

Operational Environmental Management Plan

Lidsdale Ash Repository

Prepared for Generator Property Management Pty Ltd

March 2026

Operational Environmental Management Plan

Lidsdale Ash Repository

Generator Property Management Pty Ltd

E230337 RP1

March 2026



Approved by

John Pola

GPM Manager Environment

31/03/2026

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ABN: 28 141 736 558

Document control

Operational Environmental Management Plan Document Control

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1 Introduction

The Lidsdale Ash Repository (formerly known as the Wallerawang Ash Repository) is owned and operated by Generator Property Management (GPM) with the site having a long history of being used for the disposal of wastes from the Wallerawang Power Station (WPS), including ash, mining and industrial wastes. GPM took ownership of the site in September 2020 from Energy Australia NSW. The site was used for ash disposal in conjunction with the WPS since the late 1950s but since the closure of WPS in 2014, the Lidsdale Ash Repository has been placed in care and maintenance.

The Lidsdale Ash Repository is located at Skelly Road, Lidsdale NSW (the site) and is approximately 15 kilometres (km) north-west of Lithgow and 2.5 km north-east of Wallerawang Power Station. The site comprises an area of approximately 528 hectares (ha) and is situated primarily on Lot 5 in Deposited Plan (DP) 829137.

GPM's objectives at the site include decommissioning, demolition, rehabilitation and management of ongoing regulatory and contractual obligations.

This document describes the Operational Environmental Management Plan (OEMP) that will be implemented by GPM and its contractors during the care and maintenance of the Lidsdale Ash Repository.

The site includes:

- the Kerosene Vale Dry Ash Repository (KVAR) and underlying former Kerosene Vale Ash Dam (KVAD)
- Sawyers Swamp Creek Ash Dam (SSCAD)
- Lidsdale Cut and adjacent asbestos landfills
- WPS Asbestos demolition landfill south of the SSCAD.

The site location and layout are displayed in Figure 1.1 below.

The OEMP provides a framework to manage the environmental aspects associated with the operation and maintenance of the Lidsdale Ash Repository. The OEMP outlines the requirements associated with the Lidsdale Ash Repository as stipulated in the relevant provisions of the Project Approval 07_0005 issued by the NSW Department of Planning and Environment (DPE) (now the NSW Department of Planning, Housing and Infrastructure (DPHI)), the Environment Protection Licence (EPL) 21185 issued by the NSW Environment Protection Authority (EPA), and the Statement of Commitments (SoC) presented in the Submissions Report (Parsons Brinkerhoff 2008).

1.1 Background to the Lidsdale Ash Repository

The original ash placement operations were at the KVAD. The mining void was filled with ash transported from the WPS as a slurry (i.e. wet ash placement). When the KVAD was full, it was capped with a clay capping and then ash placement operations began at the SSCAD, which saw wet ash placement take place from 1980 to 2003. The SSCAD is still used to manage site water requirements with water levels within SSCAD managed by irrigation for dust suppression and other onsite water uses to prevent discharge to Sawyers Swamp Creek. When required, water is transferred for treatment via a Caustic Injection Plant (CIP), clarification and discharged through a licenced discharge point (LDP3). SSCAD is a declared dam under the NSW [Dams Safety Act 2015 No 26](#) (DS Act) and is subject to regular surveillance and monitoring by certified engineers in accordance with the DS Act.

The need to further develop the KVAR area in order to maintain power-generation operations at WPS was identified in 2001. The existing wet ash storage area (i.e. SSCAD) was approaching its design capacity and the placement of dry ash at the KVAR was identified as a viable alternative. Conversion from wet to dry ash placement aimed to minimise environmental and social impacts potentially resulting from heavy metal accumulation.

In 2002, Project Approval was granted by the then Minister of Planning to change from wet to dry ash-producing activities and to use the KVAR area for dry ash storage.

The placement of ash on the Repository was developed in two stages:

- Stage 1: Comprises about one third of the area associated with the repository site and located on the south-western section of the site, this area was designed to operate for a period of five years and reached its design capacity and has been capped.
- Stage 2: Comprises the remainder the repository site, covering an area from the open face of the Stage 1 area to the edge of the original storage area. This stage was designed to operate about 10 years, depending on actual ash production rates.

On 26 November 2008, Project Approval (07_0005) was granted by the then Minister of Planning for the extension of the existing KVAR area to permit the continued disposal of ash generated by the WPS under Part 3A (now repealed) of the *Environmental Planning and Assessment Act 1979*. The KVAR Stage 1 placement works were completed and capped in February 2009. The KVAR Stage 2 placement works commenced soon after in April 2009.

In January 2014, WPS's Unit 7 was removed from service and deregistered from the market; whilst in March 2014, Unit 8 was placed in long term storage. However, in November 2014, EnergyAustralia NSW announced that Unit 8 was to be removed from service and the WPS deregistered from the market.

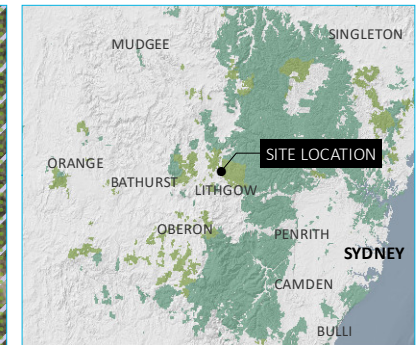
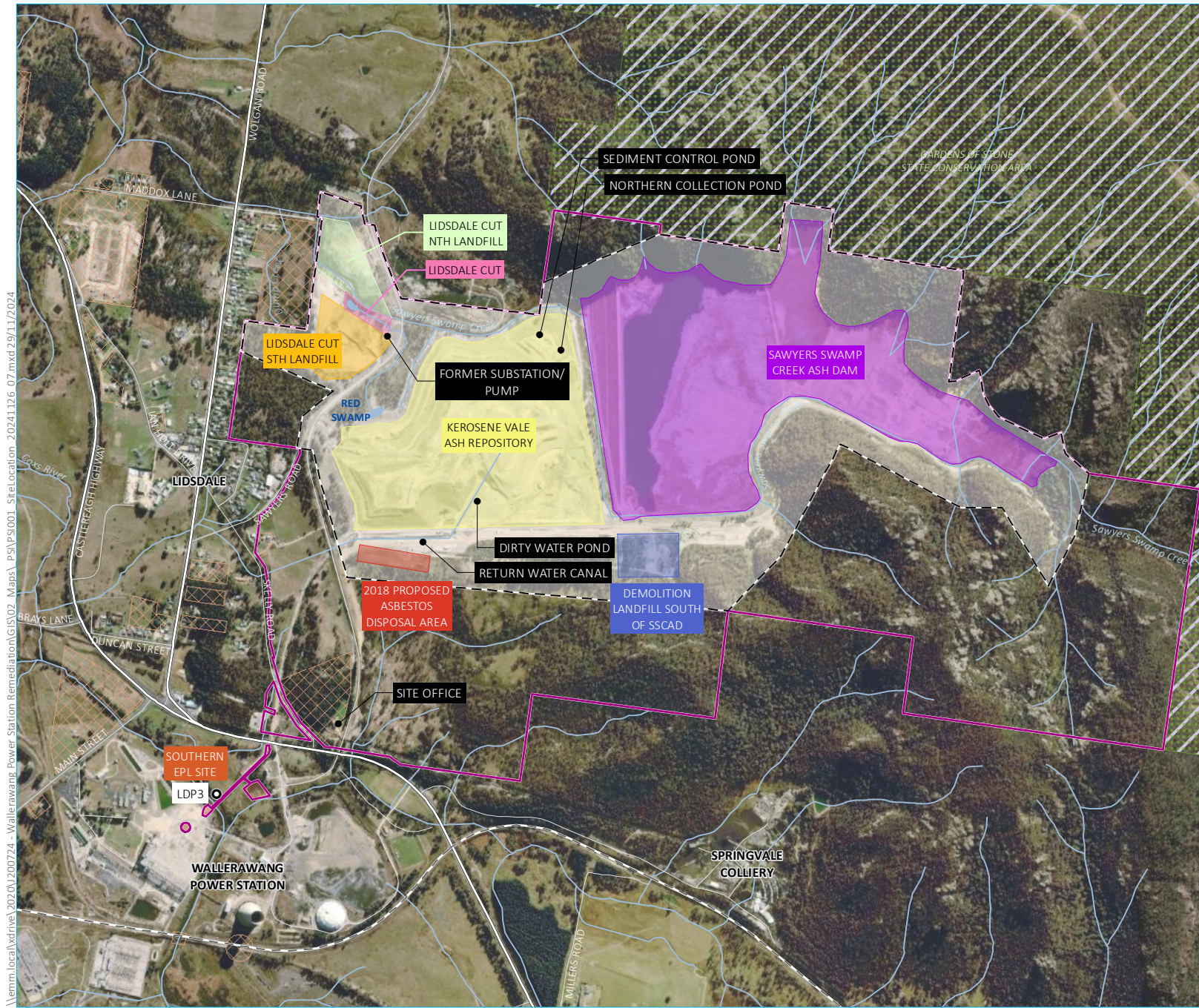
WPS ceased energy production in April 2014 and demolition was completed in 2023. The bulk transport and disposal of ash to the KVAR ceased following the closure of the WPS. The Lidsdale Ash Repository is currently being managed in a care and maintenance arrangement. Environmental studies and investigations are currently underway to support GPM's safe closure of the site, including decommissioning of structures, demolition of some elements, rehabilitation of the landforms and management of ongoing regulatory and contractual obligations associated with the Lidsdale Ash Repository area.

In August 2018, a modification (MOD 1) was approved to allow for the importation of clean fill to the Lidsdale Ash Repository (formerly known as the Wallerawang Ash Repository) from off-site sources for capping of the area.

In October 2023, a second modification (MOD 2) was approved to extend the timeframe permitting the importation of capping materials to the two dams associated with the Lidsdale Ash Repositories.

Project Approval 07_0005 contains a number of Conditions of Approval (CoA) that need to be complied with by GPM NSW. CoA 6.4 of Project Approval 07_0005 requires an OEMP be developed prior to the commencement of operations at the site. This document has been prepared as an update to the original OEMP (2018) as part of ongoing compliance management with respect to CoA 6.4.

A team of contractors have been engaged by GPM to support GPM's care and maintenance activities and management of ongoing regulatory and contractual obligations associated with the Lidsdale Ash Repository site. Relevant terms and conditions stipulated in the contractual arrangement between the Contractor(s) and GPM have been considered in the development of this OEMP to ensure consistency.



- KEY**
- Site boundary
 - VMP – Declaration Area Boundary
 - Licenced discharge point
 - 2018 proposed asbestos disposal area
 - Demolition landfill south of SSCAD
 - Kerosene Vale ash repository
 - Lidsdale cut northern landfill
 - Lidsdale cut southern landfill
 - Lidsdale cut
 - Sawyers Swamp Creek ash dam
 - Southern EPL site
- Heritage items**
- National Heritage list
 - Heritage area (LEP)
- Existing environment**
- Rail line
 - Major road
 - Minor road
 - Watercourse/drainage line
 - Named waterbody
 - State forest
- INSET KEY**
- Major road
 - NPWS reserve
 - State forest

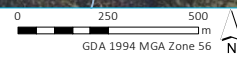
Site location and layout

Lidsdale Ash Repository
Operational Environmental Management Plan
Figure 1.1



\\lemm.local\ydrive\2020\200724 - Wallerawang Power Station Remediation\GIS\02 Maps\PS\IP9001_SiteLocation_20241126_07.mxd 29/11/2024

Source: EMM (2024); DFSI (2017); GA (2011); ASGC (2006); ESRI (2024); DPE (2017)



1.2 Construction and Operational Environmental Management Plans

CoA 6.4 requires the applicant to prepare and implement an Operational Environmental Management Plan (this document). This is a separate document to the CEMP that covers the routine operations of the site outside the specific construction activities identified in Section 1.2 of this Plan. As part of this OEMP, CoA 6.5 requires the preparation and implementation of the following plans:

- Operational Noise Management Plan (CNMP)
- Operational Groundwater Management Plan (OGWMP)
- Operational Surface Water Management Plan (OSWMP)
- Operational Air Quality Management Plan (OAQMP)
- Operational Landscape/Revegetation Management Plan (OLRMP)
- Operational Transport Management Plan (OTMP).

These plans are included as sub-plans to the OEMP.

CoA 6.2 requires the applicant to develop a construction environmental management plan (CEMP) that outlines the environmental management practices and procedures to be followed during construction, CoA 6.3 requires the preparation and implementation of the following plans as part of the CEMP:

- Construction Traffic Management Plan (CTMP)
- Construction Noise Management Plan (CNMP)
- Construction Erosion and Sediment Control Plan (CESCP).

Table 1.1 provides a high-level overview of the proposed activities that are covered by the OEMP and CEMP. Further information on the scope of this OEMP is provided in Section 1.3.

Table 1.1 Activities covered by the CEMP and OEMP

Environmental Management Plan	Activities covered
OEMP – care and maintenance operations	<ul style="list-style-type: none">• ash management• management of on-site water systems• capping material haulage, placement and management• landscaping and revegetation/rehabilitation of the site• upgrading and maintaining internal access roads in the project area

Environmental Management Plan	Activities covered
CEMP – construction activities	<ul style="list-style-type: none"> • Sawyers Swamp Creek realignment • construction of stability berms around the perimeter of the KVAR • excavation of the former pine plantation area • sediment controls and surface water dams associated with construction of the KVAR stability berm and realignment of the Sawyers Swamp Creek • establishment of freshwater collection ponds and diversion pipes/drains on the northern edges of SSCAD • rearrangement of water flows around the KVAR • establishment of access roads onto the surface of the SSCAD and associated roads across the dam surface • reinstatement of environmental controls for historic landfill areas including capping of slumped areas, reprofiling for water management and control of sediment runoff during these activities • concurrent construction activities.

1.3 Scope of OEMP

The scope of the OEMP covers all care and maintenance operations (as defined in Schedule 2 of Project Approval (PA) 07_0005) including:

- ash management including capping and stabilisation of historically placed ash materials across the site
- management of on-site water systems including water containment ponds, sediment dams, leachate ponds, stormwater control structures, SSCAD (including spillway and dam wall management) and water treatment plants and EPL discharge pond (LDP3) and associated pipework, pumps and culverts
- landscaping and revegetation/rehabilitation of the site, including weed management, fire control, slashing and hydromulch application
- upgrading and maintaining internal access roads in the project area including wheel wash facility, road cleaning, rumble grids and intersections.

This OEMP reflects the current care and maintenance activities at Lidsdale Ash Repository to satisfy the following requirements:

- relevant Conditions of Approval as stipulated in the Project Approval (PA) 07_0005 as modified (MOD2)
- relevant commitments as stipulated in the Statement of Commitments provided as part of the Submissions Report for the Project Approval
- requirements of the declared dam under the NSW [Dams Safety Act 2015 No 26](#) for SSCAD
- the requirements of the declaration area and voluntary management plan (VMP) under the *Contaminated Land Management Act 1997* (CLM Act)
- clauses and conditions of EPL 21185.

1.4 Objectives of OEMP

The objectives of this OEMP are:

- to provide a framework demonstrating GPM's commitment to conduct its activities in a manner that minimises impacts to the physical, biological, cultural and social environment
- to evaluate potential environmental impacts of the Lidsdale Ash Repository area and to ensure such impacts are minimised or avoided where practical
- to ensure that all GPM's employees and contractors involved in the Lidsdale Ash Repository activities are aware of their environmental responsibilities and are proactive in their approach to environmental management
- to comply with relevant legislative requirements.

Under the contractual arrangements for the Lidsdale Ash Repository area, all companies, contractors and sub-contractors undertaking work on the site must comply with this OEMP.

1.5 Structure of OEMP

The structure of the OEMP has been developed to be consistent with the elements of AS/NZA ISO 14001 as well as complying with the general requirements and objectives stipulated within the *Guideline for the Preparation of Environmental Management Plans* (DIPNR 2004).

The OEMP comprises the following sections:

- **Section 1** – describes the Lidsdale Ash Repository background, the OEMP purpose and format, and lists the key reference documents surrounding the OEMP
- **Section 2** – describes the key operational activities
- **Section 3** – establishes the environmental management framework for implementing the OEMP including roles and responsibilities for managing operations and adhering to environmental regulations
- **Section 4** – describes the environmental controls applicable to the Lidsdale Ash Repository, including:
 - a summary of statutory approval requirements and associated environmental legislation and regulations
 - an outline of the risk assessment undertaken
 - a summary of the Lidsdale Ash Repository's environmental aspects, impacts and associated mitigation measures outlined in the relevant sub-plans
- **Section 5** – addresses environmental monitoring specifications and responsibilities
- **Section 6** – outlines the implementation framework through the management sub-plans and the associated environmental targets and key indicators
- **Appendix A** – site inspection checklist
- **Appendix B** – complaints register

- **Appendix C** – Operational Noise Management Plan
- **Appendix D** – Operational Groundwater Management Plan
- **Appendix E** – Operational Surface Water Management Plan
- **Appendix F** – Operational Air Quality Management Plan
- **Appendix G** – Operational Landscape/Revegetation Management Plan
- **Appendix H** – Operational Transport Management Plan.

1.6 Reference documents

The OEMP incorporates the obligations and criteria outlined in the following documents:

- Project Approval 07_0005 (NSW Department of Planning)
 - Submission Report – Statement of Commitments (Parsons Brinckerhoff 2008)
- Modification application 07_0005 Mod 1
- Wallerawang Power Station Submissions Report (EA 2018)
- Modification application 07_0005 Mod 2
- Environment Protection Licence 21185
- Approved REF 2002 for the KVAR Stage 1 works
- Three Development Applications for the asbestos containing materials disposal areas within the site
- Works Approval under *Water Management Act 2000*.

1.7 Endorsement and approval

1.7.1 Internal approval of OEMP and Sub-plans

The OEMP and associated sub-plans, strategies and monitoring programs undergo ongoing review by the GPM team. Following the ongoing review and revision process, internal signoff will be provided.

Once internal approval is received, the documents will be provided to DPHI and the ER for review prior to undertaking external consultation, review and approval processes described below.

1.7.2 External endorsement and approval of OEMP and sub-plans

Table 1.2 below provides a summary of the relevant authority(s), Council and agencies that require consultation during preparation of the OEMP sub-plans and monitoring programs in accordance with the CoAs.

External distribution for consultation and approval of the OEMP, sub-plans and monitoring programs will be undertaken and updated in consultation with the relevant external parties (refer Table 1.2) and will then be endorsed by the ER in accordance with CoA 6.4 and 6.5. After this external consultation and endorsement process is complete the required documents will be submitted to the Secretary for approval.

Table 1.2 Relevant bodies requiring consultation

Report	Relevant CoA	Condition of Approval	Consultation required
Operational Environmental Management Plan	6.4	The plan shall be submitted for the approval of the Secretary no later than four weeks prior to the commencement of operation of the project, unless otherwise agreed by the Secretary.	Secretary (DPHI)
Operational Noise Management plan	6.5a	The plan shall be prepared in consultation with, and to the satisfaction of, the EPA.	EPA
Operational Groundwater Management Plan	6.5b	The plan shall be prepared in consultation with, and to the satisfaction of, WaterNSW.	WaterNSW
Operational Surface Water Management Plan	6.5c	The plan shall be based on best environmental practice and shall be prepared in consultation with, and to the satisfaction of, WaterNSW and Fisheries NSW.	WaterNSW Fisheries NSW
Operational Air Quality Management Plan	6.5d	The plan shall be prepared in consultation with, and to the satisfaction of, the EPA.	EPA
Operational Transport Management Plan	6.5f	The plan must be prepared in consultation with TfNSW and Council.	TfNSW Lithgow Council

1.8 Conditions of approval

A summary of the CoA relevant to the OEMP and where they have been addressed is provided in Table 1.3.

Table 1.3 CoA requirements for OEMP

CoA number	Requirement	Relevant OEMP Section
2.8	Operational activities associated with the project shall only be undertaken from 7:00 am to 10:00 pm Monday to Sunday.	2.4 - Hours of operation
2.9	Within six months of commencement of operation of the project the Applicant shall prepare and submit to the Secretary a review of the logistical arrangements for ash haulage and placement to determine the feasibility of reducing the hours of operation. If, as a result of the review, it is determined that ash haulage and placement times can commence later and/or finish earlier, the Applicant shall aim to observe the reduced hours whenever possible.	2.2 - Extent of historical ash placement 2.3.1 - Ash Delivery

CoA number	Requirement	Relevant OEMP Section
2.10	<p>Operations outside the hours stipulated in condition 2.8 of this approval are only permitted in the following emergency situations:</p> <ul style="list-style-type: none"> a) where it is required to avoid the loss of lives, property and/or to prevent environmental harm; or b) breakdown of plant and/or equipment at the repository or the Wallerawang Power Station with the effect of limiting or preventing ash storage at the power station outside the operating hours defined in condition 2.8; or c) a breakdown of an ash haulage truck(s) preventing haulage during the operating hours stipulated in condition 2.8 combined with insufficient storage capacity at the Wallerawang Power Station to store ash outside of the project operating hours; or d) in the event that the National Electricity Market Management Company (NEMMCO), or a person authorised by NEMMCO, directs the Applicant (as a licensee) under the National Electricity Rules to maintain, increase or be available to increase power generation for system security and there is insufficient ash storage capacity at the Wallerawang Power Station to allow for the ash to be stored. <p>In the event of conditions 2.10b) or 2.10c) arising, the Applicant is to take all reasonable and feasible measures to repair the breakdown in the shortest time possible.</p>	2.4.2 - Abnormal or emergency operation conditions
2.11	<p>In the event that an emergency situation as referred to under condition 2.10b) or 2.10c) occurs more than once in any two month period, the Applicant shall prepare and submit to the Secretary for approval a report including, but not limited to:</p> <ul style="list-style-type: none"> a) the dates and a description of the emergency situations; b) an assessment of all reasonable and feasible mitigation measures to avoid recurrence of the emergency situations; c) identification of a preferred mitigation measure(s); and d) timing and responsibility for implementation of the mitigation measure(s). <p>The report is to be submitted to the Secretary within 60 days of the second exceedance occurring. The Applicant shall implement all reasonable and feasible mitigation measures in accordance with the requirements of the Secretary.</p>	2.4.2 - Abnormal or emergency operation conditions
2.12	<p>The Applicant shall notify the EPA prior to undertaking any emergency ash haulage or placement operations outside of the hours of operation stipulated in condition 2.8 of this approval and keep a log of such operations.</p>	2.4.2 - Abnormal or emergency operation conditions
2.13	<p>The Applicant shall notify the Secretary in writing within seven days of undertaking any emergency ash haulage or placement operations outside of the hours of operation stipulated in condition 2.8 of this approval.</p>	2.4.2 - Abnormal or emergency operation conditions
2.14	<p>The Applicant shall notify nearby sensitive receivers (as defined in the Operational Noise Management Plan required under condition 6.5a) of this approval) prior to 8:00 pm where it is known that emergency ash haulage or placement operations will be required outside of the hours of operation stipulated in condition 2.8 of this approval.</p>	2.4.2 - Abnormal or emergency operation conditions
2.15	<p>The cumulative operational noise from the ash placement area and ash haulage activity shall not exceed an L_{Aeq} (15 minute) of 40 dB(A) at the nearest most affected sensitive receiver during normal operating hours as defined in condition 2.8 of this approval.</p> <p>This noise criterion applies under the following meteorological conditions:</p> <ul style="list-style-type: none"> a) wind speeds up to 3 m/s at 10 metres above ground; and/or b) temperature inversion conditions of up to 3°C/100 m and source to receiver gradient winds of up to 2 m/s at 10 m above ground level. <p>This criterion does not apply where the Applicant and the affected landowner have reached a negotiated agreement in regard to noise, and a copy of the agreement has been forwarded to the Secretary and the EPA.</p>	Appendix C Operational Noise Management Plan

CoA number	Requirement	Relevant OEMP Section
2.16	The Applicant shall implement measures to ensure noise attenuation of trucks. These measures may include, but are not necessarily limited to, installation of residential class mufflers, engine shrouds, body dampening, speed limiting, fitting of rubber stoppers to tail gates, limiting the use of compression braking, and ensuring trucks operate in a one-way system at the ash repository where feasible.	Appendix C Operational Noise Management Plan
2.17	The Applicant shall liaise with the owner/operator of Angus Place Coal Mine with the aim of preparing a protocol which provides for a co-operative approach for the management and mitigation of noise impacts associated with coal and ash truck movements along the private haul road.	Appendix C Operational Noise Management Plan
2.18	<p>Where noise monitoring (as required by conditions 3.2 or 3.3 of this approval) identifies any non-compliance with the operational noise criterion specified under condition 2.15 of this approval the Applicant shall prepare and submit to the Secretary for approval a report including, but not limited to:</p> <ul style="list-style-type: none"> a) an assessment of all reasonable and feasible physical and other mitigation measures for reducing noise at the source including, but not limited to – <ul style="list-style-type: none"> i) construction of a noise barrier along the haulage road, ii) alternative ash haulage routes, and iii) alternative methods of ash conveyance to the repository; and b) identification of the preferred measure(s) for reducing noise at the source; c) feedback from directly affected property owners and the EPA on the proposed noise mitigation measures; and d) location, type, timing and responsibility for implementation of the noise mitigation measure(s). <p>The report is to be submitted to the Secretary within 60 days of undertaking the noise monitoring which has identified exceedances of the operational noise criterion specified under condition 2.15, unless otherwise agreed to by the Secretary. The Applicant shall implement all reasonable and feasible mitigation measures in accordance with the requirements of the Secretary.</p>	Appendix C Operational Noise Management Plan
2.19	<p>If, after the implementation of all reasonable and feasible source controls, as identified in the report required by condition 2.18, the noise generated by the project exceeds the criterion stipulated in condition 2.15 at:</p> <ul style="list-style-type: none"> a) any sensitive receiver in existence at the date of this approval; or b) any residential dwelling for which an approval has been sought or obtained under the Environmental Planning and Assessment Act 1979 no later than six months after the confirmation of operational noise levels; upon receiving a written request from an affected landowner (unless that landowner has acquisition rights under condition 2.20 of this approval and has requested acquisition) the Applicant shall implement additional noise mitigation measures such as double glazing, insulation, air conditioning and or other building acoustic treatments at any residence on the land, in consultation with the landowner. <p>For the purpose of this condition and condition 2.20, confirmation of operational noise levels means:</p> <ul style="list-style-type: none"> a) completion of the operational noise review required under condition 3.2 of this approval; and b) implementation of any source controls, as required under condition 2.18 of this approval, should the operational noise review indicate noise levels in excess of the operational noise criterion specified in condition 2.15; and c) monitoring of operational noise levels, as required under condition 3.3b) of this approval, following the implementation of any source controls. <p>The additional mitigation measures must be reasonable and feasible. If within three months of receiving this request from the landowner the Applicant and landowner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Director-General for resolution, whose decision shall be final.</p>	Appendix C Operational Noise Management Plan

CoA number	Requirement	Relevant OEMP Section
2.20	<p>If, after the implementation of all reasonable and feasible source controls, as identified in the report required by condition 2.18, the noise generated by the project exceeds the criterion stipulated in condition 2.15 by more than 5 dB(A):</p> <ul style="list-style-type: none"> a) at a sensitive receiver in existence at the date of this approval; or b) at any residential dwelling for which an approval has been sought or obtained under the <i>Environmental Planning and Assessment Act 1979</i> prior to the landholder receiving written notification that they are entitled to land acquisition rights, as per condition 2.25 of this approval; or c) over 25% or more of the area of a vacant allotment in existence at the date of this approval, and where a dwelling is permissible under the <i>Environmental Planning and Assessment Act 1979</i> at that date, with the exception of land that is currently used for industrial or mining purposes; <p>the Applicant shall, upon receiving a written request for acquisition from the landowner, acquire the land in accordance with the procedures in conditions 2.22 to 2.24 of this approval. Any landowner that has agreed to, or property that has been the subject of, the application of additional noise mitigation measures under condition 2.19 of this approval waives the right to land acquisition.</p>	Appendix C Operational Noise Management Plan
2.21	<p>The land acquisition rights under condition 2.20 of this approval do not apply to landowners who have sought approval to subdivide their land after the date of this approval, unless the subdivision is created pursuant to condition 2.24 of this approval.</p>	Appendix C Operational Noise Management Plan

CoA number	Requirement	Relevant OEMP Section
2.22	<p>Within three months of receiving a written request from a landowner with acquisition rights under condition 2.20 of this approval, the Applicant shall make a binding written offer to the landowner based on:</p> <ul style="list-style-type: none"> a) the current market value of the landowner's interest in the property at the date of this written request, as if the property was unaffected by the project which is the subject of the project application, having regard to the: <ul style="list-style-type: none"> i) existing and permissible use of the land, in accordance with the applicable planning instruments at the date of the written request; and ii) presence of improvements on the property and/or any approved building or structure which has been physically commenced at the date of the landowner's written request, and is due to be completed subsequent to that date, but excluding any improvements that have resulted from the implementation of condition 2.19 of this approval; b) the reasonable costs associated with: <ul style="list-style-type: none"> i) relocating within the Lithgow local government area, or to any other local government area determined by the Secretary; ii) obtaining legal advice and expert advice for determining the acquisition price of the land, and the terms upon which it is required; and c) reasonable compensation for any disturbance caused by the land acquisition process. <p>However, if at the end of this period, the Applicant and landowner cannot agree on the acquisition price of the land, and/or the terms upon which the land is to be acquired, then either party may refer the matter to the Secretary for resolution.</p> <p>Upon receiving such a request, the Secretary shall request the President of the NSW Division of the Australian Property Institute to appoint a qualified independent valuer or Fellow of the Institute, to consider submissions from both parties, and determine a fair and reasonable acquisition price for the land, and/or terms upon which the land is to be acquired.</p> <p>Within 14 days of receiving the independent valuer's determination, the Applicant shall make a written offer to purchase the land at a price not less than the independent valuer's determination.</p> <p>If the landowner refuses to accept this offer within six months of the date of the Applicant's offer, the Applicant's obligations to acquire the land shall cease, unless otherwise agreed by the Secretary.</p>	Appendix C Operational Noise Management Plan
2.23	The Applicant shall bear the costs of any valuation or survey assessment requested by the independent valuer or the Secretary and the costs of determination referred to above.	Appendix C Operational Noise Management Plan
2.24	If the Applicant and landowner agree that only part of the land shall be acquired, then the Applicant shall pay all reasonable costs associated with obtaining Council approval for any plan of subdivision (where permissible), and registration of the plan at the Office of the Registrar-General.	Appendix C Operational Noise Management Plan
2.25	The Applicant shall provide written notice to all landowners that are entitled to rights under conditions 2.19 and 2.20 within 21 days of determining the landholdings where additional noise mitigation measures or land acquisition apply. For the purpose of condition 2.20b), this condition only applies where operational noise levels have been confirmed in accordance with the definition in condition 2.19.	Appendix C Operational Noise Management Plan
2.30	The Applicant shall take all reasonable and feasible measures to prevent discharge of sediments and pollutants from the construction and operation of the project entering waterways.	Appendix E Surface Water Management Plan
2.32	All equipment, machinery and vehicles associated with the construction and operation of the project shall be operated and maintained in a manner that minimises the potential for oil and grease spills/leaks.	Appendix E Surface Water Management Plan

CoA number	Requirement	Relevant OEMP Section
2.33	The Applicant shall construct and operate the project in a manner that minimises dust impacts generated by construction works and operational activities, including wind-blown and traffic-generated dust, on the receiving environment. All activities on the site shall be undertaken with the objective of preventing visible emissions of dust from the site. Should such visible dust emissions occur at any time, the Applicant shall identify and implement all practicable dust mitigation measures, including cessation of relevant works, as appropriate, such that emissions of visible dust cease.	Appendix F Air Quality Management Plan
2.34	The Applicant shall ensure that the load carrying compartment(s) of all ash haulage trucks are covered at all times except when loading or unloading ash material.	This CoA is not applicable as there is no longer ash haulage associated with the project.
2.35	The Applicant shall take all practicable measures to mitigate off-site lighting impacts from the project and ensure all external lighting associated with the project complies with <i>Australian Standard AS4282 1997 – Control of the Obtrusive Effects of Outdoor Lighting</i> .	4.1.4 - Relevant legislation, regulations and guidelines
2.36	The Applicant shall ensure that construction vehicles associated with the project: <ul style="list-style-type: none"> a) minimise the use of local roads (though residential streets and town centres) to gain access to the site; b) adhere to any nominated haulage routes identified in the Construction Traffic Management Plan as referred to in condition 6.3a) of this approval; and c) adhere to a Construction Vehicle Code of Conduct prepared to manage driver behaviour along the local road network to address traffic impacts (and associated noise) along nominated haulage routes. 	Appendix H Operational Transport Management Plan 2.3.2 - Capping material delivery
2.36A	The Applicant must: <ul style="list-style-type: none"> a) not import more than 100 heavy vehicle loads of capping material to the site per day; b) cover all heavy vehicle loads of capping material; c) not transport capping material on local roads in the Lithgow local government area; d) notify the Department before commencing the importation of capping material from sources outside of the Lithgow local government area; and (e) not import capping material to the site for more than 10 years following the date of approval of Modification application 07_0005 Mod 2. 	Appendix H Operational Transport Management Plan 2.3.2 - Capping material delivery
2.36B	The Applicant must implement warning signage on the Castlereagh Highway on the approaches to the Castlereagh Highway/Wallerawang Power Station Haul Road intersection prior to importing capping material to the site from sources outside of the Lithgow local government area to the satisfaction of TfNSW.	Appendix H Operational Transport Management Plan
2.37	The Applicant shall ensure that all construction personnel are educated on their obligations in respect of the protection of Aboriginal and non-indigenous heritage sites and items.	3.5 - Environment awareness training and site inductions
2.38	If any previously unidentified heritage sites or items (Aboriginal and/or non-indigenous) are discovered during construction works or operational activities, all work likely to affect the heritage sites or item(s) is to cease immediately and the discovery of the objects shall be reported to Heritage NSW or the Department as relevant.	4.1.4 - Relevant legislation, regulations and guidelines
2.39	All waste materials shall be assessed, classified, managed and disposed of in accordance with the EPA's <i>Waste Classification Guidelines</i> (or its latest version).	6.2.1 Waste management sub-plan
2.40	All waste materials removed from the site shall only be directed to a waste management facility lawfully permitted to accept the materials.	6.2.1 Waste management sub-plan

CoA number	Requirement	Relevant OEMP Section
2.41	<p>The Applicant shall not cause, permit or allow any waste generated outside the site to be received at the site for storage, treatment, processing, reprocessing, or disposal on the site, except as expressly permitted by a licence under the <i>Protection of the Environment Operations Act 1997</i>, if such a licence is required in relation to that waste.</p>	6.2.1 Waste management sub-plan
3.2	<p>Within 60 days of the commencement of operation of the project, unless otherwise agreed to by the Director-General, the Applicant shall submit for the approval of the Secretary an Operational Noise Review to confirm the operational noise impacts of the project. The Operational Noise Review must be prepared in consultation with, and to the satisfaction of, the EPA. The Review shall:</p> <ul style="list-style-type: none"> a) identify the appropriate operational noise objectives and level for sensitive receivers; b) describe the methodologies for noise monitoring including the frequency of measurements and location of monitoring sites; c) document the operational noise levels at sensitive receivers as ascertained by the noise monitoring program; d) assess the noise performance of the project against the noise criterion specified in condition 2.15 of this approval and the predicted noise levels as detailed in the report referred to under condition 1.1 of this approval; and e) provide details of any entries in the Complaints Register (as required under condition 5.4 of this approval) relating to noise impacts. <p>Where monitoring indicates noise levels in excess of the operational noise criterion specified in condition 2.15 of this approval, the Applicant shall prepare a report as required by condition 2.18 of this approval.</p>	Appendix C Operational Noise Management Plan
3.3	<p>The Applicant shall prepare and implement an Operational Noise Monitoring Program to assess compliance against the operational noise criterion stipulated in condition 2.15 of this approval, throughout the life of the project. The noise monitoring program shall be prepared in consultation with, and to the satisfaction of, the EPA.</p> <p>The noise monitoring program shall be prepared in accordance with the requirements of the <i>NSW Noise Policy for Industry</i> (EPA, 2017) (or its latest version) and must include, but not be limited to:</p> <ul style="list-style-type: none"> a) monitoring during ash placement in the far western area of the site adjacent to the haul road; and b) monitoring of the effectiveness of any noise mitigation measures implemented under condition 2.18 of this approval, against the noise criterion specified in condition 2.15 of this approval. <p>Noise from the project is to be measured at the most affected point on or within the residential boundary, or at the most affected point within 30 metres of a dwelling where the dwelling is more than 30 metres from the boundary, to determine compliance with the noise criterion stipulated in condition 2.15 of this approval. Where it can be demonstrated that direct measurement of noise from the project is impractical, the EPA may accept alternative means of determining compliance and the modifying factors shall also be applied to the measured noise levels where applicable in accordance with the <i>NSW Noise Policy for Industry</i> (EPA, 2017) (or its latest version).</p> <p>The Applicant shall forward to the EPA and the Secretary a report containing the results of any non-compliance within 14 days of conducting a noise assessment.</p> <p>Where monitoring indicates noise levels in excess of the operational noise criterion specified in condition 2.15 of this approval, approval, the Applicant shall prepare a report as required by condition 2.18 of this approval.</p> <p>The monitoring program shall form part of the Operational Noise Management Plan referred to in condition 6.5a) of this approval.</p>	Appendix C Operational Noise Management Plan

CoA number	Requirement	Relevant OEMP Section
3.4	<p>The Applicant shall prepare and implement a Groundwater Monitoring Program to monitor the impacts of ash placement activities on local groundwater quality and hydrology. The Program shall be developed in consultation with, and to the satisfaction of, WaterNSW, and shall describe the location, frequency, rationale and procedures and protocols for collecting groundwater samples as well as the parameters analysed and methods of analysis. The monitoring program shall be ongoing for the life of the project and include, but not be limited to:</p> <ul style="list-style-type: none"> a) monitoring at established bore sites (or replacement bore sites in the event that existing sites are damaged or lost) as described in the document referred to under condition 1.1 of this approval; and b) a schedule for periodic monitoring of groundwater quality, depth and flow at all monitoring sites, at an initial frequency of no less than once every month for the first 12 months of operation. <p>The monitoring program shall form part of the Groundwater Management Plan referred to in condition 6.5b) of this approval.</p>	Appendix D Operational Groundwater Management Plan
3.5	<p>The Applicant is to implement a surface water quality monitoring program to monitor the impacts of the ash placement activities on, and the realignment of, Sawyers Swamp Creek. The Program shall be developed in consultation with and to the satisfaction of Fisheries NSW and WaterNSW, and shall describe the location, frequency, rationale and the procedures and protocols for collecting water samples as well as the parameters analysed and methods of analysis. The program shall include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> a) monitoring at the four existing water quality monitoring sites as described in the document referred to under condition 1.1 of this approval; b) monitoring downstream of the realigned section of Sawyers Swamp Creek; c) monitoring at groundwater discharge points into Sawyers Swamp Creek; d) wet weather monitoring with a minimum of two events recorded within the first 12 months of both the operation of the project and post realignment of Sawyers Swamp Creek; and e) a schedule for periodic monitoring of surface quality at all sites throughout the life of the project, at an initial frequency of no less than once every month for the first 12 months and must include, but not be limited to, dissolved oxygen, turbidity, total phosphorus and total nitrogen. f) The monitoring program shall form part of the Surface Water Management Plan referred to in condition 6.5c) of this approval. 	Appendix E Surface Water Management Plan
3.8	<p>The Applicant shall prepare an Air Quality Monitoring Program, in consultation with, and to the satisfaction of, the EPA. The Program shall include, but not necessarily be limited to, monitoring for dust at the monitoring sites identified in the document referred to under condition 1.1 of this approval. The air quality monitoring program shall be ongoing for the life of the project, including final rehabilitation and stabilisation of the site.</p> <p>The monitoring program shall form part of the Air Quality Management Plan referred to in condition 6.5d) of this approval.</p>	Appendix F Air Quality Management Plan
4.1	<p>Prior to each of the events listed below, the Applicant shall certify in writing to the satisfaction of the Secretary that it has complied with all conditions of this approval applicable prior to that event:</p> <ul style="list-style-type: none"> a) commencement of any construction works on the land subject of this approval; and b) commencement of operation of the project. 	3.7- Compliance tracking program

CoA number	Requirement	Relevant OEMP Section
4.2	<p>The Applicant shall develop and implement a Compliance Tracking Program for the project, prior to commencing operations, to track compliance with the requirements of this approval and shall include, but not necessarily limited to:</p> <ul style="list-style-type: none"> a) provisions for periodic review of the compliance status of the project against the requirements of this approval and the Statement of Commitments detailed in the document referred to in condition 1.1c) of this approval b) provisions for periodic reporting of the compliance status to the Secretary c) a program for independent environmental auditing in accordance with the Independent Audit Post Approval Requirements (NSW Government 2020) d) procedures for rectifying any non-compliance identified during environmental auditing or review of compliance e) mechanisms for recording incidents and actions taken in response to those incidents f) provisions for reporting incidents to the Secretary during construction and operation g) provisions for ensuring all employees, contractors and sub-contractors are aware of, and comply with, the conditions of this approval relevant to their respective activities. <p>The Compliance Tracking Program shall be implemented prior to operation of the project with a copy submitted to the Secretary for approval within four weeks of commencement of the project, unless otherwise agreed by the Secretary.</p>	3.7 - Compliance tracking program
5.1	<p>Prior to the commencement of the project, the Applicant shall establish and maintain a website for the provision of electronic information associated with the project. The Applicant shall, subject to confidentiality, publish and maintain up-to-date information on this website or dedicated pages including, but not necessarily limited to:</p> <ul style="list-style-type: none"> a) the documents referred to under condition 1.1 of this approval b) this project approval, Environment Protection Licence and any other relevant environmental approval, licence or permit required and obtained in relation to the project c) all strategies, plans and programs required under this project approval, or details of where this information can be viewed d) information on construction and operational progress e) the outcomes of compliance tracking in accordance with the requirements of this project approval. 	3.4.3 - Community and stakeholder communications
5.2	<p>The Applicant shall make all documents required to be provided under condition 5.1 of this approval publicly available.</p>	3.4.3 - Community and stakeholder communications
5.3	<p>Prior to the commencement of the project, the Applicant shall ensure that the following are available for community complaints and enquiries during construction and operation:</p> <ul style="list-style-type: none"> a) a 24-hour contact number(s) on which complaints and enquiries about construction and operational activities may be registered b) a postal address to which written complaints and enquiries may be sent c) an email address to which electronic complaints and enquiries may be transmitted. <p>The telephone number, postal address and email address shall be published in a newspaper circulating in the local area prior to the commencement of the project. The above details shall also be provided on the website required by condition 5.1 of this approval.</p>	3.6 - Complaints management process

CoA number	Requirement	Relevant OEMP Section
5.4	<p>The Applicant shall record the details of all complaints received through the means listed under condition 5.3 of this approval in an up-to-date Complaints Register. The Register shall record, but not necessarily be limited to:</p> <ul style="list-style-type: none"> a) the date and time of the complaint b) the means by which the complaint was made (e.g. telephone, email, mail, in person) c) any personal details of the complainant that were provided, or if no details were provided a note to that effect d) the nature of the complaint e) the time taken to respond to the complaint f) any investigations and actions taken by the Applicant in relation to the complaint g) any follow-up contact with, and feedback from, the complainant h) if no action was taken by the Applicant in relation to the complaint, the reason(s) why no action was taken. <p>The Complaints Register shall be made available for inspection by the Secretary upon request.</p>	3.6 - Complaints management process
6.1	<p>Prior to the commencement of any construction or operational activities, or as otherwise agreed by the Secretary, the Applicant shall nominate for the approval of the Secretary a suitably qualified and experienced Environmental Representative(s) independent of the design, construction and operation personnel. The Applicant shall engage the Environmental Representative(s) during any construction activities, and throughout the life of the project, or as otherwise agreed by the Secretary. The Environmental Representative(s) shall:</p> <ul style="list-style-type: none"> a) oversee the implementation of all environmental management plans and monitoring programs required under this approval, and advise the Applicant upon the achievement of these plans/programs b) have responsibility for considering and advising the Applicant on matters specified in the conditions of this approval and the Statement of Commitments in the EA c) oversee the implementation of the environmental auditing of the project in accordance with the requirements of condition 4.2 of this approval and all relevant project Environmental Management System(s) d) be given the authority and independence to recommend to the Applicant reasonable steps to be taken to avoid or minimise unintended or adverse environmental impacts, and, failing the effectiveness of such steps, to recommend to the Applicant that relevant activities are to be ceased as soon as reasonably practicable if there is a significant risk that an adverse impact on the environment will be likely to occur. 	3.7.1 – Environmental inspections
6.4	<p>The Applicant shall prepare and implement an Operational Environmental Management Plan to detail an environmental management framework, practices and procedures to be followed during operation of the project. The Plan shall be consistent with Guideline for the Preparation of Environmental Management Plans (DIPNR 2004) and shall include, but not necessarily be limited to:</p>	1.5 – Structure of OEMP
	<ul style="list-style-type: none"> a) identification of all statutory and other obligations that the Applicant is required to fulfil in relation to operation of the project, including all approvals, licences, approvals and consultations 	4.1 – Statutory requirements
	<ul style="list-style-type: none"> b) a description of the roles and responsibilities for all relevant employees (including contractors) involved in the operation of the project 	3.3 – Environmental roles and responsibilities
	<ul style="list-style-type: none"> c) overall environmental policies and principles to be applied to the operation of the project 	4 – Environmental controls
	<ul style="list-style-type: none"> d) standards and performance measures to be applied to the project, and a means by which environmental performance can be periodically reviewed and improved, where appropriate 	Appendix A Site inspection checklist
	<ul style="list-style-type: none"> e) management policies to ensure that environmental performance goals are met and to comply with the conditions of this approval 	4 – Environmental controls

CoA number	Requirement	Relevant OEMP Section
	f) the additional plans listed under condition 6.5 of this approval	Appendix C to Appendix H
	g) the environmental monitoring requirements outlined under conditions 3.3 to 3.5 inclusive and 3.8 of this approval.	5 – Environmental monitoring
	<p>The Plan shall be submitted for the approval of the Secretary no later than four weeks prior to the commencement of operation of the project, unless otherwise agreed by the Secretary. Operation shall not commence until written approval has been received from the Secretary. Nothing in this approval precludes the Applicant from incorporating the requirements of the Operational Environmental Management Plan into existing environmental management systems and plans administered by the Applicant.</p>	-
6.5	<p>As part of the Operation Environmental Management Plan for the project, required under condition 6.4 of this approval, the Applicant shall prepare and implement the following Management Plans:</p>	-
	<p>a) an Operational Noise Management Plan to detail measures to mitigate and manage noise during operation of the project. The Plan shall be prepared in consultation with, and to the satisfaction of, the EPA and include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> i) procedures to ensure that all reasonable and feasible noise mitigation measures are applied during operation of the project; ii) identification of all relevant sensitive receivers and the applicable criteria at those receivers commensurate with the noise limit specified under condition 2.15 of this approval; iii) identification of activities that will be carried out in relation to the project and the associated noise sources; iv) noise monitoring procedures (as referred to in condition 3.3 of this approval) for periodic assessment of noise impacts at the relevant receivers against the noise limits specified under this approval and the predicted noise levels as detailed in the report referred to under condition 1.1 of this approval; v) details of all management methods and procedures that will be implemented to control individual and overall noise emissions from the site during operation; vi) procedures and corrective actions to be undertaken if non-compliance against the operational noise criteria is detected; and vii) provisions for periodic reporting of results to EPA. 	Appendix C Operational Noise Management Plan

CoA number	Requirement	Relevant OEMP Section
	<p>b) a Groundwater Management Plan to detail measures to mitigate and manage groundwater impacts. The Plan shall be prepared in consultation with, and to the satisfaction of, WaterNSW and include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> i) baseline data on groundwater quality, depth and flow in the project area ii) groundwater objectives and impact assessment criteria iii) a program to monitor groundwater flows and groundwater quality in the project area as required by condition 3.4 of this approval iv) a protocol for the investigation of identified exceedances of the groundwater impact assessment criteria v) a response plan to address potential exceedances and groundwater quality impacts vi) provisions for periodic reporting of results to WaterNSW. 	Appendix D Operational Groundwater Management Plan
	<p>c) a Surface Water Management Plan to outline measures that will be employed to manage water on the site, to minimise soil erosion and the discharge of sediments and other pollutants to lands and/or waters throughout the life of the project. The Plan shall be based on best environmental practice and shall be prepared in consultation with, and to the satisfaction of, WaterNSW and Fisheries NSW. The Plan shall include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> i) baseline data on the water quality and flow in Sawyers Swamp Creek up ii) to the date of this approval iii) water quality objectives and impact assessment criteria for Sawyers Swamp Creek iv) a program to monitor surface water quality in Sawyers Swamp Creek as referred to in condition 3.5 of this approval v) a protocol for the investigation of identified exceedances in the impact assessment criteria vi) a response plan to address potential adverse surface water quality exceedances vii) a site water management strategy identifying clean and dirty water areas for Stages A, B and C of the project and the associated water management measures including erosion and sediment controls and provisions for recycling/reuse of water and the procedures for decommissioning water management structures on the site viii) provisions for periodic reporting of results to the Fisheries NSW and WaterNSW. 	Appendix E Operational Surface Water Management Plan

CoA number	Requirement	Relevant OEMP Section
	<p>d) an Air Quality Management Plan to outline measures to minimise impacts from the project on local air quality. The Plan shall be prepared in consultation with, and to the satisfaction of, the EPA and include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> i) baseline data on dust deposition levels ii) air quality objectives and impact assessment criteria iii) an air quality monitoring program as referred to in condition 3.8 of this approval iv) an assessment of alternative methods of ash placement to minimise the exposure of active placement areas to prevailing winds v) mitigation measures to be incorporated during emplacement activities and haulage of ash vi) an operating protocol for the repository irrigation system including activation rates, application rates and area of coverage vii) a protocol for the investigation of visible emissions from the repository area viii) a response plan to address visible emissions from the repository area ix) provisions for periodic reporting of results to the EPA. 	Appendix F Operational Air Quality Management Plan
	<p>e) a Landscape/Revegetation Plan to outline measures to minimise the visual impacts of the repository and ensure the long-term stabilisation of the site and compatibility with the surrounding land fabric and land use. The Plan shall include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> i) identification of design objectives and standards based on local environmental values, vistas, and land uses ii) a description of short- and long-term revegetation measures iii) a schedule of species to be used in revegetation iv) timing and progressive implementation of revegetation works as placement areas are completed, including landscape plans v) procedures and methods to monitor and maintain revegetated areas during the establishment phase and long-term vi) Revegetation works must incorporate the use of local native species. 	Appendix G Operational Landscape/revegetation Plan

CoA number	Requirement	Relevant OEMP Section
	<p>f) an Operational Transport Management Plan for the project, which must:</p> <ul style="list-style-type: none"> i) be prepared in consultation with TfNSW and Council, prior to importing capping material from sources outside of the Lithgow local government area ii) detail the route to be used to transport capping material iii) detail the route to be used to transport capping material iv) detail the measures that would be implemented to minimise traffic safety issues for other road users (including cyclists), including: <ul style="list-style-type: none"> • notifying the community about project-related traffic impacts • procedure to address complaints about project-related traffic • minimising potential traffic conflicts with school buses and during local school drop-off and pick-up times • scheduling heavy vehicle movements to minimise convoy length or platoons • responding to local climate conditions that may affect road safety such as fog, dust, wet weather • responding to emergency repair or maintenance requirements; and vi) include a Driver Code of Conduct, which addresses: <ul style="list-style-type: none"> • travelling speeds • driver fatigue • adherence to the designated transport route • safe driving practices. 	Appendix H Operational Transport Management Plan
6.5A	<p>The Applicant shall update the Operation Environment Management Plan (as referred to in condition 6.4 of this approval) and associated monitoring programs (as referred to in conditions 3.4 to 3.8 inclusive) prior to the importation of capping material to the site from sources outside of the Lithgow local government area, to the satisfaction of the Secretary. The updated plan and associated monitoring programs must reflect all operational activities, monitoring and management practices for the Kerosene Vale Ash Dam and the Sawyers Swamp Creek Ash Dam.</p>	This occurred prior to September 2020.
6.6	<p>Within three months of:</p> <ul style="list-style-type: none"> a) the submission of an incident report under condition 7.1 b) the submission of an Annual Review under condition 7.3 c) the submission of an Independent Environmental Audit under condition 4.2) or d) the modification of the conditions of this approval (unless the conditions require otherwise) <p>the Applicant must review and, if necessary, revise the studies, strategies or plans required under the conditions of approval to the satisfaction of the Secretary.</p> <p>Where this review leads to revisions in any such document, then within 4 weeks of the review Non-Compliance Notification the revised document must be submitted to the Secretary for approval, unless otherwise agreed with the Secretary.</p> <p>Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the development.</p>	3.7.2 - Reporting
7.1	<p>The Secretary must be notified in writing via the Major Projects website immediately after the Applicant becomes aware of an incident. The notification must identify the development (including the application number and the name of the development if it has one) and set out the location and nature of the incident. Subsequent notification requirements must be given, and reports submitted in accordance with the requirements set out in Appendix 3.</p>	3.8- Environmental incident and non-compliance management

CoA number	Requirement	Relevant OEMP Section
7.2	<p>The Secretary must be notified in writing via the Major Projects website within seven days after the Applicant becomes aware of any non-compliance. A non-compliance notification must identify the development and the application number for it, set out the condition of approval that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.</p> <p><i>Note: A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.</i></p>	3.8.1- Non compliance
7.3	<p>The Applicant shall, throughout the life of the project, prepare and submit for the approval of the Secretary, an Annual Environmental Management Report (AEMR). The AEMR shall review the performance of the project against the Operation Environmental Management Plan (refer to condition 6.4 of this approval) and the conditions of this approval. The AEMR shall include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> a) details of compliance with the conditions of this approval; b) a copy of the Complaints Register (refer to condition 5.4 of this approval) for the preceding twelve-month period (exclusive of personal details), and details of how these complaints were addressed and resolved; c) identification of any circumstances in which the environmental impacts and performance of the project during the year have not been generally consistent with the environmental impacts and performance predicted in the documents listed under condition 1.1 of this approval, with details of additional mitigation measures applied to the project to address recurrence of these circumstances; d) results of all environmental monitoring required under conditions 3.3 to 3.8 of this approval, including interpretations and discussion by a suitably qualified person; and e) a list of all occasions in the preceding twelve-month period when environmental goals/objectives/impact assessment criteria for the project have not been achieved, indicating the reason for failure to meet the criteria and the action taken to prevent recurrence of that type of failure. <p>The Applicant shall submit a copy of the AEMR to the Secretary every year, with the first AEMR to be submitted no later than twelve months after the commencement of operation of the project. The Secretary may require the Applicant to address certain matters in relation to the environmental performance of the project in response to review of the Annual Environmental Report. Any action required to be undertaken shall be completed within such period as the Secretary may require. The Applicant shall make copies of each AEMR available for public inspection on request.</p>	3.7.2 - Reporting

2 Operational activities

This section provides an overview of the extent of activities relating to the Lidsdale Ash Repository operation, including the likely methods and procedures that will be used by GPM, its contractors, and associated consultants. These environmental aspects have been used as the basis for developing the management and control strategies contained in this OEMP.

2.1 Overview

The WPS is now closed and substantially demolished, however the operational activities for the Lidsdale Ash Repository will continue to ensure compliance with approval conditions is maintained until the site is rehabilitated and permanently closed. Environmental studies and investigations are currently underway to support GPM's safe decommissioning, demolition, rehabilitation and management of ongoing regulatory and contractual obligations associated with the Lidsdale Ash Repository area.

Activities will continue to be undertaken in a manner that is consistent with the relevant provisions of the Project Approval (07_0005), and associated approval documents and EPL 21185, and as such will be monitored regularly to ensure compliance. The management of the groundwater, surface water and landscape aspects of the Lidsdale Ash Repository will also be under constant review and monitoring to provide all stakeholders assurance that the environmental impacts have been recognised and continue to be managed appropriately.

2.2 Extent of historical ash placement

Ash from WPS has been placed within the site since the 1950s. Prior to this other coal mining activities in the early 1940s and before were conducted in the site area as part of various mining operations associated with Kerosene Vale Colliery, Lidsdale Cut, and other small operations.

The entire site has been subject to backfilling of mine voids associated with these mines with ash from coal fired power station generation from WPS and other former power stations at Lithgow. Lidsdale Cut, KVAR/KVAD and SSCAD are shown on Figure 1.1.

Ash placement no longer occurs at the site, due to the decommissioning of the WPS, therefore the extent of the ash placement outlined in Figure 1.1 will not increase. As part of the demolition of the WPS waste materials, including asbestos containing material (ACM), are approved to be disposed of at the site in a number of areas. The majority of demolition at WPS has been completed however further stages of development at WPS will generate additional materials which will be disposed of at approved locations on the site. These wastes will be managed under this OEMP.

2.3 Approved operational activities

2.3.1 Ash delivery

Due to the closure of the WPS, ash is no longer required to be delivered to the Lidsdale Ash Repository.

2.3.2 Capping material delivery

The approval of modification 2 provides the authority for GPM to import suitable material for the capping of the Lidsdale Ash Repositories until October 2033.

SSCAD and KVAR have been partially capped and rehabilitated, although completion of these activities requires significant additional material. Capping material is proposed to be sourced from within the approved project area where available as a result of reshaping to final landforms and from various locations across NSW. The materials currently approved comprise of virgin excavated natural material (VENM), excavated natural material (ENM) and other suitable Resource Recovery Exemption material approved by NSW EPA.

Imported materials are transported by trucks and access the site via the existing heavy vehicle entrance to WPS off the Castlereagh Highway. Trucks would travel between WPS and the capping sites on the private roads that link the WPS to Angus Place Colliery and the Lidsdale Ash Repositories area. An Operational Transport Management Plan (OTMP) has been developed consistent with condition 6.5 (f) of the Planning Approval. Refer to Appendix H for the detailed OTMP.

2.3.3 Water management

There are several aspects to water management at the site:

- management and treatment of contaminated surface water from the SSCAD, KVAR and Lidsdale Cut
- management and treatment of contaminated leachate in groundwater associated with KVAD/KVAR, SSCAD and Lidsdale Cut
- operational water treatment plants to treat water discharged via LDP 3 in accordance with EPL 21185 requirements
- stormwater management control ponds and sediment dams across the site.

Apart from contaminated water management, water is also required during care and maintenance operational activities for activities such as dust suppression, rehabilitation maintenance and firefighting. This water is sourced from the site water/stormwater retention basins and the existing SSCAD storage area. Note water sourced from SSCAD would only be used in accordance with the water quality management plan and only within the SSCAD and KVAR/KVAD areas and haul roads for dust suppression or potentially for firefighting on site in extreme conditions.

The management, collection and monitoring of surface water to ensure site runoff is contained will be undertaken as part of the care and maintenance activities and is addressed within this OEMP. Site specific management practices will be put in place to prevent site runoff from exposed ash surfaces from entering Sawyers Swamp Creek. Site surface water management measures are addressed in Appendix E of this OEMP and in summary include:

- the water management system for SSCAD does not authorise discharges into the Sawyers Swamp Creek, whereby water is transferred via the return water pipeline to the water treatment plant for treatment prior to discharge via the licensed discharge point 3 (LDP3) to maintain water levels within operational limits. This ensures that untreated water from SSCAD does not enter the adjacent Sawyers Swamp Creek
- development of retention basins (or use of the existing basin) to capture site surface water runoff
- management of landforms with designated slopes to direct water to retention areas
- diversion of clean water away from disturbed areas into existing surface water drainage and Sawyers Swamp Creek to provide environmental flows
- capping and revegetating completed areas to enable the diversion of clean water to site drainage systems
- sediment and erosion control installation and maintenance.

As part of the operation of the Lidsdale Ash Repositories, surface and groundwater monitoring will be undertaken to assess any change in receiving water quality. Details of the monitoring regimes for surface and groundwater are outlined in Appendix D of this OEMP.

The continued generation of leachate from the Lidsdale Ash Repositories is being reduced through the implementation of a range of mitigation measures. These measures will be continued throughout the care and maintenance phase and will include:

- capping of ash placement areas to reduce infiltration of rainwater into these areas
- capture of leachate below the SSCAD wall and KVAR/KVAD areas and treatment prior to discharge or reuse.

Surface drainage from rehabilitated areas is captured to control sediment and flow rates from landforms on site to minimise impacts on Sawyers Swamp Creek. Some of this water is also utilised for reuse in site activities. Construction water is managed under the Construction Environmental Management Plan.

2.3.4 Rehabilitation

Schedule 1 of the Planning Approval defines rehabilitation as “The restoration of land disturbed by the development to a good condition, having regard to its condition prior to commencement of construction, to ensure it is safe, stable and non-polluting.”

Given the long history of the site, pre-existing conditions are not known, and the large amount of ash and other materials deposited on the site do not allow ‘pre-existing’ landforms to be returned to the site. Rehabilitation therefore has the following aims:

- return the site to a stable landform in disturbed areas
- provide vegetative cover which allows the continued management of the site (including SSCAD wall, asbestos landfills and ash repositories)
- rehabilitate areas outside of continuous management areas to native bushland areas (where bordering on existing native vegetation) or grazing land (where these areas currently occur)
- control priority weeds across the site.

Following the completion of capping and landform shaping across the site, the following broad actions will be undertaken:

- establish a topsoil or topsoil substitute across shaped areas
- establish vegetative growth via seeding and planting
- monitor rehabilitated areas for erosion, growth and weeds
- maintain areas by slashing, mowing and weed control.

Details of the final rehabilitation outcomes for the site will be updated following completion of contamination studies, risk assessments and agreed outcomes of the Voluntary Management Plan with NSW EPA under the CLM Act. This process is not due to be finalised until 2027. The actions to be undertaken until final outcomes are known are covered in the Operational Landscape/Revegetation Plan as Appendix G of this OEMP.

2.4 Hours of operation

2.4.1 Normal operating hours

The normal hours of operation for the Site are between 7:00 am and 10:00 pm Monday to Sunday (CoA 2.8). Operations outside these hours are defined as abnormal or emergency operating conditions and are subject to specific requirements, as described below. During winter periods some lighting is required to safely access and operate the site.

2.4.2 Abnormal or emergency operation conditions

Conditions under which operations outside the normal hours of operation can occur have been specified in the Project Approval (CoA 2.10) and can be described as where it is required to avoid the loss of lives, property and/or to prevent environmental harm. Should the breakdown of plant, equipment and/or haulage trucks cause an emergency requirement to work outside of operating hours, GPM will take all reasonable and feasible measures to repair the breakdown in the shortest time possible.

If an emergency situation caused by the breakdown of plant, equipment and/or haulage truck occurs more than once in any two month period, as required by CoA 2.11, GPM will prepare a report which includes the following information:

- The dates and a description of the emergency situations;
- an assessment of all reasonable and feasible mitigation measures to avoid recurrence of the emergency situations;
- identification of a preferred mitigation measure(s); and
- timing and responsibility for implementation of the mitigation measure(s).

The report will be submitted to the Secretary within 60 days of the second exceedance occurring. GPM will implement all reasonable and feasible mitigation measures in accordance with the requirements of the Secretary.

Where emergency operation is required, GPM will notify the EPA and nearby sensitive receivers prior to any emergency ash haulage or placement activities, and the Secretary of DPHI within one week after the emergency activities have occurred. Sensitive receivers will be notified prior to 8:00pm where it is known that emergency ash haulage or placement operations will be required.

In accordance with CoA 2.12, GPM will notify the EPA prior to undertaking any emergency ash haulage or placement operations outside of the hours of operation and keep a log of such operations.

As mentioned in Section 2.3.1, operations outside of normal hours of operation is reduced due to haulage of ash from WPS and ash placement is no longer being undertaken.

3 Environmental Management Framework

The basic elements of an Environmental Management System (EMS) are similar to the key elements that make up an Environmental Management Plan (EMP). This OEMP has been developed to provide a framework for managing environmental aspects associated with the operation of the Lidsdale Ash Repository as stipulated in the relevant provisions of the Project Approval 07_0005 as modified and EPL 21185.

3.1 Environmental management system

GPM's EMS is based on AS/NZS ISO 14001. The ISO 14001 standard provides best practice specification for implementation of an EMS. An EMS provides a framework for managing the company's environmental responsibilities so that they are integrated into overall operations. The standard approach integrates environmental management and supports the company's compliance with legislated and voluntary environmental requirements as well as continuously improving their overall environmental performance.

This international environmental standard ensures a consistent approach is undertaken to integrate environmental management at all levels of the organisation by:

- identification of significant environmental risks
- identifying and maintaining awareness of relevant environmental legislation
- assignment of roles and responsibilities
- establishment of procedures for internal and external communications
- establishment of procedures for monitoring and measuring environmental performance
- setting and reviewing objectives and targets for improving environmental performance
- monitoring and measuring environmental compliance and community inquiries
- setting and reviewing management system programs for achieving objectives and targets
- provision of environmental training aligned to skill requirements
- review of EMS performance for continual improvement.

This OEMP has been developed to be consistent with the relevant provisions of GPM's approvals and licenses as noted above.

A summary of the EMS and its interaction with the CEMP and OEMP is provided in Figure 3.1.

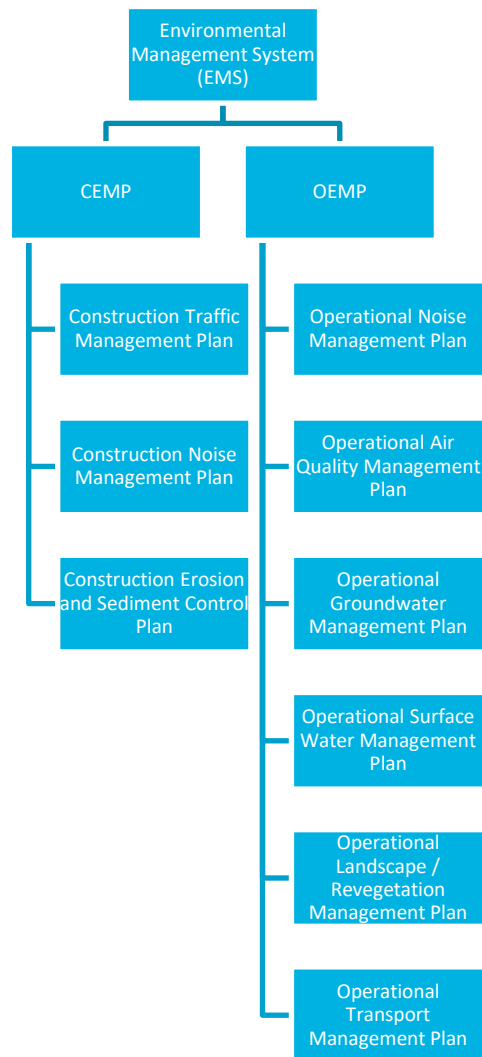


Figure 3.1 Environmental Management System flowchart

3.2 Site Contacts

The contact details for the Lidsdale Ash Repository Area are:

GPM Lidsdale Office
02 63523884

Mr Marlon Frost
GPM Western Region Manager (Lidsdale Site Manager)
M: 0423 127 030
E: marlon.frost@gpmco.com.au

Mr John Pola
GPM Manager Environment
M: 0429 205 290
E: john.pola@gpmco.com.au

3.3 Environmental roles and responsibilities

The responsibilities for the implementation of this OEMP and associated sub-plans are described below.

3.3.1 Site Manager

The Site Manager will:

- ensure compliance with the environmental requirements of the CoAs and all relevant licences are approved, along with the Manager Environment
- ensure that adequate resources are provided to implement the requirements of this OEMP and to meet all legislative and contract requirements for environmental management
- direct and support the site employees and contractors in conducting operations that are consistent with the requirements of this OEMP
- monitor the implementation of this OEMP, sub-plans and monitoring programs required under the Consent
- regularly check mitigation measures and ensure that regular environmental auditing is undertaken
- ensure records of environmental management measures and the Site Diary are kept
- develop the environmental component of the site general induction, in consultation with the Manager Environment
- deliver site inductions
- ensure that all contractor agreements issued to contractors and suppliers comply with the requirements of this OEMP
- report any incidents and non-compliances as required by the Consent
- work with the Manager Environment to ensure that the community relations protocols identified in this OEMP are communicated to all personnel
- review this OEMP and sub-plans as required by the Consent.

3.3.2 GPM Manager Environment

The Manager Environment will:

- ensure compliance with the environmental requirements of the CoAs and all relevant licences are approved, along with the Site Manager
- initiate review of procedures and mitigation measures, in consultation with the Site Manager and site contractors, to address environmental issues
- develop the environmental component of the site general induction, in consultation with the Site Manager
- deliver site inductions
- work with the Site Manager to ensure that the community relations protocols identified in this OEMP are communicated to all personnel

- undertake stakeholder consultation as specified in Table 4.3
- respond to any community concerns or complaints related to environmental performance
- be involved in the investigative process of incidents as an independent observer to identify the cause of the incident and to establish the most suitable methods for preventing recurrence.

3.3.3 Environmental Representative

CoA 6.1 requires that prior to the commencement of construction or operational activities, or as otherwise agreed by the Secretary, GPM shall nominate for the approval of the Secretary a suitably qualified and experienced Environmental Representative(s) (ER). GPM will engage the ER(s) during any construction activities, and throughout the life of the project, or as otherwise agreed by the Secretary.

The ER will:

- be independent of the design, construction and operation personnel
- oversee the implementation of all environmental management plans and monitoring programs
- advise GPM upon the achievement of the environmental management plans and monitoring programs
- advise GPM on matters specified in the CoAs and the Statement of Commitments in the EA
- oversee the implementation of the environmental auditing of the project in accordance with CoA 4.2 and all relevant project Environmental Management Systems
- recommend reasonable steps to be taken to avoid or minimise unintended or adverse environmental impacts
- recommend relevant activities to be ceased as soon as reasonably practicable if there is a significant risk that an adverse impact on the environment will be likely to occur

GPM has appointed an ER in accordance with CoA 6.1 and has submitted the details of this appointment to the Secretary for approval. Should the need arise to change the ER during the course of the Project, the Secretary will be notified.

3.3.4 All on-site employees and contractors

All employees and contractors will:

- comply with this OEMP and sup-plans, and environmental legislation, rules and guidelines
- follow instructions from the GPM Western Region Manager as appropriate
- work with regard to the environment, not cause damage or adverse environmental impacts
- report environmental incidents immediately to the GPM Western Region Manager.

3.3.5 Environmental specialists

Environmental specialists will be commissioned by GPM, as required, to provide technical input and advice on environmental matters. Environmental specialists will also undertake surveys, inspections, implement monitoring programs or prepare environmental assessments and reports, as required.

3.4 Lidsdale Ash Repository communications

Effective Lidsdale Ash Repository communications are essential to the transfer of information between GPM, site contractors, key stakeholders, regulatory bodies, and the community in general.

3.4.1 Lidsdale Ash Repository team communications

GPM has established a dedicated team of specialists to manage the decommissioning, demolition, and rehabilitation (DDR) of the Lidsdale Ash Repository area. An external engineering consultancy has been engaged to provide technical expertise to the DDR team. All communications relating to the Lidsdale Ash Repository area are coordinated by the Lidsdale Site Manager.

3.4.2 Regulatory conditions

The relevant regulatory authorities for the Lidsdale Ash Repository are the NSW Environment Protection Authority (EPA) and the NSW Department of Planning of Planning, Housing and Infrastructure (DPHI). Where required, consultation with government departments has been undertaken throughout the update of the OEMP as per the requirements of the CoA. The conditions of the EPA, NSW Department of Primary Industries (DPI), Lithgow Council and Transport for NSW have been incorporated into this OEMP as required.

The requirements for ongoing reporting of progress and regulatory compliance are outlined in Table 4.1 of this OEMP.

GPM will be responsible for ensuring that reporting to the regulatory authorities is achieved as per the CoA, EPL, and this OEMP.

3.4.3 Community and stakeholder communications

GPM maintains a website for the provision of electronic information associated with the Lidsdale Ash Repository at <https://gpmco.com.au/environment/>. GPM will, subject to confidentiality, publish and maintain up-to-date information on this website including:

- a link to the Major Projects Wallerawang Ash Repositories Application 07_0005 Environmental Assessment including:
 - Appendices prepared by Parsons Brinckerhoff (April 2008)
 - Submissions Report prepared by Parsons Brinckerhoff (May 2008)
 - the Conditions of Approval (CoA) issued by the Department of Planning
- relevant strategies, plans and programs required under the CoA, or details of where this information can be viewed
- the outcomes of compliance tracking undertaken in accordance with the project approval
- community updates in relation to the Lidsdale Ash Repository area.

The intention is to ensure that these key pieces of information are made publicly available to promote community and stakeholder engagement.

GPM will continue to use the measures for communication established for Lidsdale Ash Repository activities to ensure all community complaints and enquiries received are managed in an appropriate manner. The measures include:

- 24-hour community information and complaints line
- an online electronic form in which complaints and enquires can be transmitted.
- a postal address to which written complaints and enquiries may be sent

Specific contact details such as the 24-hour complaints line, the postal address and the online enquiry form can be found on the website here: <https://gpmco.com.au/contact/>

The following stakeholders have been identified as relevant to the Lidsdale Ash Repository:

- DPHI
- EPA
- WaterNSW
- Dam Safety Committee
- Transport for NSW
- Lithgow City Council
- NSW Department of Primary Industries – Water
- NSW Department of Primary Industries – Fisheries
- NSW DCCEEW - BCS
- Greenspot (current owners of the former WPS)
- Centennial Coal
- Bathurst Local Aboriginal Land Council
- affected landowners and local community.

A list of key stakeholders will be updated as the Lidsdale Ash Repository operations progress. This list is presented in Table 4.3 to ensure all future Lidsdale Ash Repository notifications, correspondence and updates are sent to the appropriate contact at each organisation.

3.5 Environment awareness training and site inductions

All personnel involved in Lidsdale Ash Repository activities will receive an environmental awareness and induction training prior to commencing work on the site. The environmental component to the site general induction has been developed by the Site Manager in consultation with the Manager Environment.

An Induction Register will be maintained by the Site Manager to record all attendees, dates and written acknowledgment of understanding and agreement to comply with its requirements.

The purpose of the training will be to provide sufficient education relevant to the Lidsdale Ash Repository operational activities so that personnel:

- understand how their role interacts with the environment and the local community
- understand their community obligations and environmental responsibilities
- can identify potential environmental and community issues and act promptly to ensure appropriate control measures and corrective actions are undertaken.

The induction training will be delivered either electronically prior to attendance on site, or on site by either the Site Manager or Manager Environment and will cover, but not be limited to, the following topics:

- hours of operation
- haul road speed restrictions and transport protocols
- location of nearby neighbours
- erosion and sediment controls
- dust suppression techniques
- water quality protection
- vegetation and weed management
- waste management
- heritage issues and management
- storage and handling of chemicals, fuels and oils
- spill prevention and response
- site hazards
- emergency preparedness and response
- community communication protocols and procedures
- incident/non-compliance reporting requirements.

Additional environmental training may be required in response to specific environmental issues or concerns, requests by Authorities or changes in the Lidsdale Ash Repository scope that will affect the environmental aspects of the operations.

3.6 Complaints management process

GPM is responsible for implementing and managing the complaints management process and operates an Information and Complaints Line.

GPM records the details of all complaints received in a Complaints Register. The register includes:

- the date and time of the complaint

- the means by which the complaint was made (e.g. telephone, email, mail, in person)
- any personal details of the complainant that were provided, or if no details were provided a note to that effect
- the nature of the complaint
- the time taken to respond to the complaint
- any investigations and actions taken by GPM and/or the Contractor in relation to the complaint
- any follow-up contact with, and feedback from, the complainant
- if no action was taken by GPM or the Contractor in relation to the complaint, the reason(s) why no action was taken.

The Site Manager and Manager Environment will work together to ensure that the community relations protocols identified in this OEMP are communicated to all Lidsdale Ash Repository personnel covering complaints received on site during operations and that appropriate training covering the protocols is established in site inductions. The key elements of the on-site complaints management protocol are outlined below:

- All persons wishing to register a complaint to operations personnel will be politely directed to the Site Manager, who will record the details of the complaint in the Complaints Register.
- The Manager Environment will deal with the complaint and will take action to resolve the issue whilst ensuring that all correspondence relating to the issue is documented. All attempts will be made to resolve the issue on the same day, however if this is not possible, the complainant will be updated regularly on the progress of the matter.

In accordance with CoA 5.4, the Complaints Register will be provided to the Secretary upon request.

3.7 Compliance Tracking Program

GPM has developed and implemented a Compliance Tracking Program for the project, in accordance with CoA 4.2, to track compliance with the requirements of this approval and as detailed in Table 3.1 below. Reporting against the Compliance Tracking Program is conducted on a yearly basis as part of the AEMR. The AEMR is provided to the Secretary for approval and demonstrates how GPM has satisfied CoA 4.2 for the relevant financial year.

Table 3.1 Compliance Tracking Program

Condition number	Requirement	Where addressed
4.2 (a)	Provisions for periodic review of the compliance status of the project against the requirements of this approval and the Statement of Commitments detailed in the document referred to in condition 1.1c) of this approval	Section 3.7.1 Environmental Inspections Section 3.7.2 Reporting
4.2 (b)	Provisions for periodic reporting of the compliance status to the Secretary	Section 3.7.2 Reporting
4.2 (c)	A program for independent environmental auditing in accordance with the Independent Audit Post Approval Requirements (NSW Government 2020)	Section 0Independent Audit

Condition number	Requirement	Where addressed
4.2 (d)	Procedures for rectifying any non-compliance identified during environmental auditing or review of compliance	Section 3.8.1 Non-compliance management
4.2 (e)	Mechanisms for recording incidents and actions taken in response to those incidents	Section 3.8 Environmental Incident and Non-compliance Management
4.2 (f)	Provisions for reporting incidents to the Secretary during construction and operation	Section 3.8 Environmental Incident and Non-compliance Management
4.2 (g)	Provisions for ensuring all employees, contractors and sub-contractors are aware of, and comply with, the conditions of this approval relevant to their respective activities.	Section 3.5 Environmental Awareness Training

CoA 4.3 states that any existing compliance tracking program already administered by GPM can be used to satisfy the requirements of CoA 4.2. The Compliance Tracking Program currently used for this project relates solely to this site and fully satisfies all requirements of Planning Approval 07_0005.

3.7.1 Environmental inspections

Environmental inspections will be undertaken by GPM staff and contractors in accordance with the Environmental inspection program outlined in Table 3.2. These measures will be implemented to ensure operations are undertaken in compliance with the regulatory requirements outlined in this OEMP. The inspections may also identify areas where improvements to the environmental performance of the Lidsdale Ash Repository operations can be achieved.

Site inspections will be undertaken by GPM at least weekly, with observations and any corrective actions being recorded on an inspection checklist. Some of the key items that will be checked during each inspection are likely to include:

- sediment controls for all entry points to the catchment/dirty water collection system and the condition and effectiveness of any nearby drainage lines sediment and erosion controls surrounding all stockpiles and ash placement zones
- all dust suppression measures such as irrigation systems are fully functional, and in effective locations
- haul roads are in good condition
- environmental monitoring locations are secure with equipment in good working order
- activities are taking place inside the approved disturbance areas
- condition of equipment, vehicles and plant to ensure that they are operated and maintained in a manner that minimises the potential for oil and grease spills/leaks as required by CoA 2.32
- any waste materials have been removed from the approved operation zone and disposed of in an appropriate manner
- all chemicals and fuels are being stored away from drainage lines and within bunded areas as required
- all Lidsdale Ash Repository complaints are being logged and directed to the appropriate personnel to be actioned.

Table 3.2 outlines the schedule for environmental inspections. Appendix A provides examples of typical site inspection checklists that will be used for the Lidsdale Ash Repository inspections.

The Environmental Representative (ER) undertakes a monthly inspection of the site independent of GPM or other contractors. The ER maintains a compliance action tracker which identifies issues which require action to maintain compliance. The ER also prepares a monthly report on activities undertaken which is provided to GPM and DPHI.

Where required, GPM and site staff have the authority and independence to recommend to GPM and the Contractor what reasonable steps and control measures are to be implemented to avoid or minimise unintended or adverse environmental impacts. If control measures are deemed to be ineffective in controlling the risk and an adverse impact on the environment is likely to occur, the relevant activities are to cease as soon as reasonably practicable and control measure re-assessed and corrected.

Table 3.2 Environmental inspection program

Potential impact	Location	Parameters	Frequency	Technique	Reporting	Responsibility
General environmental impact	All Lidsdale Ash Repository operational areas	Potential impacts listed in Table 4.8 of the OEMP	Weekly	Site environmental inspections	Daily site environmental checklists	GPM
	All Lidsdale Ash Repository operational areas	CoA and in Table 4.8 of OEMP	Monthly	Site environmental inspections	ER Compliance Action tracker and monthly report	ER
Dust related impacts	Haul roads and ash placement zones	Potential impacts listed in Table 4.8 of OEMP	Weekly (when active)	Environmental inspections targeting haul roads and ash placement zones	Site Environmental checklists	GPM

3.7.2 Reporting

Throughout the life of the project, GPM will prepare and submit for the approval of the Secretary, an Annual Environmental Management Report (AEMR). The AEMR shall review the performance of the project against this Operation Environmental Management Plan and the conditions of the approval (Section 1.8). The AEMR shall include, but not necessarily be limited to:

- details of compliance with the conditions of the approval
- a copy of the Complaints Register for the preceding twelve-month period, and details of how these complaints were addressed and resolved
- identification of any circumstances in which the environmental impacts and performance of the project during the year have not been generally consistent with the environmental impacts and performance predicted in the documents listed under condition 1.1 of the approval, with details of additional mitigation measures applied to the project to address recurrence of these circumstances
- results of all environmental monitoring required under conditions 3.3 to 3.8 of the approval, including interpretations and discussion by a suitably qualified person
- a list of all occasions in the preceding twelve-month period when environmental goals/objectives/impact assessment criteria for the project have not been achieved, indicating the reason for failure to meet the criteria and the action taken to prevent recurrence of that type of failure.

In response to the Secretary's review of the AEMR, if required by the Secretary, GPM will address certain matters in relation to the environmental performance of the project. Any action required to be undertaken will be completed within such period as the Secretary may require. GPM will make copies of each AEMR available for public inspection on request. The development of the AEMR contains a mechanism to audit the project against all Conditions of Approval in line with the Compliance Tracking Program.

In accordance with CoA 4.1, prior to the commencement of any construction works on land subject to Planning Approval 07_0005, GPM will certify in writing to the satisfaction of the Secretary that they are compliant with all CoA applicable to those construction works.

GPM will review and, if necessary, revise the studies, strategies and plans required under the conditions of approval to the satisfaction of the Secretary within three months of:

- the submission of an incident report under CoA 7.1
- the submission of an Annual Review under CoA 7.3
- the submission of an Independent Environmental Audit under CoA 4.2
- the modification of the conditions of this approval (unless the CoAs require otherwise).

Where this review leads to revisions in any such document, then within 4 weeks of the review, GPM will submit the revised document to the Secretary for approval, unless otherwise agreed with the Secretary.

3.7.3 Independent Audit

As required by CoA 4.2 (c), independent audits of the project will be conducted in accordance with the *Independent Audit Post Approval Requirements* (NSW Government 2020) (IAPAR 2020). For projects in closure phase, this is at intervals no greater than 1 year or as otherwise agreed by the Secretary.

Independent auditors will be agreed to by the Secretary prior to commencing the audit as required by the IAPAR 2020.

3.8 Environmental incident and non-compliance management

3.8.1 Non-compliance management

Non-compliances or potential non-compliances are situations or events that do not comply with the Conditions of Approval and other relevant environmental legislation, licenses, permits and approvals, but are not classified as incidents. Non-compliances or potential non-compliances may be identified in any of the following situations:

- as part of internal site inspections, supervision or monitoring of normal activities
- during external audits
- following significant verbal or written third party complaints.

All non-compliances will be recorded in the appropriate registers and stored electronically i.e. site inspection checklists, auditing reports, complaints register. Corrective actions will be recorded on the site inspection checklist as per Appendix A. Notification and reporting of non-compliance matters to DPHI shall be undertaken in accordance with the conditions of approval. The non-compliance will be investigated and managed by the contract administrator until compliance is achieved.

3.8.2 Types of environmental incidents

Examples of environmental incidents include (but are not limited to):

- discharge of sediment or polluted water to Sawyers Swamp Creek or Cox’s River
- collapse of ash steep slopes
- collapse of bunds, capping or surface water control measures
- exposure of suspected contaminated materials in areas outside known landfills and repositories
- significant dust or noise impacts on surrounding community
- spills of chemicals, fuel or oil.

3.8.3 Environmental incident response procedure

All site staff must communicate any environmental incident that occurs on the Lidsdale Ash Repository site (including near misses) to the Site Manager or Manager Environment. All staff shall follow direction of GPM to resolve the issue as soon as practicably possible. Environmental incidents that have caused or have the potential to cause a pollution event will be managed in accordance with the Site Pollution Incident Response Management Plan (PIRMP) and the Site Emergency Response Plan.

A list of the incident categories and appropriate actions is provided in Table 3.3.

Table 3.3 Incident categories

Incident type	Incident characteristics	Action required
Near-miss	<p>A near- miss is when there is:</p> <ul style="list-style-type: none"> • potential for but no actual pollution • general environmental hazards (such as hazardous substances not stored in secured locations) • handling mishaps with fuels, oil, lubricants and/or hazardous substances not resulting in spillage • loss of control of equipment not resulting in damage to vegetation or property • inefficient or lacking traffic and access controls that almost resulted in an incident. 	<p>Contractor staff must report incident to the Site Manager immediately. GPM must then be notified within 24 hours and be provided with an incident notification record. Contractor must advise suitable controls to be implemented in future situations to prevent recurrence.</p>
Minor	<p>A minor environmental incident has occurred when material has been spilled or released to the environment (land, air, water, people affected), causing no material pollution and no material harm to the environment. Its consequence/impact are measured as minor and includes some or all of the following aspects:</p> <ul style="list-style-type: none"> • material easily contained and recovered • is confined to work site boundaries • involves minimal or minor interruption to work activities • complaints easily handled at the work site • has no external or regulatory involvement (community, Council, emergency services, media, other relevant authorities). 	<p>Contractor staff must report incident to the Site Manager immediately. GPM review incident against PIRMP and record an incident notification record. The Environment Representative will be notified of the incident. GPM to review incident and controls in place or to be implemented to prevent a recurrence.</p>

Incident type	Incident characteristics	Action required
Major	<p>Any incident with actual or potential material impacts on the biophysical environment and/or off-site impacts on people and includes some or all of the following aspects:</p> <ul style="list-style-type: none"> • actual or potential breach of environmental legislation or permit/licence/consent/ approval condition • actual or potential material environmental harm involves or has the potential to involve community, media or regulatory authorities. 	<p>Contractor staff must report incident to the Site Manager immediately. GPM review incident against PIRMP and record an incident notification record. The Environment Representative will be notified of the incident. GPM to review incident and controls in place or to be implemented to prevent a recurrence. Notifications under the PIRMP are to be undertaken and recorded.</p> <p>The POEO Act requires the occupier of premises, the employer or any person carrying out an activity which has caused a pollution incident to immediately notify each relevant authority when material harm to the environment is caused or threatened. EPA will be notified immediately of pollution incidents via the EPA Environment Line (telephone 131 555).</p> <p>DPHI will be notified as soon as reasonably possible after becoming aware of the incident in accordance with CoA 7.1 and Appendix 3 of the Planning Approval. DPHI notification and reporting requirements are outlined further below.</p> <p>GPM will provide incident report to the Secretary of the DPHI and EPA within 7 days of the incident occurring.</p>
Disaster	<ul style="list-style-type: none"> • National press coverage • regulatory investigation and significant penalties/fines incurred and potential or actual loss of licence • major community impacts (for example whole suburb) • major and long-term consequence on environment. Extensive clean-up required with external assistance. 	<p>Contractor staff must report incident to the Site Manager immediately. GPM review incident against PIRMP and record an incident notification record. The Environment Representative will be notified of the incident. GPM to review incident and controls in place or to be implemented to prevent a recurrence. EPA will be notified immediately of pollution incidents via the EPA Environment Line (telephone 131 555).</p> <p>Notifications under the PIRMP are to be undertaken and recorded GPM shall provide an incident report to the Secretary of DPHI and EPA within 7 days of the incident occurring. Work on site to cease during external incident investigation.</p>

All near misses and incidents must be actioned, reported, and recorded. In the event of an environmental incident occurring that is above the 'near-miss' category and which cannot be managed by equipment on-site, the most senior person on site at the time of the incident must immediately obtain assistance from GPM.

GPM may engage and coordinate external service providers, such as the State Emergency Services, to assist in the response.

The Manager Environment must be notified as soon as possible in order to address the cause or impact of the environmental incident and to ensure procedures are undertaken in accordance with this OEMP and GPM's existing emergency response system.

i DPHI incident notification and reporting requirements

Notification to DPHI must be in writing via the Major Projects website. In accordance with CoA 7.1, the notification must identify the project (including the Planning Approval number and the name of the project) and set out the location and nature of the incident. Subsequent notification and reporting requirements in accordance with Appendix 3 of the Planning Approval are listed below:

- A follow-up written incident notification must be submitted to the Secretary via the Major Projects website within seven days after the Applicant becomes aware of an incident. This follow-up notification is required even if the notification required under condition 7.1 was not given or, having given such notification, GPM subsequently forms the view that an incident has not occurred
- The written notification must contain the following details:
 - a) identify the project and application number;
 - b) provide details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident);
 - c) identify how the incident was detected;
 - d) identify when the Applicant became aware of the incident;
 - e) identify any actual or potential non-compliance with conditions of approval;
 - f) describe what immediate steps were taken in relation to the incident;
 - g) identify further action(s) that will be taken in relation to the incident; and
 - h) identify a project contact for further communication regarding the incident.
- Within 30 days of the date on which the incident occurred or as otherwise agreed to by the Secretary, GPM must provide the Secretary and any relevant public authorities (as determined by the Secretary) with a detailed report on the incident addressing all requirements below, and such further reports as may be requested. The Incident Report must include:
 - a) a summary of the incident;
 - b) outcomes of an incident investigation, including identification of the cause of the incident;
 - c) details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence; and
 - d) details of any communication with other stakeholders regarding the incident.

3.8.4 Incident investigation

The Manager Environment must be involved in the investigative process as an independent observer with a collaborative effort made to ensure that the cause of the incident is identified in order to establish the most suitable methods for preventing recurrence.

All major and above incident reports will be provided to DPHI and the EPA establishing full details including causes and the mitigation measures implemented, as outlined in Section 3.8.3i.

3.9 Document controls

Lidsdale Ash Repository records, including Contractor records, will be maintained to provide evidence of the effective operation of this OEMP. The records will be identifiable as to the item/area concerned. Such records include, but are not limited to:

- correspondence to/from stakeholders and interested parties
- permits, licences and approvals
- induction training records
- environmental complaints/enquiries registers
- non-compliance reports
- environmental incident reports
- environmental inspection and audit reports.

Records will be filed, stored and maintained in accordance with GPM's quality assurance procedures.

4 Environmental controls

4.1 Statutory requirements

The operation of Lidsdale Repository must comply with the following statutory requirements:

- the Minister’s Conditions of Approval as stipulated in the Wallerawang Ash Repository Approval (Application No 07_0005), as modified:
 - Kerosene Vale Stage 2 Ash Repository Area – Environmental Assessment, prepared by Parsons Brinckerhoff and dated 1 April 2008
 - Kerosene Vale Stage 2 Ash Repository Area – Submissions Report, prepared by Parsons Brinckerhoff and dated 30 May 2008
 - Modification application 07_0005 Mod 1 and supporting documentation: Wallerawang Power Station Capping Project - Environmental assessment of importation of clean fill to Wallerawang Ash Repository, prepared by EnergyAustralia NSW and dated March 2018; and
 - Wallerawang Power Station Capping Project - Response to Submissions Report, prepared by EnergyAustralia NSW and dated June 2018; and
 - Modification application 07_0005 Mod 2 and supporting documentation, including the Modification Report dated 9 May 2023, Submissions Report dated 21 August 2023, and the additional information provided by the Applicant in support of the application and identified in Appendix A of the Department’s assessment report.
- EPL 21185
 - Environment Protection Licence 21185- Licence Variation Notice no. 1644223
- licenses, permits and approvals (refer Section 4.1.3)
- relevant legislation, regulations, and guidelines (refer Section 4.1.4).

4.1.1 Lidsdale Ash Repository approval

The Environmental Assessment for the Kerosene Vale Stage 2 Ash Repository works was prepared to satisfy the requirements of Part 3A (now repealed) of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The Environmental Assessment was assessed by the then Department of Planning and Environment in consultation with other relevant Authorities.

The Environmental Assessment went on public exhibition on 2 April 2008 for a period of 30 days and received the KVAR Stage 2 Approval from the Minister for Planning in December 2008.

The Statement of Commitments (SoC) included in the Submissions Report, which was amended as a result of the submissions received during the public exhibition period, to allow for a comprehensive management approach to minimise the environmental impacts associated the operation of Kerosene Vale Stage 2 Ash Repository.

KVAR Stage 2 Approval (07_0005) has been subject to two modifications approved on the 9 August 2018 and 13 October 2023.

The modifications provide approval to import capping material to the Lidsdale Ash Repository at a rate of 100 trucks per day until 2033. These capping materials are defined by the EPA Waste Guideline Classification Guidelines 2014.

