




**Mt Piper Ash Placement Project Lamberts North  
Annual Operation Compliance Report  
September 2023 – August 2024**

## Annual Operation Compliance Report

<b>Project Name</b>	<b>Mt Piper Ash Placement Project Lamberts North</b>
<b>Project Application Number</b>	<b>09_0186</b>
<b>Description of Project</b>	
<b>Project Address</b>	<b>Mt Piper Power Station, 350 Boulder Road, Portland 2847</b>
<b>Proponent</b>	<b>EnergyAustralia NSW</b>
<b>Title of Compliance Report</b>	<b>Annual Operation Compliance Report</b>
<b>Reporting Period</b>	<b>1 September 2023 – 31 August 2024</b>
<b>Version</b>	<b>1.0</b>
<b>Date</b>	<b>28 November 2024</b>
<p>I declare that I have reviewed the contents of the attached Compliance Report and to the best of my knowledge:</p> <p>i. the Compliance Report has been prepared in accordance with all relevant conditions of consent;</p> <p>ii. the Compliance Report has been prepared in accordance with the Compliance Reporting Requirements;</p> <p>iii. the findings of the Compliance Report are reported truthfully, accurately and completely;</p> <p>iv. due diligence and professional judgement have been exercised in preparing the Compliance Report; and</p> <p>v. the Compliance Report is an accurate summary of the compliance status of the development.</p> <p>Notes:</p> <ul style="list-style-type: none"> <li>Under section 10.6 of the Environmental Planning and Assessment Act 1979 a person must not include false or misleading information (or provide information for inclusion in) a report of monitoring data or an audit report produced to the Minister in connection with an audit if the person knows that the information is false or misleading in a material respect. The proponent of an approved project must not fail to include information in (or provide information for inclusion in) a report of monitoring data or an audit report produced to the Minister in connection with an audit if the person knows that the information is materially relevant to the monitoring or audit. The maximum penalty is, in the case of a corporation, \$1 million and for an individual, \$250,000; and</li> <li>The Crimes Act 1900 contains other offences relating to false and misleading information: section 307B (giving false or misleading information – maximum penalty 2 years' imprisonment or 200 penalty units, or both).</li> </ul>	
<b>Name of authorised reporting officer</b>	<b>Ben Eastwood</b>
<b>Title</b>	<b>NSW Environment Leader</b>
<b>Signature</b>	
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This report may be cited as:

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# 1. Summary of compliance

EnergyAustralia NSW (EA NSW) owns and operates the Mt Piper Ash Placement Project (PA 09\_0186), comprising two separate ash repositories including the Lamberts North Ash Repository (LNAR) and the Lamberts South Ash Repository (LSAR) in accordance with Project Approval 09\_0186, granted by the Minister for Planning on 12 February 2012. The installation of the first stage of the Leachate Barrier Management System was completed in April 2022, with the first Brine Conditioned Ash being placed within the lined area in May 2022. Annual Operations Compliance Report (AOCR) includes a summary of the environmental performance at the LNAR over the September 2023 to August 2024 reporting period. The LNAR is located approximately 18 kilometres north-west of the city of Lithgow and is situated adjacent to the Mount Piper Ash Repository (MPAR) and 700 meters to the east of the Mt Piper Power Station (MPPS). The MPAR is authorised under a separate consent (DA 80/10060) and is not the subject of this report.

The AOCR has been prepared pursuant to Schedule 2, Condition A10 of the Project Approval 09\_0186. The AOCR has been prepared in accordance with the NSW Government’s Post-approval requirements for Compliance Reporting dated May 2020.

A summary of the LNAR compliance achieved during the reporting period is provided in Table 1. No non-compliance was identified during the reporting period. A detailed review of compliance with the Conditions of Approval (CoA) is presented in Appendix A.

The AOCR contains a summary of monitoring carried out under the conditions of Project Approval 09\_0186 during the reporting period.

The groundwater and surface water monitoring performed during the reporting period identified some elevated results above the surface water and groundwater environmental goals, identified in the relevant sub-plans contained in the approved Lamberts North Ash Placement Project Operation Environmental Management Plan dated April 2022 (OEMP). Based on the analysis of historical data and trends, these elevated results are most likely not linked to activities at LNAR and have been deemed more likely to be associated with other adjacent, approved activities in the area. EA NSW has completed an independent groundwater investigation into these elevated results which is outlined in section 7.1.2.

**Table 1 Details on Non-Compliance**

Relevant Approval	Condition No.	Condition Summary	Compliance Status	Comment	Section where addressed within AOCR

In assessing compliance with CoAs, the key for compliance assessment provided in Table 2 Compliance Status Key was used, in accordance with the NSW Government’s Independent Audit Guideline.

