersion modelling to assess an application to handle and load different mineral concentrates at the NSS bulk handling facility.

HEZ relocation air quality assessment, Lonsdale SA (Sep 2015)

Client: Snowy Hydro Ltd

Role: Environmental Engineer

Key achievements:

- Detailed assessment of a proposal to relocate the HEZ power station to one of three potential locations including qualitative CALPUFF dispersion modelling, meteorological modelling using CALMET and TAPM, and a review of the different regulatory frameworks and criteria that the facility would be required to comply with for the different geographies.

NPI 2014/15 Reporting, Townsville QLD (Aug-Sep 2015)

Client: Glencore

Role: Environmental Engineer

Key achievements:

- Assistance with the submission of 2014/15 NPI data to the national database for Glencore's Bowen, CRL and Townsville Port facilities including update of assessment tool and data analysis.

NPI 2014/15 Reporting, Townsville QLD (Aug-Sep 2015)

Client: Northern Stevedoring Services Pty Ltd

Role: Environmental Engineer

Key achievements:

- Development of an bespoke NPI reporting tool for NSS' Townville Port Bulk handling operations and calculation and submission of 2014/15 NPI reporting data.

Chatswood to Sydenham Harbour Crossing Air quality technical paper, Sydney NSW (May 2015 to Jan 2016)

Client: Transport for NSW

Role: Environmental Engineer

Key achievements:

- Qualitative assessment of potential construction and operational air quality impacts associated with the SRT Harbour Crossing project.

Odour review for Cabramatta pumping station, Cabramatta NSW (Apr 2015)

Client: Sydney Water Corporation

Role: Environmental Engineer

Key achievements:

- Assessment of four different odour control unit (OCU) exit stack options around Cabramatta Rugby Leagues club using the AUSPLUME dispersion model.

Air quality assessment of proposed production increase at Sydney Steel Mill, Rooty Hill NSW (Apr 2015)

Client: OneSteel

Role: Environmental Engineer

Key achievements:

- Updates to historical AUSPLUME files to evaluate potential emissions to air associated with an increase in production of rolled product.

Air quality assessment for Bryants Gravel Pit expansion EIS, Cooks Gap NSW (Feb-Mar 2015)

Client: Mid-Western Regional Council

Role: Environmental Engineer

Key achievements:

- Use of TAPM to generate site-specific meteorological data.
- Development of an emissions inventory considering NPI 2012 emission factors.
- AUSPLUME modelling to quantitatively evaluate present and proposed emissions at nearby receivers.

- Evaluation of results against DEC, 2005 criteria and development of appropriate safeguards as required.
- Reporting of assessment methodology and results.
- Client liaison and project management oversight.

Air quality review for Singleton railway underpass REF, Singleton NSW (Feb 2015)

Client: NSW RMS

Role: Environmental Engineer

Key achievements:

- Review of potential air quality impacts associated with an upgrade to a railway bridge and widening of the New England Highway, including TRAQ (CALINE) modelling to evaluate impacts associated with a temporary traffic diversion

DA No. D/2014/1307 Air quality Review, Haymarket NSW (Dec 2014)

Client: Kaz Constructions Pty Ltd

Role: Environmental Engineer

Key achievements:

- Review of present meteorological, ambient air quality and Sydney Cross City Tunnel (CCT) emissions information against predictions made in the CCT EIS to evaluate whether prediction remained valid.
- Assessment of whether a proposed multi-story development would adversely affect the dispersal of emissions from the CCT ventilation stack, or be unduly impacted by these emissions.

Air quality review for WestConnex Enabling Works – Airport East Precinct REF, Port Botany NSW (Dec 2014)

Client: NSW RMS

Role: Environmental Engineer

Key achievements:

- Review and update of air quality assessment section of REF to address comments from authorities.

South West Rocks Supplementary Odour Assessment, South West Rocks NSW (Nov 2014)

Client: Kempsey Shire Council

Role: Environmental Engineer

Key achievements:

- Odour modelling using AUSPLUME of re-configured WWTP design to determine recommended urban buffer setback requirements.