This OEMP has been prepared to satisfy the modified Lidsdale Ash Repository Approval conditions.

4.1.2 Environment Protection Licence

EPL 21185 regulates the operation of the Kerosene Vale Ash Repositories (also known as the Lidsdale Ash Repository), including portions of the former Wallerawang Power Station.

The licence was issued by the EPA to GPM under the provisions of the *Protection of the Environment Operations Act 1997* (POEO Act) in September 2020.

The licence regulates, among other things, waste disposal and water releases to the Cox's River via licensed discharge points.

GPM, as the licensee, must comply with the conditions of this licence, and must submit annual returns. The Annual Return must include a Statement of Compliance, and a summary of any monitoring required by the licence (including the recording of complaints) and be submitted to the EPA within 60 days after the end of each reporting period.

On 22 October 2025 Environment Protection Licence 21185- Licence Variation Notice no. 1644223 was issued by the EPA to GPM which comprised feedback and recommendations regarding the Water Treatment Management Suitability and Feasibility Assessment and the relocation of surface water monitoring location S5(EPL point 20). The updated surface water monitoring location S5(EPL point 20) is presented in the OSWMP (Appendix E)

4.1.3 Licenses, permits and approvals

There are a number of licenses, permits and approvals that are associated with the Lidsdale Ash Repository operations. The majority of these requirements are derived from the Lidsdale Ash Repository Approval, as illustrated in Table 4.1 and associated dates of approval.

Table 4.1 Licenses, permits and approvals required for the Lidsdale Ash Repository

Relevant authority	Source of requirement	Responsibility for obtaining licence/ approval/ permit	Trigger	Information required	Approximate processing time for lodgement	Additional comments	Status
NSW DPHI Major Infrastructure Assessment	CoA 6.2	GPM	Need to construct stabilisation structure on northern embankment and re-alignment of Swayers Swamp Creek.	Prepare a Construction Environment Management Plan (CEMP) to contain framework outlining construction activities, potential environmental impacts and mitigation measures and procedures.	4-6 weeks	To be submitted 4 weeks prior to commencement of construction works.	CEMP developed and approved by DPE in August 2011 for works associated with Mod 1. CEMP revision in progress for closure works.
	CoA 2.26	GPM	Need to realign Swayers Swamp Creek.	Prepare the Sawyers Swamp Creek Re-Alignment Rehabilitation Plan.	4-6 weeks	To be submitted 2 months prior to the realignment of Swayers Swamp Creek.	Realignment of Sawyers Swamp Creek Rehabilitation Plan submitted to DPHI following consultation August 2024.
	CoA 4.2	GPM	Need to comply with Conditions of Approval throughout Stage 2 operations.	Develop Compliance Tracking Program to track compliance with Conditions of Approval relating to Stage 2 operation.	4-6 weeks	To be implemented prior to Stage 2 operations and submitted for approval within 4 weeks of commencement of Stage 2 weeks.	A detailed review checklist and recommendations for CoA provided in Annual Returns. Compliance Tracking Program provided in Section 3.7 of this OEMP.
	CoA 6.1	GPM	Need to nominate a suitable Environmental Representative.	Candidate profile information to be provided to Secretary to aid in approval process.	4-6 weeks	Key Project contact details provided in Annual Returns.	Environmental Representative approved by DPHI 20/6/2024
	CoA 7.3	GPM	Need to regularly report on environmental performance of Lidsdale Ash Repositories.	Submit Annual Review, containing a review against OEMP and Conditions of Approval.	4-6 weeks	To be submitted no later than 12 months after commencement of operations and each year thereafter.	Ongoing.

Relevant authority	Source of requirement	Responsibility for obtaining licence/ approval/ permit	Trigger	Information required	Approximate processing time for lodgement	Additional comments	Status
	CoA 3.6	GPM	Need to realign Sawyers Swamp Creek.	Prepare Sawyers Swamp Creek Realignment Hydrological Monitoring Program must include sampling before and after realignment works, with monitoring continuing 5 years post-realignment.	4-6 weeks	To be submitted 2 months prior to the realignment of Sawyers Swamp Creek.	Plan for realignment of Sawyers Swamp Creek submitted for approval.
Department of Primary Industries (Fisheries)	CoA 3.7	GPM	Need to realign Sawyers Swamp Creek.	Sawyers Swamp Creek Realignment Ecological Monitoring Program must include sampling and assessment of ecological health before and after realignment works, with monitoring continuing 5 years after final planting.	4-6 weeks	To be submitted 2 months prior to the realignment of Sawyers Swamp Creek.	Plan for realignment of Sawyers Swamp Creek submitted for approval.
NSW Department of Primary Industries Water	Part 5 of the Water Act (1912)	GPM	Need to construct groundwater extraction or monitoring bores.	Application for licence to construct groundwater bores.	4-6 weeks	Licence to be attained prior to construction of bores.	Bore licences obtained as required.

4.1.4 Relevant legislation, regulations and guidelines

Legislation and guidelines relevant to the Lidsdale Ash Repositories are listed in Table 4.2. This table also lists the Administering Authorities for the various environmental issues identified as being relevant to this Project.

Relevant legislation and subsequent implications are broadly identified in this document. It will be the responsibility of GPM and the Contractor to ensure that the relevant provisions of the following legislation and guidelines are complied with when carrying out work for the Project.

The OEMP will be updated as required in line with any legislative changes made after the drafting date.

Table 4.2 Relevant legislation, guidelines and standards

Relevant legislation (Administering Authority)	Summary of legislation requirements	General requirements
Australian Standard AS4282 1997 - Control of the Obtrusive Effects of Outdoor Lighting	Deals primarily with obtrusive lighting within residential and urban areas, where a measurement of light on residential windows is considered but has few references to requirements or locations of illuminated signs in rural areas.	GPM needs to take all reasonable and practical measures to ensure lighting associated with operation of Stage 2 complies with this AS4282. (Refer to COA 2.35 of the Planning Approval.)
<i>Biodiversity Conservation Act 2016</i> ((NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW) Biodiversity, Conservation and Science (BCS))	Provides protection for flora, fauna and habitat in New South Wales.	A survey of the site's native vegetation was undertaken. A threatened ecological community is associated with a plant community (Plant Community Type (PCT) 3945) that was identified on site. If site vegetation works are to potentially impact PCT 3945, relevant permits, licenses or approvals will be obtained.
<i>Environmental Planning and Assessment Act 1979</i> (DPHI)	Establishes a framework to control development in NSW by prohibiting, permitting, or placing conditions on activities. The legislation also details the process by which approval can be gained, and the relevant authority.	Activities to the Lidsdale Ash Repository as currently approved by SSD Planning Approval 07_0005 (MOD2) and Lithgow City Council (DA015/19).
<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Commonwealth Department of Climate Change, Energy, the Environment and Water)	The EPBC Act and regulations are Australia's main national environmental legislation. They provide a way for to protect and manage nationally and internationally important plants, animals, habitats and places.	Relevant if potentially significant impacts to matters of national environmental significance (e.g. significant impacts to EPBC-listed threatened species and ecological communities) may occur.
<i>Local Government Act 1993</i> (Lithgow City Council)	Controls environmental impacts including noise, pollution and nuisance not controlled under the POEO Act. Provides for infrastructure under the control of council and identifies requirements for developers.	No requirement for permits or licenses under the Local Government Act or have been identified for the Lidsdale Ash Repositories.
<i>Mine Subsidence Compensation Act 1961</i> (Subsidence Advisory NSW)	Provides for payment of compensation for damage to properties and structures resulting from subsidence following coal or shale mining. Works within designated areas must comply with the requirements to ensure they are covered by the scheme.	At the moment, the provisions of this Act do not apply to the operation of the repository. The potential future mining of an area of the Stage 2 repository may invoke provisions of the Act. To be determined during the approval process associated with the proposed mining activities at the repository site.

Relevant legislation (Administering Authority)	Summary of legislation requirements	General requirements
<i>Contaminated Land Management Act 1997</i> (NSW Environment Protection Authority)	Establishes a process for investigating and where appropriate remediating land where contamination presents a significant risk of harm to the environment.	The site has been declared to be significantly contaminated land under section 11 of the Contaminated Land Management Act (Declaration Number 20211113, Area Number 3494).
<i>Drinking Water Catchments Regional Environmental Plan No.1</i> (Water NSW)	This plan was prepared in accordance with Part 3 of the EP&A Act and the Sydney Water Catchment Management Act 1998. The plan was made to secure the environmental, social and economic future of the catchments that supply drinking water to Sydney, the Blue Mountains and the Illawarra. The plan aims to sustain these catchments so as to create healthy water catchments, improve water quality in degraded areas, and maintain or improve water quality where it is currently suitable.	The Stage 2 Planning Approval allows for the realignment of a section of Sawyers Swamp Creek, which feeds into the Coxs River, and is part of the Drinking Water Catchment. This re-alignment has not been undertaken. The Environmental Assessment indicated that the water quality as defined by the Drinking Water Catchments Regional Environmental Plan No. 1 would be adequately managed under certain conditions. These conditions are outlined in the Operational Surface and Groundwater sub-plans of this OEMP.
<i>Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-liquid Wastes 1999</i> (EPA)	These guidelines aid in the classification, assessment, storage and management of liquid and non-liquid wastes should there be any.	The guidelines are relevant to the Stage 2 operations. Refer to the Section 6.2.1- Waste Management for details.
<i>Heritage Act 1977</i> (Heritage NSW)	Protects all items of environmental heritage (natural and cultural) in New South Wales. The Act does not apply to Aboriginal “relics”. Applies if any heritage items are identified during operation works.	No requirement for permits, licenses or approvals have been identified for the Lidsdale Ash Repository.
<i>Noise Policy for Industry 2017</i> (EPA)	This Policy is set in place to establish noise criteria that would protect the community from excessive intrusive noise and preserve amenity for specific land uses.	The Policy is applicable to the operation of the Lidsdale Ash Repository. Refer to the Operational Noise Management Plan for details.
<i>Noxious Weeds Act 1993</i> (Department of Primary Industries – Agriculture)	Provides for the identification, classification and control of noxious weeds in NSW. Applies to the management and disposal of noxious weeds if found and removed during the works.	No requirement for permits, licenses or approvals. No noxious weeds have been identified for the Lidsdale Ash Repository.
<i>National Parks and Wildlife Act 1974</i> (Heritage NSW)	Provides protection for indigenous heritage, in New South Wales. It is an offence to knowingly destroy, deface or damages, or cause or permit the destruction or defacement of or damage to, an Aboriginal object or Aboriginal place without a permit.	If previously unidentified indigenous heritage items or places are discovered on site that are proposed to be disturbed, an Aboriginal Heritage Impact Permit will be required. In addition to this, all work likely to affect these previously unidentified heritage sites or items is to cease immediately and the discovery of the sites/items will be reported to Heritage NSW or the Department as relevant.
<i>Soil Conservation Act 1938</i> (NSW Department of Primary Industries – Land)	Controls activities causing or likely to cause soil erosion or land degradation. Lidsdale Ash Repositories activities must prevent soil erosion or land degradation.	No requirement for permits, licenses or approvals have been identified for the Lidsdale Ash Repository.
<i>Water Act 1912</i> (Water NSW)	Regulates the influence of impacts on waterways, outlining control and remedial measures (i.e. groundwater wells), licensing and offences.	No requirement for permits, licenses or approvals have been identified for the Lidsdale Ash Repositories.

Relevant legislation (Administering Authority)	Summary of legislation requirements	General requirements
<i>Protection of the Environment Operations Act 1997</i> (EPA)	This Act controls how activities should be undertaken in consideration of environmental protection on all aspects, including air, water, soil, and noise pollution, as well as waste. Scheduled activities are required to obtain a licence to operate from the EPA.	The provisions of EPL 21185 apply to the operation of the Lidsdale Ash Repository.
Waste Avoidance and Resource Recovery Act 2001 (EPA)	Promotes the waste management hierarchy (avoidance, resource recovery, and disposal).	The provisions of this Act do not apply to the Lidsdale Ash Repository.
Water Management Act 2000 (Water NSW)	Controls water use for activities and in areas of NSW.	The provisions of this Act do not currently apply to the Lidsdale Ash Repository.

4.2 Stakeholder consultation for the Lidsdale Ash Repository

GPM will continue to engage with key stakeholders during the care and maintenance activities at the site as required. Further consultation with stakeholders will be conducted during the development of the closure and rehabilitation plan proposed for the site.

The key stakeholders which were previously engaged for the Lidsdale Ash Repository have included:

- DPHI
- EPA
- NSW Department of Primary Industries – Water
- Lithgow City Council
- Transport for NSW
- Water NSW
- NSW Department of Primary Industries – Fisheries
- NSW DCCEEW - CPHR
- Greenspot (current owners of the former WPS)
- Centennial Coal
- Bathurst Local Aboriginal Land Council
- Nearest privately owned residents to the site.

Table 4.3 Stakeholder consultation schedule for Lidsdale Ash Repository

Stakeholder	Nature of involvement in Lidsdale Ash Repository	When consulted	Person responsible for consultation
NSW Department of Planning, Housing and Infrastructure (DPHI)	<ul style="list-style-type: none"> environmental management performance monitoring compliance monitoring incident management 	<ul style="list-style-type: none"> notification following emergency operation reporting following noise non-compliance dispute with landowners on noise mitigation measures notification following environmental incident or non-compliance review Annually via the submission of the Annual Environmental Management Report (AEMR) 	Manager Environment
Environment Protection Authority (EPA)	<ul style="list-style-type: none"> environmental management performance monitoring compliance monitoring incident management 	<ul style="list-style-type: none"> notification following material pollution incident noise and water monitoring results annually via the EPL Annual Return 	Manager Environment
Department of Primary Industries – Fisheries	<ul style="list-style-type: none"> works associated with the realignment of Sawyers Swamp Creek incident management 	<ul style="list-style-type: none"> prior to realignment of the Sawyers Swamp Creek 	Manager Environment
WaterNSW	<ul style="list-style-type: none"> environmental Management performance monitoring incident management 	Where required for consultation on groundwater and surface water management issues	Manager Environment
DCCEEW – Water	<ul style="list-style-type: none"> works associated with the realignment of Sawyers Swamp Creek environmental management performance monitoring incident management 	Where required for consultation on groundwater and surface water management issues and works associated with Sawyers Swamp Creek realignment works	Manager Environment
Lithgow City Council	<ul style="list-style-type: none"> environmental management performance monitoring incident management review of Transport Management Plan 	As required	Manager Environment
Heritage NSW	Heritage issues	Notification if indigenous heritage items are identified	Manager Environment
DECCW - CPHR	Biodiveristy	As required where biodiversity issues arise	Manager Environment
Bathurst Local Aboriginal Land Council	Incident management	Notification if indigenous heritage items are identified	Manager Environment

Stakeholder	Nature of involvement in Lidsdale Ash Repository	When consulted	Person responsible for consultation
Nearest residents	Regular involvement and representation at quarterly community consultation meetings, general enquiries and complaints	<ul style="list-style-type: none"> notification prior to emergency operations during discussions regarding noise exceedances and appropriate noise mitigation measures 	Manager Environment

4.3 Environmental risk assessment

The Environmental Aspects and Impacts Register in Section 4.4 and the relevant sub-plans in Section 6, this OEMP both provide a framework for the environmental risks associated with the activities associated with the decommissioning, deconstruction and repurpose of the Lidsdale Ash Repository. In order to calculate and assess the likelihood, consequences and risk rating of these environmental risks and others that may emerge as remediation of the Lidsdale Ash Repository progresses, the Contractor in consultation with GPM must incorporate the risk assessment framework outlined in this section with the relevant environmental aspects and impacts.

A task-specific risk assessment is undertaken by the Contractor in consultation with GPM and the Environmental Representative as individual activities are undertaken in order to assess environmental issues and to mitigate potential risks in a practical manner.

4.3.1 Risk assessment

The following tables outline the risk assessment process using three steps to identify the appropriate management measures required.

- Use Table 4.4 to determine the likelihood that the aspect will have an impact on the environment or the reputation of the Lidsdale Ash Repository once control have been put in place.
- Use Table 4.5 to determine how severe the potential impact will be with controls in place.
- Then determine the level of risk utilising Table 4.6. This will determine the type and level of environmental protection measures that will be required. Where a significant risk to the environment has been identified, environmental protection measures must be introduced to reduce the risk to an acceptable level. Aspects with a medium or low risk should also have practicable management measures implemented if these can further reduce risk (refer to Table 4.7).

Table 4.4 Likelihood criteria

Level	Occurrence	Frequency	Probability
A - Almost certain	Already happened or is expected to occur in most circumstances	Once per month or more	90% or greater chance of occurrence
B - Likely	May probably occur in most circumstances	Once per year up to once per month	66% up to 90% chance of occurrence
C - Possible	Not unusual and might occur in the foreseeable future	Once in 10 years up to once per year	10% up to 33% of occurrence
D - Unlikely	Could occur at some time but unlikely in the foreseeable future	Once in 10 years up to once in 3 years	10% up to 33% chance of occurrence

Level	Occurrence	Frequency	Probability
E - Rare	Is expected to occur only in exceptional or extreme occurrences	Less than once in 10 years	Less than 10% chance of occurrence.

Table 4.5 Consequence criteria

Consequence (impact)	Environmental, legal and/or reputation impact
Insignificant	Environmental – Limited and localised, environmental consequence is limited to weeks. Reputation – Potential to cause negligible level of impact.
Minor	Environmental – On-site release immediately contained by local personnel, short-term. Temporary environmental impact, environmental consequence is less than 12 months. Reputation – Potential to cause a low level of impact.
Moderate	Environmental – On-site release contained with assistance from personnel not based at the works location. Medium term environmental impact, environmental consequence 1–2 years. Reputation – Potential to cause a medium level of impact.
Major	Environmental – Off-site release or pollution with a medium to long term environmental impact, environmental consequence 2–5 years. Reputation – Potential to cause a high level of impact.
Catastrophic	Environmental – Toxic pollution and off-site contamination, permanent or long-term environmental impact, environmental consequence >5 years. Reputation – Potential to cause a severe level of impact.

Table 4.6 Risk rating

		Likelihood				
		Rare	Unlikely	Possible	Likely	Almost certain
Impact	Insignificant	Low	Low	Medium	Medium	Medium
	Minor	Low	Medium	Medium	High	High
	Moderate	Medium	Medium	High	High	Severe
	Major	Medium	High	High	Severe	Severe
	Catastrophic	High	High	Severe	Severe	Severe

Table 4.7 Risk ranking

Risk ranking	Management required
Severe	Immediate management action required
High	Priority management action warranted
Medium	Management action warranted
Low	Management action should be considered, particularly for low level impacts which nevertheless occur on a continual basis.

Contractors in consultation with GPM shall determine how the risks can be remedied to ensure sound environmental management.

This may include updating the OEMP to cover any further identified management measures and mitigation strategies.

It is the responsibility of the GPM Site Manager and the Manager Environment to ensure that all personnel are aware of the nature and implications of any changes to the operational activities during the Lidsdale Ash Repository works.

4.4 Environmental aspects and impacts register

Environmental aspects and potential adverse environmental impacts relevant to the Lidsdale Ash Repository area while in care and maintenance are summarised in Table 4.8.

Table 4.8 Environmental aspects and impacts – Lidsdale Ash Repository

Environmental aspect	Potential impacts	Corresponding OEMP
Site management	Capping and bund erosion and sedimentation associated with surface flows and increased runoff	Operational Surface Water Management Plan
	Potential for infiltration of surface/rainwater to groundwater, affecting groundwater levels and/or quality	Operational Groundwater Management Plan
	Impacts from the repository on the surrounding catchment area	Operational Surface Water Management Plan
	Direct or indirect impacts on items of Indigenous or non-indigenous heritage value	Emergency Response Plan
	Direct or indirect impacts on biodiversity values	Operational Landscape/Revegetation Plan
	Weed growth affecting rehabilitated areas	Operational Landscape/Revegetation Plan
	Exposure of contaminated materials (i.e. ACM)	Operational Surface Water Management Plan
	Chemical spills from operation of water treatment plant	Operational Surface Water Management Plan
Air Quality	Use of haul roads and placement of capping material resulting in airborne dust	Operational Air Quality Management Plan
	Placement of capping materials during dry period causing dust	Operational Air Quality Management Plan
	Exposed ash and other materials with the potential to generate dust	Operational Air Quality Management Plan
Importation of capping material	Impacts to the community associated with Lidsdale Ash Repository-related traffic impacts	Operational Transport Management Plan Operational Air Quality Management Plan
	Materials delivered not meeting approval or RRE/RRO requirements	EPL 21185

5 Environmental monitoring

5.1 Overview

Environmental monitoring for the Lidsdale Ash Repository area is designed to comply with the requirements of statutory approvals and provide an analysis of the condition of the environment surrounding the works.

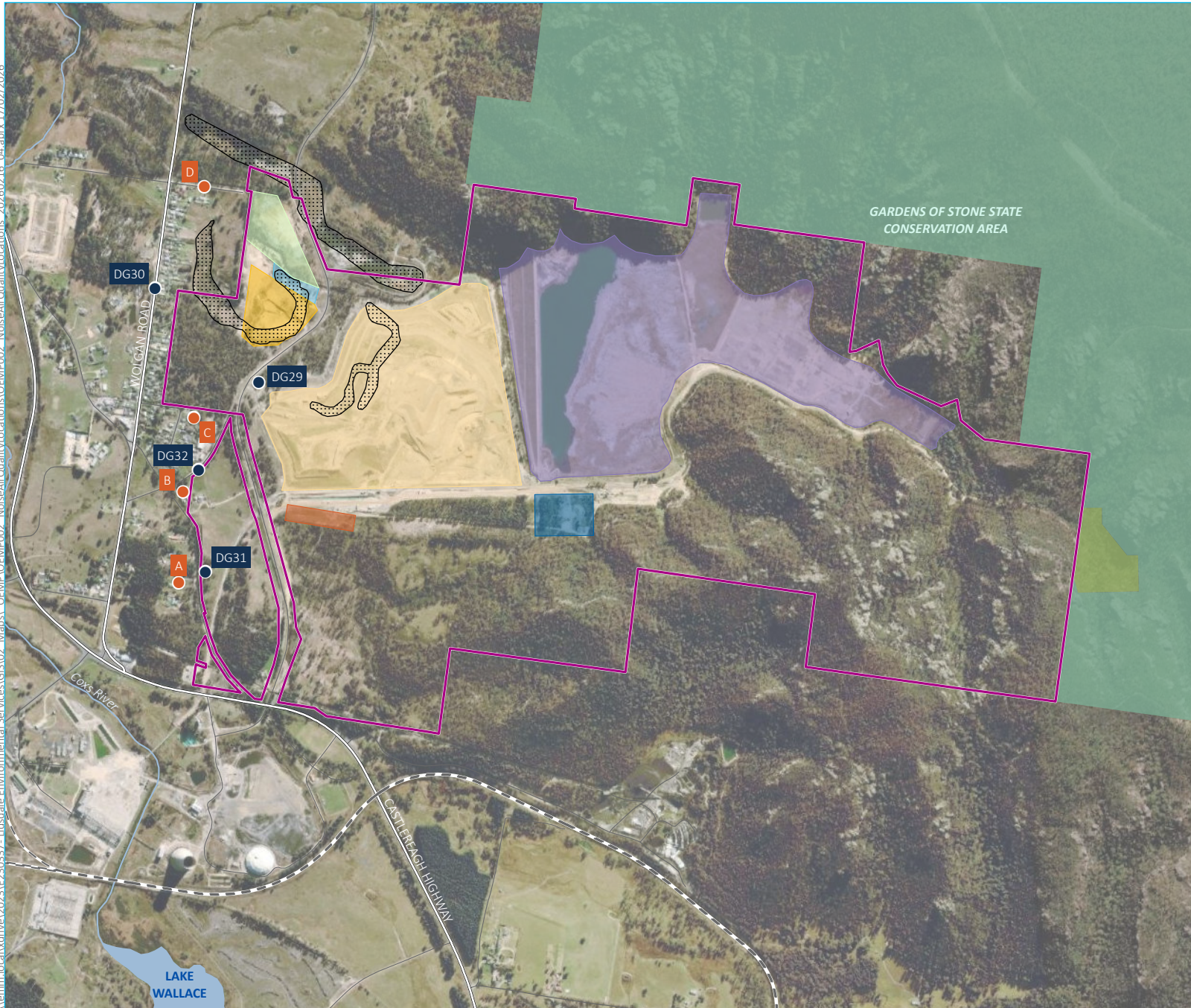
The results of the monitoring program will be used as indicators of the effectiveness of the environmental controls, and as guidelines for the management and maintenance of key environmental procedures. An adaptive management approach will be implemented by GPM should the monitoring results show adverse trends.

Detailed procedures outlining the environmental monitoring responsibilities and the impacts to be mitigated can be found within the individual sub-plans included as Appendices of this OEMP. In addition to the environmental monitoring the SSCAD is a prescribed dam under the Dams Safety Act and is subject to regular surveillance as detailed in the dam safety emergency response plan that does not form part of this OEMP.

The environmental monitoring network is shown in Figure 5.1, Figure 5.2 and Figure 5.3 for each aspect of the program detailed in Table 5.1.

Table 5.1 outlines the monitoring program including timeframes and describes the nature of inspections that are undertaken.

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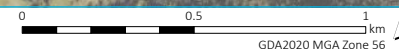
- KEY**
- Site boundary
 - Historical open cut pit
 - Dust gauge
 - Noise monitoring
- Site layout**
- 2018 proposed asbestos disposal area
 - Demolition landfill south of SSCAD
 - Kerosene Vale ash repository
 - Lidsdale cut northern landfill
 - Lidsdale cut southern landfill
 - Lidsdale cut
 - Sawyers Swamp creek ash dam
- Existing environment**
- Rail line
 - Major road
 - Minor road
 - Named watercourse
 - Named waterbody
 - NPWS reserve
 - State forest

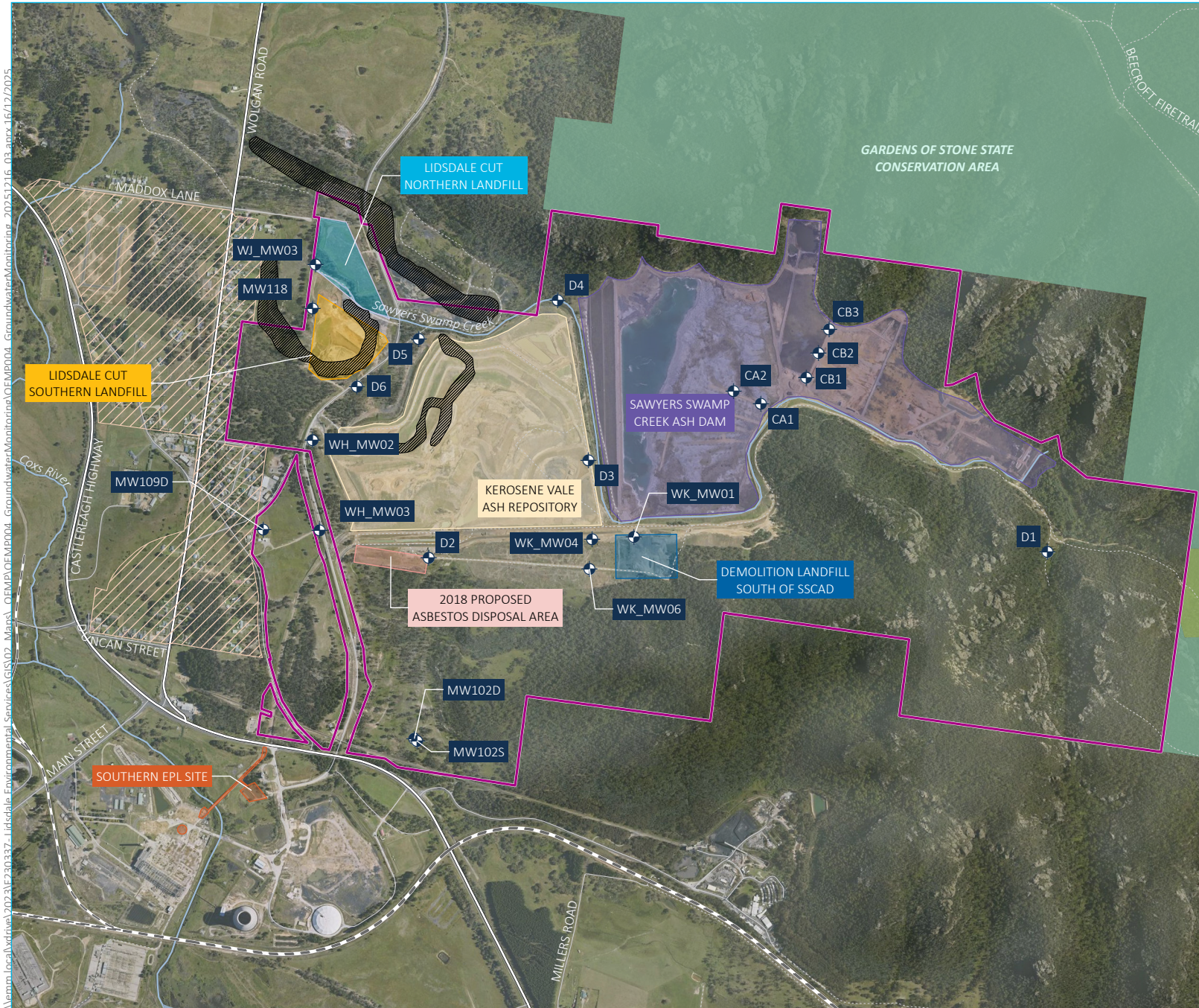
Environmental monitoring locations
– noise and air quality

Lidsdale Ash Repository
Operational Environmental
Management Plan
Figure 5.1



Source: EMM (2026); GPM (2023); DPE (2024); DCSSS (2023); ESRI (2026)





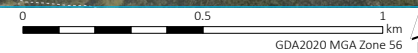
- KEY**
- Site boundary
 - Nearest sensitive (residential) receiver
 - Historical open cut pit
 - Groundwater routine monitoring network
- Site layout**
- 2018 proposed asbestos disposal area
 - Demolition landfill south of SSCAD
 - Kerosene Vale ash repository
 - Lidsdale cut northern landfill
 - Lidsdale cut southern landfill
 - Lidsdale cut
 - Sawyers Swamp Creek ash dam
 - Southern EPL site
- Existing environment**
- Rail line
 - Major road
 - Minor road
 - Vehicular track
 - Named watercourse
 - Named waterbody
 - NPWS reserve
 - State forest

Groundwater monitoring locations

Lidsdale Ash Repository
Operational Environmental
Management Plan
Figure 5.2



Source: EMM (2025); GPM (2025); DCSSS (2024); MetroMap (2025); GA (2009)





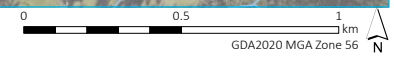
- KEY**
- Site boundary
 - Sawyers Swamp Creek diversion
 - Monitoring location**
 - Water management system
 - Watercourse
 - Stream gauge
 - Existing environment**
 - Rail line
 - Major road
 - Minor road
 - Watercourse/drainage line
 - Named waterbody
 - NPWS reserve
 - State forest

Surface water monitoring locations

Lidsdale Ash Repository
Operational Environmental
Management Plan
Figure 5.3



Source: EMM (2024); GPM (2024); DCSSS (2024); ESRI (2024)



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5.2 Environmental monitoring program

An overview of the environmental monitoring activities that have been specified by the respective sub-plans under Section 6 of the OEMP is provided in Table 5.1. Refer to specific sub-plans in the Appendices for further details.

Table 5.1 Environmental monitoring program

Potential impact	Locations	Parameters	Frequency	Technique	Reporting	Responsibility	OEMP sub-plan reference
Noise normal conditions	Based on the current operations at the Lidsdale Ash Repository the following 3 locations have been identified as the nearest sensitive receivers: <ul style="list-style-type: none"> Location A: Skelly Road Location B: Neubeck Street Location C: Wolgan Road. Location D: Maddox Lane Monitoring should be performed at locations on these roads representative of the closest (or most exposed) sensitive receivers (residences). Refer to Figure 5.1.	Noise levels shall not exceed an L_{Aeq} of 40dB(A) at the nearest most affected receiver	During daytime (7:00 am-6:00 pm) and evening time (6:00 pm-10:00 am). Every 3 months or more frequent if adverse trends are noted.	Short-term attended noise monitoring	Three monthly noise monitoring report. If non-compliance, report is to be forwarded to DPHI and EPA within 14 days of conducting monitoring. Further monitoring should be undertaken in the event of adverse community comment or complaint relevant to operational noise.	Specialist Consultant on behalf of GPM	Appendix C
Noise emergency conditions	At the complainant's property or nearest available representative location	Noise levels shall not exceed an L_{Aeq} of 40dB(A) at the nearest most affected receive	As required	Attended monitoring using handheld sound level meter	Six monthly noise monitoring report	Specialist Consultant on behalf of GPM	Section 2.4 Appendix C
Dust impacts	Four existing dust monitoring locations Refer to Figure 5.1.	Total dust deposition of 4 g/m ² /month (annual)	Monthly	Dust deposition gauges	Air quality monitoring records	NATA approved specialists on behalf of GPM	Appendix F

Potential impact	Locations	Parameters	Frequency	Technique	Reporting	Responsibility	OEMP sub-plan reference
Groundwater quality	21 monitoring bores Refer to Figure 5.2.	Analytical suite as per Appendix D, water depth and flow direction, and baseline data	Six-Monthly	Sample collection from the 21 monitoring locations as per procedures outlined in the Groundwater Quality Sub-Plan	Groundwater monitoring data	NATA approved specialists on behalf of GPM	Appendix D
Surface water quality	9 monitoring locations Refer to Figure 5.3.	Analytical suite as per Appendix E	Monthly	Sample collection from the 9 monitoring locations as per procedures outlined in the Surface Water Management Sub-plan	Surface water monitoring data	NATA approved specialists on behalf of GPM	Appendix E
	14 monitoring locations. Refer to Figure 5.3.	Analytical suite as per Appendix E	Quarterly during dry weather events, and 1 week following wet weather	Sample collection from the 14 monitoring locations as per procedures outlined in the Surface Water Quality Sub-plan	Surface water monitoring data	NATA approved specialists on behalf of GPM	Appendix E
	3 monitoring locations. Refer to Figure 5.3.	Analytical suite as per Appendix E	Weekly during discharges to the Cox's River	Sample collection from the 3 monitoring locations as per procedures outlined in the Surface Water Quality Sub-plan	Surface water monitoring data	NATA approved specialists on behalf of GPM	Appendix E
Capping material	Stockpiles	RRO criteria	Monthly	Sample collection from stockpiles against RRO criteria	Laboratory reports, database	NATA approved specialists on behalf of GPM	Section 6.2.1
Lighting	Site	No light spill from external to neighbouring properties from activities	Weekly	Visual assessment AS2482 1997	Site Diary notes	Site Manager	Section 6.1

6 Implementation

6.1 Environmental targets and key indicators

The following environmental performance indicators will be used to assess the performance of the Lidsdale Ash Repository operations. If adverse trends are noted, a review of the relevant procedures and mitigation measures will be initiated by the Manager Environment in consultation with the Site Manager and site contractors, to address the issue in question and achieve acceptable performance.

Table 6.1 Environmental targets and performance indicators

Environmental issue	Performance target	Performance indicators
Noise impacts at sensitive receptors	<ul style="list-style-type: none"> achieve compliance with the noise criterion of L_{Aeq} of 40dB(A) at the nearest most affected receiver during normal operations continued mitigation of noise impacts associated with the Lidsdale Ash Repository 	<ul style="list-style-type: none"> the number of noise-related complaints noise monitoring data obtained from the sensitive receiver locations compliance indicators as assessed by the specialist noise consultant and the Environmental Representative, as required observed and monitored reduction in noise generation due to adaptation where necessary of engineering measures on trucks, the implementation of operating techniques such as limited compression braking and speed limit restrictions
Surface water quality	<ul style="list-style-type: none"> zero environmental incidents that related to pollution of waters at Sawyers Swamp Creek comply with EPL discharge limits 	<ul style="list-style-type: none"> the surface water monitoring results and the assessment of water quality in accordance with the ANZECC guidelines no visual evidence of erosion and sedimentation impacts on Sawyers Creek following significant rain events records of trend analysis, management procedures and observations for each of the nominated monitoring locations
Groundwater quality	<ul style="list-style-type: none"> zero environmental incidents that are related to pollution of waters consistent or improving groundwater quality across the site 	<ul style="list-style-type: none"> SSTVs provide a framework to assess potential deterioration of water quality or deviation in water levels at the Site results of monitoring trends undertaken by suitably qualified consultant
Air quality	<ul style="list-style-type: none"> the local air quality in the vicinity of the project is not impacted by Lidsdale Ash Repository operations zero incidence of dust-related complaints 	<ul style="list-style-type: none"> zero visible dust events in vicinity of Lidsdale Ash Repository during site operations complaints register demonstrating zero occurrence of dust-related complaints
Landscape and revegetation	<ul style="list-style-type: none"> all areas of the Lidsdale Ash Repository that have reached their final height will initially be covered with capping material and revegetated to stabilise the soil surface 	<ul style="list-style-type: none"> evidence of final batter development and regular placement and spreading of capping material
Waste	<ul style="list-style-type: none"> waste disposal practices at the Lidsdale Ash Repository to reflect Environment Protection Licence conditions wastes generated on site to be recycled or disposed of as per Waste Management Sub-plan 	<ul style="list-style-type: none"> 100% of material unloaded at the ash placement area to correspond to the EPL criteria outlined in the Waste Management Sub-plan (OEMP Section 6.2.1) evidence of recycling system in use and site generated waste being disposed of to an appropriate facility

Environmental issue	Performance target	Performance indicators
Lighting	<ul style="list-style-type: none"> no light spill to neighbouring properties all external lighting to be assessed for light spill off site against AS 2482 1987 	<ul style="list-style-type: none"> zero complaints regarding light spill from lighting compliance with CoA 2.35 and AS 2482 1997
Closure of site	<ul style="list-style-type: none"> achieve structural stability of landforms maximise clean water diversion to Sawyers Swamp Creek capping of final landforms in accordance with approved closure plans rehabilitation of capped landforms achieve compliance with approved capping material requirements under the excavated natural material order 2014 and excavated natural material exemption 2014 and VENM classification achieve compliance with the number of heavy vehicle loads of capping material to the site per day achieve compliance with the requirement to cover all heavy vehicle loads 	<ul style="list-style-type: none"> prior to delivery of imported material, the generator is to provide confirmation of the material classification document control system in place to record heavy vehicle loads to the site regular monitoring of truck movements, material delivered and placement operations showing compliance in areas such as speed limit adherence and the covering of loaded vehicles monitoring of closure activities and rehabilitation success in AEMR

6.2 Environmental management sub-plans

Detailed management sub-plans have been developed to mitigate potential environmental impacts associated with the Lidsdale Ash Repository area. These provide operational management guidelines for environmental issues identified in the Conditions of Approval and identifies environmental mitigation measures and safeguards to be implemented. These environmental safeguards will form the basis of the environmental controls for the Lidsdale Ash Repository operations.

The sub-plans follow an issue-based format where the environmental impacts, management activities and controls are organised under each identified environmental issue. Each plan has a monitoring program to ensure all aspects are quantified and the requirements of the various conditions of approval or license requirements are met.

The following management plans have been prepared as sub-plans to the OEMP:

- Operational Noise and Vibration Management Plan
- Operational Surface Water Management Plan
- Operational Groundwater Management Plan
- Operational Air Quality Management Plan
- Operational Landscape/Revegetation Plan
- Operational Transport Management Plan.

The management of wastes is included in this OEMP as Section 6.2.1.

6.2.1 Waste management sub-plan

i Targets

The waste management targets are:

- waste disposal practices at the Lidsdale Ash Repository is to reflect the consent and EPL 21185 conditions
- wastes generated on site are to be recycled or disposed of as per the guidelines specified in Table 6.2.

ii Indicators

The waste management indicators are:

- 100% of material disposed of within the Lidsdale Ash Repository is to correspond to the criteria outlined in Table 6.2
- evidence of the recycling system in use and site-generated waste being disposed of to an appropriate facility.

iii Supporting documentation

- EPA Waste Classification Guidelines
- resource recovery orders and exemptions in force at the time.

iv Key issues/constraints/strategies

All staff involved in waste management activities are to be made aware of the waste management procedures as outlined in Table 6.2. Waste-related documents and records are to reflect adherence to these protocols, thereby providing the foundations for a transparent approach to waste management.

Table 6.2 Waste management subplan

Relevant aspect/impact	Management and mitigation measures	Source of requirement	Frequency	Relevant records	Responsibility
General requirements	Unless authorised by EPL 21185, GPM and the Contractor shall not cause, permit or allow any waste generated outside the ash repository to be received at the ash repository for storage, treatment, processing, reprocessing or disposal. Any waste generated at the ash repository shall not be disposed of at the ash repository, unless expressly permitted by the EPL 21185.	EPL CoA 2.41	Ongoing	Waste records	GPM/Contractor
	GPM and the Contractor shall ensure that all waste materials are assessed, classified, managed and disposed of in accordance with EPA Waste Classification Guidelines	CoA 2.39	As required	Waste records	GPM/Contractor
	All waste materials removed from the site will only be directed to a waste management facility lawfully permitted to accept the materials.	CoA 2.40	As required	Waste records	GPM/Contractor
Ash repository operation	<p>GPM and the Contractor shall ensure that only the following types of waste are to be received at the ash repository:</p> <ul style="list-style-type: none"> • ENM • VENM • RRO/RRE materials listed on EPL 21185. <p>The following materials can only be received from the WPS EPL 766 area:</p> <ul style="list-style-type: none"> • asbestos • ash • mill pyrites • demineralisation and polisher plant effluents • chemical clean solutions • cooling tower sediments • ion exchange resins • fabric filter bags • brine conditioned fly ash • biomass co-firing ash • settling pond sediments • oil and grit trap sediments. 	EPL L4.1	Ongoing	Waste records	GPM/Contractor

Relevant aspect/impact	Management and mitigation measures	Source of requirement	Frequency	Relevant records	Responsibility
	Maintenance wastes, such as oils and greases, shall be disposed of by the Contractor to an appropriate facility. Waste generated by site personnel shall be collected on a regular basis. Waste must either be recycled or disposed of to an appropriate facility.	SoC Table 7.1 'Waste'	As required	Waste records	Contractor
	All cleared vegetation shall be mulched, chipped or re-used on-site for sediment filter fences, site rehabilitation or other uses, where appropriate.	SoC Table 7.1 'Waste'	As required	Waste records	Contractor
	Illegally dumped rubbish or waste found inside the ash repository boundaries shall be disposed of by the Contractor at an appropriate licensed waste facility.	OEMP	As required	Waste records	Contractor
Reporting	The Annual Environmental Management Report (AEMR) will be submitted to the Secretary complete with waste management data gathered throughout the year.	CoA 7.3	CoA 7.3 Annually	Annual Environmental Management Report (AEMR)	GPM
	EPL 21185 Annual Return.	EPL 21185 R1.1	Annually as per Licence version date	Annual Return	GPM

References

DIPNR (2004) *Guideline for the Preparation of Environmental Management Plans* Department of Infrastructure, Planning and Natural Resources

EA (2018) *Wallerawang Power Station Capping Project: Environmental assessment of importation of clean fill to Wallerawang Ash Repository*, EnergyAustralia NSW Pty Ltd

Parsons Brinkerhoff (2008) *Kerosene Vale Stage 2 Ash Repository Area Environmental Assessment*.

EMM Consulting Pty Ltd (2023) *MP07_005_Mod 2 Modification Report*, Generator Property Management

Niche (2021) *Lidsdale Ash Repository Constraints Assessment (Biodiversity)*, Generator Property Management

Total Earth Care (2022) *Weed Management Plan Wallerawang Ash Dam Areas*, Generator Property Management

New Era Total, *Weed Management Plan for Lidsdale Ash Repository*, Generator Property Management

New South Wales Environment Protection Agency (NSW EPA) (2023) Environment Protection Licence 21185, Licence version date 19 December 2023.

NSW EPA (2025) Environment Protection Licence 21185 Licence Variation Notice no. 1644223, Doc Ref: DOC25/354786-1, issued 22 October 2025.

Abbreviations and definitions

Abbreviations	Definitions
AEMR	Annual Environmental Management Report
Capping material	Material used to cap ash repository areas of the site
CEMP	Construction Environmental Management Plan
CIP	Caustic Injection Plant
CoA	Conditions of Approval stipulated on the Project Approval (Application 07_0005) granted by the Minister for Planning for the Project under Part 3A of the Environmental Planning and Assessment Act 1979
Contractor	The company responsible for the Stage 2 ash repository operations and project works
DDR	Decommissioning, demolition and rehabilitation
DPE	(Former) Department of Planning and Environment
DPHI	Department of Planning, Housing and Infrastructure
DPI	NSW Department of Primary Industries
DS Act	NSW Dam Safety Act 1978
EA	Environmental Assessment
EA NSW	Energy Australia NSW (previous owners of the site)
EMS	Environmental Management System
ENM	Excavated natural material
EPA	Environmental Protection Authority
EP&A Act	Environmental Planning and Assessment Act 1979
EPL	Environment Protection Licence No. 21185
GPM	Generator Property Management – site owners and operators
Heavy vehicle	A vehicle that has a combined Gross Vehicle Mass or Aggregate Trailer Mass of more than 4.5 tonnes
IAPAR	Independent Audit Post Approval Guidelines 2020
KVAD	Kerosene Vale Ash Dam
KVAR	Kerosene Vale Ash Repository
Licensee	The Licensee for this Project is GPM
LAR	Lidsdale Ash Repository (formerly known as the Wallerawang Ash Repository)
OEMP	Operation Environmental Management Plan
Operation	<p>The operational activities of the project include:</p> <ul style="list-style-type: none"> • Ash haulage, placement and management systems • Onsite water management systems • Capping material haulage, placement and management • Landscaping and revegetation/rehabilitation of the site; and • Upgrading and maintaining internal access roads in the project area

Abbreviations	Definitions
OTMP	Operational Transport Management Plan
PCT	Plant Community Type
POEO Act	Protection of the Environment Operations Act 1997
Project	Refers to the project described in the environmental assessment for the modification
Proponent	The Proponent for this Project is GPM
RMS	Roads and Maritime Services (now TfNSW)
SSCAD	Sawyers Swamp Creek Ash Dam
SoC	Statement of Commitments – public submissions to the Stage 2 ash repository works outlined in the Submissions Report by Parsons Brinckerhoff (June 2008)
WPS	Wallerawang Power Station
VENM	Virgin excavated natural material.

Appendix A

Site Inspection Checklist

A.1 Site Inspection Checklist

Table A.1 Daily environmental site inspection

Week start & end date:	Contractor / Name:			Work Order # (if applicable):			
Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday*	Sunday*
Date							
Time inspection completed:							
Weather Conditions							
Temperature (°C):							
Rainfall (mm)							
Humidity (%):							
Wind Speed (km/h):							
Sediment and erosion controls							
Site sediment controls are in place in accordance with the PESCP for the activity and effective.	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No
*If no provide more information in corrective actions list below.							
Drainage lines when flowing are stable and not eroding. Erosion controls surrounding all stockpiles and ash placement zones working effectively.	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No
*If no provide more information in corrective actions list below.							
Sediment basin levels below discharge levels.	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No
Basin discharging?	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No

Week start & end date:	Contractor / Name:			Work Order # (if applicable):			
------------------------	--------------------	--	--	-------------------------------	--	--	--

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday*	Sunday*
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Time inspection completed:

Dust Suppression

All dust suppression measures such as irrigation systems and pumps are fully functional and in effective locations?	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No
Water cart in use?	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No
Environmental monitoring locations are secure with equipment in good working condition	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No
Site roads not generating visible dust	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No

Waste Management

Condition of equipment, vehicles and plant to control spills and leaks	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No
All waste materials have been disposed of in an appropriate matter	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No
All chemicals and fuels are being stored within bunded areas and clear of drainage lines	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No

Community

Have any complaints been received? If yes have they been recorded and actioned in accordance with the compliance reporting requirements	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No
--	----------	----------	----------	----------	----------	----------	----------

Corrective action(s) if required

Day	Action(s) required	Completion date
Monday ___/___/___		___/___/___
Tuesday ___/___/___		___/___/___
Wednesday ___/___/___		___/___/___
Thursday ___/___/___		___/___/___
Friday ___/___/___		___/___/___

Note * - Only required when works are being undertaken on Weekends

Table A.2 Monthly Monitoring Checklist

Month:

Date inspection completed:

Weather Conditions (monthly range)

Temperature (°C):

Rainfall (mm)

Humidity (%):

Wind Speed (km/h):

Sediment and erosion controls	Comments / Actions required
PESCP for the activities being undertaken are effective. Yes / No *If no provide more information in corrective actions list below.	
Drainage lines stable and not eroding. working effectively. Yes / No *If no provide more information in corrective actions list below.	
Sediment basin levels as per design requirements on ESCP. Yes / No	
EPL discharge points labelled and operational.	

Dust Suppression	Comments / Actions required
All dust suppression measures such as irrigation systems and pumps are fully functional and in effective locations for upcoming works? Yes / No	

Month:

Water cart fill point in good working order? Yes / No

Environmental monitoring locations are secure with equipment in good working condition Yes / No

Site roads in good condition Yes / No

Waste Management Comments / Actions required

Spill kits full and adequate for current operations Yes / No

All waste materials have been disposed of in an appropriate manner Yes / No

All chemicals and fuels are being stored within bunded areas and clear of drainage lines. Storage areas adequate for current and upcoming works Yes / No

Community Comments / Actions required

Have any complaints been received? Yes / No
If yes have they been reported externally where required

Appendix B

Complaints Register

B.1 Complaints Register

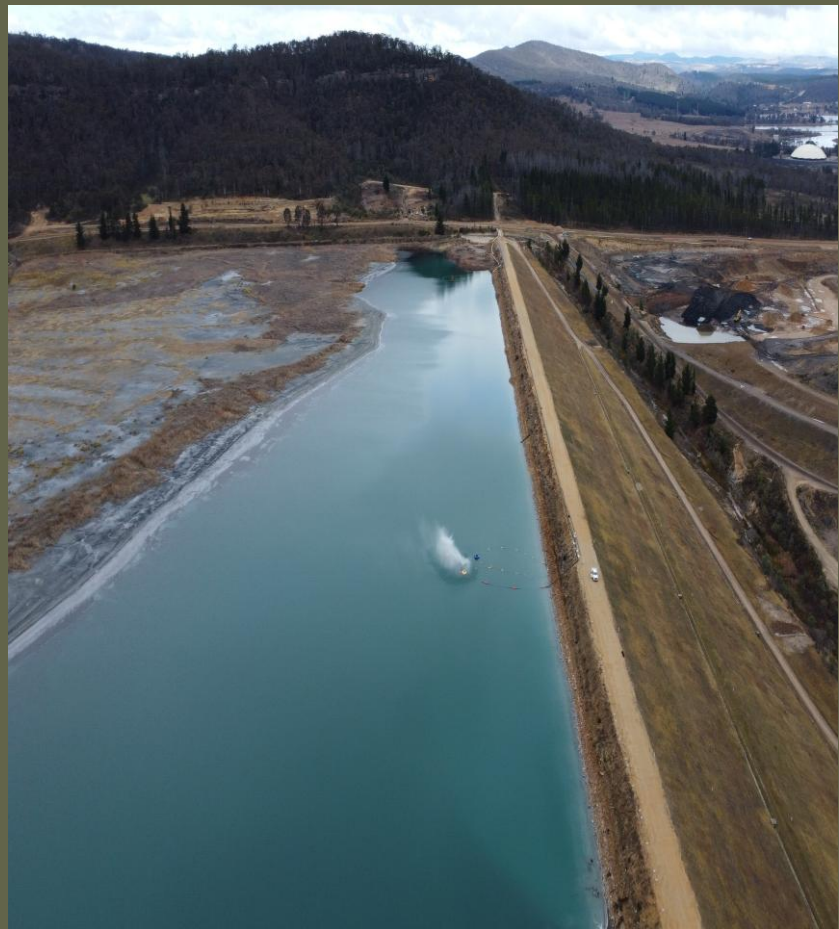
Link to complaints register: <https://gpmco.com.au/lidsdale/>

Appendix C

Operational Noise Management Plan


Operational Noise Management Plan

Lidsdale Ash Repository 2026



GPM

Document control

Title	Operational Noise Sub-plan - Lidsdale Ash Repository 2025
Approved by GPM Environment Manager	John Pola
Signed	
Dated	31 st March 2026

Version control

Revision	Date	Description	Author	Reviewer	Approval
Rev 01	19/12/2024	Draft	Sofia Stergio	Philip Towler	John Pola
Rev 02	28/01/2025	Update consultation register	Nadia Eisenlohr	Daniel Keegan	John Pola
Rev03	14/10/2025	Updated post DPFI comments	Zainab Ahmed Nadia Eisenlohr	Tracey Doczy	John Pola
Rev 04	18/02/2026	DPFI additional comments	Zainab Ahmed Nadia Eisenlohr	Tracey Doczy	John Pola
Rev 05	31/03/2026	Final	Zainab Ahmed Nadia Eisenlohr	Tracey Doczy	John Pola

List of emergency and key contacts

Position	Name	Phone
EPA pollution hotline		131 555
Fire and Rescue NSW		000 (for pollution incidents that present an immediate threat to human health or property) 1300 729 579 (for pollution incidents that do not present an immediate threat to human health or property)
Lithgow Hospital		02 6350 2300
SafeWork NSW		131 050
24-hour community information line		1800 817 711
Environment Manager	John Pola	0429 205 290
Financial Controller & Company Secretary	Diane Dibben	0412 773 255
Managing Director	David Wood	0484 623 220
Western Region Manager	Marlon Frost	0423 127 030
Engineering Project Officer	Timothy Edwards	0413 446 686
Engineering Project Officer	Julian MacPhee	0427 094 014
Environmental Representative	David Bone	0407 461 092
Lithgow City Council	General Number	02 6354 9999
Wallerawang Police	General Number	02 6355 1303
Lithgow Police	Chris Sammut	02 6352 8399

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Glossary/Abbreviations

Abbreviation	Expanded text
Approval	Approval Modification MP07_005-Mod 2
CEMP	Construction Environmental Management Plan
CEMS	Contractors Environmental Management System
CoAs	Conditions of approval
Minister, the	Minister of the NSW Department of Planning and Environment (or delegate)
DP&E	Department of Planning and Environment
DPHI	NSW Department of Planning, Housing and Infrastructure
EIS	Environmental Impact Statement
EEC	Endangered Ecological Community
EPA	NSW Environment Protection Authority
EPBC-CoA	Federal Conditions of Approval under the EPBC Act
EMS	Environmental Management System
Environmental aspect	Defined by AS/NZS ISO 14001:2015 as an element of an organisation's activities, products or services that can interact with the environment.
Environmental impact	Defined by AS/NZS ISO 14001:2015 as any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's environmental aspects.
Environmental incident	A set of circumstances that causes or threatens to cause material harm to the environment, and/or breaches or exceeds the limits or performance measures/criteria in this approval.
Environmental objective	Defined by AS/NZS ISO 14001:2015 as an overall environmental goal, consistent with the environmental policy, that an organisation sets itself to achieve.
Environmental policy	Statement by an organisation of its intention and principles for environmental performance.
Environmental target	Defined by AS/NZS ISO 14001:2015 as a detailed performance requirement, applicable to the organisation or parts thereof, that arises from the environmental objectives and that needs to be set and met in order to achieve those objectives.
ER	Environmental Representative: A suitably qualified and experienced person independent of project design and construction personnel employed for the duration of construction. The principal point of advice in relation to all questions and complaints concerning environmental performance.
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i> (NSW)
EPL	Environment Protection Licence
ESCP	Erosion and Sediment Control Plan

GPM	Generator Property Management Pty Ltd
KPI	Key Performance Indicator
KVAD	Kerosene Vale Ash Dam
KVAR	Kerosene Vale Ash Repository (dry stacked as on top of KVAD)
LADR	Lidsdale Ash Dam Repository
Non-compliance	An occurrence, set of circumstances or development that is a breach of this approval but is not an incident.
OEH	Office of Environment and Heritage
PESCP	Progressive Erosion and Sediment Control Plan
Principal, the	GPM
POEO Act	<i>Protection of the Environment Operations Act 1997</i> (NSW)
SAP	Sensitive Area Plan
Secretary	Secretary of the Department of Planning or their Nominee
SSCAD	Sawyers Swamp Creek Ash Dam
WPS	Wallerawang Power Station

1 Introduction

The Lidsdale Ash Dam Repository (LADR), formerly known as the Wallerawang Ash Repository, is located at Skelly Road, Lidsdale NSW (the Site) and is approximately 15 kilometres (km) north-west of Lithgow and 2.5 km north-east of Wallerawang Power Station. The Site comprises an area of approximately 528 hectares (ha) and is situated primarily on Lot 5 of Deposited Plan (DP) 829137.

The Site includes several distinct components, including:

- The Kerosene Vale Dry Ash Repository (KVAR) and underlying former Kerosene Vale Ash Dam (KVAD)
- Sawyers Swamp Creek Ash Dam (SSCAD)
- Lidsdale Cut and adjacent asbestos landfills
- Demolition landfill south of the SSCAD.

The site location and general layout are shown in Figure 1.1.

The Site has been used since the 1950s to store ash and other wastes generated by the Wallerawang Power Station (WPS). Site operations started prior to the commencement of the *Environmental Planning and Assessment Act 1979* (EP&A Act), when the WPS and associated facilities were owned by the NSW Government.

Ownership and responsibility for the Site was transferred from Energy Australia NSW Pty Ltd to Generator Property Management Pty Limited (GPM) in September 2020. GPM's objectives at the Site include closure of the operational facilities and the rehabilitation and management of the site in general including the Kerosene Ash Repository (KVAR) and the Sawyers Swamp Creek Ash Dam (SSCAD).

This Operational Noise Management Plan (ONMP) has been developed to ensure operational activities are carried out responsibly and in accordance with the relevant CoAs and any other requirements.

GPM and its contractors are also undertaking construction activities that will be managed under the Site's Construction Environmental Management Plan (CEMP).

See Section 1.3 for definitions of operational activities and construction activities.

1.1 Background to the Lidsdale Ash Repository

The Lidsdale Site was originally farmland that was gradually turned into mining premises during the late 1800s into the early 20th century. The Kerosene Vale mines were originally a series of open cut operations that changed to underground mines using portals driven under the northern escarpment.

The original ash placement operations were at the KVAD. The mining void was filled with ash transported from the WPS as a slurry (i.e. wet ash placement). When the KVAD was full, it was capped with a clay capping and then ash placement operations began at the SSCAD, which saw wet ash placement take place from 1980 to 2003. The SSCAD is still used to manage site water requirements with water levels managed by irrigation for dust suppression and other onsite water uses to prevent discharge to Sawyers Swamp Creek. When required, water is transferred for treatment via a CIP, clarified and discharged through a licenced discharge point (LDP3). The SSCAD is a declared dam under the NSW [Dams Safety Act 2015 No 26](#) (DS Act) and is subject to regular surveillance and monitoring by certified engineers in accordance with the DS Act.

The need to further develop the KVAR area to maintain power-generation operations at WPS was identified in 2001. The existing wet ash storage area (i.e. the SSCAD) was approaching its design capacity and the placement of dry ash at the KVAR was identified as a viable alternative. Conversion from wet to dry ash placement aimed to minimise environmental and social impacts potentially resulting from heavy metal accumulation.

It is noted that the Site has recently been formally Declared under the *Contaminated Land Management Act* (CLM Act) by the EPA and is subject to a Voluntary Management Plan requiring detailed and extensive investigations that will guide long term works on the SSCAD and may require additional works on the Site that would be subject to further approval.

1.2 Relevant project approval

In 2002, Project Approval was granted by the then Minister of Planning to change from wet to dry ash-producing activities and to use the KVAR area for dry ash storage.

The placement of ash on the Repository was developed in two stages:

- Stage 1: Comprises about one third of the area associated with the repository site and located on the south-western section of the site, this area was designed to operate for a period of 5 years and reached its design capacity and has been capped.
- Stage 2: Comprises the remainder the repository site, covering an area from the open face of the Stage 1 area to the edge of the original storage area. This stage was designed to operate about 10 years, depending on actual ash production rates.

On 26 November 2008, Project Approval (07_0005) was granted by the then Minister of Planning for the extension of the existing KVAR area to permit the continued disposal of ash generated by the WPS under Part 3A (now repealed) of the Environmental Planning and Assessment Act 1979. The KVAR Stage 1 placement works were completed and capped in February 2009. The KVAR Stage 2 placement works commenced soon after in April 2009.

In January 2014, WPS's Unit 7 was removed from service and deregistered from the market; whilst in March 2014, Unit 8 was placed in long term storage. However, in November 2014, EnergyAustralia NSW announced that Unit 8 was to be removed from service and the WPS deregistered from the market.

WPS ceased energy production in April 2014 and is currently being decommissioned and dismantled. The bulk transport and disposal of ash to the KVAR ceased following the closure of the WPS. The Lidsdale Ash Repository is currently being managed in a care and maintenance arrangement. Environmental studies and investigations are currently underway to support GPM's safe decommissioning, demolition, rehabilitation and management of ongoing regulatory and contractual obligations associated with the Lidsdale Ash Repository area.

Modification 1 to 07_005 was approved on 9 August 2018 under section 75W of the EP&A Act. This was to allow for the importation of clean fill (virgin excavated natural material (VENM) and excavated natural material (ENM)) for use of capping of KVAR and SSCAD over two years. This modification included a revised project area that extended the originally approved project to include the area covered by SSCAD.

Modification 2 to 07_005 was approved on 13 October 2023 under section 96(1A) of the EP&A Act. This was to allow for the importation of fill over an additional 10 years (i.e. until 13 October 2033).

The most complete description of the onsite activities was provided in the original Kerosene Vale Stage 2 Ash Repository Area Environmental Assessment prepared by Parsons Brinckerhoff in April 2008. This focused on the ongoing ash management without providing any details of site rehabilitation requirements when the power station closed. However, it did include the realignment of a section of Sawyers Swamp Creek to allow the structural earthworks required to achieve an acceptable factor of safety against failure of the ash stockpiles during earthquakes. The subsequent modification applications focussed on the potential impacts of the importation of fill material, rather than on activities within the Site where the material would be utilised.

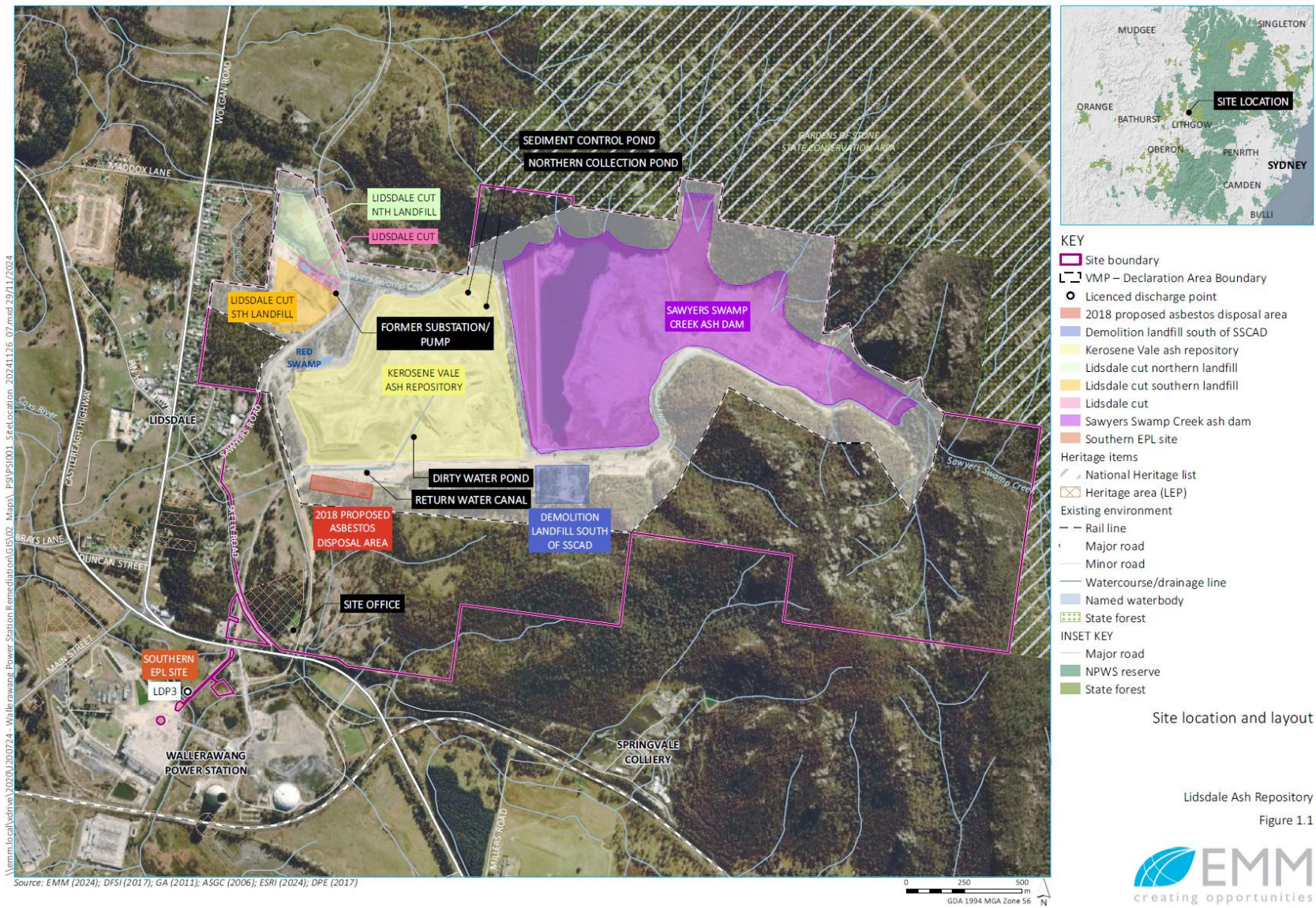


Figure 1.1 Site location and layout.

1.3 Operational Environmental Management Plan and Sub-plans

CoA 6.4 requires the applicant to develop an OEMP that outlines the environmental management practices and procedures to be followed during operations, while CoA 6.5 requires the preparation and implementation of the following plans as part of the OEMP:

- **Operational Surface Water Management Plan (OSWMP)** - identifies the management measures to minimise surface water impacts
- **Operational Noise Management Plan (ONMP)** - identifies the management measures to minimise operational noise impacts
- **Operational Groundwater Management Plan (OGMP)** - identifies the management measures to minimise operational groundwater impacts
- **Operational Air Quality Management Plan (OAQMP)** - identifies the management measures to minimise operational air quality impacts
- **Operational Landscape/Revegetation Plan (OLP)** - identifies the management measures to minimise operational biodiversity impacts
- **Operational Transport Management Plan (OTMP)** - identifies the management measures to minimise traffic and transport impacts

Given the requirement to develop these additional management plans in conjunction with the OEMP, these plans are identified as sub-plans to the OEMP.

Table 1.1 provides a high-level overview of the proposed activities that are covered by the OEMP and those covered by the CEMP. Further information on the scope of this OEMP is provided in section 1.4.

Table 1.1. Activities covered by the CEMP and OEMP

Environmental Management Plan	Activities covered
OEMP – care and maintenance operations	<ul style="list-style-type: none"> • Ash management activities • Management of on-site water systems • Capping material haulage, placement and management • Landscaping and revegetation/rehabilitation of the site • Upgrading and maintaining internal access roads in the project area

Environmental Management Plan	Activities covered
CEMP – construction activities	<ul style="list-style-type: none"> • Sawyers Swamp Creek realignment • Construction of stability berms around the perimeter of the KVAR • Excavation of the former pine plantation area • Sediment controls and surface water dams associated with construction of the KVAR stability berm and realignment of the Sawyers Swamp Creek • Establishment of freshwater collection ponds on the northern edge of SSCAD • Rearrangement of water flows around the KVAR • Establishment of access roads onto the surface of the SSCAD and associated roads across the dam surface • Reinstatement of environmental controls for historic landfill areas including capping of slumped areas, reprofiling for water management and control of sediment runoff during these activities

Noise generated during operations will primarily result from the following activities:

- Truck movements associated with materials importation and placement, along internal haul roads, occurring between 7:00 am and 10:00 pm under normal operating conditions.
- Materials placement using compactors and bulldozers to improve landform and stabilisation of the site.
- Sequential placement progressing east over the former pine plantation area, then north toward Sawyers Swamp Creek.

1.4 Environmental management system overview

GPM's Environmental Management System (EMS) is based on AS/NZS ISO 14001. The ISO 14001 standard provides best practice specifications for the implementation of an EMS. An EMS provides a framework for managing the company's environmental responsibilities so that they are integrated into overall operations. The standard approach integrates environmental management and supports the company's compliance with legislated and voluntary environmental requirements, as well as continuously improving their overall environmental performance.

The relevant environmental standard ensures a consistent approach is undertaken to integrate environmental management at all levels of the organisation by:

- identifying and maintaining awareness of relevant environmental legislation
- assignment of roles and responsibilities
- establishment of procedures for internal and external communications
- establishment of procedures for monitoring and measuring environmental performance
- setting and reviewing objectives and targets for improving environmental performance
- monitoring and measuring environmental compliance and community inquiries
- setting and reviewing management system programs for achieving objectives and targets
- provision of environmental training aligned to skill requirements
- review of EMS performance for continual improvement.

This ONMP has been developed to be consistent with the relevant provisions of GPM's EMS, including approvals and license as noted above.

A summary of the EMS and its interaction with the CEMP and OEMP is provided in Figure 1.2.

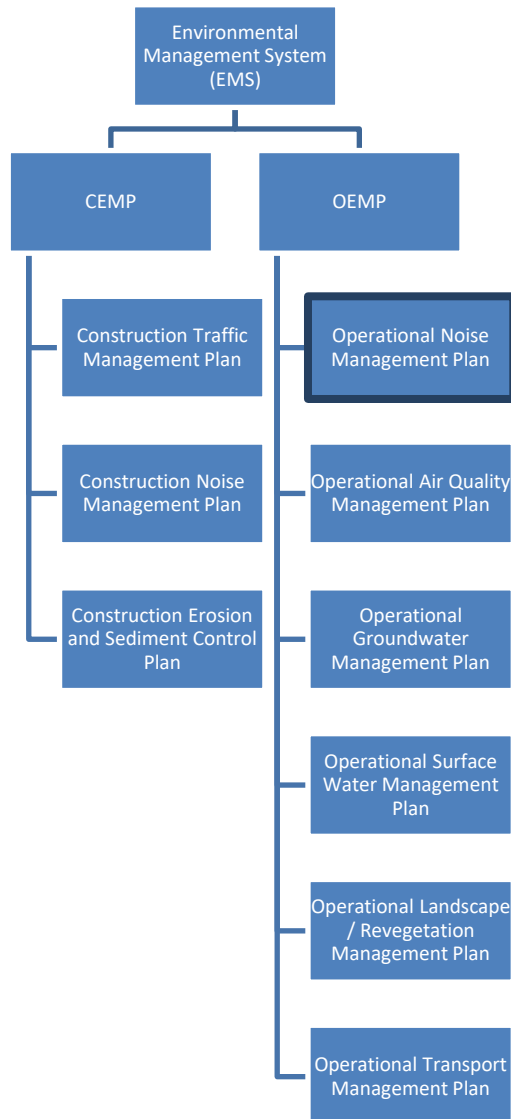


Figure 1.2 Environmental Management System flowchart

1.5 Interactions with other management plans and strategies

This ONMP (outlined in Figure 1.2 above) is a sub-plan to the OEMP and interrelates with the other (sub) management plans set out in Sections 1.3 and 1.4 above.

1.6 This CEMP Reference documents

This ONMP incorporates the obligations and criteria outlined in the following documents:

- Project Approval 07_0005 (NSW Department of Planning)
- Submission Report – Statement of Commitments (Parsons Brinckerhoff 2008)
- Modification application 07_0005 Mod 1

- Modification application 07_0005 Mod 2
- Wallerawang Power Station to Submissions Report (EA 2018)
- Environment Protection Licence 21185 (NSW Environment Protection Authority)
- Works Approval (Water Mgt Act 2000)

1.7 Management Plan Consultation and Approval Process

The OEMP and associated sub-plans, strategies and monitoring programs undergo review by the GPM team. Following this review and revision process, internal approval is provided to release the document for consultation.

Table 1.2 summarises the relevant authorities, councils, and agencies consulted during the preparation of the OEMP sub-plans and monitoring programs, in line with the conditions of approval. External consultation has been undertaken for the ONMP and Monitoring Program.

Management plans are then endorsed by the ER (CoA 6.5) and subsequently submitted to the Secretary for approval.

A copy of the latest ER Endorsement of the OEMP is included in Appendix B of this Plan.

Table 1.2 Consultation requirements for OEMP and sub-plans

Report	Relevant CoA	Condition of Approval	Consultation required
Operational Environmental Management Plan	6.4	The plan will be submitted for the approval of the Secretary no later than four weeks prior to the commencement of operation of the project, unless otherwise agreed by the Secretary.	Secretary (DPHI)
Operational Noise Management plan	6.5a	The plan has been prepared in consultation with, and to the satisfaction of, the EPA.	EPA
Groundwater Management Plan	6.5b	The plan will be prepared in consultation with, and to the satisfaction of, WaterNSW.	WaterNSW
Surface Water Management Plan	6.5c	The plan will be based on best environmental practice and will be prepared in consultation with, and to the satisfaction of, WaterNSW and Fisheries NSW.	WaterNSW Fisheries NSW
Air Quality Management Plan	6.5d	The plan has been prepared in consultation with, and to the satisfaction of, the EPA.	EPA
Operational Transport Management Plan	6.5f	The plan must be prepared in consultation with TfNSW and Council.	TfNSW Lithgow Council

Table 1.3 Consultation outcomes for ONMP

Agency	Date provided	Comments	Where addressed
EPA	21/01/2025	EPA has reviewed this plan and has no comments at this stage	Not applicable

2 Purpose and Objectives

2.1 Purpose

This ONMP for the Lidsdale Ash Repository outlines strategies and actions to mitigate environmental impacts when undertaking operational activities. As listed in Table 1.1 these activities include: ash management, maintenance of internal roads, on-site water systems management, materials placement & haulage, stabilisation and rehabilitation of the site.

Designed to set clear protocols and responsibilities, the ONMP reduces operational noise impact risks and fosters environmentally sound & sustainable practices. This sub-plan is to be read in conjunction with the OEMP.

2.2 Objectives

The objectives of the ONMP are to:

- reduce the risk of generating non-compliant noise and vibration emissions.
- document operation activities that may lead to environmental noise impacts and associated control measures to be implemented
- detail the location of sensitive noise receivers
- describe noise management criteria and associated noise monitoring protocols and reporting.

It is noted that ash is no longer placed in the repository, and as such operational activities now have a lower potential for noise impacts. This includes undertaking works outside of standard working hours.

2.3 Targets and Indicators

The following targets and indicators apply to the operational activities undertaken at the site:

Targets

- Achieve compliance with the operational noise criterion of LAeq 40 dB(A) at the nearest most affected receiver during normal operating conditions.
- Implement and maintain ongoing measures to minimise and mitigate noise impacts associated with operations at the Lidsdale Ash Repository.

Indicators

- No substantiated noise-related complaints received.
- Noise monitoring results demonstrate compliance at identified sensitive receiver locations.
- Documented reduction in noise levels associated with truck movements, supported by the implementation of noise control measures such as speed limits and reduced use of compression braking

2.4 Permissible Working Hours

In accordance with CoA 2.8 operational activities as listed in Table 1.1. Activities covered by the CEMP and OEMP are to be undertaken from 7.00 am to 10.00 pm Monday to Sunday.

Where appropriate sources of material for closure of the site can be identified and approved for use under the project approvals, these resources would be used in preference to imported materials. Wherever possible material transport and operations which are likely to be audible at residential receivers will avoid evening periods.

Condition 2.9 requires the Applicant, within six months of project operation, to review ash haulage and placement logistics to assess the feasibility of reducing operating hours. If feasible, the Applicant is to implement reduced hours where possible. However, with the closure of the Wallerawang Power Station (WPS) and cessation of ash delivery and placement, this condition is no longer applicable.

Out of standard hours emergency works are permitted as follows:

- where it is required to avoid the loss of lives, property and/or to prevent environmental harm; or
- breakdown of plant and/or equipment at the repository or the WPS with the effect of limiting or preventing ash storage at the power station outside the operating hours defined in condition 2.8; or
- a breakdown of an ash haulage truck(s) preventing haulage during the operating hours stipulated in condition 2.8 combined with insufficient storage capacity at the WPS to store ash outside of the project operating hours; or
- in the event that the National Electricity Market Management Company (NEMMCO), or a person authorised by NEMMCO, directs GPM (as a licensee) under the National Electricity Rules to maintain, increase or be available to increase power generation for system security and there is insufficient ash storage capacity at the WPS to allow for the ash to be stored.

If a breakdown of plant or equipment or a breakdown of an ash haulage truck is identified, GPM is to take all reasonable and feasible measures to repair the breakdown in the shortest time possible.

In accordance with CoA 2.11 in the event that an emergency situation as referred to under a breakdown of plant or equipment or a breakdown of an ash haulage truck GPM must prepare and submit to the Secretary a report including, but not limited to:

- the dates and a description of the emergency situations;
- an assessment of all reasonable and feasible mitigation measures to avoid recurrence of the emergency situations;
- identification of a preferred mitigation measure(s); and
- timing and responsibility for implementation of the mitigation measure(s).

The report is to be submitted to the Secretary within 60 days of the second exceedance occurring. GPM will implement all reasonable and feasible mitigation measures in accordance with the requirements of the Secretary.

2.5 Notification for out of hours work

If emergency works are undertaken, GPM shall:

- Notify the EPA prior to undertaking any ash haulage or placement outside the hours specified in CoA 2.8 and maintain a log of such activities.
- Notify the Planning Secretary in writing within seven days of any such operations.
- Inform nearby sensitive receivers before 8:00 pm if emergency operations outside approved hours are anticipated.

3 Environmental requirements

3.1 Relevant Conditions of Approval

The relevant CoAs, and where they are addressed in this ONMP are provided in Table 3.1.

Table 3.1 Relevant Conditions of Approval and where they are addressed in this report

Relevant CoA	Condition of Approval	Where addressed in this plan
2.8	Operational activities associated with the project shall only be undertaken from 7.00 am to 10.00 pm Monday to Sunday	Section 2.4 Permissible Working Hoursof this ONMP
2.9	Within six months of commencement of operation of the project the Applicant shall prepare and submit to the Secretary a review of the logistical arrangements for ash haulage and placement to determine the feasibility of reducing the hours of operation. If, as a result of the review, it is determined that ash haulage and placement times can commence later and/or finish earlier, the Applicant shall aim to observe the reduced hours whenever possible.	Section 2.4 Permissible Working Hoursof this ONMP
2.10	Operations outside the hours stipulated in condition 2.8 of this approval are only permitted in the following emergency situations: a) where it is required to avoid the loss of lives, property and/or to prevent environmental harm; or b) breakdown of plant and/or equipment at the repository or the Wallerawang Power Station with the effect of limiting or preventing ash storage at the power station outside the operating hours defined in condition 2.8; or c) a breakdown of an ash haulage truck(s) preventing haulage during the operating hours stipulated in condition 2.8 combined with insufficient storage capacity at the Wallerawang Power Station to store ash outside of the project operating hours; or d) in the event that the National Electricity Market Management Company (NEMMCO), or a person authorised by NEMMCO, directs the Applicant (as a licensee) under the National Electricity Rules to maintain, increase or be available to increase power generation for system security and there is insufficient ash storage capacity at the Wallerawang Power Station to allow for the ash to be stored. In the event of conditions 2.10b) or 2.10c) arising, the Applicant is to take all reasonable and feasible measures to repair the breakdown in the shortest time possible	Section 2.4 Permissible Working Hours of this ONMP
2.11	In the event that an emergency situation as referred to under condition 2.10b) or 2.10c) occurs more than once in any two month period, the Applicant shall prepare and submit to the Secretary for approval a report including, but not limited to: a) the dates and a description of the emergency situations; b) an assessment of all reasonable and feasible mitigation measures to avoid recurrence of the emergency situations; c) identification of a preferred mitigation measure(s); and d) timing and responsibility for implementation of the mitigation measure(s). The report is to be submitted to the Secretary within 60 days of the second exceedance occurring. The Applicant shall implement all reasonable and feasible mitigation measures in accordance with the requirements of the Secretary.	Section 2.4 Permissible Working Hoursof this ONMP

Relevant CoA	Condition of Approval	Where addressed in this plan
2.12	The Applicant shall notify the EPA prior to undertaking any emergency ash haulage or placement operations outside of the hours of operation stipulated in condition 2.8 of this approval and keep a log of such operations.	Section 2.5 of this ONMP
2.13	The Applicant shall notify the Secretary in writing within seven days of undertaking any emergency ash haulage or placement operations outside of the hours of operation stipulated in condition 2.8 of this approval.	Section 2.5 of this ONMP
2.14	The Applicant shall notify nearby sensitive receivers (as defined in the Operational Noise Management Plan required under condition 6.5a) of this approval) prior to 8.00 pm where it is known that emergency ash haulage or placement operations will be required outside of the hours of operation stipulated in condition 2.8 of this approval.	Section 2.5 of this ONMP
2.15	The cumulative operational noise from the ash placement area and ash haulage activity shall not exceed an $L_{Aeq, 15 \text{ minute}}$ of 40 dB(A) at the nearest most affected sensitive receiver during normal operating hours as defined in condition 2.8 of this approval.	Section 4.1 Operational Noise Criteria of this ONMP
2.15 a,b	<p>This noise criterion applies under the following meteorological conditions:</p> <ul style="list-style-type: none"> a) wind speeds up to 3 m/s at 10 metres above ground; and/or b) temperature inversion conditions of up to 3oC/100 m and source to receiver gradient winds of up to 2 m/s at 10 m above ground level. <p>This criterion does not apply where the Applicant and the affected landowner have reached a negotiated agreement in regard to noise, and a copy of the agreement has been forwarded to the Secretary and the EPA.</p>	Section 4.1 Operational Noise Criteria Table 4.1 – Environmental Mitigation Measures
2.16	The Applicant shall implement measures to ensure noise attenuation of trucks. These measures may include, but are not necessarily limited to, installation of residential class mufflers, engine shrouds, body dampening, speed limiting, fitting of rubber stoppers to tail gates, limiting the use of compression braking, and ensuring trucks operate in a one-way system at the ash repository where feasible.	Table 4.1 – Environmental Mitigation Measures
2.17	The Applicant shall liaise with the owner/operator of Angus Place Coal Mine with the aim of preparing a protocol which provides for a co-operative approach for the management and mitigation of noise impacts associated with coal and ash truck movements along the private haul road.	<p>Angus Place and WPS are no longer operating.</p> <p>If Angus Place recommences operation, an action will be taken to review the management plan and update if required.</p>

Relevant CoA	Condition of Approval	Where addressed in this plan
2.18	Where noise monitoring (as required by conditions 3.2 or 3.3 of this approval) identifies any non-compliance with the operational noise criterion specified under condition 2.15 of this approval the Applicant shall prepare and submit to the Secretary for approval a report including, but not limited to:	Section 5.2 Table 4.1 – Environmental Mitigation Measures
2.18a	An assessment of all reasonable and feasible physical and other mitigation measures for reducing noise at the source including, but not limited to - i) construction of a noise barrier along the haulage road, ii) alternative ash haulage routes, and iii) alternative methods of ash conveyance to the repository; and	Table 4.1 – Environmental Mitigation Measures Note: The haul road is not in use as originally anticipated by this condition.
2.18b	Identification of the preferred measure(s) for reducing noise at the source;	Table 4.1 – Environmental Mitigation Measures
2.18c	Feedback from directly affected property owners and the EPA on the proposed noise mitigation measures; and	Table 4.1– Environmental Mitigation Measures
2.18d	Location, type, timing and responsibility for implementation of the noise mitigation measure(s).	Table 4.1 – Environmental Mitigation Measures
2.18	The report is to be submitted to the Secretary within 60 days of undertaking the noise monitoring which has identified exceedances of the operational noise criterion specified under condition 2.15, unless otherwise agreed to by the Secretary. The Applicant shall implement all reasonable and feasible mitigation measures in accordance with the requirements of the Secretary.	Table 4.1 – Environmental Mitigation Measures

Relevant CoA	Condition of Approval	Where addressed in this plan
2.19	<p>If, after the implementation of all reasonable and feasible source controls, as identified in the report required by condition 2.18, the noise generated by the project exceeds the criterion stipulated in condition 2.15 at:</p> <ul style="list-style-type: none"> a) any sensitive receiver in existence at the date of this approval; or b) any residential dwelling for which an approval has been sought or obtained under the <i>Environmental Planning and Assessment Act 1979</i> no later than six months after the confirmation of operational noise levels; <p>Upon receiving a written request from an affected landowner (unless that landowner has acquisition rights under condition 2.20 of this approval and has requested acquisition) the Applicant shall implement additional noise mitigation measures such as double glazing, insulation, air conditioning and or other building acoustic treatments at any residence on the land, in consultation with the landowner.</p>	Table 4.1 – Environmental Mitigation Measures
2.19 (cont.)	<p>For the purpose of this condition and condition 2.20, confirmation of operational noise levels means:</p> <ul style="list-style-type: none"> a) completion of the operational noise review required under condition 3.2 of this approval; and b) implementation of any source controls, as required under condition 2.18 of this approval, should the operational noise review indicate noise levels in excess of the operational noise criterion specified in condition 2.15; and c) monitoring of operational noise levels, as required under condition 3.3b) of this approval, following the implementation of any source controls. <p>The additional mitigation measures must be reasonable and feasible. If within three months of receiving this request from the landowner the Applicant and landowner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Director-General for resolution, whose decision shall be final.</p>	Table 4.1 – Environmental Mitigation Measures
2.20	<p>If, after the implementation of all reasonable and feasible source controls, as identified in the report required by condition 2.18, the noise generated by the project exceeds the criterion stipulated in condition 2.15 by more than 5 dB(A):</p> <ul style="list-style-type: none"> a) at a sensitive receiver in existence at the date of this approval; or b) at any residential dwelling for which an approval has been sought or obtained under the <i>Environmental Planning and Assessment Act 1979</i> prior to the landholder receiving written notification that they are entitled to land acquisition rights, as per condition 2.25 of this approval; or c) over 25% or more of the area of a vacant allotment in existence at the date of this approval, and where a dwelling is permissible under the <i>Environmental Planning and Assessment Act 1979</i> at that date, with the exception of land that is currently used for industrial or mining purposes; <p>The Applicant shall, upon receiving a written request for acquisition from the landowner, acquire the land in accordance with the procedures in conditions 2.22 to 2.24 of this approval.</p> <p>Any landowner that has agreed to, or property that has been the subject of, the application of additional noise mitigation measures under condition 2.19 of this approval waives the right to land acquisition.</p>	Table 4.1 – Environmental Mitigation Measures

Relevant CoA	Condition of Approval	Where addressed in this plan
2.21	The land acquisition rights under condition 2.20 of this approval do not apply to landowners who have sought approval to subdivide their land after the date of this approval, unless the subdivision is created pursuant to condition 2.24 of this approval.	Table 4.1 – Environmental Mitigation Measures
2.22	<p>Within three months of receiving a written request from a landowner with acquisition rights under condition 2.20 of this approval, the Applicant shall make a binding written offer to the landowner based on:</p> <p>a) the current market value of the landowner’s interest in the property at the date of this written request, as if the property was unaffected by the project which is the subject of the project application, having regard to the:</p> <ul style="list-style-type: none"> i) existing and permissible use of the land, in accordance with the applicable planning instruments at the date of the written request ii) presence of improvements on the property and/or any approved building or structure which has been physically commenced at the date of the landowner’s written request, and is due to be completed subsequent to that date, but excluding any improvements that have resulted from the implementation of condition 2.19 of this approval. <p>b) the reasonable costs associated with:</p> <ul style="list-style-type: none"> i) relocating within the Lithgow local government area, or to any other local government area determined by the Secretary ii) obtaining legal advice and expert advice for determining the acquisition price of the land, and the terms upon which it is required <p>c) reasonable compensation for any disturbance caused by the land acquisition process.</p> <p>However, if at the end of this period, the Applicant and landowner cannot agree on the acquisition price of the land, and/or the terms upon which the land is to be acquired, then either party may refer the matter to the Secretary for resolution.</p> <p>Upon receiving such a request, the Secretary shall request the President of the NSW Division of the Australian Property Institute to appoint a qualified independent valuer or Fellow of the Institute, to consider submissions from both parties, and determine a fair and reasonable acquisition price for the land, and/or terms upon which the land is to be acquired.</p> <p>Within 14 days of receiving the independent valuer’s determination, the Applicant shall make a written offer to purchase the land at a price not less than the independent valuer’s determination.</p> <p>If the landowner refuses to accept this offer within six months of the date of the Applicant’s offer, the Applicant’s obligations to acquire the land shall cease, unless otherwise agreed by the Secretary.</p>	Table 4.1 – Environmental Mitigation Measures
2.23	The Applicant shall bear the costs of any valuation or survey assessment requested by the independent valuer or the Secretary and the costs of determination referred to above.	Table 4.1 – Environmental Mitigation Measures
2.24	If the Applicant and landowner agree that only part of the land shall be acquired, then the Applicant shall pay all reasonable costs associated with obtaining Council approval for any plan of subdivision (where permissible), and registration of the plan at the Office of the Registrar-General.	Table 4.1 – Environmental Mitigation Measures

Relevant CoA	Condition of Approval	Where addressed in this plan
2.25	The Applicant shall provide written notice to all landowners that are entitled to rights under conditions 2.19 and 2.20 within 21 days of determining the landholdings where additional noise mitigation measures or land acquisition apply. For the purpose of condition 2.20b), this condition only applies where operational noise levels have been confirmed in accordance with the definition in condition 2.19.	Table 4.1 – Environmental Mitigation Measures
3.2	<p>Within 60 days of the commencement of operation of the project, unless otherwise agreed to by the Director-General, the Applicant shall submit for the approval of the Secretary an Operational Noise Review to confirm the operational noise impacts of the project. The Operational Noise Review must be prepared in consultation with, and to the satisfaction of, the EPA. The Review shall:</p> <ul style="list-style-type: none"> a) identify the appropriate operational noise objectives and level for sensitive receivers b) describe the methodologies for noise monitoring including the frequency of measurements and location of monitoring sites c) document the operational noise levels at sensitive receivers as ascertained by the noise monitoring program d) assess the noise performance of the project against the noise criterion specified in condition 2.15 of this approval and the predicted noise levels as detailed in the report referred to under condition 1.1 of this approval e) provide details of any entries in the Complaints Register (as required under condition 5.4 of this approval) relating to noise impacts. <p>Where monitoring indicates noise levels in excess of the operational noise criterion specified in condition 2.15 of this approval, the Applicant shall prepare a report as required by condition 2.18 of this approval.</p>	<p>Table 4.1 – Environmental Mitigation Measures</p> <p>Review has been completed</p>

Relevant CoA	Condition of Approval	Where addressed in this plan
3.3	<p>The Applicant shall prepare and implement an Operational Noise Monitoring Program to assess compliance against the operational noise criterion stipulated in condition 2.15 of this approval, throughout the life of the project. The noise monitoring program shall be prepared in consultation with, and to the satisfaction of, the EPA.</p> <p>The noise monitoring program shall be prepared in accordance with the requirements of the <i>NSW Noise Policy for Industry</i> (EPA, 2017) (or its latest version) and must include, but not be limited to:</p> <ul style="list-style-type: none"> a) monitoring during ash placement in the far western area of the site adjacent to the haul road; and b) monitoring of the effectiveness of any noise mitigation measures implemented under condition 2.18 of this approval, against the noise criterion specified in condition 2.15 of this approval. <p>Noise from the project is to be measured at the most affected point on or within the residential boundary, or at the most affected point within 30 metres of a dwelling where the dwelling is more than 30 metres from the boundary, to determine compliance with the noise criterion stipulated in condition 2.15 of this approval. Where it can be demonstrated that direct measurement of noise from the project is impractical, the EPA may accept alternative means of determining compliance and the modifying factors shall also be applied to the measured noise levels where applicable in accordance with the <i>NSW Noise Policy for Industry</i> (EPA, 2017) (or its latest version).</p> <p>The Applicant shall forward to the EPA and the Secretary a report containing the results of any non-compliance within 14 days of conducting a noise assessment.</p> <p>Where monitoring indicates noise levels in excess of the operational noise criterion specified in condition 2.15 of this approval, approval, the Applicant shall prepare a report as required by condition 2.18 of this approval.</p> <p>The monitoring program shall form part of the Operational Noise Management Plan referred to in condition 6.5a) of this approval.</p>	Appendix A, Operational Noise Monitoring Program
6.5	As part of the Operation Environmental Management Plan for the project, required under condition 6.4 of this approval, the Applicant shall prepare and implement the following Management Plans:	
6.5a	An Operational Noise Management Plan to detail measures to mitigate and manage noise during operation of the project. The Plan shall be prepared in consultation with, and to the satisfaction of, the EPA and include, but not necessarily be limited to:	This ONMP
6.5a i	Procedures to ensure that all reasonable and feasible noise mitigation measures are applied during operation of the project;	Table 4.1 – Environmental Mitigation Measures
6.5a ii	Identification of all relevant sensitive receivers and the applicable criteria at those receivers commensurate with the noise limit specified under condition 2.15 of this approval;	Appendix A, Operational Noise Monitoring Program

Relevant CoA	Condition of Approval	Where addressed in this plan
6.5a iii	identification of activities that will be carried out in relation to the project and the associated noise sources;	Appendix A, Operational Noise Monitoring Program
6.5a iv	noise monitoring procedures (as referred to in condition 3.3 of this approval) for periodic assessment of noise impacts at the relevant receivers against the noise limits specified under this approval and the predicted noise levels as detailed in the report referred to under condition 1.1 of this approval;	Appendix A, Operational Noise Monitoring Program
6.5a v	details of all management methods and procedures that will be implemented to control individual and overall noise emissions from the site during operation;	Appendix A, Operational Noise Monitoring Program
6.5a vi	procedures and corrective actions to be undertaken if non-compliance against the operational noise criteria is detected; and	Section 5.3
6.5a vii	provisions for periodic reporting of results to EPA.	Section 5.3
7.1	The Secretary must be notified in writing via the Major Projects website immediately after the Applicant becomes aware of an incident. The notification must identify the development (including the application number and the name of the development if it has one) and set out the location and nature of the incident. Subsequent notification requirements must	Table 4.1 – Environmental Mitigation Measures Section 5 Further Management Obligations
7.2	The Secretary must be notified in writing via the Major Projects website within seven days after the Applicant becomes aware of any non-compliance. A non-compliance notification must identify the development and the application number for it, set out the condition of approval that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance. <i>Note: A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.</i>	Table 4.1 – Environmental Mitigation Measures Section 5 Further Management Obligations
C.1	A written incident notification addressing the requirements set out below must be submitted to the Secretary via the Major Projects website within seven days after the Applicant becomes aware of an incident. Notification is required to be given under this condition even if the Applicant fails to give the notification required under condition 7.1 or, having given such notification, subsequently forms the view that an incident has not occurred.	Table 4.1 – Environmental Mitigation Measures Section 5 Further Management Obligations

Relevant CoA	Condition of Approval	Where addressed in this plan
C.2	<p>Written notification of an incident must:</p> <ul style="list-style-type: none"> a) identify the project and application number b) provide details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident) c) identify how the incident was detected d) identify when the Applicant became aware of the incident e) identify any actual or potential non-compliance with conditions of approval f) describe what immediate steps were taken in relation to the incident g) identify further action(s) that will be taken in relation to the incident h) identify a project contact for further communication regarding the incident. 	<p>Table 4.1 – Environmental Mitigation Measures</p> <p>Section 5 Further Management Obligations</p>
C.3	<p>Within 30 days of the date on which the incident occurred or as otherwise agreed to by the Secretary, the Applicant must provide the Secretary and any relevant public authorities (as determined by the Secretary) with a detailed report on the incident addressing all requirements below, and such further reports as may be requested.</p>	<p>Table 4.1 – Environmental Mitigation Measures</p> <p>Section 5 Further Management Obligations</p>
C.4	<p>The Incident Report must include:</p> <ul style="list-style-type: none"> a) a summary of the incident b) outcomes of an incident investigation, including identification of the cause of the incident c) details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence d) details of any communication with other stakeholders regarding the incident. 	<p>Table 4.1 – Environmental Mitigation Measures</p> <p>Section 5 Further Management Obligations</p>

3.2 Compliance tracking

CoA 4.2 mandates a compliance tracking program to track compliance with the requirements before commencing operations. A compliance tracking tool has been prepared for internal use by GPM to ensure effective and efficient tracking of compliance. Further details are outlined in Section 3.7 of the OEMP.