**Table 2 Compliance Status Key**

Risk Level	Colour Code	Description
<b>Compliant</b>		The proponent has collected sufficient verifiable evidence to demonstrate that all elements of the requirement have been complied with.
<b>Non-compliant</b>		The proponent has identified a non-compliance with one or more elements of the requirement.
<b>Not triggered</b>		A requirement has an activation or timing trigger that has not been met at the phase of the development when the compliance assessment is undertaken, therefore an assessment of compliance is not relevant.

An acceptable standard of environmental performance has been achieved during the reporting period as evidenced by the following:

- Noise from the LNAR site was largely inaudible or unable to be measured at sensitive receivers during the reporting period. One location that was occasionally audible which was within the limits, they were unable to be measured due to continuous road traffic noise. Overall, the noise levels were deemed compliant with the development consent limits.
- Analysis of the air quality data indicates emissions from the LNAR have been managed effectively during the reporting period and comply with CoA D3 (d) and E18.
- There were no incidents associated with the LNAR site that caused or threatened material harm to the environment during the reporting period.

## 2. Introduction

### 2.1 Background

The MPPS comprises of two coal-fired steam turbine generators, with a generating capacity of 700 and 730 MW, built over two stages in 1992 and 1993. The power station (along with the MPAR) is located approximately 17 km northwest of Lithgow and five kilometers east of Portland (Figure 1) and was originally authorised in 1990 by the Lithgow City Council (DA 80/10060). The approved footprint of the LNAR is adjacent to the MPAR, near the MPPS (Figure 2). EA NSW acquired MPPS and associated land holdings and infrastructure from the state-owned Delta Electricity (DE) in September 2013.

Ash from the power station is placed in a dry ash repository (either MPAR or LNAR) as required. Approximately 680,000 m<sup>3</sup> of ash is placed on an annual basis into the ash repositories at MPPS, depending on electricity demand and generation.

The AOCR specifically relates to the Lamberts North Ash Placement Project which authorises the operation of two separate ash placement areas referred to the LNAR and the LSAR.

The LNAR is the active ash placement area and this AOCR reports on the environmental performance associated with it over the 2023 – 2024 reporting period. The LSAR is yet to be constructed.