Mt. Thorley Warkworth Air quality Management Plan review, Hunter Valley NSW (Oct 2014)

Client: Coal and Allied – Rio Tinto

Role: Environmental Engineer

Key achievements:

- Statistical review of measured meteorological and PM10 data to determine conditions most conducive for elevated PM10 concentrations at surrounding receivers.

Patrick Shipping Terminal Air Quality Emissions Review, Carrington NSW (Sep - Oct 2014)

Client: Patrick

Role: Environmental Engineer

Key achievements:

- Assistance in the review of potential air quality impacts associated with an EPL variation application to allow temporary storage and export of zinc and lead concentrate from the Patrick Stevedoring Carrington Terminal.

Air Quality Assessment – Lisarow REF, Lisarow NSW (Sep 2014)

Client: NSW RMS

Role: Environmental Engineer

Key achievements:

- Quantitative comparative assessment of current and projected (project, no project) roadside air quality using TRAQ (CALINE) transport emissions model.
- Qualitative assessment of potential construction air quality impacts and development of mitigation measures and safeguards.

DAFF Quarantine Facility Emission Modelling, Mickelham VIC (Aug 2014)

Client: DAFF

Role: Environmental Engineer

Key achievements:

- Preliminary AUSPLUME modelling including BPIP calculations of potential chemical release scenarios.

Biosolids Storage Strategy odour screening review, Various Hunter locations NSW (July 2014)

Client: LOOP Organics

Role: Environmental Engineer

Key achievements:

- Development of local meteorological data using TAPM.
- Evaluated potential odour effects of bio solids storage areas with respect to meteorological conditions and surrounding landuses.

Odour sampling Supervision, Charmhaven and Mannering Park NSW (Jun, Nov 2014)

Client: Wyong Shire Council

Role: Environmental Engineer

Key achievements:

- Supervision of odour sampling activities at Charmhaven and Mannering Park WWTP's.

Rooty Hill Regional Distribution Centre construction and operational air quality and noise compliance assessment, Doonside NSW (June 2014 – Oct 2015)

Client: Holcim

Role: Environmental Engineer

Key achievements:

- Monitor, maintain and report on project depositional dust gauge, high volume air sampler and noise monitoring results.
- Monitoring and maintenance of project weather station.
- Attended noise monitoring to assess construction noise against development criteria.

Preliminary air quality and plume rise assessment, Avalon VIC (July 2014)

Client: HRL Developments Pty Ltd

Role: Environmental Engineer

Key achievements:

- Dispersion modelling of potential pollutant emissions from a thermal boiler power station associated with a sustainable farming development using AERMOD.
- Liaison with CASA to assess potential plume rise impacts to surrounding aeronautical activities.

Odour dispersion modelling review and update SWC WWTPs, South Sydney NSW (May- June 2014)

Client: Sydney Water Corporation (SWC)

Role: Environmental Engineer

Key achievements:

- Development of emissions inventories for existing WWTPs from existing dispersion models.
- Update of Glenfield WWTP AUSPLUME model and creation of updated odour contour plots in Surfer.

South West Rocks WWTP Odour Assessment, South West Rocks NSW (Apr 2014)

Client: Kempsey Shire Council

Role: Environmental Engineer

Key achievements:

- AUSPLUME dispersion modelling of current and projected odour emission scenarios, including assessment against criteria.

Air Emissions Assessment, Londonderry NSW (Mar 2014)

Client: TestSafe Australia

Role: Environmental Engineer

Key achievements:

- Support in the preparation of air emissions inventory for the facility.
- AUSPLUME dispersion modelling of associated pollutants.

Munmorah Power Station Demolition and Clearing Works SEE Qualitative Air Quality Assessment, Lake Munmorah NSW (Mar 2014)

Client: Delta Electricity

Role: Environmental Engineer

Key achievements:

- Qualitative assessment of demolition and site clearance activities.

Rezoning Application Odour Assessment, Nelsons Plains NSW (Feb 2014)

Client: Portree Park Pty Ltd

Role: Environmental Engineer

Key achievements:

- AUSPLUME odour dispersion modelling and review of odour-related impacts associated with rezoning application.