4 Environmental management

4.1 Operational Noise Criteria

The cumulative operational noise from the ash placement area and ash haulage activity will not exceed an LAeq (15 minute) of 40 dB(A) at the nearest most affected sensitive receiver during normal operating hours.

This noise criterion applies under the following meteorological conditions:

- wind speeds up to 3 m/s at 10 metres above ground; and/or
- temperature inversion conditions of up to 3°C/100 m and source to receiver gradient winds of up to 2 m/s at 10 m above ground level.

This criterion does not apply where the GPM and the affected landowner have reached a negotiated agreement in regard to noise, and a copy of the agreement has been forwarded to the Secretary and the EPA.

Additionally, in accordance with Environmental Protection Licence 21185, noise from the Kerosene Vale Ash Repository premise must not exceed 40 dB(A) LAeq (15-minute) at the nearest sensitive receiver.

Compliance is to be determined at the most affected location within the residential boundary, or within 30 m of a dwelling in rural settings, with adjustments applied for tonal, impulsive, or intermittent noise in accordance with the NSW Industrial Noise Policy.

Noise limits associated with the EPL apply under specified meteorological conditions, including moderate wind and temperature inversion scenarios, and do not apply where a negotiated noise agreement exists between the licensee and affected residents, provided the EPA is notified.

4.2 Management measures

Management actions to minimise operational impacts are summarised in Table 4.1.

Table 4.1 Environmental Management Measures

Relevant aspect	Management and mitigation measures	Source of requirement	Frequency	Relevant records	Responsibility
Noise Management Criteria	<p>Activities shall be managed to avoid noise emission levels above L_{Aeq} of 40dB(A) at the nearest, most affected receiver.</p> <p>This criterion applies under the following meteorological conditions:</p> <ul style="list-style-type: none"> a) wind speeds up to 3 m/s at 10 metres above ground; and/or b) temperature inversion conditions of up to 3°C/100 m and source to receiver gradient winds of up to 2 m/s at 10 m above ground level. <p>Note: This criterion does not apply where the Applicant and the affected landowner have reached a negotiated agreement in regard to noise, and a copy of the agreement has been forwarded to the Secretary and the EPA.</p>	CoA 2.15	Operations	<p>Monitoring records</p> <p>Complaints register</p> <p>Site inspection checklist</p>	GPM
General Mitigation	The distance between noisy plant, equipment and sensitive receptors will be maximised where practicable.	CoA 2.15	Daily	Site inspection checklist	Contractor
Activities Scheduling	All noise intensive works will be scheduled between late morning to early evening periods to minimise impact on sensitive receivers, including peak periods (where transportation noise dominates), when possible or practicable.	CoA 2.15	Daily	Site inspection checklist	Contractor
Activities Scheduling	No onsite activities or engines will be started before the prescribed start time of 7:00 am.	CoA 2.8 and 2.16	Daily	Site inspection checklist	Contractor
Plant & Equipment	All equipment and plant used on the Lidsdale Ash Repositories will meet the typical noise levels presented in AS 2436.	CoA 2.15	Daily	Site inspection checklist	Contractor
Plant & Equipment	All equipment will be adequately maintained and kept in good operating order.	CoA 2.15	Daily	<p>Site inspection checklist</p> <p>Equipment maintenance and compliance register</p>	Contractor

Relevant aspect	Management and mitigation measures	Source of requirement	Frequency	Relevant records	Responsibility
Plant & Equipment	All equipment will be operated in an appropriate and efficient manner.	CoA 2.15	Daily	Site inspection checklist	Contractor
Plant & Equipment	Any unusually noisy equipment will be investigated and rectified as soon as practicable.	CoA 2.15	Daily	Site inspection checklist	Contractor
Training and Awareness	Noise issues will be discussed as part of routine 'toolbox' talks to keep staff aware of current care and maintenance activities and potential noise issues.	CoA 2.15	Daily or as required	Toolbox talk meeting minutes	Contractor
Training and Awareness	Inductions will include relevant information relating to noise management obligations applicable at the site. For example, this will include the location of noise sensitive receptors, any site or activities specific mitigation measures, noise complaints procedure, as well as the consequences of not complying with these mitigation measures.	Best practice	Operations	Training records	Contractor
Transport noise mitigation	GPM and its transport contractors will proactively implement noise attenuation measures for operational trucks to minimise potential noise impacts. These measures include, but may not be limited to <ul style="list-style-type: none"> • fitting residential-grade mufflers, • installing engine shrouds and body dampening, • applying speed limits, • fitting rubber stoppers to tailgates, • minimising the use of compression braking, and • maintaining a one-way traffic system within the ash repository where practicable. 	CoA 2.16	Operations	Equipment maintenance registers Equipment &/or site inspection checklists Audit/Compliance registers	Contractor
Transport noise mitigation	The use of alternative warning devices on plant machinery will be used (subject to OHS requirements)	CoA 2.16	During normal conditions	Site inspection checklist	Contractor

Relevant aspect	Management and mitigation measures	Source of requirement	Frequency	Relevant records	Responsibility
Transport noise mitigation	Pre-commencement plant and equipment inspections shall be undertaken to confirm noise attenuation has been fitted or if another form of noise attenuation is necessary – such as speed limiting or limiting compression braking.	CoA 2.16	Prior to commencement of operations	Site inspection checklist	Contractor
Transport noise mitigation	Noise reduction techniques applied to trucks will be routinely inspected and maintained to ensure required operational efficiency.	OEMP	As required by manufacturers or following complaints.	Site inspection checklist	Contractor
Transport noise mitigation	Deliveries of supplies to the Lidsdale Ash Repository not to exceed 6 trucks in a 15-minute period.	CoA 2.15	Daily	Toolbox talk minutes	GPM / Contractor
Transport noise mitigation	Deliveries of supplies should not occur outside of the hours of operation of Lidsdale Ash Repository (7:00 am to 10:00 pm Monday to Sunday)	CoA 2.8	Daily	Toolbox talk minutes	GPM / Contractor
Angus Place Coal Mine	GPM will maintain a cooperative approach to managing potential noise impacts associated with haul road use. Should operations at Angus Place Coal Mine recommence, this management plan will be reviewed and updated as necessary to include a joint noise management protocol with the mine operator.	CoA 2.17	As necessary	Consultation records	GPM
Monitoring and Assessment	A review of the noise performance of the Lidsdale Ash Repositories operations will be undertaken to assess compliance with the prescribed noise criterion of 40dB(A) $L_{Aeq, 15 \text{ min}}$ at the nearest noise sensitive receivers. Note: Refer to the Operational Noise Monitoring Program, Appendix A for further details.	CoA 3.2	Complete	Operational Noise Review report	GPM
Monitoring and Assessment	The criterion to limit cumulative operational noise levels to below 40 dB(A) $L_{Aeq, 15 \text{ min}}$ does not apply where GPM and the potentially affected landowner have reached a negotiated agreement in regard to noise and a copy of this agreement has been forwarded to the Secretary and the EPA.	CoA 2.15	As required	Noise level agreement between GPM and landholder	GPM

Relevant aspect	Management and mitigation measures	Source of requirement	Frequency	Relevant records	Responsibility
Monitoring and Assessment	A corrective actions register will be kept on site to identify response actions to potential noise issues from any change in operations for proactive response to potential noise impacts. This register will identify whether subplans need to be updated with feasible engineering controls, noise mitigations in accordance with periodic review requirements.	OEMP	Complete	Corrective Actions Register	GPM / Contractor
Monitoring and Assessment	Attended noise monitoring will be undertaken at sensitive receivers as outlined in the Operational Noise Monitoring Program, Appendix A. Note: Refer to the Operational Noise Management Plan, Appendix A for further details.	Operational Noise Monitoring Program, CoA 2.18d	Quarterly	Report to EPA	GPM
Monitoring and Assessment	Attended noise monitoring and assessment of compliance of operations will be undertaken at sensitive receivers on a periodic basis, or as a result of a complaint or due to changes in operations. Note: Refer to the Operational Noise Monitoring Program, Appendix A for further details.	CoA 6.3b)	As required in response to complaints or change in operation	Quarterly noise monitoring reports	Specialised consultant / Contractor
Monitoring and Assessment	Attended ambient noise monitoring will take place at residential receiver locations identified in the Operational Noise Monitoring Program (incl. Skelly Road, Neubeck Street, Wolgan Road, Maddox Lane) and will provide periodic 15-minute ambient noise levels. Note: Refer to the Operational Noise Monitoring Program, Appendix A for further details.	Operational Noise Monitoring Program, Appendix A	During daytime (7am-6pm) and evening time (6pm-10am) for one day	Quarterly noise monitoring reports	GPM / Specialised consultant
Monitoring and Assessment	If noise monitoring identifies a non-compliance with the operational noise criteria, GPM will assess all reasonable and feasible source mitigation options, such as haul road noise barriers, alternative haulage routes, or ash conveyance methods and submit a mitigation report to the Secretary for approval.	CoA 2.18	As required	Quarterly noise monitoring reports	GPM / Specialised consultant

Relevant aspect	Management and mitigation measures	Source of requirement	Frequency	Relevant records	Responsibility
Monitoring and Assessment	<p>Where noise monitoring identifies any non-compliance with the operational noise criterion, a report will be submitted to the Secretary within 60 days of undertaking the noise monitoring which has identified exceedances of the operational noise criterion. The report will include:</p> <ul style="list-style-type: none"> a) the preferred measure(s) for reducing noise at the source will be identified b) results of consultation with directly affected property owners and the EPA on the proposed noise mitigation measures c) location, type, timing and responsibility for implementation of the noise mitigation measure(s). <p>GPM will implement all reasonable and feasible mitigation measures in accordance with the requirements of the Secretary.</p>	CoA 2.18b-d	As required	If required	GPM / Specialised consultant
Monitoring and Assessment	Any identified non-compliance will be reported to the Secretary within 7 days of GPM becoming aware of the non-compliance.	CoA 7.2, C1	As required	Report to Secretary	GPM

Relevant aspect	Management and mitigation measures	Source of requirement	Frequency	Relevant records	Responsibility
At Property Mitigation	<p>GPM will implement additional noise mitigation measures at affected residences if monitoring confirms that project-related noise exceeds the operational noise criteria, despite all reasonable and feasible source controls having been applied.</p> <p>Upon confirmation of exceedance and receipt of a written request from an affected landowner (excluding cases where acquisition rights apply), GPM will work collaboratively with the landowner to design and implement additional reasonable and feasible property-specific mitigation measures. These may include double glazing, acoustic insulation, air conditioning, or other building treatments to achieve compliance.</p> <p>Implementation Trigger:</p> <ul style="list-style-type: none"> Confirmation of operational noise levels indicating exceedance of the noise criterion. Completion of the operational noise review and source control implementation. Valid written request from an affected landowner within the specified timeframe. <p>Contingency / Dispute Resolution:</p> <p>If agreement on mitigation measures cannot be reached within three months, either party may refer the matter to the Planning Secretary (Director-General) for resolution.</p>	CoA 2.19	As required	Report to Secretary	GPM / Contractor
Incidents and Complaints Records	<p>A log of noise related incidents will be kept at GPM premises. The log will record all noise complaints, including location, action carried out and outcomes of investigations and measures implemented.</p>	CoA 2.19	As required	Incident register Complaints register	GPM
Incidents and Complaints Records	<p>The noise management log will be reviewed on a periodic basis to determine trends.</p>	CoA 2.18, 3.2 and 5.4	As required	Incident register	GPM

Relevant aspect	Management and mitigation measures	Source of requirement	Frequency	Relevant records	Responsibility
Incidents and Complaints Records	<p>In the event of a noise related complaint associated with the operation of Lidsdale Ash Repositories activities, an assessment of received noise influence and potential mitigation measures will be undertaken.</p> <p>Note: Refer to the Operational Noise Management Plan, Appendix A for further details.</p>	CoA 2.18, 3.2 and 5.4	As required	Incident register	GPM / Contractor
Management Plan Review	<p>Within three months of:</p> <ul style="list-style-type: none"> a) submitting an incident report (CoA 7.1) b) submitting the Annual Review (CoA 7.3) c) submitting an Independent Environmental Audit (CoA 4.2); or d) any modification to the approval conditions (unless otherwise specified), <p>GPM will proactively review and, if necessary, update all required studies, strategies, or plans to ensure they reflect best practice and continue to meet the conditions of approval to the Secretary's satisfaction. Where updates are made, the revised documents will be submitted to the Secretary within four weeks of the review, unless otherwise agreed.</p> <p>Note: This ensures that all strategies, plans, and programs remain current and incorporate measures to enhance the development's environmental performance</p>	CoA 2.18, 3.2 and 6.6	As required	Noise Management Sub-Plan version control	GPM

Relevant aspect	Management and mitigation measures	Source of requirement	Frequency	Relevant records	Responsibility
Land acquisition	<p>If, after the implementation of all reasonable and feasible source controls, as identified in this table, the noise generated by the project exceeds the criterion of $L_{Aeq, 15 \text{ min}}$ of 40 dB(A) by more than 5 dB(A):</p> <ul style="list-style-type: none"> a) at a sensitive receiver in existence at the date of the approval; or b) at any residential dwelling for which an approval has been sought or obtained under the Environmental Planning and Assessment Act 1979 prior to the landholder receiving written notification that they are entitled to land acquisition rights, as per condition 2.25 of the approval; or c) over 25% or more of the area of a vacant allotment in existence at the date of this approval, and where a dwelling is permissible under the Environmental Planning and Assessment Act 1979 at that date, with the exception of land that is currently used for industrial or mining purposes; <p>GPM will, upon receiving a written request for acquisition from the landowner, acquire the land in accordance with the procedures in conditions 2.22 to 2.24 of the approval.</p> <p>It is noted that any landowner that has agreed to, or property that has been the subject of, the application of additional noise mitigation measures under condition 2.19 of the approval waives the right to land acquisition.</p>	CoA 2.20	As required	If required	GPM
Land acquisition	<p>It is noted that land acquisition rights do not apply to landowners who have sought approval to subdivide their land after the date of the approval, unless the subdivision is created pursuant to condition 2.24 of the approval, where GPM and the landowner agree that only part of the land will be acquired.</p>	CoA 2.21	As required	If required	GPM
Land acquisition	<p>Within three months of receiving a written request from a landowner with acquisition rights under condition 2.20 of the approval, GPM will make a binding written offer to the landowner based on:</p> <ul style="list-style-type: none"> a) the current market value of the landowner's interest in the property at the date of this written request, as if the 	CoA 2.22	As required	If required	GPM

Relevant aspect	Management and mitigation measures	Source of requirement	Frequency	Relevant records	Responsibility
	<p>property was unaffected by the project which is the subject of the project application, having regard to the:</p> <ul style="list-style-type: none"> i) existing and permissible use of the land, in accordance with the applicable planning instruments at the date of the written request; and ii) presence of improvements on the property and/or any approved building or structure which has been physically commenced at the date of the landowner's written request, and is due to be completed subsequent to that date, but excluding any improvements that have resulted from the implementation of condition 2.19 of this approval; <p>b) the reasonable costs associated with:</p> <ul style="list-style-type: none"> i) relocating within the Lithgow local government area, or to any other local government area determined by the Secretary; ii) obtaining legal advice and expert advice for determining the acquisition price of the land, and the terms upon which it is required; and <p>c) reasonable compensation for any disturbance caused by the land acquisition process.</p> <p>However, if at the end of this period, the Applicant and landowner cannot agree on the acquisition price of the land, and/or the terms upon which the land is to be acquired, then either party may refer the matter to the Secretary for resolution.</p> <p>Upon receiving such a request, the Secretary will request the President of the NSW Division of the Australian Property Institute to appoint a qualified independent valuer or Fellow of the Institute, to consider submissions from both parties, and determine a fair and reasonable acquisition price for the land, and/or terms upon which the land is to be acquired.</p> <p>Within 14 days of receiving the independent valuer's determination, the Applicant will make a written offer to purchase the land at a price not less than the independent valuer's determination.</p> <p>If the landowner refuses to accept this offer within six months of the date of the Applicant's offer, the Applicant's obligations to</p>				

Relevant aspect	Management and mitigation measures	Source of requirement	Frequency	Relevant records	Responsibility
	acquire the land will cease, unless otherwise agreed by the Secretary.				
Land acquisition	GPM will bear the costs of any valuation or survey assessment requested by the independent valuer or the Secretary and the costs of determination referred to above.	CoA 2.23	As required	If required	GPM
Land acquisition	If GPM and landowner agree that only part of the land will be acquired, then the Applicant will pay all reasonable costs associated with obtaining Council approval for any plan of subdivision (where permissible), and registration of the plan at the Office of the Registrar-General.	CoA 2.24	As required	If required	GPM
Land acquisition	GPM will provide written notice to all landowners that are entitled to rights under conditions 2.19 and 2.20 within 21 days of determining the landholdings where additional noise mitigation measures or land acquisition apply. For the purpose of condition 2.20b), this condition only applies where operational noise levels have been confirmed in accordance with the definition in condition 2.19.	CoA 2.25	As required	If required	GPM

Relevant aspect	Management and mitigation measures	Source of requirement	Frequency	Relevant records	Responsibility
Reporting	<p>Non- compliances</p> <p>The Secretary will be notified in writing via the Major Projects website within seven (7) days of GPM becoming aware of any non-compliance.</p> <p>Notifications will identify the development and application number, specify the relevant approval condition, describe the nature and cause of the non-compliance (if known), and outline actions taken or proposed to address it.</p> <p>Incidents</p> <p>The Secretary will be notified immediately upon GPM becoming aware of any incident.</p> <p>Notifications will include the project and application number; date, time, and location of the incident; a brief description and rationale for its classification; how and when it was detected; any actual or potential non-compliance; immediate and planned corrective actions; and a project contact for follow-up.</p> <p>Notifications are required even if prior notifications under Condition 7.1 were not provided or if it is later determined that an incident did not occur.</p> <p>Within 30 days of the incident (or as otherwise agreed by the Secretary), a detailed Incident Report will be submitted to the Secretary and any relevant public authorities.</p> <p>The report will summarise the incident, present investigation findings including the cause, outline corrective and preventative actions, and document communications with stakeholders.</p> <p>All subsequent notifications and reports must comply with the requirements set out in Appendix 3 of the Project Approval.</p>	<p>CoA 7.1, 7.2</p> <p>Planning Approval (07_0005) Appendix 3</p>	As required	<p>Incident notification/report</p> <p>Non-compliance notification/report</p>	GPM
Reporting	<p>An Annual Return will be submitted in accordance with EPL 21185 and the EPA publication A Guide to Licensing within 60 days of each reporting period. With an anniversary date of 14 September, the Return is due by 13 November each year and it must include a Statement of Compliance and a summary of all required monitoring (including complaint records) in line with condition R1 of the licence</p>	EPL	Annual	EPL Annual Return	GPM

Relevant aspect	Management and mitigation measures	Source of requirement	Frequency	Relevant records	Responsibility
	<p>Within 30 days of the date on which the incident occurred or as otherwise agreed to by the Secretary, GPM will provide the Secretary and any relevant public authorities (as determined by the Secretary) with a detailed report on the incident addressing all requirements below, and such further reports as may be requested.</p> <p>The Incident Report must include:</p> <ul style="list-style-type: none"> a) a summary of the incident b) outcomes of an incident investigation, including identification of the cause of the incident c) details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence d) details of any communication with other stakeholders regarding the incident. 	CoA C.1, C.2	As required	If required	GPM / Specialist Consultant
Reporting	The Annual Environmental Management Report will be submitted to the Secretary complete with noise monitoring data gathered throughout the year.	CoA 7.3	Annually	Annual Environmental Management Report	GPM

5 Further Management Obligations

5.1 Monitoring

Monitoring for the project will be undertaken at designated receiver locations in Lidsdale, NSW, with positions outlined in Table A1 and Figure A1 in the Operational Noise Monitoring Program (Appendix A). These monitoring sites include Skelly Road (A), the corner of Sawyers Road and Skelly Road (B), the end of Nuebeck Street (C) and on Maddox Lane (D).

Compliance with operational noise criteria will be determined under the following meteorological conditions:

- wind speeds up to 3 m/s at 10 metres above ground; and/or
- temperature inversion conditions of up to 3°C/100 m and source to receiver gradient winds of up to 2 m/s at 10 m above ground level.

Operational noise from the KVAR will not exceed an LAeq (15 minute) of 40 dB(A) at the nearest most affected sensitive receiver during normal operating hours.

Where activities risk exceeding these objectives, management measures from the ONMP will be applied. Complaint-driven monitoring will be conducted at the complainant's property or the nearest representative site. Noise must be measured at, or computed for, the most affected location within the residential boundary, or at the most affected point within 30 metres of a dwelling (rural setting) where the dwelling is more than 30 metres from the boundary. A modifying factor correction must be applied for tonal, impulsive or intermittent noise in accordance with the "Environmental Noise Management - NSW Industrial Noise Policy (January 2000)".

Operational work hours are restricted to 7.00 am to 10.00 pm Monday to Sunday.

Operational activities are to be carried out in a competent manner.

This includes:

- the processing, handling, movement and storage of materials and substances used to carry out the activity; and
- the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

5.2 Incidents and non-compliances

The following definitions are relevant:

- **'Incidents'** are defined as: "A set of circumstances that causes or threatens to cause material harm to the environment, and/or breaches or exceeds the limits or performance measures/criteria in this approval."
- **'Non-compliances'** are defined as: "An occurrence, set of circumstances or development that is a breach of this approval but is not an incident."

All non-compliances will be recorded in the appropriate registers and stored electronically i.e. site inspection checklists, auditing reports, complaints register. The non-compliance will be investigated and managed by the Environment Manager (or delegate).

If a noise exceedance is recorded, the result will be checked and verified, the source will be investigated / identified, and controls applied.

Corrective measures may include:

- Investigation, documentation and notification to senior management.
- Limiting simultaneous noisy works,
- Installing, relocating or maintaining equipment,
- Rescheduling high noise activities to less sensitive times.
- Toolbox talks and closer supervision.

Depending on the impact, community engagement and follow-up monitoring may be undertaken, with additional attended monitoring to verify the effectiveness of controls. All actions will be recorded in the Corrective Action Register.

5.3 Reporting

GPM maintains proactive reporting and communication processes to ensure transparency and regulatory compliance throughout operations.

Incident and Non-Compliance Reporting

GPM will notify the Secretary in writing via the Major Projects website: immediately upon becoming aware of an incident (CoA 7.1) and within seven days of any non-compliance (CoA 7.2).

Notifications will detail the nature of the event, relevant conditions, causes (where known), and corrective actions undertaken. Incidents recorded as non-compliances are not reported twice.

GPM will implement corrective and preventative measures as directed by the Secretary.

Emergency Operations

Operations outside approved hours may only occur in emergencies to prevent injury, property loss, or environmental harm.

GPM will promptly repair breakdowns and notify the EPA and affected sensitive receivers prior to emergency haulage or placement activities, and the Secretary within one week of the event.

If emergency operations occur more than once in two months, GPM will submit a report to the Secretary within 60 days, detailing the events, mitigation options, preferred measures, and implementation responsibilities.

Noise Monitoring Reporting

Quarterly operational noise monitoring reports will be submitted to the EPA.

Where monitoring identifies non-compliance, results will be reported to the EPA and the Secretary within 14 days.

Within 60 days of a confirmed exceedance, GPM will prepare a detailed mitigation report (as per CoA 2.18) identifying feasible source controls, preferred options, and consultation outcomes.

Where residual noise exceeds criteria after mitigation, additional reasonable and feasible building treatments will be implemented in consultation with affected landowners.

Annual Reporting and Compliance Tracking

An Annual Environmental Management Report (AEMR) will be prepared and submitted to the Secretary each year. The AEMR will:

- review compliance with approval conditions and management plans;
- summarise all environmental monitoring results and complaint records; and

- identify any exceedances or incidents and corrective actions taken.

An Annual Return will be submitted to the EPA in accordance with EPL 21185 and A Guide to Licensing within 60 days of the reporting period (due 13 November each year).

A Compliance Tracking Program will be implemented to record compliance status, audits, incident responses, and ongoing environmental performance review.

5.4 Review and improvement

A review of the OEMP, sub-plans (including this ONMP) and monitoring programs will be undertaken during operations as required. These reviews will be completed to determine the efficiency of the plans and monitoring programs and whether any changes are required to ensure compliance.

Circumstances which trigger a review include:

- changes to design, construction, work methods, legislation, or policy
- incidents, complaints or non-compliance
- changes identified by continuous improvement
- changes to key management plans that are relevant
- where additional monitoring measures are identified in annual reviews or audits.

In addition, and in accordance with CoA 6.6, GPM will review and, if necessary, revise the studies, strategies and plans required under the conditions of approval to the satisfaction of the Secretary within three months of:

- the submission of an incident report under CoA 7.1
- the submission of an Annual Review under CoA 7.3
- the submission of an Independent Environmental Audit under CoA 4.2
- the modification of the conditions of this approval (unless the CoAs require otherwise).

Where this review leads to revisions in any such document, then within 4 weeks of the review, GPM will submit the revised document to the Secretary for approval, unless otherwise agreed with the Secretary.

5.4.1 Update and amendment

Updates and amendments to this ONNMP must first be approved by Environmental Representative and then to be submitted to the Planning Secretary for approval via the Planning Portal website.

A copy of the updated plan will be distributed to all relevant stakeholders and changes implemented immediately.

5.5 Complaint Management

GPM will continue to use the measures for communication established for Lidsdale Ash Repository activities to ensure all community complaints and enquiries received are managed in an appropriate manner. The measures include:

- 24-hour community information and complaints line
- an online electronic form in which complaints and enquires can be transmitted.
- a postal address to which written complaints and enquiries may be sent

Specific contact details such as the 24-hour complaints line, the postal address and the online enquiry form can be found on the website here: <https://gpmco.com.au/contact/>

Further information is detailed in Section 3.6 of the OEMP.

Appendix A: Operational Noise Monitoring Program

Introduction

The Program has been developed in accordance with the NSW Industrial Noise Policy and CoA 3.3. CoA 3.3 states:

Ongoing Operational Noise Monitoring

The Applicant shall prepare and implement an Operational Noise Monitoring Program to assess compliance against the operational noise criterion stipulated in condition 2.15 of this approval, throughout the life of the project. The noise monitoring program shall be prepared in consultation with, and to the satisfaction of, the EPA.

The noise monitoring program shall be prepared in accordance with the requirements of the NSW Noise Policy for Industry (EPA, 2017) (or its latest version) and must include, but not be limited to:

- *monitoring during ash placement in the far western area of the site adjacent to the haul road; and*
- *monitoring of the effectiveness of any noise mitigation measures implemented under condition 2.18 of this approval, against the noise criterion specified in condition 2.15 of this approval.*

Noise from the project is to be measured at the most affected point on or within the residential boundary, or at the most affected point within 30 metres of a dwelling where the dwelling is more than 30 metres from the boundary, to determine compliance with the noise criterion stipulated in condition 2.15 of this approval. Where it can be demonstrated that direct measurement of noise from the project is impractical, the EPA may accept alternative means of determining compliance and the modifying factors shall also be applied to the measured noise levels where applicable in accordance with the NSW Noise Policy for Industry (EPA, 2017) (or its latest version).

The Applicant shall forward to the EPA and the Secretary a report containing the results of any non-compliance within 14 days of conducting a noise assessment.

Where monitoring indicates noise levels in excess of the operational noise criterion specified in condition 2.15 of this approval, approval, the Applicant shall prepare a report as required by condition 2.18 of this approval.

The monitoring program shall form part of the Operational Noise Management Plan referred to in condition 6.5a) of this approval.

The Program addresses noise emissions from ash management, internal road maintenance, water system operations, material haulage and placement, and site stabilisation and rehabilitation. It also outlines procedures for complaints management, noise monitoring, and post-commissioning requirements. The Program was developed in consultation with the NSW EPA, who advised they have no further comments. Correspondence confirming this is provided in Appendix C

Site context and surrounding environment

The Kerosene Vale Ash Repository (KVAR) is located approximately 2.5 kilometres north-east of the Wallerawang Power Station (WPS) and approximately 10 km north-west of the city of Lithgow. The nearest residential community is Lidsdale which lies approximately 1.5 kilometres to the west of the KVAR. The nearest properties are approximately 200 metres from the haul road which operates between the WPS and KVAR.

Residential properties at Lidsdale are between 15 and 40 metres below the haul road which runs on a ridge separating the existing and proposed ash storage locations from Lidsdale. The storage areas have been engineered from a previous quarry site and are 20 and 40 metres below the level of the haul road to the west.

A Noise and Vibration Impact Assessment (NVIA) was prepared as part of the Kerosene Vale Stage 2 Ash Repository Area Environmental Assessment (Parsons Brinckerhoff, 2008), which measured baseline conditions, and focused on ash transportation and placement activities.

The noise assessment conducted within the Mod 1 and 2 assessment noted that general operational activities were not expected to cause any exceedances of the noise goals established by the original PA 7_0005, as exceedance of these goals did not occur previously, when vehicle movements in areas close to nearby residents at Lidsdale were much higher. As such, specific noise predictions for the operational activities subject of this Monitoring Program have not been undertaken previously.

The NVIA has also been taken into consideration when determining monitoring locations and methodology.

Operational noise limits and compliance requirements

In accordance with CoA 2.8 and EPL 21185, cumulative operational noise from the site must not exceed 40 dB(A) LAeq (15-minute) at the nearest sensitive receiver.

Compliance is determined at the most affected location within the residential boundary, or within 30m of a dwelling in rural settings, with adjustments applied for tonal, impulsive, or intermittent noise in accordance with the NSW Industrial Noise Policy.

Noise limits apply under defined meteorological conditions, including moderate wind and temperature inversions. They do not apply where a negotiated noise agreement with affected residents is in place and the EPA has been notified.

Methodology

Attended environmental noise monitoring will be undertaken in general accordance with Australian Standard AS1055 – Acoustics, Description and Measurement of Environmental Noise and relevant NSW EPA requirements.

Monitoring will be conducted during both daytime (7am to 6pm) and evening (6pm to 10pm) periods at each designated location when operational works are occurring. The duration of each measurement will be 15 minutes.

At each monitoring location, atmospheric conditions (including wind speed, wind direction, humidity, and temperature) will be measured and recorded to support data interpretation.

The sound level meters shall be configured on A-weighted, fast response settings, with noise levels logged over fifteen-minute statistical intervals (LAeq, LAmax, LAmin, and statistical percentiles as required). All instruments shall comply with AS 1259.1 Acoustics – Sound Level Meters, Part 1: Nonintegrating.

Calibration protocols include:

- Pre- and post-measurement field calibrations to verify the integrity of readings and identify any significant deviations in the reference signal.
- NATA calibration of sound level meters at least every two years, independent of the monitoring period.
- Acoustic calibrators used for field checks are to be NATA calibrated annually.

A detailed record of plant and machinery operating at the time of monitoring will be maintained. These operational records will be reviewed alongside measured noise levels to confirm the accuracy of predictions and assumptions made within the NVIA.

All measurements will be evaluated for potential modifying factors in accordance with the *NSW Noise Policy for Industry* (NPfI). Assessment of modifying factors is undertaken at the time of measurement if the site was audible and directly quantifiable. If applicable, modifying factor penalties will be reported and added to measured site-only L_{Aeq} noise levels.

Low-frequency modifying factor penalties will only be applied to site-only L_{Aeq} levels if the site was the only contributing low-frequency noise source. Specific methodology for assessment of each modifying factor is outlined in Fact Sheet C of the NPfI.

Locations

Site monitoring locations are detailed in Table A1 and shown on Figure A1. It should be noted that Figure A1 shows actual monitoring positions, not necessarily the location of residences. Monitoring locations were chosen due to proximity to operational works on site as well as in consideration of the noise monitoring locations used in the NVIA.

These locations are at the most affected point on or within the residential boundary, or at the most affected point within 30 metres of a dwelling where the dwelling is more than 30 metres from the boundary.

Table A1 Attended noise monitoring locations

Descriptor	Description	Coordinates (MGA 56)	
		Easting	Northing
Location A	Skelly Road, Lidsdale NSW	229052	6301209
Location B	Corner Sawyers Road and Skelly Road, Lidsdale NSW	228899	6301470
Location C	End of Nuebeck Street, Lidsdale NSW	228982	6301813
Location D	Maddox Lane, Lidsdale, NSW	229111	6302676

Noise monitoring as part of complaint investigation will be undertaken at the complainant property or nearest representative location.

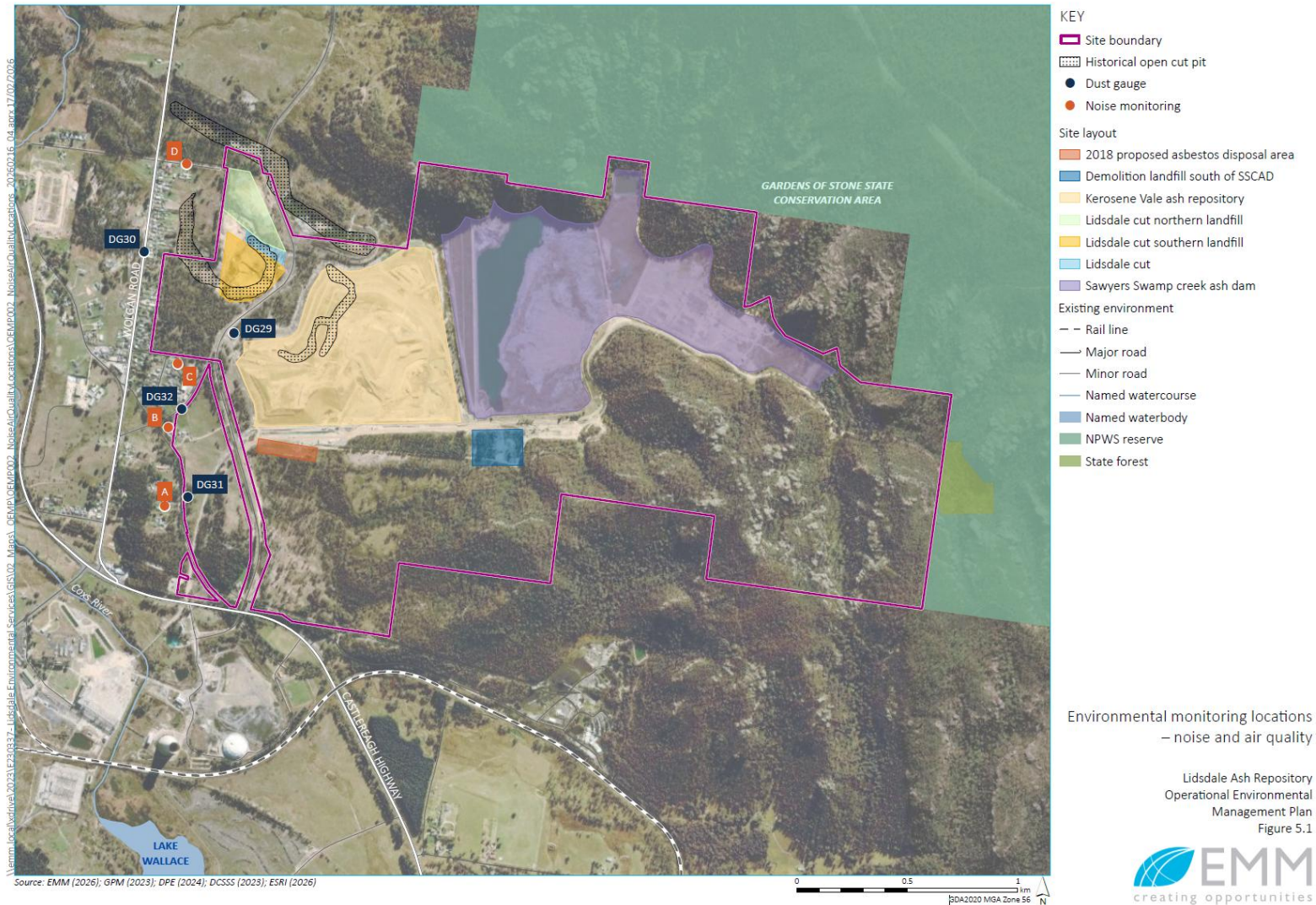


Figure A1 Noise monitoring locations

Frequency

Noise monitoring will occur quarterly (approximately every 3 months) during operation of the Lidsdale Ash Repository and in response to complaints.

The effectiveness of mitigation measure applied shall be assessed during these nominated noise monitoring events.

Reporting

A quarterly noise monitoring report will be produced and provided to the EPA. Noise monitoring will also be reporting in the Annual Environmental Management Report (AEMR), which will be submitted to the Secretary each year.

If the noise monitoring determines a non-compliance, a report will be forwarded to the EPA and the Secretary within 14 days of conducting the noise assessment. Further non-compliance reporting will be managed as outlined in Section 5 of the ONMP.

Appendix B: ER Endorsement of ONMP

31 March 2026

John Pola
Environmental Manager
Generator Property Management - Lidsdale
110 Skelly Road
Lidsdale NSW 2790

Re: MP07_0005 - Wallerawang Ash Dam Areas - Environmental Representative Endorsement - Operational Noise Management Plan Rev 5

Dear John,

Following a review of the documents provided for the Operational Noise Management Plan (ONMP) Rev 5 following consultation, I can provide the following endorsement.

The ONMP Rev 5 has been reviewed against the Mod 2 Consolidated Conditions of Approval, in particular Condition 6.5a. Consultation with NSW EPA is complete for this plan and has been incorporated in this document. All DPHI comments have been resolved.

All conditions of approval and mitigation measures are contained in the ONMP Rev 5.

The document is endorsed for submission to DPHI for approval.

Yours sincerely



David Bone
Independent Environmental Representative
dbone@emmconsulting.com.au

Appendix C: EPA Consultation Letter



Our ref: DOC25/12774-1

John Pola
Safety and Environment Manager
Generator Property Management Pty Ltd

By email: john.pola@gpm.com.au

Dear John,

**POST APPROVAL MANAGEMENT PLANS – KEROSENE VALE ASH REPOSITORIES
Generator Property Management – EPL 21185**

I refer to your request via the Department of Planning, Housing and Infrastructure (DPHI) for advice from the Environment Protection Authority (EPA) on the Construction and Operational Noise Management Plans, and the Air Quality Management Plan for the former Kerosene Vale Ash Repositories site (the Premises), Environment Protection Licence (EPL 21185).

In preparing this advice, the EPA has included a review of the following documents:

- *'Generator Property Management: Construction & Operational Noise Management Plan – Lidsdale Ash Repository 2024, November 2024'*.
- *'Generator Property Management: Operational Air Quality Management Plan – Lidsdale Ash Repository 2024, November 2024'*.

For your information, the EPA does not endorse Environmental Management Plans (EMPs) given the role of the EPA in developing conditions and criteria for environmental protection and management. The EPA does however encourage the development of EMPs and programs to ensure that proponents have determined how they will meet their statutory obligations and environmental objectives as specified by any Project Approval and/or conditions of an environment protection licence.

The EPA has reviewed the management plans as provided and has no comments at this stage. The EPA will continue to review any additional management plans as required.

If you have any further questions about this matter, please contact Allan Adams, Senior Operations Officer, Environment Protection Authority on 6333 3804, or at info@epa.nsw.gov.au.

Yours sincerely,

LUCY APPS
Unit Head
Environment Protection Authority

21 January 2025

NSW Environment Protection Authority
As the environmental steward and regulator of our State we are committed to a sustainable future.
Join us on our mission to protect tomorrow together.

Phone:
131 555
Email:
info@epa.nsw.gov.au
Website:
epa.nsw.gov.au

Visit:
6 Parramatta Square
10 Darcy Street
Parramatta NSW 2150
Mail:
PO Box 1388, Bathurst
NSW 2795

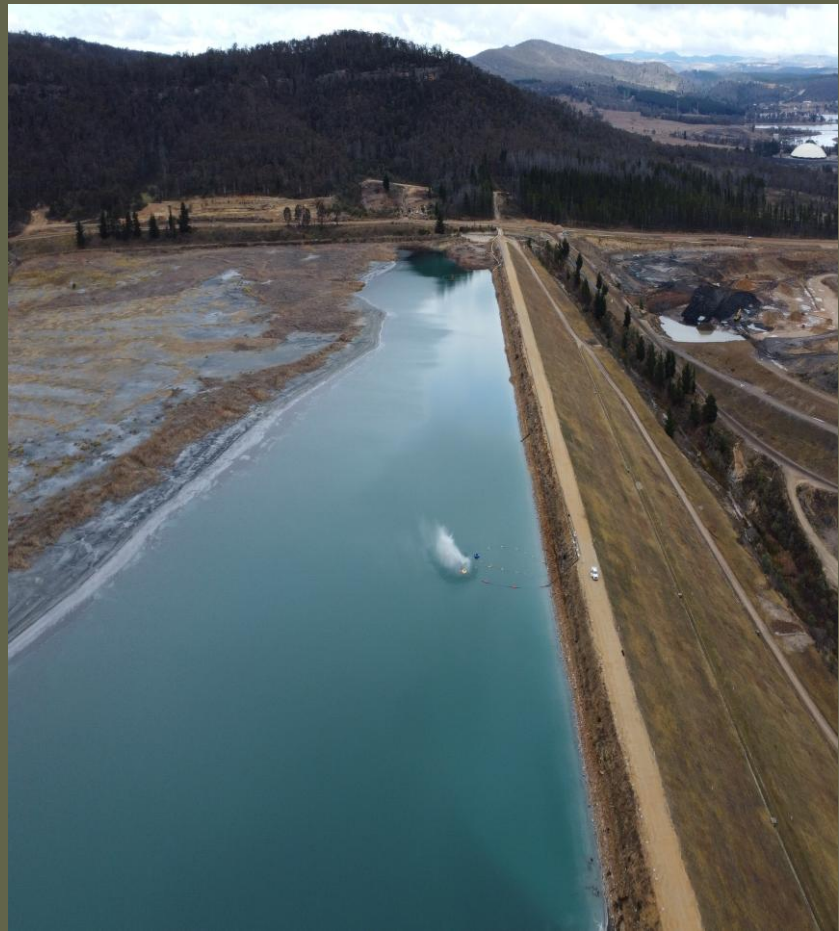


Appendix D

Operational Groundwater Management Plan


Operational Groundwater Management Plan

Lidsdale Ash Repository 2026



GPM

Document control

Title	Groundwater Management Plan - Lidsdale Ash Repository 2025
Approved by GPM Environment Manager	John Pola
Signed	
Dated	31 st March 2026

Version control

Revision	Date	Description	Author	Reviewer	Approval
Rev 0	27/09/2024	Internal Draft	Laurence Smith	Verity Blair	Verity Blair
Rev 1	19/12/2024	Draft	Verity Blair, Quan Bui	Verity Blair	John Pola
Rev 2	24/02/2025	Update to respond to WaterNSW comments	Nadia Eisenlohr	Daniel Keegan	John Pola
Rev 3	07/10/2025	Update to address DPHI comments	Quan Bui, Nadia Eisenlohr	Henry Noakes	John Pola
Rev 4	4/02/2026	Update to address EPA comments following EPA comments DOC25/354786-1	Tasman Coupe	Henry Noakes	John Pola
Rev 5	31/03/2026	Final	Tasman Coupe	Henry Noakes	John Pola

List of emergency and key contacts

Position	Name	Phone
EPA pollution hotline	General Number	131 555
Fire and Rescue NSW	General Number	000 (for pollution incidents that present an immediate threat to human health or property) 1300 729 579 (for pollution incidents that do not present an immediate threat to human health or property)
Lithgow Hospital	General Number	63502300
SafeWork NSW	General Number	131 050
24-hour community information line	General Number	1800 817 711
Environment Manager	John Pola	0429 205 290
Financial Controller & Company Secretary	Diane Dibben	0412 773 255
Managing Director	David Wood	0484 623 220
Western Region Manager	Marlon Frost	0423 127 030
Engineering Project Officer	Timothy Edwards	0413 446 686
Engineering Project Officer	Julian MacPhee	0427 094 014
Environmental Representative	David Bone	(02) 4907 4800
Lithgow City Council	General Number	(02) 6354 9999
Wallerawang Police	General Number	(02) 6355 1303
Lithgow Police	Chris Sammut	(02) 6352 8399

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Glossary/Abbreviations

Abbreviation	Expanded text
ANZG 2018	Australian and New Zealand Guidelines for fresh and marine waters (default guideline values) 2018
Approval	Approval Modification MP07_005-Mod 2
ASS	Acid Sulphate Soils
CEMP	Construction Environmental Management Plan
CEMS	Contractors Environmental Management System
Compliance audit	Verification of how implementation is proceeding with respect to a Construction Environmental Management Plan (CEMP) (which incorporates the relevant approval conditions).
CoAs	Conditions of approval
Minister, the	Minister of the NSW Department of Planning, Housing and Infrastructure (or delegate)
DGV	Default Guideline Value
DPE	Department of Planning and Environment (now DPHI)
DPHI	NSW Department of Planning, Housing and Infrastructure (formally DPE)
EIS	Environmental Impact Statement
EEC	Endangered Ecological Community
Ecologically sustainable development	Using, conserving and enhancing the community's resources so that the ecological processes on which life depends are maintained and the total quality of life now and in the future, can be increased (Council of Australian Governments, 1992)
EPA	NSW Environment Protection Authority
EPBC-CoA	Federal Conditions of Approval under the EPBC Act
ERG	Environmental Review Group – generally comprising representatives of Roads and Maritime, Environmental Representative, Project delivery team, regulatory authorities and Lithgow Council. The ERG will be maintained for the duration of the Project and will meet regularly and undertake environmental inspections. The role the ERG is to work collaboratively with the project team to provide proactive advice on environmental management issues on the Project.
EMS	Environmental Management System
EMMs	Environmental Management Measures as outlined in the project EIS documentation.
Environmental aspect	Defined by AS/NZS ISO 14001:2015 as an element of an organisation's activities, products or services that can interact with the environment.

Abbreviation	Expanded text
Environmental impact	Defined by AS/NZS ISO 14001:2015 as any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's environmental aspects.
Environmental incident	A set of circumstances that causes or threatens to cause material harm to the environment, and/or breaches or exceeds the limits or performance measures/criteria in this approval.
Environmental objective	Defined by AS/NZS ISO 14001:2015 as an overall environmental goal, consistent with the environmental policy, that an organisation sets itself to achieve.
Environmental policy	Statement by an organisation of its intention and principles for environmental performance.
Environmental target	Defined by AS/NZS ISO 14001:2015 as a detailed performance requirement, applicable to the organisation or parts thereof, that arises from the environmental objectives and that needs to be set and met in order to achieve those objectives.
ER	Environmental Representative: A suitably qualified and experienced person independent of project design and construction personnel employed for the duration of construction. The principal point of advice in relation to all questions and complaints concerning environmental performance.
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i> (NSW)
EPL	Environment Protection Licence
ESCP	Erosion and Sediment Control Plan
GPM	Generator Property Management Pty Ltd
Hold point	Is a verification point that prevents work from commencing prior to approval from Roads and Maritime Services
KPI	Key Performance Indicator
KVAD	Kerosene Vale Ash Dam
KVAR	Kerosene Vale Ash Repository (dry stacked as on top of KVAD)
LADR	Lidsdale Ash Dam Repository
Non-compliance	An occurrence, set of circumstances or development that is a breach of the approval but is not an incident.
OEH	Office of Environment and Heritage
OEMP	Operational environmental management plan
PESCP	Progressive Erosion and Sediment Control Plan
PIRMP	Pollution Incident Response Management Plan
Principal, the	GPM
POEO Act	<i>Protection of the Environment Operations Act 1997</i> (NSW)
REMM	Revised Environmental Management Measure

Abbreviation	Expanded text
Roads and Maritime	Roads and Maritime Services
ROL	Road occupancy licence
SAP	Sensitive Area Plan
Secretary	Secretary of the Department of Planning, Housing and Infrastructure or their Nominee
SSCAD	Sawyers Swamp Creek Ash Dam
SEAR's	Secretary's Environmental Assessment Requirements
SPIR	Submission and Preferred Infrastructure Report
SWMS	Safety & Environmental work method statement
TfNSW	Transport for New South Wales
WaterNSW	The State Water Corporation of NSW
WPS	Wallerawang Power Station

1 Introduction

The Lidsdale Ash Dam Repository (LADR), formerly known as the Wallerawang Ash Repository (WAR), is located at Skelly Road, Lidsdale NSW (the Site) and is approximately 15 kilometres (km) north-west of Lithgow and 2.5 km north-east of Wallerawang Power Station (WPS). The Site comprises an area of approximately 528 hectares (ha) and is situated primarily on Lot 5 of Deposited Plan (DP) 829137.

The Site includes several distinct components, including:

- The Kerosene Vale Dry Ash Repository (KVAR) and underlying former Kerosene Vale Ash Dam (KVAD).
- Sawyers Swamp Creek Ash Dam (SSCAD).
- Lidsdale Cut and adjacent asbestos landfills.
- WPS Asbestos demolition landfill south of the SSCAD

The Site location and general layout are shown in Figure 1.1.

The Site has been used since the 1950s to store ash and other wastes generated by the Wallerawang Power Station. Site operations started prior to the commencement of the *Environmental Planning and Assessment Act 1979* (EP&A Act), when the WPS and associated facilities were owned by the NSW Government.

Ownership and responsibility for the Site was transferred from Energy Australia NSW Pty Ltd to Generator Property Management Pty Limited (GPM) in September 2020. GPM's objectives at the Site include closure of the operational facilities and the rehabilitation and management of the Site in general including the Kerosene Ash Repository (KVAR) and the Sawyers Swamp Creek Ash Dam (SSCAD).

This Operational Groundwater Management Plan (OGMP) has been developed to ensure the care and maintenance of the Site is carried out responsibly and in accordance with the relevant Conditions of Approval (CoAs) and any other requirements.

GPM and its contractors are also undertaking construction activities that will be managed under the Site's Construction Environmental Management Plan (CEMP).

1.1 Background to the Lidsdale Ash Repository

The Lidsdale Site was originally farmland that was gradually turned into mining premises during the late 1800s into the early 20th century. The Kerosene Vale mines were originally a series of open cut operations that changed to underground mines using portals driven under the northern escarpment.

The original ash placement operations were at the KVAD. The mining void was filled with ash transported from the WPS as a slurry (i.e. wet ash placement). When the KVAD was full, it was capped with a clay and then ash placement operations began at the SSCAD, which saw wet ash placement take place from 1980 to 2003. The SSCAD is still used to manage site water requirements with water levels managed by irrigation for dust suppression and other onsite water uses to prevent discharge to Sawyers Swamp Creek. When required, water is transferred for treatment via a Caustic Injection Plant (CIP), clarified and discharged through a licenced discharge point (LDP3). The SSCAD is a declared dam under the NSW *Dams Safety Act 2015 No 26* (DS Act) and is subject to regular surveillance and monitoring by certified engineers in accordance with the DS Act.

The need to further develop the KVAR area to maintain power-generation operations at WPS was identified in 2001. The existing wet ash storage area (i.e. the SSCAD) was approaching its design capacity and the placement of dry ash at the KVAR was identified as a viable alternative. Conversion from wet to dry ash placement aimed to minimise environmental and social impacts potentially resulting from heavy metal accumulation. The extent of both stages is outlined in Figure 1.2.

It is noted that the Site has recently been formally Declared under the *Contaminated Land Management Act* (CLM Act) by the EPA and is subject to a Voluntary Management Plan (VMP) requiring detailed and extensive investigations that will guide long term closure works and may require additional works on the Site that would be subject to further approval.

1.2 Relevant project approval

In 2002, Project Approval was granted by the then Minister of Planning to change from wet to dry ash-producing activities and to use the KVAR area for dry ash storage.

The placement of ash on the Repository was developed in two stages:

- Stage 1: Comprises about one third of the area associated with the Site and located on the south-western section of the site, this area was designed to operate for a period of 5 years and reached its design capacity and has been covered.
- Stage 2: Comprises the remainder the Site, covering an area from the open face of the Stage 1 area to the edge of the original storage area. This stage was designed to operate about 10 years, depending on actual ash production rates.

On 26 November 2008, Project Approval (07_0005) was granted by the then Minister of Planning for the extension of the existing KVAR area to permit the continued disposal of ash generated by the WPS under Part 3A (now repealed) of the *Environmental Planning and Assessment Act 1979*. The KVAR Stage 1 placement works were completed and capped in February 2009. The KVAR Stage 2 placement works commenced soon after in April 2009.

In January 2014, WPS's Unit 7 was removed from service and deregistered from the market; whilst in March 2014, Unit 8 was placed in long term storage. However, in November 2014, EnergyAustralia NSW announced that Unit 8 was to be removed from service and the WPS deregistered from the market.

WPS ceased energy production in April 2014 and is currently being decommissioned and dismantled. The bulk transport and disposal of ash to the KVAR ceased following the closure of the WPS. The Lidsdale Ash Repository is currently being managed in a care and maintenance arrangement. Environmental studies and investigations are currently underway to support GPM's safe decommissioning, demolition, rehabilitation and management of ongoing regulatory and contractual obligations associated with the Lidsdale Ash Repository area.

Modification 1 to 07_005 was approved on 9 August 2018 under section 75W of the EP&A Act. This was to allow for the importation of clean fill (virgin excavated natural material (VENM) and excavated natural material (ENM)) for use in the final shaping and capping of KVAR and SSCAD over two years. This modification included a revised project area that extended the originally approved project to include the area covered by SSCAD.

Modification 2 to 07_005 was approved on 13 October 2023 under section 96(1A) of the EP&A Act. This was to allow for the importation of fill over an additional 10 years (i.e. until 13 October 2033).

The most complete description of the onsite activities was provided in the original *Kerosene Vale Stage 2 Ash Repository Area Environmental Assessment* prepared by Parsons Brinckerhoff in April 2008. This focused on the ongoing ash management without providing any details of site rehabilitation requirements when the power station closed. However, it did include the realignment of a section of Sawyers Swamp Creek (SSC) to allow the structural earthworks required to achieve an acceptable factor of safety against failure of the KVAR ash stockpiles during earthquakes. The subsequent modification applications focussed on the potential impacts of the importation of fill material, rather than on activities within the Site where the material would be utilised.

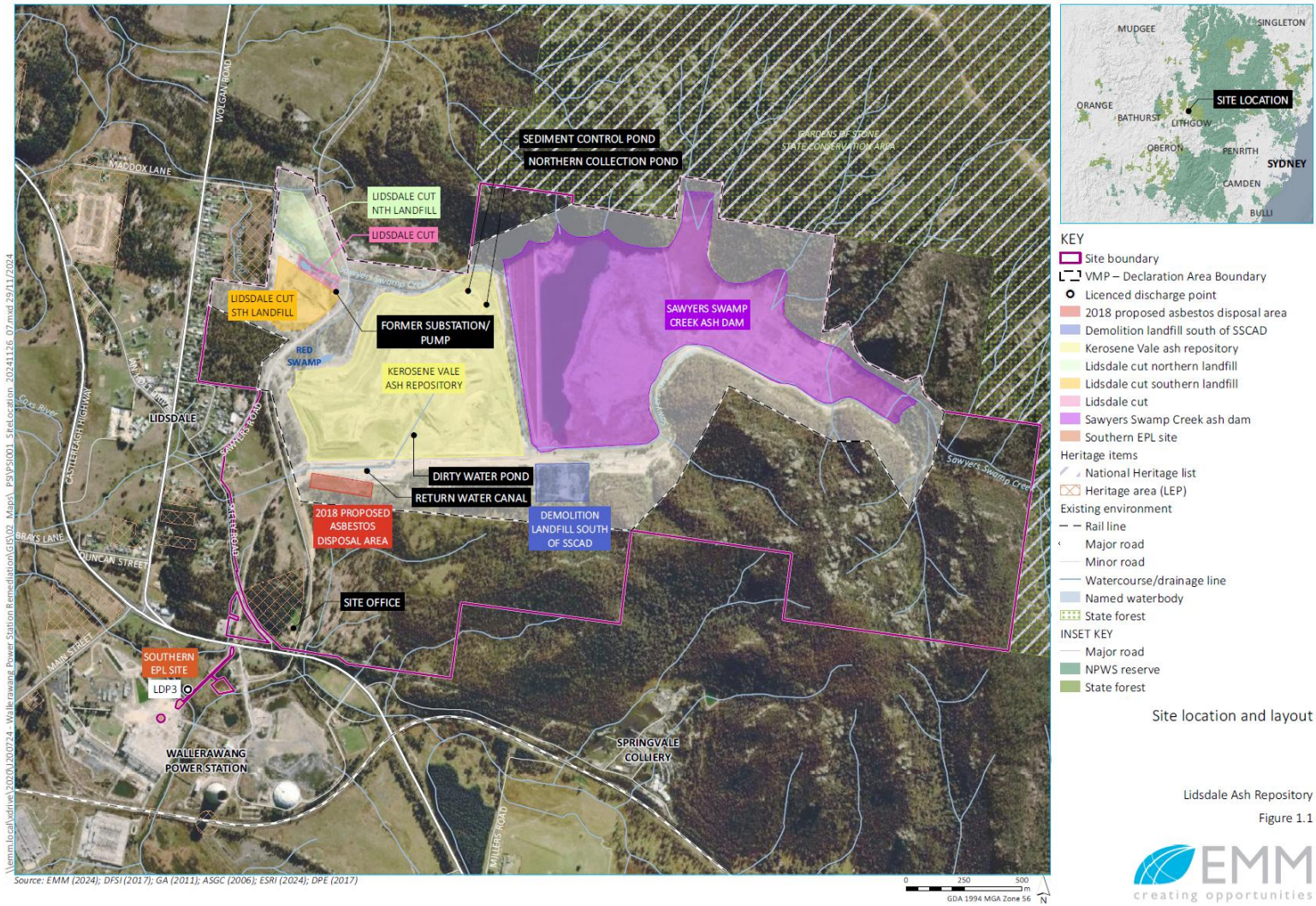


Figure 1.1 Site location and layout



Figure 1.2 Historical ash placement at the cessation of ash placement in KVAR

1.3 Operational Environmental Management Plan and sub-plans

CoA 6.4 requires the applicant to develop an OEMP that outlines the environmental management practices and procedures to be followed during operations, while CoA 6.5 requires the preparation and implementation of the following management plans:

- **Operational Noise Management Plan (ONMP)** - identifies the management measures to minimise operational noise impacts
- **Operational Groundwater Management Plan (OGMP)** - identifies the management measures to minimise operational groundwater impacts
- **Operational Air Quality Management Plan (OAQMP)** - identifies the management measures to minimise operational air quality
- **Operational Surface Water Management Plan (OSWMP)** – identifies the management measures to minimise operational surface water impacts
- **Operational Landscape/Revegetation Plan (OLP)** - identifies the management measures to minimise operational biodiversity impacts
- **Operational Transport Management Plan (OTMP)** - identifies the management measures to minimise traffic and transport impacts during operation

Given the requirement to develop these additional plans in conjunction with the OEMP, these plans are identified as sub-plans to the OEMP.

Table 1.1 provides a high-level overview of the proposed activities that are covered by the OEMP and those covered by the CEMP. Further information on the scope of this OEMP is provided in section 1.4.

Table 1.1 Activities covered by the CEMP and OEMP

Environmental Management Plan	Activities covered
CEMP – construction activities	<ul style="list-style-type: none"> • Sawyers Swamp Creek realignment • Construction of stability berms around the perimeter of the KVAR • Excavation of the former pine plantation area • Sediment controls and surface water dams associated with construction of the KVAR stability berm and realignment of the Sawyers Swamp Creek • Establishment of freshwater collection ponds on the northern edge of SSCAD • Rearrangement of water flows around the KVAR • Establishment of access roads onto the surface of the SSCAD and associated roads across the dam surface • Reinstatement of environmental controls for historic landfill areas including capping of slumped areas, reprofiling for water management and control of sediment runoff during these activities • Concurrent construction activities

Environmental Management Plan	Activities covered
OEMP – care and maintenance operations	<ul style="list-style-type: none"> • Ash management • Management of on-site water systems • Capping material haulage, placement and management • Landscaping and revegetation/rehabilitation of the site • Upgrading and maintaining internal access roads in the project area

1.4 Environmental management system overview

GPM’s Environmental Management System (EMS) is based on AS/NZS ISO 14001. The ISO 14001 standard provides best practice specifications for the implementation of an EMS. An EMS provides a framework for managing the company’s environmental responsibilities so that they are integrated into overall operations. The standard approach integrates environmental management and supports the company’s compliance with legislated and voluntary environmental requirements, as well as continuously improving their overall environmental performance.

The relevant environmental standard ensures a consistent approach is undertaken to integrate environmental management at all levels of the organisation by:

- identifying and maintaining awareness of relevant environmental legislation
- assignment of roles and responsibilities
- establishment of procedures for internal and external communications
- establishment of procedures for monitoring and measuring environmental performance
- setting and reviewing objectives and targets for improving environmental performance
- monitoring and measuring environmental compliance and community inquiries
- setting and reviewing management system programs for achieving objectives and targets
- provision of environmental training aligned to skill requirements
- review of EMS performance for continual improvement.

This OGMP has been developed to be consistent with the relevant provisions of GPM’s EMS, including approvals and license as noted above.

A summary of the EMS and its interaction with the CEMP and OEMP is provided in Figure 1.3.

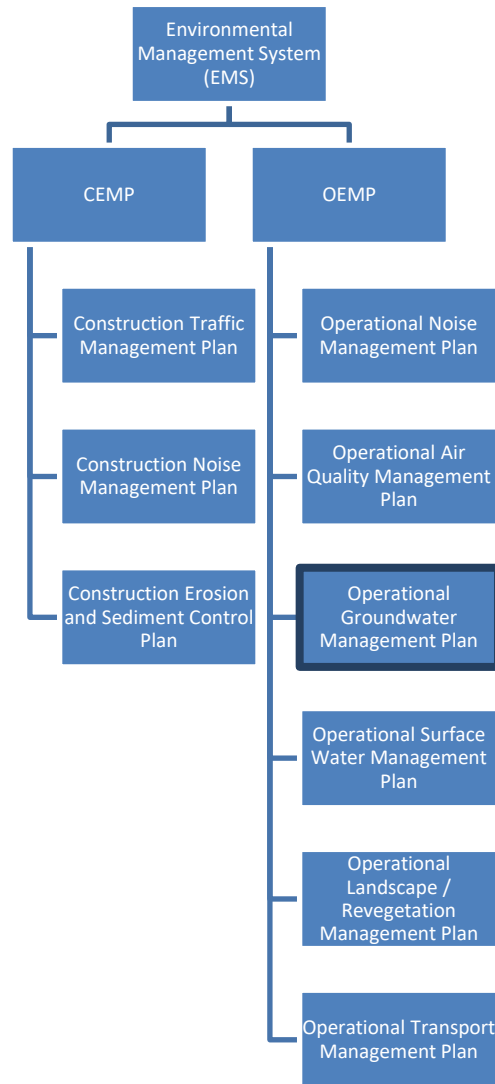


Figure 1.3 Environmental Management System flowchart

1.5 Interactions with other management plans and strategies

This OGMP (outlined in Figure 1.3 above) is a sub-plan to the OEMP and interrelates with the other (sub) management plans set out in section 1.3 and 1.4 above.

1.6 Reference documents

The OEMP incorporates the obligations and criteria outlined in the following documents:

- Project Approval 07_0005 (NSW Department of Planning)
- Submission Report – Statement of Commitments (Parsons Brinckerhoff 2008)
- Modification application 07_0005 Mod 1
- Modification application 07_0005 Mod 2
- Wallerawang Power Station to Submissions Report (EA 2018)
- Environment Protection Licence 21185 (NSW Environment Protection Authority)
- Works Approval (Water Mgt Act 2000)

1.7 Endorsement and approval

1.7.1 Internal approval of OEMP and sub-plans

The OEMP and associated sub-plans, strategies and monitoring programs undergo ongoing review by the GPM team. Following the ongoing review and revision process, internal signoff will be provided.

Once internal approval is received, the documents will be provided to the Environmental Representative (ER) for review prior to undertaking external consultation, review and approval processes described below.

1.7.2 External endorsement and approval of OEMP and sub-plans

Table 1.2 below provides a summary of the relevant authority(s), Council(s) and agencies that require consultation during preparation of the OEMP sub-plans and monitoring programs in accordance with the conditions of approval.

External distribution for consultation and approval of the OEMP, sub-plans and monitoring programs will be undertaken and updated in consultation with the relevant external parties (refer Table 1.2) and will then be endorsed by the ER in accordance with CoA 6.5. After this external consultation and endorsement process is complete the required documents will be submitted to the Secretary for approval, in accordance with CoA 6.4.

This will occur no later than four weeks prior to the commencement of operation of the project (unless otherwise agreed by the Secretary).

A copy of the ER Endorsement of the OGMP is included in Appendix A of this Plan.

Consultation outcomes are detailed in Table 1.3 and consultation records are provided in Appendix E.

Table 1.2 Consultation requirements for the OEMP and sub-plans

Report	Relevant CoA	Condition of Approval	Consultation required
Operational Environmental Management Plan	6.4	The plan shall be submitted for the approval of the Secretary no later than four weeks prior to the commencement of operation of the project, unless otherwise agreed by the Secretary.	Secretary (DPHI)
Operational Noise Management plan	6.5a	The plan shall be prepared in consultation with, and to the satisfaction of, the EPA.	EPA
Groundwater Management Plan	6.5b	The plan shall be prepared in consultation with, and to the satisfaction of WaterNSW.	WaterNSW
Surface Water Management Plan	6.5c	The plan shall be based on best environmental practice and shall be prepared in consultation with, and to the satisfaction of, WaterNSW and Fisheries NSW.	WaterNSW Fisheries NSW
Air Quality Management Plan	6.5d	The plan shall be prepared in consultation with, and to the satisfaction of, the EPA.	EPA
Operational Transport Management Plan	6.5f	The plan must be prepared in consultation with TfNSW and Council.	TfNSW Lithgow Council

Table 1.3 Consultation outcomes for OGMP

Agency	Date provided	Comments	Where addressed
WaterNSW	04/02/2025	Chrome 6+ (Cr6+), Mercury (Hg) and Silver (Ag) should be included in groundwater monitoring given historic data at the site	Aluminium (Al), Mercury (Hg) and Silver (Ag) have been added to the list of analytes sampled in Table B1. Speciation of chromium, which includes Cr6+, will be undertaken in the following sampling round if significant chromium contamination is measured in the dissolved metals and metalloid concentrations from groundwater samples.
		Table B2 should be updated to include sampling for Aluminium (Al), Chrome 6+ (Cr6+), Mercury (Hg) and Silver (Ag) given historic issues identified	Aluminium (Al), Mercury (Hg) and Silver (Ag) have been added to the list of analytes sampled in Table B1. Speciation of chromium, which includes Cr6+, will be undertaken in the following sampling round if significant chromium contamination is measured in the dissolved metals and metalloid concentrations from groundwater samples.
		There is no discussion as to what the four groundwater monitoring sites (A9, A17, GW10 & GW11) identified in Figure B1 as “extra water quality and water level sites – not part of OEMP” are for, and why they aren’t included in the OEMP. WaterNSW considers that more detail regarding these monitoring sites should be included as part of the site’s OGMP, even if non-routine sites	These bores are not part of the OEMP monitoring program and have been removed from the figure to avoid confusion.
		Section 6.2 of the OGMP notes that monitoring shall be conducted 6 monthly at 11 locations whereas, Appendix B of the OGMP suggests 13 water quality monitoring locations. The OGMP should be updated for consistency	Section 6.2 has been updated to note 13 groundwater monitoring locations. Note: In Revision 3 of this document, Section 6.2 is now Section 5.2, and this statement has been moved to the Groundwater Monitoring Program in Appendix B. Section 5.2 refers directly to Appendix B. Based on the recommendation of the EPA and GPM water management objectives an additional eight (8) locations have been added to the program and Appendix B has been updated to reflect the updated total of 21 groundwater monitoring locations
		Clarification should be included in Table B4 on when relevant agencies shall be notified if Low Hazard (Stage 1) trigger continues, and where Stage 2 is not triggered.	Table B4 has been updated to clarify when relevant agencies shall be notified if Low Hazard (Stage 1) trigger continues, and where Stage 2 is not triggered. Note: In Revision 3 of this document, as part of the update of the Groundwater Monitoring Program, the TARP has been changed to a figure (Figure B2) and this update carried over to the figure.
WaterNSW	21/07/2025	Thank you very much for sending through the updated plans. Water NSW has now reviewed the and have no further comments. Just a quick note, the flow gauge upstream of LDP 3 operated by Water NSW is 212054 (Coxs River @ Wallerawang Power Station), probably mistakenly reported as 12054.	Reference to LDP3 flow gauge updated.

Agency	Date provided	Comments	Where addressed
NSW EPA	22/10/2025	Water quality monitoring of groundwater bores within irrigation areas proposed to be undertaken to confirm contaminate pathways.	MW102S, MW102D and MW109D added to the 6-monthly program. An additional 5 wells within Sawyer Swamp Creek Ash Dam (CA1, CA2, CB1, CB2 and CB3) have also been added to the 6-monthly program, the OEMP and this document due to GPM water management objectives.

2 Purpose and objectives

2.1 Purpose

This OGMP for the Lidsdale Ash Repository outlines strategies and actions to mitigate environmental impacts during the project's operational phase. It is designed to set clear protocols and responsibilities, and to thereby ensure that risks are managed, and sustainable practices are upheld. This sub-plan supports the OEMP and should be read in conjunction with the OEMP.

2.2 Objectives

The use of monitoring locations up and down-gradient of the ash placement area(s) allows a comparison between groundwater quality in the ash deposits and the (regional) bedrock groundwater system. The monitoring of groundwater quality at regular intervals provides a clear indication of trends and allows mitigation and remediation measures to be implemented (if required).

Specialist consultants have established the groundwater monitoring bores and continue to undertake the prescribed monitoring and analysis of groundwater results, as per this plan.

Groundwater quality monitoring will be undertaken on regular cycle in accordance with the Groundwater monitoring program in Appendix B.

2.3 Targets

This sub-plan seeks to establish targets and indicators as follows.

Targets:

- To characterise groundwater by monitoring the water quality and water levels in groundwater systems underlying and within the Ash repository and surrounding area.
- To ensure natural groundwater quality and beneficial uses/environmental values are not degraded, and to ensure negligible contaminants are not migrating offsite in the regional groundwater system or via connected surface water systems.

Indicators:

- Negligible groundwater quality changes by comparing results from monitoring with historical background and upgradient regional groundwater levels and concentrations.
- Supporting documentation, including groundwater monitoring analytes and methods, are presented in Appendix B and baseline data is provided in Appendix C and Appendix D.

3 Environmental requirements

3.1 Relevant Conditions of Approval

The relevant CoAs, and where they are addressed in this OGWMP are provided in Table 3.1.

Table 3.1 Relevant Conditions of Approval and where they are addressed

Relevant CoA	Condition of Approval	Where addressed in this plan
3.4	<p>The Applicant shall prepare and implement a Groundwater Monitoring Program to monitor the impacts of ash placement activities on local groundwater quality and hydrology. The Program shall be developed in consultation with, and to the satisfaction of, WaterNSW, and shall describe the location, frequency, rationale and procedures and protocols for collecting groundwater samples as well as the parameters analysed and methods of analysis. The monitoring program shall be ongoing for the life of the project and include, but not be limited to:</p> <ul style="list-style-type: none"> a) monitoring at established bore sites (or replacement bore sites in the event that existing sites are damaged or lost) as described in the document referred to under condition 1.1 of this approval; and b) a schedule for periodic monitoring of groundwater quality, depth and flow at all monitoring sites, at an initial frequency of no less than once every month for the first 12 months of operation. <p>The monitoring program shall form part of the Groundwater Management Plan referred to in condition 6.5b) of this approval.</p>	<p>Appendix B Appendix C</p>
6.5 (b)	<p>A Groundwater Management Plan to detail measures to mitigate and manage groundwater impacts. The Plan shall be prepared in consultation with, and to the satisfaction of, WaterNSW and include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> i) baseline data on groundwater quality, depth and flow in the project area ii) groundwater objectives and impact assessment criteria iii) a program to monitor groundwater flows and groundwater quality in the project area as required by condition 3.4 of this approval iv) a protocol for the investigation of identified exceedances of the groundwater impact assessment criteria v) a response plan to address potential exceedances and groundwater quality impacts vi) provisions for periodic reporting of results to WaterNSW. 	<p>Table 4.1 Appendix C Table 4.1 Table 4.1, Appendix B Table 4.1, Appendix B Appendix B Section 5.2</p>

3.2 Compliance tracking

CoA 4.2 mandates a compliance tracking program to track compliance with the requirements before commencing operations. A compliance tracking tool was developed by Energy Australia in 2005 and has been reviewed and updated for use by GPM following Modification 2 approval. The program is contained in the OEMP and is used to ensure effective and efficient tracking of compliance.

Details on compliance management, including roles and responsibilities, are provided throughout Section 3 of the OEMP.

4 Environmental management

4.1 Management measures

Management actions to minimise operational impacts are provided in Table 4.1.

Table 4.1 Environmental Management Measures

Relevant aspect	Management and mitigation measures	Source of requirement	Frequency	Relevant records	Responsibility
Groundwater quality monitoring	Monitoring to be undertaken in accordance with the OGMP, attached as Appendix B. Water quality monitoring results shall be assessed by a suitably qualified professional and compared to the Site Specific Trigger Values (refer to Appendix B, Figure B2).	CoA 3.4	6-monthly (unless advised otherwise)	Groundwater monitoring records	GPM / Specialised Consultant
Groundwater level monitoring	Monitoring to be undertaken in accordance with the OGMP, attached as Appendix B. Water level monitoring results shall be assessed by a suitably qualified professional and compared to the Site Specific Trigger Values (refer to Appendix B, Figure B2).	CoA 3.4	6-monthly	Groundwater monitoring records	GPM / Specialised Consultant
Groundwater flow monitoring	Meters will be monitored at areas of known groundwater seepage, at: <ul style="list-style-type: none"> SSCAD dam wall outflow KVAD seepage collection system 	CoA 3.4	Daily with 6-monthly download	Flow monitoring records	GPM / Specialised Consultant
Reporting	The results and analysis of the monitoring data will be included as part of the Annual Environmental Management Report (AEMR) and assessed against the relevant recent data, relevant upgradient data, and the Site Specific Trigger Values presented in the OGMP. Results and analysis will include interpretations and discussion by a suitably qualified person. Any exceedance of Site Specific Trigger Values will be reported as per the TARP (refer Appendix B, Figure B2).	CoA 7.3 CoA 6.4(b)	Annually	AEMR Stage 1 Trigger Exceedance Reports Stage 2 Trigger Rectification Reports	GPM / Specialised Consultant

5 Administrative requirements

5.1 Incidents and non-compliances

5.1.1 Incidents

All incidents will be reported and investigated, and corrective actions assigned to prevent future occurrences in accordance with the OEMP Section 3.8.

The approval defines an incident as:

A set of circumstances that causes or threatens to cause material harm to the environment, and/or breaches or exceeds the limits or performance measures/criteria in this approval.

Material harm (which includes actual or potential harm) to the health or safety of human beings or to ecosystems that is not trivial or that results in actual or potential loss or property damage exceeding a threshold dollar value as identified by the POEO Act.

The Secretary must be notified in writing via the Major Projects website immediately after the Project team becomes aware of an incident in accordance with CoA 7.1. The notification must identify the development (including the application number and the name of the development if it has one) and set out the location and nature of the incident.

Section 3.8 of the OEMP details environmental incidents and the response to environmental emergencies for the Project. This includes the reporting, notification and investigation of environmental incidents. Emergency contact details are also provided. In the event of an environmental incident or emergency related to the implementation of this OGMP, the responses detailed in the OEMP are to be implemented.

5.1.2 Non-compliance

The approval defines non-compliance as:

An occurrence, set of circumstances or development that is a breach of the approval but is not an incident.

The Secretary must be notified in writing via the Major Projects website within seven days after the Project team becomes aware of any non-compliance in accordance with CoA 7.2. A non-compliance notification must identify the development and the application number for it, set out the condition of approval that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.

Section 3.8.1 of the OEMP details the Project team's response following the identification of a non-compliance with the CoA, the OEMP and associated sub-plans. This includes the reporting, investigation and notification of non-compliances. Non-compliance with this OGMP will be addressed as required by the OEMP.

5.2 Reporting

Environmental monitoring for the Lidsdale Ash Repository area is designed to comply with the requirements of statutory approvals and provide an analysis of the condition of the environment surrounding the works.

An overview of the environmental monitoring activities for the project area specified under Section 5.2 of the OEMP.

Groundwater monitoring frequency and locations are specified in the Groundwater Monitoring Program in Appendix B.

Groundwater monitoring data will be incorporated into the Annual Environmental Management Report (AEMR) which will be submitted to the Secretary each year. In accordance with CoA 6.5(b)vi, the groundwater component of the AEMR will also be provided to WaterNSW.

5.3 Review

A review of the OEMP, sub-plans (including this OGMP) and monitoring programs will be undertaken during operations as required. These reviews will be completed to determine the efficiency of the plans and monitoring programs and whether any changes are required to ensure compliance.

Circumstances which may trigger a review include:

- changes to design, construction, work methods, legislation, or policy
- incidents, complaints or non-compliance
- changes identified by continuous improvement
- changes to key management plans that are relevant
- where additional monitoring measures are identified in annual reviews or audits.
- where monitoring or numerical modelling demonstrates a change to the conceptual hydrogeological understanding.

In addition and in accordance with CoA 6.6, GPM will review and, if necessary, revise the studies, strategies and plans required under the conditions of approval to the satisfaction of the Secretary within three months of:

- the submission of an incident report under CoA 7.1
- the submission of an Annual Review under CoA 7.3
- the submission of an Independent Environmental Audit under CoA 4.2
- the modification of the conditions of this approval (unless the CoAs require otherwise).

Where this review leads to revisions in any such document, then within 4 weeks of the review, GPM will submit the revised document to the Secretary for approval, unless otherwise agreed with the Secretary.

In accordance with CoA 6.5A, this plan, this OGMP has been updated prior to the importation of capping material to the site from sources outside of the Lithgow local government area.

Appendix A ER Letter of Endorsement

31 March 2026

John Pola
Environment Manager
Generator Property Management
110 Skelly Road
Lidsdale NSW 2790

Re: MP07_0005 - Wallerawang Ash Dam Areas - Environmental Representative Endorsement - Operational Groundwater Quality Management Plan Rev 5

Dear John,

Following a review of the documents provided for the Operation Groundwater Quality Management Plan (GWQMP) Rev 5, I can provide the following endorsement.

The GWQMP Rev 5 has been reviewed against the Mod 2 Consolidated Conditions of Approval, in particular Condition 6.5b. Consultation with WaterNSW and DPHI has been undertaken for this plan and has all comments have been addressed in the revised document. All comments from DPHI have been closed.

All conditions of approval and mitigation measures are contained in the GWQMP Rev 5.

The document is endorsed for submission to DPHI for approval.

Yours sincerely



David Bone
Independent Environmental Representative
dbone@emmconsulting.com.au

Appendix B Groundwater Monitoring Program

Introduction

This Groundwater Monitoring Program has been developed in accordance with CoA 3.4 and will be ongoing for the life of the project.

Elected monitoring locations provide spatial coverage of the Site, target relevant groundwater systems and understand the potential for off-site contaminant migration, and are as described in the documents referred to under CoA 1.1.

Monitoring locations will be assessed for functionality during each monitoring round, and in the event that monitoring locations are damaged or lost, replacement locations will be established.

The groundwater monitoring program comprises a well network of 34 locations across the site. Twenty-one (21) locations monitored for both groundwater level and groundwater quality, with thirteen (13) locations monitored for groundwater level only. A summary of the monitoring bores elected for groundwater monitoring is provided in Table B2.

Groundwater quality monitoring

Groundwater quality data is to be collected every six-months at twenty-one (21) monitoring bores. Elected monitoring bores provide spatial coverage of the Site, target relevant groundwater systems and understand the potential for off-site contaminant migration.

Groundwater quality monitoring will be undertaken by suitably qualified and experienced site personnel as follows:

1. Groundwater samples will be retrieved from dedicated Hydrasleeves™ installed in the monitoring bores.
2. Physico-chemical parameters will be measured using a calibrated water quality meter.
3. Samples will be collected in laboratory supplied containers, stored immediately in chilled eskies and submitted to a National Association of Testing Authorities (NATA) accredited laboratory for analysis.

Analytes have been elected based on potential analytes present across the site, either naturally occurring or introduced via anthropogenic activities. A schedule of testing analytes is provided in Table B1.

Table B1 Groundwater monitoring parameters and analytes

Category	Analytes	Sampling and analysis methods
Physio-chemical parameters	pH, dissolved oxygen (DO), temperature, specific conductance (SPC), total dissolved solids (TDS), redox potential (ORP)	Analysis is to be undertaken during fieldworks using a calibrated water quality meter.
	Total dissolved solids (TDS)	Analysis is to be undertaken by a NATA-certified laboratory.
Anions	Bicarbonate, carbonate, chloride, fluoride, sulfate	Analysis is to be undertaken by a NATA- certified laboratory.
Cations	Sodium, potassium, calcium, magnesium	Analysis is to be undertaken by a NATA- certified laboratory.
Dissolved metals and metalloids	Aluminium (Al), arsenic (As) ^α , boron (B), cadmium (Cd), chromium (Cr) ^α , copper (Cu), lead (Pb), manganese (Mn), mercury (Hg), nickel (Ni), selenium (Se), silver (Ag), and zinc (Zn)	Samples are to be filtered using a 0.45 µm filter. Analysis is to be undertaken by a NATA-certified laboratory.
PAHs	Benzo(a)pyrene	Analysis is to be undertaken by a NATA- certified laboratory.

Note: α – speciation of arsenic and chromium will be undertaken in the following sampling round if arsenic or chromium is detected above the guideline limit for 95% Freshwater species protection (ANZECC 2000)

In general accordance with Groundwater Sampling and Analysis – A Field Guide (Geoscience Australia 2009), groundwater quality monitoring will include the following Quality Controls:

1. Dedicated sampling equipment will be installed in the monitoring bores to prevent cross contamination.
2. Dedicated single use consumables (i.e. gloves, field filters, syringes and Hydrasleeves™) will be used for sample collection, minimising the potential for cross contamination.
3. Calibration certificates for hired equipment will be retained. Subsequent calibrations will be undertaken daily and documented.
4. One pair of field duplicates and a triplicate sample will be collected at a frequency of 1 sample per 20 primary samples. These are to be analysed for equivalent analytes as per the primary sample (refer Table B1).
5. Rinsate blanks will be collected by running de-ionised water over sampling equipment and collected in sample bottles
6. A set of trip blanks and trip spikes are to be transported to Site with empty laboratory samples bottles and transported back to the laboratory with the collected water samples.

A summary of the monitoring bores is provided in Table B2. Figure B1 shows the location of all groundwater monitoring bores.

Groundwater level monitoring

Groundwater level monitoring will be undertaken twice yearly (i.e. 6-monthly) at thirty-four (34) monitoring bores as follows:

1. Groundwater levels will be measured using a hand-held dip meter at all thirty-four (34) locations, prior to the retrieval of sampling equipment (i.e. Hydrasleeves or loggers). The date and time will also be recorded.
2. Automated dataloggers and barometric loggers will be checked for functionality and downloaded at thirteen (13) locations. Loggers will be redeployed as soon as possible after download has completed and set to record groundwater level and temperature at a 6-hourly frequency.

A summary of the monitoring bores elected for groundwater monitoring is provided in Table B2. Figure B1 shows the location of all groundwater monitoring bores.

Table B2 Groundwater monitoring bores

Bore	Easting	Northing	Top of Casing ('mAHD)	Screen interval (² mbgl)		Target groundwater system	Groundwater monitoring		
				Top	Base		Quality	Level (³ automated)	Level (⁴ manual)
WGM1/D1	231988	6301410	954.91	2.6	9.0	Regolith & Illawarra Coal Measures	X		X
WGM1/D2	229680	6301388	929.06	5.6	18.0	Illawarra Coal Measures	X		X
WGM1/D3	230276	6301753	930.30	4.1	17.5	Illawarra Coal Measures	X		X
WGM1/D4	230160	6302350	907.42	4.1	6.0	Regolith of Illawarra Coal Measures	X		X
WGM1/D5	229642	6302206	904.76	4.1	14.3	Illawarra Coal Measures	X		X
WGM1/D6	229412	6302028	907.39	2.5	14.9	Illawarra Coal Measures	X		X
WH_MW02	229246	6301826	924.41	24.0	27.0	Illawarra Coal Measures	X		X
WH_MW03	229272	6301492	921.23	16.0	19.0	Illawarra Coal Measures	X		X
WJ_MW03	229257	6302482	897.03	4.5	7.5	Illawarra Coal Measures	X		X
WK_MW01	230445	6301466	945.05	5.0	9.0	Illawarra Coal Measures	X		X
WK_MW04	230290	6301459	937.24	3.0	6.0	Illawarra Coal Measures	X		X
WK_MW06	230279	6301346	948.91	26.0	30.0	Illawarra Coal Measures	X		X
WWD1A	231654	6301882	943.60	11.5	14.5	Sawyers Swamp Creek Ash Dam		X	X
WWD1B	231645	6301881	944.45	20.5	23.5	Illawarra Coal Measures		X	X

Table B2 Groundwater monitoring bores

Bore	Easting	Northing	Top of Casing ('mAHD)	Screen interval (²mbgl)		Target groundwater system	Groundwater monitoring		
				Top	Base		Quality	Level (³automated)	Level (⁴manual)
WWD2A	230974	6302184	943.71	20.5	23.5	Sawyers Swamp Creek Ash Dam		X	X
WWD2B	230974	6302187	943.80	29.0	32.0	Illawarra Coal Measures		X	X
WWD5A	230026	6302165	918.46	4.5	7.5	Kerosene Vale Ash Repository		X	X
WWD5B	230015	6302148	921.70	17.5	20.5	Illawarra Coal Measures		X	X
WWD6A	229672	6301674	943.11	26.7	29.7	Kerosene Vale Ash Dam		X	X
WWD6B	229667	6301680	942.76	30.3	34.3	Illawarra Coal Measures		X	X
WWD10	229287	6302149	906.17	8.9	11.9	Illawarra Coal Measures		X	X
WWD12	229476	6302519	902.30	6.6	9.6	Illawarra Coal Measures		X	X
WWD14A	229847	6301909	941.42	17.6	20.6	Kerosene Vale Ash Dam		X	X
WWD14B	229845	6301905	941.34	22.6	25.6	Regolith of Illawarra Coal Measures		X	X
WH_MW04	229080	6301944	909.04	49.0	55.0	Illawarra Coal Measures		X	X
MW102S	229625	6300714	905.10	5.9	8.9	Siltstone	X		X
MW102D	229627	6300704	905.03	19.7	25.7	Siltstone	X		X
MW109D	229061	6301498	898.73	23.2	29.2	Siltstone	X		X

Table B2 Groundwater monitoring bores

Bore	Easting	Northing	Top of Casing (¹ mAHD)	Screen interval (² mbgl)		Target groundwater system	Groundwater monitoring		
				Top	Base		Quality	Level (³ automated)	Level (⁴ manual)
MW118 ⁵	229237	6302344	902.66	6.5	9.5	Regolith & Illawarra Coal Measures	X		X
CA1	230919	6301963	941.46	0.5	3.5	Sawyers Swamp Creek Ash Dam	X		X
CA2	230818	6302012	941.84	0.5	3.5	Sawyers Swamp Creek Ash Dam	X		X
CB1	231088	6302060	942.85	1.5	4.5	Sawyers Swamp Creek Ash Dam	X		X
CB2	231134	6302152	942.74	1.25	4.25	Sawyers Swamp Creek Ash Dam	X		X
CB3	231173	6302242	942.70	0.8	3.8	Sawyers Swamp Creek Ash Dam	X		X

Note: 1. Metres above Australian Height Datum; 2. Metres below ground level; 3. As recorded by installed automated dataloggers; 4. As measured using a hand-held dip meter, 5. Replacement of EPL well WI_MW03.

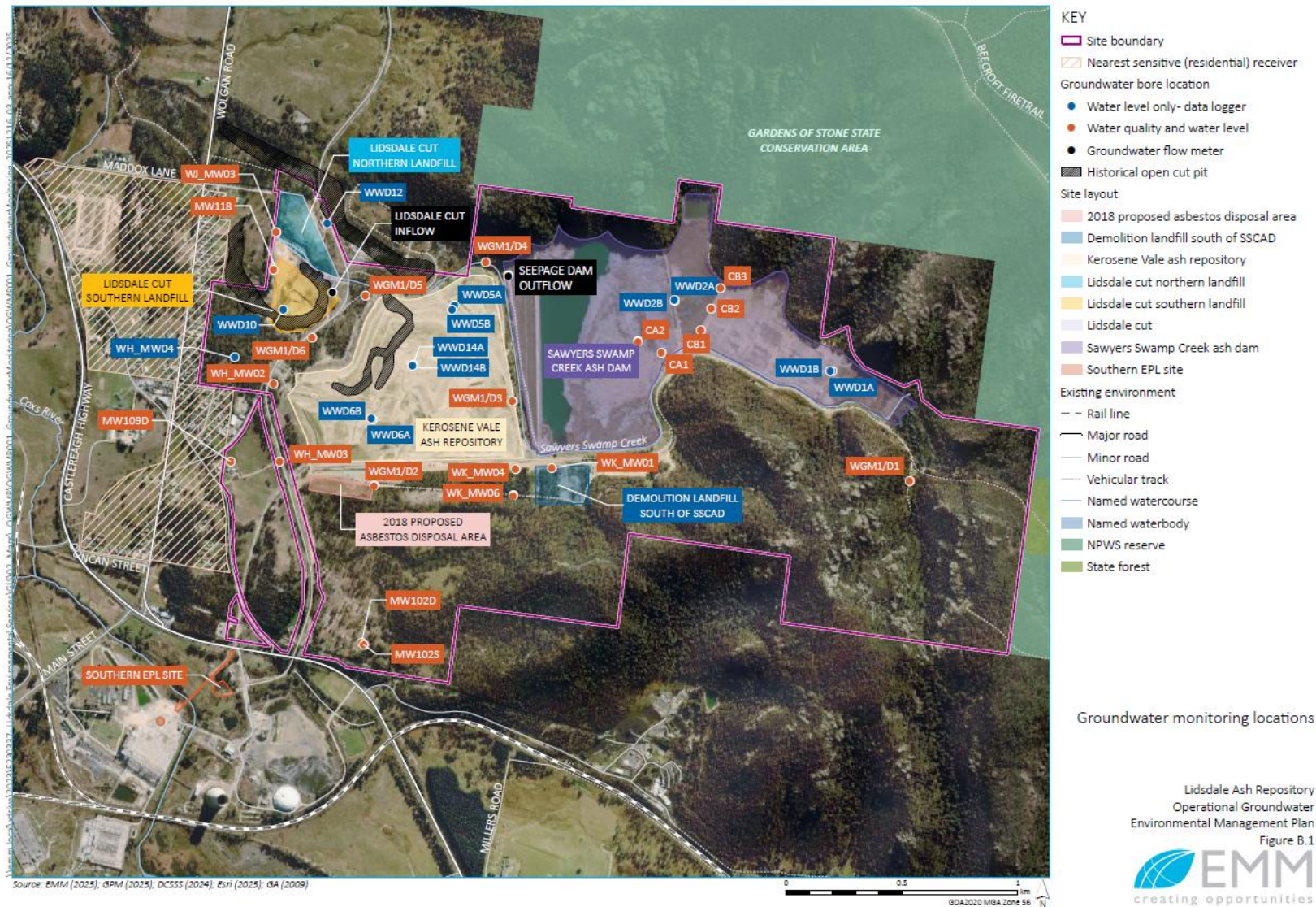


Figure B1 OEMP monitoring locations

Groundwater flow monitoring

Groundwater seepage volumes are collected at two metered locations within the Site. Metered flow data will be used to understand the potential for groundwater flow changes across the site.