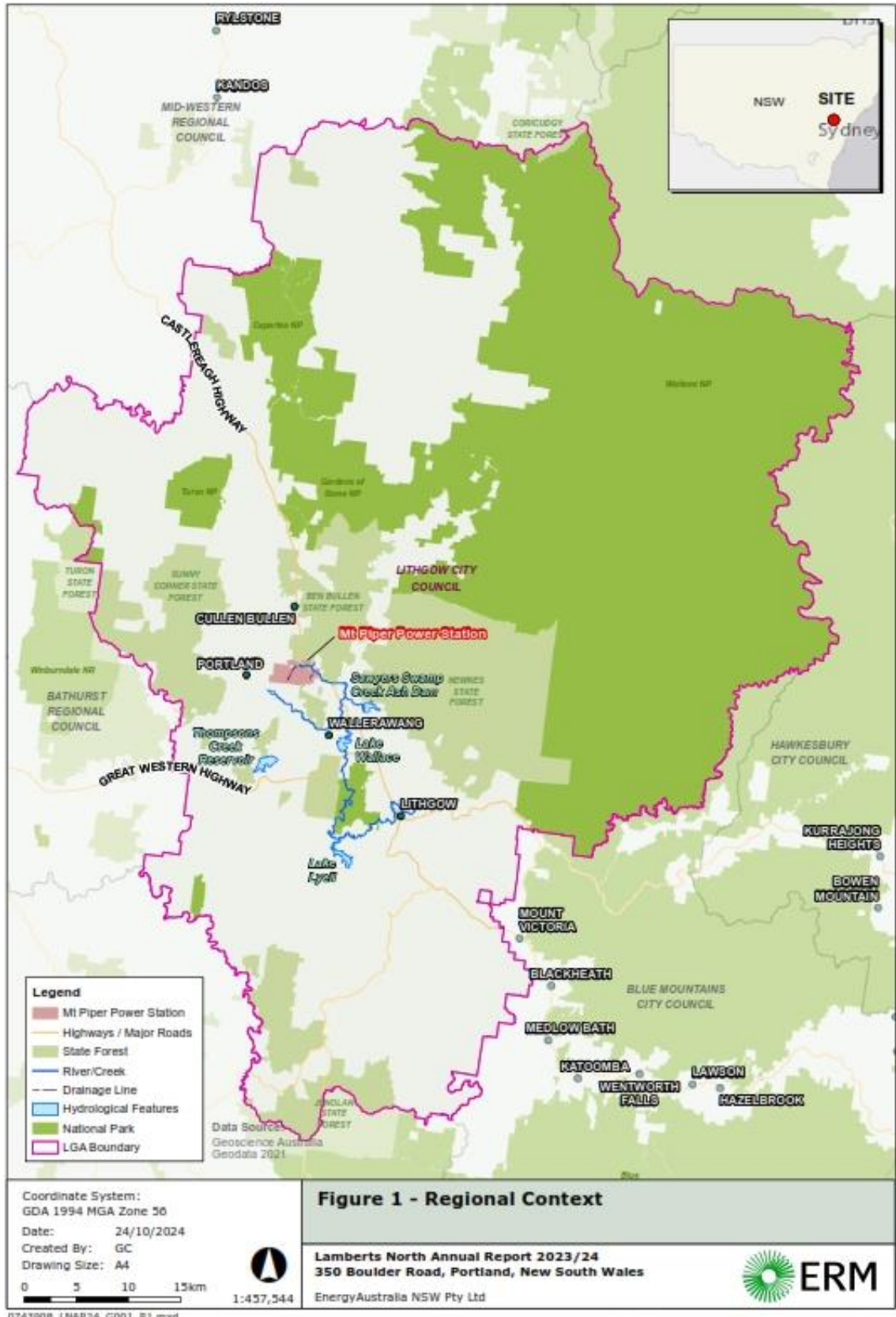


Figure 1 Regional context map



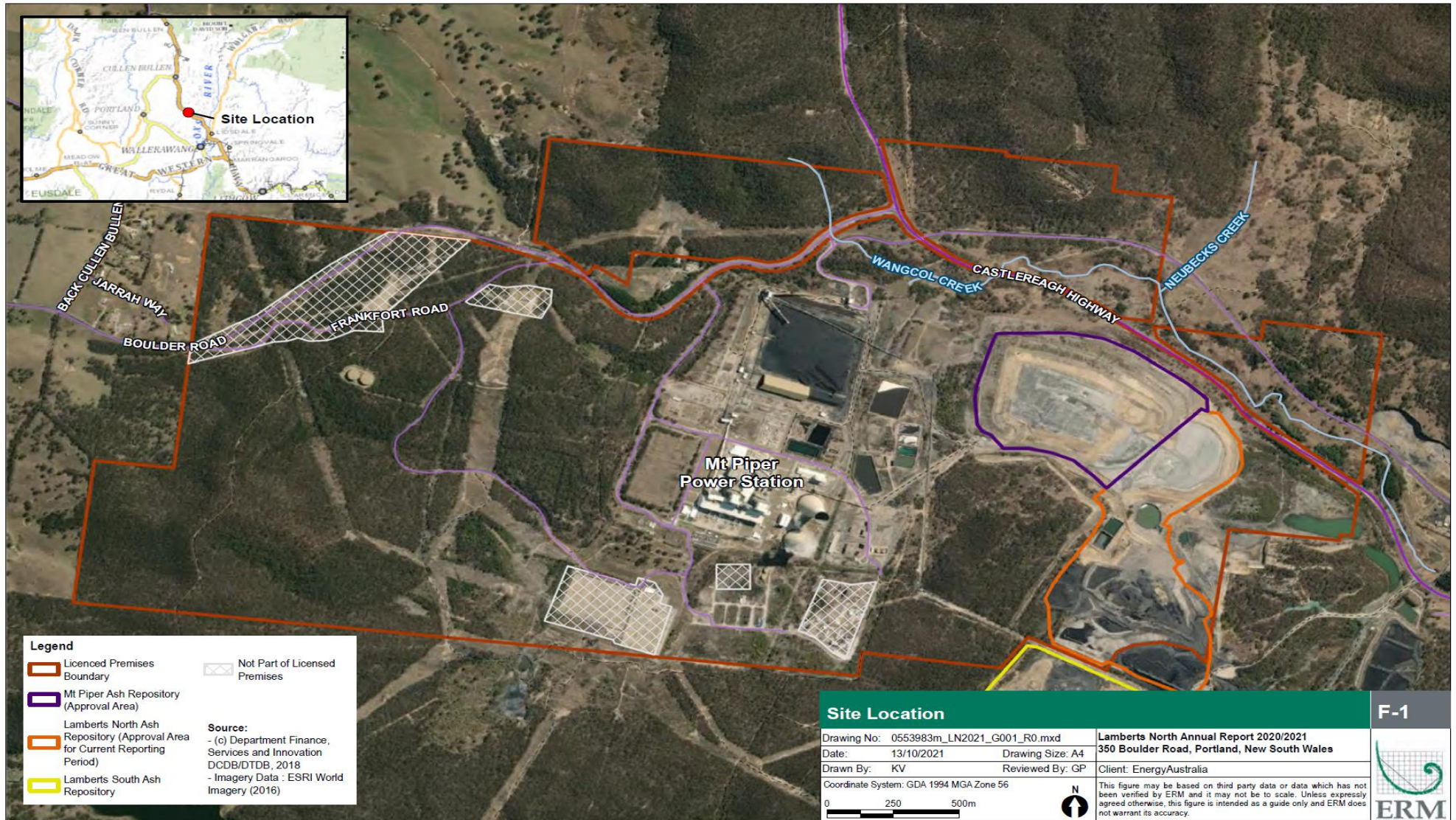


Figure 2 Site Location

Objective ID: A2217873

## 2.2 Purpose of the AOCR

The Project Approval (PA 09\_0186) contains conditions with which EA NSW needs to comply, as the proponent, at different stages of the Project (Section 3). This report has been prepared in accordance with the NSW Government's, *Post-approval requirements for Compliance Reporting Guideline* (NSW Government, 2020) as required under Condition A10 of the project approval (PA 09\_0186).

Section 1 of the Compliance Reporting guidelines (NSW Government, 2020) states that the aim of compliance reporting is to ensure that:

- *The Project's performance in terms of compliance with Conditions of Consent is evaluated on the basis of monitoring data and is communicated at various stages during the carrying out of the development;*
- *The reporting obligations required by the conditions of consent are met; and*
- *Opportunities for improvement are identified and adopted.*

This AOCR has been prepared in order to satisfy CoA A10 of the Project Approval 09\_0186 (**DPE, 2021**). This report covers the operations, environmental and community performance of the LNAR from 1 September 2023 to 31 August 2024 (reporting period).

## 2.3 Project contacts

The contact details for LNAR are listed in Table 3.

**Table 3 Lamberts North Ash Placement Contact**

Contact Person	Position	Telephone
Ben Eastwood	NSW Environment Leader	(02) 63548111

### 3. Consents, Leases and Licences

This AOCR has been prepared to demonstrate the sites performance and compliance with the relevant conditions of PA 09\_0186 and the Statement of Commitments (SoC). Licences and approvals applicable to LNAR are summarised in Table 4:

**Table 4 Key Consents, Leases, Licenses and Permits**

Approval/Lease/Licence	Issue Date	Expiry Date	Details/Comments
<b>Project Approval 09_0186</b>	16 February 2012 MOD 1: 21 September 2021	-	Granted by the Minister for Department of Planning and the Environment (DPE), under Section 75J of the Environmental Planning and Assessment Act (EP&A Act).
<b>Environment Protection License (EPL) No. 13007</b>	1 March 2024	-	EPL held by EA NSW for MPPS, granted by the Environment Protection Authority (EPA), under Section 55 of the Protection of the Environment Operations Act (POEO Act).