Referees

Available upon request

Appendix B – Consultation

Documents: "Dust Sub management Plan"
Revision: April 2025 Revision DO.V3
May 2025 D0.V4
Reviewed: Charissa Pillay April 2025
Charissa Pillay May 2025

Schedule

Schedule		**Sufficient (Yes/No/ Partial)**	**Document reference and comment**	**Action Required**	**Company Response**	**DPHI Response**	**Company Response**
Schedule 2							
Air quality and Greenhouse Gas B6. All reasonable and feasible avoidance and mitigation measures must be implemented to prevent the generation of dust from the development.		No	Section 7.2 There are no details to address the condition.	Include a commitment to take All reasonable and feasible avoidance and mitigation measures must be implemented to prevent the generation of dust from the development	We have added this commitment to the beginning of Section 7.2 in line with this comment. This is	Closed	
B7. All reasonable and feasible avoidance and mitigation measures must be implemented to minimise greenhouse gas emissions from the development.		No	There is no information to address the condition.	Provide all reasonable and feasible avoidance and mitigation measures implemented to minimise greenhouse gas emissions from the development	B7 is outside the scope of the dust management plan so this requirement has not been added. This is already incorporated into the overall EMS	Include the condition in the subplan.	Greenhouse gas commitments add in Table 7-2 of the DMP
Meteorological monitoring B22. Prior to the commencement of development activities and for the life of the development, a suitable meteorological station must operate in the vicinity of the development that:		No	Section 5.3 does not confirm if the onsite station complies with the condition requirement.	Include details to confirm the condition requirement.	The existing on-site meteorological station is a requirement of Condition M5.1 of EPL 2122. This condition lists sampling methods AM-1, AM-2 and AM-4 from the now superseded Approved Methods for Sampling	Include the detail in the subplan	The following additional detail provided in Section 5.3 " The station is a requirement of Condition M5.1 of EPL 2122. This

Documents: “Dust Sub management Plan”
Revision: April 2025 Revision DO.V3
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Reviewed: Charissa Pillay April 2025
Charissa Pillay May 2025

Schedule

(a) complies with the requirements in the Approved Methods for Sampling and Analysis of Air Pollutants in New South Wales (DEC, 2007);					and Analysis of Air Pollutants in New South Wales (DEC, 2007). As such, it is confirmed that the station is already in-place and meeting the requirements of condition B22		condition lists sampling methods AM-1, AM-2 and AM-4 from the now superseded Approved Methods for Sampling and Analysis of Air Pollutants in New South Wales (DEC, 2007) which are also referred to in Condition B22 of Development Consent SSD-24937520.As such, it is considered that meteorological station ‘AGL08’ already meets the requirements of Condition B22. “

Documents: "Dust Sub management Plan"
Revision: April 2025 Revision DO.V3
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Reviewed: Charissa Pillay April 2025
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Schedule

Rehabilitation B35. The approved development area must be rehabilitated progressively, that is, as soon as practicable following disturbance associated with the development, to minimise the total area exposed at any time. Interim stabilisation and temporary vegetation strategies must be implemented in areas prone to dust generation, soil erosion and weed incursion that are not yet rehabilitated.		Yes	Section 7.2 addresses the requirement.	-	Noted, thank you for the feedback.		
B36 Table 6 – Rehabilitation Objectives							
Liddell Ash Dam - • Minimise dust emissions from ash dam surface		Yes	Section 7.3.4 addresses the requirement.	-	Noted, thank you for the feedback.		
C20 Blast Management Plan							
© describe the mitigation measures that will be implemented to:							
(iii) manage blast generated dust and fumes, protect public safety and manage road closures;		No	As the sub plan is a standalone document, it should address the condition separately.	Include the mitigation measure to manage blast generated dust and fumes, protect public safety and manage road closures	The Blasts required for the demolition works and the subsequent Blast Management Plans have not yet been finalised. AGL received approval to further stage the Blast	Provide a general measure to manage blast generated dust and fumes, protect public safety and manage road closures	General details added in Table 7-2 as per comment, noting specific measures are included in the