Metered data will be used to calibrate a numerical model (set to be completed in early 2026). The numerical model will support quantification of flow within the site, and will be used to determine trigger values (in tandem with baseline flow data).

Table B3 Groundwater flow monitoring sites

Monitoring ID	Easting	Northing	Recording frequency	Key Site monitoring
Seepage Dam Outflow	6302294.7	230258.4	Daily	Seepage from the SSCAD wall
Lidsdale Cut Inflow	6302264.0	229495.6	Daily	KVAD seepage collection system

Site Specific Trigger Values

Based on historical data collected prior to development of this OGMP (baseline data), Site Specific Trigger Values (SSTVs) have been derived at:

- 13 monitoring locations for water quality (comprising WGM1/D1, WGM1/D2, WGM1/D3, WGM1/D4, WGM1/D5, WGM1/D6, WH_MW02, WH_MW03, WI_MW03, WJ_MW03, WK_MW01, WK_MW04, WK_MW06),
- 26 monitoring locations for water quality (comprising WGM1/D1, WGM1/D2, WGM1/D3, WGM1/D4, WGM1/D5, WGM1/D6, WH_MW02, WH_MW03, WH_MW04, MW118, WJ_MW03, WK_MW01, WK_MW04, WK_MW06, WWD10, WWD12, WWD14A, WWD14B, WWD1A, WWD1B, WWD2A, WWD2B, WWD5A, WWD5B, WWD6A, WWD6B).

It is recognised that a pre-disturbance (i.e. prior to construction or deposition of ash at the Site) dataset does not exist however, the SSTVs provide a framework to assess potential deterioration of water quality, flow or volume at the Site.

Insufficient baseline data was available at the 8 remaining locations (comprising CA1, CA2, CB1, CB2, CB3, MW102S, MW102D and MW109D) and two groundwater flow monitoring sites (Seepage Dam Outflow and Lidsdale Cut Inflow), noting that groundwater changes arising from external stressors (i.e. climate and nearby coal extraction) have not yet been adequately monitored to develop meaningful SSTVs. SSTVs will be developed at the remaining locations in a subsequent review of this OGMP.

Groundwater quality SSTVs were based on the maximum recorded concentrations during the groundwater quality baseline monitoring period, comprising seven (7) monitoring events between October 2022 and May 2025 (refer Appendix C). Maximum groundwater quality baseline data concentration values were compared to the 95% level of species protection (LOSP) default guideline values (DGVs), as presented in the ANZG 2018 Australian and New Zealand guidelines for Fresh and Marine Water Quality (ANZG 2018). The higher concentration value was adopted as the primary groundwater quality SSTV. As additional baseline data becomes available, or as new information on DGVs becomes available, groundwater quality SSTVs may be updated in subsequent OGMP reviews. Water quality SSTVs are presented in Table B4.

Groundwater level SSTVs are based on the 5th and 95th percentiles of the groundwater level baseline dataset, comprising water level loggers installed in each well and monitoring events between November 2001 and May 2025. As additional baseline data becomes available, groundwater level SSTVs may be updated in subsequent OGMP reviews. Groundwater level SSTVs are presented in Table B.4..

At the time of compiling this document, a numerical model is being developed to understand the volumetric groundwater flow between Site components. Following completion of the numerical model (set for early 2026), groundwater flow SSTVs can be developed at the gauging locations (refer Table B3) for ongoing monitoring. This will be captured in a subsequent update of this OGMP.

Table B4 Site Specific Trigger Values – Groundwater quality

Parameters	Units	WGM1/D1	WGM1/D2	WGM1/D3	WGM1/D4	WGM1/D5	WGM1/D6	WH_MW02	WH_MW03	MW118 ³	WJ_MW03	WK_MW01	WK_MW04	WK_MW06
pH	-	4.0-5.6	3.7-5.5	4.8-5.7	5.8-6.2	5.1-5.9	3.8-5.1	5.4-5.9	4.3-6.0	5.6-6.0	3.9-5.1	6.2-6.6	6.2-6.5	6.3-6.7
EC	µS/cm	210	523	725	1,600	1,473	1,016	476	299	512	1,328	1,980	2,910	1,115
Aluminium	mg/L	0.22	2.96	0.6	¹ 0.055	1.15	8.82	¹ 0.055	0.16	0.06	1.22	¹ 0.055	0.02	0.02
Arsenic (III)	mg/L	¹ 0.024	¹ 0.024	¹ 0.024	¹ 0.024	¹ 0.024	¹ 0.024	¹ 0.024	¹ 0.024	¹ 0.024	¹ 0.024	¹ 0.024	¹ 0.024	0.062
Arsenic (IV)	mg/L	¹ 0.013	¹ 0.013	¹ 0.013	¹ 0.013	¹ 0.013	¹ 0.013	¹ 0.013	¹ 0.013	¹ 0.013	¹ 0.013	¹ 0.013	¹ 0.013	0.062
Boron	mg/L	¹ 0.94	¹ 0.94	¹ 0.94	1.44	3.07	¹ 0.94	¹ 0.94	¹ 0.94	¹ 0.94	¹ 0.94	¹ 0.94	¹ 0.94	¹ 0.94
Cadmium	mg/L	¹ 0.0055	¹ 0.0055	¹ 0.0055	¹ 0.0055	¹ 0.0055	¹ 0.0055	¹ 0.0055	¹ 0.0055	¹ 0.0055	¹ 0.0055	¹ 0.0055	¹ 0.0055	¹ 0.0055
Chromium (VI)	mg/L	0.002	0.001	0.002	¹ 0.001	¹ 0.001	0.001	¹ 0.001	¹ 0.001	¹ 0.001	¹ 0.001	¹ 0.001	¹ 0.001	0.003
Copper	mg/L	0.008	0.01	0.006	0.002	¹ 0.0014	0.013	¹ 0.0014	0.004	0.002	0.015	¹ 0.0014	0.005	¹ 0.0014
Lead	mg/L	¹ 0.0034	¹ 0.0034	0.004	¹ 0.0034	¹ 0.0034	0.006	¹ 0.0034	0.002	¹ 0.0034	0.008	¹ 0.0034	¹ 0.0034	¹ 0.0034
Manganese	mg/L	¹ 1.9	¹ 1.9	¹ 1.9	7.98	8.14	¹ 1.9	2.61	1.96	¹ 1.9	2.4	¹ 1.9	¹ 1.9	¹ 1.9
Mercury	mg/L	¹ 0.0006	¹ 0.0006	¹ 0.0006	¹ 0.0006	¹ 0.0006	¹ 0.0006	¹ 0.0006	¹ 0.0006	¹ 0.0006	¹ 0.0006	¹ 0.0006	¹ 0.0006	¹ 0.0006
Nickel	mg/L	0.037	0.089	0.277	0.042	0.229	0.472	¹ 0.011	0.038	0.106	0.178	0.025	0.029	¹ 0.011
Selenium	mg/L	¹ 0.011	¹ 0.011	¹ 0.011	¹ 0.011	¹ 0.011	¹ 0.011	¹ 0.011	¹ 0.011	¹ 0.011	¹ 0.011	¹ 0.011	¹ 0.011	¹ 0.011
Silver	mg/L	² 0.001	² 0.001	² 0.001	² 0.001	² 0.001	² 0.001	² 0.001	² 0.001	² 0.001	² 0.001	² 0.001	² 0.001	² 0.001
Zinc	mg/L	0.199	0.136	0.315	0.046	0.017	1.42	0.01	0.142	0.27	1.03	0.01	0.072	¹ 0.008
Benzoapyrene	µg/L	¹ 0.2	¹ 0.2	¹ 0.2	¹ 0.2	¹ 0.2	¹ 0.2	¹ 0.2	¹ 0.2	¹ 0.2	¹ 0.2	¹ 0.2	¹ 0.2	¹ 0.2

Note: 1. Value has been amended to 95% Default Guideline Value (DGV), noting baseline concentrations were lower than DGV. 2. Contaminant concentration is unlikely given site history, trigger value set to limit of reporting. 3. WI_MW03 was damaged and has been replaced by MW118, the SSTV considers the dataset from both locations.

Table B5 Site Specific Trigger Values – Groundwater levels (mAHD)

Location	95 th percentile	5 th percentile
WGM1/D1	953.51	² NA
WGM1/D2	926.04	918.69
WGM1/D3	922.3	919.09
WGM1/D4	906.42	905.82
WGM1/D5	898.81	² NA
WGM1/D6	896.6	895.76
WH_MW02	902.98	901.32
WH_MW03	904.87	903.34
WH_MW04	889.48	888.60
MW118	¹ 893.77	¹ 892.08
WJ_MW03	893.8	892.18
WK_MW01	940.51	938.84
WK_MW04	933.74	932.12
WK_MW06	925.4	923.55
WWD10	895.06	893.91
WWD12	895.86	893.67
WWD14A	920.75	² NA
WWD14B	919.20	918.16
WWD1A	943.21	942.35
WWD1B	942.81	942.12
WWD2A	942.12	940.72
WWD2B	941.29	940.38
WWD5A	911.36	² NA
WWD5B	912.60	911.82
WWD6A	917.72	917.48

Location	95 th percentile	5 th percentile
WWD6B	913.22	912.73

Note: 1. WI_MW03 was damaged and has been replaced by MW118, the SSTV considers the dataset from both locations.
2. 5th percentile trigger not applicable as bore has previously been dry.

Trigger Action Response Plan

A trigger action response plan (TARP) has been developed to provide an adaptive monitoring and response approach, whereby:

- Potential exceedances are explored, prior to alerting regulators / Departments to ensure that exceedances are legitimate and not as a result of external influences (i.e. climatic stressors) or internal error handling (i.e. laboratory reporting errors or incorrect monitoring), overall reducing administrative burden.
- A mechanism is included to update the TARP in response to a further developed understanding (i.e. the baseline period has been a relatively 'wet' period, and the effects of a drier period can still be understood through the collection of additional baseline data as monitoring continues).

The TARP is described in Figure B2.

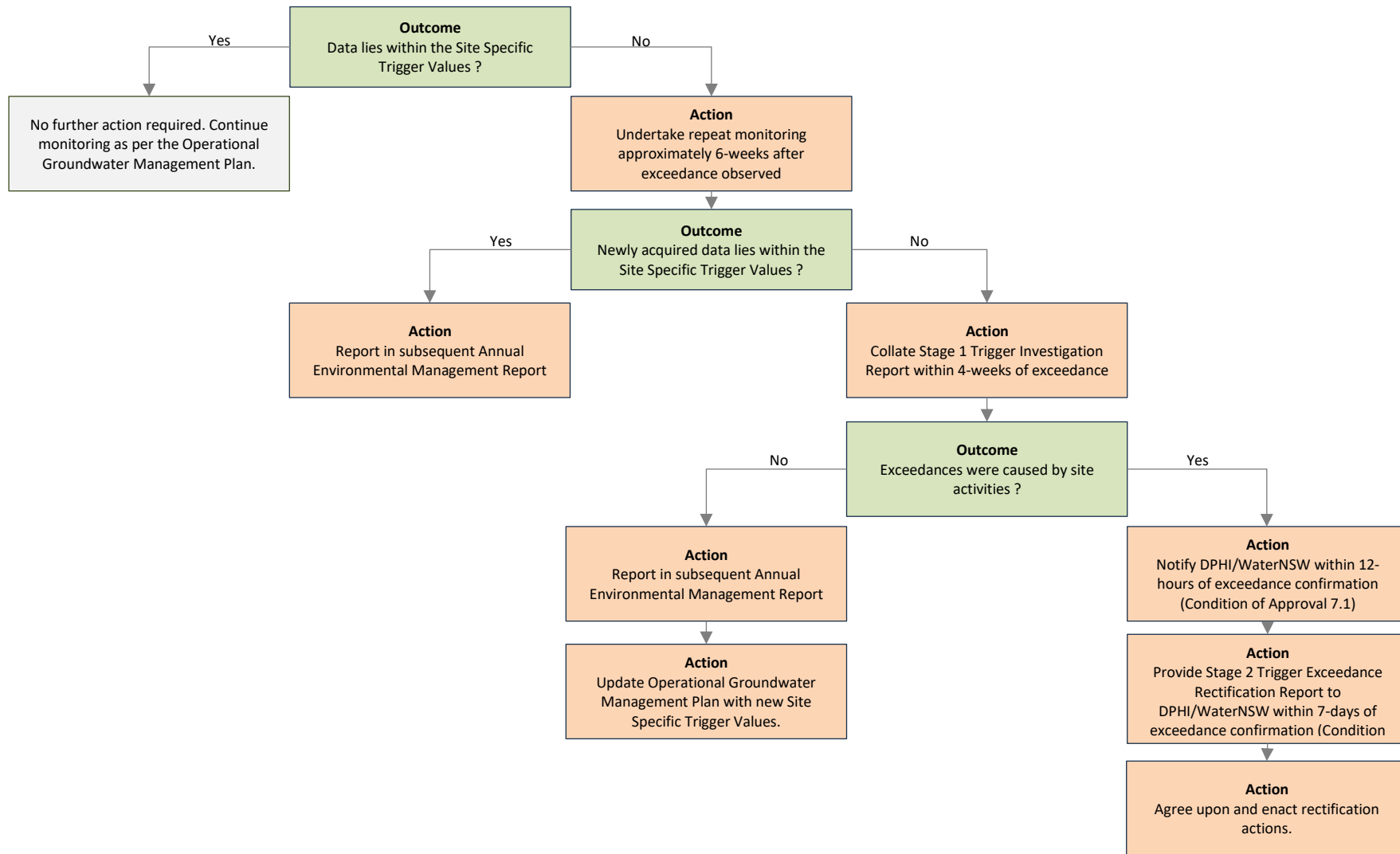


Figure B2 Trigger action response plan

Reporting

An Annual Environmental Management Report (AEMR) is prepared annually, and includes a summary of the monitoring data, exceedances and rectifications undertaken over the previous year.

Beyond the routine AEMR reporting, and in accordance with the TARP (refer Figure B2), reporting may also include:

- Stage 1 Trigger Investigation Reports, as may be required following a confirmed exceedance of water level or water quality.
- Stage 2 Trigger Exceedance Rectification Report, as may be required in the event that a Stage 1 Trigger Investigation Report indicated that an exceedance was caused by site activities.

Appendix C Baseline groundwater quality data set

	Field				Analytical results – alkalinity				Inorganics									PAH
	EC (field)	pH	TDS (Field)	TDS	Alkalinity (Bicar-bonate as CaCO ₃)	Alkalinity (Car-bonate as CaCO ₃)	Alkalinity (Hydroxide) as CaCO ₃	Alkalinity (total) as CaCO ₃	Calcium	Calcium (filtered)	Chloride	Fluoride	Sodium (filtered)	Magnesium	Magnesium (filtered)	Potassium (filtered)	Sulfate as SO ₄ - Turbidimetric (filtered)	Benzo(a) pyrene
	uS/cm	-	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L
EQL				5	1	1	1	1	0.5	0.5	1	0.1	0.5	0.5	0.5	0.5	1	0.5

Location Code Date

CA1	27 Nov 2024	940	6	-	760	90	<5	<5	90	44	49	36	6.7	120	22	23	49	-	-
CA1	18 Dec 2024	909	5.6	-	720	71	<5	<5	71	54	46	28	6.4	110	24	20	42	-	-
CA1	14 Jan 2025	922	5.1	-	660	16	<5	<5	16	45	53	9	4.6	91	14	17	43	-	-
CA2	14 Jan 2025	994	5.9	-	690	110	<5	<5	110	38	39	35	6.6	120	18	18	43	-	-
CB1	27 Nov 2024	449	5.4	-	320	23	<5	<5	23	16	17	24	1.8	49	6.8	7.0	30	-	-
CB1	18 Dec 2024	403	5.6	-	270	32	<5	<5	32	14	13	17	1.5	37	5.6	5.3	23	-	-
CB1	14 Jan 2025	579	5.8	-	420	29	<5	<5	29	18	18	24	1.9	65	7.9	7.9	31	-	-
CB2	27 Nov 2024	208	5.7	-	180	15	<5	<5	15	6.1	6.3	14	0.3	19	3	3	17	-	-
CB2	18 Dec 2024	229	5.5	-	160	16	<5	<5	16	5	4	10	0.2	19	2	2	16	-	-
CB2	14 Jan 2025	269	5.4	-	180	18	<5	<5	18	6.0	6.3	13	0.3	22	3	3	19	-	-
CB3	27 Nov 2024	400	6	-	310	22	<5	<5	22	15	16	23	1.2	39	6.3	6.5	25	-	-
CB3	18 Dec 2024	369	6.1	-	220	25	<5	<5	25	12	11	20	0.9	32	5	4	19	-	-
CB3	14 Jan 2025	465	5.8	-	300	24	<5	<5	24	14	14	22	1.3	38	5.6	5.5	22	-	-
D1	17 Oct 2022	59.3	3.96	51.35	635	7	<1	<1	7	-	2	22	<0.1	14	-	2	8	11	<0.5
D1	29 Nov 2022	191	4.76	-	124.15	9	<1	<1	9	-	2	22	<0.1	13	-	2	3	11	<1.6
D1	23 May 2023	209.6	4.42	175.5	196	12	<1	<1	12	-	3	20	<0.1	12	-	2	4	12	<0.5
D1	13 Nov 2023	134.3	4.69	87.1	108	5	<1	<1	5	-	2	21	<0.1	12	-	2	4	12	<0.5
D1	25 Jun 2024	82.7	5.43	74.1	90	10	<1	<1	10	-	2	16	<0.1	16	-	2	3	13	<0.5
D1	11 Nov 2024	107.9	5.13	70.2	86	9	<1	<1	9	-	2	16	<0.1	16	-	3	4	13	<0.5
D1	14 May 2025	120.9	5.59	78.65	73	13	<1	<1	13	-	2	15	<0.1	14	-	2	3	11	<0.5
D1B	13 Nov 2023	-	-	-	81	45	<5	<5	45	-	4	10	<0.1	5	-	3	7.6	-	<1
D1B	13 Nov 2023	215.3	5.64	139.75	86	40	<1	<1	40	-	4	9	<0.1	4	-	3	9	12	<0.5
D1B	14 Nov 2023	-	-	-	444	5	<1	<1	5	-	20	61	<0.1	47	-	22	6	226	<0.5
D1B	25 Jun 2024	-	-	-	-	37	<1	<1	37	-	5	9	0.1	4	-	3	9	9	<0.5

EQL	Field				Analytical results – alkalinity				Inorganics									PAH
	EC (field)	pH	TDS (Field)	TDS	Alkalinity (Bicarbonate as CaCO ₃)	Alkalinity (Carbonate as CaCO ₃)	Alkalinity (Hydroxide) as CaCO ₃	Alkalinity (total) as CaCO ₃	Calcium	Calcium (filtered)	Chloride	Fluoride	Sodium (filtered)	Magnesium	Magnesium (filtered)	Potassium (filtered)	Sulfate as SO ₄ - Turbidimetric (filtered)	Benzo(a) pyrene
	uS/cm	-	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L
EQL				5	1	1	1	1	0.5	0.5	1	0.1	0.5	0.5	0.5	0.5	1	0.5

Location Code Date

D2	18 Oct 2022	171.3	5.35	139.1	274	1	<1	<1	1	-	6	19	<0.1	32	-	21	4	142	<0.5
D2	29 Nov 2022	349	5.27	-	226.85	3	<1	<1	3	-	2	19	<0.1	30	-	17	4	118	<1.4
D2	23 May 2023	352.2	5.45	269.1	235	<1	<1	<1	<1	-	2	32	<0.1	38	-	16	3	116	<0.5
D2	15 Nov 2023	523	3.68	339.95	409	<1	<1	<1	<1	-	2	37	<0.1	53	-	18	3	174	<0.5
D2	24 Jun 2024	398.9	4.06	371.8	208	4	<1	<1	4	-	1	23	<0.1	32	-	17	4	94	<0.5
D2	11 Nov 2024	217	5.1	155.5	282	7	<1	<1	7	-	2	32	<0.1	45	-	19	4	152	<0.5
D2	14 May 2025	362.9	5.07	235.95	268	<1	<1	<1	<1	-	2	31	<0.1	42	-	15	4	120	<0.5
D3	18 Oct 2022	346.2	5.07	281.1	629	4	<1	<1	4	-	32	30	0.5	62	-	33	13	320	<0.5
D3	29 Nov 2022	671	4.78	-	435.5	4	<1	<1	4	-	24	38	0.4	58	-	27	10	258	<1.4
D3	22 May 2023	528	5.32	416	440	40	<1	<1	40	-	25	37	0.2	60	-	26	14	239	<0.5
D3	13 Nov 2023	560.7	5.54	364	575	111	<1	<1	111	-	57	38	0.2	59	-	22	10	273	<0.5
D3	24 Jun 2024	577	5.72	455	444	61	<1	<1	61	-	39	28	0.3	55	-	23	10	254	<0.5
D3	11 Nov 2024	506	5.37	397	413	25	<1	<1	25	-	25	42	0.2	58	-	23	9	217	<0.5
D3	14 May 2025	725	5.47	468	388	26	<1	<1	26	-	26	44	0.2	64	-	24	8	219	<0.5
D4	29 Nov 2022	1,600	5.81	-	1,040	202	<1	<1	202	-	145	46	<0.1	176	-	76	6	769	<1.7
D4	22 May 2023	941	5.82	780	1,150	57	<1	<1	57	-	79	36	<0.1	87	-	45	7	749	<0.5
D4	13 Nov 2023	1,480	6	962	1,010	6	<1	<1	6	-	70	32	<0.1	105	-	46	8	558	<0.5
D4	24 Jun 2024	663	6.03	591	974	<1	<1	<1	<1	-	102	41	<0.1	111	-	52	8	720	<0.5
D4	11 Nov 2024	989	6.16	839.5	924	58	<1	<1	58	-	70	38	<0.1	104	-	42	8	528	<0.5
D4	15 May 2025	1,270	6.09	825.5	800	31	<1	<1	31	-	71	37	<0.1	119	-	45	9	473	<0.5
D5	19 Oct 2022	169.4	5.37	239	584	41	<1	<1	41	-	30	59	<0.1	54	-	30	6	333	<0.5
D5	29 Nov 2022	671	5.59	-	435.5	38	<1	<1	38	-	28	51	<0.1	56	-	29	6	308	<1.5
D5	23 May 2023	622	5.5	494	478	34	<1	<1	34	-	23	60	<0.1	52	-	25	6	235	<0.5
D5	13 Nov 2023	-	-	-	97	35	<1	<1	35	-	4	10	<0.1	4	-	3	9	14	<0.5

	Field				Analytical results – alkalinity				Inorganics									PAH
	EC (field)	pH	TDS (Field)	TDS	Alkalinity (Bicarbonate as CaCO ₃)	Alkalinity (Carbonate as CaCO ₃)	Alkalinity (Hydroxide) as CaCO ₃	Alkalinity (total) as CaCO ₃	Calcium	Calcium (filtered)	Chloride	Fluoride	Sodium (filtered)	Magnesium	Magnesium (filtered)	Potassium (filtered)	Sulfate as SO ₄ - Turbidimetric (filtered)	Benzo(a) pyrene
	uS/cm	-	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L
EQL				5	1	1	1	1	0.5	0.5	1	0.1	0.5	0.5	0.5	0.5	1	0.5

Location Code Date

D5	14 Nov 2023	-	-	-	380	15	<5	<5	15	-	18	68	<0.1	49	-	20	5.3	-	<1
D5	14 Nov 2023	380.7	5.42	247	494	7	<1	<1	7	-	21	67	<0.1	49	-	23	6	233	<0.5
D5	25 Jun 2024	642	5.72	525	578	38	<1	<1	38	-	28	55	0.1	57	-	29	6	320	<0.5
D5	11 Nov 2024	692	5.86	546	532	11	<1	<1	11	-	30	65	<0.1	58	-	28	7	306	<0.5
D5	13 May 2025	1,473	5.14	962	940	<1	<1	<1	<1	-	72	24	1.1	94	-	54	43	574	<0.5
D6	19 Oct 2022	549	3.77	416	912	<1	<1	<1	<1	-	11	32	1.0	113	-	71	6	609	<0.5
D6	29 Nov 2022	902	4.16	-	585	<1	<1	<1	<1	-	8	24	0.5	94	-	60	6	508	<1.6
D6	29 Nov 2022	-	-	-	-	<1	<1	<1	<1	-	7	24	0.5	95	-	61	6	510	<1.2
D6	23 May 2023	811	4.5	643.5	752	<1	<1	<1	<1	-	9	22	0.6	94	-	56	5	480	<0.5
D6	15 Nov 2023	1,016	3.88	663	712	<1	<1	<1	<1	-	9	22	0.4	85	-	49	5	435	<0.5
D6	25 Jun 2024	801	5.13	650	682	<1	<1	<1	<1	-	9	22	0.6	74	-	52	5	442	<0.5
D6	11 Nov 2024	731	4.43	572	646	<1	<1	<1	<1	-	12	22	0.4	80	-	49	5	444	<0.5
D6	11 Nov 2024	-	-	-	669	<1	<1	<1	<1	-	12	22	0.4	78	-	49	5	434	<0.5
D6	13 May 2025	-	-	-	660	<5	<5	<5	<5	-	13	33	0.4	51	-	28	5.6	-	<1
D6	13 May 2025	176	4.53	115	456	<1	<1	<1	<1	-	14	26	0.4	60	-	30	6	296	<0.5
MW102D	10 Dec 2024	854	5.52	-	579	135	<1	<1	135	-	75	12	-	19	-	33	10	236	<2
MW102S	10 Dec 2024	1526	5.54	-	1,620	94	<1	<1	94	-	149	33	-	53	-	130	10	991	<2
MW109D	12 Dec 2024	794	6.62	-	560	320	<1	<1	320	-	99	41	-	47	-	37	14	111	<2
WH_MW02	18 Oct 2022	235.3	5.57	186.55	292	96	<1	<1	96	-	12	28	<0.1	20	-	18	5	92	<0.5
WH_MW02	29 Nov 2022	420.4	5.44	-	273	90	<1	<1	90	-	12	28	<0.1	19	-	17	5	86	<1.6
WH_MW02	22 May 2023	337.6	5.76	263.9	252	62	<1	<1	62	-	12	28	<0.1	20	-	18	5	88	<0.5
WH_MW02	15 Nov 2023	475.7	5.55	309.4	310	96	<1	<1	96	-	11	30	<0.1	18	-	16	5	78	<0.5
WH_MW02	24 Jun 2024	366	5.89	306	275	78	<1	<1	78	-	13	28	<0.1	20	-	17	5	103	<0.5
WH_MW02	11 Nov 2024	465.7	5.82	302	292	81	<1	<1	81	-	13	28	<0.1	21	-	19	5	108	<0.5

EQL	Field				Analytical results – alkalinity				Inorganics									PAH
	EC (field)	pH	TDS (Field)	TDS	Alkalinity (Bicarbonate as CaCO ₃)	Alkalinity (Carbonate as CaCO ₃)	Alkalinity (Hydroxide) as CaCO ₃	Alkalinity (total) as CaCO ₃	Calcium	Calcium (filtered)	Chloride	Fluoride	Sodium (filtered)	Magnesium	Magnesium (filtered)	Potassium (filtered)	Sulfate as SO ₄ - Turbidimetric (filtered)	Benzo(a) pyrene
	uS/cm	-	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L
				5	1	1	1	1	0.5	0.5	1	0.1	0.5	0.5	0.5	0.5	1	0.5

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WH_MW02	13 May 2025	447.1	5.93	290.55	240	46	<1	<1	46	-	14	29	<0.1	20	-	19	5	116	<0.5
WH_MW03	18 Oct 2022	-	-	-	160	12	<5	<5	12	-	4	11	<0.1	19	-	9.2	4	-	<1
WH_MW03	18 Oct 2022	110.3	4.27	86.45	259	13	<1	<1	13	-	6	13	<0.1	22	-	11	5	86	<0.5
WH_MW03	29 Nov 2022	257.3	4.44	-	167.05	<1	<1	<1	<1	-	4	14	<0.1	20	-	10	5	94	<1.4
WH_MW03	22 May 2023	161.8	4.88	127.5	176	10	<1	<1	10	-	11	15	<0.1	16	-	7	4	80	<0.5
WH_MW03	15 Nov 2023	299	5.12	194	162	21	<1	<1	21	-	18	12	0.3	16	-	7	5	88	<0.5
WH_MW03	25 Jun 2024	53	5.95	45	358	8	<1	<1	8	-	14	13	0.2	16	-	11	5	94	<0.5
WH_MW03	11 Nov 2024	147	5.6	117	309	<1	<1	<1	<1	-	8	19	<0.1	20	-	12	5	116	<0.5
WH_MW03	13 May 2025	175.1	5.14	112	118	6	<1	<1	6	-	9	10	0.2	12	-	6	4	66	<0.5
WH_MW04	19 Oct 2022	416.9	6.68	320.4	367	329	<1	<1	329	-	72	28	0.5	20	-	27	21	14	<0.5
WH_MW04	23 May 2023	553	6.96	435.5	385	323	<1	<1	323	-	79	26	0.4	17	-	23	20	13	<0.5
WI_MW03	19 Oct 2022	293.4	5.72	221.3	274	136	<1	<1	136	-	20	6	0.4	24	-	23	10	97	<0.5
WI_MW03	29 Nov 2022	437	5.59	-	284.05	153	<1	<1	153	-	21	5	0.2	16	-	27	8	58	<1.7
WI_MW03	23 May 2023	394	5.99	306.5	247	159	<1	<1	159	-	22	6	0.3	19	-	27	9	64	<0.5
WI_MW03	13 May 2025	512.1	5.9	332.8	276	72	<1	<1	72	-	23	11	0.8	30	-	24	14	147	<0.5
WI_MW03R	26 Jun 2024	-	-	-	260	91	<5	<5	91	-	21	9	0.7	31	-	23	15	-	<1
WI_MW03R	26 Jun 2024	-	-	-	340	80	<1	<1	80	-	25	10	0.7	29	-	23	14	170	<0.5
WI_MW03R	26 Jun 2024	426	5.86	403	338	72	<1	<1	72	-	25	9	0.7	29	-	23	14	170	<0.5
WI_MW03R	26 Jun 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WI_MW03R	11 Nov 2024	383	5.9	302	308	97	<1	<1	97	-	22	9	0.6	24	-	24	13	129	<0.5
WJ_MW03	19 Oct 2022	546	3.99	474.5	800	<1	<1	<1	<1	-	45	125	<0.1	113	-	41	9	489	<0.5
WJ_MW03	29 Nov 2022	1,142	4.51	-	741	6	<1	<1	6	-	42	108	0.1	118	-	42	9	494	<1.6
WJ_MW03	23 May 2023	999	4.55	793	821	<1	<1	<1	<1	-	41	187	0.1	122	-	38	10	384	<0.5
WJ_MW03	15 Nov 2023	1,328	4.08	864	781	<1	<1	<1	<1	-	44	133	<0.1	106	-	44	10	425	<0.6

EQL	Field				Analytical results – alkalinity				Inorganics									PAH
	EC (field)	pH	TDS (Field)	TDS	Alkalinity (Bicarbonate as CaCO ₃)	Alkalinity (Carbonate as CaCO ₃)	Alkalinity (Hydroxide) as CaCO ₃	Alkalinity (total) as CaCO ₃	Calcium	Calcium (filtered)	Chloride	Fluoride	Sodium (filtered)	Magnesium	Magnesium (filtered)	Potassium (filtered)	Sulfate as SO ₄ - Turbidimetric (filtered)	Benzo(a) pyrene
	uS/cm	-	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L
				5	1	1	1	1	0.5	0.5	1	0.1	0.5	0.5	0.5	0.5	1	0.5

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WJ_MW03	26 Jun 2024	720	3.88	624	834	<1	<1	<1	<1	-	56	122	0.1	99	-	45	11	446	<0.5
WJ_MW03	26 Jun 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WJ_MW03	11 Nov 2024	954	5.1	786	896	<1	<1	<1	<1	-	68	40	<0.1	81	-	54	11	577	<0.5
WJ_MW03	13 May 2025	-	-	-	758	<1	<1	<1	<1	-	57	98	<0.1	96	-	49	12	409	<0.5
WK_MW01	17 Oct 2022	-	-	-	1,000	370	<5	<5	370	-	150	110	0.2	88	-	98	17	-	<1
WK_MW01	17 Oct 2022	570	6.43	468	1,410	347	<1	<1	347	-	158	137	0.2	87	-	100	18	548	<0.5
WK_MW01	29 Nov 2022	1,699	6.23	-	1,105	354	<1	<1	354	-	156	137	0.2	90	-	102	19	539	<1.2
WK_MW01	23 May 2023	1,540	6.4	1,189.5	1,350	361	<1	<1	361	-	147	183	0.2	94	-	99	18	473	<0.5
WK_MW01	13 Nov 2023	1,980	6.41	1,287	1,470	345	<1	<1	345	-	150	153	0.2	92	-	105	18	497	<0.5
WK_MW01	24 Jun 2024	1,021	6.46	851	1,180	339	<1	<1	339	-	186	133	0.2	92	-	104	19	559	<0.5
WK_MW01	11 Nov 2024	1,526	6.52	1,209	1,440	356	<1	<1	356	-	174	150	0.2	94	-	102	19	536	<0.5
WK_MW01	14 May 2025	1,861	6.58	1,209	1,290	359	<1	<1	359	-	168	161	0.2	105	-	108	20	425	<0.5
WK_MW04	18 Oct 2022	610	6.47	507	1,740	419	<1	<1	419	-	92	622	0.2	219	-	138	17	133	<0.5
WK_MW04	18 Oct 2022	-	-	-	1,690	428	<1	<1	428	-	93	626	0.2	216	-	139	17	130	<0.5
WK_MW04	29 Nov 2022	-	-	-	-	414	<1	<1	414	-	96	659	0.2	228	-	144	18	134	<1.4
WK_MW04	23 May 2023	2,631	6.17	1,988	1,900	373	<1	<1	373	-	82	858	0.2	292	-	142	19	134	<0.5
WK_MW04	13 Nov 2023	2,910	6.4	1,891.5	1,910	349	<1	<1	349	-	83	679	0.2	239	-	138	17	136	<0.5
WK_MW04	24 Jun 2024	888	6.27	702	1,620	344	<1	<1	344	-	97	614	0.2	247	-	137	19	109	<0.5
WK_MW04	11 Nov 2024	2,054	6.38	1,645	1,720	344	<1	<1	344	-	88	635	0.2	236	-	131	17	133	<0.5
WK_MW04	13 May 2025	2,672	6.26	1,735	1,690	353	<1	<1	353	-	99	584	0.2	255	-	143	19	116	<0.5
WK_MW06	18 Oct 2022	335.8	6.56	109.2	582	519	<1	<1	519	-	122	40	0.3	13	-	47	23	4	<0.5
WK_MW06	29 Nov 2022	1,028	6.27	-	669.5	476	<1	<1	476	-	120	56	0.3	14	-	47	22	15	<1.9
WK_MW06	23 May 2023	901	6.47	708.5	588	493	<1	<1	493	-	119	50	0.3	13	-	46	21	10	<0.5
WK_MW06	13 Nov 2023	1,115	6.5	721.5	589	504	<1	<1	504	-	118	46	0.3	12	-	48	22	10	<0.5

	Field				Analytical results – alkalinity				Inorganics									PAH
	EC (field)	pH	TDS (Field)	TDS	Alkalinity (Bicarbonate as CaCO ₃)	Alkalinity (Carbonate as CaCO ₃)	Alkalinity (Hydroxide) as CaCO ₃	Alkalinity (total) as CaCO ₃	Calcium	Calcium (filtered)	Chloride	Fluoride	Sodium (filtered)	Magnesium	Magnesium (filtered)	Potassium (filtered)	Sulfate as SO ₄ - Turbidimetric (filtered)	Benzo(a) pyrene
	uS/cm	-	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L
EQL				5	1	1	1	1	0.5	0.5	1	0.1	0.5	0.5	0.5	0.5	1	0.5

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WK_MW06	24 Jun 2024	677	6.53	617.5	549	465	<1	<1	465	-	134	42	0.3	12	-	46	21	13	<0.5
WK_MW06	11 Nov 2024	784	6.68	624	581	457	<1	<1	457	-	127	41	0.2	13	-	46	22	12	<0.5
WK_MW06	14 May 2025	1,002	6.66	650	527	458	<1	<1	458	-	126	33	0.3	14	-	48	22	6	<0.5
WWD1A	17 Oct 2022	378.6	5.48	302.6	322	300	<1	<1	300	-	55	15	<0.1	15	-	13	7	9	<0.5
WWD1A	23 May 2023	-	-	-	340	230	<5	<5	230	-	36	17	<0.1	24	-	7.9	6.4	-	<1
WWD1A	23 May 2023	258.2	5.51	244.4	286	125	<1	<1	125	-	29	15	0.1	17	-	8	5	1	<0.5
WWD1A	25 Jun 2024	-	-	-	-	254	<1	<1	254	-	38	19	0.2	17	-	9	7	13	<0.5
WWD1B	17 Oct 2022	429.4	6.53	325.55	396	192	<1	<1	192	-	45	22	2.1	40	-	14	24	77	<0.5
WWD1B	17 Oct 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5
WWD1B	23 May 2023	-	-	-	570	190	<5	<5	190	-	48	40	4.9	73	-	18	44	-	<1
WWD1B	23 May 2023	682	6.57	598	575	164	<1	<1	164	-	47	37	4.7	79	-	19	46	236	<0.5
WWD1B	25 Jun 2024	-	-	-	-	185	<1	<1	185	-	49	32	3.6	67	-	18	40	173	<0.5
WWD2A	17 Oct 2022	320.9	6.28	256.75	392	231	<1	<1	231	-	32	36	2.2	32	-	16	37	12	<0.5
WWD2A	23 May 2023	505	6.53	403	337	242	<1	<1	242	-	39	36	2.3	33	-	17	36	6	<0.5
WWD2A	04 Jul 2023	-	-	-	418	202	<1	<1	202	-	33	37	2.3	28	-	16	32	21	<0.5
WWD2A	25 Jun 2024	-	-	-	-	220	<1	<1	220	-	36	35	1.8	32	-	16	36	4	<0.5
WWD2B	17 Oct 2022	443.8	6.68	351.65	273	130	<1	<1	130	-	32	39	0.2	10	-	12	5	8	<0.5
WWD2B	04 Jul 2023	-	-	-	386	136	<1	<1	136	-	42	60	0.1	9	-	16	5	8	<0.5
WWD2B	25 Jun 2024	-	-	-	-	50	<1	<1	50	-	46	25	0.8	34	-	15	17	196	<0.5
WWD5A	19 Oct 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1.6
WWD5B	18 Oct 2022	1,261	6.46	942.5	1,490	455	<1	<1	455	-	98	248	0.3	250	-	100	10	474	<0.5
WWD5B	22 May 2023	1,927	6.31	1,514.5	1,560	443	<1	<1	443	-	100	355	0.3	292	-	113	9	442	<0.5
WWD6A	18 Oct 2022	758	5.3	559	1,220	15	<1	<1	15	-	103	46	10.0	87	-	30	108	607	<0.5
WWD6A	22 May 2023	1,068	5.38	832	1,050	8	<1	<1	8	-	113	224	10.7	83	-	29	91	250	<0.5

	Field				Analytical results – alkalinity				Inorganics								PAH	
	EC (field)	pH	TDS (Field)	TDS	Alkalinity (Bicarbonate as CaCO ₃)	Alkalinity (Carbonate as CaCO ₃)	Alkalinity (Hydroxide) as CaCO ₃	Alkalinity (total) as CaCO ₃	Calcium	Calcium (filtered)	Chloride	Fluoride	Sodium (filtered)	Magnesium	Magnesium (filtered)	Potassium (filtered)	Sulfate as SO ₄ - Turbidimetric (filtered)	Benzo(a) pyrene
	uS/cm	-	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L
EQL				5	1	1	1	1	0.5	0.5	1	0.1	0.5	0.5	0.5	0.5	1	0.5

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WWD6A	22 May 2023	-	-	-	1,070	7	<1	<1	7	-	100	48	10.9	81	-	29	100	700	<0.6
WWD6A	14 Nov 2023	1,181	5.16	767	880	12	<1	<1	12	-	71	46	7.7	68	-	23	83	499	<0.5
WWD6A	24 Jun 2024	-	-	-	-	1	<1	<1	1	-	90	46	6.4	72	-	25	80	535	<0.5
WWD6B	18 Oct 2022	650	5.45	468	906	33	<1	<1	33	-	8	164	0.3	195	-	33	5	330	<0.5
WWD6B	22 May 2023	937	5.53	689	776	41	<1	<1	41	-	6	194	0.2	213	-	10	<1	226	<0.5
WWD6B	22 May 2023	-	-	-	834	41	<1	<1	41	-	5	226	0.2	214	-	11	<1	247	<0.5
WWD6B	14 Nov 2023	875	5.41	572	804	30	<1	<1	30	-	6	192	0.2	208	-	13	1	294	<0.5
WWD6B	24 Jun 2024	-	-	-	-	48	<1	<1	48	-	6	176	0.3	210	-	11	<1	250	<0.5
WWD10	19 Oct 2022	276.9	4.07	202.7	301	<1	<1	<1	<1	-	13	15	0.3	31	-	14	9	155	<0.5
WWD10	23 May 2023	350.9	4.49	271.05	295	<1	<1	<1	<1	-	13	14	0.2	31	-	13	7	159	<0.5
WWD12	19 Oct 2022	142.4	4.96	104.65	104	10	<1	<1	10	-	5	32	<0.1	21	-	6	3	35	<0.5
WWD12	23 May 2023	422.3	5.05	323.7	148	37	<1	<1	37	-	4	22	<0.1	18	-	5	3	28	<0.5
WWD14A	18 Oct 2022	430.3	4.52	212.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5
WWD14A	22 May 2023	2,749	3.61	2,099.5	7,120	<1	<1	<1	<1	-	510	18	1	337	-	69	330	4,620	<0.5
WWD14A	15 Nov 2023	6,437	3.76	4,186	7,010	<1	<1	<1	<1	-	443	18	0.7	320	-	75	346	4,810	<0.6
WWD14B	18 Oct 2022	3,498	3.82	2,658.5	7,740	<1	<1	<1	<1	-	360	59	0.7	313	-	131	236	4,580	<0.5
WWD14B	22 May 2023	1,828	3.83	1,423.8	6,280	<1	<1	<1	<1	-	349	33	0.8	297	-	123	223	3,860	<0.5
WWD14B	22 May 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

	Metals																				
	Aluminium (filtered)	Arsenic (filtered)	Barium (filtered)	Beryllium (filtered)	Boron (filtered)	Antimony (filtered)	Cadmium (filtered)	Chromium (III+VI) (filtered)	Cobalt (filtered)	Copper (filtered)	Strontium (filtered)	Iron (filtered)	Lead (filtered)	Manganese (filtered)	Mercury (filtered)	Molybdenum (filtered)	Nickel (filtered)	Selenium (filtered)	Silver (filtered)	Vanadium (filtered)	Zinc (filtered)
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	0.01	0.001	0.001	0.0005	0.02	0.001	0.0001	0.001	0.001	0.001	0.001	0.01	0.001	0.001	0.00005	0.001	0.001	0.001	0.001	0.001	0.001

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CA1	27 Nov 2024	1.7	0.003	0.021	0.002	2.4	0.002	0.0004	<0.001	0.038	<0.001	2	16	<0.001	2.3	<0.00005	0.33	0.15	<0.001	<0.001	<0.001	0.17
CA1	18 Dec 2024	1.6	<0.001	0.023	0.003	2.2	0.002	0.0009	<0.001	0.037	<0.001	1.9	9.6	<0.001	2	<0.00005	0.21	0.12	<0.001	<0.001	<0.001	0.11
CA1	14 Jan 2025	4.2	<0.001	0.081	0.003	1.8	0.003	0.0069	<0.001	0.11	0.001	1.8	0.05	<0.001	3.2	<0.00005	0.002	0.26	0.003	<0.001	0.004	0.71
CA2	14 Jan 2025	1.1	0.002	0.03	0.002	1.8	0.001	0.0004	<0.001	0.028	<0.001	1.6	11	<0.001	2.2	<0.00005	0.28	0.13	<0.001	<0.001	<0.001	0.14
CB1	27 Nov 2024	0.35	0.001	0.028	0.0009	1.2	0.007	0.0007	<0.001	0.022	<0.001	1.7	1.5	<0.001	0.85	<0.00005	0.33	0.058	<0.001	<0.001	0.015	0.14
CB1	18 Dec 2024	0.32	<0.001	0.03	0.0007	0.8	0.004	0.0005	<0.001	0.018	<0.001	1.3	0.42	<0.001	0.77	<0.00005	0.22	0.034	<0.001	<0.001	0.003	0.1
CB1	14 Jan 2025	0.52	0.002	0.029	0.0009	1.1	0.007	0.0007	<0.001	0.024	<0.001	1.8	2.8	<0.001	1.2	<0.00005	0.34	0.051	<0.001	<0.001	0.023	0.18
CB2	27 Nov 2024	0.08	<0.001	0.031	<0.0005	0.42	0.006	0.0001	<0.001	0.004	<0.001	0.27	<0.01	<0.001	0.38	<0.00005	0.11	0.022	0.014	<0.001	0.018	0.024
CB2	18 Dec 2024	0.07	<0.001	0.032	<0.0005	0.42	0.003	0.0001	<0.001	0.003	<0.001	0.18	<0.01	<0.001	0.25	<0.00005	0.04	0.005	0.008	<0.001	0.006	0.014
CB2	14 Jan 2025	0.07	<0.001	0.038	<0.0005	0.39	0.005	0.0002	<0.001	0.004	0.001	0.31	0.01	<0.001	0.37	<0.00005	0.072	0.016	0.013	<0.001	0.011	0.057
CB3	27 Nov 2024	0.13	0.092	0.029	<0.0005	1.1	<0.001	<0.0001	<0.001	0.02	<0.001	0.92	9.7	<0.001	0.97	<0.00005	0.25	0.057	<0.001	<0.001	<0.001	0.07
CB3	18 Dec 2024	0.13	0.028	0.039	<0.0005	0.69	<0.001	<0.0001	<0.001	0.014	<0.001	0.6	3	<0.001	0.67	<0.00005	0.11	0.027	<0.001	<0.001	<0.001	0.029
CB3	14 Jan 2025	0.08	0.053	0.03	<0.0005	0.73	<0.001	<0.0001	<0.001	0.016	<0.001	0.71	8.6	<0.001	0.89	<0.00005	0.17	0.038	<0.001	<0.001	<0.001	0.064
D1	17 Oct 2022	0.09	<0.001	0.041	<0.001	<0.05	0.011	<0.0001	<0.001	<0.001	0.007	0.031	0.06	<0.001	0.016	-	<0.001	0.037	<0.01	<0.001	<0.01	0.179
D1	29 Nov 2022	-	<0.001	-	-	<0.05	-	<0.0001	<0.001	-	0.005	-	-	<0.001	0.023	-	-	<0.001	<0.01	-	-	0.127
D1	23 May 2023	0.11	<0.001	0.056	<0.001	<0.05	0.019	<0.0001	<0.001	<0.001	0.008	0.033	0.56	<0.001	0.03	<0.0001	<0.001	<0.001	<0.01	<0.001	<0.01	0.182
D1	13 Nov 2023	0.05	<0.001	0.038	-	<0.05	-	<0.0001	<0.001	-	0.004	-	0.09	<0.001	0.022	-	-	<0.001	<0.01	-	-	0.199
D1	25 Jun 2024	0.06	<0.001	0.036	-	<0.05	-	<0.0001	<0.001	-	0.002	-	<0.05	<0.001	0.007	-	-	<0.001	<0.01	-	-	0.111
D1	11 Nov 2024	0.22	<0.001	0.036	-	<0.05	-	0.0002	0.002	-	0.006	-	0.22	<0.001	0.014	-	-	0.002	<0.01	-	-	0.168
D1	14 May 2025	0.08	<0.001	0.037	-	<0.05	-	<0.0001	<0.001	-	0.002	-	0.22	<0.001	0.088	<0.0001	-	<0.001	<0.01	<0.001	-	0.190
D1B	13 Nov 2023	0.03	<0.001	0.3	<0.0005	<0.02	<0.001	0.0001	<0.001	<0.001	0.001	0.035	15	<0.001	0.78	<0.00005	<0.001	<0.001	<0.001	<0.001	<0.001	0.01
D1B	13 Nov 2023	<0.01	<0.001	0.294	-	<0.05	-	<0.0001	<0.001	-	<0.001	-	15.1	<0.001	0.823	-	-	<0.001	<0.01	-	-	<0.005
D1B	14 Nov 2023	0.02	<0.001	0.047	-	0.29	-	<0.0001	<0.001	-	<0.001	-	28.4	<0.001	1.64	-	-	0.033	<0.01	-	-	0.016
D1B	25 Jun 2024	<0.01	<0.001	0.262	-	0.14	-	<0.0001	<0.001	-	<0.001	-	11.9	<0.001	0.666	-	-	<0.001	<0.01	-	-	<0.005

	Metals																				
	Aluminium (filtered)	Arsenic (filtered)	Barium (filtered)	Beryllium (filtered)	Boron (filtered)	Antimony (filtered)	Cadmium (filtered)	Chromium (III+VI) (filtered)	Cobalt (filtered)	Copper (filtered)	Strontium (filtered)	Iron (filtered)	Lead (filtered)	Manganese (filtered)	Mercury (filtered)	Molybdenum (filtered)	Nickel (filtered)	Selenium (filtered)	Silver (filtered)	Vanadium (filtered)	Zinc (filtered)
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	0.01	0.001	0.001	0.0005	0.02	0.001	0.0001	0.001	0.001	0.001	0.001	0.01	0.001	0.001	0.00005	0.001	0.001	0.001	0.001	0.001	0.001

Location Code Date

D2	18 Oct 2022	2.96	<0.001	0.028	0.002	<0.05	<0.001	0.0004	<0.001	0.049	0.010	0.018	<0.05	<0.001	0.876	-	<0.001	0.089	<0.01	<0.001	<0.01	0.136
D2	29 Nov 2022	-	<0.001	-	-	<0.05	-	0.0002	<0.001	-	<0.001	-	<0.001	0.452	-	-	0.043	<0.01	-	-	0.052	
D2	23 May 2023	0.18	<0.001	0.027	0.001	0.1	<0.001	0.0002	<0.001	0.032	<0.001	0.01	0.2	<0.001	0.465	<0.0001	<0.001	0.049	<0.01	<0.001	<0.01	0.055
D2	15 Nov 2023	0.21	<0.001	0.028	-	0.14	-	0.0002	<0.001	-	<0.001	-	0.13	0.003	0.632	-	-	0.058	<0.01	-	-	0.070
D2	24 Jun 2024	0.11	<0.001	0.030	-	0.07	-	0.0002	<0.001	-	<0.001	-	<0.05	<0.001	0.410	-	-	0.044	<0.01	-	-	0.050
D2	11 Nov 2024	0.21	<0.001	0.031	-	0.08	-	0.0002	0.001	-	0.003	-	0.14	0.001	0.523	-	-	0.057	<0.01	-	-	0.065
D2	14 May 2025	0.12	<0.001	0.034	-	0.05	-	0.0002	<0.001	-	<0.001	-	<0.05	<0.001	0.431	<0.0001	-	0.044	<0.01	<0.001	-	0.052
D3	18 Oct 2022	0.51	0.002	0.027	0.002	0.52	<0.001	0.0012	<0.001	0.090	0.006	0.214	10.6	<0.001	1.73	-	<0.001	0.277	<0.01	<0.001	<0.01	0.315
D3	29 Nov 2022	-	<0.001	-	-	0.29	-	0.0035	<0.001	-	0.006	-	-	<0.001	0.922	-	-	0.150	<0.01	-	-	0.176
D3	22 May 2023	0.24	<0.001	0.046	0.001	0.4	<0.001	0.0014	<0.001	0.032	<0.001	0.126	0.67	<0.001	0.926	<0.0001	<0.001	0.109	<0.01	<0.001	<0.01	0.117
D3	13 Nov 2023	0.12	<0.001	0.033	-	0.31	-	0.0005	<0.001	-	<0.001	-	11.7	<0.001	0.932	-	-	0.110	<0.01	-	-	0.077
D3	24 Jun 2024	0.60	<0.001	0.020	-	0.42	-	0.0012	<0.001	-	0.003	-	0.14	<0.001	0.828	-	-	0.161	<0.01	-	-	0.134
D3	11 Nov 2024	0.32	<0.001	0.022	-	0.26	-	0.0005	0.002	-	0.001	-	3.19	0.004	0.671	-	-	0.069	<0.01	-	-	0.103
D3	14 May 2025	0.12	<0.001	0.026	-	0.24	-	0.0004	<0.001	-	<0.001	-	8.50	0.002	0.737	<0.0001	-	0.076	<0.01	<0.001	-	0.028
D4	29 Nov 2022	-	<0.001	-	-	0.58	-	<0.0001	<0.001	-	<0.001	-	-	<0.001	7.98	-	-	0.007	<0.01	-	-	0.026
D4	22 May 2023	<0.01	<0.001	0.042	<0.001	0.58	<0.001	<0.0001	<0.001	0.042	0.001	0.213	89.3	<0.001	5.55	<0.0001	<0.001	0.042	<0.01	<0.001	<0.01	0.045
D4	13 Nov 2023	<0.01	<0.001	0.041	-	1.11	-	<0.0001	<0.001	-	<0.001	-	72.0	<0.001	6.25	-	-	0.029	<0.01	-	-	0.022
D4	24 Jun 2024	<0.01	<0.001	0.021	-	0.72	-	<0.0001	<0.001	-	<0.001	-	36.4	<0.001	5.39	-	-	0.036	<0.01	-	-	0.046
D4	11 Nov 2024	0.04	<0.001	0.015	-	1.34	-	<0.0001	<0.001	-	<0.001	-	66.2	<0.001	5.81	-	-	0.030	<0.01	-	-	0.034
D4	15 May 2025	<0.01	<0.001	0.024	-	1.44	-	<0.0001	<0.001	-	0.002	-	44.4	<0.001	7.66	<0.0001	-	0.021	<0.01	<0.001	-	0.027
D5	19 Oct 2022	<0.01	0.002	0.040	<0.001	0.69	<0.001	<0.0001	<0.001	0.026	<0.001	0.163	39.8	<0.001	2.16	<0.0001	<0.001	0.040	<0.01	<0.001	<0.01	<0.005
D5	29 Nov 2022	-	<0.001	-	-	0.48	-	<0.0001	<0.001	-	<0.001	-	-	<0.001	1.93	-	-	0.028	<0.01	-	-	0.006
D5	23 May 2023	<0.01	<0.001	0.059	<0.001	0.27	<0.001	<0.0001	<0.001	0.021	0.001	0.116	31.8	<0.001	1.59	<0.0001	<0.001	0.03	<0.01	<0.001	<0.01	0.008
D5	13 Nov 2023	<0.01	<0.001	0.301	-	0.08	-	<0.0001	<0.001	-	<0.001	-	16.7	<0.001	0.852	-	-	<0.001	<0.01	-	-	<0.005

	Metals																					
	Aluminium (filtered)	Arsenic (filtered)	Barium (filtered)	Beryllium (filtered)	Boron (filtered)	Antimony (filtered)	Cadmium (filtered)	Chromium (III+VI) (filtered)	Cobalt (filtered)	Copper (filtered)	Strontium (filtered)	Iron (filtered)	Lead (filtered)	Manganese (filtered)	Mercury (filtered)	Molybdenum (filtered)	Nickel (filtered)	Selenium (filtered)	Silver (filtered)	Vanadium (filtered)	Zinc (filtered)	
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	0.01	0.001	0.001	0.0005	0.02	0.001	0.0001	0.001	0.001	0.001	0.001	0.01	0.001	0.001	0.00005	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Location Code	Date	Aluminium (filtered)	Arsenic (filtered)	Barium (filtered)	Beryllium (filtered)	Boron (filtered)	Antimony (filtered)	Cadmium (filtered)	Chromium (III+VI) (filtered)	Cobalt (filtered)	Copper (filtered)	Strontium (filtered)	Iron (filtered)	Lead (filtered)	Manganese (filtered)	Mercury (filtered)	Molybdenum (filtered)	Nickel (filtered)	Selenium (filtered)	Silver (filtered)	Vanadium (filtered)	Zinc (filtered)
D5	14 Nov 2023	0.23	<0.001	0.041	<0.0005	0.22	<0.001	<0.0001	<0.001	0.022	<0.001	0.13	27	<0.001	1.6	<0.00005	<0.001	0.031	<0.001	<0.001	<0.001	0.018
D5	14 Nov 2023	0.02	<0.001	0.065	-	0.37	-	<0.0001	<0.001	-	<0.001	-	30.7	<0.001	1.61	-	-	0.032	<0.01	-	-	0.017
D5	25 Jun 2024	<0.01	<0.001	0.031	-	0.52	-	<0.0001	<0.001	-	<0.001	-	42.1	<0.001	1.89	-	-	0.032	<0.01	-	-	<0.005
D5	11 Nov 2024	0.05	<0.001	0.034	-	0.49	-	<0.0001	<0.001	-	0.001	-	40.1	<0.001	1.88	-	-	0.036	<0.01	-	-	0.012
D5	13 May 2025	1.15	0.004	0.095	-	3.07	-	0.0001	<0.001	-	<0.001	-	15.5	<0.001	8.14	<0.0001	-	0.229	<0.01	<0.001	-	0.012
D6	19 Oct 2022	8.82	<0.001	0.017	0.011	0.61	<0.001	0.0008	<0.001	0.225	0.013	0.123	2.15	0.006	0.671	<0.0001	<0.001	0.472	<0.01	<0.001	<0.01	1.42
D6	29 Nov 2022	-	<0.001	-	-	0.44	-	0.0008	<0.001	-	0.003	-	-	0.004	0.583	-	-	0.386	<0.01	-	-	0.983
D6	29 Nov 2022	-	<0.001	-	-	0.45	-	0.0008	<0.001	-	0.007	-	-	0.004	0.567	-	-	0.388	<0.01	-	-	0.998
D6	23 May 2023	3.87	<0.001	0.035	0.008	0.34	<0.001	0.0009	<0.001	0.256	0.004	0.085	0.99	0.003	0.835	<0.0001	<0.001	0.398	<0.01	<0.001	<0.01	1.21
D6	15 Nov 2023	3.63	<0.001	0.011	-	0.34	-	0.0007	<0.001	-	<0.001	-	11.5	0.002	1.33	-	-	0.426	<0.01	-	-	1.29
D6	25 Jun 2024	4.96	<0.001	0.019	-	0.63	-	0.0004	<0.001	-	<0.001	-	1.71	0.002	0.556	-	-	0.447	<0.01	-	-	0.884
D6	11 Nov 2024	3.16	<0.001	0.018	-	0.54	-	0.0002	0.001	-	<0.001	-	18.6	<0.001	1.26	-	-	0.428	<0.01	-	-	0.635
D6	11 Nov 2024	3.14	<0.001	0.018	-	0.58	-	0.0002	<0.001	-	<0.001	-	18.8	<0.001	1.24	-	-	0.421	<0.01	-	-	0.625
D6	13 May 2025	1.9	<0.001	0.015	-	0.44	-	0.0007	<0.001	-	0.001	-	1.4	0.003	0.43	<0.00005	-	0.24	<0.001	<0.001	-	0.66
D6	13 May 2025	2.02	<0.001	0.018	-	0.56	-	0.0007	<0.001	-	<0.001	-	1.42	0.003	0.485	<0.0001	-	0.244	<0.01	<0.001	-	0.685
MW102D	10 Dec 2024	-	0.003	0.066	<0.001	0.09	-	<0.0001	<0.001	0.027	<0.001	-	-	<0.001	1.46	<0.0001	-	0.029	<0.01	-	<0.01	0.044
MW102S	10 Dec 2024	-	0.002	0.019	<0.001	<0.05	-	<0.0001	<0.001	0.265	<0.001	-	-	<0.001	15.0	<0.0001	-	0.313	<0.01	-	<0.01	0.420
MW109D	12 Dec 2024	-	0.003	0.121	<0.001	0.18	-	<0.0001	0.003	0.002	<0.001	-	-	0.002	0.478	<0.0001	-	0.003	<0.01	-	<0.01	0.015
WH_MW02	18 Oct 2022	<0.01	<0.001	0.026	<0.001	<0.05	<0.001	<0.0001	<0.001	<0.001	<0.001	0.072	36.8	<0.001	2.42	-	<0.001	<0.001	<0.01	<0.001	<0.01	<0.005
WH_MW02	29 Nov 2022	-	<0.001	-	-	<0.05	-	<0.0001	<0.001	-	<0.001	-	-	<0.001	2.30	-	-	0.003	<0.01	-	-	0.007
WH_MW02	22 May 2023	0.02	<0.001	0.036	<0.001	<0.05	<0.001	<0.0001	<0.001	<0.001	<0.001	0.062	32.8	<0.001	2.32	<0.0001	<0.001	<0.001	<0.01	<0.001	<0.01	0.01
WH_MW02	15 Nov 2023	<0.01	<0.001	0.009	-	0.07	-	<0.0001	<0.001	-	<0.001	-	28.7	<0.001	2.54	-	-	0.003	<0.01	-	-	<0.005
WH_MW02	24 Jun 2024	<0.01	<0.001	0.022	-	<0.05	-	<0.0001	<0.001	-	<0.001	-	36.1	<0.001	2.36	-	-	<0.001	<0.01	-	-	<0.005
WH_MW02	11 Nov 2024	0.04	<0.001	0.025	-	<0.05	-	<0.0001	<0.001	-	<0.001	-	38.3	<0.001	2.40	-	-	<0.001	<0.01	-	-	0.006

	Metals																					
	Aluminium (filtered)	Arsenic (filtered)	Barium (filtered)	Beryllium (filtered)	Boron (filtered)	Antimony (filtered)	Cadmium (filtered)	Chromium (III+VI) (filtered)	Cobalt (filtered)	Copper (filtered)	Strontium (filtered)	Iron (filtered)	Lead (filtered)	Manganese (filtered)	Mercury (filtered)	Molybdenum (filtered)	Nickel (filtered)	Selenium (filtered)	Silver (filtered)	Vanadium (filtered)	Zinc (filtered)	
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	0.01	0.001	0.001	0.0005	0.02	0.001	0.0001	0.001	0.001	0.001	0.001	0.01	0.001	0.001	0.00005	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Location Code Date

WH_MW02	13 May 2025	<0.01	<0.001	0.024	-	<0.05	-	<0.0001	<0.001	-	<0.001	-	37.8	<0.001	2.61	<0.0001	-	<0.001	<0.01	<0.001	-	<0.005
WH_MW03	18 Oct 2022	0.74	<0.001	0.071	0.0007	0.03	<0.001	0.0001	0.001	0.011	0.003	0.031	13	0.001	1.6	<0.00005	<0.001	0.024	<0.001	<0.001	<0.001	0.12
WH_MW03	18 Oct 2022	0.02	<0.001	0.054	<0.001	<0.05	<0.001	<0.0001	<0.001	0.009	<0.001	0.031	19.1	<0.001	1.69	-	<0.001	0.020	<0.01	<0.001	<0.01	0.094
WH_MW03	29 Nov 2022	-	<0.001	-	-	<0.05	-	0.0002	<0.001	-	0.004	-	-	0.002	1.57	-	-	0.034	<0.01	-	-	0.142
WH_MW03	22 May 2023	0.04	<0.001	0.075	<0.001	<0.05	<0.001	<0.0001	<0.001	0.018	0.001	0.043	5.08	<0.001	1.63	<0.0001	<0.001	0.02	<0.01	<0.001	<0.01	0.087
WH_MW03	15 Nov 2023	0.15	<0.001	0.072	-	0.18	-	0.0002	<0.001	-	<0.001	-	0.08	<0.001	1.47	-	-	0.024	<0.01	-	-	0.058
WH_MW03	25 Jun 2024	0.16	<0.001	0.073	-	0.07	-	0.0001	<0.001	-	0.002	-	0.87	<0.001	1.67	-	-	0.034	<0.01	-	-	0.080
WH_MW03	11 Nov 2024	0.16	<0.001	0.048	-	<0.05	-	0.0001	<0.001	-	0.002	-	9.23	<0.001	1.96	-	-	0.038	<0.01	-	-	0.134
WH_MW03	13 May 2025	0.09	<0.001	0.062	-	0.06	-	0.0002	<0.001	-	<0.001	-	0.16	<0.001	0.907	<0.0001	-	0.016	<0.01	<0.001	-	0.060
WH_MW04	19 Oct 2022	<0.01	<0.001	0.665	<0.001	<0.05	<0.001	<0.0001	<0.001	<0.001	<0.001	0.380	2.40	<0.001	0.034	<0.0001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.005
WH_MW04	23 May 2023	<0.01	<0.001	0.196	<0.001	<0.05	<0.001	<0.0001	0.001	<0.001	<0.001	0.302	0.05	<0.001	0.046	<0.0001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.005
WI_MW03	19 Oct 2022	<0.01	0.003	0.039	<0.001	0.41	<0.001	<0.0001	<0.001	0.031	0.002	0.149	7.61	<0.001	0.980	<0.0001	<0.001	0.061	<0.01	<0.001	<0.01	0.033
WI_MW03	29 Nov 2022	-	0.001	-	-	0.13	-	<0.0001	<0.001	-	<0.001	-	-	<0.001	0.960	-	-	0.053	<0.01	-	-	0.015
WI_MW03	23 May 2023	<0.01	0.002	0.06	<0.001	0.22	<0.001	<0.0001	<0.001	0.022	0.002	0.117	7.36	<0.001	0.852	<0.0001	<0.001	0.045	<0.01	<0.001	<0.01	0.021
WI_MW03	13 May 2025	0.04	<0.001	0.042	-	0.61	-	<0.0001	<0.001	-	<0.001	-	16.0	<0.001	1.62	<0.0001	-	0.106	<0.01	<0.001	-	0.012
WI_MW03R	26 Jun 2024	0.08	<0.001	0.04	-	0.66	-	<0.0001	<0.001	-	<0.001	-	8.4	<0.001	1.5	-	-	0.11	<0.001	-	-	0.22
WI_MW03R	26 Jun 2024	0.04	<0.001	0.037	-	0.65	-	<0.0001	<0.001	-	<0.001	-	8.14	<0.001	1.53	-	-	0.104	<0.01	-	-	0.229
WI_MW03R	26 Jun 2024	0.05	<0.001	0.036	-	0.62	-	<0.0001	<0.001	-	<0.001	-	8.68	<0.001	1.54	-	-	0.106	<0.01	-	-	0.270
WI_MW03R	26 Jun 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WI_MW03R	11 Nov 2024	0.06	<0.001	0.037	-	0.45	-	<0.0001	<0.001	-	<0.001	-	9.52	<0.001	1.39	-	-	0.102	<0.01	-	-	0.107
WJ_MW03	19 Oct 2022	0.94	<0.001	0.012	0.001	0.09	<0.001	<0.0001	<0.001	0.297	0.015	0.293	14.1	0.008	1.74	<0.0001	<0.001	0.165	<0.01	<0.001	<0.01	1.03
WJ_MW03	29 Nov 2022	-	0.001	-	-	0.05	-	<0.0001	<0.001	-	<0.001	-	-	0.002	1.82	-	-	0.154	<0.01	-	-	0.847
WJ_MW03	23 May 2023	0.54	0.001	0.032	<0.001	<0.05	<0.001	<0.0001	<0.001	0.237	0.001	0.242	24	0.007	1.58	<0.0001	<0.001	0.131	<0.01	<0.001	<0.01	0.617
WJ_MW03	15 Nov 2023	1.22	<0.001	0.037	-	0.09	-	<0.0001	<0.001	-	0.005	-	17.6	0.004	1.88	-	-	0.157	<0.01	-	-	0.996

	Metals																					
	Aluminium (filtered)	Arsenic (filtered)	Barium (filtered)	Beryllium (filtered)	Boron (filtered)	Antimony (filtered)	Cadmium (filtered)	Chromium (III+VI) (filtered)	Cobalt (filtered)	Copper (filtered)	Strontium (filtered)	Iron (filtered)	Lead (filtered)	Manganese (filtered)	Mercury (filtered)	Molybdenum (filtered)	Nickel (filtered)	Selenium (filtered)	Silver (filtered)	Vanadium (filtered)	Zinc (filtered)	
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	0.01	0.001	0.001	0.0005	0.02	0.001	0.0001	0.001	0.001	0.001	0.001	0.01	0.001	0.001	0.00005	0.001	0.001	0.001	0.001	0.001	0.001	0.001

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WJ_MW03	26 Jun 2024	1.11	<0.001	0.013	-	0.09	-	<0.0001	<0.001	-	0.004	-	14.6	0.007	1.79	-	-	0.164	<0.01	-	-	0.924
WJ_MW03	26 Jun 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WJ_MW03	11 Nov 2024	0.30	0.001	0.011	-	0.10	-	<0.0001	<0.001	-	0.001	-	41.9	0.002	2.40	-	-	0.178	<0.01	-	-	0.922
WJ_MW03	13 May 2025	0.64	0.002	0.024	-	0.11	-	0.0001	<0.001	-	0.013	-	31.4	0.006	2.12	<0.0001	-	0.169	<0.01	<0.001	-	0.972
WK_MW01	17 Oct 2022	<0.01	<0.001	0.038	<0.0005	0.74	<0.001	<0.0001	<0.001	0.002	0.002	0.38	0.04	<0.001	0.98	<0.00005	<0.001	0.022	<0.001	<0.001	<0.001	0.004
WK_MW01	17 Oct 2022	<0.01	<0.001	0.056	<0.001	0.85	<0.001	<0.0001	<0.001	0.002	<0.001	0.360	0.15	<0.001	0.936	-	<0.001	0.025	<0.01	<0.001	<0.01	<0.005
WK_MW01	29 Nov 2022	-	<0.001	-	-	0.70	-	<0.0001	<0.001	-	<0.001	-	-	<0.001	0.330	-	-	0.014	<0.01	-	-	<0.005
WK_MW01	23 May 2023	<0.01	<0.001	0.035	<0.001	0.56	<0.001	<0.0001	<0.001	0.018	<0.001	0.3	1.77	<0.001	1.63	<0.0001	<0.001	0.019	<0.01	<0.001	<0.01	0.007
WK_MW01	13 Nov 2023	<0.01	<0.001	0.036	-	0.73	-	<0.0001	<0.001	-	<0.001	-	0.07	<0.001	0.135	-	-	0.008	<0.01	-	-	<0.005
WK_MW01	24 Jun 2024	<0.01	<0.001	0.024	-	0.83	-	<0.0001	<0.001	-	<0.001	-	4.09	<0.001	1.10	-	-	0.011	<0.01	-	-	<0.005
WK_MW01	11 Nov 2024	0.04	0.001	0.020	-	0.80	-	<0.0001	<0.001	-	<0.001	-	11.3	<0.001	1.78	-	-	0.015	<0.01	-	-	0.009
WK_MW01	14 May 2025	<0.01	<0.001	0.034	-	0.74	-	<0.0001	<0.001	-	0.001	-	5.12	<0.001	1.00	<0.0001	-	0.016	<0.01	<0.001	-	0.010
WK_MW04	18 Oct 2022	0.02	<0.001	0.063	<0.001	0.06	<0.001	<0.0001	<0.001	0.003	0.005	0.253	0.12	<0.001	0.393	-	<0.001	0.014	<0.01	<0.001	<0.01	0.030
WK_MW04	18 Oct 2022	<0.01	<0.001	0.061	<0.001	0.07	<0.001	<0.0001	<0.001	0.002	0.001	0.258	0.07	<0.001	0.389	-	<0.001	0.014	<0.01	<0.001	<0.01	0.030
WK_MW04	29 Nov 2022	-	<0.001	-	-	<0.05	-	<0.0001	<0.001	-	<0.001	-	-	<0.001	0.565	-	-	0.009	<0.01	-	-	0.034
WK_MW04	23 May 2023	<0.01	<0.001	0.09	<0.001	<0.05	<0.001	<0.0001	<0.001	0.022	<0.001	0.222	0.75	<0.001	1.49	<0.0001	<0.001	0.029	<0.01	<0.001	<0.01	0.072
WK_MW04	13 Nov 2023	<0.01	<0.001	0.063	-	<0.05	-	<0.0001	<0.001	-	<0.001	-	<0.05	<0.001	0.303	-	-	0.010	<0.01	-	-	0.029
WK_MW04	24 Jun 2024	<0.01	<0.001	0.060	-	0.07	-	<0.0001	<0.001	-	<0.001	-	<0.05	<0.001	0.337	-	-	0.008	<0.01	-	-	0.034
WK_MW04	11 Nov 2024	0.02	<0.001	0.064	-	0.08	-	<0.0001	<0.001	-	0.002	-	<0.05	<0.001	0.165	-	-	0.006	<0.01	-	-	0.032
WK_MW04	13 May 2025	<0.01	<0.001	0.078	-	0.07	-	<0.0001	<0.001	-	<0.001	-	0.78	<0.001	0.895	<0.0001	-	0.008	<0.01	<0.001	-	0.031
WK_MW06	18 Oct 2022	<0.01	0.036	0.956	<0.001	<0.05	<0.001	<0.0001	0.003	0.001	<0.001	0.503	2.95	<0.001	0.136	-	<0.001	0.004	<0.01	<0.001	<0.01	<0.005
WK_MW06	29 Nov 2022	-	0.062	-	-	<0.05	-	<0.0001	0.001	-	<0.001	-	-	<0.001	0.074	-	-	<0.001	<0.01	-	-	<0.005
WK_MW06	23 May 2023	<0.01	0.054	0.775	<0.001	<0.05	<0.001	<0.0001	<0.001	<0.001	<0.001	0.429	2.27	<0.001	0.07	<0.0001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.005
WK_MW06	13 Nov 2023	<0.01	0.048	0.804	-	<0.05	-	<0.0001	<0.001	-	<0.001	-	2.18	<0.001	0.090	-	-	<0.001	<0.01	-	-	<0.005

	Metals																					
	Aluminium (filtered)	Arsenic (filtered)	Barium (filtered)	Beryllium (filtered)	Boron (filtered)	Antimony (filtered)	Cadmium (filtered)	Chromium (III+VI) (filtered)	Cobalt (filtered)	Copper (filtered)	Strontium (filtered)	Iron (filtered)	Lead (filtered)	Manganese (filtered)	Mercury (filtered)	Molybdenum (filtered)	Nickel (filtered)	Selenium (filtered)	Silver (filtered)	Vanadium (filtered)	Zinc (filtered)	
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	0.01	0.001	0.001	0.0005	0.02	0.001	0.0001	0.001	0.001	0.001	0.001	0.01	0.001	0.001	0.00005	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Location Code Date

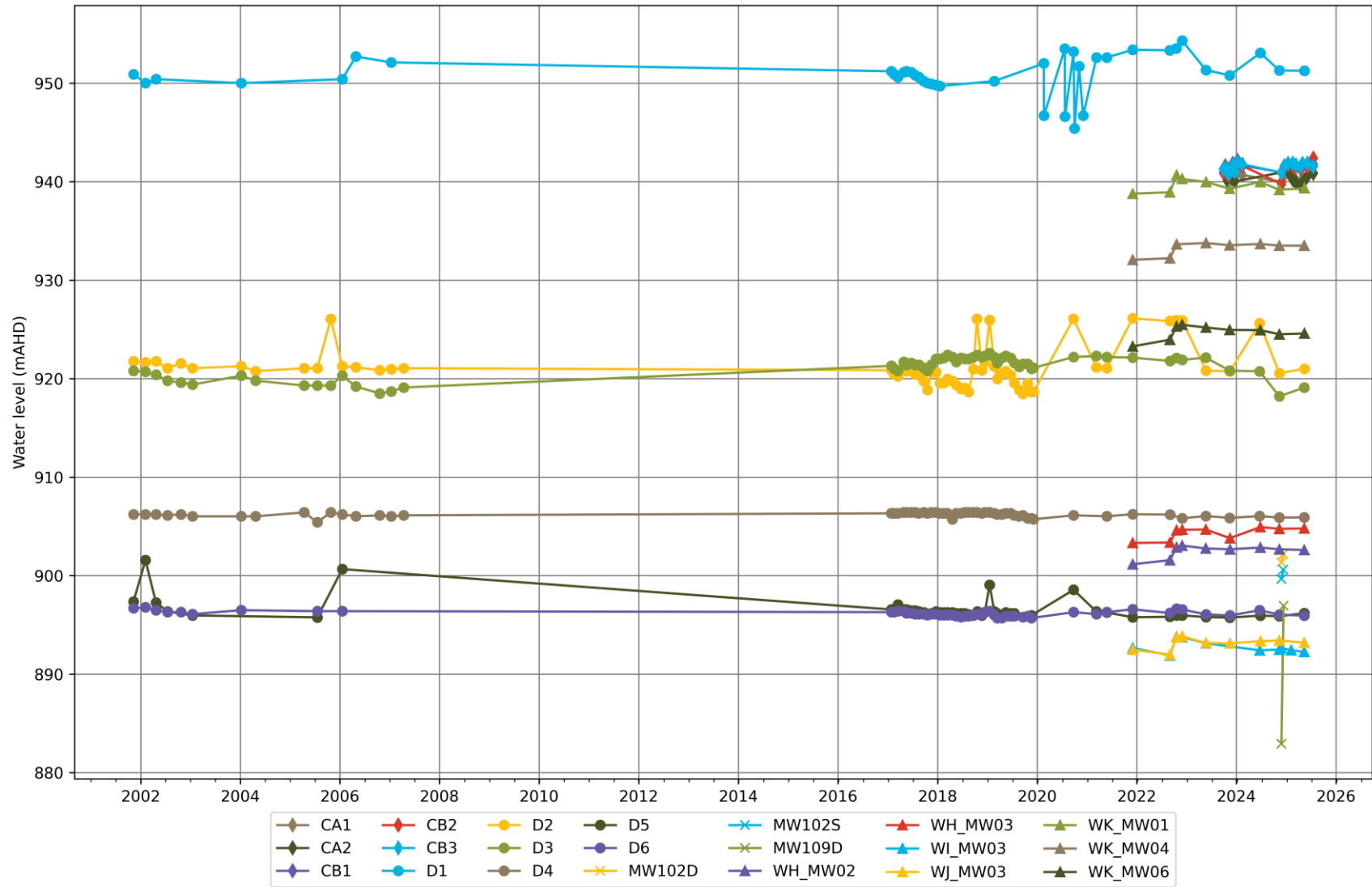
WK_MW06	24 Jun 2024	<0.01	0.042	0.664	-	<0.05	-	<0.0001	<0.001	-	<0.001	-	1.35	<0.001	0.058	-	-	<0.001	<0.01	-	-	<0.005
WK_MW06	11 Nov 2024	0.02	0.047	0.756	-	<0.05	-	<0.0001	<0.001	-	<0.001	-	2.48	<0.001	0.073	-	-	<0.001	<0.01	-	-	<0.005
WK_MW06	14 May 2025	<0.01	0.002	0.823	-	<0.05	-	<0.0001	<0.001	-	<0.001	-	2.00	<0.001	0.059	<0.0001	-	<0.001	<0.01	<0.001	-	<0.005
WWD1A	17 Oct 2022	<0.01	0.008	0.309	<0.001	0.13	<0.001	<0.0001	<0.001	0.006	<0.001	0.164	74.4	<0.001	0.233	-	<0.001	0.006	<0.01	<0.001	<0.01	0.005
WWD1A	23 May 2023	0.02	0.007	0.25	<0.0005	0.05	<0.001	<0.0001	<0.001	0.006	0.003	0.11	49	<0.001	0.19	<0.00005	<0.001	0.004	<0.001	<0.001	<0.001	0.008
WWD1A	23 May 2023	0.52	0.007	0.234	<0.001	0.43	<0.001	0.0001	<0.001	0.007	0.002	0.102	49	<0.001	0.287	<0.0001	<0.001	0.007	<0.01	<0.001	<0.01	0.016
WWD1A	25 Jun 2024	<0.01	0.003	0.103	-	0.17	-	<0.0001	<0.001	-	<0.001	-	20.7	<0.001	0.089	-	-	0.002	<0.01	-	-	<0.005
WWD1B	17 Oct 2022	0.03	0.009	0.597	<0.001	1.58	<0.001	<0.0001	<0.001	<0.001	<0.001	0.645	16.6	<0.001	1.33	-	0.084	0.002	<0.01	<0.001	<0.01	<0.005
WWD1B	17 Oct 2022	0.03	0.008	0.580	<0.001	1.57	<0.001	<0.0001	<0.001	<0.001	<0.001	0.622	15.6	<0.001	1.29	-	0.082	0.002	<0.01	<0.001	<0.01	<0.005
WWD1B	23 May 2023	0.05	0.01	0.22	<0.0005	3.1	<0.001	<0.0001	<0.001	<0.001	<0.001	1.2	38	<0.001	2.4	<0.00005	0.2	0.003	<0.001	<0.001	<0.001	<0.001
WWD1B	23 May 2023	0.13	0.009	0.205	<0.001	2.49	<0.001	<0.0001	<0.001	<0.001	0.002	1.05	35.7	<0.001	2.35	<0.0001	0.155	0.003	<0.01	<0.001	<0.01	<0.005
WWD1B	25 Jun 2024	0.08	0.010	0.180	-	3.31	-	<0.0001	<0.001	-	<0.001	-	36.3	<0.001	2.46	-	-	<0.001	<0.01	-	-	<0.005
WWD2A	17 Oct 2022	0.04	<0.001	0.335	<0.001	3.90	<0.001	<0.0001	<0.001	<0.001	<0.001	1.09	8.88	<0.001	1.63	-	<0.001	<0.001	<0.01	<0.001	<0.01	<0.005
WWD2A	23 May 2023	0.07	<0.001	0.336	<0.001	3.13	<0.001	<0.0001	<0.001	<0.001	<0.001	1.04	11.4	<0.001	2.19	<0.0001	0.004	<0.001	<0.01	<0.001	<0.01	<0.005
WWD2A	04 Jul 2023	0.05	0.005	0.932	<0.001	2.84	<0.001	<0.0001	<0.001	<0.001	<0.001	1.23	14.8	<0.001	1.99	<0.0001	0.001	<0.001	<0.01	<0.001	<0.01	<0.005
WWD2A	25 Jun 2024	0.07	<0.001	0.997	-	3.29	-	<0.0001	<0.001	-	<0.001	-	23.9	<0.001	1.72	-	-	<0.001	<0.01	-	-	<0.005
WWD2B	17 Oct 2022	0.02	0.006	0.360	<0.001	0.20	<0.001	<0.0001	<0.001	<0.001	0.001	0.146	9.88	<0.001	0.187	-	0.005	0.003	<0.01	<0.001	<0.01	<0.005
WWD2B	04 Jul 2023	<0.01	0.004	0.488	<0.001	0.05	<0.001	<0.0001	<0.001	<0.001	<0.001	0.125	9.61	<0.001	0.191	<0.0001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.005
WWD2B	25 Jun 2024	0.69	0.012	0.142	-	0.64	-	0.0002	<0.001	-	<0.001	-	17.4	<0.001	2.10	-	-	0.044	<0.01	-	-	0.164
WWD5A	19 Oct 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WWD5B	18 Oct 2022	<0.01	0.009	0.026	<0.001	0.08	<0.001	<0.0001	<0.001	0.016	<0.001	0.358	2.53	<0.001	0.383	-	0.002	0.048	<0.01	<0.001	<0.01	<0.005
WWD5B	22 May 2023	<0.01	0.009	0.048	<0.001	<0.05	<0.001	<0.0001	<0.001	0.008	<0.001	0.364	3.37	<0.001	0.498	<0.0001	<0.001	0.025	<0.01	<0.001	<0.01	<0.005
WWD6A	18 Oct 2022	6.05	0.008	0.026	0.009	5.31	0.004	<0.0001	<0.001	0.154	<0.001	5.74	19.2	<0.001	3.31	-	0.420	0.643	<0.01	<0.001	<0.01	1.09
WWD6A	22 May 2023	6.35	0.012	0.056	0.008	4.1	0.011	0.0009	<0.001	0.145	0.005	5.42	17.8	<0.001	3.08	<0.0001	0.353	0.63	0.02	<0.001	<0.01	1.08

	Metals																					
	Aluminium (filtered)	Arsenic (filtered)	Barium (filtered)	Beryllium (filtered)	Boron (filtered)	Antimony (filtered)	Cadmium (filtered)	Chromium (III+VI) (filtered)	Cobalt (filtered)	Copper (filtered)	Strontium (filtered)	Iron (filtered)	Lead (filtered)	Manganese (filtered)	Mercury (filtered)	Molybdenum (filtered)	Nickel (filtered)	Selenium (filtered)	Silver (filtered)	Vanadium (filtered)	Zinc (filtered)	
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	0.01	0.001	0.001	0.0005	0.02	0.001	0.0001	0.001	0.001	0.001	0.001	0.01	0.001	0.001	0.00005	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Location Code Date

WWD6A	22 May 2023	5.92	0.01	0.043	0.007	4.03	0.012	0.0008	<0.001	0.138	<0.001	5.14	18.4	<0.001	2.87	<0.0001	0.329	0.602	0.02	<0.001	<0.01	1.06
WWD6A	14 Nov 2023	5.37	0.006	0.076	-	3.25	-	0.0023	<0.001	-	0.001	-	12.6	<0.001	2.28	-	-	0.534	<0.01	-	-	1.48
WWD6A	24 Jun 2024	5.07	0.006	0.034	-	3.45	-	0.0052	<0.001	-	<0.001	-	11.1	<0.001	2.27	-	-	0.613	0.02	-	-	2.00
WWD6B	18 Oct 2022	0.28	0.002	0.017	0.002	0.76	<0.001	<0.0001	<0.001	0.123	<0.001	0.171	25.3	<0.001	0.849	-	0.010	0.111	<0.01	<0.001	<0.01	0.020
WWD6B	22 May 2023	0.09	0.006	0.042	0.001	0.65	<0.001	<0.0001	0.001	0.029	0.002	0.079	4.72	<0.001	0.093	<0.0001	0.008	0.038	<0.01	<0.001	<0.01	0.026
WWD6B	22 May 2023	0.11	0.005	0.033	0.001	0.78	<0.001	<0.0001	0.001	0.028	<0.001	0.069	3.8	<0.001	0.097	<0.0001	0.001	0.036	<0.01	<0.001	<0.01	0.022
WWD6B	14 Nov 2023	0.09	0.005	0.052	-	0.72	-	<0.0001	<0.001	-	<0.001	-	6.14	<0.001	0.182	-	-	0.043	<0.01	-	-	0.027
WWD6B	24 Jun 2024	0.12	0.004	0.024	-	0.87	-	<0.0001	0.001	-	<0.001	-	3.96	<0.001	0.113	-	-	0.036	<0.01	-	-	0.025
WWD10	19 Oct 2022	0.60	<0.001	0.021	0.003	0.25	<0.001	0.0004	<0.001	0.081	0.011	0.167	0.12	0.004	1.09	<0.0001	<0.001	0.133	<0.01	<0.001	<0.01	0.438
WWD10	23 May 2023	0.5	<0.001	0.017	0.002	0.12	<0.001	0.0003	0.006	0.07	<0.001	0.135	0.67	0.002	1.06	<0.0001	<0.001	0.155	<0.01	<0.001	<0.01	0.35
WWD12	19 Oct 2022	0.04	<0.001	0.105	<0.001	0.09	<0.001	<0.0001	<0.001	0.031	0.002	0.042	8.15	<0.001	0.517	<0.0001	<0.001	0.096	<0.01	<0.001	<0.01	0.101
WWD12	23 May 2023	<0.01	<0.001	0.086	<0.001	0.08	<0.001	<0.0001	<0.001	0.026	<0.001	0.032	9.73	<0.001	0.5	<0.0001	<0.001	0.087	<0.01	<0.001	<0.01	0.098
WWD14A	18 Oct 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WWD14A	22 May 2023	389	0.107	0.031	0.19	21.8	0.003	0.116	0.062	0.358	0.065	11.9	23.7	<0.001	10.3	<0.0001	0.032	1.2	0.7	<0.001	0.14	4.16
WWD14A	15 Nov 2023	408	0.066	0.045	-	26.3	-	0.141	0.076	-	0.085	-	38.4	<0.001	11.6	-	-	1.26	0.34	-	-	4.55
WWD14B	18 Oct 2022	260	0.046	0.029	0.158	20.2	<0.001	0.0400	0.042	0.997	0.008	8.41	256	0.040	82.7	-	0.008	1.54	1.90	<0.001	0.15	4.14
WWD14B	22 May 2023	275	0.083	0.028	0.13	13.8	0.001	0.067	0.086	0.934	0.004	7.78	233	0.034	78.8	<0.0001	0.02	1.5	0.53	<0.001	0.16	3.93
WWD14B	22 May 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix D Baseline groundwater level data



Appendix E Consultation records



4 February 2025

Generator Property Management Pty Ltd
PO Box 132
Budgewoi NSW 2262

Attention: Stephen Saladine

Dear Stephen

Subject: Wallerawang Power Station Ash Dam – WaterNSW’s Advice on proposed Operational Groundwater (MP07_0005-PA-29) and Surface Water (MP07_0005-PA-30) Management Plan

WaterNSW appreciates the opportunity to provide advice on the proposed Operational Groundwater and Surface Water Management Plan (OGWMP and OSWMP) prepared by Generator Property Management Pty Ltd (GPM). The existing consent conditions for MP07_0005, conditions 6.5(b) and (c), requires an Operational Groundwater and Surface Water Management Plan (OGWMP and OSWMP) to be prepared in consultation with WaterNSW, and implemented as part of the Operation Environmental Management Plan for the project.

As the development is located within the Sydney Drinking Water Catchment (SDWC), Section 6.61(1) and 6.63 of the *State Environmental Planning Policy (Biodiversity and Conservation) 2021* (the SEPP) apply.

WaterNSW has reviewed the information in the proposed OGWMP and OSWMP (both dated 19 December 2024) prepared by GPM and requests that the reports include the following matters:

- For OGWMP:
 - Chrome 6+ (Cr6+), Mercury (Hg) and Silver (Ag) should be included in groundwater monitoring given historic data at the site
 - Table B2 should be updated to include sampling for Aluminium (Al), Chrome 6+ (Cr6+), Mercury (Hg) and Silver (Ag) given historic issues identified
 - There is no discussion as to what the 4 groundwater monitoring sites (A9, A17, GW10 & GW11) identified in Figure B1 as “extra water quality and water level sites – not part of OEMP” are for, and why they aren’t included in the OEMP. WaterNSW considers that more detail regarding these monitoring sites should be included as part of the sites OGWMP, even if non-routine sites
 - Section 6.2 of the OGWMP notes that monitoring shall be conducted 6 monthly at 11 locations whereas, Appendix B of the OGWMP suggests 13 water quality monitoring locations. The OGWMP should be updated for consistency, and
 - Clarification should be included in Table B4 on when relevant agencies shall be notified if Low Hazard (Stage 1) trigger continues, and where Stage 2 is not triggered.
- For OSWMP:
 - The OSWMP should include a detailed water balance for the site to demonstrate that storage volumes can effectively manage contaminated water on site

- Little information is provided in the OSWMP regarding the Caustic Injection Plant (CIP). WaterNSW considers the potential impacts of this activity are relevant and should also be included in the OSWMP including specific details of the current water quality within the SSCAD (including heavy metals and metalloids) and details of the treatment process and the expected quality of treated water discharges for all parameters. The OSWMP should also include when use of the CIP is triggered (i.e., anticipated rainfall thresholds, water quality exceedances), and monitoring is required prior to treatment, and prior to discharge to ensure compliance with the EPL
- WaterNSW considers detailed baseline monitoring data for each sample site be provided as an appendix similar to that provided in the OGWMP
- WaterNSW considers baseline values for all parameters proposed for monitoring should be included in Table A.2 – particularly given the site has a history for exceedances of Boron, Fluoride, Filterable Iron and Filterable Manganese which present a risk to the local aquatic ecology of the receiving waters that would not have been exposed to these contaminants on a regular basis. We also note that treatment through the CIP would not address these contaminants
- WaterNSW also considers that the 80th percentile values be provided for each monitoring site, for each parameter to identify potential spatial trends
- In Table B3 - Stage 2 notification, WaterNSW should also be included as a relevant agency to be notified, and
- In the Trigger Action Response Plans (Table B3 in the OSWMP and Table B4 in the OGWMP), recommend notifying the relevant agencies if a Stage 1 (Low Hazard) trigger continues for greater than 6 weeks, even if Stage 2 is not triggered.

WaterNSW also requests to remain as a stakeholder in any further assessment and consultation on this project. If you have any questions, please contact Rizwana Rumman via email at environmental.assessments@waternsw.com.au.

Yours sincerely



JURI JUNG
Catchment Protection Manager

Nadia Eisenlohr

From: Nadia Eisenlohr
Sent: Monday, 8 September 2025 8:34 AM
To: Nadia Eisenlohr
Subject: RE: Attention Rizwana Rumman: Subject: Wallerawang Power Station Ash Dam – WaterNSW’s Advice on proposed Operational Groundwater (MP07_0005-PA-29) and Surface Water (MP07_0005-PA-30) Management Plan

From: Rizwana Rumman <Rizwana.Rumman@waternsw.com.au>
Sent: Thursday, 7 August 2025 2:25 PM
To: Julian MacPhee <julian.macphee@gpmco.com.au>
Cc: John Pola <john.pola@gpmco.com.au>
Subject: RE: Attention Rizwana Rumman: Subject: Wallerawang Power Station Ash Dam – WaterNSW’s Advice on proposed Operational Groundwater (MP07_0005-PA-29) and Surface Water (MP07_0005-PA-30) Management Plan

You don't often get email from rizwana.rumman@waternsw.com.au. [Learn why this is important](#)

Hi Julian,

Thank you very much for sending through the updated plans. Water NSW has now reviewed the and have no further comments.

Just a quick note, the flow gauge upstream of LDP 3 operated by Water NSW is 212054 (Coxs River @ Wallerawang Power Station) , probably mistakenly reported as 12054.

Kind regards,

Rizwana Rumman
Catchment Assessment Officer



Level 14, 169 Macquarie St (1PSQ)
Parramatta NSW 2150
Work location: remote, please reach via email
E: rizwana.rumman@waternsw.com.au

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My work day may look different than your work day. Feel free to read, act on or respond during your working hours.

WaterNSW acknowledges the Traditional Custodians of the land and water on which we work and recognises the continuing cultural and spiritual connections that Aboriginal and Torres Strait Islander People have to Country. We pay our respects to Elders past and present.

From: Julian MacPhee <julian.macphee@gpmco.com.au>
Sent: Monday, 21 July 2025 9:44 AM
To: Environmental Assessments <Environmental.Assessments@waternsw.com.au>

Cc: John Pola <john.pola@gpmco.com.au>

Subject: [EXTERNAL] Attention Rizwana Rumman: Subject: Wallerawang Power Station Ash Dam – WaterNSW’s Advice on proposed Operational Groundwater (MP07_0005-PA-29) and Surface Water (MP07_0005-PA-30) Management Plan

This message is from an External Sender. Be careful opening emails, attachments and links from unknown senders.

Dear Rizwana,

I am contacting you regarding consultation advice for Wallerawang Power Station – Lidsdale Ash Dam – Operational Groundwater (MP07_0005-PA-29) and Surface Water (MP07_0005-PA-30) Management Plan.

Consultation was received on 4/2/2025 from WaterNSW which included several amendments to be made in the OGWMP and SWMP for Lidsdale Ash dam (attached).

DPHI have indicated there was no subsequent consultation after the requested amendments were made as the updated OGWMP and SWMP may not have been provided on the DPHI portal to WaterNSW.

I have attached the current version’s of the OGWMP and SWMP to review and endorse if satisfied with the document updates made in response to the comments received on 4/2/2025.

Many thanks.

Regards,

Julian MacPhee

Engineering Project Officer

GPM - Generator Property Management Pty Ltd

ABN: 73 615 047 295

Mobile: 0427 094 014

Julian.MacPhee@gpmco.com.au

110 Skelly Road, Lidsdale NSW 2790

301 Scenic Drive, Colongra NSW 2262

PO Box 132 Budgewoi NSW 2262

NOTICE: This e-mail is sent by Generator Property Management Pty Ltd, (GPM) ABN 73 615 047 295.

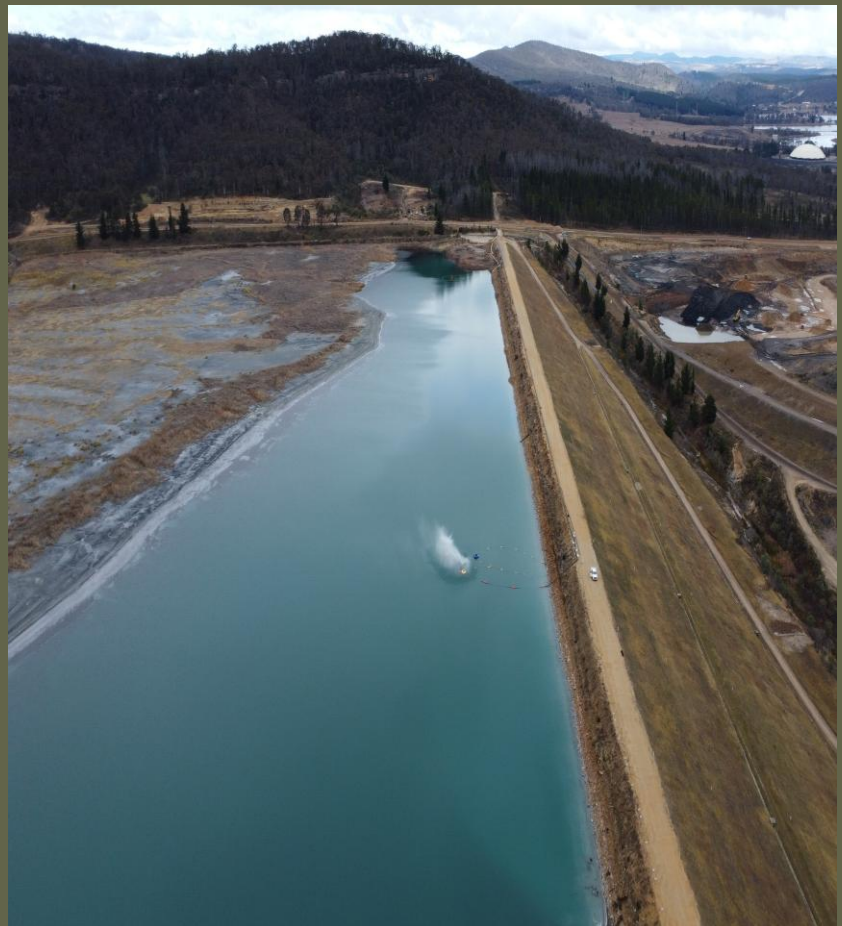
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Appendix E


Operational Surface Water Management Plan

Operational Surface Water Management Plan

Lidsdale Ash Repository 2026



Document control

Title	Operational Surface Water Management Plan - Lidsdale Ash Repository 2025
Approved by GPM Environment Manager	John Pola
Signed	
Dated	31st March 2026

Version control

Revision	Date	Description	Author	Reviewer	Approval
Rev 01	26/11/2024	Draft	Laurence Smith	Philip Towler	John Pola
Rev 02	19/12/2024	Final	Verity Blair	Phillip Towler	John Pola
Rev 03	24/03/2025	Updates following WaterNSW comments	Lachlan Hammersley, Nadia Eisenlohr	Daniel Keegan	John Pola
Rev 04	08/09/2025	Updates following DPHI comments	Nadia Eisenlohr	Lachlan Hammersley	John Pola
Rev 05	04/02/2026	Update to address EPA comments DOC25/354786-1	Tasman Coupe	Henry Noakes	John Pola
Rev 06	31/03/2026	Final	Tasman Coupe	Lachlan Hammersley	John Pola

List of emergency and key contacts

Position	Name	Phone
EPA pollution hotline	General Number	131 555
Fire and Rescue NSW	General Number	000 (for pollution incidents that present an immediate threat to human health or property) 1300 729 579 (for pollution incidents that do not present an immediate threat to human health or property)
Lithgow Hospital	General Number	02 6350 2300
SafeWork NSW	General Number	131 050
24-hour community information line	General Number	1800 817 711
GPM Environmental Manager	John Pola	0429 205 290
Financial Controller & Company Secretary	Diane Dibben	0412 773 255
Managing Director	David Wood	0484 623 220
Western Region Manager	Marlon Frost	0423 127 030
Engineering Project Officer	Timothy Edwards	0413 446 686
Engineering Project Officer	Julian MacPhee	0427 094 014
Environmental Representative	David Bone	0407 461 092
Lithgow City Council	General Number	02 6354 9999
Wallerawang Police	General Number	02 6355 1303
Lithgow Police	Chris Sammut	02 6352 8399

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Glossary/Abbreviations

Abbreviation	Expanded text
Approval	Approval Modification MP07_005-Mod 2
ASS	Acid Sulfate Soils
CEMP	Construction Environmental Management Plan
CEMS	Contractors Environmental Management System
CIP	Caustic Injection Plant
Compliance audit	Verification of how implementation is proceeding with respect to a Construction Environmental Management Plan (CEMP) (which incorporates the relevant approval conditions).
CoAs	Conditions of Approval
Minister, the	Minister of the NSW Department of Planning and Environment (or delegate)
DP&E	Department of Planning and Environment (now DPHI)
DPHI	NSW Department of Planning, Housing and Infrastructure
EIS	Environmental Impact Statement
EEC	Endangered Ecological Community
Ecologically sustainable development	Using, conserving and enhancing the community's resources so that the ecological processes on which life depends are maintained and the total quality of life now and in the future, can be increased (Council of Australian Governments, 1992)
EPA	NSW Environment Protection Authority
EPBC-CoA	Federal Conditions of Approval under the EPBC Act
EMS	Environmental Management System
EMMs	Environmental Management Measures as outlined in the project EIS documentation.
Environmental aspect	Defined by AS/NZS ISO 14001:2015 as an element of an organisation's activities, products or services that can interact with the environment.
Environmental impact	Defined by AS/NZS ISO 14001:2015 as any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's environmental aspects.
Environmental incident	A set of circumstances that causes or threatens to cause material harm to the environment, and/or breaches or exceeds the limits or performance measures/criteria in the planning approval
Environmental objective	Defined by AS/NZS ISO 14001:2015 as an overall environmental goal, consistent with the environmental policy, that an organisation sets itself to achieve.
Environmental policy	Statement by an organisation of its intention and principles for environmental performance.

Environmental target	Defined by AS/NZS ISO 14001:2015 as a detailed performance requirement, applicable to the organisation or parts thereof, that arises from the environmental objectives and that needs to be set and met in order to achieve those objectives.
Environmental Representative	A suitably qualified and experienced person independent of project design and construction personnel employed for the duration of construction. The principal point of advice in relation to all questions and complaints concerning environmental performance.
EP&A Act	<i>Environmental Planning and Assessment Act 1979 (NSW)</i>
EPL	Environment Protection Licence
ESCP	Erosion and Sediment Control Plan
GPM	Generator Property Management Pty Ltd
Hold point	Is a verification point that prevents work from commencing prior to approval from Roads and Maritime Services
KPI	Key Performance Indicator
KVAD	Kerosene Vale Ash Dam
KVAR	Kerosene Vale Ash Repository (dry stacked as on top of KVAD)
LADR	Lidsdale Ash Dam Repository
LDP	Licensed discharge point
Non-compliance	An occurrence, set of circumstances or development that is a breach of the approval but is not an incident.
OEH	Office of Environment and Heritage
OEMP	Operational environmental management plan
OSWMP	Operational Surface Water Management Plan
PESCP	Progressive Erosion and Sediment Control Plan
PIRMP	Pollution Incident Response Management Plan
Principal, the	GPM
POEO Act	<i>Protection of the Environment Operations Act 1997 (NSW)</i>
REMM	Revised Environmental Management Measure
Roads and Maritime	Roads and Maritime Services (now TfNSW)
ROL	Road occupancy licence
SAP	Sensitive Area Plan
Secretary	Secretary of the Department of Planning or their Nominee
SSCAD	Sawyers Swamp Creek Ash Dam
SEAR's	Secretary's Environmental Assessment Requirements
SMP	Specific Management Plans
SPIR	Submission and Preferred Infrastructure Report

SWMS	Safety & Environmental work method statement
TfNSW	Transport for New South Wales
WPS	Wallerawang Power Station

1 Introduction

The Lidsdale Ash Dam Repository (LADR), formerly known as the Wallerawang Ash Repository, is located at Skelly Road, Lidsdale NSW (the Site) and is approximately 15 kilometres (km) northwest of Lithgow and 2.5 km north-east of Wallerawang Power Station (WPS). The Site comprises an area of approximately 528 hectares (ha) and is situated primarily on Lot 5 of Deposited Plan (DP) 829137.

The Site includes several distinct components, including:

- The Kerosene Vale Dry Ash Repository (KVAR) and underlying former Kerosene Vale Ash Dam (KVAD).
- Sawyers Swamp Creek Ash Dam (SSCAD).
- Lidsdale Cut and adjacent asbestos landfills.
- WPS Asbestos demolition landfill south of the SSCAD.

The Site location and general layout are shown in Figure 1.1.

The Site has been used since the 1950s to store ash and other wastes generated by the Wallerawang Power Station (WPS). Site operations started prior to the commencement of the *Environmental Planning and Assessment Act 1979* (EP&A Act), when the WPS and associated facilities were owned by the NSW Government.

Ownership and responsibility for the Site was transferred from Energy Australia NSW Pty Ltd to Generator Property Management Pty Limited (GPM) in September 2020. GPM's objectives at the Site include closure of the operational facilities and the rehabilitation and management of the Site in general including the Kerosene Ash Repository (KVAR) and the Sawyers Swamp Creek Ash Dam (SSCAD).

This Operational Surface Water Management Plan (OSWMP) has been developed to ensure the care and maintenance of the Site are carried out responsibly and in accordance with the relevant Conditions of Approval (CoAs) and any other requirements.

GPM and its contractors are also undertaking construction activities that will be managed under the Site's Construction Environmental Management Plan (CEMP).

1.1 Background to the Lidsdale Ash Repository

The Lidsdale Site was originally farmland that was gradually turned into mining premises during the late 1800s into the early 20th century. The Kerosene Vale mines were originally a series of open cut operations that changed to underground mines using portals driven under the northern escarpment.

The original ash placement operations were at the KVAD. The mining void was filled with ash transported from the WPS as a slurry (i.e. wet ash placement). When the KVAD was full, it was capped with a clay capping and then ash placement operations began at the SSCAD, which saw wet ash placement take place from 1980 to 2003. The SSCAD is still used to manage site water requirements with water levels managed by irrigation for dust suppression and other onsite water uses to prevent discharge to Sawyers Swamp Creek. When required, water is transferred for treatment via a Caustic Injection Plant (CIP), clarified and discharged through a licenced discharge point (LDP3). The SSCAD is a declared dam under the NSW [Dams Safety Act 2015 No 26](#) (DS Act) and is subject to regular surveillance and monitoring by certified engineers in accordance with the DS Act.

The need to further develop the KVAR area to maintain power-generation operations at WPS was identified in 2001. The existing wet ash storage area (i.e. the SSCAD) was approaching its design capacity and the placement of dry ash at the KVAR was identified as a viable alternative. Conversion from wet to dry ash placement aimed to minimise environmental and social impacts potentially resulting from heavy metal accumulation. The extent of both stages is outlined in Figure 1.1.

It is noted that the Site has recently been formally Declared under the *Contaminated Land Management Act* (CLM Act) by the EPA and is subject to a Voluntary Management Plan requiring detailed and extensive investigations that will guide long term works on the SSCAD and may require additional works on the Site that would be subject to further approval.

1.2 Relevant project approval

In 2002, Project Approval was granted by the then Minister of Planning to change from wet to dry ash-producing activities and to use the KVAR area for dry ash storage.

The placement of ash on the Repository was developed in two stages:

- Stage 1: Comprises about one third of the area associated with the repository site and located on the south-western section of the Site, this area was designed to operate for a period of 5 years and reached its design capacity and has been capped.
- Stage 2: Comprises the remainder the repository site, covering an area from the open face of the Stage 1 area to the edge of the original storage area. This stage was designed to operate about 10 years, depending on actual ash production rates.

On 26 November 2008, Project Approval (07_0005) was granted by the then Minister of Planning for the extension of the existing KVAR area to permit the continued disposal of ash generated by the WPS under Part 3A (now repealed) of the *Environmental Planning and Assessment Act 1979*. The KVAR Stage 1 placement works were completed and capped in February 2009. The KVAR Stage 2 placement works commenced soon after in April 2009.

In January 2014, WPS's Unit 7 was removed from service and deregistered from the market; whilst in March 2014, Unit 8 was placed in long term storage. However, in November 2014, EnergyAustralia NSW announced that Unit 8 was to be removed from service and the WPS deregistered from the market.

WPS ceased energy production in April 2014 and is currently being decommissioned and dismantled. The bulk transport and disposal of ash to the KVAR ceased following the closure of the WPS. The Lidsdale Ash Repository is currently being managed in a care and maintenance arrangement. Environmental studies and investigations are currently underway to support GPM's safe decommissioning, demolition, rehabilitation and management of ongoing regulatory and contractual obligations associated with the Lidsdale Ash Repository area.

Modification 1 to 07_005 was approved on 9 August 2018 under section 75W of the EP&A Act. This was to allow for the importation of clean fill (virgin excavated natural material (VENM) and excavated natural material (ENM)) for use of capping of KVAR and SSCAD over two years. This modification included a revised project area that extended the originally approved project to include the area covered by SSCAD.

Modification 2 to 07_005 was approved on 13 October 2023 under section 96(1A) of the EP&A Act. This was to allow for the importation of fill over an additional 10 years (i.e. until 13 October 2033).

The most complete description of the onsite activities was provided in the original *Kerosene Vale Stage 2 Ash Repository Area Environmental Assessment* prepared by Parsons Brinckerhoff in April 2008. This focused on the ongoing ash management without providing any details of site rehabilitation requirements when the power station closed. However, it did include the realignment of a section of Sawyers Swamp Creek to allow the structural earthworks required to achieve an acceptable factor of safety against failure of the ash stockpiles during earthquakes. The subsequent modification applications focussed on the potential impacts of the importation of fill material, rather than on activities within the Site where the material would be utilised.

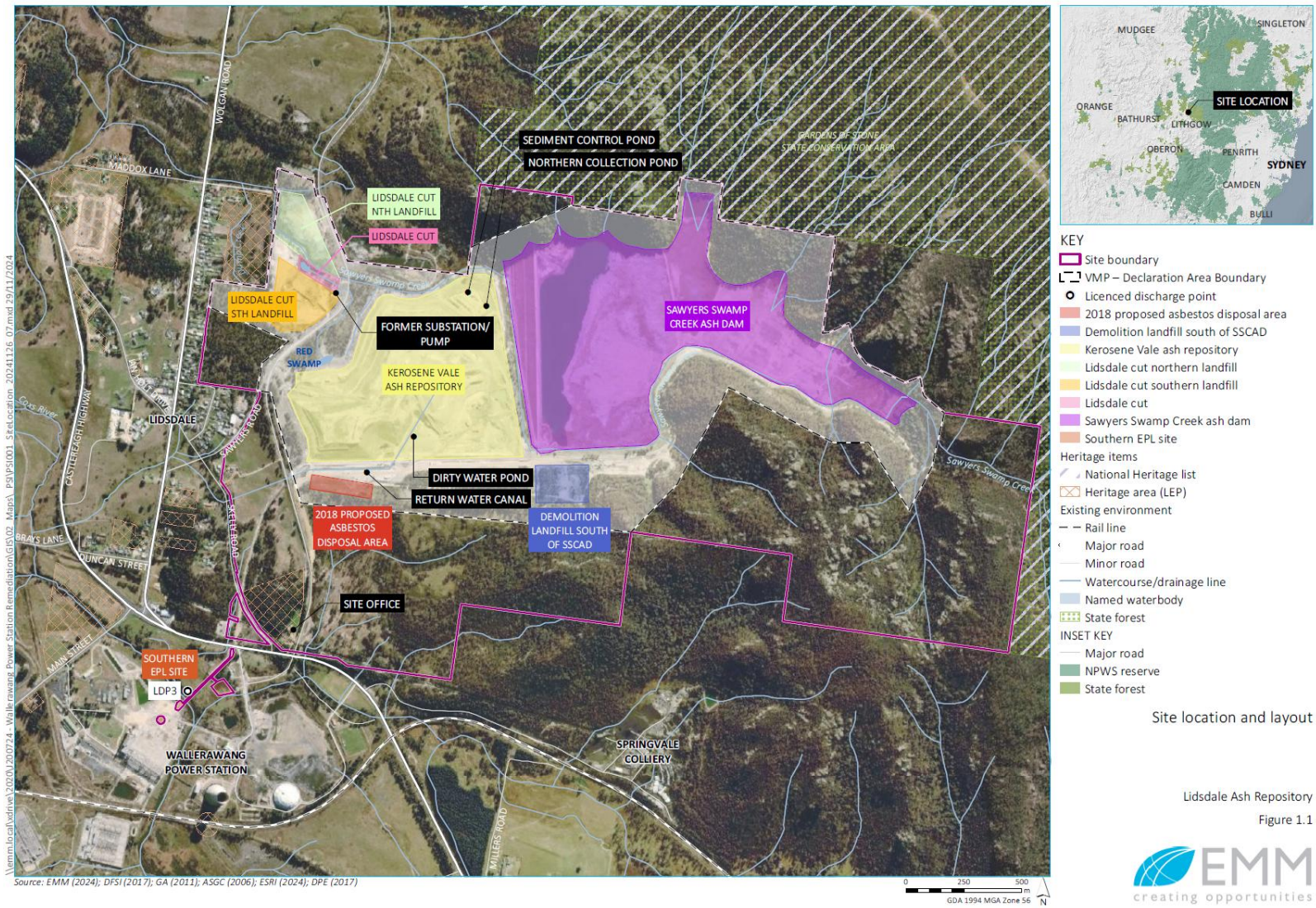


Figure 1.1 Site location and layout.

1.3 Operational Environmental Management Plan and Sub-plans

CoA 6.5 requires the applicant to develop an OEMP that outlines the environmental management practices and procedures to be followed and requires the preparation and implementation of the following management plans:

- **Operational Surface Water Management Plan (OSWMP)** - identifies the management measures to minimise surface water impacts
- **Operational Noise Management Plan (ONMP)** - identifies the management measures to minimise operational noise impacts
- **Operational Groundwater Management Plan (OGMP)** - identifies the management measures to minimise operational groundwater impacts
- **Operational Air Quality Management Plan (OAQMP)** - identifies the management measures to minimise operational air quality impacts
- **Operational Landscape/Revegetation Plan (OLP)** - identifies the management measures to minimise operational biodiversity impacts
- **Operational Transport Management Plan (OTMP)** - identifies the management measures to minimise traffic and transport impacts during construction

Given the requirement to develop these additional management plans in conjunction with the OEMP, these plans are identified as sub-plans to the OEMP.

Table 1.1 provides a high-level overview of the proposed activities that are covered by the CEMP and those covered by the OEMP. Further information on the scope of this OEMP is provided in Section 1.4.

Table 1.1 Activities covered by the CEMP and OEMP

Environmental Management Plan	Activities covered
OEMP – care and maintenance operations	<ul style="list-style-type: none"> • Ash management • Management of on-site water systems • Capping material haulage, placement and management • Landscaping and revegetation/rehabilitation of the Site • Upgrading and maintaining internal access roads in the project area

Environmental Management Plan	Activities covered
CEMP – construction activities	<ul style="list-style-type: none"> • Sawyers Swamp Creek realignment • Construction of stability berms around the perimeter of the KVAR • Excavation of the former pine plantation area • Sediment controls and surface water dams associated with construction of the KVAR stability berm and realignment of the Sawyers Swamp Creek • Establishment of freshwater collection ponds on the northern edge of SSCAD • Rearrangement of water flows around the KVAR • Establishment of access roads onto the surface of the SSCAD and associated roads across the dam surface • Reinstatement of environmental controls for historic landfill areas including capping of slumped areas, reprofiling for water management and control of sediment runoff during these activities • Concurrent construction activities.

1.4 Environmental management system overview

GPM's Environmental Management System (EMS) is based on AS/NZS ISO 14001. The ISO 14001 standard provides best practice specifications for the implementation of an EMS. An EMS provides a framework for managing the company's environmental responsibilities so that they are integrated into overall operations. The standard approach integrates environmental management and supports the company's compliance with legislated and voluntary environmental requirements, as well as continuously improving their overall environmental performance.

The relevant environmental standard ensure a consistent approach is undertaken to integrate environmental management at all levels of the organisation by:

- Identifying and maintaining awareness of relevant environmental legislation.
- Assignment of roles and responsibilities.
- Establishment of procedures for internal and external communications.
- Establishment of procedures for monitoring and measuring environmental performance.
- Setting and reviewing objectives and targets for improving environmental performance.
- Monitoring and measuring environmental compliance and community inquiries.
- Setting and reviewing management system programs for achieving objectives and targets.
- Provision of environmental training aligned to skill requirements.
- Review of EMS performance for continual improvement.

This OSWMP has been developed to be consistent with the relevant provisions of GPM's EMS, including approvals and license as noted above.

A summary of the EMS and its interaction with the CEMP and OEMP is provided in Figure 1.2.

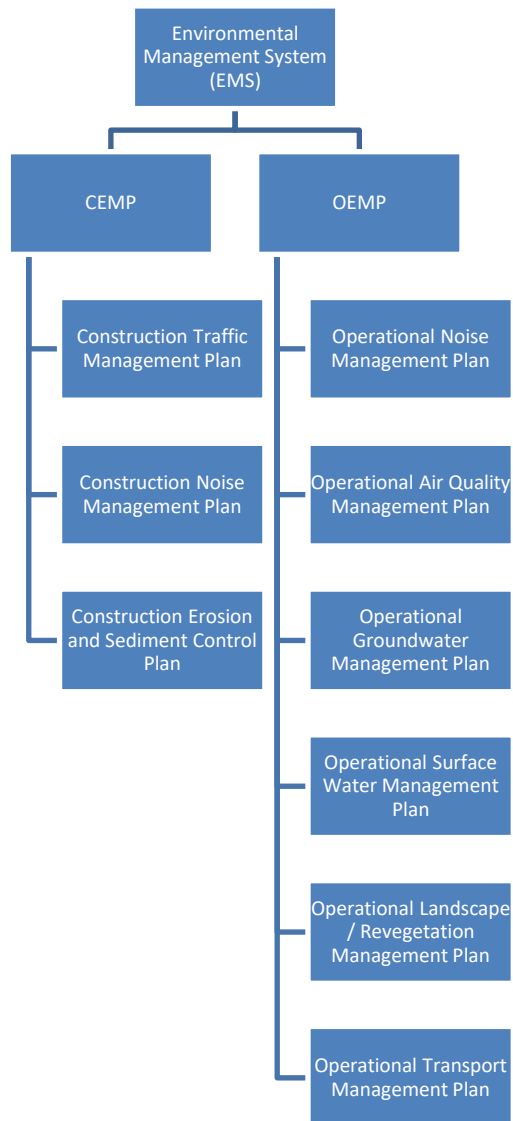


Figure 1.2 Environmental Management System flowchart

1.5 Interactions with other management plans and strategies

This OSWMP is a sub-plan to the OEMP and interrelates with the other (sub) management plans set out in Section 1.3 and 1.4 above.

1.6 Reference documents

This OSWMP incorporates the obligations and criteria outlined in the following documents:

- Project Approval 07_0005 (NSW Department of Planning)
- Submission Report – Statement of Commitments (Parsons Brinckerhoff 2008)
- Modification application 07_0005 Mod 1
- Modification application 07_0005 Mod 2
- Wallerawang Power Station to Submissions Report (EA 2018)
- Environment Protection Licence 21185 (NSW Environment Protection Authority)
- Works Approval (Water Mgt Act 2000).

1.7 Endorsement and approval

1.7.1 Internal approval of OEMP and Sub-plans

The OEMP and associated sub-plans, strategies and monitoring programs undergo ongoing review by the GPM team. Following the ongoing review and revision process, internal signoff will be provided.

Once internal approval is received, the documents will be provided to DPHI and the ER for review prior to undertaking external consultation, review and approval processes described below.

1.7.2 External endorsement and approval of OEMP and sub-plans

Table 1.2 below provides a summary of the relevant authority(s), council(s) and agencies that require consultation during preparation of the OEMP sub-plans and monitoring programs in accordance with the conditions of approval.

External distribution for consultation and approval of the OEMP, sub-plans and monitoring programs will be undertaken and updated in consultation with the relevant external parties (refer Table 1.2) and will then be endorsed by the ER in accordance with CoA 6.5. After this external consultation and endorsement process is complete the required documents will be submitted to the Secretary for approval.

A copy of the latest ER Endorsement of the OEMP is included in Appendix E of this Plan. Consultation evidence with relevant external parties is provided in Appendix F.

Table 1.2 Consultation requirements for OEMP and subplans

Report	Relevant CoA	Condition of Approval	Consultation required
Operational Environmental Management Plan	6.4	The plan shall be submitted for the approval of the Secretary no later than four weeks prior to the commencement of operation of the project, unless otherwise agreed by the Secretary.	Secretary (DPHI)
Operational Noise Management plan	6.5a	The plan shall be prepared in consultation with, and to the satisfaction of, the EPA.	EPA
Groundwater Management Plan	6.5b	The plan shall be prepared in consultation with, and to the satisfaction of, WaterNSW.	WaterNSW
Surface Water Management Plan	6.5c	The plan shall be based on best environmental practice and shall be prepared in consultation with, and to the satisfaction of, WaterNSW and Fisheries NSW.	WaterNSW Fisheries NSW
Air Quality Management Plan	6.5d	The plan shall be prepared in consultation with, and to the satisfaction of, the EPA.	EPA
Operational Transport Management Plan	6.5f	The plan must be prepared in consultation with TfNSW and Council.	TfNSW Lithgow Council

Table 1.3 Consultation outcomes for OSWMP

Agency	Date provided	Comments	Where addressed
WaterNSW	4 th February 2025	The OSWMP should include a detailed water balance for the site to demonstrate that storage volumes can effectively manage contaminated water on site	Added as Appendix D
		Little information is provided in the OSWMP regarding the Caustic Injection Plant (CIP). WaterNSW considers the potential impacts of this activity are relevant and should also be included in the OSWMP including specific details of the current water quality within the SSCAD (including heavy metals and metalloids) and details of the treatment process and the expected quality of treated water discharges for all parameters. The OSWMP should also include when use of the CIP is triggered (i.e., anticipated rainfall thresholds, water quality exceedances), and monitoring is required prior to treatment, and prior to discharge to ensure compliance with the EPL	Section 4.2 added to provide more detail about the water treatment system.
		WaterNSW considers detailed baseline monitoring data for each sample site be provided as an appendix similar to that provided in the OGWMP	Added baseline monitoring as Appendix C
		WaterNSW considers baseline values for all parameters proposed for monitoring should be included in Table A.2 – particularly given the site has a history for exceedances of Boron, Fluoride, Filterable Iron and Filterable Manganese which present a risk to the local aquatic ecology of the receiving waters that would not have been exposed to these contaminants on a regular basis. We also note that treatment through the CIP would not address these contaminants	Table A.2 has been updated to include additional analytes. Additional information about the CIP treatment processes has been added to Section 4.2.
		WaterNSW also considers that the 80th percentile values be provided for each monitoring site, for each parameter to identify potential spatial trends	80 th percentile values are continuously updated with each monitoring event. Any included within this plan would not be accurate. Surface water quality data, including the trends for monitoring sites, will be incorporated into the Annual Environmental Management Report (AEMR).
		In Table B3 - Stage 2 notification, WaterNSW should also be included as a relevant agency to be notified,	WaterNSW added as a relevant agency to notify at Stage 2.
		In the Trigger Action Response Plans (Table B3 in the OSWMP and Table B4 in the OGWMP), recommend notifying the relevant agencies if a Stage 1 (Low Hazard) trigger continues for greater than 6 weeks, even if Stage 2 is not triggered.	Table B.3 has been updated to clarify when relevant agencies shall be notified if Low Hazard (Stage 1) trigger continues, and where Stage 2 is not triggered.

Agency	Date provided	Comments	Where addressed
Fisheries NSW	7 th February 2025	<p>DPIRD Fisheries believe that the Trigger Action Response Plan (TARP) is not very detailed in providing corrective mitigating actions to address non-compliant adverse surface water quality exceedances and surface water level exceedances in the dam, other than reporting/consulting with regulatory agencies and reviewing the OSWMP.</p> <p>A clear Response and Contingency Plan outlining triggers and actions to be undertaken in such events might be beneficial.</p>	<p>Corrective mitigating actions are determined based on the type and scale of the exceedance. These actions will be determined based on the outcomes of the investigation. Reference to the Pollution Incident Response Management Plan (PIRMP) has been added within the TARP. The PIRMP provides more details around the action and notification protocol as well as site specific hazards and environmental risks.</p>
Revision 3 of this plan was provided to WaterNSW and Fisheries NSW on the 21 st of July 2025 for comment close-out.			
WaterNSW	7 th August 2025	Thank you very much for sending through the updated plans. Water NSW has now reviewed the and have no further comments.	N/A
Fisheries NSW	1 st September 2025	<p>Thank you for your correspondence.</p> <p>I have reviewed the updated OSWMP and am satisfied that my previous comments have been addressed and endorse the revised plan.</p>	N/A
Revision 4 of this plan was provided to WaterNSW and Fisheries NSW on the 8 th of September 2025 for comment close-out			
NSW EPA	22 nd October 2025	<p>Relocation of surface water monitoring location</p> <p>The EPA supports the request to relocate LDP 20 [read:EPL20] (S5) surface water sampling point approximately 200 m downstream due to increasing inaccessibility and workplace safety matters.</p>	<p>Figure 5.3 in the OEMP and Figure B.1 of this document have been updated to present the updated monitoring location for S5 (EPL20).</p>

2 Purpose and Objectives

2.1 Purpose

This OSWMP for the Lidsdale Ash Repository outlines strategies and actions to mitigate environmental impacts during operations. It is designed to set clear protocols and responsibilities, and to thereby ensure that risks are managed and sustainable practices are upheld. This sub-plan supports the OEMP and should be read in conjunction with the OEMP.

2.2 Objectives

Key Issues

The key surface water management issues at the Site are:

- clean water and stormwater separation from the contaminated water system
- incidental ingress of contaminated water into the clean water and stormwater systems
- treatment and discharge of contaminated water via EPL discharge points
- discharge of un-contaminated stormwater
- sediment laden runoff from unsealed roads, and areas where capping earthworks are being undertaken.

Constraints

GPM commenced ownership and responsibility for the Site in September 2020, taking over from EnergyAustralia. GPM's initial focus has been to manage the ongoing regulatory and contractual obligations for the Site. The longer-term objective is to plan for and then undertake the safe closure of the ash dams and repositories and then appropriately remediate the balance of the Site for permanent closure. On 22 August 2022, the EPA issued GPM with a Contaminated Land Declaration Notice which declares the Site as significantly contaminated land under division 2 the *Contaminated Land Management Act 1997*. GPM is required to provide the EPA with a Voluntary Management Proposal to investigate and address the contamination by 18 October 2022.

Currently the Site is operated on a care and maintenance arrangement. GPM are progressively improving the water management system to treat and discharge contaminated water and reduce the volume of contaminated water that requires management and the incidental ingress of contaminated water into the clean water, stormwater and local surface and groundwater systems. These works are expected to result in improvements overtime. However, it is expected that some water management issues can only be resolved via complete rehabilitation of the Site. Accordingly, some residual impacts are expected during the current care and maintenance period.

Strategy

The surface water management subplan establishes procedures for categorising and managing water. The procedures will be implemented across all parts of the water management system that require active management. Examples include an erosion and sediment control plan that would be prepared by a contractor or a plan to manage the diversion of clean water from SSCAD to Sawyers Swamp Creek. The following sections describe water management methods, responsibilities, monitoring requirements and thresholds for discharging to the clean water system. Where required for training and quality purposes, procedures will be developed outside of this OSWMP and will be progressively updated as required.

2.3 Targets

This sub-plan establishes targets and indicators as follows.

Targets:

- As much as practical, separate clean water from the contaminated water system to minimise the volume of contaminated water that requires management.
- Where practical, minimise the incidental discharge of contaminated water into Sawyers Swamp Creek.
- Treat water in SSCAD pond to EPL discharge criteria
- Reuse stormwater across the site for irrigation or construction uses as a priority
- Treat residual stormwater to relevant guidelines and EPL criteria (where appropriate) prior to discharge to the environment
- Reduce exposed areas through erosion and sediment control and rehabilitation to reduce stormwater management requirements over time
- Zero environmental incidents that relate to pollution of waters.

Indicators:

- No significant degradation of the water quality of Sawyers Swamp Creek downstream of the Site.
- The volume of treated water from SSCAD Pond that is discharged via LDP3, as per EPL requirements.

Supporting documentation includes water categorisation procedure (Appendix A), surface water monitoring analytes and methods (Appendix B), baseline monitoring (Appendix C) and a preliminary site water balance (Appendix D).

3 Environmental requirements

3.1 Water management overview

Surface water within the Site is described using the following nomenclature:

- The Site's water management system includes:
 - **Sawyers Swamp Creek Ash Dam (SSCAD)** is an ash dam that was formed in the Sawyers Swamp Creek valley. It is divided into four sections (A, B, C and D) and has a total area of 82 ha. Each section is separated by earthen embankments. Sections A comprises an open water body that is referred to as the SSCAD Pond and currently has areas of exposed ash. Sections B, C and D are referred to as the Upper Dam. A perched groundwater system also exists within the placed ash (the perched SSCAD groundwater system).

The SSCAD Pond is a large water body and is a central feature of the Site's overall water management system. It receives potentially contaminated water from the KVAR/KVAD water management area and the SSCAD embankment drainage system. This assists in minimising incidental surface and groundwater discharges from the Site. The SSCAD Pond also receives runoff from direct rainfall, clean water catchment CW1 and overflows from the SSCAD Upper Dam (Section B, C and D).

Water accumulation in the SSCAD Pond is managed via irrigation to exposed ash areas and at times via controlled discharges to the Coxs River at a licensed discharge point referred to as LDP3. Controlled discharges are treated prior to discharge and are regulated by EPL 21185.

- **KVAR/KVAD water management area** is located to the west (downgradient) of SSCAD. KVAD is the Power Station's original ash dams which used to be an open cut mine void (KVAD) and KVAR is the dry ash compacted stockpile situated on top of the capped KVAD. The combined area now has an associated water management system. A perched groundwater system exists within the KVAR (the perched KVAR groundwater system). Surface water runoff and seepage from this area drains to several water storage areas. Captured water that is known to be contaminated is pumped to the Lidsdale Cut.
- **Sawyers Swamp Creek Diversion** is a clean water system that manages streamflow from the Sawyers Swamp Creek catchment areas to the east and south of SSCAD. The system diverts clean water around SSCAD and the KVAR/KVAD water management area. The diversion eventually joins the Sawyers Swamp Creek channel to the north-west of the Site which eventually flows to the Cox's River.
- The following ancillary areas are located within the Site or are relevant to the Site's water management system:
 - Investigation Area is a 24 ha area located west of the Site, downgradient from the KVAR/KVAD water management area. Parts of this area have been disturbed by mining that is understood to have occurred prior to the 1950s. There are known deposits of coal ash, chitter and a potential landfill in this area. Vegetation has re-established within most of the investigation area. GPM are undertaking an investigation into the potential for surface and groundwater contamination to occur from this area as part of the contaminated land investigations that are a separate process to this OSWMP.

- Upgradient clean water catchments refer to clean water catchment areas that are upgradient of either the SSCAD or the Sawyers Swamp Creek Diversion. Runoff from these catchments has potential to interact with the Site's water management system via either direct inflows or system overflows during certain high flow events. Incidental discharge from the Site's water management system (discussed above) may also enter the Sawyers Swamp Creek Diversion at several locations.
- Downgradient clean water areas refer to parts of the Site that are not known to have been previously disturbed by mining operations or ash placement and drain away from the Site's water management system.
- Dump Creek is a first order watercourse that is located to the west of the Site. Parts of the Investigation Area are within the Dump Creek Catchment. There is also potential for some groundwater from the Site to flow to the north-west towards Dump Creek.
- Surface water within the Site is described using the following categories based on water quality: clean water, stormwater and contaminated water. A water categorisation procedure is provided in Appendix A.
- A site water balance for the site is currently under development and subject the completion of a number of environmental studies currently occurring on the site. A preliminary version of the water balance is attached in Appendix D.

Figure 3.1 shows the abovementioned water management areas and systems.

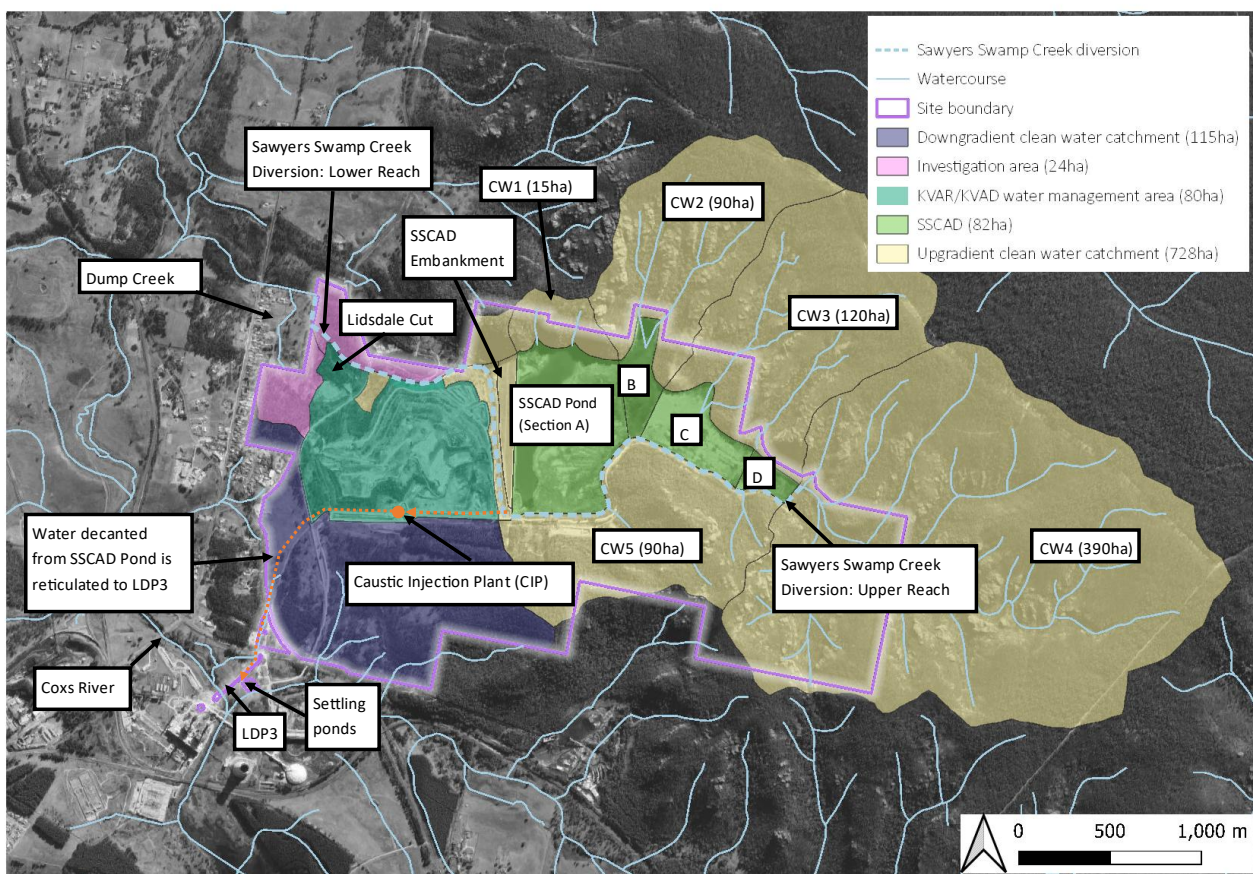


Figure 3.1 Water management areas

Specific procedures related to the decommissioning of water management structures will be included in future revisions of this document as part of closure planning.

3.2 Relevant Conditions of Approval

The relevant CoAs, and where they are addressed in this Sub-plan are provided in Table 3.1.

Table 3.1 Relevant Conditions of Approval and where they are addressed

Relevant CoA	Condition of Approval	Where addressed in this plan
2.30	The Applicant shall take all reasonable and feasible measures to prevent discharge of sediments and pollutants from the construction and operation of the project entering waterways.	Table 4.1 Environmental mitigation measures)
2.31	Earthworks not associated with the realignment of Sawyers Swamp Creek shall not be undertaken within 50 m of the creek where reasonable and feasible.	Table 4.1 Environmental mitigation measures)
2.32	All equipment, machinery and vehicles associated with the construction and operation of the project shall be operated and maintained in a manner that minimises the potential for oil and grease spills/leaks.	Table 4.1 Environmental mitigation measures)
3.5	<p>The Applicant is to implement a surface water quality monitoring program to monitor the impacts of the ash placement activities on, and the realignment of, Sawyers Swamp Creek. The Program shall be developed in consultation with and to the satisfaction of Fisheries NSW and WaterNSW, and shall describe the location, frequency, rationale and the procedures and protocols for collecting water samples as well as the parameters analysed and methods of analysis. The program shall include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> a) monitoring at the four existing water quality monitoring sites as described in the document referred to under condition 1.1 of this approval; b) monitoring downstream of the realigned section of Sawyers Swamp Creek; c) monitoring at groundwater discharge points into Sawyers Swamp Creek; d) wet weather monitoring with a minimum of two events recorded within the first 12 months of both the operation of the project and post realignment of Sawyers Swamp Creek; and e) a schedule for periodic monitoring of surface quality at all sites throughout the life of the project, at an initial frequency of no less than once every month for the first 12 months and must include, but not be limited to, dissolved oxygen, turbidity, total phosphorus and total nitrogen. <p>The monitoring program shall form part of the Surface Water Management Plan referred to in condition 6.5c) of this approval.</p>	Appendix B (Surface Water Monitoring Plan)
6.5c	<p>A Surface Water Management Plan to outline measures that will be employed to manage water on the site, to minimise soil erosion and the discharge of sediments and other pollutants to lands and/or waters throughout the life of the project. The Plan shall be based on best environmental practice and shall be prepared in consultation with, and to the satisfaction of, WaterNSW and Fisheries NSW. The Plan shall include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> i. baseline data on the water quality and flow in Sawyers Swamp Creek up to the date of this approval; ii. <i>Left blank due to typo in the Planning Approval</i> 	Appendix C (Baseline Monitoring)

Relevant CoA	Condition of Approval	Where addressed in this plan
	iii. water quality objectives and impact assessment criteria for Sawyers Swamp Creek;	Appendix A (Water quality categorisation procedure)
	iv. a program to monitor surface water quality in Sawyers Swamp Creek as referred to in condition 3.5 of this approval;	Appendix B (Surface Water Monitoring)
	v. a protocol for the investigation of identified exceedances in the impact assessment criteria;	Appendix B (Surface Water Monitoring)
	vi. a response plan to address potential adverse surface water quality exceedances;	Appendix B (Surface Water Monitoring)
	vii. a site water management strategy identifying clean and dirty water areas for Stages A, B and C of the project and the associated water management measures including erosion and sediment controls and provisions for recycling/reuse of water and the procedures for decommissioning water management structures on the site; and	Section 3.1, Table 4.1 Environmental mitigation measures, Appendix D (Site water balance). It is noted that these stages of the approved development were completed by others prior to GPM ownership of the site.
	viii. provisions for periodic reporting of results to the Fisheries NSW and WaterNSW.	Section 5.2

3.3 Compliance tracking

CoA 4.2 mandates a compliance tracking program to track compliance with the requirements before commencing operations. A compliance tracking program has been prepared for internal use by GPM to ensure effective and efficient tracking of compliance (refer Section 3.6 of the OEMP for further details on compliance tracking).

Detail on compliance management, including roles and responsibilities, is provided throughout Section 3 of the OEMP.

4 Environmental management

4.1 Management measures

Management actions to minimise operational impacts are summarised in Table 4.1. This describes the water management approach for each water quality category (i.e. clean water, stormwater and contaminated water) and monitoring and reporting requirements.

Table 4.1 Environmental mitigation measures

Relevant aspect	Management and mitigation measures	Source of requirement	Frequency	Relevant records	Responsibility
Clean water management	Clean water will be identified using the water quality categorisation procedure (see Appendix A of the OSWMP).	This OSWMP and CoA 2.30	Ongoing	Appendix A ESDAT database	GPM
	Where practical, clean water will be separated from stormwater and contaminated water systems and will be diverted into a designated clean water drainage system, such as the Sawyers Swamp Creek Diversion.	This OSWMP and CoA 2.30	Ongoing	Appendix A ESDAT database	GPM
	Any clean water diversion system that manages water that is potentially exposed to ash will require ongoing monitoring and review. A procedure will be prepared for each system. Each procedure will describe: <ul style="list-style-type: none"> • how clean water is to be diverted; • ongoing monitoring requirements; and • thresholds for ceasing the diversion. 	This OSWMP, CoA 2.30 and CoA 6.4c)	Ongoing	Appendix A ESDAT database	GPM
Site management	Earthworks not associated with the realignment of Sawyers Swamp Creek shall not be undertaken within 50 m of the creek where reasonable and feasible.	CoA 2.31	Ongoing	Site inspection reports	GPM
	All equipment, machinery and vehicles associated with the construction and operation of the project shall be operated and maintained in a manner that minimises the potential for oil and grease spills/leaks.	CoA 2.32	Ongoing	Site inspection reports	GPM
Stormwater management	Stormwater will be identified using the water quality categorisation procedure (see Appendix A).	This OSWMP and CoA 2.30	Ongoing	Appendix A	GPM
	Water that is identified as stormwater is to be managed in accordance with the methods described in <i>Managing Urban Stormwater Soils and Construction: Volume 1</i> (Landcom 2004) and <i>Volume 2E Mines and Quarries</i> (DECC 2008).	This OSWMP, CoA 2.30 and CoA 6.4c)	Ongoing	Site inspection reports ESCPs	GPM

Relevant aspect	Management and mitigation measures	Source of requirement	Frequency	Relevant records	Responsibility
	A plan will be prepared for the Site that shows: all stormwater catchment areas, stormwater drainage lines, sedimentation basins, overflow locations and irrigation areas (if relevant). The plan will be progressively updated as required.	This OSWMP, CoA 2.30 and CoA 6.4c)	Ongoing	This OSWMP	GPM
	Any stormwater system that manages runoff or interflow that is potentially exposed to ash and/or potentially receives some contaminated water ingress will require ongoing monitoring and review. Monitoring and review requirements have been established.	This OSWMP, CoA 2.30 and CoA 6.4c)	Ongoing	Appendix A, Surface water TARP, ESDAT database	GPM
Contaminated water management	Contaminated water will be identified using the water quality categorisation procedure (see Appendix A).	This OSWMP and CoA 2.30	Ongoing	Appendix A, Surface water TARP, ESDAT database	GPM
	Where practical, contaminated water will be separated from clean and stormwater systems.	This OSWMP and CoA 2.30	Ongoing	Nil	GPM
	All known sources of contaminated water, the contaminated water management system, operating procedures (including response and contingency procedures) and monitoring and reporting requirements will be established. These will be progressively updated as required.	This OSWMP, CoA 2.30 and CoA 6.4c)	Ongoing	Appendix A, Appendix B, ESDAT database	GPM
	The accumulation of contaminated water will be managed by irrigation to exposed ash, natural evaporation and controlled discharges to the Coxs River at LDP3. Controlled discharges will be undertaken in accordance with the requirements of EPL 21185.	This OSWMP and CoA 2.30	Ongoing	Appendix A, Appendix B, ESDAT database	GPM
Routine surface water quality monitoring	Routine monitoring will be undertaken at the following locations: <ul style="list-style-type: none"> • Coxs River <ul style="list-style-type: none"> – WX12 – upstream of Sawyers Swamp Creek confluence – S1 – downstream of Sawyers Swamp Creek confluence • Sawyers Swamp Creek <ul style="list-style-type: none"> – SS5 - upstream of SSCAD 	This OSWMP, CoA 2.30 and CoA 6.5c)	Quarterly sampling preferably conducted during dry conditions.	All water quality results will be reported in the AEMR, EPL annual return, EPL data reporting	GPM

Relevant aspect	Management and mitigation measures	Source of requirement	Frequency	Relevant records	Responsibility
	<ul style="list-style-type: none"> - S6 – downstream of SSCAD, upstream of SSCAD embankment and KVAR/KVAD water management area - S5 – downstream of SSCAD, SSCAD embankment and the eastern part of KVAR/KVAD water management area - WX5 – upstream of Lidsdale Cut, downstream of SSCAD, SSCAD embankment and the KVAR/KVAD water management area - WX7 – downstream of the Site and Dump Creek • Dump Creek <ul style="list-style-type: none"> - WX11 – located immediately upstream of the confluence with Sawyers Swamp Creek • Water management dams <ul style="list-style-type: none"> - SSCAD Pond and BLKH – water bodies located behind the SSCAD embankment on SSCAD - Lidsdale Cut – a former open cut that contaminated water from the KVAR/KVAD Water Management Area is reticulated to. <p>It is noted that additional monitoring within the water management system may be undertaken as required. This monitoring is referred to as Operational Monitoring and will be used to inform the operation of the water management system and therefore does not need to be reported in the AEMR.</p> <p>Appendix B provides monitoring analytes, analysis methods and more detailed information on each surface water monitoring location.</p>				

Relevant aspect	Management and mitigation measures	Source of requirement	Frequency	Relevant records	Responsibility
Water quality monitoring results analysis	<p>Surface water quality results will be compared to:</p> <ul style="list-style-type: none"> Guideline Values (GVs) for a slightly-to-moderately disturbed upland river system. GV's are provided in Appendix A; and Water quality trends at each sampling location (where available) since July 2019. Earlier data is not considered to be relevant due to the water quality in Sawyers Swamp Creek being strongly influenced by discharges from Springvale Colliery that occurred between 2013 and July 2019. <p>The results will be interpreted by a suitably qualified professional who will describe any deviations from GV's and changes to water quality trends.</p> <p>To comply with CoA 6.5c), the results will also be separately compared to the baseline data that is referenced in CoA 6.5c). This baseline data relates to data collected between July 2004 and January 2006 at the four surface water monitoring locations as per CoA 3.5. Immediately prior to this period wet ash placement in SSCAD had ceased. Dry ash was being placed in Stage 1 of KVAR over the period. Hence, this data is not representative of pre-disturbance conditions and has little relevance to current site conditions.</p>	This OSWMP	Monthly as part of the AEMR	All water quality results will be reported in the AEMR and in accordance with the EPL	GPM
Reporting	<p>An Annual Surface Water Quality Review (ASWQR) will be prepared as part of the AEMR. The ASWQR will include:</p> <ul style="list-style-type: none"> a description of weather and streamflow conditions over the AEMR period (the period); a description of the water management system that was operated over the period; and all water quality data and analysis. <p>The AEMR will:</p> <ul style="list-style-type: none"> include a summary of the ASWQR; and describe any reported surface water incidents over the period. 	This OSMP and CoA 7.3	Annually	AEMR	GPM

4.2 Water treatment system

Following consultation with the EPA in early 2022 GPM committed to installing a new LDP3 Treatment System. Initial modifications to the historic system and the discharge regime were made in March 2022. The new system was constructed and installed over the balance of 2022 and was completed in January 2023. Commissioning and operation of the new system commenced in February 2023.

The system includes the following features:

- Treatment processes
 - The Caustic Injection Plant (CIP) was modified to enable an initial pH adjustment to the 8.5 to 9.5 range, allowing for the optimum pH for metal removal to be established
 - Metal and polymer coagulants and limestone have been added to the treatment process to enhance co-precipitation and flocculation of metals in the Return Canal, which is used as an extended settling basin
 - Passive mixing tanks were installed between the CIP and the Return Canal. The tanks enhance reaction times and the overall effectiveness of the treatment system
 - The system utilises the original Return Canal as a partitioned extended settling basin. This modification facilitates increased residence time which enhances removal of metals and improves sludge management
 - Treated water from the Return Canal is pumped into the existing gravity main that reticulates water to the settling ponds (see Figure 4.1). pH adjustment to within the EPL range 6.5 - 8.5 is made at this point in the treatment process if required. This mechanism can also be used as a second stage pH adjustment to target removal of any residual metals that are less soluble at near-neutral pH (ie aluminium)
 - The existing settling ponds have been maintained to allow for the settling of any residual sludge. The ponds continue to overflow at the LDP3 discharge location, as per the historic arrangement.
- Discharge restrictions – EPL condition L2.5 applies the following restrictions on discharges at LDP3:
 - Minimum streamflow – discharge can only occur when streamflow in the Coxs River is above the wet weather threshold defined in EPL. Wet weather was initially defined as a streamflow of ≥ 20 ML/day but was reduced to ≥ 10 ML/day when the EPL was varied on 19 December 2023.
 - Minimum streamflow to discharge ratio - when streamflow in the Coxs River is higher than the wet weather threshold, discharges can occur at rates that maintain a minimum streamflow to discharge ratio of 10:1. For example, a 2 ML/day discharge can occur when the streamflow is 20 ML/day, a 4 ML/day discharge can occur when the streamflow is 40 ML/day.

The recorded streamflow at the NSW Water operated stream gauge (number 212054) located immediately upstream of the LDP3 discharge location is used to calculate daily discharge rates. A conceptual process flow diagram is provided in Figure 4.1. Photograph 4.1 shows inflows into the Return Canal and Photograph 4.2 is an aerial image of the eastern portion of the treatment system that shows the CIP, mixing tanks, eastern portion of the Return Canal and the acid dosing system.

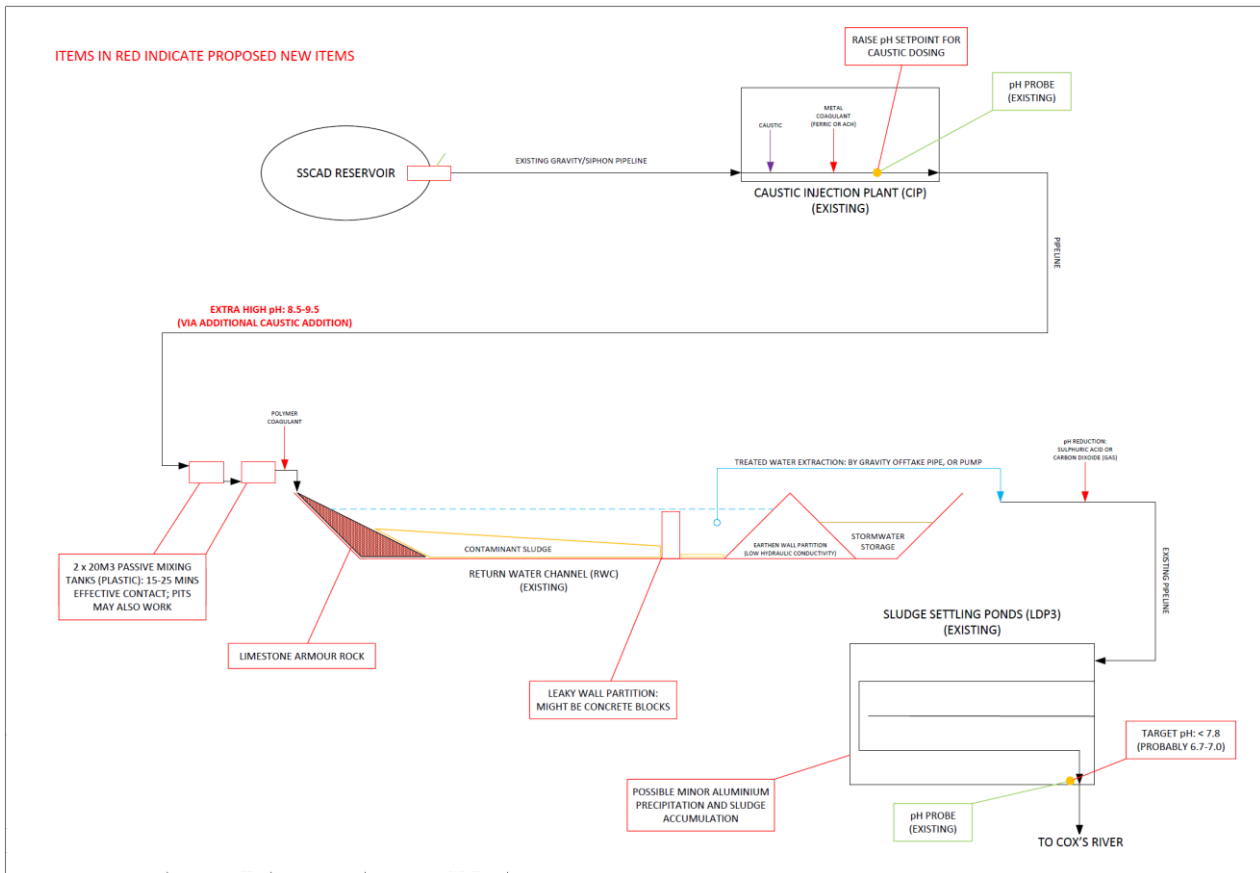
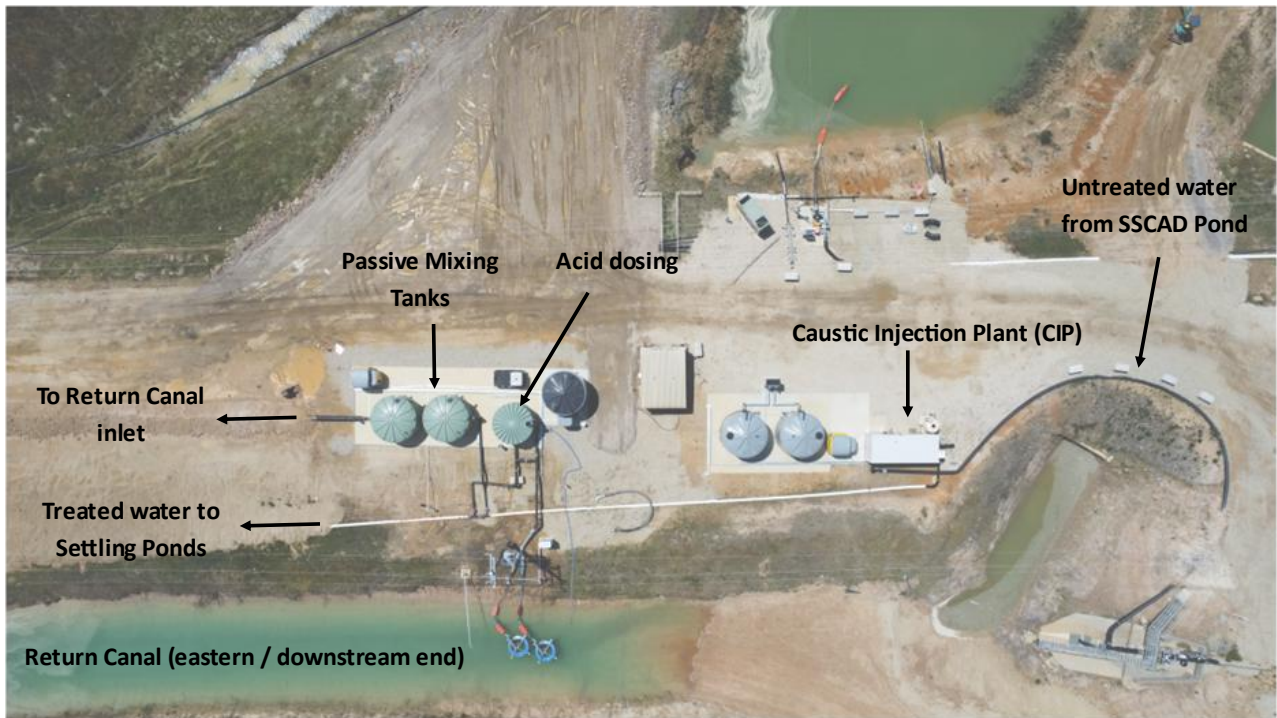


Figure 4.1 New LDP3 Treatment System



Photograph 4.1 Inflows into the Return Canal



Photograph 4.2 LDP3 Treatment System – eastern end

5 Administrative requirements

5.1 Incidents and non-compliances

5.1.1 Incidents

All incidents will be reported and investigated, and corrective actions assigned to prevent future occurrences in accordance with the OEMP Section 3.8.

The approval defines an incident as:

A set of circumstances that causes or threatens to cause material harm to the environment, and/or breaches or exceeds the limits or performance measures/criteria in this approval.

Material harm (which includes actual or potential harm) to the health or safety of human beings or to ecosystems that is not trivial or that results in actual or potential loss or property damage exceeding a threshold dollar value as identified by the POEO Act.

The Secretary must be notified in writing via the Major Projects website immediately after the Project team becomes aware of an incident in accordance with CoA 7.1. The notification must identify the development (including the application number and the name of the development if it has one) and set out the location and nature of the incident.

Section 3.8 of the OEMP details environmental incidents and the response to environmental emergencies for the Project. This includes the reporting, notification and investigation of environmental incidents. Emergency contact details are also provided. In the event of an environmental incident or emergency related to the implementation of this OSWMP, the responses detailed in the OEMP are to be implemented.

5.1.2 Non-compliance

The approval defines non-compliance as:

An occurrence, set of circumstances or development that is a breach of the approval but is not an incident.

The Secretary must be notified in writing via the Major Projects website within seven days after the Project team becomes aware of any non-compliance in accordance with CoA 7.2. A non-compliance notification must identify the development and the application number for it, set out the condition of approval that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.

Section 3.8.1 of the OEMP details the Project team's response following the identification of a non-compliance with the CoA, the OEMP and associated sub-plans. This includes the reporting, investigation and notification of non-compliances. Non-compliance with this OSWMP will be addressed as required by the OEMP.

5.2 Reporting

Environmental monitoring for the Lidsdale Ash Repository area is designed to comply with the requirements of statutory approvals and provide an analysis of the condition of the environment surrounding the works.

An overview of the environmental monitoring activities for the project area specified under Section 5 of the OEMP.

Surface water quality monitoring frequency and locations are specified in the Surface Water Monitoring Program in Appendix B.

Surface water quality data, including the trends for monitoring sites, will be incorporated into the Annual Environmental Management Report (AEMR) which will be submitted to the Secretary each year. In accordance with CoA 6.5(c)viii, the surface water component of the AEMR will also be provided to WaterNSW and Fisheries NSW.

5.3 Review

A review of the OEMP, sub-plans (including this OSWMP) and monitoring programs will be undertaken during operations as required. These reviews will be completed to determine the efficiency of the plans and monitoring programs and whether any changes are required to ensure compliance.

Circumstances which may trigger a review include:

- changes to design, construction, work methods, legislation, or policy
- incidents, complaints or non-compliance
- changes identified by continuous improvement
- changes to key management plans that are relevant
- where additional monitoring measures are identified in annual reviews or audits.

In addition and in accordance with CoA 6.6, GPM will review and, if necessary, revise the studies, strategies and plans required under the conditions of approval to the satisfaction of the Secretary within three months of:

- the submission of an incident report under CoA 7.1
- the submission of an Annual Review under CoA 7.3
- the submission of an Independent Environmental Audit under CoA 4.2
- the modification of the conditions of this approval (unless the CoAs require otherwise).

Where this review leads to revisions in any such document, then within 4 weeks of the review, GPM will submit the revised document to the Secretary for approval, unless otherwise agreed with the Secretary.

In accordance with CoA 6.5A, this OSWMP has been updated prior to the importation of capping material to the site from sources outside of the Lithgow local government area.

Appendix A: Water quality categorisation procedure

Procedure

Surface water within the Site is described using the following water quality categories:

- clean water
- stormwater
- contaminated water.

Table A.1 provides a water quality categorisation procedure. The procedure can be applied to any waterbody within the Site's water management system.

Table A.1 Water quality categorisation procedure

Item	Categorisation criteria	Water quality monitoring requirements
1	Clean water – water can be categorised as clean water if it meets any of the following criteria:	
1.1	Water that flows onto the Site from upgradient areas and is separated from the stormwater and contaminated water systems in a dedicated clean water drainage system.	<ul style="list-style-type: none"> • Nil Note: the water quality in Sawyers Swamp Creek will be monitored as part of the routine surface water monitoring program (see Surface Water Subplan).
1.2	Surface water runoff from undisturbed areas of the Site that are outside of the KVAR/KVAD water management area. An undisturbed area is any area that has not been previously disturbed and is vegetated or has been previously disturbed but has been rehabilitated.	<ul style="list-style-type: none"> • Nil Note: the water quality in Sawyers Swamp Creek will be monitored as part of the routine surface water monitoring program (see Appendix B).
1.3	Any water that has water quality consistent with: <ul style="list-style-type: none"> • Guideline values (GVs); or • The water quality in Sawyers Swamp Creek upstream of the SSCAD (monitoring location SS5), based on 80th percentile values or the water quality at SS5 at the time of sampling. GV and 80th percentile values at SS5 are provided in Table A.2.. Consistency with water quality criteria can be assessed on an analyte-by-analyte basis (i.e. the criteria would be met if some analytes meet GV and others meet upstream water quality values).	Initial period – applies to waterbodies that have not been previously categorised as being clean water or if material changes in the water management system or operating procedures occur. During the initial period, weekly water quality monitoring is required when discharge from the waterbody to the clean water system occurs. The initial period is to continue until: <ul style="list-style-type: none"> • the water quality criteria are met in five consecutive representative samples; or • if results from ten or more representative samples are available and 80th percentile values meet the water quality criteria. After initial period – monthly water quality monitoring is required when discharge from a waterbody to the clean water system occurs. The monthly monitoring frequency can continue if: <ul style="list-style-type: none"> • the water quality criteria are met; or • if results from ten or more representative samples are available and 80th percentile values meet the water quality criteria.

Item	Categorisation criteria	Water quality monitoring requirements
2	Stormwater – water can be categorised as stormwater if it meets any of the following criteria:	
2.1	Catchment areas outside of the KVAR/KVAD water management area (see Figure 3.1): <ul style="list-style-type: none"> Any surface water runoff from unsealed roads, unvegetated areas (ie exposed batters) or areas where earthworks are being undertaken. 	<ul style="list-style-type: none"> Nil <p>Note: the water quality in Sawyers Swamp Creek will be monitored as part of the routine surface water monitoring program.</p>
2.2	Stormwater storages that receive runoff from KVAR/KVAD water management area (see Figure 3.1). These storages may receive some contaminated water ingress. <ul style="list-style-type: none"> Water that has water quality consistent with clean water (as described in item 1.3) but has elevated turbidity and potentially electrical conductivity. 	As per monitoring requirements for item 1.3.
3	Contaminated water – is any water that is:	
3.1	<ul style="list-style-type: none"> Known to be contaminated. This includes water in SSCAD Pond, seepage from the SSCAD embankment and seepage and subsurface drainage discharges from the KVAR/KVAD water management area. 	<ul style="list-style-type: none"> Nil <p>Note: monitoring is not required to categorise contaminated water as the focus of water categorisation monitoring is to demonstrate that clean water and stormwater is not contaminated.</p>
3.2	<ul style="list-style-type: none"> Not clean water or stormwater. 	

Guideline Values and upstream water quality

Table A.2 provides guideline values (GVs) and information on upstream water quality that can be applied to categorising water quality. It is noted that:

- The GV are the default values for a slightly-to-moderately disturbed upland river system (95% species protection) that are provided in ANZG 2018 and other references.
- The 80th percentile values at Sawyers Swamp Creek upstream of SSCAD (monitoring site SS5) have been calculated using:
 - data from samples collected between 2013 to 21 July 2022 that were available for pH (73 samples), EC (69 samples), turbidity (70 samples), fluoride (71 samples), total nitrogen (73 samples) barium (22 samples), boron (25 samples), copper (26 samples), iron (71 samples), manganese (67 samples), vanadium (50 samples) and zinc (50 samples)
 - data from samples collected between January 2022 and January 2025 that were available for total suspended solids (120 samples), total phosphorus (122 samples), filterable reactive phosphate (90 samples), oxides of nitrogen (122 samples) and ammonia (122 samples).

Table A.2 GVs and upstream water quality

Parameters	Units	Guideline values (GVs)		Sawyers Swamp Creek upstream of SSCAD (SS5)	
		GV	Source	80th percentile value ¹	At time of sampling
Physico-chemical parameters					
pH	-	6.5 - 8.0	Default Guideline Value (DGV) for upland river in south-east Australia (Table 3.3.2; ANZECC 2000)	5.5 – 6.8	To be established via monitoring
EC	µS/cm	350	DGV for NSW upland rivers (Table 3.3.3; ANZECC 2000)	114	
Turbidity	NTU	2 - 25	DGV for upland river in south-east Australia (Table 3.3.2; ANZECC 2000)	26	
Total suspended solids	mg/L	25	DGV for NSW upland river (Table 8.2.12; ANZECC 2000)	9	
Ions					
Fluoride	mg/L	1.7	Moderate-reliability DGVs for fluoride (ANZ 2024)	0.2	To be established via monitoring
Nutrients					
Total phosphorus	mg/L	0.02	DGV for upland river in south-east Australia (Table 3.3.2; ANZECC 2000)	0.05	To be established via monitoring
Filterable reactive phosphate as P	mg/L	0.015	DGV for upland river in south-east Australia (Table 3.3.2; ANZECC 2000)	0.005	
oxides of nitrogen as N (NOx)	mg/L	0.015	DGV for upland river in south-east Australia (Table 3.3.2; ANZECC 2000)	0.010	
Total nitrogen as N	mg/L	0.25	DGV for upland river in south-east Australia (Table 3.3.2; ANZECC 2000)	0.9	
Ammonia as N	mg/L	0.9	Very high reliability DGV (at pH 8) (ANZG 2018)	0.012	
Metals				Refers to results from 45 µm filtered samples only	
Aluminium	mg/L	0.055	Low reliability DGV (pH > 6.5) (ANZG 2018)	0.160	To be established via monitoring
Antimony	mg/L	0.009	Unknown reliability DGV (ANZG 2018)	<0.001	
Arsenic	mg/L	0.013	Moderate reliability DGV for As(V) (ANZG 2018)	<0.001	
Barium	mg/L	2	Australian Drinking Water Guidelines Version 3.9 (NHMRC 2024) Health-Based Guideline Value	0.055	
Boron	mg/L	0.94	Very high reliability DGV (ANZG 2018)	<0.05	

Parameters	Units	Guideline values (GVs)		Sawyers Swamp Creek upstream of SSCAD (SS5)	
		GV	Source	80th percentile value ¹	At time of sampling
Cadmium	mg/L	0.0002	Very high reliability DGV (ANZG 2018)	<0.0001	
Chromium	mg/L	0.001	Very high reliability DGV for Cr(VI) (ANZG 2018)	<0.001	
Cobalt	mg/L	0.0014	Unknown reliability DGV (ANZG 2018)	0.005	
Copper	mg/L	0.0014	Very high reliability DGV (ANZG 2018)	<0.001	
Iron	mg/L	0.3	Canadian guideline level (CCREM 1987) Interim working level (ANZECC 2000)	0.61	
Lead	mg/L	0.0034	Moderate reliability DGV (ANZG 2018)	<0.001	
Manganese	mg/L	1.9	Moderate reliability DGV (ANZG 2018)	0.265	
Mercury	mg/L	0.00006	Moderate reliability DGV for 99% species protection level recommended for slightly to moderately disturbed systems due to the potential for bioaccumulation (ANZG 2018)	<0.00004	
Molybdenum	mg/L	0.034	Unknown reliability DGV (ANZG 2018)	<0.001	
Nickel	mg/L	0.011	Low reliability DGV (ANZG 2018)	0.002	
Selenium	mg/L	0.005	Moderate reliability DGV for 99% species protection level recommended for slightly to moderately disturbed systems due to the potential for bioaccumulation (ANZG 2018)	<0.01	
Silver	mg/L	0.00005	Low reliability DGV (ANZG 2018)	<0.001	
Vanadium	mg/L	0.006	Unknown reliability DGV (ANZG 2018)	<0.01	
Zinc	mg/L	0.008	Very high reliability DGV (ANZG 2018)	0.034	

Notes: 1. ID refers to insufficient data. 80th percentile values can be updated once additional data becomes available (for analytes that have results from ten or more representative samples).

It is noted that analyte suite provided in Table B.1 includes the following analytes that are not included in Table A.2. These analytes (listed below) are to be monitored to provide information on water chemistry but do not need to be considered when categorising water quality against potential physical and chemical stressors or toxicants (as GV's have not been established):

- dissolved oxygen (DO), redox, hardness, alkalinity, and total dissolved solids
- anions and cations including chloride, sulfate, sodium, potassium, calcium, and magnesium
- nutrients including total kjeldahl nitrogen
- metals including beryllium and strontium (it is noted that barium and iron have no defined GV within ANZ 2018, however there are applicable recommendations associated with these parameters)

The development of GV's for various stressors and toxicants are ongoing. Where new information on GV's is available, this table will be updated as part of future periodical management plan reviews.

Appendix B: Surface Water monitoring

Monitoring analytes and analysis methods

Table B.1 provides the surface water monitoring analytes and analysis methods.

Table B.1 Monitoring analytes and methods

Category	Analytes	Sampling and analysis methods
Streamflow conditions	Continuous flow monitoring (at select locations SS5 and S6) and observations at time of sampling	Note and photograph of streamflow (i.e. dry, stagnant or flowing) or water storage conditions at the time of sampling
Physio-chemical parameters	pH, turbidity, electrical conductivity, dissolved oxygen, redox	Analysis is to be undertaken using a calibrated water quality meter OR by a NATA-certified laboratory.
	Total suspended solids	Analysis is to be undertaken by a NATA-certified laboratory.
	Total dissolved solids	
	Total hardness (as CaCO ₃)	
	Total alkalinity (as CaCO ₃)	
	Ammonia as N, oxides of nitrogen as N (NO _x), total kjeldahl nitrogen (TKN) as N and total nitrogen as N	
	Total phosphorus as P Filterable reactive phosphate as P	
Anions	Chloride, fluoride, sulfate	Analysis is to be undertaken by a NATA-certified laboratory.
Cations	Sodium, potassium, calcium, magnesium	Analysis is to be undertaken by a NATA-certified laboratory.
Metals and Metalloids (dissolved)	aluminium (Al), antimony (Sb), arsenic (As), barium (Ba), beryllium (Be), boron (B), cadmium (Cd), chromium (Cr), cobalt (Co), copper (Cu), iron (Fe), lead (Pb), manganese (Mn), mercury (Hg), molybdenum (Mo), nickel (Ni), selenium (Se), silver (Ag), strontium (Sr), vanadium (V) and zinc (Zn)	Samples for dissolved metals analysis are to be filtered using a 0.45 µm filter.
		Analysis is to be undertaken by a NATA-certified laboratory.

Surface water monitoring locations and frequency

Table B.2 describes the surface water monitoring locations and monitoring objectives, while Figure B.1 shows the monitoring locations. Monitoring at all locations should be undertaken within a single day and samples from the Coxs River and Sawyers Swamp Creek should be collected from upstream to downstream to minimise the potential for changing streamflow conditions during the sampling period to impact the results.

Table B.2 Surface water monitoring locations and frequency

ID	Description	Monitoring objective	Frequency
WMS3	Lidsdale Cut	Lidsdale Cut is one of the storages in the KVAR water management system (see Chapter 2). It receives runoff and collected seepage from the western portion of the KVAR water management area. Lidsdale Cut is dewatered to SSCAD Pond on an as needed basis.	Monthly monitoring

ID	Description	Monitoring objective	Frequency
WX11	Dump Creek	Dump Creek is a 1st order watercourse located to the west (down gradient) of the KVAR water management area (see Figure B.1 Error! Reference source not found.). It flows to the north and joins Sawyers Swamp Creek upstream of WX7 (see Figure B.1).	Monthly monitoring
WMS1	Sawyers Swamp Creek Ash Dam	This monitoring location is in the SSCAD Pond (see Figure B.1). To characterise water quality in SSCAD Pond and comply with CoA 3.5a	Monthly monitoring
WX7	Sawyers Swamp Creek	WX7 is located on Sawyers Swamp Creek approximately 500 m downstream of the Site.	Monthly monitoring
WX12	Upstream of Sawyers Swamp Creek confluence	To characterise the quality of the water in the Coxs River upstream and downstream of the Sawyers Swamp Creek confluence	Monthly monitoring
S1	Downstream of Sawyers Swamp Creek confluence	and to enable an assessment of water quality impacts to the Coxs River.	Monthly monitoring
SS5	Upstream of SSCAD	SS5 is located upstream of SSCAD and is therefore not potentially impacted by the Site's water management system. Water quality data from SS5 can be used to: <ul style="list-style-type: none"> • identify changes in Swayer Swamp Creek water quality within the Site (i.e. by comparison with downstream samples); and • categorise water quality within the Site's water management system. It is noted that historically S7 has been used as an upstream monitoring location. SS5 replaces S7 as it was recently discovered that S7 is on a tributary to Sawyers Swamp Creek.	Monthly monitoring
S6	Downstream of SSCAD, upstream of SSCAD embankment and KVAR / KVAD water management area	To identify changes in water quality in the upper reach of the Sawyers Swamp Creek Diversion, which flows to the south of SSCAD.	Monthly monitoring
S5	Downstream of SSCAD, SSCAD embankment and the eastern part of KVAR / KVAD water management area	To identify changes in water quality in the Sawyers Swamp Creek Diversion reach, that flows between the SSCAD embankment and the eastern portion of the KVAR/KVAD water management area. This reach may receive seepage from SCCAD and the eastern portion of KVAD.	Monthly monitoring
WX5	Downstream of SSCAD, SSCAD embankment and KVAR / KVAD water management area, adjacent to Lidsdale Cut	To identify changes in water quality in the lower reach of the Sawyers Swamp Creek Diversion, which flows past the northern portion of the KVAR/KVAD water management area. This reach of the creek may receive seepage from western and northern portions of KVAD.	Monthly monitoring

ID	Description	Monitoring objective	Frequency
BLKH	Located in the Blackhole which is a waterbody that has formed adjacent to placed ash in SSCAD.	To characterise water quality in the Blackhole which receives a combination of ash drainage and catchment runoff from the north of the site (this includes construction of collection ponds).	Monthly monitoring
WX9	Downstream of Sawyers Swamp Creek confluence, upstream of LDP3.	LDP3 discharge monitoring	Weekly when discharge at LDP3 is occurring
LDP3	Controlled discharge location from the LDP3 Water Treatment System, which treats water from SSCAD Pond.		Weekly when discharge at LDP3 is occurring
WX10A	Downstream of Sawyers Swamp Creek confluence, downstream of LDP3.		Weekly when discharge at LDP3 is occurring

In accordance with CoA 3.5 (d), wet weather monitoring will be undertaken at least twice at all locations listed in Table B.2 within the first 12 months of both the operation of the project (commenced in 2008) and post realignment of Sawyers Swamp Creek (yet to occur).

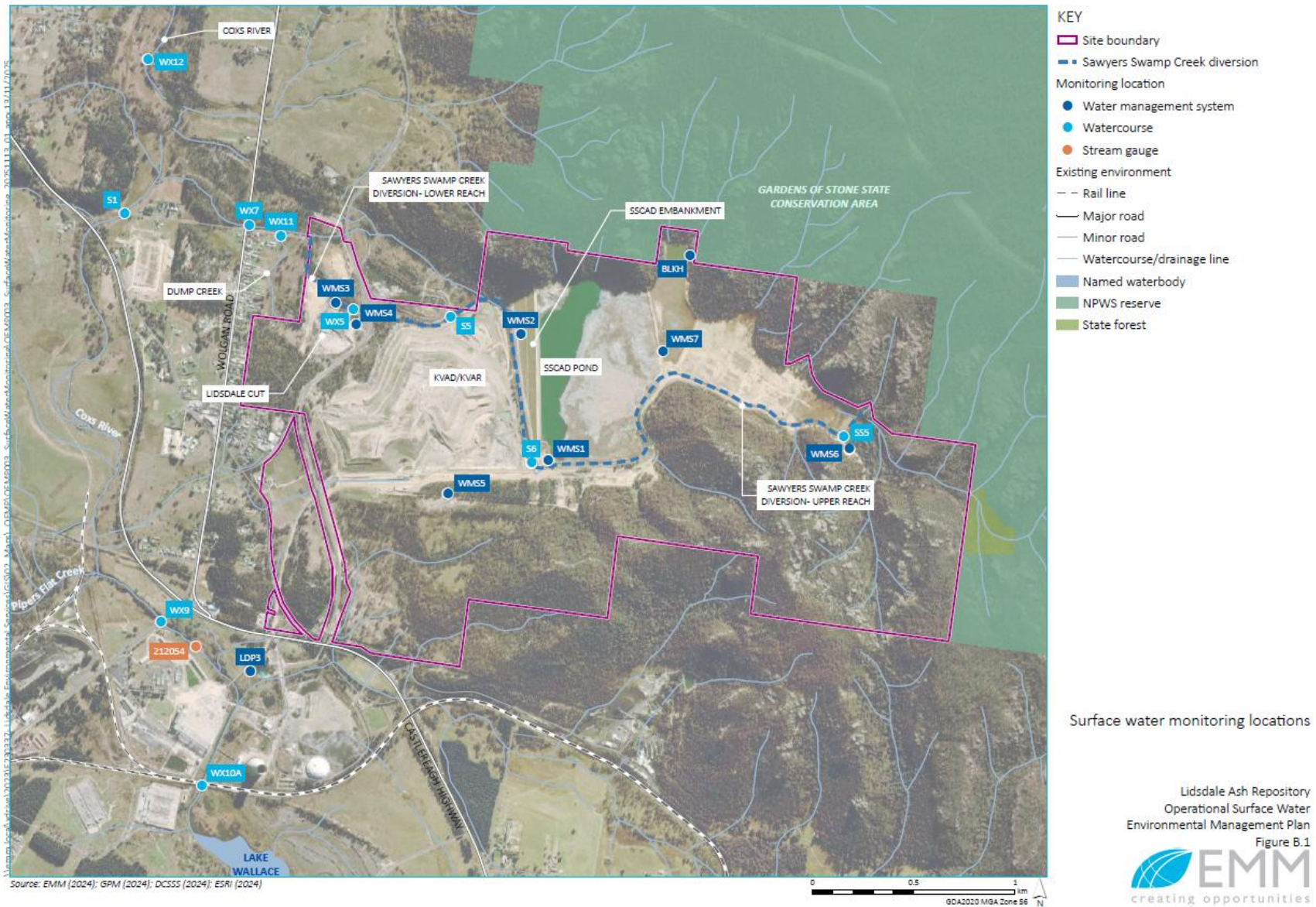


Figure B.1 Surface water monitoring locations

Surface water monitoring will be undertaken from the Site monitoring locations in accordance with this monitoring program, a protocol for identifying and investigating any exceedances of the surface water impact assessment criteria and for notifying DPHI and other relevant stakeholders is provided in the TARP (refer Table B.3). The TARP establishes methods to identify the source of surface water quality exceedances and if necessary, establish actions to further investigate the exceedance.

The surface water TARP and trigger values may be refined in future years as more site-specific surface water data are obtained.

Table B.3 Trigger Action Response Plan

Aspect	Normal Conditions	Stage 1 – Low Hazard	Stage 2 – Non-compliance	Notifications
<p>Surface water level</p> <p>(NOTE: this does not include SSCAD, management as per Dam Safety requirements)</p>	<p>Surface water levels in water containment dams, leachate dams and stormwater dams are at or below the long-term median water levels</p>	<p>Trigger: Dam water levels are within 500mm of spillway discharge. No water leaving site.</p> <p>Action: Continue to monitor weather and assess water level data, establish trends and correlate with site activities and climatic data.</p> <p>Determine whether any decrease in water level may be required due to forecast rainfall.</p> <p>Calculate and predicted rainfall and assess dewatering requirements.</p> <p>If a Stage 1 trigger continues for greater than 6 weeks¹, relevant agencies, DPHI, WaterNSW and the EPA, will be notified.</p>	<p>Trigger: Water levels have risen to exceed the spillway height and water is discharging from site.</p> <p>Contaminated water is discharging from containment ponds.</p> <p>Action:</p> <p>Enact Pollution Incident Response Management Plan (PIRMP)</p> <p>Pump water to alternative storages where capacity is available. Commence monitoring of any discharges not already captured by existing telemetry. Engage hydrologist specialist to assess and confirm containment capacity.</p> <p>Work with regulators to determine necessary remediation actions.</p> <p>Review the SWMP and related procedures to prevent reoccurrence.</p>	<p>Stage 1: Notify environmental coordinator and site manager as soon as practicable.</p> <p>Stage 2: Notify relevant agencies (EPA, DPHI, WaterNSW). Notification to DPHI via the NSW Planning Portal immediately after the incident is identified (CoA 7.1), subsequent notification within 7 days of identified non-compliance (CoA 7.1, CoA Appendix 3). Written incident notification within seven days and a full report in 30 days to DPHI. EPA reporting of material harm (EPL 21185 R2) required immediately after the incident is identified and within 7 days (R2.2). Further reports may be requested by DPHI and/or EPA.</p> <p>Review of the OSWMP is required within 3 months of notification of an incident or non-compliance under CoA 6.6a.</p>

Aspect	Normal Conditions	Stage 1 – Low Hazard	Stage 2 – Non-compliance	Notifications
Surface water quality	Surface water quality is within or below the values specified in Appendix A	<p>Trigger: Water quality is outside or above the values in Appendix A.</p> <p>Action: Undertake investigation to determine if the change in water quality is related to site operations.</p> <p>If a Stage 1 trigger continues for greater than 6 weeks¹, relevant agencies, DPFI, WaterNSW and the EPA, will be notified.</p>	<p>Trigger: Investigation into Stage 1 trigger identifies that trigger exceedance is due to a site activity.</p> <p>Action:</p> <p>Enact Pollution Incident Response Management Plan (PIRMP)</p> <p>Implement corrective/preventative actions in consultation with relevant agencies based on the outcomes of the investigation.</p> <p>Review the SWMP and related procedures to prevent reoccurrence.</p>	<p>Stage 1: Notify environmental coordinator and site manager as soon as practicable.</p> <p>Stage 2: Notify relevant agencies (EPA, DPFI, WaterNSW). Notification to DPFI via the NSW Planning Portal immediately after the incident is identified (CoA 7.1), subsequent notification within 7 days of identified non-compliance (CoA 7.1, CoA Appendix 3). Written incident notification within seven days and a full report in 30 days to DPFI. EPA reporting of material harm (EPL 21185 R2) required immediately after the incident is identified and within 7 days (R2.2). Further reports may be requested by DPFI and/or EPA.</p> <p>Review of the OSWMP is required within 3 months of notification of an incident or non-compliance under CoA 6.6a.</p>

1. The 6 week timeframe for notification was recommended by WaterNSW during consultation on Revision 1 of the Operation Groundwater Management Plan. If the Stage 1 trigger is recorded for less than 6 weeks and then returns to within the values specified in Appendix A, notification is not required.

Appendix C: Baseline Monitoring

Data from July 2004 to January 2006

This baseline data relates to data collected between July 2004 and January 2006 at the four surface water monitoring locations as per CoA 3.5. Immediately prior to this period wet ash placement in SSCAD had ceased. Dry ash was being placed in Stage 1 of KVAR over the period. Hence, this data is not representative of pre-disturbance conditions and has little relevance to current site conditions.