Documents: "Dust Sub management Plan"
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					Management Plan in the Department's letter dated 3 April 2025. The dust mitigation measures relating to blasting are unable to be provided in the DMP. Each Blast will be managed in accordance with a specific Blast Management Plan which will detail mitigation measures and specific information for each of the blasts.		BMP as per Condition B20
C22. A dust management sub-plan must be prepared as part of the demolition environmental management plan. The plan must:							
(a) be prepared by a suitably qualified and experienced person/s;		Partial	There is no resume attached to the plan to support details in section 1.5	Include evidential record to confirm the information in section 1.5.	A CV of the lead author (Luke Spencer) is also attached to this submission. It is noted that Sam Putland has since left Jacobs.		CV included as Appendix A
(b) describe the mitigation measures that will be implemented to:							
(i) comply with the conditions of this consent; and		Yes	Table 7-1 in section 7.2 addresses the condition.	-	Noted, thank you for the feedback.		
(ii) manage the risks identified in the environmental risk		Yes	Section 4 addresses the condition.	-	Noted, thank you for the feedback.		

Documents: "Dust Sub management Plan"
Revision: April 2025 Revision DO.V3
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Reviewed: Charissa Pillay April 2025
Charissa Pillay May 2025

Schedule

assessment required by condition B1;							
(c) include a monitoring, evaluation and reporting program that uses an approach that is consistent with the environmental management strategy required by condition B1.		Yes	Section 7.3 addresses the requirement.	-	Noted, thank you for the feedback.		
Schedule 5		**Sufficient (Yes/No/ Partial)**	**Document reference and comment**	**Action Required**	**Company Response**		
General Comments		***Action Required***		***Company Response***	***Company Response (XX/XX/XX)***		
Other Agency Comments		***Action Required***		***Company Response***	***Company Response (XX/XX/XX)***		

Department of Planning, Housing and Infrastructure

Our ref: SSD-24937520-PA-9

Matthew Parkinson
Manager Environment and Approvals
AGL Macquarie PTY Limited
New England Highway
Muswellbrook, NSW, 2333

23 May 2025

Liddell Future Landuse Project – Dust Sub-plan

Dear Mr. Parkinson

Thank you for submitting the Dust Sub-plan in accordance with Condition C22, Schedule 2 of the consent for the Liddell Fututre Landuse (SSD 24937520-PA-9). I also acknowledge your response to the Department's review comments and request for additional information.

I note the Dust Sub-plan contains the information required by the conditions of approval.

Accordingly, as nominee of the Planning Secretary, I approve the revised Dust Subplan (Rev. Dov5, May 2025).

You are reminded that if there are any inconsistencies between the subplan and the conditions of approval, the conditions prevail.

Please ensure you make the document publicly available on the project website at the earliest convenience.

If you wish to discuss the matter further, please contact Charissa Pillay on 02 99955944.

Yours sincerely

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

APPENDIX F – BLAST MANAGEMENT SUB PLAN

Department of Planning, Housing and Infrastructure

Our ref: SSD-24937520-PA-1

Matthew Parkinson
Manager Environment and Approvals
AGL Macquarie PTY Limited

03/04/2025

Liddell Future Landuse Project – Approval to Stage Management Plans

Dear Mr. Parkinson

I refer to your letter dated 27 March 2025, seeking approval for the staging of management plans in accordance with Conditions A19, A20, and A21, Schedule 2 of the consent for the Liddell Future Land Use (SSD-24937520).

The Department also notes that AGL Macquarie PTY Limited has agreed with the NSW Environment Protection Authority (EPA) that water management measures, following the completion of demolition, may require revisions prior to commencing works for Stage 2 and Stage 3. These revisions will depend on the findings from the additional assessments required by Conditions C1 to C8, Schedule 2.

Further to your request, I understand that the site requires preparation for blast events involved in demolition. In accordance with Part A, Condition A21(b); and the staging of the Blast Management sub-plan is also requested.

Accordingly, as nominee of the Planning Secretary, I approve the staging of the management plans as outlined in your request letter.

If you wish to discuss the matter further, please contact Charissa Pillay on 02 99955944.

Yours sincerely

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