Table C. 1 Surface Water Quality Baseline Data from 2004 to 2006 - Source: Energy Australia, 2018

Table B – Surface Water Quality Baseline Data

		38 Sawyers S Ck Ash Dam		39 Dump Ck		40 Sawyers Ck WX5		41 Sawyers Ck WX7																					
		Wallerawang Environmental Waters, Surface Water																											
		Yearly Report																											
		WW Env Surface Waters																											
Date	Water Level metres	pH	Conductivity Lab	MO Alk as CaCO3 mg/L	Chloride mg/L	Fluoride mg/L	Sulphate Result mg/L	TDS Result mg/L	Sodium Na mg/L	Potassium K mg/L	Calcium Ca mg/L	Magnesium Mg mg/L	Arsenic As mg/L	Silver Ag mg/L	Barium Ba mg/L	Boron B mg/L	Cadmium Cd mg/L	Chromium Cr mg/L	Chromium 6+ mg/L	Copper Cu mg/L	Iron Fe mg/L	Mercury Hg mg/L	Manganese Mn mg/L	Lead Pb mg/L	Selenium Se mg/L	Zinc Zn mg/L			
ANZECC 2000 Guideline (Fresh Water Aquatic Ecosystem) 95% PL					0.003								0.013	5E-05		0.37	0.0002		0.001	0.001	0.006		0.0006	1.9	0.0034	0.011	0.008		
31-Jul-04	2004-07-39-1	7-Jul-04	39	Dump Ck	4.40	62,000	0	22	0.600	300	360	58	15	19	20	0.025	0.005	0.02	1.1	0.001	0.005	0.06	0.00005	2	0.005	0.003	0.33		
31-Jul-04	2004-07-40-1	7-Jul-04	40	Sawyers Ck WX5	6.40	75,600	40	28	1,500	280	460	60	35	39	18	0.025	0.005	0.06	1.4	0.001	0.005	0.005	0.03	0.00005	1.5	0.005	0.003	0.05	
31-Jul-04	2004-07-41-1	7-Jul-04	41	Sawyers Ck WX7	6.10	142,800	20	35	1,000	710	1060	150	30	82	48	0.025	0.005	0.03	3.4	0.001	0.005	0.005	0.04	0.00005	0.45	0.005	0.003	0.08	
31-Oct-04	2004-10-38-1	20-Oct-04	38	Sawyers S Ck Ash Dam	5.60	244,900	5	23	10,000	1200	1940	330	84	140	17	0.025	0.005	0.08	7	0.006	0.005	0.005	0.03	0.00005	1.1	0.005	0.11	0.22	
31-Oct-04	2004-10-39-1	20-Oct-04	39	Dump Ck	4.00	61,900	0	21	0.500	230	420	55	14	18	20	0.025	0.005	0.02	1	0.001	0.005	0.005	0.83	0.00005	1.8	0.005	0.003	0.34	
31-Oct-04	2004-10-40-1	20-Oct-04	40	Sawyers Ck WX5	6.10	28,600	20	11	0.600	84	190	20	12	17	6	0.025	0.005	0.03	0.37	0.001	0.005	0.005	0.33	0.00005	0.53	0.005	0.003	0.08	
31-Oct-04	2004-10-41-1	20-Oct-04	41	Sawyers Ck WX7	6.10	130,900	30	32	1,100	590	930	140	27	76	44	0.025	0.005	0.03	2.8	0.001	0.005	0.005	0.05	0.00005	0.41	0.005	0.003	0.07	
31-Jan-05	2005-01-38-1	18-Jan-05	38	Sawyers S Ck Ash Dam	5.00	237,700	5	24	6,700	1300	1950	370	93	140	16	0.025	0.005	0.08	7.2	0.007	0.005	0.005	0.04	0.00005	1.2	0.005	0.1	0.27	
31-Jan-05	2005-01-39-1	18-Jan-05	39	Dump Ck	4.40	57,600	0	21	0.400	220	430	55	16	16	17	0.025	0.005	0.02	1.1	0.001	0.005	0.005	0.68	0.00005	1.8	0.005	0.003	0.23	
31-Jan-05	2005-01-40-1	18-Jan-05	40	Sawyers Ck WX5	6.40	30,200	30	11	0.400	89	250	25	12	16	6.7	0.025	0.005	0.04	0.42	0.001	0.005	0.005	0.09	0.00005	0.67	0.005	0.003	0.07	
31-Jan-05	2005-01-41-1	18-Jan-05	41	Sawyers Ck WX7	6.50	108,700	30	27	0.900	480	800	110	22	53	33	0.025	0.005	0.03	2.4	0.001	0.005	0.005	0.16	0.00005	0.82	0.005	0.003	0.08	
30-Apr-05	2005-04-38-1	14-Apr-05	38	Sawyers S Ck Ash Dam	4.40	245,300	0	25	7,600	1600	1900	350	87	140	18	0.025	0.005	0.09	7.3	0.007	0.005	0.01	0.09	0.00005	1.4	0.005	0.089	0.33	
30-Apr-05	2005-04-39-1	14-Apr-05	39	Dump Ck	4.60	57,800	10	20	0.700	270	420	58	16	17	19	0.025	0.005	0.02	1.2	0.001	0.005	0.005	0.64	0.00005	1.9	0.005	0.003	0.24	
30-Apr-05	2005-04-40-1	14-Apr-05	40	Sawyers Ck WX5	6.40	73,700	50	16	1,100	270	480	59	35	38	19	0.025	0.005	0.08	1.5	0.001	0.005	0.005	0.07	0.00005	2.4	0.005	0.003	0.03	
30-Apr-05	2005-04-41-1	14-Apr-05	41	Sawyers Ck WX7	6.20	99,200	10	25	0.800	440	740	100	24	46	33	0.025	0.005	0.03	2.2	0.001	0.005	0.005	0.15	0.00005	1	0.005	0.003	0.15	
31-Jul-05	2005-07-38-1	19-Jul-05	38	Sawyers S Ck Ash Dam	4.00	218,200	0	24	7,400	1200	1760	340	84	140	18	0.025	0.005	0.09	5.9	0.007	0.01	0.02	0.69	0.00005	1.4	0.005	0.06	0.33	
31-Jul-05	2005-07-39-1	19-Jul-05	39	Dump Ck	4.30	55,400	0	21	0.800	220	300	56	14	17	18	0.025	0.005	0.02	0.95	0.001	0.005	0.005	0.83	0.00005	1.7	0.005	0.003	0.33	
31-Jul-05	2005-07-40-1	19-Jul-05	40	Sawyers Ck WX5	6.10	91,900	5	18	3,200	490	620	71	50	52	25	0.025	0.005	0.08	1.6	0.001	0.005	0.005	4	0.00005	3.4	0.005	0.003	0.13	
31-Jul-05	2005-07-41-1	19-Jul-05	41	Sawyers Ck WX7	6.30	101,500	12	28	0.800	460	650	110	24	52	34	0.025	0.005	0.03	2	0.001	0.005	0.005	0.12	0.00005	0.87	0.005	0.003	0.17	
31-Oct-05	2005-10-38-1	26-Oct-05	38	Sawyers S Ck Ash Dam	4.10	231,700	0	26	7,100	1800	1760	330	85	130	17	0.025	0.005	0.09	6.3	0.007	0.01	0.04	0.34	0.00005	1.4	0.005	0.068	0.4	
31-Oct-05	2005-10-39-1	26-Oct-05	39	Dump Ck	4.90	53,400	5	20	0.600	250	320	52	14	16	18	0.025	0.005	0.02	0.99	0.001	0.005	0.005	0.32	0.00005	1.6	0.005	0.003	0.23	
31-Oct-05	2005-10-40-1	26-Oct-05	40	Sawyers Ck WX5	6.30	32,600	140	7	0.500	130	250	23	17	22	8.5	0.025	0.005	0.05	0.49	0.001	0.005	0.005	0.23	0.00005	0.67	0.005	0.003	0.07	
31-Oct-05	2005-10-41-1	26-Oct-05	41	Sawyers Ck WX7	6.30	84,800	20	25	0.800	370	580	89	22	42	29	0.025	0.005	0.03	1.8	0.001	0.005	0.005	0.03	0.00005	0.68	0.005	0.003	0.18	
31-Jan-06	2006-01-38-1	18-Jan-06	38	Sawyers S Ck Ash Dam	4.80	196,600	5	29	5,500	1100	1640	290	71	110	15	0.025	0.005	0.08	4.8	0.001	0.005	0.03	0.03	0.00005	1.2	0.005	0.053	0.31	
31-Jan-06	2006-01-39-1	18-Jan-06	39	Dump Ck	5.90	40,700	5	19	0.300	150	310	42	13	13	12	0.025	0.005	0.02	0.63	0.001	0.005	0.005	0.06	0.00005	1	0.005	0.003	0.14	
31-Jan-06	2006-01-40-1	18-Jan-06	40	Sawyers Ck WX5	6.50	20,700	30	6	0.300	57	180	13	9	15	4.2	0.025	0.005	0.04	0.24	0.001	0.005	0.005	0.12	0.00005	0.36	0.005	0.003	0.05	
31-Jan-06	2006-01-41-1	18-Jan-06	41	Sawyers Ck WX7	6.60	61,400	30	18	0.700	250	440	62	14	29	17	0.025	0.005	0.02	1.1	0.001	0.005	0.005	0.04	0.00005	0.3	0.005	0.003	0.04	
		MEDIAN VALUES																											
					6.40	71,200.00	30.00	18.00	1.10	250.00	460.00	59.00	35.00	26.00	13.00	0.03	0.01	0.05	1.40	0.001	0.01	0.01	0.01	0.23	0.00	1.26	0.01	0.0030	0.09
					6.30	107,150.00	10.00	27.00	0.90	460.00	738.00	110.00	24.00	51.00	33.00	0.03	0.01	0.03	2.40	0.00	0.01	3.25	0.01	0.15	0.00	0.82	0.01	0.0030	0.12

Baseline flow data from prior to 2008 is not available. Appendix F of the Stage 2 Environmental Assessment (Technical Report 2 – Surface Water, Parsons Brinckerhoff 2008) provides hydrological modelling to assess potential changes in catchment flows as a result of the expected changes to the catchment surfaces. The output of the model is provided in Table C.1 below.

Table C. 2 Catchment flow model data from Appendix F of the Stage 2 Environmental Assessment (Parsons Brinckerhoff 2008). Note: Appendix F Report notes that no flow data was available to calibrate this model. Sub-catchment details are displayed in Figure C. 1 below.

Table A-3 Catchment flows

Sub-catchment	Existing landform 9hr 2Yr ARI (m ³ /s)	Final landform 9hr 2Yr ARI (m ³ /s)	Existing landform 9hr 5Yr ARI (m ³ /s)	Final landform 9hr 5Yr ARI (m ³ /s)	Existing landform 9hr 20Yr ARI (m ³ /s)	Final landform 9hr 20Yr ARI (m ³ /s)	Existing landform 2hr 100Yr ARI (m ³ /s)	Final landform 2hr 100Yr ARI (m ³ /s)
U/S catch	7.43	7.43	11.29	11.29	16.76	16.76	16.52	16.52
Dam catch	12.23	12.23	18.61	18.61	27.42	27.42	27.28	27.28
SSCAD	12.27	12.27	18.67	18.67	27.52	27.52	27.36	27.36
Catch1a	2.10	2.10	2.46	2.46	2.94	2.94	3.74	3.74
Catch1b	3.29	3.29	4.02	4.02	5.00	5.00	6.43	6.43
Catch1c	3.92	3.92	4.86	4.86	6.13	6.13	7.88	7.88
Catch2	0.32	0.32	0.41	0.41	0.52	0.52	1.73	1.73
Catch3	0.44	0.81	0.58	1.13	0.77	1.53	1.53	2.12
Catch4	0.14	0.14	0.18	0.18	0.25	0.25	0.40	0.40
Catch5	0.33	0.33	0.43	0.43	0.57	0.57	1.44	1.44
SSC2	5.14	4.80	6.54	6.04	8.37	7.69	10.91	10.20
SSC3	5.58	5.25	7.13	6.63	9.14	8.48	11.92	11.23
SSC4	5.83	5.94	7.46	7.60	9.58	9.79	12.50	12.69
SSC5	5.89	5.99	7.56	7.69	9.71	9.92	12.63	12.82
SSC6	6.41	6.91	8.26	9.00	10.65	11.68	14.07	15.06
KVAR1	0.37	0.47	0.53	0.67	0.74	0.95	0.91	1.12
KVAR2	-	0.42	-	0.61	-	0.85	-	1.02



Figure A-1 Existing site model layout

Figure C. 1 Model layout from Appendix F of the Stage 2 Environmental Assessment (Parsons Brinckerhoff 2008)

Appendix D: Site water balance

Purpose

The site water balance is currently under development and subject to the completion of a number of environmental studies currently occurring on the site. A broad review of the water cycle has been prepared as an interim measure for the OSWMP whilst a comprehensive model is being developed.

Model description

The site water balance estimates the volume of water within the system based on the following equation:

$$\text{Change in volume over time} = \text{inflows} - \text{outflows}$$

where:

- inflows consist of direct rainfall onto the water surface of storages, catchment runoff, intercepted groundwater and pumped transfers of water
- outflows consist of evaporation from the water surface area of storages, infiltration into groundwater systems draining off-site, and discharges to downstream watercourses.

A conceptual schematic of the site water cycle is presented in Figure D.1.

Data

Climate data

Climate data for the water balance model used BoM station only data, extracted from grid reference -33.40, 150.10 via a SILO Data Drill. Data extracted from SILO was limited to historical data from 1959 as this was the period time when the local BoM weather stations (Lidsdale station number 63132) to the site were first developed. A total of 66 years were considered in the data set.

Daily rainfall was applied to the model to calculate direct rainfall onto the simulated water surface of storages. Morton's shallow lake evaporation data were used to estimate evaporation losses from the simulated water surface of storages. Morton's potential evapotranspiration data were used to estimate soil moisture losses and irrigation areas considered potential evapotranspiration losses using the FAO (Food and Agriculture Organisation of the United Nations) Penman-Monteith formula.

Annual statistics on rainfall is provided in Table D.1..

Table D.1 Annual climate statistics

Statistic	Rainfall total (mm)	Typical years representing statistic from data set
Minimum	385.6	1982
Maximum	1266	1978
10th	529	2006, 2019, 1979, 2002, 1980, 1997
50th (median)	799	1962, 2005, 1971, 1961, 1967, 2024, 2011, 2012
90th	1016	2020, 2010, 1984, 1963, 1973, 1990, 2022
Average	794	1962, 2005, 1971, 1961, 1967, 2024, 2011, 2012

Monthly distribution of average climate is presented in Figure D.2..

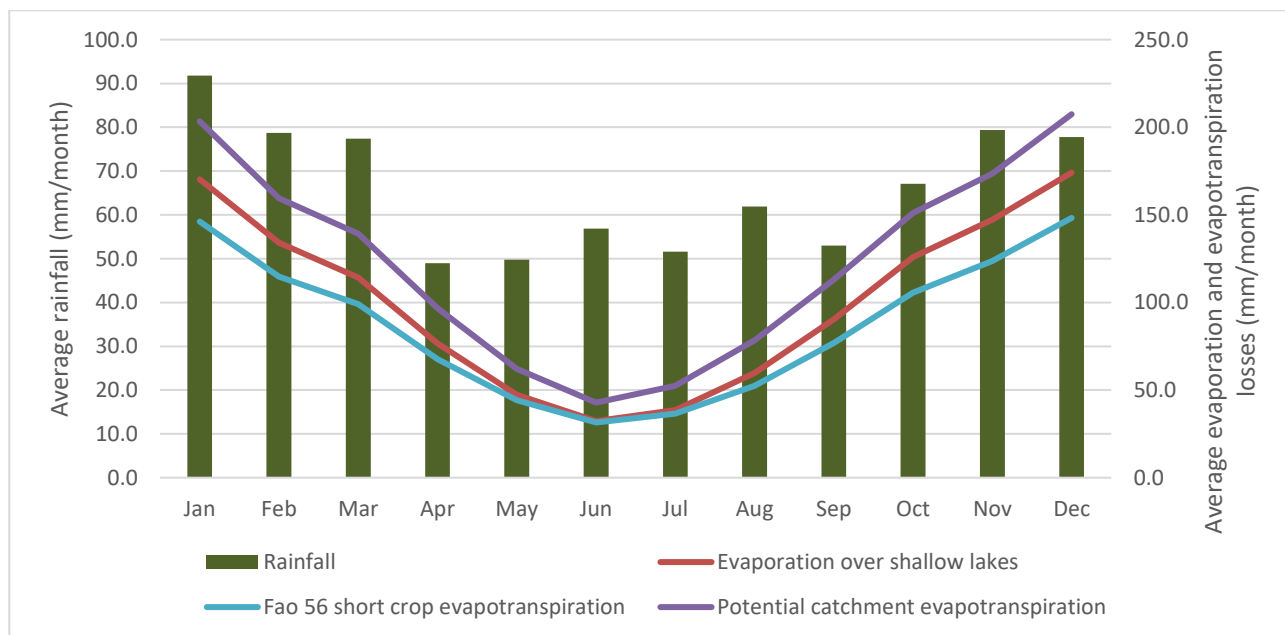


Figure D.2 Monthly average climate distribution

Metering data

The site has been progressively expanding a program of water metering around the site. Table D.2 presents the metered sites relevant to the site water balance and data currently available. Data has been recorded as daily totals

Table D.2 Metering data available

Locations	Purpose	Data type and duration
Sawyers Swamp Creek (SSC) monitoring at three locations (diversion dam-SS5, dam spillway-S6 and creek outlet-between S5 and WX7)	SSC passes through the site and potentially interacts with groundwater systems to gain and/or lose water. Monitoring is occurring at three locations to understand how the site activities interact with the reaches of the diverted watercourse.	Diversion dam flow volumes – 1/6/2023 to current Dam spillway flow volumes – 17/7/2024 to current SSC downstream flow volumes – 17/7/2024 to current
Lidsdale Cut - WX5 (inflows and outflows)	Lidsdale Cut functions as a water storage, part of the water management system within the lower portion of the site. The storage is potentially connected to the groundwater system based on its water quality. Water transfers from the storage are important in ongoing groundwater investigations.	Lidsdale cut inflow volumes - 1/10/2023 to current Lidsdale cut outflow pumped volumes - 1/10/2023 to current
SSCAD Dam wall seepage	SSCAD Dam wall has a number of controlled seepage points to maintain adequate drainage of the wall. Given the water quality of water stored within SSCAD, this water needs to be further managed or treated within the site water management system. Monitoring of the wall seepage is important in the assessment of SSCAD's function.	Seepage pit outflow volumes – 1/10/2023 to current
SSCAD Pond water level	SSCAD Pond is actively managed to mitigate potential releases via the emergency spillway. Monitoring of the level assists in understanding the surface water runoff contribution to SSCAD from the surrounding catchment. Overtime this is expected to reduce as diversions are constructed Water from the Pond is beneficially reused on site or treated and discharged via the LDP3 Treatment System.	Pond level – 5/6/2023 to current
LDP3 Discharges	Water from SSCAD Pond is treated and discharged via LDP3 when the Pond levels and flow conditions within the Coxs River allow. Ongoing monitoring is a EPL requirement.	LDP3 discharge volumes – 1/1/2022 to current

Catchments and water storage data

Catchments for the site were characterised into the following two different land types, based upon site observations and aerial imagery:

- vegetated undisturbed / unvegetated uncompacted construction areas
- compacted / impervious areas – roads, water surfaces, laydown areas.

Table D.3 provides the key water storages and a breakdown of catchment types represented in the water balance model.

Table D.3 Water storages and catchment data

Water storages	Storage capacity (ML)	Maximum surface area (m ²)	Pervious areas (vegetated undisturbed / unvegetated uncompacted) (ha)	Impervious areas (compacted / worked / capped) (ha)	Total catchment area (ha)
Wetland and north pond	20.5	19,394	6.9	10.3	17.1
Lidsdale Cut (Cells 1 and 2)	10.7	7,201.4	7.2	10.7	17.9
SSCAD Pond	472 (at spillway)	133,185	75.0	18.7	93.7
Diversion Dam	4.5 (at spillway)	11,687	389.2	0.0	389.2
KVAR Final Holding Pond	20	70,989	12.8	19.3	32.1

The currently total storage capacity of the water management system is estimated at 523.2 ML, and 51.2 ML not considering the SSCAD Pond.

Operational information

The site is managed on an as required basis with portable pumping infrastructure available to redirect water around site as required. As part of the water balance development further documentation of the typical activities and transfer rates associated with portable infrastructure will be included within the model. The preliminary water balance model has not included any operational data of this nature.

LDP3 discharges is a key water disposal mechanism for the site with discharge activities only to be undertaken when all the conditions of the EPL are met. Based on the historical operation of this discharge point, Figure D.3 presents the volume of site based discharges via LDP3 as a percentile over the period 2022 to 2025. Due to the conditions of the EPL, discharges greater than 0 ML/day occurred in 40% of days over the last three years, with discharges greater than 6 ML/day occurring in 10% of days. Average LDP3 discharges over the data set available totalled approximately 522 ML/year.

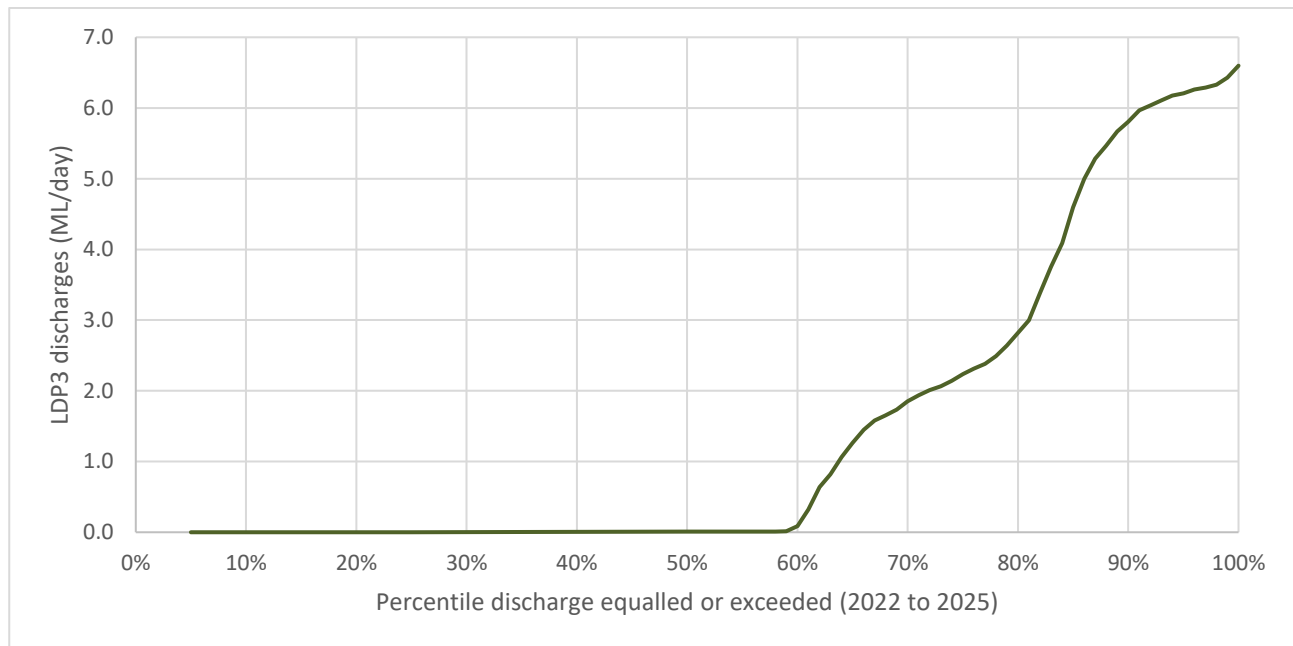


Figure D.3 Historical LDP3 discharges

To assist in water management at the site, irrigation activities are undertaken. These activities are currently undertaken across five main areas within the site. The irrigation disposal areas are estimated at 59.5 ha across site with irrigation activities including disposal of partially treated water from the LDP3 Treatment System and untreated stormwater from sediment basins.

Assumptions

The key assumptions for the water balance include:

- information prepared as part of this initial water balance assessment are preliminary and based on an annualised spreadsheet evaluation of inputs and outputs. Focus has been to present the information currently known and quantify the water management capacity for the site
- site investigations are ongoing specifically on groundwater interactions with various components of the site water management system
- data sets currently available are limited and are not representative of climate variability present at the site
- SSCAD sections B, C and D can individually serve as areas of water management storage however this is dependent on the presence of earthen bunds between each. As these bunds are currently subject to change as the site is being rehabilitated, for the purposes of this assessment, these areas have been assumed to all report to the SSCAD Pond which is likely to present a conservative outcome.
- Diversion Dam, Blackhole Dam and collection ponds provide capacity to manage the diversion of clean water. Stage storage information was not available for Blackhole Dam and the collection ponds.
- To appropriately simulate the potential for future LDP3 discharges, a catchment model for the Coxs River must be included within the site water balance to confirm, to simulate stream flows that meet EPL conditions. This has not been undertaken as part of this preliminary assessment however options to incorporate this will be included in future water balance versions.
- Soil assessment works are being scoped to optimise daily irrigation water volumes.

Assessment

The water balance has considered broad inputs and outputs for the site to provide a preliminary overview for the water cycle of the site. This has been undertaken using spreadsheet estimates for rainfall and runoff as well as evaporative losses. Metering data has been considered where appropriate to determine average transfer or inflow rates to the water management system.

A summary of the average annual inflows and outflows have been estimated based on the current data available for the site and is presented in Table D.4. Notes have been provided against various model estimates to indicate the current assumptions and where further work is required.

From the results, it generally supports a direction for the site to dispose of water from the site. The water inventory across the site has been historical high and is more than the demands require. The site water demands are relatively small, compared to the catchment and potential groundwater inflows, as the key operational tasks are construction related earthworks and site rehabilitation requirements.

Groundwater remains a key unknown for the site with further assessment of this component ongoing.

Table D.4 Summary of estimated annual inflows and outflows

Element	Annual volumes (ML/year)	Notes and comments
Inflows		
Direct rainfall and catchment runoff to water management system	396.0	
Direct rainfall and catchment runoff to Sawyers Swamp Creek Diversion	1,529.6	High level estimate with catchment runoff assumptions and requires further review of metering data
Groundwater into KVAR/KVAD	32.9	Based on metering of inflows Lidsdale Cut minus transferred volumes from SSCAD wall seepage
Groundwater into SSCAD	20.4	Partial volume only, based on seepage metering of the SSCAD wall
Total inflows	1,958.5	
Outflows		
Evaporation from dams	210.6	
Dust suppression and irrigation sediment laden water (from sediment basins)	81.1	Estimate based on soil moisture deficit calculation and nominated area by GPM
Irrigation partially treated water (from LDP3 Treatment System)	20.5	Estimate based on soil moisture deficit calculation and nominated area by GPM
Irrigation onto SSCAD (from Lidsdale Cut)	62.1	Based on metering data
Runoff loss through groundwater seepage	Unknown	There is a potential for surface to groundwater connectivity but remains unknown

Element	Annual volumes (ML/year)	Notes and comments
Sawyers Swamp Creek outflow from site	1,529.6	Model assumed inflows equalled outflows. This is likely a conservative estimate as current site watercourse metering suggests less than 10% of this volume however this is limited by data points and rainfall variability.
Loss to groundwater from Sawyers Swamp Creek	Unknown	Further metering data required to understand the differential between upstream to downstream monitoring sites
Discharge via LDP3	522.0	Average of annual data between 2022 and 2025 and subject to Coxs River streamflow and SSCAD Pond levels.
Total outflows	2,425.9	
Change in storage (Inflows – outflows)	-467.4	System theoretically has capacity to dewater excess water from site, subject to determining groundwater unknowns. Water inventory for the site is typically high (between 200 ML to 500 ML)
Balance	0	

Appendix E : ER Letter of Endorsement

31 March 2026

John Pola
Environmental Manager
Generator Property Management - Lidsdale
110 Skelly Road
Lidsdale NSW 2790

Re: MP07_0005 - Wallerawang Ash Dam Areas - Environmental Representative Endorsement - Operational Surface water Quality Management Plan Rev 6

Dear John,

Following a review of the documents provided for the Operation Surface water Quality Management Plan (SWQMP) Rev 6, I can provide the following endorsement.

The SWQMP Rev 6 has been reviewed against the Mod 2 Consolidated Conditions of Approval, in particular Condition 6.5. Consultation with WaterNSW and DPIRD Fisheries has been completed and all comments have been addressed.

All conditions of approval and mitigation measures are contained in the SWQMP Rev 6.

The document is endorsed for submission for approval.

Yours sincerely



David Bone
Independent Environmental Representative
dbone@emmconsulting.com.au

Appendix F : Consultation

DPIRD Fisheries

Department of Primary Industries and Regional Development



Our Ref: C25/94

FE25/150

7 February 2025

John Pola
Generator Property Management Pty Ltd

Re: **Operational Surface Water Management Plan (OSWMP), Lidsdale Ash Repository (2024)**

Thank you for providing comment from DPIRD Fisheries, a division of NSW Department of Primary Industries and Regional Development (DPIRD) on the Operational Surface Water Management Plan (OSWMP) for this development.

DPIRD Fisheries is responsible for ensuring that fish stocks are conserved and that there is no net loss of key fish habitats upon which they depend. To achieve this, DPIRD Fisheries ensures that developments comply with the requirements of the *Fisheries Management Act 1994* (namely the aquatic habitat protection and threatened species conservation provisions in Parts 7 and 7A of the Act, respectively), and the associated *Policy and Guidelines for Fish Habitat Conservation and Management (2013)*.

DPIRD Fisheries have reviewed the OSWMP. The proposed surface water monitoring program satisfies the conditions of approval to consult with DPIRD Fisheries. The OSWMP appears reasonable in the selection of monitoring locations, frequency of monitoring, and rationale behind the monitoring program to determine the impacts of the ash placement activities and the realignment of Sawyers Swamp Creek. However, DPIRD Fisheries believe that the Trigger Action Response Plan (TARP) is not very detailed in providing corrective mitigating actions to address non-compliant adverse surface water quality exceedances and surface water level exceedances in the dam, other than reporting/consulting with regulatory agencies and reviewing the OSWMP. A clear Response and Contingency Plan outlining triggers and actions to be undertaken in such events might be beneficial.

If you require any further information, please do not hesitate to contact me on 0429 908 856.

Yours sincerely

A handwritten signature in black ink that reads "D. Ward".

David Ward
Fisheries Manager (Murray Darling)



4 February 2025

Generator Property Management Pty Ltd
PO Box 132
Budgewoi NSW 2262

Attention: Stephen Saladine

Dear Stephen

Subject: Wallerawang Power Station Ash Dam – WaterNSW’s Advice on proposed Operational Groundwater (MP07_0005-PA-29) and Surface Water (MP07_0005-PA-30) Management Plan

WaterNSW appreciates the opportunity to provide advice on the proposed Operational Groundwater and Surface Water Management Plan (OGWMP and OSWMP) prepared by Generator Property Management Pty Ltd (GPM). The existing consent conditions for MP07_0005, conditions 6.5(b) and (c), requires an Operational Groundwater and Surface Water Management Plan (OGWMP and OSWMP) to be prepared in consultation with WaterNSW, and implemented as part of the Operation Environmental Management Plan for the project.

As the development is located within the Sydney Drinking Water Catchment (SDWC), Section 6.61(1) and 6.63 of the *State Environmental Planning Policy (Biodiversity and Conservation) 2021* (the SEPP) apply.

WaterNSW has reviewed the information in the proposed OGWMP and OSWMP (both dated 19 December 2024) prepared by GPM and requests that the reports include the following matters:

- For OGWMP:
 - Chrome 6+ (Cr6+), Mercury (Hg) and Silver (Ag) should be included in groundwater monitoring given historic data at the site
 - Table B2 should be updated to include sampling for Aluminium (Al), Chrome 6+ (Cr6+), Mercury (Hg) and Silver (Ag) given historic issues identified
 - There is no discussion as to what the 4 groundwater monitoring sites (A9, A17, GW10 & GW11) identified in Figure B1 as “extra water quality and water level sites – not part of OEMP” are for, and why they aren’t included in the OEMP. WaterNSW considers that more detail regarding these monitoring sites should be included as part of the sites OGWMP, even if non-routine sites
 - Section 6.2 of the OGWMP notes that monitoring shall be conducted 6 monthly at 11 locations whereas, Appendix B of the OGWMP suggests 13 water quality monitoring locations. The OGWMP should be updated for consistency, and
 - Clarification should be included in Table B4 on when relevant agencies shall be notified if Low Hazard (Stage 1) trigger continues, and where Stage 2 is not triggered.
- For OSWMP:
 - The OSWMP should include a detailed water balance for the site to demonstrate that storage volumes can effectively manage contaminated water on site

- Little information is provided in the OSWMP regarding the Caustic Injection Plant (CIP). WaterNSW considers the potential impacts of this activity are relevant and should also be included in the OSWMP including specific details of the current water quality within the SSCAD (including heavy metals and metalloids) and details of the treatment process and the expected quality of treated water discharges for all parameters. The OSWMP should also include when use of the CIP is triggered (i.e., anticipated rainfall thresholds, water quality exceedances), and monitoring is required prior to treatment, and prior to discharge to ensure compliance with the EPL
- WaterNSW considers detailed baseline monitoring data for each sample site be provided as an appendix similar to that provided in the OGWMP
- WaterNSW considers baseline values for all parameters proposed for monitoring should be included in Table A.2 – particularly given the site has a history for exceedances of Boron, Fluoride, Filterable Iron and Filterable Manganese which present a risk to the local aquatic ecology of the receiving waters that would not have been exposed to these contaminants on a regular basis. We also note that treatment through the CIP would not address these contaminants
- WaterNSW also considers that the 80th percentile values be provided for each monitoring site, for each parameter to identify potential spatial trends
- In Table B3 - Stage 2 notification, WaterNSW should also be included as a relevant agency to be notified, and
- In the Trigger Action Response Plans (Table B3 in the OSWMP and Table B4 in the OGWMP), recommend notifying the relevant agencies if a Stage 1 (Low Hazard) trigger continues for greater than 6 weeks, even if Stage 2 is not triggered.

WaterNSW also requests to remain as a stakeholder in any further assessment and consultation on this project. If you have any questions, please contact Rizwana Rumman via email at environmental.assessments@waternsw.com.au.

Yours sincerely



JURI JUNG
Catchment Protection Manager

Nadia Eisenlohr

From: Nadia Eisenlohr
Sent: Monday, 8 September 2025 8:33 AM
To: Nadia Eisenlohr
Subject: RE: Ref: C25/94 - Re: Operational Surface Water Management Plan (OSWMP), Lidsdale Ash Repository (2024) - (MP07_0005-PA-30)

From: David Ward <david.ward@dpird.nsw.gov.au>
Sent: Monday, 1 September 2025 2:23 PM
To: Julian MacPhee <julian.macphee@gpmco.com.au>
Cc: John Pola <john.pola@gpmco.com.au>
Subject: RE: Ref: C25/94 - Re: Operational Surface Water Management Plan (OSWMP), Lidsdale Ash Repository (2024) - (MP07_0005-PA-30)

Some people who received this message don't often get email from david.ward@dpird.nsw.gov.au. [Learn why this is important](#)

Hi Julian,

Thank you for your correspondence.

I have reviewed the updated OSWMP and am satisfied that my previous comments have been addressed and endorse the revised plan.

Cheers
David

Please note I will only be working Monday-Tuesday during the month of August.

David Ward

Fisheries Manager, Aquatic Ecosystem Assessment
Regulatory Reform and Engagement | Fisheries and Forestry
**Department of Primary Industries
and Regional Development**

T 02 6763 1255 M 04 2990 8856 E david.ward@dpi.nsw.gov.au

nsw.gov.au/dpird

4 Marsden Park Road CALALA NSW 2340



**Department of Primary Industries
and Regional Development**

We stand on Country that always was and always will be Aboriginal land. We acknowledge the Traditional Custodians of the land and waters, and we show our respect for Elders past, present and emerging. We are committed to providing places in which Aboriginal people are included socially, culturally and economically through thoughtful and collaborative approaches to our work.

From: Julian MacPhee <julian.macphee@gpmco.com.au>
Sent: Thursday, 24 July 2025 11:06 AM
To: David Ward <david.ward@dpi.nsw.gov.au>
Cc: John Pola <john.pola@gpmco.com.au>
Subject: Ref: C25/94 - Re: Operational Surface Water Management Plan (OSWMP), Lidsdale Ash Repository (2024) - (MP07_0005-PA-30)

Dear David,

I am contacting you regarding consultation advice for Wallerawang Power Station – Lidsdale Ash Dam – Operational Surface Water (MP07_0005-PA-30) Management Plan.

Consultation was received on 7/2/2025 from DPIRD Fisheries which included an amendment to be made in the SWMP for Lidsdale Ash dam (attached).

Subsequent consultation is required by DPHI after the requested amendment was made as the SWMP may not have been provided on the DPHI portal to DPIRD Fisheries .

I have attached the current version of the SWMP to review and endorse if satisfied with the document updates made in response to the comments received on 7/2/2025.

Many thanks.

Regards,

Julian MacPhee
Engineering Project Officer
GPM - Generator Property Management Pty Ltd
ABN: 73 615 047 295
Mobile: 0427 094 014
Julian.MacPhee@gpmco.com.au
110 Skelly Road, Lidsdale NSW 2790
301 Scenic Drive, Colongra NSW 2262
PO Box 132 Budgewoi NSW 2262

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Nadia Eisenlohr

From: Nadia Eisenlohr
Sent: Monday, 8 September 2025 8:34 AM
To: Nadia Eisenlohr
Subject: RE: Attention Rizwana Rumman: Subject: Wallerawang Power Station Ash Dam – WaterNSW’s Advice on proposed Operational Groundwater (MP07_0005-PA-29) and Surface Water (MP07_0005-PA-30) Management Plan

From: Rizwana Rumman <Rizwana.Rumman@waternsw.com.au>
Sent: Thursday, 7 August 2025 2:25 PM
To: Julian MacPhee <julian.macphee@gpmco.com.au>
Cc: John Pola <john.pola@gpmco.com.au>
Subject: RE: Attention Rizwana Rumman: Subject: Wallerawang Power Station Ash Dam – WaterNSW’s Advice on proposed Operational Groundwater (MP07_0005-PA-29) and Surface Water (MP07_0005-PA-30) Management Plan

You don't often get email from rizwana.rumman@waternsw.com.au. [Learn why this is important](#)

Hi Julian,

Thank you very much for sending through the updated plans. Water NSW has now reviewed the and have no further comments.

Just a quick note, the flow gauge upstream of LDP 3 operated by Water NSW is 212054 (Coxs River @ Wallerawang Power Station) , probably mistakenly reported as 12054.

Kind regards,

Rizwana Rumman
Catchment Assessment Officer



Level 14, 169 Macquarie St (1PSQ)
Parramatta NSW 2150
Work location: remote, please reach via email
E: rizwana.rumman@waternsw.com.au

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My work day may look different than your work day. Feel free to read, act on or respond during your working hours.

WaterNSW acknowledges the Traditional Custodians of the land and water on which we work and recognises the continuing cultural and spiritual connections that Aboriginal and Torres Strait Islander People have to Country. We pay our respects to Elders past and present.

From: Julian MacPhee <julian.macphee@gpmco.com.au>
Sent: Monday, 21 July 2025 9:44 AM
To: Environmental Assessments <Environmental.Assessments@waternsw.com.au>

Cc: John Pola <john.pola@gpmco.com.au>

Subject: [EXTERNAL] Attention Rizwana Rumman: Subject: Wallerawang Power Station Ash Dam – WaterNSW’s Advice on proposed Operational Groundwater (MP07_0005-PA-29) and Surface Water (MP07_0005-PA-30) Management Plan

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Dear Rizwana,

I am contacting you regarding consultation advice for Wallerawang Power Station – Lidsdale Ash Dam – Operational Groundwater (MP07_0005-PA-29) and Surface Water (MP07_0005-PA-30) Management Plan.

Consultation was received on 4/2/2025 from WaterNSW which included several amendments to be made in the OGWMP and SWMP for Lidsdale Ash dam (attached).

DPHI have indicated there was no subsequent consultation after the requested amendments were made as the updated OGWMP and SWMP may not have been provided on the DPHI portal to WaterNSW.

I have attached the current version’s of the OGWMP and SWMP to review and endorse if satisfied with the document updates made in response to the comments received on 4/2/2025.

Many thanks.

Regards,

Julian MacPhee

Engineering Project Officer

GPM - Generator Property Management Pty Ltd

ABN: 73 615 047 295

Mobile: 0427 094 014

Julian.MacPhee@gpmco.com.au

110 Skelly Road, Lidsdale NSW 2790

301 Scenic Drive, Colongra NSW 2262

PO Box 132 Budgewoi NSW 2262

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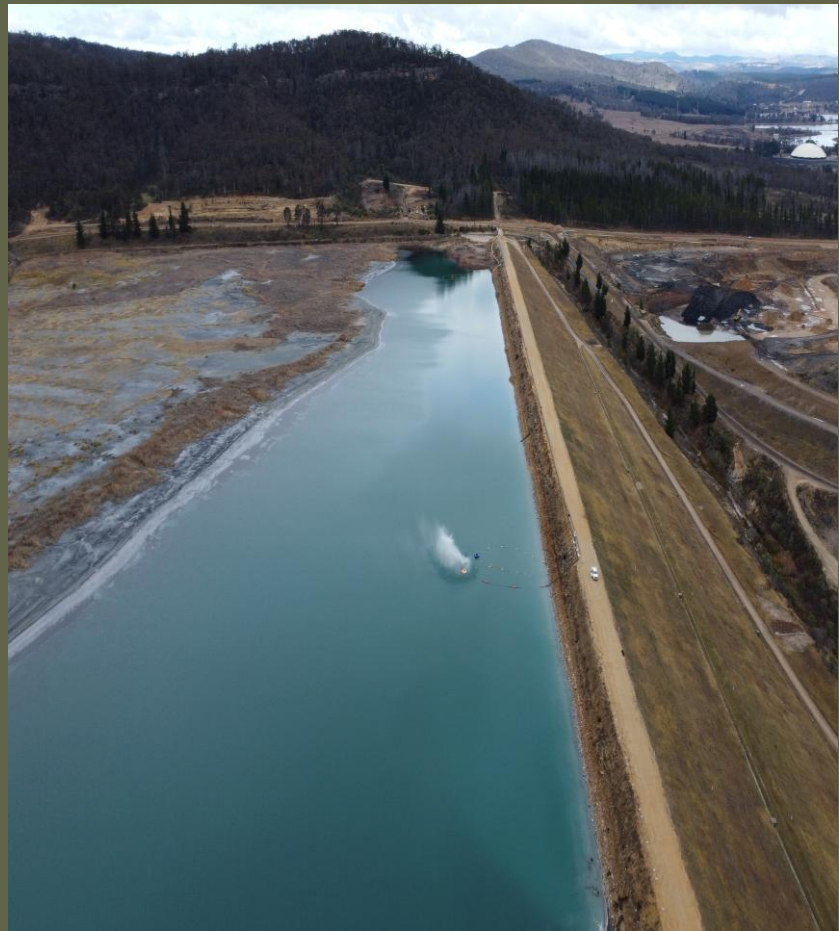
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Appendix F

Operational Air Quality Management Plan


Operational Air Quality Management Plan

Lidsdale Ash Repository 2026



GPM

Document control

Title	Operational Air Quality Management Plan - Lidsdale Ash Repository 2025
Approved by GPM Manager Environment	John Pola
Signed	
Dated	31 st March 2026

Version control

Revision	Date	Description	Author	Reviewer	Approval
Rev 02	19/12/2024	Draft	Laurence Smith	Verity Blair	John Pola
Rev 03	28/01/2025	Update consultation register	Nadia Eisenlohr	Daniel Keegan	John Pola
Rev 04	08/08/2025	Update to reflect DPHI's comments	Zainab Ahmed	Nadia Eisenlohr	John Pola
Rev 05	18/09/2025	Update to reflect DPHI's comments	Zainab Ahmed	Nadia Eisenlohr	John Pola
Rev 06	31/03/2026	Final	Zainab Ahmed	Nadia Eisenlohr	John Pola

List of emergency and key contacts

Position	Name	Phone
EPA pollution hotline	General Number	131 555
Fire and Rescue NSW	General Number	000 (for pollution incidents that present an immediate threat to human health or property) 1300 729 579 (for pollution incidents that do not present an immediate threat to human health or property)
Lithgow Hospital	General Number	63502300
SafeWork NSW	General Number	131 050
24-hour community information line	General Number	1800 817 711
Manager Environment	John Pola	0429 205 290
Financial Controller & Company Secretary	Diane Dibben	0412 773 255
Acting Chief Executive Officer	Dougal Mulvey	0414 361 366
Western Region Manager	Paul Glasson	0418 708 113
Engineering Project Officer	Timothy Edwards	0413 446 686
Engineering Project Officer	Julian MacPhee	0427 094 014
Environmental Representative	John Pola	0429 205 290
Lithgow City Council	General Number	(02) 6354 9999
Wallerawang Police	General Number	02 6355 1303
Lithgow Police	Chris Sammut	02 6352 8399

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Glossary/Abbreviations

Abbreviation	Expanded text
Approval	Approval Modification MP07_005-Mod 2
ASS	Acid Sulphate Soils
CEMP	Construction Environmental Management Plan
CoAs	Conditions of approval
Minister, the	Minister of the NSW Department of Planning and Environment (or delegate)
DG	Dust gauges
DPHI	NSW Department of Planning, Housing and Infrastructure
EPA	NSW Environment Protection Authority
ERG	Environmental Review Group – generally comprising representatives of Roads and Maritime, Environmental Representative, Project delivery team, regulatory authorities and Lithgow Council. The ERG will be maintained for the duration of the Project and will meet regularly and undertake environmental inspections. The role the ERG is to work collaboratively with the project team to provide proactive advice on environmental management issues on the Project.
EMS	Environmental Management System
Environmental aspect	Defined by AS/NZS ISO 14001:2015 as an element of an organisation's activities, products or services that can interact with the environment.
Environmental impact	Defined by AS/NZS ISO 14001:2015 as any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's environmental aspects.
Environmental incident	A set of circumstances that causes or threatens to cause material harm to the environment, and/or breaches or exceeds the limits or performance measures/criteria in this approval.
Environmental objective	Defined by AS/NZS ISO 14001:2015 as an overall environmental goal, consistent with the environmental policy, that an organisation sets itself to achieve.
ER	Environmental Representative: A suitably qualified and experienced person independent of project design and construction personnel employed for the duration of construction. The principal point of advice in relation to all questions and complaints concerning environmental performance.
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i> (NSW)
EPL	Environment Protection Licence
GPM	Generator Property Management Pty Ltd
KPI	Key Performance Indicator
KVAD	Kerosene Vale Ash Dam
KVAR	Kerosene Vale Ash Repository (dry stacked as on top of KVAD)

Abbreviation	Expanded text
LADR	Lidsdale Ash Dam Repository
Non-compliance	An occurrence, set of circumstances or development that is a breach of the approval but is not an incident.
OAQMP	Operational Air Quality Management Plan
OEMP	Operational environmental management plan
Principal, the	GPM
Roads and Maritime	Roads and Maritime Services
Secretary	Secretary of the Department of Planning or their Nominee
SSCAD	Sawyers Swamp Creek Ash Dam
TfNSW	Transport for New South Wales
WPS	Wallerawang Power Station

1 Introduction

The Lidsdale Ash Dam Repository (LADR), formerly known as the Wallerawang Ash Repository, is located at Skelly Road, Lidsdale NSW (the Site) and is approximately 15 kilometres (km) north-west of Lithgow and 2.5 km north-east of Wallerawang Power Station (WPS). The Site comprises an area of approximately 528 hectares (ha) and is situated primarily on Lot 5 of Deposited Plan (DP) 829137.

The Site includes several distinct components, including:

- The Kerosene Vale Dry Ash Repository (KVAR) and underlying former Kerosene Vale Ash Dam (KVAD).
- Sawyers Swamp Creek Ash Dam (SSCAD).
- Lidsdale Cut and adjacent asbestos landfills.
- WPS Asbestos demolition landfill south of the SSCAD.

The site location and general layout are shown in Figure 1.1.

The Site has been used since the 1950s to store ash and other wastes generated by the Wallerawang Power Station. Site operations started prior to the commencement of the *Environmental Planning and Assessment Act 1979* (EP&A Act), when the WPS and associated facilities were owned by the NSW Government.

Ownership and responsibility for the Site was transferred from Energy Australia NSW Pty Ltd to Generator Property Management Pty Limited (GPM) in September 2020. GPM's objectives at the Site include closure of the operational facilities and the rehabilitation and management of the site in general including the KVAR and the SSCAD.

This OEMP has been developed to ensure the care and maintenance of the site are carried out responsibly and in accordance with the relevant Conditions of Approval (CoAs) and any other requirements.

GPM and its contractors are also undertaking construction activities that will be managed under the Site's Construction Environmental Management Plan (CEMP).

1.1 Background to the Lidsdale Ash Repository

The Lidsdale Site was originally farmland that was gradually turned into mining premises during the late 1800s into the early 20th century. The Kerosene Vale mines were originally a series of open cut operations that changed to underground mines using portals driven under the northern escarpment.

The original ash placement operations were at the KVAD. The mining void was filled with ash transported from the WPS as a slurry (i.e. wet ash placement). When the KVAD was full, it was capped with a clay capping and then ash placement operations began at the SSCAD, which saw wet ash placement take place from 1980 to 2003. The SSCAD is still used to manage site water requirements with water levels managed by irrigation for dust suppression and other onsite water uses to prevent discharge to Sawyers Swamp Creek. When required, water is transferred for treatment via a CIP, clarified and discharged through a licenced discharge point (LDP3). The SSCAD is a declared dam under the NSW [Dams Safety Act 2015 No 26](#) (DS Act) and is subject to regular surveillance and monitoring by certified engineers in accordance with the DS Act.

The need to further develop the KVAR area to maintain power-generation operations at WPS was identified in 2001. The existing wet ash storage area (i.e. the SSCAD) was approaching its design capacity and the placement of dry ash at the KVAR was identified as a viable alternative. Conversion from wet to dry ash placement aimed to minimise environmental and social impacts potentially resulting from heavy metal accumulation. The extent of both stages is outlined in Figure 1.2.

It is noted that the Site has recently been formally Declared under the *Contaminated Land Management Act* (CLM Act) by the EPA and is subject to a Voluntary Management Plan requiring detailed and extensive investigations that will guide long term works on the SSCAD and may require additional works on the Site that would be subject to further approval.

1.2 Project approval history

In 2002, Project Approval was granted by the then Minister of Planning to change from wet to dry ash-producing activities and to use the KVAR area for dry ash storage.

The placement of ash on the Repository was developed in two stages:

- Stage 1: Comprises about one third of the area associated with the repository site and located on the south-western section of the site, this area was designed to operate for a period of 5 years and reached its design capacity and has been capped.
- Stage 2: Comprises the remainder the repository site, covering an area from the open face of the Stage 1 area to the edge of the original storage area. This stage was designed to operate about 10 years, depending on actual ash production rates.

On 26 November 2008, Project Approval (07_0005) was granted by the then Minister of Planning for the extension of the existing KVAR area to permit the continued disposal of ash generated by the WPS under Part 3A (now repealed) of the EP&A Act 1979. The KVAR Stage 1 placement works were completed and capped in February 2009. The KVAR Stage 2 placement works commenced soon after in April 2009.

In January 2014, WPS's Unit 7 was removed from service and deregistered from the market; whilst in March 2014, Unit 8 was placed in long term storage. However, in November 2014, EnergyAustralia NSW announced that Unit 8 was to be removed from service and the WPS deregistered from the market.

WPS ceased energy production in April 2014 and is currently being decommissioned and dismantled. The bulk transport and disposal of ash to the KVAR ceased following the closure of the WPS in 2014. The Lidsdale Ash Repository is currently being managed in a care and maintenance arrangement. Environmental studies and investigations are currently underway to support GPM's safe decommissioning, demolition, rehabilitation and management of ongoing regulatory and contractual obligations associated with the Lidsdale Ash Repository area.

Modification 1 to 07_005 was approved on 9 August 2018 under section 75W of the EP&A Act. This was to allow for the importation of clean fill (virgin excavated natural material (VENM) and excavated natural material (ENM)) for use in the final shaping and capping of KVAR and SSCAD over two years. This modification included a revised project area that extended the originally approved project to include the area covered by SSCAD.

Modification 2 to 07_005 was approved on 13 October 2023 under section 96(1A) of the EP&A Act. This was to allow for the importation of fill over an additional 10 years (i.e. until 13 October 2033).

The most complete description of the onsite activities was provided in the original *Kerosene Vale Stage 2 Ash Repository Area Environmental Assessment* prepared by Parsons Brinckerhoff in April 2008. This focused on the ongoing ash management without providing any details of site rehabilitation requirements when the power station closed. However, it did include the realignment of a section of Sawyers Swamp Creek to allow the structural earthworks required to achieve an acceptable factor of safety against failure of the ash stockpiles during earthquakes. The subsequent modification applications focussed on the potential impacts of the importation of fill material, rather than on activities within the Site where the material would be utilised.

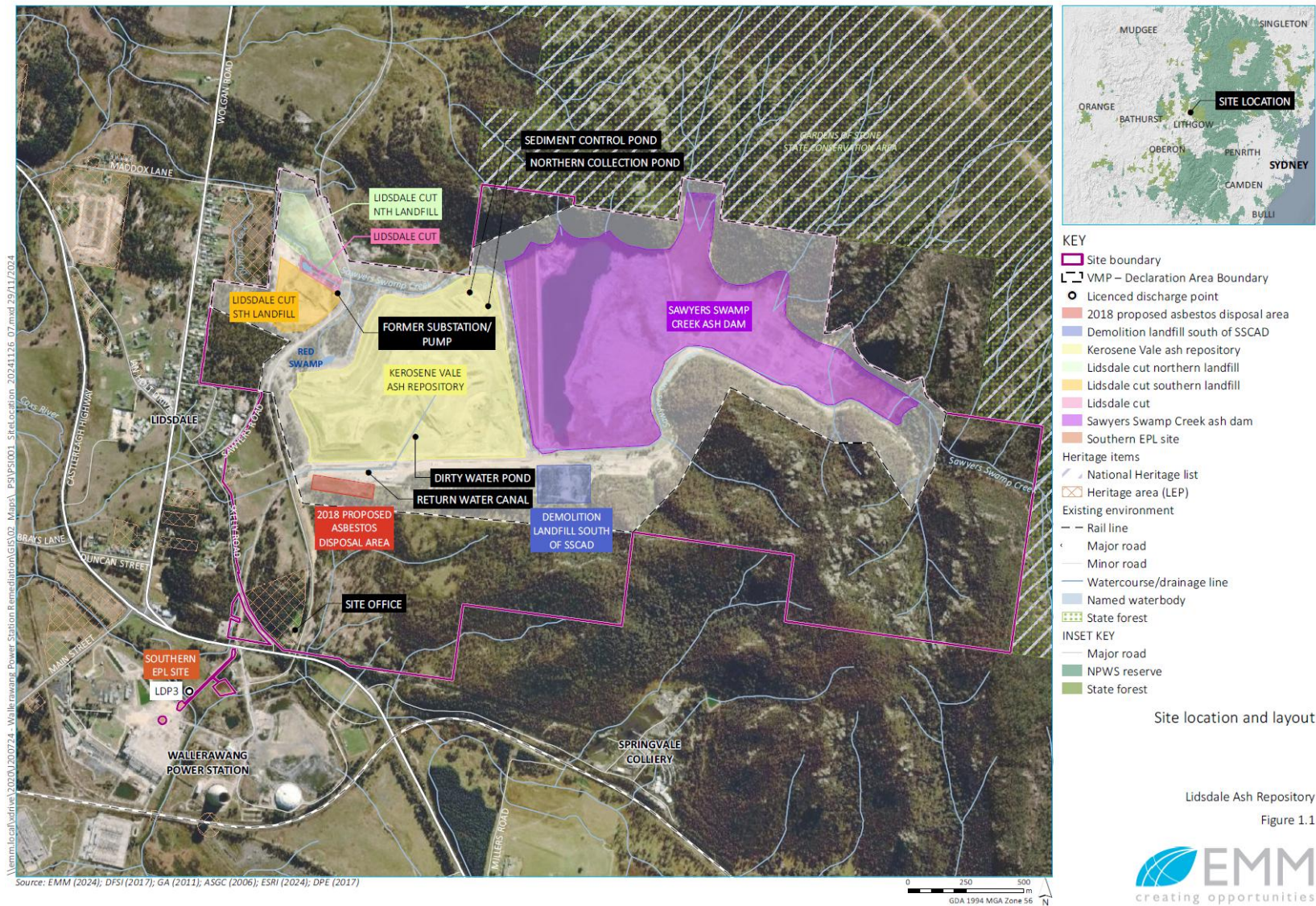


Figure 1.1 Site location and layout.



Figure 1.2 Historical ash placement at the cessation of ash placement KVAR Stages 1 and 2

1.3 Operational Environmental Management Plan and Sub-plans

Under the approval, CoA 6.4 lists requirements for the applicant to develop an OEMP that outline the environmental management practices and procedures to be followed during operations, while CoA 6.5 requires the preparation and implementation of the following management plans be prepared in conjunction with the OEMP:

- **Operational Noise Management Plan (ONMP)** - identifies the management measures to minimise operational noise impacts
- **Operational Groundwater Management Plan (OGMP)** - identifies the management measures to minimise operational groundwater impacts
- **Operational Surface Water Management Plan (OSWMP)** – identifies the management measures to minimise operational surface water impacts
- **Operational Air Quality Management Plan (OAQMP)** – identifies management measures to minimise impacts from project on local air quality
- **Operational Landscape/Revegetation Plan (OLP)** - identifies the management measures to minimise operational biodiversity impacts
- **Construction and Operational Transport Management Plan (OTMP)** - identifies the management measures to minimise traffic and transport impacts

This OAQMP has been prepared as a subplan of the OEMP and must be read with the OEMP.

Table 1.1 provides a high-level overview of the proposed activities that are covered by the OEMP and those covered by the OEMP. Further information on the scope of this OEMP is provided in section 1.4.

Table 1.1 Activities covered by the OEMP

Environmental Management Plan	Activities covered
OEMP – care and maintenance operations	<ul style="list-style-type: none"> • Ash management • Management of on-site water systems • Capping material haulage, placement and management • Landscaping and revegetation/rehabilitation of the site • Upgrading and maintaining internal access roads in the project area

1.3.1 OAQMP

CoA 6.5 (d) requires applicant to prepare an Operational Air Quality Management plan that outlines measures to minimise impacts from project on local air quality. This OAQMP has been prepared in accordance with that condition.

Table 3.1 includes a breakdown of the detailed requirements of CoA 6.5 (d).

It is noted that the site no longer receives coal ash from the Wallerawang Power Station (WPS) which was decommissioned in 2014.

1.4 Environmental management system overview

GPM's Environmental Management System (EMS) is based on AS/NZS ISO 14001. The ISO 14001 standard provides best practice specifications for the implementation of an EMS. An EMS provides a framework for managing the company's environmental responsibilities so that they are integrated into overall operations. The standard approach integrates environmental management and supports the company's compliance with legislated and voluntary environmental requirements, as well as continuously improving their overall environmental performance.

The relevant environmental standard ensures a consistent approach is undertaken to integrate environmental management at all levels of the organisation by:

- identifying and maintaining awareness of relevant environmental legislation
- assignment of roles and responsibilities
- establishment of procedures for internal and external communications
- establishment of procedures for monitoring and measuring environmental performance
- setting and reviewing objectives and targets for improving environmental performance
- monitoring and measuring environmental compliance and community inquiries
- setting and reviewing management system programs for achieving objectives and targets
- provision of environmental training aligned to skill requirements
- review of EMS performance for continual improvement.

This OAQMP has been developed to be consistent with the relevant provisions of GPM's EMS, including approvals and license as noted above.

A summary of the EMS and its interaction with the CEMP and OEMP and their respective sub-plans is provided in Figure 1.3.

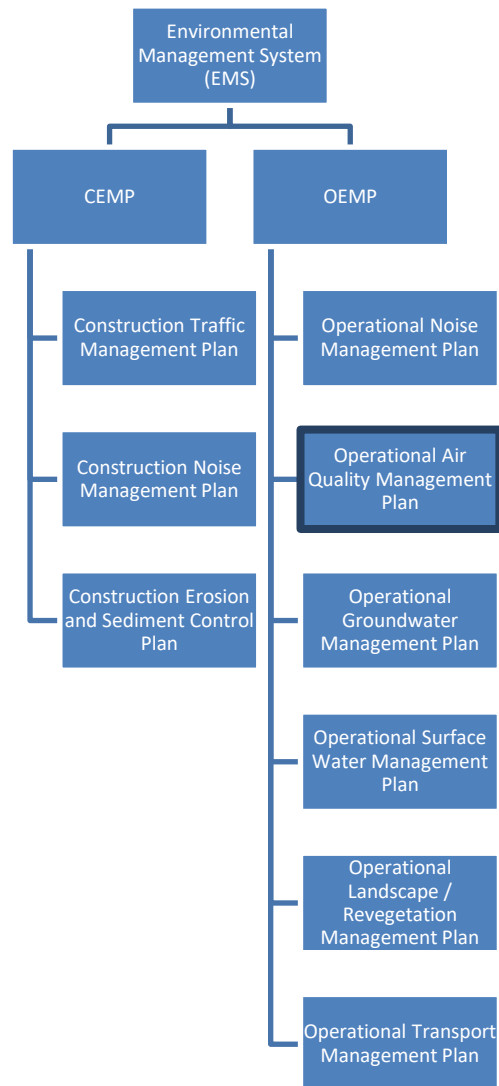


Figure 1.3 Environmental Management System flowchart

1.5 Interactions with other management plans and strategies

This OAQMP (outlined in Figure 1.3 above) is a sub-plan to the OEMP and interrelates with the other (sub) management plans set out in section 1.3 and 1.4 above.

1.6 Reference documents

The OAQMP incorporates the obligations and criteria outlined in the following documents:

- Project Approval 07_0005 (NSW Department of Planning)
- Submission Report – Statement of Commitments (Parsons Brinckerhoff 2008)
- Modification application 07_0005 Mod 1
- Modification application 07_0005 Mod 2
- Wallerawang Power Station to Submissions Report (EA 2018)
- Environment Protection Licence 21185 (NSW Environment Protection Authority)
- Works Approval (Water Mgt Act 2000).

1.7 Endorsement and approval

1.7.1 Internal approval of OEMP and Sub-plans

The OAQMP will undergo ongoing review by the GPM team. Following the ongoing review and revision process described in Section 5, internal signoff will be provided.

Once internal approval is received, the documents will be provided to Department of Planning Housing and Infrastructure (DPHI) and the Environmental Representative (ER) for review prior to undertaking external consultation, review and approval processes described below.

1.7.2 External endorsement and approval of OEMP and sub-plans

Table 1.2 below provides a summary of the relevant authority(s), council(s) and agencies that require consultation during preparation of the OAQMP in accordance with the CoAs.

External distribution for consultation and approval of the OEMP, sub-plans and monitoring programs will be undertaken and updated in consultation with the relevant external parties and will then be endorsed by the ER in accordance with CoA 6.4 and 6.5 (refer Table 1.2 and Table 1.3). After this external consultation and endorsement process is complete the required documents will be submitted to the Secretary for approval. This will occur no later than four weeks prior to the commencement of operation of the project (unless otherwise agreed by the Secretary).

It is noted that in accordance with CoA 6.5A, the applicant will update the OEMP and relevant sub-plans prior to the importation of capping material to the site from sources outside Lithgow LGA, to the satisfaction of the Secretary.

A copy of the ER Endorsement of the OAQMP is included in Appendix A: of this Plan.
Consultation with the EPA is included in Appendix C of this Plan.

Table 1.2 Consultation requirements for OEMP and sub-plans

Report	Relevant CoA	Condition of Approval	Consultation required
Operational Environmental Management Plan	6.4	The plan shall be submitted for the approval of the Secretary no later than four weeks prior to the commencement of operation of the project, unless otherwise agreed by the Secretary.	Secretary (DPHI)
Operational Noise Management plan	6.5a	The plan shall be prepared in consultation with, and to the satisfaction of, the EPA.	EPA
Groundwater Management Plan	6.5b	The plan shall be prepared in consultation with, and to the satisfaction of, WaterNSW.	WaterNSW
Surface Water Management Plan	6.5c	The plan shall be based on best environmental practice and shall be prepared in consultation with, and to the satisfaction of, WaterNSW and Fisheries NSW.	WaterNSW Fisheries NSW
Air Quality Management Plan	6.5d	The plan shall be prepared in consultation with, and to the satisfaction of, the EPA.	EPA
Operational Transport Management Plan	6.5f	The plan must be prepared in consultation with TfNSW and Council.	TfNSW Lithgow Council

Table 1.3 Consultation outcomes for AQMP

Agency	Date provided	Comments	Where addressed
NSW EPA	21/01/2025	EPA has reviewed this plan and has no comments at this stage	Not applicable

2 Purpose and Objectives

2.1 Purpose

This OAQMP for the Lidsdale Ash Repository outlines strategies and actions to mitigate environmental impacts during the project's operational phase. It is designed to set clear protocols and responsibilities, and to thereby ensure that risks are managed and sustainable practices are upheld. This sub-plan supports the OEMP and should be read in conjunction with the OEMP.

2.2 Objectives

The key objective of the air quality management system is to manage activities effectively to reduce the occurrence of conditions that may lead to the generation of visible dust emissions.

Through the use of dust suppression equipment and the implementation of air quality management procedures, dust events can be controlled. In the event of fugitive emissions, an effective system for dust suppression can minimise impacts on the surrounding environment. Other measures to be included are the use of a water cart, wheel wash facilities, irrigation and dust suppressants, when necessary. Air quality monitoring practices are designed to provide an on-going indication of the effectiveness of the air quality management system within a measurable framework.

A Specialist Consultant has established the air quality monitoring locations and continues to undertake the prescribed monitoring and analysis of results, as per this plan. Air quality monitoring will be undertaken on a monthly cycle in accordance with the Air Quality monitoring program in Appendix B: .

2.3 Targets

This OAQMP seeks to establish targets and indicators as follows.

Section 3 of the Environmental Protection Licence (EPL) 21185 stipulates:

O3 Dust

- O3.1. All areas in or on the premises must be maintained in a condition that prevents or minimise the emission into the air of air pollutants (which includes dust)
- O3.2. Any activity in or on the premises must be carried out by such practicable means as to prevent or minimise the emission into the air of air pollutants (which includes dust)
- O3.3 Any plant in or on the premises must be operated by such practicable means as to prevent or minimise the emission into the air or air pollutants (which includes dust)
- O3.4 Trucks entering and leaving the premises that are carrying loads of dust generating materials must have their loads covered at all times, except during loading and unloading.

Indicators:

- Zero visible dust events from operations in in the Lidsdale Ash Repository
- Complaints register demonstrating zero occurrence of dust-related complaints
- Dust levels as measured by Total Insoluble Solids below 4g/m²/mth annual average.

Other targets have been established for the management of air quality and odour impacts during the operations:

- ensure compliance with the relevant legislative requirements

- ensure activities on the site shall be undertaken with the objective of preventing visible emissions of dust from the site
- provide effective management of dust, and other emissions during operations to minimise risks to human health and the environment.

3 Environmental requirements

3.1 Relevant Conditions of Approval

This OAQMP forms part of the OEMP and has been prepared in accordance with relevant CoAs of the approval. Table 3.1 provides conditions requirements and where they have been addressed in this OAQMP.

Table 3.1 Relevant Conditions of Approval for AQMP

Relevant CoA	Condition of Approval	Where addressed in this plan
2.33	The Applicant shall construct and operate the project in a manner that minimises dust impacts generated by construction works and operational activities, including wind-blown and traffic-generated dust, on the receiving environment. All activities on the site shall be undertaken with the objective of preventing visible emissions of dust from the site. Should such visible dust emissions occur at any time, the Applicant shall identify and implement all practicable dust mitigation measures, including cessation of relevant works, as appropriate, such that emissions of visible dust cease.	Section 2.3 (EPL targets), Section 4 (Environmental Mitigation Measures) and Appendix B: of this plan.
2.34	The Applicant shall ensure that the load carrying compartment(s) of all ash haulage trucks are covered at all times except when loading or unloading ash material.	Section 2.3 (EPL targets), Section 4 (Environmental Mitigation Measures) and Appendix B: of this plan). Note: with the closure of WPS no ash deliveries currently occur. General truck deliveries are managed under this condition.
3.8	The Applicant shall prepare an Air Quality Monitoring Program , in consultation with, and to the satisfaction of, the EPA. The Program shall include, but not necessarily be limited to, monitoring for dust at the monitoring sites identified in the document referred to under condition 1.1 of this approval. The air quality monitoring program shall be ongoing for the life of the project, including final rehabilitation and stabilisation of the site. The monitoring program shall form part of the Air Quality Management Plan referred to in condition 6.5d) of this approval.	Appendix B: of this plan.
6.5 d)	<p>an Air Quality Management Plan to outline measures to minimise impacts from the project on local air quality. The Plan shall be prepared in consultation with, and to the satisfaction of, the EPA and include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> i. baseline data on dust deposition levels ii. air quality objectives and impact assessment criteria iii. an air quality monitoring program as referred to in condition 3.8 of this approval iv. an assessment of alternative methods of ash placement to minimise the exposure of active placement areas to prevailing winds v. mitigation measures to be incorporated during emplacement activities and haulage of ash vi. an operating protocol for the repository irrigation system including activation rates, application rates and area of coverage vii. a protocol for the investigation of visible emissions from the repository area 	This plan.
		Section 4.1
		Section 2.3
		Appendix B: of this plan
		Section 4.2, Table 4.2
		Not included in this plan, ash no longer received at the premises
		Section 4.2, Table 4.2
Section 4.2		

Relevant CoA	Condition of Approval	Where addressed in this plan
	<ul style="list-style-type: none"> viii. a response plan to address visible emissions from the repository area ix. provisions for periodic reporting of results to the EPA. 	<p>Appendix B: of this plan</p> <hr/> <p>Section 4.2, Table 4.2</p>
6.5A	The Applicant shall update the OEMP (as referred to in condition 6.4 of this approval) and associated monitoring programs (as referred to in conditions 3.4 to 3.8 inclusive) prior to the importation of capping material to the site from sources outside of the Lithgow local government area, to the satisfaction of the Secretary. The updated plan and associated monitoring programs must reflect all operational activities, monitoring and management practices for the Kerosene Vale Ash Dam and the Sawyers Swamp Creek Ash Dam.	Section 1.7.1
6.6	<p>Within three months of:</p> <ul style="list-style-type: none"> a) the submission of an incident report under condition 7.1; b) the submission of an Annual Review under condition 7.3; c) the submission of an Independent Environmental Audit under condition 4.2); or d) the modification of the conditions of this approval (unless the conditions require otherwise), <p>the Applicant must review and, if necessary, revise the studies, strategies or plans required under the conditions of approval to the satisfaction of the Secretary.</p> <p>Within three months of:</p> <ul style="list-style-type: none"> a) the submission of an incident report under condition 7.1; b) the submission of an Annual Review under condition 7.3; c) the submission of an Independent Environmental Audit under condition 4.2); or d) the modification of the conditions of this approval (unless the conditions require otherwise), <p>the Applicant must review and, if necessary, revise the studies, strategies or plans required under the conditions of approval to the satisfaction of the Secretary.</p>	Section 5

3.2 Compliance tracking

CoA 4.2 mandates a compliance tracking program to track compliance with the requirements before commencing operations. A compliance tracking tool has been prepared for internal use by GPM to ensure effective and efficient tracking of compliance.

Details on compliance management, including roles and responsibilities, are provided throughout section 3 of the OEMP.

4 Environmental management

4.1 Background information on air quality

Table 4.1 provides a summary of the dust deposition monitoring data collected in the vicinity of the site from 2017 to September 2021. With the exception of DG32, dust deposition levels are generally below 2 g/m²/month on an annual basis. The average over all sites and all years is 1.5 g/m²/month.

In November 2019 monitoring of DG5 ceased and the dust gauge was removed from its location by EnergyAustralia NSW at the request of the landowner. It is noted that DG27 and DG28 are no longer within the Lidsdale Ash Repository site boundary and are now on land associated with the former Wallerawang Power Station owned by Greenspot. Due to ongoing demolition of the power station, these dust gauges have been removed.

The remaining four dust deposition gauges (DG29, DG30, DG31 and DG32) are located in surrounding areas of the Lidsdale Ash Repository area. In addition, DG31 is located in the general direction of DG27 and DG28 but is closer to the Lidsdale Ash Repository site. Therefore, the remaining four dust deposition gauges are deemed adequate to characterise air quality in the vicinity of the project.

Table 4.1 Dust deposition (insoluble solids) monitoring data (g/m²/month)

Year	DG5	DG27	DG28	DG29	DG30	DG31	DG32
2017	0.4	1.8	1.2	0.5	0.4	0.5	2.7
2018	2.0	1.9	2.2	2.0	1.0	1.5	5.0
2019	1.1	1.6	2.5	1.3	1.3	1.3	2.5
2020	No data	2.9	1.5	1.5	0.7	1.8	2.6
2021	No data	1.1	0.5	0.4	0.4	0.4	1.5
Average	1.1	1.9	1.6	1.1	0.8	1.1	2.8

4.2 Management measures

Management actions to minimise operational impacts are summarised in Table 4.2.

Table 4.2 Environmental Management Measures

Relevant aspect	Management and mitigation measures	Source of requirement	Frequency	Relevant records	Responsibility
General requirement	Lidsdale Ash Repository operations shall be conducted in a manner that minimises dust impacts generated by operational activities, including windblown and traffic generated dust. All activities on the site shall be undertaken with the objective of preventing visible emissions of dust from the site. Should such visible dust emissions occur at any time, practicable dust mitigation measures shall be identified and implemented, including cessation of relevant works, as appropriate, such that emissions of visible dust cease.	CoA 2.33	Ongoing	Site inspection checklist Complaints register	Site Contractor
	All areas in or on the premises must be maintained in a condition that prevents or minimises the emission into the air of air pollutants (which includes dust).	EPL O3.1	Ongoing	Site inspection checklist	Site Contractor
	Any activity in or on the premises must be carried out by such practicable means as to prevent or minimise the emission into the air of air pollutants (which includes dust).	EPL O3.2	Ongoing	Site inspection checklist	Site Contractor
	Any plant in or on the premises must be operated by such practicable means as to prevent or minimise the emission into the air or air pollutants (which includes dust).	EPL O3.3	Ongoing	Site inspection checklist Pre-start inspections	Site Contractor
Capping material deliveries	The load must be covered except when loading or unloading capping material.	CoA2.34 and EPL O3.4	Ongoing	Site inspection checklist	Site Contractor
	Achieve compliance with the requirement to not import more than 100 heavy vehicle loads of capping material to the site per day.	CoA2.36A	Daily	Project diary	Site Contractor
	The private haulage roads shall be maintained in a clean condition by routinely washing the surface. This applies to the haul roads within the repository zone and does not include the private haul road from the power station.	OEMP	As required	Site inspection checklist	Site Contractor
Ash handling	Small volumes of ash will be transported intermittently to the Lidsdale Ash Repository during the dismantling of the Wallerawang Power Station and completion of the KVAR and SSCAD landforms. The ash will be transported via the internal haul trucks. No external vehicle trips will be required.	OEMP	As required	Site inspection checklist	Site Contractor

Relevant aspect	Management and mitigation measures	Source of requirement	Frequency	Relevant records	Responsibility
	A water suppression cart will be utilised during emplacement activities and haulage of ash from or to site. Operators must ensure that the load carrying compartment(s) of all ash haulage trucks is covered at all times except when directly loading or unloading ash material.	COA 6.5 (d)(vii)	As required	Site inspection checklists	Site contractor
	If required, ash placement will be undertaken on site in such a manner that would minimise the exposure of active placement areas to prevailing winds. Management would include: <ul style="list-style-type: none"> • Application of sprays • Use of water trucks • Equipment maintenance. 	COA 6.5 (d)(iv)	As required	Site inspection checklists	Site contractor
Dust controls	A water cart shall be used to undertake dust suppression.	OEMP	As required	Site inspection checklist	Site Contractor
	A dedicated water sprinkler and surface irrigation system is installed at the site. The system covers the areas of exposed ash within the SSCAD. The irrigation system is activated during periods of high winds, during dry conditions and when visible dust from SSCAD is observed during site activities. The system has an approximate application rate of 20L/s (72KL/hour) and covers an area of approximately 30ha. The irrigation system is currently manually controlled and will in future be controlled by a SCADA system as closure works progress. When activated, periodic checks of the system will be conducted to ensure application rates are fit for purpose and sufficient to control the dust arising from high winds and dry conditions. Periodic checks will also ensure that the system is not overwatering or causing run-off.	CoA 6.5 (d)(vi)	As required	Site inspection checklist	Site Contractor
	In the event of visible dust emissions, personnel shall notify the Site Manager or Facility Environment Manager immediately, who will immediately direct the water cart operator to spray the area and review the location and application rate of the sprinkler system.	OEMP	As required	Site inspection checklist	Site Contractor

Relevant aspect	Management and mitigation measures	Source of requirement	Frequency	Relevant records	Responsibility
Air quality monitoring	A total of four deposition gauges shall be used to monitor dust emissions at the site, and at key locations adjacent to residential properties and Wallerawang Power Station. Refer to Appendix B: .	OEMP and CoA 3.8	Monthly to monitor activities.	Air quality monitoring records	GPM Site Manager / Specialist Consultant
	Samples shall be removed from the dust deposition gauges on a monthly basis by a NATA approved laboratory and assessed for compliance with the appropriate air quality criteria in accordance with the monitoring program in Appendix B: .	OEMP and CoA 3.8	Monthly	Air quality monitoring records	GPM Site Manager / Specialist Consultant
	The EPA amenity-based criteria for dust fallout is a maximum total dust deposition of 4 g/m ² /month (annual). Activities undertaken on site shall aim to achieve compliance with this limit.	OEMP and CoA 3.8	Ongoing	Air quality monitoring records	GPM Site Manager / Site Contractor
	If the 4 g/m ² /month limit is exceeded in a month, an initial review of the source, management measures and activities relating to dust-generation should take place. This may include identifying site-specific reasons for contamination, checking whether dust management practices are taking place, and determining whether meteorological conditions are contributing to elevated results over extended periods.	OEMP and CoA 3.8	Ongoing	Air quality monitoring records	GPM Site Manager / Site Contractor
	If the 4 g/m ² /month limit is exceeded by more than 2 g/m ² , a review of the effectiveness of the dust suppression regime and further mitigation measures shall be undertaken, including: <ul style="list-style-type: none"> Increased application rates of the irrigation system Increased application rates of water on haul roads, particularly during high wind events. Trial the use of cover crops to provide stabilisation of the ground surface. Review the adequacy of the management and mitigation measures for air quality compliance and implement additional measures as required. 	OEMP and CoA 3.8	Ongoing	Air quality monitoring records	GPM/Site Contractor

Relevant aspect	Management and mitigation measures	Source of requirement	Frequency	Relevant records	Responsibility
Reporting	The results and analysis of the monitoring data shall also be included and assessed against the air quality criteria (4 g/m ² /month).. In the event of recorded exceedances, the response taken must be documented within the annual report. Any deviations from the proposed monitoring program must also be justified.	CoA 7.3	Annually from the commencement of operations	Annual Environmental Management Report (AEMR)	GPM Site Manager / Specialist Consultant
	The Annual Environmental Management Report will be submitted to the Secretary complete with air quality monitoring data gathered throughout the years.	CoA 7.3	Annually	Annual Environmental Management Report (AEMR)	GPM Site Manager
Environmental incidents	Environmental incidents, including significant dust impacts on surrounding community are to be managed, investigated and reported in accordance with Section 3.7 of the OEMP.	CoA Appendix 3	If there is an incident	Incident records	GPM Site Manager

5 Review and improvement

A review of the OEMP, sub-plans (including this OAQMP) and monitoring programs will be undertaken during operations as required. These reviews will be completed to determine the efficiency of the plans and monitoring programs and whether any changes are required to ensure compliance.

Circumstances which may trigger a review include:

- changes to design, construction, work methods, legislation, or policy
- incidents, complaints or non-compliance
- changes identified by continuous improvement
- changes to key management plans that are relevant
- where additional monitoring measures are identified in annual reviews or audits.

In addition and in accordance with CoA 6.6, GPM will review and, if necessary, revise the studies, strategies and plans required under the conditions of approval to the satisfaction of the Secretary within three months of:

- the submission of an incident report under CoA 7.1
- the submission of an Annual Review under CoA 7.3
- the submission of an Independent Environmental Audit under CoA 4.2
- the modification of the conditions of this approval (unless the CoAs require otherwise).

Where this review leads to revisions in any such document, then within 4 weeks of the review, GPM will submit the revised document to the Secretary for approval, unless otherwise agreed with the Secretary.

5.1 Update and amendment

Updates and amendments to this OAQMP must first be approved by Environmental Representative and then may require to be submitted to the Planning Secretary for approval via the Planning Portal website.

A copy of the updated plan will be distributed to all relevant stakeholders and changes implemented immediately.

Appendix A: ER Endorsement

31 March 2026

John Pola
Environmental Manager
Generator Property Management - Lidsdale
110 Skelly Road
Lidsdale NSW 2790

Re: MP07_0005 - Wallerawang Ash Dam Areas - Environmental Representative Endorsement - Construction and Operation Traffic Management Plan Rev 7

Dear John,

Following a review of the documents provided for the Construction and Operation Traffic Management Plan (O&CTMP) Rev 7, I can provide the following endorsement.

The O&CTMP Rev 7 has been reviewed against the Mod 2 Consolidated Conditions of Approval, in particular Condition 6.5a. Consultation with TfNSW and Lithgow Council has been completed and all comments have been addressed.

All conditions of approval and mitigation measures are contained in the O&CTMP Rev 7.

The document is endorsed for submission for approval.

Yours sincerely



David Bone
Independent Environmental Representative
dbone@emmconsulting.com.au

Appendix B: Air Quality Monitoring Program

Overview

Air quality monitoring is required to be undertaken by the Conditions of Approval for MP 05_0007 condition 3.8, which requires:

*'The Applicant shall prepare an **Air Quality Monitoring Program**, in consultation with, and to the satisfaction of, the EPA. The Program shall include, but not necessarily be limited to, monitoring for dust at the monitoring sites identified in the document referred to under condition 1.1 of this approval. The air quality monitoring program shall be ongoing for the life of the project, including final rehabilitation and stabilisation of the site.*

The monitoring program shall form part of the Air Quality Management Plan referred to in condition 6.5d) of this approval.'

The site has been operational since prior to the 2005 approval and was originally tied to the operation of the WPS. Following the closure of the WPS in November 2019 the following changes were implemented:

- monitoring of DG5 ceased and the dust gauge was removed from its location by EnergyAustralia NSW at the request of the landowner.
- DG27 and DG28 are no longer within the Lidsdale Ash Repository site boundary and are now on land associated with the former Wallerawang Power Station owned by Greenspot. Due to ongoing demolition of the power station, these dust gauges have been removed.

The remaining four dust deposition gauges (DG29, DG30, DG31 and DG32) are located in surrounding areas of the Lidsdale Ash Repository area (see Figure B1). In addition, DG31 is located in the general direction of DG27 and DG28 but is closer to the Lidsdale Ash Repository site.

Dust monitoring is not a licence requirement of the EPL 21185 however control of dust is required by the EPL, and monitoring of compliance is undertaken via this monitoring program.



Figure B1 Dust deposition gauge locations (DG29, DG30, DG31 and DG32) locations

Methods

The following sections describe the monitoring methods and locations. It is noted that additional monitoring may be undertaken in addition to these requirements. There are two main methods used at the site:

- Dust Deposition Gauges
- Visual

Dust Deposition Gauges

Air quality monitoring will be undertaken on a monthly basis in accordance with AS3580.10.1- 2016 Methods for sampling and analysis of ambient air, Method 10.1: Determination of particulate matter — Deposited matter — Gravimetric method or its most current version.

In summary the method requires the following:

- A stand or holder is positioned to be 2000mm +/- 20mm above the ground to maintain a horizontal plane.
- A glass bottle of appropriate size (2L-5L) is dosed with an algicide (Dilute Copper sulphate solution) and placed in the stand or holder.
- A glass funnel of 150mm diameter is placed in the lid or via a bung into the bottle.
- The assembly is exposed for a period of 30 days +/- 2 days.
- The gauge is exchanged after this period and sent to a laboratory for analysis for Total Insoluble Solids (Total Insoluble Matter). Additional analysis for Ash Residue and Combustible Matter can also be undertaken. Visual microscopic analysis (if required) can be undertaken prior to combustion.

Dust levels as measured by Total Insoluble Solids are required to be below the 4g/m²/month annual average. Where levels exceed this limit on a monthly basis a review of activities will be undertaken as noted in Section 4.2, Table 4.2.

Where levels are greater than 2 g/m²/mth above the 4g/m²/mth limit and dust is identified to be from site activities, a full review of the location dust suppression equipment location and usage will be undertaken as noted in Section 4.2, Table 4.2.

Visual Monitoring

This will consist of the following:

- Daily inspection by GPM site management of site activities recorded in a site diary
- Daily monitoring by all staff of visible dust, where high dust levels are identified, this will be reported to the supervisor to action watercarts, irrigation sprays and stop work notices

Reporting

Dust results will be reported as follows:

- Monthly to the GPM site management team via consultants reports and laboratory results
- Monthly to the Environmental Representative
- Annual review in the AEMR
- As requested by the NSW EPA, DPHI or other agencies.

Appendix C: Consultation



Our ref: DOC25/12774-1

John Pola
Safety and Environment Manager
Generator Property Management Pty Ltd

By email: john.pola@gpm.com.au

Dear John,

**POST APPROVAL MANAGEMENT PLANS – KEROSENE VALE ASH REPOSITORIES
Generator Property Management – EPL 21185**

I refer to your request via the Department of Planning, Housing and Infrastructure (DPHI) for advice from the Environment Protection Authority (EPA) on the Construction and Operational Noise Management Plans, and the Air Quality Management Plan for the former Kerosene Vale Ash Repositories site (the Premises), Environment Protection Licence (EPL 21185).

In preparing this advice, the EPA has included a review of the following documents:

- *'Generator Property Management: Construction & Operational Noise Management Plan – Lidsdale Ash Repository 2024, November 2024'*.
- *'Generator Property Management: Operational Air Quality Management Plan – Lidsdale Ash Repository 2024, November 2024'*.

For your information, the EPA does not endorse Environmental Management Plans (EMPs) given the role of the EPA in developing conditions and criteria for environmental protection and management. The EPA does however encourage the development of EMPs and programs to ensure that proponents have determined how they will meet their statutory obligations and environmental objectives as specified by any Project Approval and/or conditions of an environment protection licence.

The EPA has reviewed the management plans as provided and has no comments at this stage. The EPA will continue to review any additional management plans as required.

If you have any further questions about this matter, please contact Allan Adams, Senior Operations Officer, Environment Protection Authority on 6333 3804, or at info@epa.nsw.gov.au.

Yours sincerely,

LUCY APPS
Unit Head
Environment Protection Authority

21 January 2025

NSW Environment Protection Authority
As the environmental steward and regulator of our State we are committed to a sustainable future.
Join us on our mission to protect tomorrow together.

Phone:
131 555
Email:
info@epa.nsw.gov.au
Website:
epa.nsw.gov.au

Visit:
6 Parramatta Square
10 Darcy Street
Parramatta NSW 2150
Mail:
PO Box 1388, Bathurst
NSW 2795

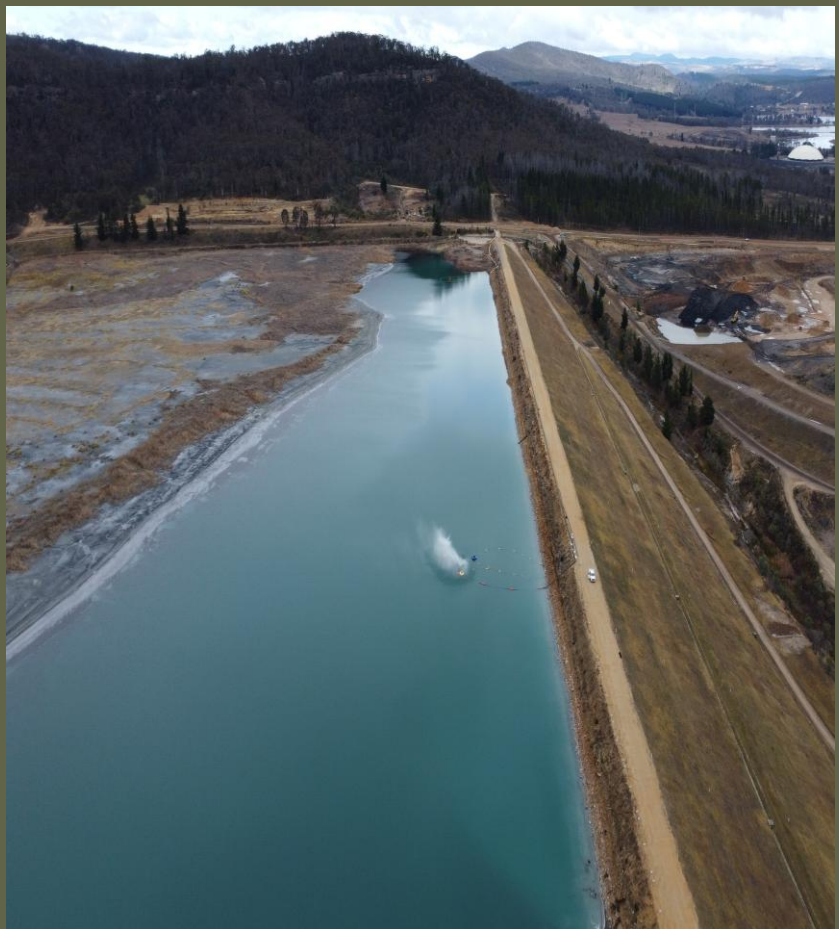


Appendix G

Operational Landscape/Revegetation Plan


Operational Landscape / Revegetation Plan

Lidsdale Ash Repository 2026



GPM

Document control

Title	Operational Landscape/Revegetation Management Plan - Lidsdale Ash Repository 2025
Approved by GPM Environment Manager	John Pola
Signed	
Dated	31 st March 2026

Version control

Revision	Date	Description	Author	Reviewer	Approval
Rev 01	27/8/2024	Draft	Laurence Smith	Verity Blair	John Pola
Rev 02	26/11/2024	Draft	Sofia Stergio	Philip Towler	John Pola
Rev 03	10/12/2024	Draft	Natalie DeVilliers	Philip Towler	John Pola
Rev 04	05/10/2025	Updated for DPHI comments	Zainab Ahmed	Nadia Eisenlohr	John Pola
Rev 05	31/03/2026	Final	Zainab Ahmed	Nadia Eisenlohr	John Pola

List of emergency and key contacts

Position	Name	Phone
EPA pollution hotline	General Number	131 555
Fire and Rescue NSW	General Number	000 (for pollution incidents that present an immediate threat to human health or property) 1300 729 579 (for pollution incidents that do not present an immediate threat to human health or property)
Lithgow Hospital	General Number	02 6350 2300
SafeWork NSW	General Number	131 050
24-hour community information line	General Number	1800 817 711
Environment Manager	John Pola	0429 205 290
Financial Controller & Company Secretary	Lisa Alexander	0438 401 663
Managing Director	David Wood	0484 623 220
Western Region Manager	Paul Glasson	0418 708 113
Engineering Project Officer	Timothy Edwards	0413 446 686
Engineering Project Officer	Julian MacPhee	0427 094 014
Environmental Representative	David Bone	0407 461 092
Lithgow City Council	General Number	02 6354 9999
Wallerawang Police	General Number	02 6355 1303
Lithgow Police	Chris Sammut	02 6352 8399

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Glossary/Abbreviations

Abbreviation	Expanded text
Approval	Approval Modification MP07_005-Mod 2
ASS	Acid Sulphate Soils
BVA	Biodiversity Values Assessment (EMM 2025)
CEMP	Construction Environmental Management Plan
CEMS	Contractors Environmental Management System
Compliance audit	Verification of how implementation is proceeding with respect to a Construction Environmental Management Plan (CEMP) (which incorporates the relevant approval conditions).
CoAs	Conditions of approval
Minister, the	Minister of the NSW Department of Planning, Housing and Infrastructure (or delegate)
DPE	Department of Planning and Environment (now DPHI)
DPHI	NSW Department of Planning, Housing and Infrastructure
EIS	Environmental Impact Statement
EEC	Endangered Ecological Community
Ecologically sustainable development	Using, conserving and enhancing the community's resources so that the ecological processes on which life depends are maintained and the total quality of life now and in the future, can be increased (Council of Australian Governments, 1992)
EPA	NSW Environment Protection Authority
EPBC-CoA	Federal Conditions of Approval under the EPBC Act
ERG	Environmental Review Group – generally comprising representatives of Roads and Maritime, Environmental Representative, Project delivery team, regulatory authorities and Lithgow Council. The ERG will be maintained for the duration of the Project and will meet regularly and undertake environmental inspections. The role the ERG is to work collaboratively with the project team to provide proactive advice on environmental management issues on the Project.
EMS	Environmental Management System
EMMs	Environmental Management Measures as outlined in the project EIS documentation.
Environmental aspect	Defined by AS/NZS ISO 14001:2015 as an element of an organisation's activities, products or services that can interact with the environment.
Environmental impact	Defined by AS/NZS ISO 14001:2015 as any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's environmental aspects.

Environmental incident	A set of circumstances that causes or threatens to cause material harm to the environment, and/or breaches or exceeds the limits or performance measures/criteria in this approval.
Environmental objective	Defined by AS/NZS ISO 14001:2015 as an overall environmental goal, consistent with the environmental policy, that an organisation sets itself to achieve.
Environmental policy	Statement by an organisation of its intention and principles for environmental performance.
Environmental target	Defined by AS/NZS ISO 14001:2015 as a detailed performance requirement, applicable to the organisation or parts thereof, that arises from the environmental objectives and that needs to be set and met in order to achieve those objectives.
ER	Environmental Representative - A suitably qualified and experienced person independent of project design and construction personnel employed for the duration of construction. The principal point of advice in relation to all questions and complaints concerning environmental performance.
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i> (NSW)
EPL	Environment Protection Licence
ESCP	Erosion and Sediment Control Plan
GPM	Generator Property Management Pty Ltd
Hold point	Is a verification point that prevents work from commencing prior to approval from Roads and Maritime Services
KPI	Key Performance Indicator
KVAD	Kerosene Vale Ash Dam
KVAR	Kerosene Vale Ash Repository (dry stacked as on top of KVAD)
LADR	Lidsdale Ash Dam Repository
Non-compliance	An occurrence, set of circumstances or development that is a breach of the approval but is not an incident..
OEH	Office of Environment and Heritage
OEMP	Operational environmental management plan
PESCP	Progressive Erosion and Sediment Control Plan
PIRMP	Pollution Incident Response Management Plan
Principal, the	GPM
POEO Act	<i>Protection of the Environment Operations Act 1997</i> (NSW)
REMM	Revised Environmental Management Measure
Roads and Maritime	Roads and Maritime Services
ROL	Road occupancy licence
SAP	Sensitive Area Plan

Secretary	Secretary of the Department of Planning or their Nominee
SSCAD	Sawyers Swamp Creek Ash Dam
SEARs	Secretary's Environmental Assessment Requirements
SPIR	Submission and Preferred Infrastructure Report
SWMS	Safety & Environmental work method statement
TfNSW	Transport for New South Wales
WPS	Wallerawang Power Station

1 Introduction

The Lidsdale Ash Dam Repository (LADR), formerly known as the Wallerawang Ash Repository, is located at Skelly Road, Lidsdale NSW (the Site) and is approximately 15 kilometres (km) northwest of Lithgow and 2.5 km north-east of Wallerawang Power Station. The Site comprises an area of approximately 528 hectares (ha) and is situated primarily on Lot 5 of Deposited Plan (DP) 829137.

The Site includes several distinct components, including:

- The Kerosene Vale Dry Ash Repository (KVAR) and underlying former Kerosene Vale Ash Dam (KVAD).
- Sawyers Swamp Creek Ash Dam (SSCAD).
- Lidsdale Cut and adjacent asbestos landfills.
- WPS Asbestos demolition landfill south of the SSCAD.

The site location and general layout are shown in Figure 1.1.

The Site has been used since the 1950s to store ash and other wastes generated by the Wallerawang Power Station (WPS). Site operations started prior to the commencement of the *Environmental Planning and Assessment Act 1979* (EP&A Act), when the WPS and associated facilities were owned by the NSW Government.

Ownership and responsibility for the Site was transferred from Energy Australia NSW Pty Ltd to Generator Property Management Pty Limited (GPM) in September 2020. GPM's objectives at the Site include closure of the operational facilities and the rehabilitation and management of the site in general including the Kerosene Ash Repository (KVAR) and the Sawyers Swamp Creek Ash Dam (SSCAD).

This Operational Landscape/Revegetation Management Plan (OLRMP) has been developed to ensure the care and maintenance of the site are carried out responsibly and in accordance with the relevant Conditions of Approval (CoAs) and any other requirements. It forms part of the Site's Operational Environmental Management Plan (OEMP) and will be staged. Further details related to the staging of this Plan have been provided in Section 1.3.

GPM and its contractors are also undertaking construction activities that will be managed under the Site's Construction Environmental Management Plan (CEMP).

1.1 Background to the Lidsdale Ash Repository

The Lidsdale Site was originally farmland that was gradually turned into mining premises during the late 1800s into the early 20th century. The Kerosene Vale mines were originally a series of open cut operations that changed to underground mines using portals driven under the northern escarpment.

The original ash placement operations were at the KVAD. The mining void was filled with ash transported from the WPS as a slurry (i.e. wet ash placement). When the KVAD was full, it was capped with a clay capping and then ash placement operations began at the SSCAD, which saw wet ash placement take place from 1980 to 2003. The SSCAD is still used to manage site water requirements with water levels managed by irrigation for dust suppression and other onsite water uses to prevent discharge to Sawyers Swamp Creek. When required, water is transferred for treatment via a Caustic Injection Plant (CIP), clarified and discharged through a licenced discharge point (LDP3). The SSCAD is a declared dam under the NSW [Dams Safety Act 2015 No 26](#) (DS Act) and is subject to regular surveillance and monitoring by certified engineers in accordance with the DS Act.

The need to further develop the KVAR area to maintain power-generation operations at WPS was identified in 2001. The existing wet ash storage area (i.e. the SSCAD) was approaching its design capacity and the placement of dry ash at the KVAR was identified as a viable alternative. Conversion from wet to dry ash placement aimed to minimise environmental and social impacts potentially resulting from heavy metal accumulation. The extent of both stages is outlined in Figure 1.1.

It is noted that the Site has recently been formally Declared under the Contaminated Land Management Act (CLM Act) by the EPA and is subject to a Voluntary Management Plan requiring detailed and extensive investigations that will guide long term works on the SSCAD and may require additional works on the Site that would be subject to further approval.

1.2 Relevant project approval

In 2002, Project Approval was granted by the then Minister of Planning to change from wet to dry ash-producing activities and to use the KVAR area for dry ash storage.

The placement of ash on the Repository was developed in two stages:

- Stage 1: Comprises about one third of the area associated with the repository site and located on the south-western section of the site, this area was designed to operate for a period of 5 years and reached its design capacity and has been capped.
- Stage 2: Comprises the remainder the repository site, covering an area from the open face of the Stage 1 area to the edge of the original storage area. This stage was designed to operate about 10 years, depending on actual ash production rates.

On 26 November 2008, Project Approval (07_0005) was granted by the then Minister of Planning for the extension of the existing KVAR area to permit the continued disposal of ash generated by the WPS under Part 3A (now repealed) of the *Environmental Planning and Assessment Act 1979*. The KVAR Stage 1 placement works were completed and capped in February 2009. The KVAR Stage 2 placement works commenced soon after in April 2009.

In January 2014, WPS's Unit 7 was removed from service and deregistered from the market; whilst in March 2014, Unit 8 was placed in long term storage. However, in November 2014, EnergyAustralia NSW announced that Unit 8 was to be removed from service and the WPS deregistered from the market.

WPS ceased energy production in April 2014 and is currently being decommissioned and dismantled. The bulk transport and disposal of ash to the KVAR ceased following the closure of the WPS. The Lidsdale Ash Repository is currently being managed in a care and maintenance arrangement. Environmental studies and investigations are currently underway to support GPM's safe decommissioning, demolition, rehabilitation and management of ongoing regulatory and contractual obligations associated with the Lidsdale Ash Repository area.

Modification 1 to 07_005 was approved on 9 August 2018 under section 75W of the EP&A Act. This was to allow for the importation of clean fill (virgin excavated natural material (VENM) and excavated natural material (ENM)) for use of capping of KVAR and SSCAD over two years. This modification included a revised project area that extended the originally approved project to include the area covered by SSCAD.

Modification 2 to 07_005 was approved on 13 October 2023 under section 96(1A) of the EP&A Act. This was to allow for the importation of fill over an additional 10 years (i.e. until 13 October 2033).

The most complete description of the onsite activities was provided in the original *Kerosene Vale Stage 2 Ash Repository Area Environmental Assessment* prepared by Parsons Brinckerhoff in April 2008. This focused on the ongoing ash management without providing any details of site rehabilitation requirements when the power station closed. However, it did include the realignment of a section of Sawyers Swamp Creek to allow the structural earthworks required to achieve an acceptable factor of safety against failure of the ash stockpiles during earthquakes. The subsequent modification applications focussed on the potential impacts of the importation of fill material, rather than on activities within the Site where the material would be utilised.

1.3 Staged rehabilitation strategy

As a result of the declaration of the site under the Contaminated Land Act, detailed studies are required to be undertaken to define the extent of contamination and required remediation. As a result the final landforms are not known. Therefore to achieve final rehabilitation of the site, a progressive strategy of short-term (Stage 1) and long-term (Stage 2) objectives has been developed:

- Stage 1 – Short term rehabilitation for the care and maintenance phase of the site until remediation plans are finalised:
 - Weed management
 - Short term stabilisation
- Stage 2 – Long term rehabilitation for the closure of the site:
 - Determined by remediation and closure plan
 - Long term revegetation strategy
 - Final landform and landuse

A review of how the conditions of consent are to be addressed progressively in this plan is provided in Table 3.1.

This plan will cover the required Stage 1 works, with the long-term final rehabilitation plan (Stage 2) currently under development and pending the outcomes of a number of investigations.

Ongoing investigations that will inform the update of this plan include:

- Closure Strategy
- Voluntary Management Plan (VMP)
- Remedial Options Assessment (ROA) and Remedial Action Plan(s) (RAP)

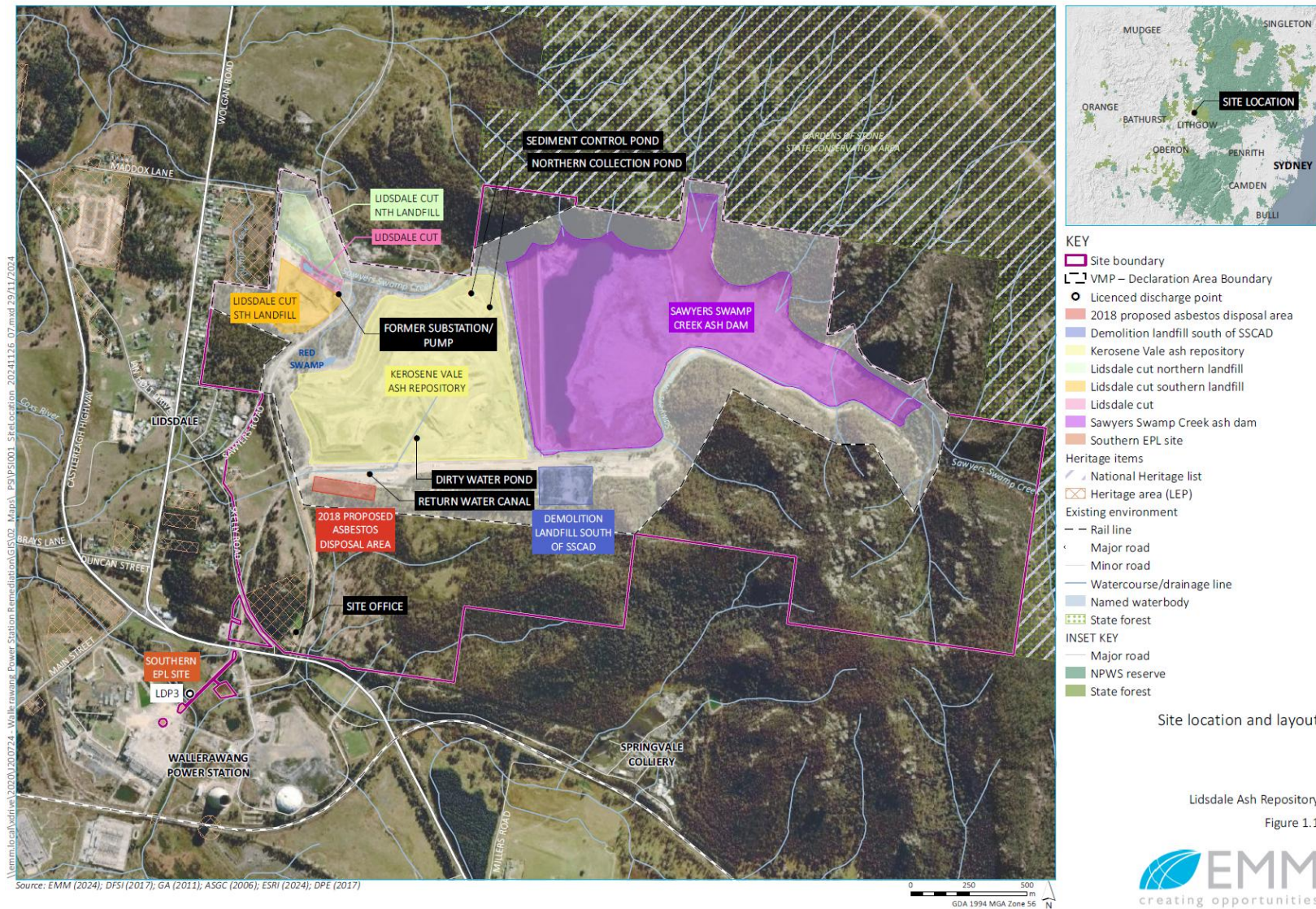


Figure 1.1 Site location and layout

1.4 Operational Environmental Management Plan and Sub-plans

CoA 6.4 requires the applicant to develop an OEMP that outlines the environmental management practices and procedures to be followed during construction, while CoA 6.5 requires the preparation and implementation of the following management plans:

- **Operational Noise Management Plan (ONMP)** - identifies the management measures to minimise operational noise impacts
- **Operational Groundwater Management Plan (OGMP)** - identifies the management measures to minimise operational groundwater impacts
- **Operational Air Quality Management Plan (OAQMP)** - identifies the management measures to minimise operational air quality impacts
- **Operational Landscape/Revegetation Plan (OLRMP)** - identifies the management measures to minimise operational biodiversity impacts
- **Operational Transport Management Plan (OTMP)** - identifies the management measures to minimise traffic and transport impacts during operation
- **Operational Surface Water Management Plan (OSWMP)** – identifies the management measures to minimise surface water impacts during operation

Given the requirement to develop these additional plans in conjunction with the OEMP, these plans are identified as sub-plans to the OEMP.

Table 1.1 provides a high-level overview of the proposed activities that are covered by the OEMP and those covered by the OEMP.

Table 1.1 Activities covered by the CEMP and OEMP

Environmental Management Plan	Activities covered
CEMP – construction activities	<ul style="list-style-type: none"> • Sawyers Swamp Creek realignment • Construction of stability berms around the perimeter of the KVAR • Excavation of the former pine plantation area • Sediment controls and surface water dams associated with construction of the KVAR stability berm and realignment of the Sawyers Swamp Creek • Establishment of freshwater collection ponds on the northern edge of SSCAD • Rearrangement of water flows around the KVAR • Establishment of access roads onto the surface of the SSCAD and associated roads across the dam surface • Reinstatement of environmental controls for historic landfill areas including capping of slumped areas, reprofiling for water management and control of sediment runoff during these activities • Concurrent construction activities
OEMP – care and maintenance operations	<ul style="list-style-type: none"> • Ash management • Management of on-site water systems • Capping material haulage, placement and management • Landscaping and revegetation/rehabilitation of the site • Upgrading and maintaining internal access roads in the project area

1.5 Environmental management system overview

GPM's Environmental Management System (EMS) is based on AS/NZS ISO 14001. The ISO 14001 standard provides best practice specifications for the implementation of an EMS. An EMS provides a framework for managing the company's environmental responsibilities so that they are integrated into overall operations. The standard approach integrates environmental management and supports the company's compliance with legislated and voluntary environmental requirements, as well as continuously improving their overall environmental performance.

The relevant environmental standards ensure a consistent approach is undertaken to integrate environmental management at all levels of the organisation by:

- Identifying and maintaining awareness of relevant environmental legislation.
- Assignment of roles and responsibilities.
- Establishment of procedures for internal and external communications.
- Establishment of procedures for monitoring and measuring environmental performance.
- Setting and reviewing objectives and targets for improving environmental performance.
- Monitoring and measuring environmental compliance and community inquiries.
- Setting and reviewing management system programs for achieving objectives and targets.
- Provision of environmental training aligned to skill requirements.
- Review of EMS performance for continual improvement.

This OLRMP has been developed to be consistent with the relevant provisions of GPM's EMS, including approvals and license as noted above.

A summary of the EMS and its interaction with the CEMP and OEMP is provided in Figure 1.2.

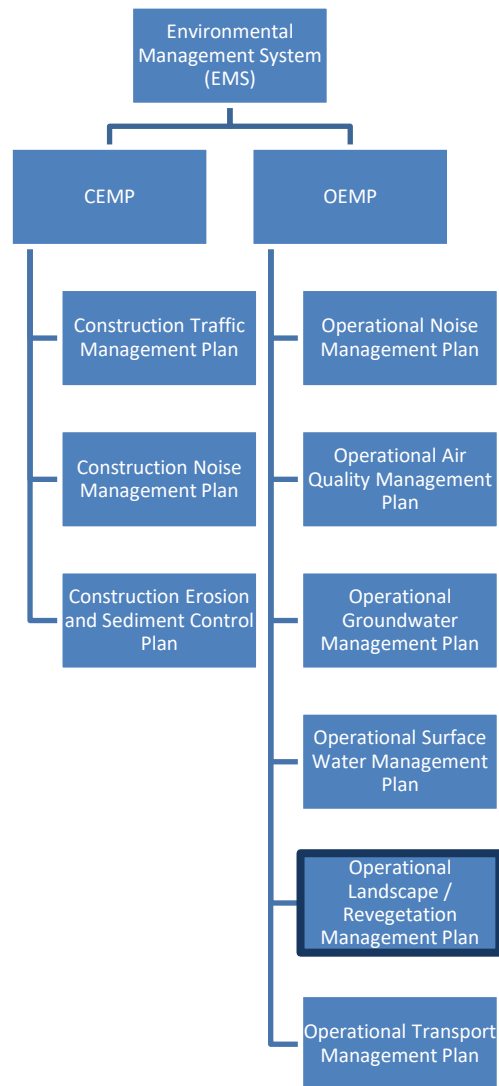


Figure 1.2 Environmental Management System flowchart

1.6 Interactions with other management plans and strategies

This OLRMP (as outlined in Figure 1.2 above) is a sub-plan to the OEMP and interrelates with the other (sub) management plans set out in section 1.2 and 1.4 above.

1.7 Reference documents

This OLRMP incorporates the obligations and criteria outlined in the following documents:

- Project Approval 07_0005
- Submission Report – Statement of Commitments (Parsons Brinckerhoff 2008)
- Modification application 07_0005 Mod 1
- Modification application 07_0005 Mod 2
- Wallerawang Power Station Submissions Report (EA 2018)
- Environment Protection Licence 21185 (NSW Environment Protection Authority)
- Works Approval (Water Mgt Act 2000)

1.8 Endorsement and approval

1.8.1 Internal approval of OEMP and Sub-plans

The OEMP and associated sub-plans, strategies and monitoring programs undergo ongoing review by the GPM team. Following the ongoing review and revision process, internal signoff will be provided.

Once internal approval is received, the documents will be provided to DPHI and the Environmental Representative (ER) for review prior to undertaking external consultation, review and approval processes described below.

1.8.2 External endorsement and approval of OEMP and sub-plans

Table 1.2 below provides a summary of the relevant authority(s), council(s) and agencies that require consultation during preparation of the OEMP sub-plans and monitoring programs in accordance with the conditions of approval.

External distribution for consultation and approval of the OEMP, sub-plans and monitoring programs will be undertaken and updated in consultation with the relevant external parties (refer Table 1.2) and will then be endorsed by the ER in accordance with CoA 6.5. After this external consultation and endorsement process is complete the required documents will be submitted to the Secretary for approval.

This will occur no later than four weeks prior to the commencement of operation of the project (unless otherwise agreed by the Secretary).

A copy of the latest ER Endorsement of the OEMP is included in Appendix A of this Plan.

Table 1.2 Consultation requirements for the OEMP and sub-plans

Report	Relevant CoA	Condition of Approval	Consultation required
Operational Environmental Management Plan	6.4	The plan shall be submitted for the approval of the Secretary no later than four weeks prior to the commencement of operation of the project, unless otherwise agreed by the Secretary.	Secretary (DPHI)
Operational Noise Management plan	6.5a	The plan shall be prepared in consultation with, and to the satisfaction of, the EPA.	EPA
Groundwater Management Plan	6.5b	The plan shall be prepared in consultation with, and to the satisfaction of, WaterNSW.	WaterNSW
Surface Water Management Plan	6.5c	The plan shall be based on best environmental practice and shall be prepared in consultation with, and to the satisfaction of, WaterNSW and Fisheries NSW.	WaterNSW Fisheries NSW
Air Quality Management Plan	6.5d	The plan shall be prepared in consultation with, and to the satisfaction of, the EPA.	EPA
Operational Transport Management Plan	6.5f	The plan must be prepared in consultation with TfNSW and Council.	TfNSW Lithgow Council

The OLRMP does not require consultation.

2 Purpose and Objectives

2.1 Purpose

Schedule 1 of the Planning Approval defines rehabilitation as “The restoration of land disturbed by the development to a good condition, having regard to its condition prior to commencement of construction, to ensure it is safe, stable and non-polluting.”

Given the long history of the site, pre-existing conditions are not known, and the large amount of ash and other materials deposited on the site do not allow ‘pre-existing’ landforms to be returned to the site. Rehabilitation therefore has the following aims:

- return the site to a stable landform in disturbed areas
- provide a long lasting and non-invasive vegetative cover which allows the continued management of the site (including SSCAD wall, asbestos landfills and ash repositories)
- rehabilitate areas outside of continuous management areas to native bushland areas (where bordering on existing native vegetation) or grazing land (where these areas currently occur)
- control priority weeds across the site.

Following the completion of capping and landform shaping across the site, the following broad actions will be undertaken:

- establish a topsoil or topsoil substitute across shaped areas
- establish vegetative growth via seeding and planting
- monitor rehabilitated areas for erosion, growth and weeds
- maintain areas by slashing, mowing and weed control.

This OLRMP for the Lidsdale Ash Repository primarily outlines strategies and actions to mitigate environmental impacts during the care and maintenance phase of the site (Stage 1 as outlined in Section 1.3). It is designed to set clear protocols and responsibilities around the implementation of landscaping and management of vegetation during works required to get the site ready for closure, and to thereby ensure that risks are managed, and sustainable practices are upheld.

Details of the final rehabilitation outcomes for the site will be updated following completion of contamination studies, risk assessments and agreed outcomes of the Voluntary Management Plan with NSW EPA under the CLM Act. This process is not due to be finalised until 2027. At that point, this OLRMP will be updated to include objectives and requirements for the long-term rehabilitation and eventual closure of the site. The update of this OLRMP for Stage 2 will include landscape plans outlining the strategy for progressive final rehabilitation, in accordance with CoA 6.5(e)iv.

This sub-plan supports the OEMP and should be read in conjunction with the OEMP.

2.2 Objectives

Key issues include:

- potential damage to the existing high value vegetation, including disturbance to threatened biodiversity by operations on the Site
- potential introduction of and spread of weeds and soil pathogens within and around the vicinity of the Lidsdale Ash Repositories.

The key objectives of the Stage 1 OLRMP are to:

- avoid or minimise disturbance wherever possible to high value biodiversity identified in the Biodiversity Values Assessment (EMM 2025) and the Niche (2021) biodiversity constraints study.
- avoid the introduction spread of weeds and soil pathogens in and around the Lidsdale Ash Repository site area

As indicated in Section 2.1, this OLRMP will be updated to provide further details of the long-term rehabilitation and closure at the site. Key objectives of the updated OLRMP will be to:

- enhance wherever possible the high value biodiversity identified in the Biodiversity Values Assessment (EMM 2025) and the Niche (2021) biodiversity constraints study, and any subsequent biodiversity studies
- align with the values, vistas and land uses of the local environment surrounding the site
- fulfill the objectives identified in the VMP, ROA, RAP(s), Closure Strategy and other documentation related to the closure of the site

All vegetation management works are to be undertaken in accordance with this OLRMP and supporting documentation identified below.

2.3 Targets

This sub-plan seeks to establish targets and indicators as follows:

Targets:

- Manage vegetation in the vicinity of the Lidsdale Ash Repositories and ensure environmental values are not degraded.
- Manage and protect identified threatened biodiversity (including their habitats) within the project area.

Indicators:

- Negligible changes to identified high value vegetation areas.
- Decrease in weed infestations.

Supporting documentation:

- Biodiversity Values Assessment (EMM 2025)
- Lidsdale Ash Repository Constraints Assessment (Biodiversity) (Niche 2021)
- Weed Management Plan Wallerawang Ash Dam Areas (Total Earth Care 2022)
- Weed Management Plan for Lidsdale Ash Repository (New Era Total)
- Central Tablelands Regional Strategic Weed Management Plan 2023-2027

3 Environmental requirements

3.1 Relevant Conditions of Approval

The relevant CoAs, and where they are addressed in this sub-plan are provided in Table 3.1.

Table 3.1 Relevant Conditions of Approval

Relevant CoA	Condition of Approval	Where addressed in this plan	When addressed	
			Stage 1	Stage 2
6.5(e)	a Landscape/Revegetation Plan to outline measures to minimise the visual impacts of the repository and ensure the long-term stabilisation of the Site and compatibility with the surrounding land fabric and land use. The Plan shall include, but not necessarily be limited to:	Throughout this OLRMP, Table 4.1 (mitigation measures) and Appendix B(Site Weed Management Plan)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
(i)	identification of design objectives and standards based on local environmental values, vistas, and land uses;	Table 4.1		<input checked="" type="checkbox"/> To be determined once requirements from Closure Strategy and VMP are finalised
(ii)	a description of short- and long-term revegetation measures;	Table 4.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
(iii)	a schedule of species to be used in revegetation;	Table 4.5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
(iv)	timing and progressive implementation of revegetation works as placement areas are completed, including landscape plans; and	Table 4.1		<input checked="" type="checkbox"/> To be determined once requirements from Closure Strategy and VMP are finalised
(v)	procedures and methods to monitor and maintain revegetated areas during the establishment phase and long-term.	Table 4.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Revegetation works must incorporate the use of local native species.	Table 4.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

3.2 Compliance tracking

CoA 4.2 mandates a compliance tracking program to track compliance with the requirements before commencing operations. A compliance tracking program has been prepared for internal use by GPM to ensure effective and efficient tracking of compliance (refer section 3.7 of the OEMP for further details on compliance tracking).

Detail on compliance management, including roles and responsibilities, is provided throughout Section 3 of the OEMP.

4 Environmental management

4.1 Management measures

Management actions to minimise operational impacts are summarised in Table 4.1.

Two columns have been included to indicate whether mitigation measures apply to Stage 1 or Stage 2 of the site's rehabilitation. The Stage 2 mitigation measures will be further updated once the outcomes of additional investigations and the objectives of the closure strategy are finalised.

Table 4.1 Environmental Management Measures

Relevant aspect	Management and mitigation measures	Source of requirement	Frequency	Relevant records	Responsibility	Stage 1 (Short term)	Stage 2 (Long term)
General requirements	Site induction to provide information on threatened vegetation/communities, no-go areas and responsibilities associated management plans for individual species.	This OLRMP	Ongoing	Training records / Toolbox talks	GPM / Specialised Consultant / Site Contractors	<input checked="" type="checkbox"/>	
	All vehicles, machinery and plant are to be free of excess mud, plant propagules or vegetative matter prior to entering the site	This OLRMP	Ongoing	Site inspection checklist Toolbox talks / Training records	GPM / Specialised Consultant / Site Contractors	<input checked="" type="checkbox"/>	
	All vehicles to travel along designated roads/tracks where appropriate. Any vehicles travelling off these designated routes will need to be washed down before and after entry to the area, to prevent introduction to new areas and spread between site areas.	This OLRMP	Ongoing	Toolbox talks / Training records	GPM / Specialised Consultant / Site Contractors	<input checked="" type="checkbox"/>	
	Measures to reduce the visual impact of the repository, including capping and re-vegetation, shall be implemented as soon as practicable after final capping of each section. Further details will be outlined in the site's closure plan.	CoA 6.5(e) SoC Table 7.1 'Erosion and Sediment Control'	After completion of each area and final capping	Site inspection checklist	Contractor		<input checked="" type="checkbox"/>
	As far as practicable and without jeopardising the safety of the operation, lighting associated with the operations shall be directed away from residential properties in the vicinity and towards Sawyers Swamp Creek Ash Dam and comply with AS4282.	CoA 2.35 SoC Table 7.1 'Erosion and Sediment Control'	Ongoing	Site inspection checklist	Contractor	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Weed management	Staff to be adequately trained and/or certified in identification of targeted weed species when undertaking weed control activities such as chemical use to ensure off-target harm.	This OLRMP	Ongoing	Training records / Contractor qualification documentation	Weed Management Contractor	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Relevant aspect	Management and mitigation measures	Source of requirement	Frequency	Relevant records	Responsibility	Stage 1 (Short term)	Stage 2 (Long term)
	Use weed-free topsoil for landscaping and revegetate disturbed sites with locally indigenous species	This OLRMP CoA 6.5(e)	Ongoing	Soil classification or testing records	GPM / Specialised Consultant / Site Contractors	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Introduction of weeds species	<p>Plant, machinery and site vehicles to be washed prior to entering and leaving Site to ensure weed propagules are not transported.</p> <p>Soil disturbance will be avoided as much as possible to minimise the potential for spreading weeds and generating sediment.</p> <p>On-site topsoil to be retained and reused to revegetate disturbed areas where possible.</p> <p>All imported fill and topsoil will be weed-free.</p>	This OLRMP	Ongoing		GPM / Site Contractors	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<p>Spread of weed species.</p> <p>Identified declared priority weeds under the <i>NSW Biosecurity Act 2015</i> include:</p> <ul style="list-style-type: none"> • Fireweed • Blackberry • Tortured Willow <p>Montpellier/Cape Broom, Scotch/English broom</p>	<p>Refer to Figure 4.3 for locations of management zones associated with declared priority weeds:</p> <ul style="list-style-type: none"> • WMZ 1 - <i>Senecio madagascariensis</i> (Fireweed) • WMZ 1, WMZ 2, WMZ 4, WMZ 6, WMZ 7, WMZ 8, WMZ 10, WMZ 12, WMZ 13, & WMZ 15 – <i>Rubus anglocandicans</i> (Blackberry) • WMZ 3 – <i>Salix matsudana 'Tortuosa'</i> (Tortured Willow) • WMZ 7, WMZ 10, WMZ 14 & WMZ 15 – <i>Genista monspessulana</i> (Montpellier Broom) <i>Cytisus scoparius</i> (Scotch/English broom) <p>Progressive site weed management to be undertaken in accordance with Management Priority plan as outlined in Total Earth Care 2022 (replicated in Appendix B).</p>	This OLRMP (Appendix B Weed Management Plan)	Ongoing	ER reports	GPM / Specialised Consultant / Site Contractors	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Relevant aspect	Management and mitigation measures	Source of requirement	Frequency	Relevant records	Responsibility	Stage 1 (Short term)	Stage 2 (Long term)
Vegetation clearing	Areas of vegetation not to be removed will be clearly marked prior to specific works occurring adjacent to the retained vegetation. Site exclusion fencing will be erected along threatened vegetation/habitat to ensure no accidental clearing or damage.	This OLRMP	Ongoing	Site inspection checklist / Sensitive Area Plan	GPM / Specialised Consultant / Site Contractors	<input checked="" type="checkbox"/>	
	Minimise vegetation clearing and disturbance to existing vegetation. Without prior assessment and approval, no vegetation clearing to be undertaken outside of the clearly marked areas. Clearance in areas of high and very high biodiversity constraints (EMM 2025, Niche 2021) will require an ecologist (licensed to handle fauna and pick flora) whilst clearance works being undertaken to ensure no threatened species are harmed during the clearance works.	This OLRMP	Ongoing	Vegetation Removal Procedure and Permit	GPM / Specialised Consultant / Site Contractors	<input checked="" type="checkbox"/>	
	Avoid impacts to hollow bearing trees. Without prior assessment and approval, no impact to hollow bearing trees. Buffer areas are to be applied to known breeding areas in accordance with recovery plans where they exist (i.e. White-breasted sea eagle nests). Clearance in areas of high and very high biodiversity constraints (EMM 2025, Niche 2021) will require an ecologist (licensed to handle fauna and pick flora) whilst clearance works being undertaken to ensure no threatened species are harmed during the clearance works.	This OLRMP	Ongoing	Vegetation Removal Procedure and Permit	GPM / Specialised Consultant / Site Contractors	<input checked="" type="checkbox"/>	
Site rehabilitation objectives, standards and procedures	All new batters shall be r stabilised as soon as practicably possible generally in accordance with the Blue Book (Managing Urban Stormwater - Soils and Construction 2004)	OEMP	Ongoing	Site inspection checklist	Contractor		<input checked="" type="checkbox"/>

Relevant aspect	Management and mitigation measures	Source of requirement	Frequency	Relevant records	Responsibility	Stage 1 (Short term)	Stage 2 (Long term)
	<p>A re-vegetation procedure which outlines the methods that would be used to revegetate the batters, including type of grass, small shrubs, sowing rate, fertilisers/ground treatment and irrigation plan will be developed as part of the closure and rehabilitation plan.</p> <p>Note: The procedure shall ensure that locally native species are used in the revegetation activities, where possible or feasible depending on soil conditions.</p>	OEMP CoA 6.5e	Prior to revegetation capping layer	Revegetation procedure	Contractor		<input checked="" type="checkbox"/>
	<p>A summary of the long term rehabilitation objectives include:</p> <ul style="list-style-type: none"> developing a broad acre planting strategy on slopes at a 1 vertical to 4 horizontal ratio. using small shrubs and groundcovers to control soil movement planting or seeding of grasses as a base soil conditioner, providing soil organic matter and establishing native perennial grass species to facilitate a long-term functional soil profile (erosion control, soil health, nutrient cycling). 	CoA 6.5e) i	Prior to long term revegetation	Revegetation procedure	GPM / Contractor		<input checked="" type="checkbox"/>
	The revegetation procedure will incorporate design objectives and standards based on local environmental values, vistas and land uses as identified in the closure plan	CoA 6.5e) i	Prior to long term revegetation	Revegetation procedure	GPM / Contractor		<input checked="" type="checkbox"/>
	The re-vegetated areas shall be watered twice weekly as required during dry periods until the vegetation is established to GPM's satisfaction. Watering will not be required during periods of wet weather. The revegetation procedure will contain a watering protocol which will ensure plants receive adequate watering during establishment as well as ensuring run-off due to overwatering is prevented.	OEMP	Twice weekly until vegetation is established	Revegetation procedure	Contractor	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Relevant aspect	Management and mitigation measures	Source of requirement	Frequency	Relevant records	Responsibility	Stage 1 (Short term)	Stage 2 (Long term)
	GPM shall ensure the revegetated zone continues to control erosion and dust impacts and runoff quality, while providing adequate visual amenity to the area.	CoA 6.5e	During vegetation establishment and beyond	Site inspection checklist	GPM	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	The ash shall be capped to a minimum depth of 0.75 m (subject to final closure requirements of the Remedial Action Plan), with the capping material to be spread with a dozer blade and then contour ripped to preclude soil movement during rainfall or other erosion events. Other soil stabilisation methods may be utilised including broom brushing or silt fencing as required.	OEMP, RAP	Capping initiated once final height is reached	Revegetation procedure	Contractor		<input checked="" type="checkbox"/>
	While total vegetation cover on finished surfaces will be difficult to achieve in the short term, the development of site biodiversity (grasses, shrubs, trees) over the longer term will enable this goal to be achieved.	CoA 6.5e) ii	As required	Revegetation procedure	GPM / Contractor		<input checked="" type="checkbox"/>
	The soil capping shall be conditioned to facilitate revegetation. If capping material does not contain stockpiled topsoil or is inappropriate to foster revegetation, appropriate soil conditioning methods shall be implemented. These may include the addition of organic matter through compost products such as green-waste or a cover crop such as annual grass species. Excavated Natural Material (ENM) or Virgin ENM and / or soil amendment products as defined by the EPA waste Classification Guideline dated 2014 may be used if required. Grass species will include various ratios of ryegrass, tall fescue and blue grass..	CoA 6.5e) ii, iii, v. OEMP	During capping and prior to soil stabilisation	Revegetation procedure	Contractor	<input checked="" type="checkbox"/>	

Relevant aspect	Management and mitigation measures	Source of requirement	Frequency	Relevant records	Responsibility	Stage 1 (Short term)	Stage 2 (Long term)
	Grass species shall be sown in the beginning of autumn or during spring and shall be grown for a season before being incorporated into the soil using harrows or dozer tynes (where accessible). This will provide a conditioned base for oversewing with perennial native grasses and other species.	CoA 6.5e)iv	Post capping and in the beginning of autumn or during spring	Revegetation procedure	Contractor	<input checked="" type="checkbox"/>	
	Seed will generally be applied as part of a hydromulch.	OEMP	As required	Revegetation procedure	Contractor	<input checked="" type="checkbox"/>	
	The second stage of grass cover revegetation shall include the sowing of a mix of perennial grasses, in either autumn or spring. Native perennial species to be used include Microlaena and Poa.	CoA 6.5e) iii. iv	Either autumn or spring	Revegetation procedure	Contractor		<input checked="" type="checkbox"/>
	Batters shall be shaped through the use of a tracked vehicle to prepare the capping and to provide rip lines along the contour.	CoA 6.5e ii	After stabilisation and conditioning	Revegetation procedure	Contractor	<input checked="" type="checkbox"/>	
	Irrigation shall be undertaken at establishment and as required thereafter, to ensure revegetation occurs. Fertilisers may also need to be applied on an ongoing basis as required. Previous results indicate that a suitable fertiliser will most likely include standard nitrogen, phosphorous, potassium and sulphur application, with the use of specialist bio dynamic products that include humic acids, liquid lime products, sea weed kelp based products and a hot-mix NPK blend (10-10-10) with chelated trace elements and potent organic fertilisers.	CoA 6.5e) ii, iv, v	Post seeding and as required	Revegetation procedure	Contractor	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Relevant aspect	Management and mitigation measures	Source of requirement	Frequency	Relevant records	Responsibility	Stage 1 (Short term)	Stage 2 (Long term)
	Threats to revegetation such as grazing by hares, rabbits, wombats and kangaroos shall be managed through the maintenance of fencing and through other means as appropriate.	CoA 6.5e) ii	Post seeding and as required	Monthly site inspection checklist	GPM/Contractor	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Soil testing shall be undertaken to assess the ongoing ability of the soil to support revegetation.	CoA 6.5e) I, ii, iv	As advised	Soil testing record	GPM / Contractor	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	The plant establishment, growth and species diversity shall be assessed annually. Assessments are to be based on visual monitoring and reported in the AEMR.	CoA 6.5e) v	Annually	Vegetation assessment record	GPM / Contractor	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	The long term revegetation shall be undertaken using tube stock after the establishment of the perennial grass species where possible (outside of capped ash areas). The tube stock shall be sourced from locally gathered provenance or shall be selected from types found within the region.	CoA 6.5e) i, ii, iii	Conduct after establishment of perennial grass species in winter months	Site inspection checklist	Contractor		<input checked="" type="checkbox"/>
	Tree species trials were undertaken in July 2008 from a regional selection to establish suitability for the area. Trials involved: Apple box, Long leaved box, Argyle apple, Red box, Western scribbly gum, Candle-bark gum, Red ironbark, Honey Myrtle and Sydney Golden Wattle	CoA 6.5e) i, ii, iii, iv	Complete	Site inspection checklist	GPM / Contractor	<input checked="" type="checkbox"/>	

Relevant aspect	Management and mitigation measures	Source of requirement	Frequency	Relevant records	Responsibility	Stage 1 (Short term)	Stage 2 (Long term)
	<p>Trials of local provenance tree species were performed in July 2009 and included: Red stringy bark, Narrow leaved peppermint, Western scribbly gum, Silver wattle and Red stem wattle.</p> <p>Note: while planting may occur before these trial species have reached maturity, the result of these trials will provide insight into the success rates for growth at the most critical, early age.</p>	CoA 6.5e) i, ii, iii, iv	Complete	Site inspection checklist	GPM / Contractor	<input checked="" type="checkbox"/>	
	The tube stock shall be planted 5-10m apart to ensure the maintenance of ground cover after establishment. Measures such as guards shall be used as protection against grazing.	CoA 6.5e) ii	Conduct after establishment of perennial grass species in winter months	Revegetation procedure	Contractor		<input checked="" type="checkbox"/>
Reporting	The Annual Environmental Management Review (AEMR) will be submitted to the Secretary complete with landscape and revegetation progress assessed throughout the year where applicable.	CoA 7.3	Annually	Annual review	GPM	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Relevant aspect	Management and mitigation measures	Source of requirement	Frequency	Relevant records	Responsibility	Stage 1 (Short term)	Stage 2 (Long term)
Harm to identified threatened ecological communities (TEC)	<p>Plant Community Type (PCT) 3945 Newnes Plateau Shrub Swamp, is associated with Newnes Plateau Shrub Swamp, which is identified as Endangered under the NSW Biodiversity Conservation Act 2016 (BC Act) and Temperate Highland Peat Swamps on Sandstone, listed as Endangered under the Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act).</p> <p>Avoid or minimise clearing of PCT 3945..</p> <p>Refer to Figure 4.1 for mapped location of PCT 3945.</p> <p>Threatened fauna, flora and plant communities</p> <p>Threatened flora, fauna and plant communities are outlined in Table 4.2 and Table 4.3 below.</p> <p>Table 4.2 provides details on PCT 3945.</p> <p>If avoidance is not feasible, install an exclusion zone around impacted areas of PCT 3945, which are to be retained to reduce the risk of accidental disturbance.</p> <p>Engagement of a qualified flora expert/arborist to conduct pre-clearing surveys as required. Vegetation clearing procedure to be followed.</p> <p>Weed management undertaken to ensure regeneration of PCT 3945 is not inhibited.</p>	This OLRMP	Ongoing	<p>Sensitive area map</p> <p>Site inspections during works in the vicinity of PCT 3945</p>	GPM / Specialised Consultant / Site Contractors	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Harm to identified vulnerable Black Gum individuals.	<p>Refer to Figure 4.1 for locations of Black Gum locations.</p> <p>Threatened fauna, flora and plant communities</p> <p>Threatened flora, fauna and plant communities are outlined in Table 4.2 and Table 4.3 below.</p> <p>Table 4.2provides details on Black Gum.</p> <p>If vegetation work is to be undertaken in the vicinity of Black Gum individuals, ensure individuals and stands are identified and an exclusion zone installed around areas to reduce the risk of accidental disturbance.</p> <p>Weed management undertaken to ensure regeneration of Black Gum is not inhibited.</p>	This OLRMP	Ongoing	<p>Sensitive area map</p> <p>Site inspections during works in the vicinity of Black Gum locations</p>	GPM / Specialised Consultant / Site Contractors	<input checked="" type="checkbox"/>	

Relevant aspect	Management and mitigation measures	Source of requirement	Frequency	Relevant records	Responsibility	Stage 1 (Short term)	Stage 2 (Long term)
<p>Harm to habitat associated with identified threatened fauna species, in particular:</p> <ul style="list-style-type: none"> the Dusky Woodswallow the Flame Robin the Scarlet Robin the White-bellied Sea-Eagle Gang-gang Cockatoo Purple Copper Butterfly. 	<p>Avoid or minimise clearing of PCTs 3369, 3385, 3687, 3694, 3696 and 3865 where possible.</p> <p>Refer to Figure 4.2 for the locations of threatened flora and fauna identified in the 2025 Biodiversity Values Assessment (EMM 2025), and refer to Figure 4.3 for an overview of mapped management zone locations for habitat associated with the Purple Copper Butterfly (WMZ 13) and identified location of a White-bellied Sea-Eagle nest (WMZ 11).</p> <p>Avoid disturbance to habitat associated with the Dusky Woodswallow, Flame Robin, White-bellied Sea-Eagle Gang-gang Cockatoo and the Purple Copper Butterfly. Refer to Threatened fauna, flora and plant communities</p> <p>Threatened flora, fauna and plant communities are outlined in Table 4.2 and Table 4.3 below.</p> <p>Table 4.2 for details on each of these species and associated habitat.</p> <p>If avoidance is not feasible, install exclusion zones around areas to be retained of threatened species habitat to reduce the risk of accidental encroachment. Refer to the EMM (2025) BVA or any subsequent ecological assessments for recommended buffer zones for threatened species identified onsite.</p> <p>Avoid areas containing Native Blackthorn <i>Bursaria spinosa</i> forming Purple Copper Butterfly habitat where possible.</p> <p>Weed management within these habitat areas to be undertaken to ensure regeneration is not inhibited.</p> <p>Weed management techniques such as spot spraying with a knapsack with care to reduce off-target spraying especially in the case of <i>Bursaria spinosa</i> subsp. <i>lasiophylla</i> (Native Blackthorn) which is associated with Purple Copper Butterfly habitat.</p>	This OLRMP	Ongoing	<p>Sensitive area map</p> <p>Site inspections during works in the vicinity of identified fauna habitat</p>	GPM / Specialised Consultant / Site Contractors	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Relevant aspect	Management and mitigation measures	Source of requirement	Frequency	Relevant records	Responsibility	Stage 1 (Short term)	Stage 2 (Long term)
<p>Harm to identified Blazed Tree</p> <p>The Blazed Tree forms an official survey boundary marking and is protected under the NSW <i>Surveying and Spatial Information Act 2002</i>.</p>	<p>Refer to Figure 4.3 for location of the blazed tree</p> <p>The blazed tree should be clearly marked to ensure accidental removal is minimised.</p> <p>The location of the blazed tree should be included in pre-start meetings prior to vegetation management works in its vicinity</p> <p>In the event that removal is required, an application to the Surveyor General for approval will be completed.</p>	This OLRMP	Ongoing	<p>Sensitive area map</p> <p>Site inspections during works in the vicinity of the Blazed tree</p>	GPM / Specialised Consultant / Site Contractors	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

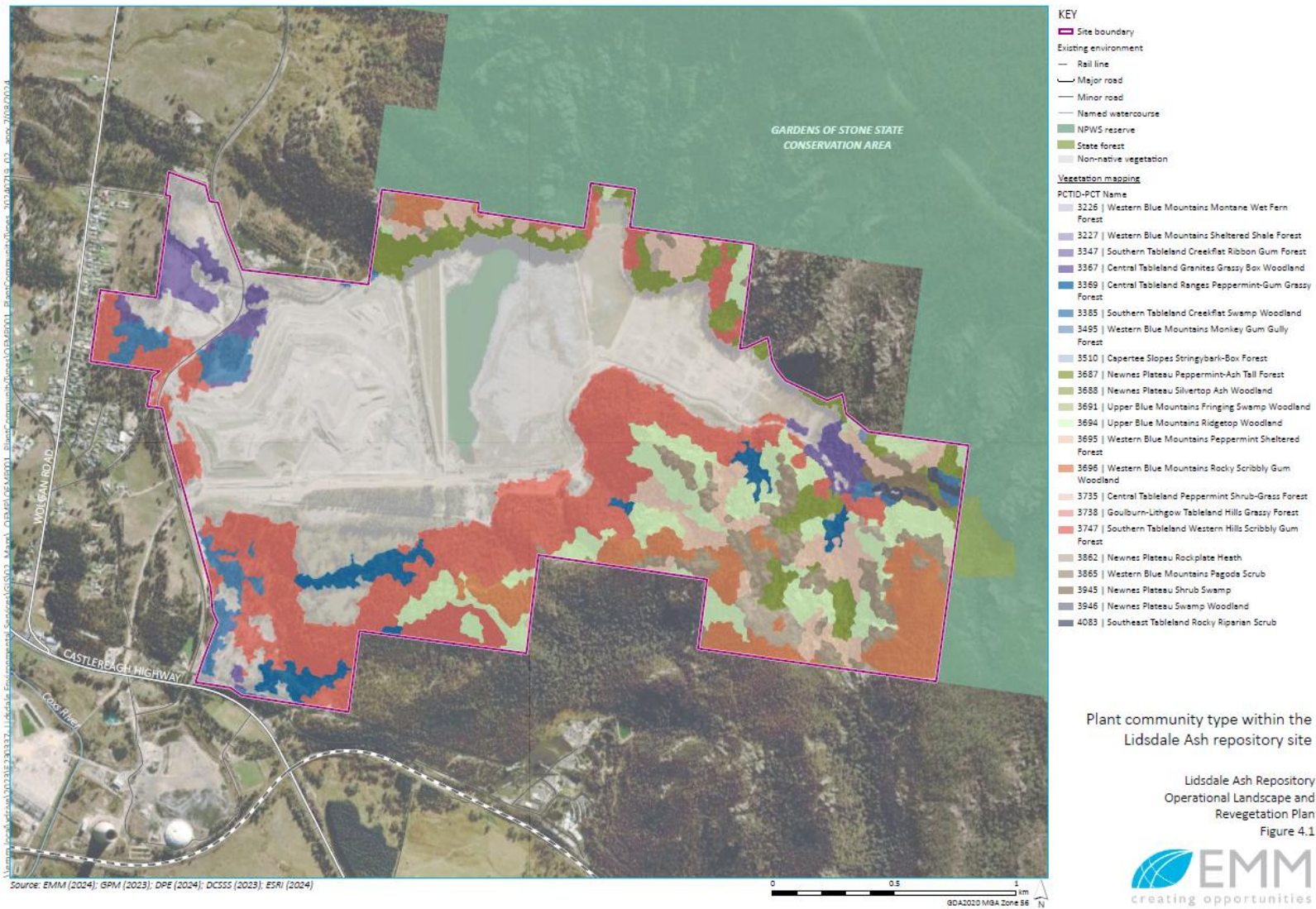


Figure 4.1 Plant Community Types within the Lidsdale Ash Repository Site

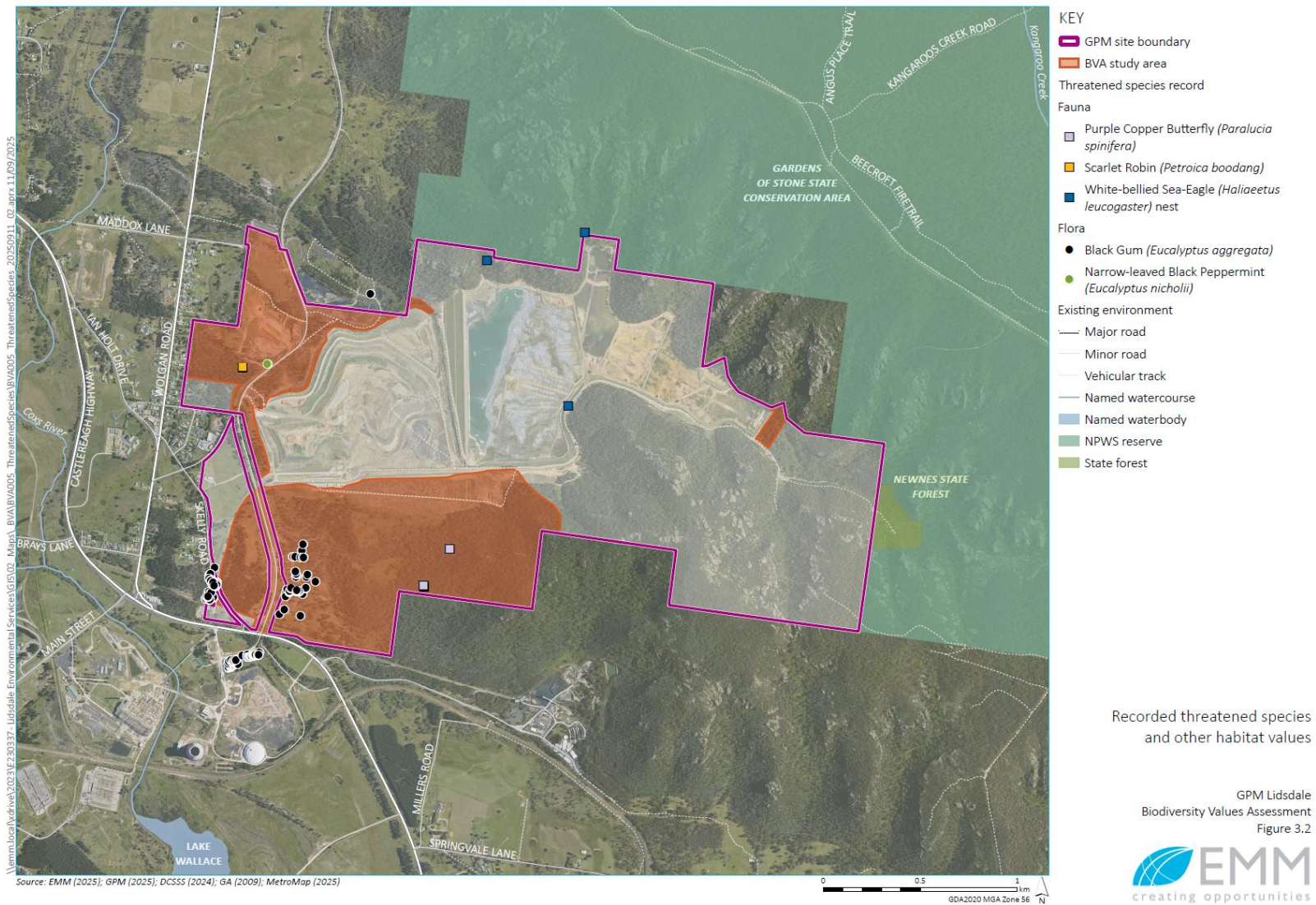


Figure 4.2 Threatened flora and fauna within the Lidsdale Ash Repository Site (EMM 2025)

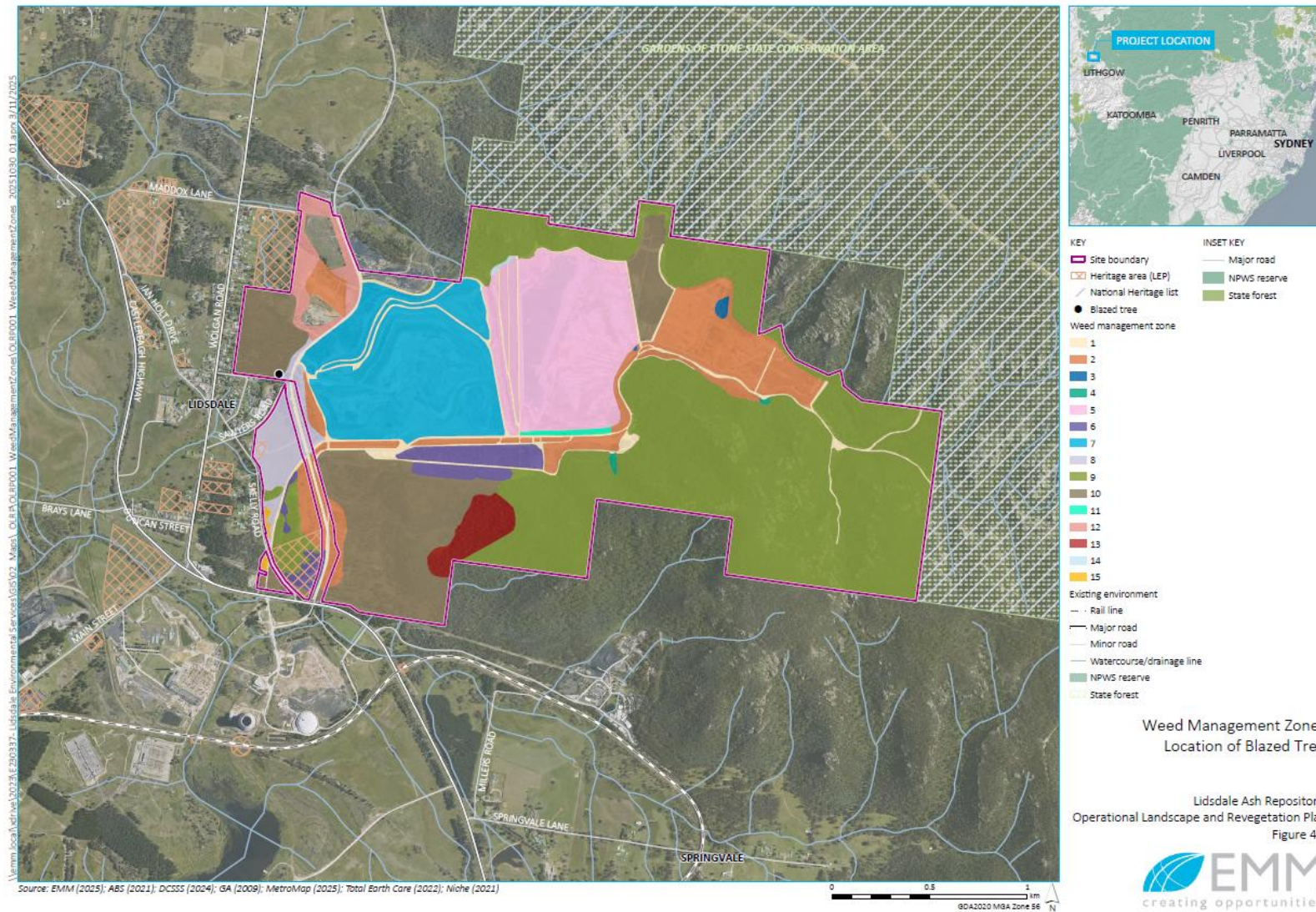



Figure 4.3 Weed Management Zones of the Lidsdale Ash Repository Site and the location of the Blazed Tree

Note: Refer to full Niche (2021) report for more detailed map indicating location of blazed tree

4.2 Threatened fauna, flora and plant communities

Threatened flora, fauna and plant communities are outlined in Table 4.2 and Table 4.3 below.

Table 4.2 Threatened flora and plant communities

Plant Community Type (PCT) or species	Conservation Status	Description	
<p>PCT 3945: Newnes Plateau Shrub Swamp –</p> <p><i>The ecological community dominated by shrubs and sedges that occurs on sites with impeded drainage in low slope headwater valleys on the Newnes Plateau in the upper Blue Mountains.</i></p>	<p>PCT 3945 can be associated with an endangered ecological community in Part 3 of Schedule 1 of the BC Act and is listed under as Endangered under the EPBC Act (where it occurs at elevations above 1100m above sea level).</p>	<p>A mid-high to tall heathland or closed heathland, occasionally with eucalypt emergents, with an unevenly-textured tussock sedge ground layer found on long gently sloping open drainage lines on the Newnes Plateau in the upper Blue Mountains. This PCT forms one of a suite of PCTs known broadly as hanging swamps or sandstone sedge swamps across the Blue Mountains.</p> <p>Where eucalypt trees are present, they are typically emergents on the margins of, or overhanging, the swamp. <i>Eucalyptus mannifera</i> is occasionally recorded however is the most frequently occurring eucalypt species. The shrub canopy very frequently includes a high cover of both <i>Leptospermum grandifolium</i> and <i>Grevillea acanthifolia</i> together with <i>Baeckea linifolia</i>, <i>Boronia deanei</i> and <i>Epacris paludosa</i>. The ground layer is a dense cover of sedges.</p>	








Plant Community Type (PCT) or species	Conservation Status	Description	
<p>Black Gum (<i>Eucalyptus aggregata</i>)</p>	<p>Vulnerable: BC Act Vulnerable: EPBC Act</p>	<p>Black Gum is a small to medium-sized woodland tree growing to 18 m tall. The bark on the trunk and main branches is dark greyish-black, deeply fibrous or flaky. The bark does not shed annually. Only the uppermost branches and twigs have smooth whitish, cream or greyish bark that sheds yearly.</p>	



Table 4.3. Identified threatened fauna

Identified Species	Habitat	Description	
<p>Dusky Woodswallow <i>Artamus cyanopterus cyanopterus</i> (Vulnerable, BC Act)</p>	<p>Primary habitat is dry open eucalypt forests and woodlands. The Dusky Woodswallow can be found in shrublands and farmlands, usually on the edges of forest or woodland. Nests are usually found in a tree fork and comprise of a loose bowl-like shape made from twigs, grass and roots.</p>	<p>The Dusky Woodswallow is a medium sized bird ranging from 16-19.5cm. They have a longish tale and are mostly dark grey-brown merging to blackish on the tail, with a small black-brown mask.</p>	 <p>The top photograph shows a Dusky Woodswallow perched on a thick, light-colored branch against a clear blue sky. The bird is facing left, with its wings slightly spread, showing dark brown upperparts and a lighter underside. The bottom photograph shows a Dusky Woodswallow sitting on a nest made of twigs and grass. The nest is situated in a tree fork. A small, fluffy chick with a bright yellow beak is visible next to the adult bird.</p>

Identified Species	Habitat	Description	
<p>Flame Robin <i>Petroica phoenicea</i> (Vulnerable, BC Act)</p>	<p>Flame Robins prefer forests and woodlands, with clearing or areas with open understoreys. In winter, the Flame Robin lives in dry forests, open woodlands and in pastures and native grasslands, with or without scattered trees.</p> <p>The Flame Robin will breed in upland tall moist eucalypt forests and woodlands, often on ridges and slopes. Nests are open cup chapes made of plant materials and spider webs, and can be found near the ground in sheltered sites such as shallow cavities in trees, stumps or banks.</p>	<p>The Flame Robin is a small robin that reaches 14 cm in length. The male Flame Robin has a bright orange-red throat, breast and upper belly. The male has a dark grey head and upper parts with a small white forehead patch and white wing stripes and white tail edges. The female is brown, darker above, and has a whitish throat and lower belly.</p>	


Identified Species	Habitat	Description	
<p>White-bellied Sea Eagle <i>Haliaeetus leucogaster</i> (Vulnerable, BC Act)</p>	<p>Habitats are characterised by the presence of large areas of open water including larger rivers, swamps, lakes, and the sea.</p> <p>Canopy trees within the Site may form potential breeding habitat for White-bellied Sea Eagles. White-bellied Sea Eagle nests are usually found in large eucalypts and often have emergent dead branches or large dead trees nearby which are used as 'guard roosts'. Nests are large structures built from sticks and lined with leaves or grass.</p> <p>No canopy stick nests were identified and no traces of were detected (i.e. whitewash, discarded prey items, feathers). Therefore, it is highly unlikely that the Site forms breeding habitat for Little Eagle and instead, consists of foraging habitat only.</p> 	<p>The White-bellied Sea Eagle is a large eagle that has long broad wings and a short, wedge-shaped tail. It measures 75–85 cm in length, and has a wingspan of 180–220 cm.</p> <p>Adults are predominantly white and grey. The head, breast and belly, and the feathering on the legs, are white. The back and upper surfaces of the wings are grey, and the undersides are greyish-black with a smaller area of white along the leading edge. The tail is grey at the base and has a white tip.</p>	


Identified Species	Habitat	Description	
<p>Gang-gang Cockatoo <i>Callocephalon fimbriatum</i> (Endangered: BC Act, Endangered: EPBC Act)</p>	<p>In summer, Gang-gang Cockatoos occur in tall mountain woodlands and forests with thick shrubby understories. In winter, they move to the lower altitudes and drier, more open woodlands and forests. They can be seen at roadsides and in the gardens and parks of urban areas. These cockatoos need tall trees for their nest hollows.</p> 	<p>Gang-gang Cockatoos are primarily slate-grey, with the males easily identified by their scarlet head and wispy crest, while females have a grey head and crest and feathers edged with salmon pink on the underbelly. They range in length from 32 to 37 cm, with a wingspan of 62 to 76 cm.</p>	



Identified Species	Habitat	Description	
<p>Purple Copper Butterfly <i>(Paralucia spinifera)</i> Endangered: BC Act Vulnerable: EPBC Act</p>	<p>The Purple Copper Butterfly is only found in the Central Tablelands of NSW. Its habitat is restricted to elevations above 900 metres. The butterflies generally remain in the vicinity of <i>B. spinosa</i> subsp. <i>lasiophylla</i>, and are rarely observed more than 10 - 40 m distant from the plant.</p> <p>Larvae can be found crawling up blackthorn stems and feeding on the leaves from 10 pm to 5 am between November and January.</p> <p><i>Bursaria spinosa</i> subsp. (<i>Lasiophylla</i>)</p> 	<p>The purple copper butterfly is one of Australia's rarest butterfly species.</p> <p>The Purple Copper Butterfly is a small butterfly with a thick body, and a wingspan of only 20-30 millimetres. The upper sides of its wings are black or deep brown, with a bronze or green iridescence when they're sunning. The undersides of its wings are patterned with subtle brown, black, and grey. Its black antennae are dotted with white spots, and terminate with a black tip.</p> <p>Adult males fly rapidly at about 1 metre from the ground and rest in the sun with their wings parted. Females fly less rapidly and tend to stay closer to the host plant. Adults usually fly on warm cloudless days in September, around the middle of the day.</p>	



4.3 Declared weeds

Table 4.4. Declared weeds

Declared Weeds	Weed Management Zone (refer Figure 4.3)	Description	
<p>Fireweed <i>Senecio madagascariensis</i></p>	<p>WMZ 1 Weed density varies greatly and is more prevalent in areas of high disturbance.</p>	<p>Fireweed (<i>Senecio madagascariensis</i>) is a highly invasive and opportunistic weed native to southeastern Africa. It quickly colonises disturbed areas.</p> <p>Fireweed is a daisy-like plant that grows from 10 to 60 cm high. It has a variable growth habit and leaf structure, but the most common form of fireweed is a low, heavily branched, annual or short-lived perennial plant.</p>	

Declared Weeds	Weed Management Zone (refer Figure 4.3)	Description	
<p>Blackberry <i>Rubus anglocandicans</i></p>	<p>WMZ 1, WMZ 2, WMZ 4, WMZ 6, WMZ 7, WMZ 8, WMZ 10, WMZ 12, WMZ 13, & WMZ 15. Infestation in these areas is worse in drainage lines, with the overall zones degrading rapidly with dense established juvenile growth.</p>	<p>Blackberry is a shrub with tangled, prickly stems. Blackberry stems are erect, or semi-erect, canes that arch or trail up to 7 m long. They can be green, purplish or red, smooth or moderately hairy, round or angled, with numerous curved or straight prickles of different sizes and sometimes with small, stalked glands.</p>	

Declared Weeds	Weed Management Zone (refer Figure 4.3)	Description	
<p>Tortured Willow <i>Salix matsudana</i></p>	<p>WMZ 3 These areas contain Mature <i>Salix matsudana</i> 'Tortuosa' (Tortured Willow) and multiple juveniles within Sawers Swamp</p>	<p>Willows are deciduous trees or shrubs. They have small seeds with long, silky hairs attached to one end like a parachute, which help them spread. The seeds are usually short-lived, from days to a few weeks. Leaves are long and narrow, with finely toothed edges and usually a paler underside. Upright catkins (flower stalks) carry numerous tiny flowers. The trees form large, dense root-mats on the surface of the soil or in shallow water and slow-moving streams</p>	
<p>Montpellier Broom & Scotch/English broom <i>Genista monspessulana</i> & <i>Cytisus scoparius</i></p>	<p>WMZ 7, WMZ 10, WMZ 14 & WMZ 15.</p>	<p>Broom species are a large shrub, up to 4 m, with bright yellow flowers. Plants usually have numerous straight young branches which gives the weed its common name</p>	

Declared Weeds	Weed Management Zone (refer Figure 4.3)	Description	
<p>Pampas grass <i>Cortaderia sp.</i></p>	<p>WMZ 5</p>	<p>Pampas grass is a perennial grass that grows in clumps up to 1.5 m wide. There are two species in NSW:</p> <ul style="list-style-type: none"> • Common pampas grass (<i>Cortaderia selloana</i>), which is up to 6 m tall when in flower. • Pink pampas grass (<i>Cortaderia jubata</i>) is up to 4.5 m tall when in flower. <p>Pampas grass has naturalised in bushland on the Central Coast and in some areas of the Central Tablelands. It is a major weed in Sydney. There are lots of small populations on the coastal plains of the north coast of NSW. It is spreading across land disturbed by coal mining to the west of Newcastle. Pampas grass prefers open, sunny locations and can grow in low-fertility soil. It tolerates waterlogging and can infest mangroves, riverbanks, and heathlands. It tends to establish in roadsides, quarries, sand dunes, mine spoil, new forest plantations, and burnt and disturbed bushland.</p>	
<p>St Johns Wort <i>Hypericum perforatum</i></p>	<p>WMZ10 & WMZ 12</p>	<p>There are two main strains of St John's wort in NSW - broad-leaf and narrow-leaf strains. The strains have different toxicity levels at different times of the year. See the section on grazing timing below for more information on when to graze each variety.</p> <p>Measure the leaves to tell them apart. Measure leaves at the 6th node (bump) on the flowering stem when the plant is growing well in spring. The narrow-leaf strain has leaves 7 – 9 mm wide. The broad-leaf strain has leaves 10 – 12 mm wide.</p> <p>The heaviest NSW infestations are in the central and southern tablelands and slopes. The narrow-leaf strain is more widespread.</p> <p>St John's wort is native to Europe, Asia and North Africa. It was brought to Australia in 1875 as a garden plant. It is used in herbal medicine.</p>	

4.4 Short term stabilisation

Short term stabilisation will use a range of species, species considered are listed in Table 4.5 below. These are to be used for stabilisation and erosion control purposes. Species for long term rehabilitation will be identified for Stage 2 of this plan.

Table 4.5 Stabilisation species list

Botanical name	Common Name
-	Japanese millet
Festuca arundinacea	Fescue
Lolium perenne	Perennial ryegrass
Lolium arundinaceum	Tall fescue
Phalaris aquatica	Phalaris
Dactylis glomerata	Cocksfoot
Microlaena sp.	Weeping grass
Poa pratensis	Kentucky blue grass
Dichanthium sp.	Bluegrass
Rytiodperma sp.	Wallaby grass

5 Administrative requirements

5.1 Incidents and non-compliances

5.1.1 Incidents

All incidents will be reported and investigated, and corrective actions assigned to prevent future occurrences in accordance with the OEMP Section 3.8.

The approval defines an incident as:

A set of circumstances that causes or threatens to cause material harm to the environment, and/or breaches or exceeds the limits or performance measures/criteria in this approval.

Material harm (which includes actual or potential harm) to the health or safety of human beings or to ecosystems that is not trivial or that results in actual or potential loss or property damage exceeding a threshold dollar value as identified by the POEO Act.

The Secretary must be notified in writing via the Major Projects website immediately after the Project team becomes aware of an incident in accordance with CoA 7.1. The notification must identify the development (including the application number and the name of the development if it has one) and set out the location and nature of the incident.

Section 3.8 of the OEMP details environmental incidents and the response to environmental emergencies for the Project. This includes the reporting, notification and investigation of environmental incidents. Emergency contact details are also provided. In the event of an environmental incident or emergency related to the implementation of this OLRMP, the responses detailed in the OEMP are to be implemented.

5.1.2 Non-compliance

The approval defines non-compliance as:

An occurrence, set of circumstances or development that is a breach of the approval but is not an incident.

The Secretary must be notified in writing via the Major Projects website within seven days after the Project team becomes aware of any non-compliance in accordance with CoA 7.2. A non-compliance notification must identify the development and the application number for it, set out the condition of approval that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.

Section 3.8.1 of the OEMP details the Project team's response following the identification of a non-compliance with the CoA, the OEMP and associated sub-plans. This includes the reporting, investigation and notification of non-compliances. Non-compliance with this OLRMP will be addressed as required by the OEMP.

5.2 Reporting

Environmental monitoring for the Lidsdale Ash Repository area is designed to comply with the requirements of statutory approvals and provide an analysis of the condition of the environment surrounding the works.

An overview of the environmental monitoring activities for the project area specified under Section 5.2 of the OEMP.

Vegetation management will be monitored during environmental inspections and ER inspections, to ensure that unauthorised clearing does not occur and that stabilisation and rehabilitation are ongoing. Additional ecological assessments are planned for the site which will provide further detail on the native vegetation condition at the site.

Weed management is carried out year-round, with actions planned to align with the best seasonal conditions for each treatment and in consideration of the management priorities identified in the Site Weed Management Plan in Appendix B. Each month, a summary of weed areas sprayed and targeted weed species is reported in the Monthly Environmental Compliance reports.

Rehabilitation, vegetation and weed management are reported in the Annual Environmental Management Report (AEMR), which will be submitted to the Secretary each year.

5.3 Review

A review of the OEMP, sub-plans (including this OLRMP) and monitoring programs will be undertaken during operations as required. These reviews will be completed to determine the efficiency of the plans and monitoring programs and whether any changes are required to ensure compliance.

Circumstances which may trigger a review include:

- changes to design, construction, work methods, legislation, or policy
- incidents, complaints or non-compliance
- changes identified by continuous improvement
- changes to key management plans that are relevant
- where additional monitoring measures are identified in annual reviews or audits.
- where monitoring or numerical modelling demonstrates a change to the conceptual hydrogeological understanding.

In addition and in accordance with CoA 6.6, GPM will review and, if necessary, revise the studies, strategies and plans required under the conditions of approval to the satisfaction of the Secretary within three months of:

- the submission of an incident report under CoA 7.1
- the submission of an Annual Review under CoA 7.3
- the submission of an Independent Environmental Audit under CoA 4.2
- the modification of the conditions of this approval (unless the CoAs require otherwise).

Where this review leads to revisions in any such document, then within 4 weeks of the review, GPM will submit the revised document to the Secretary for approval, unless otherwise agreed with the Secretary.

In accordance with CoA 6.5A, this plan, this OGMP has been updated prior to the importation of capping material to the site from sources outside of the Lithgow local government area.

Appendix A: ER letter of Endorsement

31 March 2026

John Pola
Environmental Manager
Generator Property Management - Lidsdale
110 Skelly Road
Lidsdale NSW 2790

**Re: MP07_0005 - Wallerawang Ash Dam Areas - Environmental Representative Endorsement -
Operational Landscape/Revegetation Management Plan Rev 5**

Dear John,

Following a review of the documents provided for the Operational Landscape/Revegetation Management Plan (OLRMP) Rev 3, I can provide the following endorsement.

The OLRMP Rev 3 has been reviewed against the Mod 2 Consolidated Conditions of Approval, in particular Condition 6.5e. No consultation was undertaken or required to be undertaken for this plan.

All conditions of approval and mitigation measures are contained in the OLRMP Rev 3.

The document is endorsed for submission to DPHI for approval.

Yours sincerely



David Bone
Independent Environmental Representative
dbone@emmconsulting.com.au

Appendix B: Site weed management plan

Management Priorities	Key WMZ	Specifications	Target
Protect threatened species habitat	13 11 15	Prioritise retention and protection of habitat. Follow special considerations and management actions in Table 3.1.	Majority native cover in zone 13 (>95%) Significant reduction of weed cover in zone 15 (<5% cover)
Protect top of catchment in east.	1 (east) 2 (east)	Target areas of high dispersal potential.	Create buffer of <5% weed cover on interface of Sawyers Swamp and WMZ 9.
Reduce biomass of large patches of <i>Rubus anglocandicans</i> (Blackberry) east to west.	2 7	Target areas of high dispersal potential. Prioritise large patches of <i>Rubus anglocandicans</i> (Blackberry) in the southwest.	Significant reduction in large patches of <i>Rubus anglocandicans</i> (Blackberry).
Control <i>Rubus anglocandicans</i> (Blackberry) east to west.	2 7	Focus treatment on infrastructure, drainage lines and interfaces between native vegetation and disturbed areas starting in the east and moving west.	No large patches on site.
Reduce Broom (<i>Genista monspessulana</i>)	7 10 14	Prevent infestation by reducing biomass	Significant reduction by closure (<5% cover)
Reduce <i>Cortaderia selloana</i> (Pampas grass) east to west	5	Target reproduction and recruitment to prevent further infestation.	Significant reduction by closure (<5% cover)
Remove <i>Salix matsudana</i> 'Tortuosa' (Tortured Willow)	3	Remove all individuals Monitor for regrowth and perform secondary weeding if required	100% reduction by closure
Reduce Pines (<i>Pinus radiata</i> and <i>Pinus halepensis</i>)	6 9	Focus on interface between WMZ 6 and 9 targeting individuals (<30 m tall) and juvenile individuals (DBH <10cm) encroaching into native vegetation. Pine trees over 30 m tall are considered significant and shall not be removed or harmed.	100% reduction of juvenile (DBH <20 cm) individuals. 70% reduction of <i>Pinus radiata</i> and <i>Pinus halepensis</i> by closure
Contain/reduce the spread of St Johns Wort (<i>Hypericum perforatum</i>)	10 and 11 (or where found)	Target reproduction and recruitment to prevent further infestation.	Significant reduction by closure (<5% cover)
Maintenance	All Zones	Maintain sites for a minimum 5% weeds except for significant pine trees	<5% weed cover in in all zones except for 11 and 6.

Appendix H

Operational Transport Management Plan

Lidsdale Ash Dam Areas

Construction and Operational Transport Management Plan

Prepared for Generator Property Management Pty Ltd

March 2026

Lidsdale Ash Dam Areas

Construction and Operational Transport Management Plan

Generator Property Management Pty Ltd

E230337 RP3

March 2026

Version	Date	Prepared by	Reviewed by	Comments
V1	14 December 2021	Baqir Husain	Dr. Tim Brooker	Draft for TfNSW review
V2	29 April 2022	Baqir Husain	Dr. Tim Brooker	Final addressing TfNSW comments of 8 March 2022
V3	11 October 2024	Sofia Stergio	John Pola	Minor updates to incorporate MOD2
V4	11 February 2025	Nadia Eisenlohr	Abdullah Uddin	Updates following TfNSW comments from 24/01/25
V5	15 August 2025	Zainab Ahmed	Nadia Eisenlohr	Updated to address TfNSW comments
V6	19 September 2025	Zainab Ahmed	Nadia Eisenlohr	Updated to address DPHI comments
V7	31 March 2026	Zainab Ahmed	Nadia Eisenlohr	Final

Approved by



John Pola

GPM Environment Manager

31 March 2026

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ABN: 28 141 736 558

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1 Introduction

This document describes the Construction and Operational Transport Management Plan (TMP) that will be implemented by Generator Property Management (GPM) and its contractors during the construction, operation and maintenance of the Lidsdale Ash Repository. The Lidsdale Ash Repository (the site) is located at Skelly Road, Lidsdale NSW and is approximately 15 kilometres (km) north-west of Lithgow and 2.5 km north-east of Wallerawang Power Station (WPS). The site comprises an area of approximately 528 hectares (ha) and is situated primarily on Lot 5 in Deposited Plan (DP) 829137 (refer to Figure 1.1).

The site includes:

- the Kerosene Vale Dry Ash Repository (KVAR) and underlying former Kerosene Vale Ash Dam (KVAD)
- Sawyers Swamp Creek Ash Dam (SSCAD)
- Lidsdale Cut and adjacent asbestos landfills
- demolition landfill south of the SSCAD.

This TMP has been prepared to satisfy the conditions of approval as part of the modification (MOD 2) to the development approval by Minister of Planning as part of the *Environmental Planning and Assessment Act 1979* for the project at Lidsdale Ash Repository (Application No. 07_0005) approved on 13 October 2023. This TMP outlines the framework of the transport movements to/from and within the project area associated with the importation of material required for construction and operations.

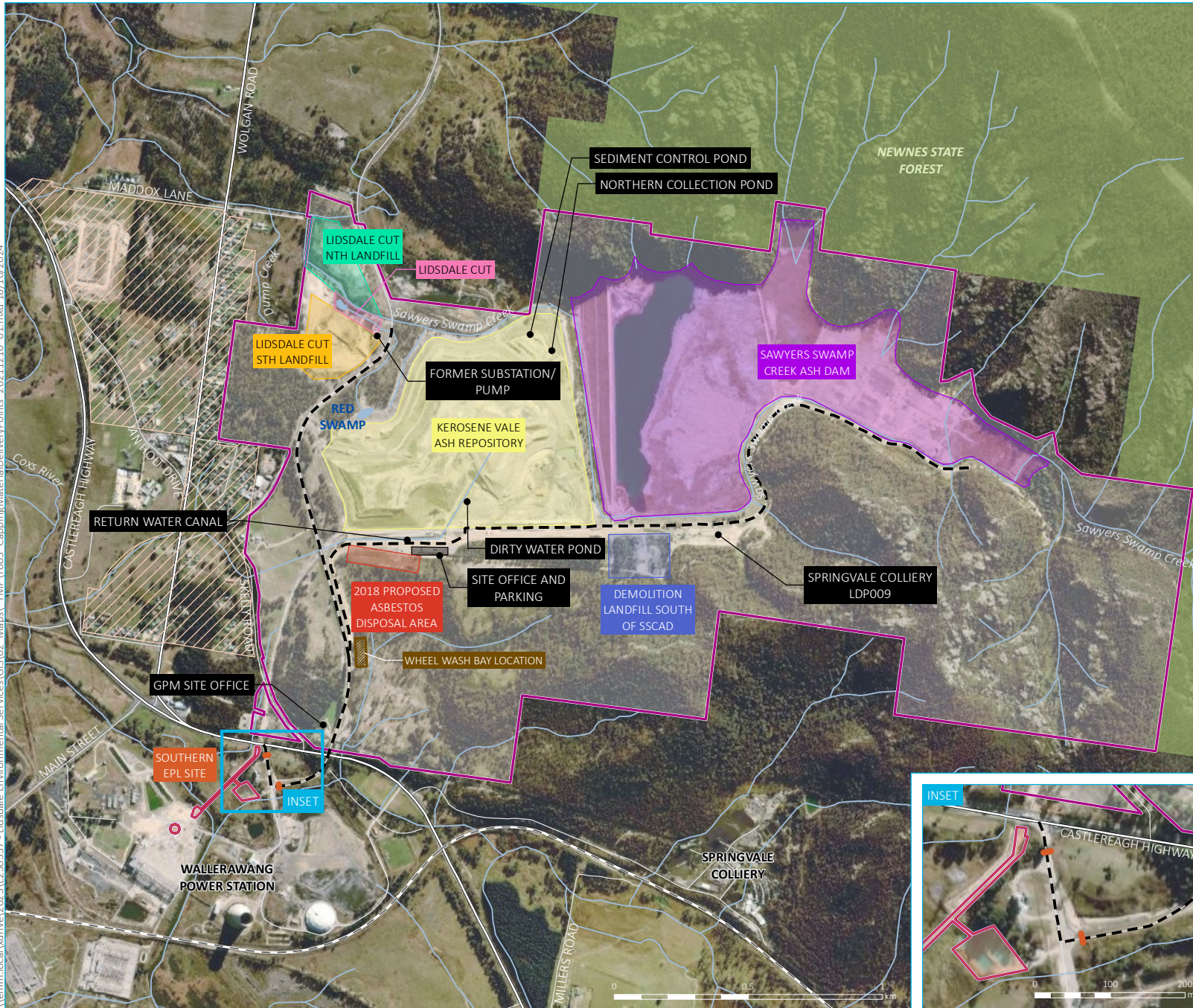
1.1 Background

The Lidsdale Ash Repository is owned and operated by GPM with the site having a long history of being used for disposal of waste from the WPS. GPM took ownership of the site in September 2020 from Energy Australia NSW. The site was used for ash disposal in conjunction with the WPS since the late 1950s but since the closure of WPS in 2014, the Lidsdale Ash Repository has been placed in care and maintenance.

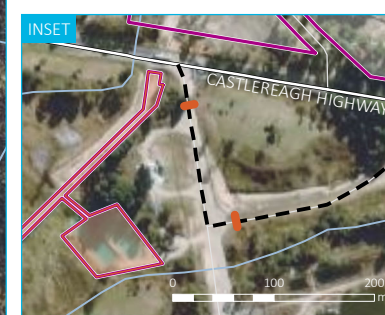
Project Approval MP07_0005- Mod 2 contains a number of conditions that need to be complied with by GPM Co NSW, as the proponent, at different stages of the Project. Condition 6.3 (a) and 6 (f) of Project Approval MP07_0005- Mod 2 requires an TMP be developed prior to the commencement of construction and operations at the site. This document has been prepared to comply with this requirement.

Site contractors have been engaged by GPM to support GPM's care and maintenance activities and management of ongoing regulatory and contractual obligations associated with the Lidsdale Ash Repository area.

\\emm.local\drive\2023\E2\30337 - Lidsdale Environmental Services\GIS\02 - Maps - TMP\T003 - CappingMaterial\DeliveryPoints - 20211210 01.mxd 16/10/2024



- KEY**
- Site boundary
 - Haul route
 - Gate (refer to inset)
 - Rail line
 - Major road
 - Minor road
 - Watercourse/drainage line
 - Named waterbody
 - State forest
 - Nearest sensitive (residential) receivers
 - Proposed approximate wheel wash bay location
 - 2018 proposed asbestos disposal area
 - Demolition landfill south of SSCAD
 - Kerosene Vale ash repository
 - Lidsdale cut northern landfill
 - Lidsdale cut southern landfill
 - Lidsdale cut
 - Sawyers Swamp Creek ash dam (SSCAD)
 - Southern EPL site
 - Site office and car parking
- INSET KEY**
- Major road
 - NPWS reserve



Site location

Lidsdale Ash Repository
Construction and Operational
Transport Management Plan
Figure 1.1

1.2 Construction and Operational Environmental Management Plans

CoA 6.2 requires the applicant to develop a construction environmental management plan (CEMP) that outlines the environmental management practices and procedures to be followed during construction. CoA 6.3 requires the preparation and implementation of the following sub-plans included as part of the CEMP:

- Construction Traffic Management Plan (CTMP)
- Construction Noise Management Plan (CNMP)
- Construction Erosion and Sediment Control Plan (CESCP).

CoA 6.4 requires the applicant to prepare and implement an Operational Environmental Management Plan (OEMP). As part of the OEMP, CoA 6.5 requires the preparation and implementation of the following plans:

- Operational Noise Management Plan (ONMP)
- Operational Groundwater Management Plan (OGWMP)
- Operational Surface Water Management Plan (OSWMP)
- Operational Air Quality Management Plan (OAQMP)
- Operational Landscape / Revegetation Management Plan (OLRMP)
- Operational Transport Management Plan.

These plans are included as sub-plans to the OEMP.

Table 1.1 provides a high-level overview of the proposed activities that are covered by the two plans. Further information on the scope of this Construction and Operational Transport Management Plan is provided in Section 2.

Table 1.1 Activities covered by the CEMP and OEMP

Environmental Management Plan	Activities covered
OEMP – care and maintenance operations	<ul style="list-style-type: none">• ash management• management of on-site water systems• capping material haulage, placement and management• landscaping and revegetation/rehabilitation of the site• upgrading and maintaining internal access roads in the project area

Environmental Management Plan	Activities covered
CEMP – construction activities	<ul style="list-style-type: none"> • Sawyers Swamp Creek realignment • construction of stability berms around the perimeter of the KVAR • excavation of the former pine plantation area • sediment controls and surface water dams associated with construction of the KVAR stability berm and realignment of the Sawyers Swamp Creek • establishment of freshwater collection ponds and diversion pipes/drains on the northern edges of SSCAD • rearrangement of water flows around the KVAR • establishment of access roads onto the surface of the SSCAD and associated roads across the dam surface • reinstatement of environmental controls for historic landfill areas including capping of slumped areas, reprofiling for water management and control of sediment runoff during these activities • concurrent construction activities.

The CEMP and OEMP form part of GPM’s Environmental Management System (EMS), which is based on AS/NZS ISO 14001. A summary of the EMS and its interaction with the CEMP, OEMP and this document (outlined) is provided in Figure 1.2.

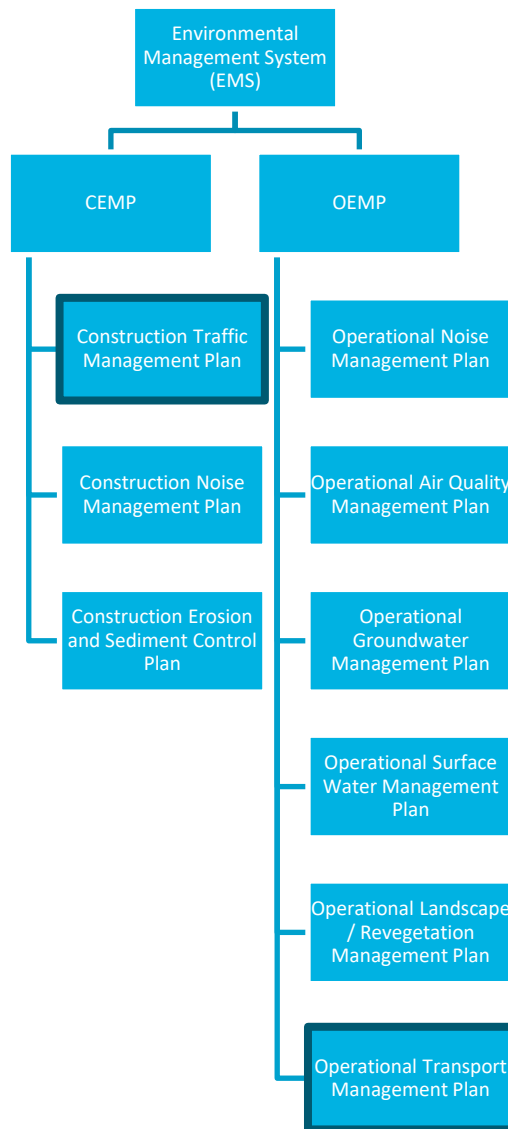


Figure 1.2 Environmental Management System flowchart

1.3 Scope

This Construction and Operational Transport Management Plan covers all traffic from construction and operations activities at the Lidsdale Ash Dam Repository.

Construction traffic movements will involve the transport of materials for landform shaping and other civil works.

Operational traffic movements will involve the transport of materials for capping, landscaping and revegetation works.

1.4 Purpose and objectives

The purpose of this Construction and Operational Transport Management Plan is to manage potential traffic impacts of the site in line with the conditions of approval. This plan also includes a Construction vehicle and Driver Code of Conduct.

The objectives of this plan are to meet the approval conditions, as summarised in Section 1.6. This plan has been prepared in accordance with Procedures for Use in the Preparation of a Traffic Management Plan (RTA, 2001).

1.5 Operating hours

Approved construction hours are:

- a) 7:00 am to 6:00 pm, Mondays to Fridays.
- b) 8:00 am to 1:00 pm on Saturdays.
- c) At no time on Sundays or public holidays.

Approved hours of operation are 7:00 am to 10:00 pm Monday to Sunday.

1.6 Approval conditions

The relevant approval conditions and where they are addressed in this report are provided in Table 1.2.

Table 1.2 Relevant approval conditions

Condition No	Relevant condition of approval	Relevant report section
Construction Traffic and Transport Impacts		
2.36	The Applicant shall ensure that construction vehicles associated with the project:	
	a) minimise the use of local roads (though residential streets and town centres) to gain access to the site;	Section 2.1
	b) adhere to any nominated haulage routes identified in the Construction Traffic Management Plan as referred to in condition 6.3a) of this approval; and	Section 2.6
	c) adhere to a Construction Vehicle Code of Conduct prepared to manage driver behaviour along the local road network to address traffic impacts (and associated noise) along nominated haulage routes.	Chapter 3
Capping Material Transport Impacts		
2.36A	The Applicant must:	

Condition No	Relevant condition of approval	Relevant report section
	a) not import more than 100 heavy vehicle loads of capping material to the site per day;	Section 2.10
	b) cover all heavy vehicle loads of capping material;	Section 3.8
	c) not transport capping material on local roads in the Lithgow local government area;	Section 2.6
	d) notify the Department before commencing the importation of capping material from sources outside of the Lithgow local government area; and	The Department was notified of this prior to September 2020.
	e) not import capping material to the site for more than 10 years following the date of approval of Modification application 07_0005 Mod 2.	Section 2.10
2.36B	The Applicant must implement warning signage on the Castlereagh Highway on the approaches to the Castlereagh Highway/Wallerawang Power Station Haul Road intersection prior to importing capping material to the site from sources outside of the Lithgow local government area to the satisfaction of TfNSW.	Section 2.4
Construction Environmental Management		
6.3 a)	a Construction Traffic Management Plan , prepared in consultation with TfNSW, the relevant Council and emergency services to manage the construction traffic impacts of the project, including but not limited to:	Section 1.7
	i) identifying construction vehicle volumes (construction staff vehicles, heavy vehicles and oversized loads) and haulage routes;	Section 2.10
	ii) identifying any road closures and/or traffic detours during the haulage of oversized loads as agreed to by the relevant roads authority;	Section 2.6
	iii) detailing a Construction Vehicle Code of Conduct to set driver behaviour controls to minimise impacts on the land uses along haulage routes (including noise minimisation measures); and	Chapter 3
	iv) complying with the document Procedures for Use in the Preparation of a Traffic Management Plan (RTA, 2001).	Section 1.4.
Operational Environmental Management		
6.5 f)	(i) be prepared in consultation with TfNSW and Council, prior to importing capping material from sources outside of the Lithgow local government area;	Section 1.7
	(ii) detail the route to be used to transport capping material;	Section 2.6
	(iii) detail the measures that would be implemented to minimise traffic safety issues for other road users (including cyclists), including: <ul style="list-style-type: none"> notifying the community about project-related traffic impacts a procedure to address complaints about project-related traffic minimising potential traffic conflicts with school buses and during local school drop-off and pick-up times scheduling heavy vehicle movements to minimise convoy length or platoons responding to local climate conditions that may affect road safety such as fog, dust, wet weather responding to emergency repair or maintenance requirements; and 	The proponent shall notify the community about the project in due course. Sections 2.12, 3.11, 2.7, 3.6, 3.10, 3.2, 0, 3.5 and Table 1.3.
	(iv) include a Driver Code of Conduct, which addresses: <ul style="list-style-type: none"> travelling speeds driver fatigue 	Chapter 3

Condition No	Relevant condition of approval	Relevant report section
	<ul style="list-style-type: none"> adherence to the designated transport route safe driving practices. 	

1.7 Consultation

Approval Condition 6.3 (a) and 6.5 (f) stipulates that this TMP be prepared in consultation with Transport for New South Wales (TfNSW) and Lithgow City Council (LCC). This draft has been provided to TfNSW, SES and LCC for comment. The TMP will be a live document and will be reviewed periodically and updated if required.

Comments provided by TfNSW are addressed in Table 1.3. LCC has reviewed the plan and provided no comments. SES was also consulted and provided recommendations that have been incorporated into the TMP. These are detailed in Table 1.3 and Table 1.4.

TfNSW, SES and Council correspondences are included in Attachment A

1.7.1 TfNSW

Revision 1 of the plan was provided to TfNSW in early 2022 for comment. TfNSW provided a letter dated 8 March 2022 which outlined a number of traffic related comments.

Revision 3 of the plan was provided to TfNSW on 7 January 2025. TfNSW has returned comments in a letter dated 24 January 2025.

TfNSW's comments and EMM responses are provided in Table 1.3.

Table 1.3 TfNSW comments and EMM responses

Item no	Comments	Responses
8 March 2022		
1.	Section 2.9 of the TMP states the number of truck movements will be dictated by the capping material source but on average there would be 6-7 truck movements per hour with a maximum peak of 12 trucks per hour and 40 light vehicle trips per day. TfNSW notes Section 2.6 of the TMP states the haulage routes will be identified as capping material sources are identified. As per condition 6.5 (ii) of Consent 07_0005 the TMP must detail the routes to be used to transport capping material. The TMP needs to be updated to identify the proposed routes and associated traffic volumes as the current TMP only shows the proposed access point to the site.	<p>The location of the sites where the materials will be collected from is unknown at this stage. However, the haulage routes will predominately use the arterial road networks.</p> <p>If the haulage routes follow any council controlled local road, the relevant council will be notified in due course.</p>
2.	The TMP does not detail the measures to be implemented to ensure scheduling of heavy vehicle movements to minimise convoy lengths, platoons or interactions with school drop off and pick up times as per Condition 6.5 (f) (iii), this needs to be addressed.	<p>Once a material transport contractor is engaged, the proponent will ensure the convoy lengths, platooning and interaction with the school pick up or drop off times is clearly articulated and appropriately conditioned in the contract to minimise any traffic impact on public roads.</p> <p>The transport contractor/s will follow the drivers code of conduct and any complaints from the road authority or community would be appropriately dealt with in accordance with the complaint management process outlined Section 3.11.</p>
3.	The TMP does not demonstrate any consideration of local climate conditions or climate conditions on transport routes	Drivers will adjust their driving behaviour in accordance with the adverse weather conditions, as

Item no	Comments	Responses
	as per Condition 6.5 (f) (iii). The TMP needs to demonstrate consideration of the climatic conditions on the transport routes including staff accessing and leaving the site and demonstrate how risks associated with the climate conditions will be managed to mitigate the risks.	stated in TfNSW Centre for Road Safety website . Some risk mitigation measures are speed reduction for safe breaking, allowing extra distance to the vehicle in front and use of headlights and fog lights, in accordance with relevant Australian Road Rules.
4	The TMP does not identify a process for notifying the community about project-related traffic impacts as per Condition 6.5 (f) (iii), this needs to be addressed.	No community notification will be undertaken, unless warranted. If the prescribed haulage routes go through the local residential streets, affected councils will be notified prior and appropriate community consultation undertaken as required. Any community complaints will be managed in accordance with the appropriate complaint management procedure, as outlined in Section 3.11 of this report.
5	The TMP does not identify a process to respond to emergency repair or maintenance requirements of TfNSW assets as per Condition 6.5 (f) (iii), this needs to be addressed.	Emergency repair or maintenance procedure has been outlined in Section 0 of this report.
24 January 2025		
1	The COTMP does not provide details on proposed haulage routes to transport the capping material associated with the operations of the development. Whilst the plan states that haulage routes will be provided once engagement with a transport contractor has occurred, it only demonstrates the internal haulage route from the existing site access road. TfNSW are required to assess the potential impacts to the broader classified road network in the context of the proposal. Accordingly, proposed haulage routes should be clearly illustrated in the COTMP in accordance with Condition 6.3(a) within the consent and identify any sensitive land uses (e.g. school zones, residential areas) impacted by the vehicle movements and consider any conditions contained within the existing approval. (i.e. Condition 2.36(a) indicates that no capping material is to be transported via any residential roads within the Lithgow local government area (LGA) during construction and operation phase).	Construction and operations materials are imported to site from a wide variety of sources, primarily along the Great Western Highway, and are transported via the highway and state roads, ultimately entering site via Castlereagh Highway. Section 2.6 has been updated.
2	The COTMP does not identify suitable measures to be implemented to ensure scheduling of heavy vehicles movements to minimise convoy lengths, platoons or interactions with school drop off and pick up times as per Condition 6.5 (f) (iii). A proposed schedule of transport operations, including identification of peak hours during operation and confirmation of maximum average of heavy vehicle movements per hour (currently listed as 12) should be included in the COTMP.	The proponent will work with their transport contractor/s to ensure the convoy lengths, platooning and interaction with the school pick up or drop off times is clearly articulated and appropriately conditioned in their contract to minimise any traffic impact on public roads. The transport contractor/s will follow the Drivers Code of Conduct and any complaints from the road authority or community would be appropriately dealt with in accordance with the complaint management process outlined Section 3.11. Section 2.7 has been added to highlight scheduling requirements.
3	Condition 6.3(a)(i) requires the identification of construction vehicle volumes (including staff vehicles, heavy vehicles and oversized vehicles). The traffic counts provided (using SIDRA) in the COTMP do not appear to differentiate the construction and operational traffic volumes, does not include counts or consider the impact of any oversized vehicles.	Construction and operations activities occur simultaneously within different areas of the site. As such it is difficult to differentiate heavy vehicles carrying construction materials from heavy vehicles carrying operations materials. As per the development consent, the combined total heavy vehicle movements will be less than 100 per day. Section 2.10 has been updated.

Item no	Comments	Responses
4	The COTMP does not identify any alternative routes to be used in the event of road closures and/or traffic detours during haulage as required by Condition 6.3(a)(ii). Furthermore, a process to respond to any emergency road repairs or road maintenance requirements as a result of, ordering haulage, has not been provided in accordance with Condition 6.5 (f)(iii). It is noted that Section 3.9 of the COTMP refers to maintenance of haulage vehicles and does not consider impacts or repairs required to the road environment or any other TfNSW assets.	In the event of road closures or traffic detours, traffic operations to/from the site will cease as there are no alternate routes to site. Section 2.6 has been updated.
5	An appropriate community consultation strategy should be clearly detailed in the COTMP prior to operations commencing in accordance with Condition 6.3(f)(iii).	Section 2.12 has been added to provide further detail about GPM's community and stakeholder communication strategy.
6	The COTMP does not demonstrate any consideration of local climate conditions or climate conditions on transport routes as per Condition 6.5(f)(iii). The COTMP needs to demonstrate consideration of the climatic conditions on the transport routes (e.g. fog, black ice, etc) including staff accessing and leaving the site and demonstrate how risks associated with the climate conditions will be managed to mitigate the risks.	Section 3.6 has been added to the Driver Code of Conduct to provide further guidance in the event of adverse weather conditions.
7	The Code of Conduct could be updated to include clear parameters for the monitoring of driver behaviour through the use of an internal monitoring system that is performance objective based, promotes driver education and can be updated in the event of any changes during transport operations. Additionally, adherence to designated transport haulage routes (including minimising impact on residential areas) in accordance with relevant conditions should be included in the Code of Conduct.	Internal monitoring systems are in place for some trucks servicing the site, particularly trucks that are importing materials from larger operators and quarries. However, as the site received materials from a wide variety of sources and uses a number of different transporters these requirements aren't imposed on all trucks, as there is no requirement in the planning consent for these systems.

07 August 2025

TfNSW reviewed the revised Construction and Operational Traffic Management Plan (TMP) and provided feedback reiterating that the comments related to the following should be considered further:

- the proposed haulage routes – Comment 1
- schedule of transport operations – Comment 2
- differentiation of construction and operational traffic volumes – Comment 3
- alternative routes in the event of road closures – Comment 4

The remaining TfNSW comments are considered closed. The TfNSW letter from 7th of August is included in Attachment A.

1	The COTMP does not provide details on proposed haulage routes to transport the capping material associated with the operations of the development. Whilst the plan states that haulage routes will be provided once engagement with a transport contractor has occurred, it only demonstrates the internal haulage route from the existing site access road. TfNSW are required to assess the potential impacts to the broader classified road network in the context of the proposal. Accordingly, proposed haulage routes should be clearly illustrated in the COTMP in accordance with Condition 6.3(a) within the consent and identify any sensitive land uses (e.g. school zones, residential areas) impacted by the vehicle movements and consider any conditions contained within the existing approval. (i.e. Condition 2.36(a) indicates that no capping material is to be transported via any residential roads within the Lithgow local government area (LGA) during construction and operation phase).	Section 2.6 has been updated to provide further details and to describe the process for determining haulage routes for new suppliers. Example haulage routes of key suppliers have been included as Attachment D.
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Item no	Comments	Responses
2	The COTMP does not identify suitable measures to be implemented to ensure scheduling of heavy vehicles movements to minimise convoy lengths, platoons or interactions with school drop off and pick up times as per Condition 6.5 (f) (iii). A proposed schedule of transport operations, including identification of peak hours during operation and confirmation of maximum average of heavy vehicle movements per hour (currently listed as 12) should be included in the COTMP.	Section 2.7 has been updated to provide further measures to ensure scheduling of heavy vehicles does not interfere with school pick up and drop off.
3	Condition 6.3(a)(i) requires the identification of construction vehicle volumes (including staff vehicles, heavy vehicles and oversized vehicles). The traffic counts provided (using SIDRA) in the COTMP do not appear to differentiate the construction and operational traffic volumes, does not include counts or consider the impact of any oversized vehicles.	Section 2.10 has been updated to state that there is no Over-size Over-mass traffic to site, so therefore has not be included in the traffic counts. If this were to change, OSOM movements would be in accordance with and subject to further approvals as well as NVHR requirements
4	The COTMP does not identify any alternative routes to be used in the event of road closures and/or traffic detours during haulage as required by Condition 6.3(a)(ii). Furthermore, a process to respond to any emergency road repairs or road maintenance requirements as a result of, ordering haulage, has not been provided in accordance with Condition 6.5 (f)(iii). It is noted that Section 3.9 of the COTMP refers to maintenance of haulage vehicles and does not consider impacts or repairs required to the road environment or any other TfNSW assets.	Sections 2.6 and 2.7 have been updated to provide more detail about road closures and the process that will be followed.
5	An appropriate community consultation strategy should be clearly detailed in the COTMP prior to operations commencing in accordance with Condition 6.3(f)(iii).	No further comment from TfNSW. This comment is considered resolved.
6	The COTMP does not demonstrate any consideration of local climate conditions or climate conditions on transport routes as per Condition 6.5(f)(iii). The COTMP needs to demonstrate consideration of the climatic conditions on the transport routes (e.g. fog, black ice, etc) including staff accessing and leaving the site and demonstrate how risks associated with the climate conditions will be managed to mitigate the risks.	No further comment from TfNSW. This comment is considered resolved.
7	The Code of Conduct could be updated to include clear parameters for the monitoring of driver behaviour through the use of an internal monitoring system that is performance objective based, promotes driver education and can be updated in the event of any changes during transport operations. Additionally, adherence to designated transport haulage routes (including minimising impact on residential areas) in accordance with relevant conditions should be included in the Code of Conduct.	No further comment from TfNSW. This comment is considered resolved.

1.7.2 Lithgow City Council

LCC has been contacted to comment on the draft plan. Council has advised that they have no comment on the draft report.

Revision 3 of the plan was provided to LCC on 7 January 2025. Council officers have reviewed the plan and it is considered satisfactory and complies with conditions 6.3(a) and 6(f) of the consent.

1.7.3 NSW State Emergency Service

Revision 4 of the plan was provided to the NSW SES in 2025 for comment. The SES provided a letter dated 13 August 2025 which provided some recommendations for consideration. These recommendations and EMM responses are provided in Table 1.3.

Table 1.4 SES recommendations and EMM responses

Item no	Comments	Responses
1.	Consider the impact of flooding on the infrastructure and people using the roads up to and including the Probable Maximum Flood (PMF), along with the impact of climate change on the flood risks.	The impact of flooding has been considered as part of the Emergency Plan, the SSCAD Dam Safety Emergency Plan and the Surface Water Management Plan
2.	Ensure workers and people using the site and roads during and after the upgrades are aware of any flood risk, for example through site inductions, by using signage and other flood information tools.	Flood planning and response will be included in the site induction as part of emergency preparedness and response
3.	Recommend the Operational Transport Management Plan includes instructions to act early on Severe Weather Warnings issued by the Australian Government Bureau of Meteorology (BoM). The NSW SES does not have the operational capacity to provide individualised flood warnings for each business site. Severe Weather Warnings will be the most likely form of advice about the potential for flood producing storms and rainfall. In addition, coastal system such as tides and tsunami should be included in your plan for this location.	Section 2.7 updated to include this recommendation.
4.	Consider closing the worksite and securing all materials and equipment prior to the start of the working day if there is a risk of riverine flooding, on receipt of advice from the BoM, or when other evidence leads to an expectation of flooding. During site works, check the BoM website prior to start of the workday for any Severe Weather Warnings.	Flood response is considered in the SSCAD Dam Safety Emergency Plan
5.	Advise that any flood response directive issued by the NSW SES or by delegated authority to others acting on its behalf must be followed. This includes any order to evacuate the site or not evacuate the site, irrespective of what decisions have been made by management in accordance with any site emergency response plan.	Flood response is considered in the SSCAD Dam Safety Emergency Plan
6.	Recommend pursuing, if relevant, site design and stormwater management that reduces the impact of flooding and minimises any risk to the community. Any improvements that can be made to reduce flood risk will benefit the community.	Stormwater and surface water management is addressed in the Surface Water Management Plan

2 Traffic management and impacts

2.1 Castlereagh Highway

Castlereagh Highway will be the key road providing access to the site. A description of this key road is presented in Table 2.1.

Table 2.1 Castlereagh Highway

Description	Local road
Road classification and connectivity	State road between Golden Highway, Birriwa (north) and Great Western Highway (south).
Alignment	East-west at the vicinity of site access intersection.
Number of lanes	One lane each way, excluding near intersections
Carriageway type	Sealed road with shoulders
Carriageway width	Varies, approximately between 11 m to 14 m with 3.5 m travel lane each way.
Posted speed limit	80 kilometres per hour (km/h) westbound, 100 km/h eastbound.
Heavy vehicle access	Yes, up to 26 m B-doubles. Up to 19 m B-doubles from Great Western Highway.
Traffic function	Carries local and regional traffic.
Additional comments	Access to the project area is provided via Castlereagh Highway.



Photograph 2.1 Castlereagh Highway (looking eastbound near site entrance)

2.2 Project area access

All vehicular access and egress to the site will be from Castlereagh Highway. Vehicles accessing the site will turn into the site at the Wallerawang Power Station access. The vehicles will then continue to follow haul route within the site. The site access from Castlereagh Highway is shown in Figure 2.1 and Photograph 2.2 and Photograph 2.3 below.



Figure 2.1 Site access from Castlereagh Highway



Source: EMM

Photograph 2.2 Site entrance from Castlereagh Highway



Source: EMM

Photograph 2.3 Site entrance from within the site

2.3 Site operation

The site area and site operation details are shown in Figure 1.1.

It is intended that trucks will dump the incoming material in designated locations on the site, turn around and exit via the same incoming route. The material will be further transported to areas by fixed axle trucks until suitable roads are established.

Employee and contractor vehicles will also use the private haul road and park in designated areas. The location of all the incoming material areas, haul routes and car parking areas are shown in Figure 1.1.

Gates at the locations marked in Figure 1.1 will be kept open during operational hours.

A wheel wash bay is located within the site at the location shown in Figure 1.1. On completion of dumping the incoming material, trucks will pass through the wheel wash bay before exiting the site on to public roads.

Drivers entering the site for the first time will go through an induction carried out by an approved member of the facility's staff. It is expected that the majority of drivers will access the site regularly and will become familiar with internal site layout and traffic movements. The trucks will be directed by appropriate signage within the site.

It is anticipated that there will be anywhere between 5 to 30 staff working at the site at any one time. Some staff will be working on tasks unrelated to material haulage and equipment.

2.4 Site safety

Site safety within the site will be ensured by Safe Working Guidelines. The speed limit within the site will be restricted to a maximum of 40 km/h and be dependent on site conditions and activities being undertaken. The warning signage on the Castlereagh Highway on the approaches to the Castlereagh Highway/Wallerawang Power Station Haul Road intersection will be maintained.

Site safety procedures will be signposted at the entrance to the site, including:

- trucks, contractors, visitors must follow safety signs and directional markings at all times
- maximum speed limit 40 km/h inside
- all visitors to park in visitor parking bays only
- any person/s exiting their vehicles on site must wear the correct personal safety equipment at all times
- all exiting trucks must pass through the proposed wheel wash bay
- all trucks, contractors must stop before leaving the site
- all exiting vehicles must stop before approaching the driveway crossover to Castlereagh Highway
- all vehicles will enter and exit the site in a forward direction to/from Castlereagh Highway.

2.5 Queuing on Castlereagh Highway

As mentioned earlier, gates at the entrance and within the site will be kept open during operational hours, hence there will be no queuing or queue overspill on Castlereagh Highway.

2.6 Haulage routes

Construction and operations materials are imported to site from a wide variety of sources, primarily along the Great Western Highway, and are transported via the highway and state roads, ultimately entering site via Castlereagh Highway. As detailed in the Mod2 Modification Report (EMM 2023), material for the site will be sourced from various locations, primarily from infrastructure and other major projects within the Sydney basin. This is due to the availability of suitable material in sufficient quantities has been severely limited, in part due to the deferral or delays in scheduling of major infrastructure projects in areas within a logistically feasible range of the Site. Haulage routes specific to each new supply site are developed when material from that site is first ordered. The haulage routes are determined using the NVHR route planner and are in accordance with the requirements of this TMP and the NVHR. In accordance with CoA 2.36A(c), local roads within the Lithgow Government Area will not be used to transport capping material. Example haulage routes from some of the Site's suppliers have been included in Attachment D. The haulage route within the site is shown in Figure 1.1.

There are no Over-size Over-mass (OSOM) loads required to be transported to site. If this requirement changes, the transport of the OSOM load would be subject to and in accordance with further approvals from the National Heavy Vehicle Regulator (NHVR).

If emergency repair or maintenance is required as a result of construction or operations traffic this will be managed in accordance with GPM's incident and non-compliance procedure outlined in Section 2.12, and in consultation with the road authority.

In the event of road closures or traffic detours, traffic operations to/from the site will cease as there are no alternate routes to site. The Castlereagh Highway entrance is the only site entrance available to heavy vehicles. If there are closures on the Castlereagh Highway and/or Great Western Highway, then suppliers will be informed and heavy vehicle movements to and from site will cease until the highway is open again.

2.7 Scheduling

Material deliveries for a specific working day are approved in consideration of all daily site activities, both operational and construction. This ensures that the daily truck limit is not exceeded.

Transport contractors and suppliers will be required to adjust scheduling of trucks to ensure:

- minimal interaction with school traffic during local school drop off and pick up times
- convoy lengths and platoons are minimised

Orders are also placed in consideration of the above points. Trucks entering and leaving site are tracked by security and an alert is issued once 80 loads has been reached. The relevant supervisors/project managers are notified, and delivery orders are managed to ensure that the daily truck limit is not exceeded. In the event of a Severe Weather Warning issued by the Bureau of Meteorology (BoM), the site supervisors/project managers will review scheduled deliveries to determine whether cancellation of any deliveries is required.

2.8 Vehicle types

The heavy vehicle type bringing in material would be a 19 m truck and dog or a fixed axle truck. Trucks transporting material within the project area will be fixed axle trucks up to 12.5 m. Smaller vehicles will be 4WD utility vehicles used by employees and contractors.

2.9 Surveyed traffic volumes

The Castlereagh Highway/site access intersection has been surveyed between 7 am and 9 am, as well as between 4 pm and 6 pm, on 2 November 2021. The count data is provided in Attachment B.

The peak traffic hours were determined to be between 7:00 am to 8:00 am and 4:00 pm to 5:00 pm. As the traffic data was less than two years old, it is still considered valid for Mod 2. The 2021 traffic volumes were converted to 2023 volumes by applying 1% linear growth per annum on Castlereagh Highway.

The adjusted 2023 traffic volumes during the AM and PM peak hours are summarised in Figure 2.2.

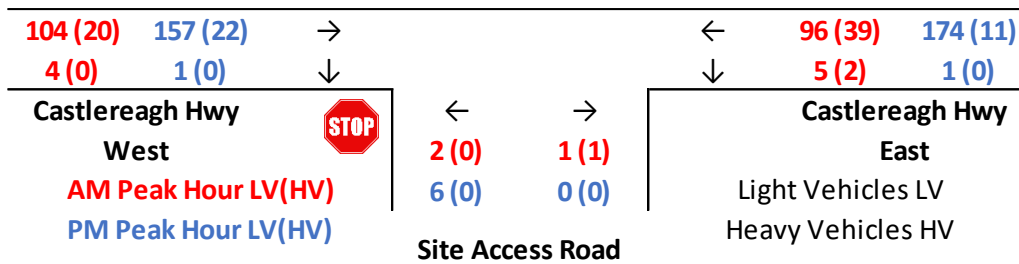


Figure 2.2 2023 peak hour surveyed traffic volumes

2.10 Operational and construction traffic volumes

Condition 2.36A (a) of the DPHI consent (Application No. 07_0005) states that the proponent must not import more than 100 heavy vehicle loads of material per day. The actual number of truck loads will be dictated by the material source but on average there would be 6 to 7 trucks per hour with a peak maximum of 12 trucks per hour based on 100 trucks per day. It is assumed there would be up to 20 light vehicle trips (40 movements) per day for staff at site. For the purposes of this assessment, it has been assumed that peak light and heavy vehicle trips would take place within the same peak hour. In accordance with the conditions of approval, material will not be imported to the site more than 10 years from the date of Mod2 approval (13 October 2023), that is no material will be imported after 13 October 2033, subject to further approval.

On this site construction activities and operational activities occur simultaneously. Construction material imports are required for civil works involved in landform shaping and for activities such as building stability berms and the construction of the creek and dam diversions. The construction works will facilitate the operational work, and conversely, operational work will facilitate further construction. As such trucks coming to site will be both trucks carrying construction materials and trucks carrying operations materials. As per the development consent, the combined total of heavy vehicles for both construction and operations will not be above 100 per day.

As mentioned in Section 2.6, there are no OSOM movements required to or from site, so OSOM traffic has not been included in this assessment.

As per surveyed traffic volume, light vehicle trips are split 50% each in north and south direction.

The combined surveyed and operational/construction traffic volumes are shown in Figure 2.3.

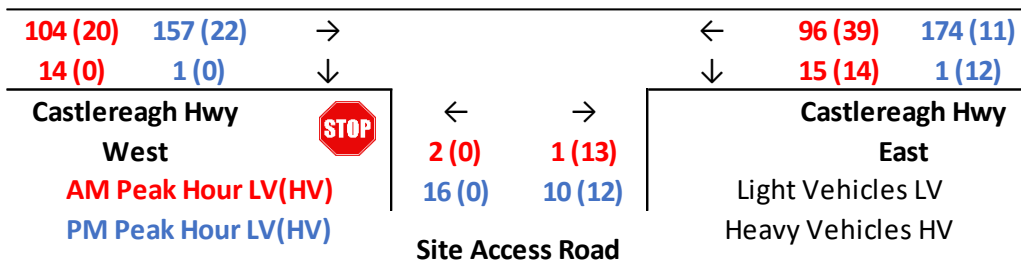


Figure 2.3 Peak hour combined surveyed and operational/construction traffic volumes

2.11 Intersection performance

Castlereagh Highway/Site Access Road intersection has been modelled with the SIDRA Intersection 9.0 software; a micro-analytical tool for individual intersections and linked intersection-network modelling. The modelling is based on the 2023 traffic survey data detailed in Sections 2.9 and 2.10. SIDRA provides the following performance indicators:

- Degree of saturation (DOS) – the total usage of the intersection expressed as a factor of 1 with 1 representing 100% use/saturation (e.g. 0.8 = 80% saturation). In practice the target degrees of saturation of 0.90 for signals, 0.85 for roundabouts and 0.80 for unsignalised intersections are generally agreed to. These are usually called ‘practical degrees of saturation’.
- Average delay (DEL) – the average delay in seconds encountered by all vehicles passing through the intersection. It is often important to review the average delay of each approach as a side road could have a long delay time, while the large free flowing major traffic will provide an overall low average delay.
- Level of service (LOS) – this is a categorisation of average delay, intended for simple reference.
- 95% queue lengths (Q95) – is defined to be the queue length in metres that has only a 5% probability of being exceeded during the analysed time period. It transforms the average delay into measurable distance units.

The LOS is a good indicator of overall performance for individual intersections, with each level summarised in Table 2.2.

Table 2.2 Intersection LOS standards

Level of service	Average delay (seconds per vehicle)	Traffic signals, roundabout	Priority intersection (‘Stop’ and ‘Give Way’)
A	<14	Good operation	Good operations
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity and accident study required
E	57 to 70	At capacity. At traffic signals, incidents will cause extensive delays. Roundabouts require other control mode.	At capacity; required other control mode
F	>71	Unsatisfactory with excessive queuing	Unsatisfactory with excessive queuing; required other control mode

Source: RTA Guide to Traffic Generating Development (RTA 2002)

SIDRA intersection modelling has been conducted for the following scenarios:

- Baseline traffic (2023): this scenario includes the 2023 adjusted survey traffic volumes only without any operational or construction traffic volumes.
- Baseline + construction/operational traffic (2023): this scenario includes the 2023 adjusted survey traffic volumes combined with construction/operational traffic volumes.
- Baseline + construction/operational traffic (2023) + cumulative traffic: this scenario includes the 2023 adjusted survey traffic volumes combined with construction/operational traffic volumes and cumulative traffic from two projects nearby in their respective construction stages (Great Western BESS and Wallerawang BESS).
- Horizon + construction/operational traffic (2033): this scenario applies 10 years to the 2023 adjusted survey traffic volumes for sensitivity testing combined with construction/operational traffic volumes.

The SIDRA results for the Castlereagh Highway/Site Access Road intersection are presented in Table 2.3.

Table 2.3 SIDRA modelling result for Castlereagh Highway/Site Access Road intersection

Control/ Scenarios	AM peak					PM peak				
	Intersection volume	DEL(s)	LOS	DOS	Q95 in m (approach)	Intersection volume	DEL(s)	LOS	DOS	Q95 in m (approach)
Baseline traffic (2023)	274	9.8	A	0.099	0.3 (west approach)	374	13.2	A	0.139	0.4 (south approach)
Baseline + operational traffic (2023)	318	14.1	A	0.099	2.0 (south approach)	416	14.7	A	0.139	3.0 (south approach)
Baseline + operational traffic (2023) + cumulative traffic	490	24.1	B	0.213	3.3 (south approach)	588	22.6	B	0.185	4.1 (south approach)
Horizon + operational traffic (2033)	344	15.1	A	0.109	2.2 (south approach)	455	16.3	A	0.153	3.2 (south approach)

Key Findings:

- In both the AM and PM peaks, the intersection would perform satisfactorily within capacity with LOS A and of LOS B for all scenarios and DoS <0.15 for most scenarios; and
- overall, the intersection has additional capacity to accommodate the required construction/operational scenario traffic.

Detailed SIDRA results are presented in Attachment C.

2.12 Community and stakeholder communications

GPM maintains a website for the provision of electronic information associated with the Lidsdale Ash Repository. GPM will, subject to confidentiality, publish and maintain up to-date information on this website including:

- a link to the Major Projects Wallerawang Ash Repositories Application 07_0005 Environmental Assessment including:
 - Appendices prepared by Parsons Brinckerhoff (April 2008)
 - Submissions Report prepared by Parsons Brinckerhoff (May 2008)
 - the Conditions of Approval (CoA) issued by the Department of Planning
- relevant strategies, plans and programs required under the CoA, or details of where this information can be viewed
- the outcomes of compliance tracking undertaken in accordance with the project approval
- community updates in relation to the Lidsdale Ash Repository area.

The intention is to ensure that these key pieces of information are made publicly available to promote community and stakeholder engagement.

GPM will continue to use the measures for communication established for Lidsdale Ash Repository activities to ensure all community complaints and enquiries received are managed in an appropriate manner. The measures include:

- 24-hour community information and complaints line
- an online electronic form in which complaints and enquires can be transmitted.

The local community, businesses, schools, and other stakeholders will be notified of upcoming works and traffic impacts prior to commencement via:

- Letterbox drops to affected properties
- Email updates to registered stakeholders
- Project website updates and social media notifications.

2.13 Incidents and non-compliances

The approval defines an incident as:

A set of circumstances that causes or threatens to cause material harm to the environment, and/or breaches or exceeds the limits or performance measures/criteria in this approval.

The Secretary must be notified in writing via the Major Projects website immediately after the Project team becomes aware of an incident in accordance with CoA 7.1. The notification must identify the development (including the application number and the name of the development if it has one) and set out the location and nature of the incident.

Section 2.9 of the CEMP and Section 3.8 of the OEMP provides further details on the management of environmental incidents and the response to environmental emergencies. This includes the reporting, notification and investigation of environmental incidents.

The approval defines non-compliance as:

An occurrence, set of circumstances or development that is a breach of the approval but is not an incident.

The Secretary must be notified in writing via the Major Projects website within seven days after the Project team becomes aware of any non-compliance in accordance with CoA 7.2. A non-compliance notification must identify the development and the application number for it, set out the condition of approval that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.

Section 2.10.4 of the CEMP and Section 3.8.1 of the OEMP provides further details on the Project team's response following the identification of a non-compliance with the CoA, the CEMP/OEMP and Sub-Plans. This includes the reporting, investigation and notification of non-compliances.

2.14 Reporting

Environmental monitoring for the Lidsdale Ash Repository area is designed to comply with the requirements of statutory approvals and provide an analysis of the condition of the environment surrounding the works.

Traffic management will be reported on in the Annual Environmental Management Report (AEMR) which will be submitted to the Secretary each year.

2.15 Review

. A review of the OEMP, sub-plans (including this TMP) and monitoring programs will be undertaken during operations as required. These reviews will be completed to determine the efficiency of the plans and monitoring programs and whether any changes are required to ensure compliance.

Circumstances which may trigger a review include:

- changes to design, construction, work methods, legislation, or policy
- incidents, complaints or non-compliance
- changes identified by continuous improvement
- changes to key management plans that are relevant
- where additional monitoring measures are identified in annual reviews or audits.

In addition and in accordance with CoA 6.6, GPM will review and, if necessary, revise the studies, strategies and plans required under the conditions of approval to the satisfaction of the Secretary within three months of:

- the submission of an incident report under CoA 7.1
- the submission of an Annual Review under CoA 7.3
- the submission of an Independent Environmental Audit under CoA 4.2
- the modification of the CoA (unless the CoAs require otherwise).

Where this review leads to revisions in any such document, then within 4 weeks of the review, GPM will submit the revised document to the Secretary for approval, unless otherwise agreed with the Secretary.

3 Construction vehicle code of conduct and driver code of conduct

3.1 Purpose of the code

The current project approval requires a Construction Vehicle Code of Conduct for construction activities that manages driver behaviour along the external road network to address traffic impacts (and associated noise) along nominated haulage routes and a Driver Code of Conduct applicable for operations that addresses travelling speed, driver fatigue, adherence to the designated transport route and safe driving practices.

This section has been prepared to address a code of conduct that is applicable to both construction and operational activities of the project.

All drivers involved with construction and operations at GPM are to obey required speed limits on all roads, both on and off site, must maintain fit for work practices, adhere to the designated transport and haulage route associated to their project and must always maintain safe driving practices.

3.2 General requirements

Truck drivers accessing the site for construction and operational activities must:

- undertake a site induction carried out by an approved member of the facility's staff or suitably qualified person under the direction of the facility's management
- hold a valid driver's licence for the class of vehicle they are driving
- not travel within 100 m of any school bus when following school buses along Castlereagh Highway, and will not attempt to overtake any school buses
- not drive into any marked cycle lane or road shoulder on the Castlereagh Highway and must give way to any cyclist or pedestrian when turning into or out of the site entry
- operate the vehicle in a safe manner within and external to the site
- strictly adhere to all designated transport routes as specified in their delivery schedules and route plans.

3.3 Heavy vehicle speed

The following speed restrictions apply in relation to travel to/from the site:

- Castlereagh Highway eastbound – speed limit is restricted to 100 km/h
- Castlereagh Highway westbound – speed limit is restricted to 80 km/h
- within the site – speed limit is restricted between 20 km/h to 40 km/h for all vehicles.

Truck drivers are to observe the posted speed limits on all public roads with speed adjusted appropriately to suit the road environment and prevailing weather conditions, to comply with the Australian Road Rules. The vehicle speed must be appropriate to ensure the safe movements of the vehicle based on the vehicle configuration.

In addition, all drivers and truck operators working for GPM are to be made aware of the Three Strikes Scheme (<https://www.aic.gov.au/sites/default/files/2020-05/tandi446.pdf>) introduced by Australian government which applies to all vehicles over 4.5 tonnes.

When a heavy vehicle is detected travelling at 15 km/h or more over the posted or relevant heavy vehicle speed limit by a mobile police unit or fixed speed camera, TfNSW will record a strike against that vehicle. If three strikes are recorded within a three-year period, TfNSW will act to suspend the registration of that vehicle (up to three months). The drivers are required to manage their behaviour along the local road network to address traffic impacts (and associated noise) along nominated haulage routes.

3.4 Driver fatigue

Fatigue is one of the biggest causes of crashes for heavy vehicle drivers. The National Heavy Vehicle Accreditation Scheme (<https://www.nhvr.gov.au/safety-accreditation-compliance/national-heavy-vehicle-accreditation-scheme>) allows heavy vehicle operators the choice of operating under three fatigue management schemes: Standard Hours of Operation; Basic Fatigue Management (BFM); and Advanced Fatigue Management (AFM). All heavy vehicle drivers operating at the site are to be aware of their adopted fatigue management scheme and operate within its requirements.

Fatigue includes (but is not limited to) the following:

- feeling sleepy
- feeling physically or mentally tired, weary or drowsy
- feeling exhausted or lacking energy
- behaving in a way consistent with any of the above.

3.5 Safe driving practices

Safe driving practices are essential for keeping the truck drivers and other motorists safe on NSW roads and reducing the risk of crashes. Truck drivers accessing the site must:

- wear a seatbelt while driving. Drivers must not have any part of their body outside the vehicle
- not drive while under the influence of alcohol or drugs, including some over-the-counter and prescription medications as stated in the heavy vehicle driver handbook
- observe speed limits on all public roads
- not use a mobile phone while driving or even when stationary, for example, stopped at lights or stuck in traffic
- not drive a vehicle on a road negligently or at a speed, or in a manner dangerous to the public
- keep enough distance between their vehicle and the vehicle travelling in front so they can, if necessary, stop safely to avoid colliding with the vehicle.

3.6 Adverse weather conditions

All drivers will adjust their driving behaviour in accordance with the adverse weather conditions, following recommendations stated in the TfNSW Centre for Road Safety [website](#). Risk mitigation measures include:

- speed reduction for safe braking. Braking in icy or wet conditions should be gentle to avoid skidding and losing control
- allowing extra distance to the vehicle in front

- the use of headlights and fog lights, in accordance with relevant Australian Road Rules
- in icy conditions, slowing down and watching for ice on roads, especially in shaded or low-lying areas.

3.7 Heavy vehicle control

In order to minimise the impact of noise from truck transport, the following controls will apply to truck operators operating on behalf of GPM:

- compression brakes not to be used in the vicinity of residential areas
- tailgates must be locked and secured to avoid noise or spillage
- always observe the posted speed on site and the local road network
- tailgating is not permitted – a 100 m gap between vehicles is to be observed at all times
- equipment to be used must be fit for the purpose
- drivers to obey the operating hours outlined in Section 1.2.

3.8 Load covering

All loaded vehicles entering the site must be effectively covered for the duration of the trip.

Drivers must ensure that the tailgate is locked before leaving the site.

3.9 Driver conduct

To ensure that the impact of heavy vehicle traffic is minimised to the surrounding community and sensitive land uses, drivers will:

- Minimise the use of compression braking unless it is an emergency
- Ensure no extended periods of idling
- Ensure that there is no littering
- Remain calm and courteous when in contact with members of the public
- Maintain trucks in good working order and a clean and tidy condition
- Not block residential driveways or any other access points
- Adhere to designated haulage routes
- No texting or manual phone operation while driving
- Use of well-maintained vehicles only. Vehicles must comply with relevant noise standards.

3.10 Breakdown and incidents

In the case of a breakdown the vehicle must be towed to the nearest breakdown point as soon as possible. All truck breakdowns within the site must be reported to GPM management and the vehicle protected in accordance with the Heavy Vehicle Drivers handbook.

In the event of emergency road repair or maintenance requirements along a haulage route, immediate action must be taken to ensure the safety of personnel and other road users. If a road is deemed unsafe, transport operations may be suspended temporarily to prevent accidents or further damage. Affected drivers must be notified promptly through appropriate channels such as signage, radio communication, electronic message boards, or direct contact. If required, the relevant road authority must be consulted without delay to assess the situation. Normal operations will only resume once the road has been deemed safe for use.

Emergency contact numbers have been provided in Table 3.1 for reference.

Table 3.1 Emergency contact details

Organisation	Contact details
Transport Management Centre	(02) 8396 1400
Lithgow City Council	(02) 6354 9999
Generator Property Management Pty Ltd	UHF Channel 19 (or as signposted) 0428 853 389
Wallerawang Police Station	(02) 6355 1303

3.11 Complaint management

All complaints will be recorded in GPM's Complaints Register to ensure all complaints are recorded and managed in a timely manner to ensure active community consultation and positive relations are maintained with local residents.

GPM management will ensure that the community relations protocols are communicated to all personnel involved in the complaints process and that appropriate training covering the protocols is established in site inductions. The purpose of this system is to minimise complaints by addressing their concerns upfront and monitor the environmental performance of the site.

3.11.1 Registering complaints

Any enquiries or complaints made by members of the public to site personnel will be directed to the Site Manager.

Complaints may be made to the facility's direct line during business hours (1800 817 711) which will be forwarded to a site representative outside of business hours or for emergencies. This number will be provided on a sign at the site entrance and is available on GPM's website (<https://gpmco.com.au/contact/>).

3.11.2 Complaint response

Any complaint received by GPM regarding driver conduct will be acted on within 24-hours in the following manner:

- Details of the complaint (date, time, specifics, complainants contact details) will be recorded.
- Activities occurring during the complaint period will be investigated.

- Findings of operations during the complaint period will be recorded in the complaints register.
- Relevant management practices will be reviewed as necessary.
- Findings of the review will be communicated to the complainant.

3.11.3 Complaints register

The details of any complaint will be logged in the complaints register, with investigation findings and actions noted. In accordance with CoA 5.4, the Complaints Register will be provided to the Secretary upon request.

Should the complaint be relevant to any of the conditions of the approval, it will be handled as per the approval conditions relevant to that environmental aspect.

3.12 Pedestrian management within the site

There will be minimal pedestrian activity within the site, except for the site employees or truck drivers who will be familiar with the site.

Attachment A

Correspondence from TfNSW, SES and LCC



8/03/2022

SF2018/109889 | WST18/00046/11

Abdullah Uddin
EMM
20 Chandos Street
Sydney NSW 2065

Attention: Abdullah Uddin

Dear Mr Uddin

MP07_0005: Lot 5 DP 829137; Wallerawang Ash Repository, Lidsdale – Operational Transport Management Plan

Thank you for the referral of the subject Operational Transport Management Plan (OTMP) by email dated 28 February 2022 inviting comment from Transport for NSW (TfNSW).

TfNSW understands the OTMP has been prepared to satisfy Condition 6.5 (f) of Development Consent MP07_0005. MP07_0005 involves transportation of 2.3 million cubic metres of capping material to the subject site. Condition 2.36A of consent 07_0005 states that the proponent must not import more than 100 heavy vehicle loads of capping material per day. Vehicular access to the site will be obtained via the existing access Wallerawang Power Plant access from the Castlereagh Highway.

The OTMP has been reviewed, TfNSW requires the following comments to be addressed:

- Section 2.9 of the OTMP states the number of truck movements will be dictated by the capping material source but on average there would be 6-7 truck movements per hour with a maximum peak of 12 trucks per hour and 40 light vehicle trips per day. TfNSW notes Section 2.6 of the OTMP states the haulage routes will be identified as capping material sources are identified. As per condition 6.5 (ii) of Consent 07_0005 the OTMP must detail the routes to be used to transport capping material. The OTMP needs to be updated to identify the proposed routes and associated traffic volumes as the current OTMP only shows the proposed access point to the site.
- The OTMP does not detail the measures to be implemented to ensure scheduling of heavy vehicle movements to minimise convoy lengths, platoons or interactions with school drop off and pick up times as per Condition 6.5 (f) (iii), this needs to be addressed.

- The OTMP does not demonstrate any consideration of local climate conditions or climate conditions on transport routes as per Condition 6.5 (f) (iii). The OTMP needs to demonstrate consideration of the climatic conditions on the transport routes including staff accessing and leaving the site and demonstrate how risks associated with the climate conditions will be managed to mitigate the risks.
- The OTMP does not identify a process for notifying the community about project-related traffic impacts as per Condition 6.5 (f) (iii), this needs to be addressed.
- The OTMP does not identify a process to respond to emergency repair or maintenance requirements of TfNSW assets as per Condition 6.5 (f) (iii), this needs to be addressed.

Should you require further information please contact Hayley Sarvanandan on 02 9983 2372.

Yours faithfully



Alexandra Power
Team Leader Development Services
Development Services West
Regional and Outer Metropolitan

CC:council@lithgow.nsw.gov.au

From: [Leanne Kearney](#)
To: [Abdullah Uddin](#); [Lithgow City Council](#)
Cc: [Amanda Weston](#); [Baqir Husain](#)
Subject: RE: Development at Lidsdale Ash Dam Areas (Application No: 07_0005)
Date: Friday, 4 March 2022 10:59:51 AM
Attachments: [image004.png](#)
[image006.png](#)
[image007.png](#)
[image008.ipq](#)
[image009.png](#)

CAUTION: This email originated outside of the Organisation.

Hi Abdullah

Council officers have reviewed the documents provided, and do not have any concerns that need addressing or included in the OTMP, as the proposal doesn't utilise or impact any Council road (trucks from Castlereagh Highway (TfNSW road) will be accessing private land and using private haul roads).

Please let me know if you need any additional information regarding this matter.

Regards

Leanne Kearney | Assets and Infrastructure Planning Manager
Infrastructure Services | [Lithgow City Council](#)
Phone: (02) 6354 9999

From: Abdullah Uddin <auddin@emmconsulting.com.au>
Sent: Monday, 28 February 2022 3:30 PM
To: Leanne Kearney <leanne.kearney@lithgow.nsw.gov.au>; Lithgow City Council <council@lithgow.nsw.gov.au>
Cc: Amanda Weston <aweston@emmconsulting.com.au>; Baqir Husain <bhusain@emmconsulting.com.au>
Subject: FW: Development at Lidsdale Ash Dam Areas (Application No: 07_0005)

Good afternoon Leanne

Hope you are well.

See the email below which my colleague sent around mid-December 2021. We are yet to receive any response on this.

Just checking, council has any comments on this. We need to wrap up the project now but happy to allow another week to respond.

Could you please respond by Monday, 7 March 2022. Please feel free to call if you have any questions.

Best Regards

Abdullah Uddin

Associate Traffic Engineer, CPEng, RPEQ



T 02 9493 9500
M 0425 478 650
E auddin@emmconsulting.com.au

Connect with us

SYDNEY | Ground floor, 20 Chandos Street, St Leonards NSW 2065



From: Baqir Husain <bhusain@emmconsulting.com.au>

Sent: Wednesday, 15 December 2021 10:51 AM

To: council@lithgow.nsw.gov.au

Cc: Amanda Weston <aweston@emmconsulting.com.au>; Tim Brooker <tbrooker@emmconsulting.com.au>; Abdullah Uddin <auddin@emmconsulting.com.au>

Subject: Development at Lidsdale Ash Dam Areas (Application No: 07_0005)

Attention: Council Traffic Engineer

We have been engaged by Generator Property Management (GPM) to prepare an Operational Transport Management Plan (OTMP) for the Lidsdale Ash Repository.

About the project:

The Lidsdale Ash Repository is owned and operated by GPM with the Site having a long history of being used for disposal of waste from the WPS. GPM took ownership of the Site in September 2020 from Energy Australia NSW. The Site was used for ash disposal in conjunction with the Wallerawang Power Station (WPS) since the late 1950s but since the closure of WPS in 2014, the Lidsdale Ash Repository has been placed in care and maintenance.

Project Approval 07_0005 contains a number of conditions that need to be complied with by GPM Co NSW, as the proponent, at different stages of the Project. Condition 6 (f) of Project Approval 07_0005 requires an OTMP be developed prior to the importation of capping material from sources outside of the Lithgow local government area.

Please find attached the OTMP for the Lidsdale Ash Repository. Approval condition 6.5(f) states the following:

“an Operational Transport Management Plan for the project, which must:

(i) be prepared in consultation with RMS and Council, prior to importing capping material from sources outside of the Lithgow local government area;”

As part of the approval condition, we are seeking Lithgow Council's input to the attached OTMP. I have also attached the development consent for your information.

Given the time of year and a number of public holidays coming up, to ensure this process is kept moving we would appreciate your comments on the OTMP by January 14th 2022.

Please feel free to contact if you have any questions.

Thanks and Regards,

Baqir Husain

Traffic Engineer



T 02 9493 9500

D 02 8413 9505

Connect with us

SYDNEY | Ground floor, 20 Chandos Street, St Leonards NSW 2065

Our offices will be closed from Friday 24 December 2021 and will reopen on Tuesday 4 January 2022.

Please consider the environment before printing my email.

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Building and Development:LGS



15 January 2025

Post Approval Consultation
Major Projects

Dear Sir/Madam,

Wallerawang Power Station - Ash Dam (PAE-79044206) – Construction and Operation Traffic Management Plan Rev 3

Reference is made to the above mentioned subject and to consultation with Council on the Construction and Operation Traffic Management Plan.

Council officers have reviewed the documents provided and advise that the Construction and Operation Traffic Management Plan Rev 3 is considered satisfactory and complies with conditions 6.3(a) and 6(f) on the consent.

Council notes that the proposal does not utilise or impact any of Council road networks (trucks from Castlereagh Highway (TfNSW road) will be accessing private land and using private haul roads). Should any of Council roads be utilised, consultation with Council will need to be undertaken.

If you require any further information in relation to this matter, please contact the undersigned by telephone during normal business hours on (02) 6354 9999 or by email at council@lithgow.nsw.gov.au.

Yours sincerely,

Lauren Stevens
Development Planner

24 January 2025

TfNSW reference: WST25/00003/001 | SF2025/001941

Your reference: MP07_0005-PA-27 | PAE-79044209

Stephen Saladine
Generator Property Management
By Email: steve.saladine@gpmco.com.au.

Review of Wallerawang Power Station – Lidsdale Ash Dam (PAE-79044206) – Construction and Operation Traffic Management Plan

Dear Stephen,

Transport for NSW (TfNSW) is responding to the request for review of a Construction and Operation Traffic Management Plan (COTMP) for the Lidsdale Ash Dam Repositories, as referenced in MP07_0005 (and its modifications). The COTMP has been submitted for TfNSW consultation, via the NSW Major Projects Planning Portal, in accordance with Conditions 2.36, 2.36(a) and 6.3 (a) of the project approval MP07_0005-Mod 2, approved 13 October 2023.

TfNSW has reviewed the COTMP prepared by EMM Consulting dated October 2024, and recommends the following amendments be made to ensure the purpose of the TMP has been met in accordance with the relevant conditions of consent:

1. The COTMP does not provide details on proposed haulage routes to transport the capping material associated with the operations of the development. Whilst the plan states that haulage routes will be provided once engagement with a transport contractor has occurred, it only demonstrates the internal haulage route from the existing site access road. TfNSW are required to assess the potential impacts to the broader classified road network in the context of the proposal. Accordingly, proposed haulage routes should be clearly illustrated in the COTMP in accordance with Condition 6.3(a) within the consent and identify any sensitive land uses (e.g. school zones, residential areas) impacted by the vehicle movements and consider any conditions contained within the existing approval. (i.e. Condition 2.36(a) indicates that no capping material is to be transported via any residential roads within the Lithgow local government area (LGA) during construction and operation phase).
2. The COTMP does not identify suitable measures to be implemented to ensure scheduling of heavy vehicles movements to minimise convoy lengths, platoons or interactions with school drop off and pick up times as per Condition 6.5 (f) (iii). A proposed schedule of transport operations, including identification of peak hours during operation and confirmation of maximum average of heavy vehicle movements per hour (currently listed as 12) should be included in the COTMP.

OFFICIAL

A 51-55 Currajong Street, PARKES NSW 2870 | PO Box 334 PARKES NSW 2870 | DX20256

E development.west@transport.nsw.gov.au | ABN 18 804 239 602

P 1300 207 783

transport.nsw.gov.au

Transport for NSW

3. Condition 6.3(a)(i) requires the identification of construction vehicle volumes (including staff vehicles, heavy vehicles and oversized vehicles). The traffic counts provided (using SIDRA) in the COTMP do not appear to differentiate the construction and operational traffic volumes, does not include counts or consider the impact of any oversized vehicles.
4. The COTMP does not identify any alternative routes to be used in the event of road closures and/or traffic detours during haulage as required by Condition 6.3(a)(ii). Furthermore, a process to respond to any emergency road repairs or road maintenance requirements as a result of, or during haulage, has not been provided in accordance with Condition 6.5 (f)(iii). It is noted that Section 3.9 of the COTMP refers to maintenance of haulage vehicles and does not consider impacts or repairs required to the road environment or any other TfNSW assets.
5. An appropriate community consultation strategy should be clearly detailed in the COTMP prior to operations commencing in accordance with Condition 6.3(f)(iii).
6. The COTMP does not demonstrate any consideration of local climate conditions or climate conditions on transport routes as per Condition 6.5(f)(iii). The COTMP needs to demonstrate consideration of the climatic conditions on the transport routes (e.g. fog, black ice, etc) including staff accessing and leaving the site and demonstrate how risks associated with the climate conditions will be managed to mitigate the risks.
7. The Code of Conduct could be updated to include clear parameters for the monitoring of driver behaviour through the use of an internal monitoring system that is performance objective based, promotes driver education and can be updated in the event of any changes during transport operations. Additionally, adherence to designated transport haulage routes (including minimising impact on residential areas) in accordance with relevant conditions should be included in the Code of Conduct.

The Planning Secretary should be satisfied that the above matter has been adequately addressed prior to approving the COTMP.

If you have any questions, please contact Brendan Croft, Development Services Case Officer on 1300 019 680 or email development.west@transport.nsw.gov.au

Yours faithfully,



Kylie-Anne Pont

Team Leader Development Services – West
Transport Planning
Planning, Integration and Passenger

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7 August 2025

TfNSW reference: WST25/00003/003 | SF2025/001941
Your reference: MP07_0005-PA-27

GPM - Generator Property Management Pty Ltd

PO Box 132 Budgewoi NSW 2262

Attention: Julian MacPhee - Julian.MacPhee@gpmco.com.au

MP07_0005-PA-27 - Wallerawang Power Station - Ash Dam - Construction and operational TMP review - Various lots - Great Western Highway, Lidsdale

Hi Julian,

Transport for NSW (TfNSW) is responding to the MP07_0005-PA-27 referred on 15 July 2025 via email.

TfNSW has reviewed the revised Construction and Operational Traffic Management Plan (COTMP) by EMM (refer Project No. E210783 RP3, Version V1, dated 11/2/2025), which was updated to include some amendments suggested by TfNSW in a correspondence dated 24 January 2025. The following comments are reiterated for consideration.

The updated COTMP has limited additional information that clarifies the specifics identified in Conditions 2.36, 2.36A, 2.36B, 6.3a), and 6.5f). In particular, the proposed haulage routes, schedule of transport operations, differentiation of construction and operational traffic volumes, and alternative routes in the event of road closures . These are explained in detail in the correspondence dated 24 January 2025.

TfNSW acknowledges the Planning Secretary should be satisfied that Conditions 6.4, 6.5, & 6.5A, have been adequately addressed prior to approving the subject OTMP.

If you have any questions, please contact Brendan Croft, Development Services Case Officer, on 1300 019 680 or email development.west@transport.nsw.gov.au.

Yours faithfully,



Brendan Croft
A / Team Leader Development Services (West)
Transport Planning
Planning, Integration and Passenger

OFFICIAL

29 August 2025

TfNSW reference: WST25/00003/004 | SF2025/001

Your reference: MP07_0005-PA-2

General Property Management Pty Ltd (GPM)

Email: julian.macphee@gpmco.com.au

Council email: council@lithgow.gov.nsw.gov.au

Attention: Julian MacPhee

MP07_0005-PA-27 - Wallerawang Power Station - Ash Dam - Construction and Operational Traffic Management Plan review - Various lots - Great Western Highway, Lidsdale

Dear Julian

Transport for NSW (TfNSW) is responding to MP07_0005-PA-27 referred on 25 August 2025.

Thank you for sending the revised Construction and Operational Traffic Management Plan (COTMP), as shown in **Attachment 1**, to TfNSW to review. TfNSW has reviewed the revised COTMP by EMM (refer Project No. E210783 RP3, Version V5, dated 15/8/2025), which was updated to include amendments suggested by TfNSW in correspondence dated 7 August 2025.

TfNSW is satisfied that the concerns raised in the response dated 7 August 2025 have been addressed adequately and, on this basis, provide endorsement for the COTMP. TfNSW welcomes the opportunity to provide further advice and comment (as required) to ensure the safety and efficiency of the broader transport network.

Yours faithfully



Brendan Croft

A / Team Leader Development Services (West)

Transport Planning

Planning, Integration & Passenger

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Our Ref: ID 3268

Your Ref:

13 August 2025

John Pola
Generator Property Management Pty Ltd
PO Box 132
Budgewoi NSW 2262

Via email

email: john.pola@gpmco.com.au

CC: craig.ronan@one.ses.nsw.gov.au wtz.ops@ses.nsw.gov.au

Dear John,

Wallerawang Ash Repository, Lidsdale - Operational Transport Management Plan

Thank you for the consultation advice and opportunity to provide comment on the Operational Transport Management Plan for the extension of Wallerawang Ash Dam Areas, 6 Banksia Street Vincentia.

The NSW State Emergency Service (NSW SES) is the agency responsible for dealing with floods, storms and tsunamis in NSW. This role includes planning for, responding to and coordinating the initial recovery from floods. As such, the NSW SES has an interest in the public safety aspects of the development of flood prone land, particularly the potential for changes to land use to either exacerbate existing flood risk or create new flood risk for communities in NSW.

In summary, based on the currently available information we do not have significant concerns regarding the proposed development, however:

- **Consider** the impact of flooding on the infrastructure and people using the roads up to and including the Probable Maximum Flood (PMF), along with the impact of climate change on the flood risks.
- **Ensure** workers and people using the site and roads during and after the upgrades are aware of any flood risk, for example through site inductions, by using signage and other flood information tools.
- **Recommend** the Operational Transport Management Plan includes instructions to act early on Severe Weather Warnings issued by the Australian Government Bureau of Meteorology (BoM). The NSW SES does not have the operational capacity to provide individualised flood warnings for each business site. Severe Weather Warnings will be the most likely form of advice about the potential for flood producing storms and rainfall. In addition, coastal system such as tides and tsunamis should be included in your plan for this location.

- **Consider** closing the worksite and securing all materials and equipment prior to the start of the working day if there is a risk of riverine flooding, on receipt of advice from the BoM, or when other evidence leads to an expectation of flooding. During site works, check the BoM website prior to start of the workday for any Severe Weather Warnings.
- **Advise** that any flood response directive issued by the NSW SES or by delegated authority to others acting on its behalf must be followed. This includes any order to evacuate the site or not evacuate the site, irrespective of what decisions have been made by management in accordance with any site emergency response plan.
- **Recommend** pursuing, if relevant, site design and stormwater management that reduces the impact of flooding and minimises any risk to the community. Any improvements that can be made to reduce flood risk will benefit the community.

To provide additional support in doing the above, we direct you to the online resources which are available to the community on the www.ses.nsw.gov.au website which include helpful pages such as:

- [Know Your Risk | NSW State Emergency Service](#)
- [Local Plans and Guides](#) (enter your town or postcode) - which includes locally endorsed NSW SES Flood Emergency Sub Plans and Local Flood Insights
- [Business Continuity Plan](#) - online tool which steps you through the process of developing your own Business Emergency Plan.

In addition, if the construction phase of the upgrades causes disruption to the operation of local roads, this may impact the ability for emergency vehicles to use these routes. The NSW SES requests that notification be provided where there are likely to be significant delays in the operation of the roads affected by the upgrades.

Please feel free to contact Gillian Webber via email at rra@ses.nsw.gov.au should you wish to discuss any of the matters raised in this correspondence. The NSW SES would also be interested in receiving future correspondence regarding the outcome of this referral via this email address.

Yours sincerely

A handwritten signature in cursive script that reads 'Elspeth O'Shannessy'.

Elspeth O'Shannessy
Manager Emergency Risk Assessment
NSW State Emergency Service

Attachment B

Traffic intersection counts

Suburb : Wallerawang
 Intersection: Castlereagh Highway/Site Access Road
 Day/Date : Tuesday, 02 November 2021
 AM Peak Hour

Approach	Castlereagh Highway East Approach						Castlereagh Highway West Approach						Site Access Road South Approach					
Direction	Left			Through			Right Turn			Through			Left			Right Turn		
Time Period	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total
7:00 to 7:15	3	0	3	22	3	25	0	0	0	17	4	21	0	0	0	1	0	1
7:15 to 7:30	2	2	4	25	15	40	2	0	2	25	7	32	0	0	0	0	0	0
7:30 to 7:45	0	0	0	24	8	32	2	0	2	34	6	40	2	0	2	0	1	1
7:45 to 8:00	0	0	0	23	12	35	0	0	0	26	3	29	0	0	0	0	0	0
8:00 to 8:15	1	0	1	27	3	30	0	0	0	0	0	0	0	0	0	0	0	0
8:15 to 8:30	1	0	1	34	3	37	0	0	0	0	0	0	0	0	0	0	0	0
8:30 to 8:45	1	0	1	40	6	46	0	0	0	0	0	0	0	0	0	0	0	0
8:45 to 9:00	0	0	0	25	10	35	0	0	0	0	0	0	0	0	0	0	0	0
AM Totals	8	2	10	220	60	280	4	0	4	102	20	122	2	0	2	1	1	2

Approach	Castlereagh Highway East Approach						Castlereagh Highway West Approach						Site Access Road South Approach						
Direction	Left			Through			Right Turn			Through			Left			Right Turn			
Time Period	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	
7:00 to 8:00	5	2	7	94	38	132	4	0	4	102	20	122	2	0	2	1	1	2	269
7:15 to 8:15	3	2	5	99	38	137	4	0	4	85	16	101	2	0	2	0	1	1	250
7:30 to 8:30	2	0	2	108	26	134	2	0	2	60	9	69	2	0	2	0	1	1	210
7:45 to 8:45	3	0	3	124	24	148	0	0	0	26	3	29	0	0	0	0	0	0	180
8:00 to 9:00	3	0	3	126	22	148	0	0	0	0	0	0	0	0	0	0	0	0	151
AM Totals	16	4	20	551	148	699	10	0	10	273	48	321	6	0	6	1	3	4	

Suburb : Pokolbin
 Intersection: Hermitage Road/Site Access Road
 Day/Date : Thursday, 14 October 2021
 PM Peak Hour

Approach	Castlereagh Highway East Approach						Castlereagh Highway West Approach						Site Access Road South Approach					
Direction	Left			Through			Right Turn			Through			Left			Right Turn		
Time Period	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total
16:00 to 16:15	1	0	1	60	4	64	0	0	0	37	3	40	1	0	1	0	0	0
16:15 to 16:30	0	0	0	39	2	41	1	0	1	36	2	38	0	0	0	0	0	0
16:30 to 16:45	0	0	0	35	2	37	0	0	0	43	7	50	1	0	1	0	0	0
16:45 to 17:00	0	0	0	37	3	40	0	0	0	38	10	48	4	0	4	0	0	0
17:00 to 17:15	0	0	0	38	4	42	0	0	0	30	4	34	3	0	3	14	0	14
17:15 to 17:30	0	0	0	46	4	50	0	0	0	25	5	30	2	0	2	4	0	4
17:30 to 17:45	0	0	0	38	0	38	0	0	0	21	1	22	0	0	0	0	0	0
17:45 to 18:00	0	0	0	28	2	30	1	0	1	23	3	26	0	0	0	2	0	2
PM Totals	1	0	1	321	21	342	2	0	2	253	35	288	11	0	11	20	0	20

Approach	Castlereagh Highway East Approach						Castlereagh Highway West Approach						Site Access Road South Approach						
Direction	Left			Through			Right Turn			Through			Left			Right Turn			
Time Period	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	
16:00 to 17:00	1	0	1	171	11	182	1	0	1	154	22	176	6	0	6	0	0	0	366
16:15 to 17:15	0	0	0	149	11	160	1	0	1	147	23	170	8	0	8	14	0	14	353
16:30 to 17:30	0	0	0	156	13	169	0	0	0	136	26	162	10	0	10	18	0	18	359
16:45 to 17:45	0	0	0	159	11	170	0	0	0	114	20	134	9	0	9	18	0	18	331
17:00 to 18:00	0	0	0	150	10	160	1	0	1	99	13	112	5	0	5	20	0	20	298
PM Totals	1	0	1	785	56	841	3	0	3	650	104	754	38	0	38	70	0	70	

Attachment C

SIDRA results

MOVEMENT SUMMARY

Site: [Castlereagh Highway/Site Access Road AM Peak (Site Folder: Baseline traffic 2023)]

Castlereagh Highway/Site Access Road inetrsection
 Site Category: (None)
 Stop (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h]	[HV veh/h]	[Total veh/h]	[HV %]				[Veh. veh]	[Dist m]				
South: Site Access Road														
1	L2	2	0	2	0.0	0.007	4.9	LOS A	0.0	0.2	0.39	0.87	0.39	29.4
3	R2	2	1	2	50.0	0.007	9.8	LOS A	0.0	0.2	0.39	0.87	0.39	27.2
Approach		4	1	4	25.0	0.007	7.4	LOS A	0.0	0.2	0.39	0.87	0.39	28.3
East: Castlereagh Highway East														
4	L2	7	2	8	28.6	0.005	7.5	LOS A	0.0	0.0	0.00	0.63	0.00	56.8
5	T1	135	39	163	28.9	0.099	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach		142	41	171	28.9	0.099	0.4	NA	0.0	0.0	0.00	0.03	0.00	78.4
West: Castlereagh Highway West														
11	T1	124	20	131	16.1	0.065	0.1	LOS A	0.0	0.3	0.02	0.02	0.02	83.3
12	R2	4	0	4	0.0	0.065	7.5	LOS A	0.0	0.3	0.03	0.02	0.03	32.7
Approach		128	20	135	15.6	0.065	0.3	NA	0.0	0.3	0.02	0.02	0.02	79.5
All Vehicles		274	62	310	23.1	0.099	0.4	NA	0.0	0.3	0.02	0.04	0.02	77.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Vehicle movement LOS values are based on average delay per movement.
 Minor Road Approach LOS values are based on average delay for all vehicle movements.
 NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
 Delay Model: SIDRA Standard (Geometric Delay is included).
 Queue Model: SIDRA Standard.
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [Castlereagh Highway/Site Access Road PM Peak (Site Folder: Baseline traffic 2023)]

Castlereagh Highway/Site Access Road inetrsection
 Site Category: (None)
 Stop (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Site Access Road														
1	L2	6	0	6	0.0	0.013	5.4	LOS A	0.0	0.4	0.43	0.86	0.43	29.3
3	R2	2	1	2	50.0	0.013	13.2	LOS A	0.0	0.4	0.43	0.86	0.43	27.2
Approach		8	1	8	12.5	0.013	7.3	LOS A	0.0	0.4	0.43	0.86	0.43	28.8
East: Castlereagh Highway East														
4	L2	1	0	1	0.0	0.001	7.0	LOS A	0.0	0.0	0.00	0.63	0.00	65.4
5	T1	185	11	261	5.9	0.139	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach		186	11	262	5.9	0.139	0.1	NA	0.0	0.0	0.00	0.00	0.00	79.8
West: Castlereagh Highway West														
11	T1	179	22	203	12.3	0.095	0.1	LOS A	0.0	0.1	0.01	0.00	0.01	84.7
12	R2	1	0	1	0.0	0.095	7.9	LOS A	0.0	0.1	0.01	0.00	0.01	32.8
Approach		180	22	205	12.2	0.095	0.1	NA	0.0	0.1	0.01	0.00	0.01	84.0
All Vehicles		374	34	475	8.7	0.139	0.2	NA	0.0	0.4	0.01	0.02	0.01	79.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Vehicle movement LOS values are based on average delay per movement.
 Minor Road Approach LOS values are based on average delay for all vehicle movements.
 NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
 Delay Model: SIDRA Standard (Geometric Delay is included).
 Queue Model: SIDRA Standard.
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [Castlereagh Highway/Site Access Road AM Peak (Site Folder: Baseline + operational traffic 2023)]

Castlereagh Highway/Site Access Road inetrsection
 Site Category: (None)
 Stop (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Site Access Road														
1	L2	2	0	2	0.0	0.048	4.9	LOS A	0.2	2.0	0.53	0.94	0.53	28.5
3	R2	14	13	15	92.9	0.048	14.1	LOS A	0.2	2.0	0.53	0.94	0.53	24.5
Approach		16	13	17	81.2	0.048	12.9	LOS A	0.2	2.0	0.53	0.94	0.53	25.0
East: Castlereagh Highway East														
4	L2	29	14	35	48.3	0.025	7.9	LOS A	0.0	0.0	0.00	0.63	0.00	52.1
5	T1	135	39	163	28.9	0.099	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach		164	53	198	32.3	0.099	1.4	NA	0.0	0.0	0.00	0.11	0.00	73.0
West: Castlereagh Highway West														
11	T1	124	20	131	16.1	0.072	0.2	LOS A	0.1	0.9	0.08	0.07	0.08	81.9
12	R2	14	0	15	0.0	0.072	7.6	LOS A	0.1	0.9	0.10	0.08	0.10	32.4
Approach		138	20	145	14.5	0.072	0.9	NA	0.1	0.9	0.08	0.07	0.08	70.9
All Vehicles		318	86	360	27.4	0.099	1.8	NA	0.2	2.0	0.06	0.13	0.06	66.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Vehicle movement LOS values are based on average delay per movement.
 Minor Road Approach LOS values are based on average delay for all vehicle movements.
 NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
 Delay Model: SIDRA Standard (Geometric Delay is included).
 Queue Model: SIDRA Standard.
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [Castlereagh Highway/Site Access Road PM Peak (Site Folder: Baseline + operational traffic 2023)]

Castlereagh Highway/Site Access Road intersection
 Site Category: (None)
 Stop (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h]	[HV veh/h]	[Total veh/h]	[HV %]				[Veh. veh]	[Dist m]				
South: Site Access Road														
1	L2	16	0	17	0.0	0.093	5.5	LOS A	0.3	3.0	0.54	0.95	0.54	28.7
3	R2	22	12	23	54.5	0.093	14.7	LOS B	0.3	3.0	0.54	0.95	0.54	26.4
Approach		38	12	40	31.6	0.093	10.8	LOS A	0.3	3.0	0.54	0.95	0.54	27.3
East: Castlereagh Highway East														
4	L2	13	12	18	92.3	0.016	8.7	LOS A	0.0	0.0	0.00	0.63	0.00	43.9
5	T1	185	11	261	5.9	0.139	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach		198	23	279	11.6	0.139	0.6	NA	0.0	0.0	0.00	0.04	0.00	75.8
West: Castlereagh Highway West														
11	T1	179	22	203	12.3	0.095	0.1	LOS A	0.0	0.1	0.01	0.00	0.01	84.7
12	R2	1	0	1	0.0	0.095	8.0	LOS A	0.0	0.1	0.01	0.00	0.01	32.8
Approach		180	22	205	12.2	0.095	0.1	NA	0.0	0.1	0.01	0.00	0.01	84.0
All Vehicles		416	57	523	13.4	0.139	1.2	NA	0.3	3.0	0.04	0.10	0.04	69.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Vehicle movement LOS values are based on average delay per movement.
 Minor Road Approach LOS values are based on average delay for all vehicle movements.
 NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
 Delay Model: SIDRA Standard (Geometric Delay is included).
 Queue Model: SIDRA Standard.
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [Castlereagh Highway/Site Access Road AM Peak (Site Folder: Baseline + operational + cumulative traffic 2023)]

Castlereagh Highway/Site Access Road inetrsection
 Site Category: (None)
 Stop (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	[HV] veh/h	[Total veh/h	[HV] %				[Veh. veh	[Dist] m				
South: Site Access Road														
1	L2	2	0	2	0.0	0.083	6.4	LOS A	0.3	3.3	0.72	0.98	0.72	26.7
3	R2	14	13	15	92.9	0.083	24.1	LOS B	0.3	3.3	0.72	0.98	0.72	23.2
Approach		16	13	17	81.2	0.083	21.9	LOS B	0.3	3.3	0.72	0.98	0.72	23.6
East: Castlereagh Highway East														
4	L2	29	14	35	48.3	0.025	7.9	LOS A	0.0	0.0	0.00	0.63	0.00	52.1
5	T1	306	60	369	19.6	0.213	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach		335	74	404	22.1	0.213	0.7	NA	0.0	0.0	0.00	0.05	0.00	76.3
West: Castlereagh Highway West														
11	T1	125	21	132	16.8	0.076	0.4	LOS A	0.2	1.3	0.12	0.07	0.12	81.3
12	R2	14	0	15	0.0	0.076	8.9	LOS A	0.2	1.3	0.15	0.09	0.15	32.3
Approach		139	21	146	15.1	0.076	1.3	NA	0.2	1.3	0.12	0.07	0.12	70.6
All Vehicles		490	108	567	22.0	0.213	1.5	NA	0.3	3.3	0.05	0.09	0.05	70.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Vehicle movement LOS values are based on average delay per movement.
 Minor Road Approach LOS values are based on average delay for all vehicle movements.
 NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
 Delay Model: SIDRA Standard (Geometric Delay is included).
 Queue Model: SIDRA Standard.
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [Castlereagh Highway/Site Access Road PM Peak (Site Folder: Baseline + operational + cumulative traffic 2023)]

Castlereagh Highway/Site Access Road inetrsection
 Site Category: (None)
 Stop (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	[HV] veh/h	[Total veh/h	[HV] %				[Veh. veh	[Dist] m				
South: Site Access Road														
1	L2	16	0	17	0.0	0.135	5.5	LOS A	0.5	4.1	0.61	0.94	0.61	27.7
3	R2	22	12	23	54.5	0.135	22.6	LOS B	0.5	4.1	0.61	0.94	0.61	25.6
Approach		38	12	40	31.6	0.135	15.4	LOS B	0.5	4.1	0.61	0.94	0.61	26.4
East: Castlereagh Highway East														
4	L2	13	12	18	92.3	0.016	8.7	LOS A	0.0	0.0	0.00	0.63	0.00	43.9
5	T1	186	12	262	6.5	0.140	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach		199	24	280	12.1	0.140	0.6	NA	0.0	0.0	0.00	0.04	0.00	75.8
West: Castlereagh Highway West														
11	T1	350	43	398	12.3	0.185	0.1	LOS A	0.0	0.1	0.00	0.00	0.00	84.8
12	R2	1	0	1	0.0	0.185	8.2	LOS A	0.0	0.1	0.00	0.00	0.00	32.8
Approach		351	43	399	12.3	0.185	0.1	NA	0.0	0.1	0.00	0.00	0.00	84.4
All Vehicles		588	79	719	13.3	0.185	1.2	NA	0.5	4.1	0.04	0.07	0.04	72.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Vehicle movement LOS values are based on average delay per movement.
 Minor Road Approach LOS values are based on average delay for all vehicle movements.
 NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
 Delay Model: SIDRA Standard (Geometric Delay is included).
 Queue Model: SIDRA Standard.
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [Castlereagh Highway/Site Access Road AM Peak (Site Folder: Horizon traffic 2033)]

Castlereagh Highway/Site Access Road inetrsection
 Site Category: (None)
 Stop (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Site Access Road														
1	L2	2	0	2	0.0	0.007	5.0	LOS A	0.0	0.2	0.42	0.86	0.42	29.3
3	R2	2	1	2	50.0	0.007	10.4	LOS A	0.0	0.2	0.42	0.86	0.42	27.2
Approach		4	1	4	25.0	0.007	7.7	LOS A	0.0	0.2	0.42	0.86	0.42	28.2
East: Castlereagh Highway East														
4	L2	8	2	10	25.0	0.006	7.4	LOS A	0.0	0.0	0.00	0.63	0.00	57.7
5	T1	148	43	178	29.1	0.109	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach		156	45	188	28.8	0.109	0.4	NA	0.0	0.0	0.00	0.03	0.00	78.4
West: Castlereagh Highway West														
11	T1	136	22	143	16.2	0.071	0.1	LOS A	0.0	0.3	0.02	0.02	0.02	83.4
12	R2	4	0	4	0.0	0.071	7.6	LOS A	0.0	0.3	0.03	0.02	0.03	32.7
Approach		140	22	147	15.7	0.071	0.3	NA	0.0	0.3	0.02	0.02	0.02	79.8
All Vehicles		300	68	340	23.1	0.109	0.4	NA	0.0	0.3	0.01	0.04	0.01	77.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: [Castlereagh Highway/Site Access Road PM Peak (Site Folder: Horizon traffic 2033)]

Castlereagh Highway/Site Access Road inetrsection
 Site Category: (None)
 Stop (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	[HV] veh/h	[Total veh/h	[HV] %				[Veh. veh	[Dist] m				
South: Site Access Road														
1	L2	7	0	7	0.0	0.016	5.5	LOS A	0.1	0.4	0.45	0.86	0.45	29.3
3	R2	2	1	2	50.0	0.016	14.6	LOS B	0.1	0.4	0.45	0.86	0.45	27.1
Approach		9	1	9	11.1	0.016	7.6	LOS A	0.1	0.4	0.45	0.86	0.45	28.8
East: Castlereagh Highway East														
4	L2	1	0	1	0.0	0.001	7.0	LOS A	0.0	0.0	0.00	0.63	0.00	65.4
5	T1	204	12	287	5.9	0.153	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach		205	12	289	5.9	0.153	0.1	NA	0.0	0.0	0.00	0.00	0.00	79.8
West: Castlereagh Highway West														
11	T1	198	25	225	12.6	0.105	0.1	LOS A	0.0	0.1	0.01	0.00	0.01	84.7
12	R2	1	0	1	0.0	0.105	8.1	LOS A	0.0	0.1	0.01	0.00	0.01	32.8
Approach		199	25	226	12.6	0.105	0.1	NA	0.0	0.1	0.01	0.00	0.01	84.0
All Vehicles		413	38	524	8.8	0.153	0.2	NA	0.1	0.4	0.01	0.02	0.01	79.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Project: \\emmsvr1\EMM3\2020\J200724 - Wallerawang Power Station Remediation\Technical studies\Transport\SIDRA\20230314 SIDRA rev00.sip9

MOVEMENT SUMMARY

Site: [Castlereagh Highway/Site Access Road AM Peak (Site Folder: Horizon operational traffic 2033)]

Castlereagh Highway/Site Access Road inetrsection
 Site Category: (None)
 Stop (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h]	[HV veh/h]	[Total veh/h]	[HV %]				[Veh. veh]	[Dist m]				
South: Site Access Road														
1	L2	2	0	2	0.0	0.051	5.0	LOS A	0.2	2.2	0.55	0.94	0.55	28.3
3	R2	14	13	15	92.9	0.051	15.1	LOS B	0.2	2.2	0.55	0.94	0.55	24.4
Approach		16	13	17	81.2	0.051	13.9	LOS A	0.2	2.2	0.55	0.94	0.55	24.8
East: Castlereagh Highway East														
4	L2	30	14	36	46.7	0.026	7.8	LOS A	0.0	0.0	0.00	0.63	0.00	52.4
5	T1	148	43	178	29.1	0.109	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach		178	57	214	32.0	0.109	1.3	NA	0.0	0.0	0.00	0.11	0.00	73.4
West: Castlereagh Highway West														
11	T1	136	22	143	16.2	0.078	0.2	LOS A	0.1	1.0	0.08	0.06	0.08	82.0
12	R2	14	0	15	0.0	0.078	7.8	LOS A	0.1	1.0	0.09	0.08	0.09	32.4
Approach		150	22	158	14.7	0.078	0.9	NA	0.1	1.0	0.08	0.06	0.08	71.7
All Vehicles		344	92	389	27.1	0.109	1.7	NA	0.2	2.2	0.06	0.12	0.06	67.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Vehicle movement LOS values are based on average delay per movement.
 Minor Road Approach LOS values are based on average delay for all vehicle movements.
 NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
 Delay Model: SIDRA Standard (Geometric Delay is included).
 Queue Model: SIDRA Standard.
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [Castlereagh Highway/Site Access Road PM Peak (Site Folder: Horizon operational traffic 2033)]

Castlereagh Highway/Site Access Road inetrsection
 Site Category: (None)
 Stop (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	[HV] veh/h	[Total veh/h	[HV] %				[Veh. veh	[Dist] m				
South: Site Access Road														
1	L2	17	0	18	0.0	0.103	5.7	LOS A	0.4	3.2	0.56	0.95	0.56	28.5
3	R2	22	12	23	54.5	0.103	16.3	LOS B	0.4	3.2	0.56	0.95	0.56	26.3
Approach		39	12	41	30.8	0.103	11.7	LOS A	0.4	3.2	0.56	0.95	0.56	27.2
East: Castlereagh Highway East														
4	L2	13	12	18	92.3	0.016	8.7	LOS A	0.0	0.0	0.00	0.63	0.00	43.9
5	T1	204	12	287	5.9	0.153	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach		217	24	306	11.1	0.153	0.5	NA	0.0	0.0	0.00	0.04	0.00	76.2
West: Castlereagh Highway West														
11	T1	198	25	225	12.6	0.105	0.1	LOS A	0.0	0.1	0.01	0.00	0.01	84.7
12	R2	1	0	1	0.0	0.105	8.2	LOS A	0.0	0.1	0.01	0.00	0.01	32.8
Approach		199	25	226	12.6	0.105	0.1	NA	0.0	0.1	0.01	0.00	0.01	84.0
All Vehicles		455	61	573	13.1	0.153	1.2	NA	0.4	3.2	0.04	0.09	0.04	69.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Vehicle movement LOS values are based on average delay per movement.
 Minor Road Approach LOS values are based on average delay for all vehicle movements.
 NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
 Delay Model: SIDRA Standard (Geometric Delay is included).
 Queue Model: SIDRA Standard.
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Attachment D

Example haulage routes

D.1 Walker's Quarry, Marrangaroo, NSW

1 963 Great Western Hwy, Marrangaroo NSW 2

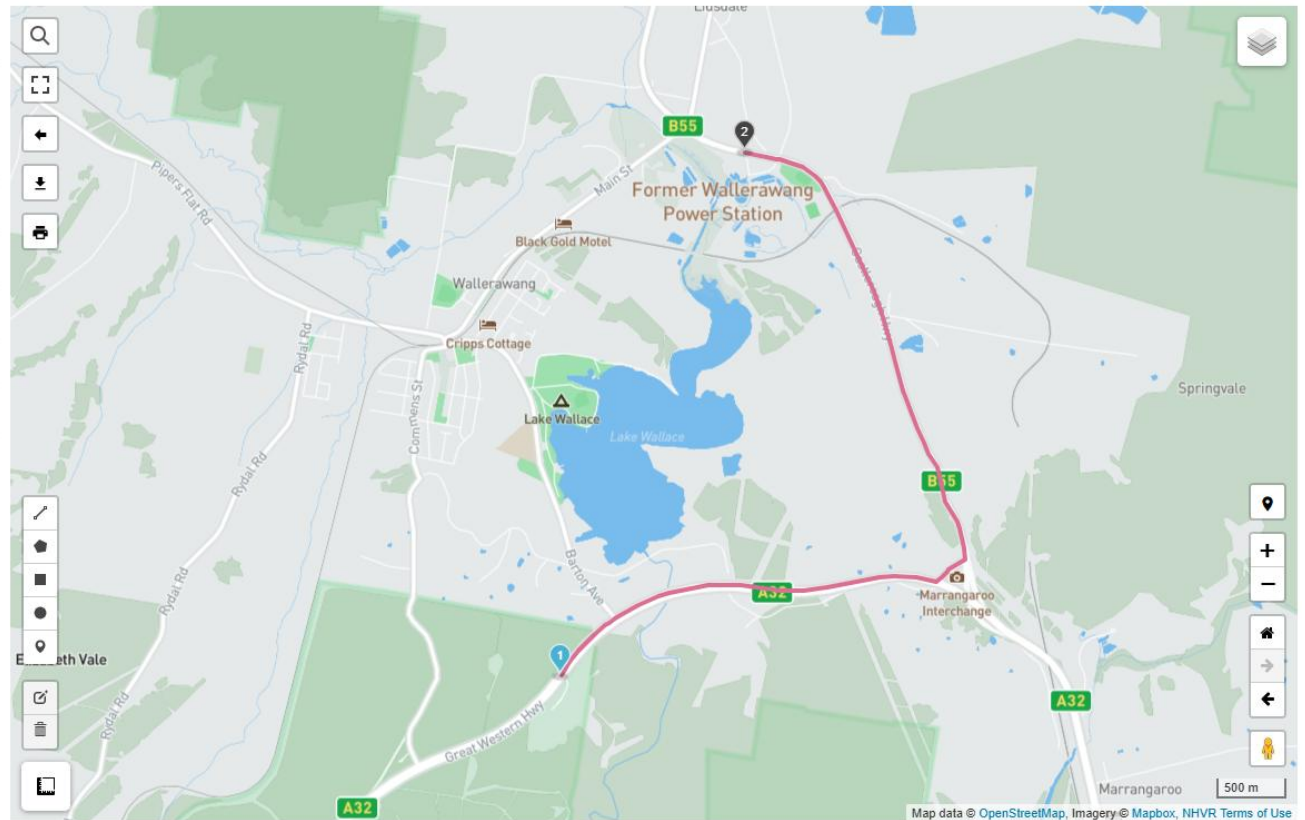
2 Castlereagh Hwy, Wallerawang NSW 2845

Route planner tool



PLAN ROADS DISTANCE LAYERS SUMMARY



RMNSW1: Transport for New South Wales... (6 roads)

- ✓ Road name
- ✓ Unknown, Wallerawang
- ✓ Great Western Highway, Wallerawang
- ✓ Great Western Highway, Marrangaroo
- ✓ Castlereagh Highway, Marrangaroo
- ✓ Castlereagh Highway, Lidsdale
- ✓ Castlereagh Highway, Wallerawang



D.2 Austen Quarry, Hartley, NSW

1 385 Jenolan Caves Rd, Hartley NSW 2790  

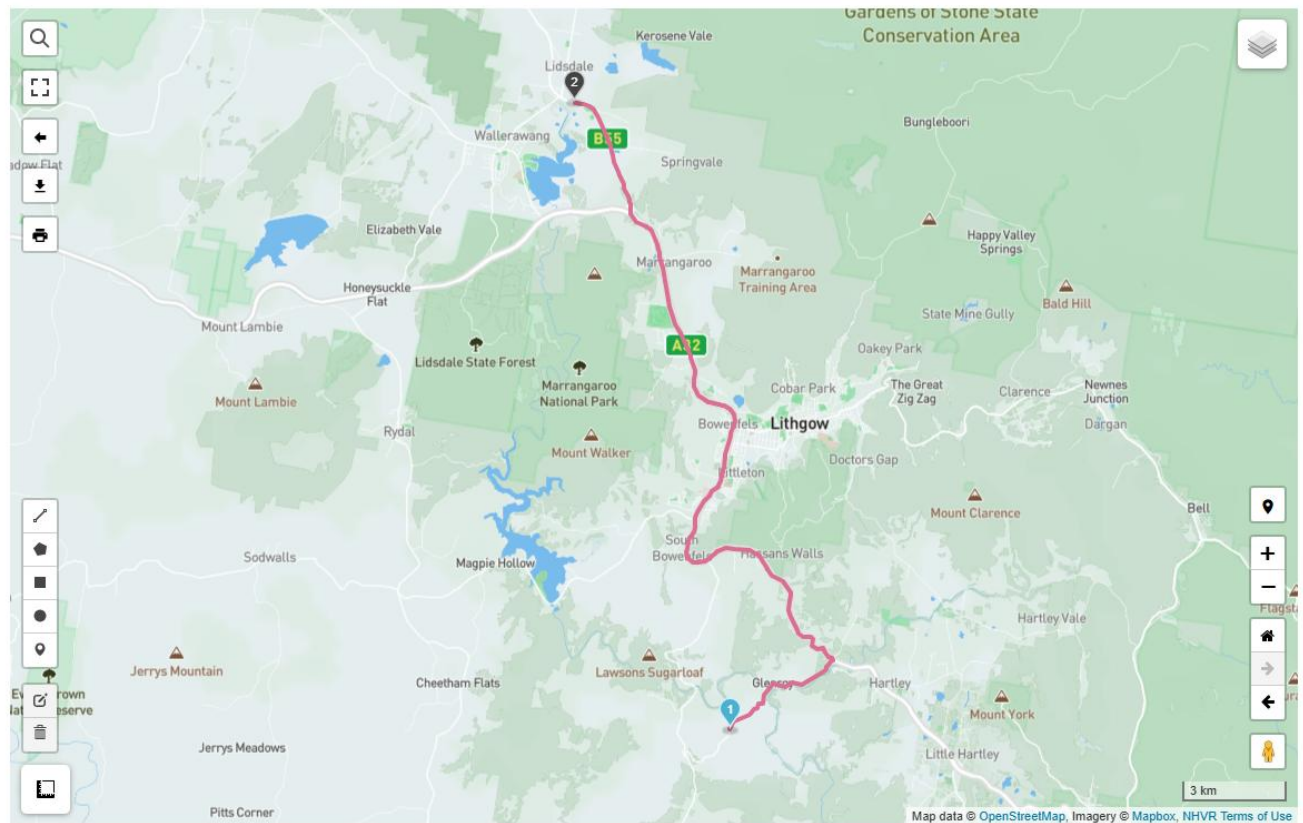
2 Castlereagh Hwy, Wallerawang NSW 2845  

Route planner tool

PLAN **ROADS** DISTANCE LAYERS SUMMARY

RMNSW1: Transport for New South Wales... (10 roads)

- ✓ **Road name**
- ✓ Jenolan Caves Road, Hartley
- ✓ Unknown, Hartley
- ✓ Great Western Highway, Hartley
- ✓ Great Western Highway, South Bowenfels
- ✓ Great Western Highway, Bowenfels
- ✓ Great Western Highway, Marrangaroo
- ✓ Castlereagh Highway Offramp, Marrangaroo
- ✓ Castlereagh Highway, Marrangaroo
- ✓ Castlereagh Highway, Lidsdale
- ✓ Castlereagh Highway, Wallerawang



D.3 TfNSW Medlow Bath Upgrade



42 Great Western Highway, Medlow Bath NSW



Castlereagh Hwy, Wallerawang NSW 2845



Route planner tool

PLAN ROADS DISTANCE LAYERS SUMMARY

RMNSW1: Transport for New South Wales... (12 roads)

✓ **Road name**

✓ Great Western Highway, Medlow Bath

✓ Great Western Highway, Blackheath

✓ Great Western Highway, Mount Victoria

✓ Great Western Highway, Little Hartley

✓ Great Western Highway, Hartley

✓ Great Western Highway, South Bowenfels

✓ Great Western Highway, Bowenfels

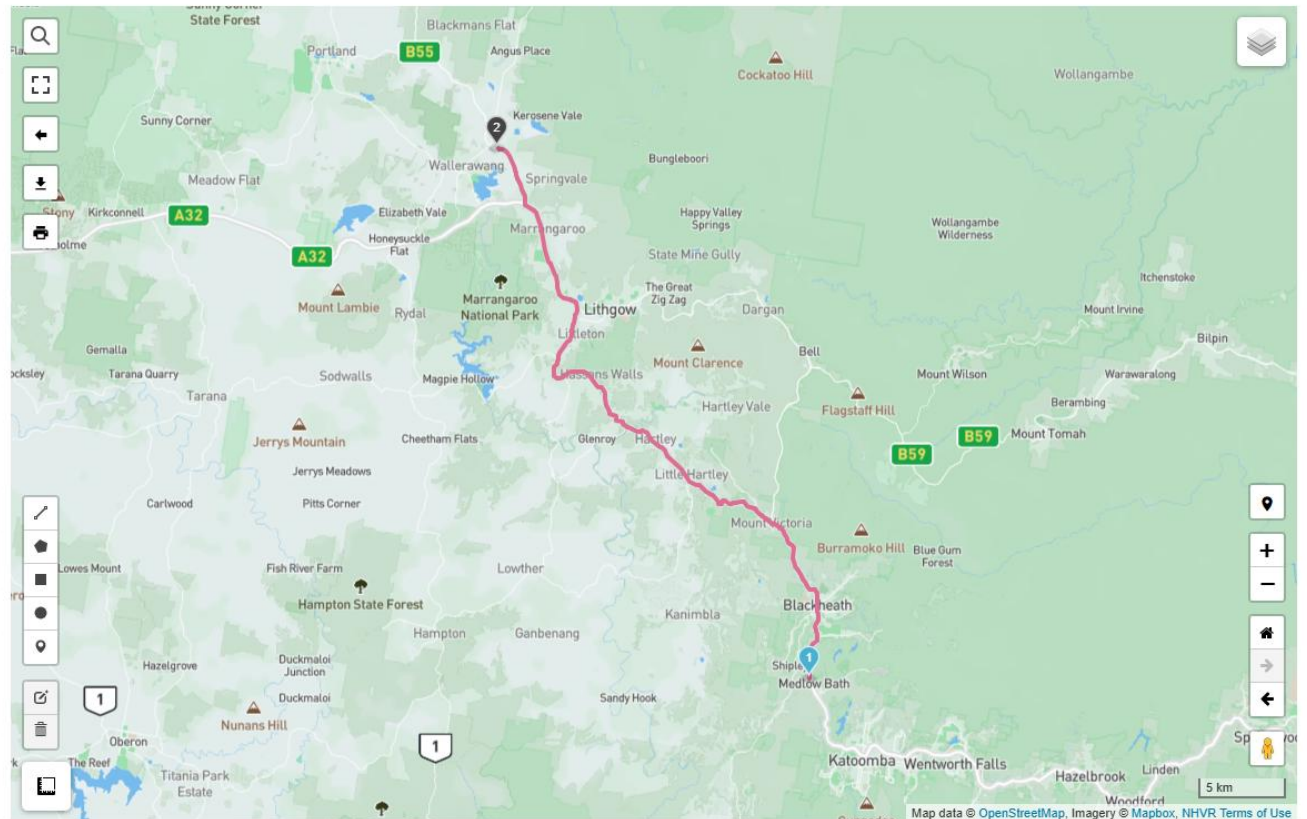
✓ Great Western Highway, Marrangaroo

✓ Castlereagh Highway Offramp, Marrangaroo

✓ Castlereagh Highway, Marrangaroo

✓ Castlereagh Highway, Lidsdale

✓ Castlereagh Highway, Wallerawang



Attachment E

ER letter of endorsement

31 March 2026

John Pola
Environmental Manager
Generator Property Management - Lidsdale
110 Skelly Road
Lidsdale NSW 2790

Re: MP07_0005 - Wallerawang Ash Dam Areas - Environmental Representative Endorsement - Construction and Operation Traffic Management Plan Rev 7

Dear John,

Following a review of the documents provided for the Construction and Operation Traffic Management Plan (O&CTMP) Rev 7, I can provide the following endorsement.

The O&CTMP Rev 7 has been reviewed against the Mod 2 Consolidated Conditions of Approval, in particular Condition 6.5a. Consultation with TfNSW and Lithgow Council has been completed and all comments have been addressed.

All conditions of approval and mitigation measures are contained in the O&CTMP Rev 7.

The document is endorsed for submission for approval.

Yours sincerely



David Bone
Independent Environmental Representative
dbone@emmconsulting.com.au

Australia

SYDNEY

Level 10 201 Pacific Highway
St Leonards NSW 2065
T 02 9493 9500

NEWCASTLE

Level 3 175 Scott Street
Newcastle NSW 2300
T 02 4907 4800

BRISBANE

Level 2, 95 North Quay
Brisbane QLD 4000
T 07 3648 1200

CANBERRA

Suite 2.04 Level 2
15 London Circuit
Canberra City ACT 2601

ADELAIDE

Level 4 74 Pirie Street
Adelaide SA 5000
T 08 8232 2253

MELBOURNE

Suite 9.01 Level 9
454 Collins Street
Melbourne VIC 3000
T 03 9993 1900

PERTH

Suite 3.03
111 St Georges Terrace
Perth WA 6000
T 08 6430 4800

Canada

TORONTO

2345 Yonge Street Suite 300
Toronto ON M4P 2E5
T 647 467 1605

VANCOUVER

2015 Main Street
Vancouver BC V5T 3C2
T 604 999 8297

CALGARY

700 2nd Street SW Floor 19
Calgary AB T2P 2W2



[linkedin.com/company/emm-consulting-pty-limited](https://www.linkedin.com/company/emm-consulting-pty-limited)



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Appendix I

ER letter of endorsement

31 March 2026

John Pola
Manager Environment
Generator Property Management - Lidsdale
110 Skelly Road
Lidsdale NSW 2790

Re: MP07_0005 - Wallerawang Ash Dam Areas - Environmental Representative Endorsement - Operational Environmental Management Plan Rev 8

Dear John,

Following a review of the documents provided for the Operational Environmental Management Plan (OEMP) Rev 8, I can provide the following endorsement.

The OEMP Rev 8 has been reviewed against the Mod 2 Consolidated Conditions of Approval, in particular Condition 6.4. DPHI consultation has been completed for this plan and all comments have been addressed.

All conditions of approval and mitigation measures are contained in the OEMP Rev 8.

The document is endorsed for submission to DPHI for approval.

Yours sincerely



David Bone
dbone@emmconsulting.com.au

Australia

SYDNEY

Level 10 201 Pacific Highway
St Leonards NSW 2065
T 02 9493 9500

NEWCASTLE

Level 3 175 Scott Street
Newcastle NSW 2300
T 02 4907 4800

BRISBANE

Level 2, 95 North Quay
Brisbane QLD 4000
T 07 3648 1200

CANBERRA

Suite 2.04 Level 2
15 London Circuit
Canberra City ACT 2601

ADELAIDE

Level 4 74 Pirie Street
Adelaide SA 5000
T 08 8232 2253

MELBOURNE

Suite 9.01 Level 9
454 Collins Street
Melbourne VIC 3000
T 03 9993 1900

PERTH

Suite 3.03
111 St Georges Terrace
Perth WA 6000
T 08 6430 4800

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