<b>Water Access Licence No. 27428 (WAL)</b>	24 March 2022	-	Granted by Department of Primary Industries-Water (DPE-Water), under the Water Management Act 2000
<b>Water Supply Work and Water Use Approval 10CA117220</b>	24 March 2022	30 June 2031	Granted by DPE-Water, under the Water Management Act 2000

#### 3.1 LNAR Project Approval 09\_0186 - Modification 2

EnergyAustralia NSW applied to the DPHI on 3 June 2024 to modify Project Approval 09\_0186 for the extension of operating hours on the LNAR. The Modification will support the construction of the lined areas within the LNAR and keep up with ash placement demands, EnergyAustralia is seeking to extend the operational hours of the LNAR. The modification aims to enhance the efficiency and flexibility of the sites operations while maintaining the same ash management activities that are currently authorised under the existing approval. The extended hours will ensure more continuous and streamlined management without altering the scope of the works currently being undertaken.

#### 3.2 Operations Environmental Management Plan

The OEMP provides the framework to manage the environmental aspects associated with the operation of the LNAR. The OEMP (EA NSW, 2022) outlines the requirements associated with the project as stipulated in the relevant provisions of the Project Approval 09\_0186 issued by the now DPE, the EPL 13007 issued by the NSW EPA, and the SoC presented in the Submissions Report (SKM, 2011).

The scope of the OEMP covers the operations involving the movement and placement of ash from Mt Piper Power Station (MTPPS) to Lamberts North Ash Repository. The environmental performance against the OEMP is provided in Sections 6 - 10. The OEMP (EA NSW, 2022) has been prepared in consultation with the EPA, WaterNSW, DPE-Water, and DPI-Fisheries. The OEMP was approved by the DPE on the 6 June 2022. The LNAR stage 2 area was commenced, with ash placement starting near the end of the reporting period.

### 3.3 Construction Environmental Management Plan

A Construction Environmental Management Plan (CEMP) for the LNAR was developed in consultation with EA NSW’s Western Environment Section and approved by the DPE in December 2012. The CEMP meets the requirements of CoA B4, providing the framework to manage the environmental aspects associated with construction works during LNAR operations. The CEMP has been prepared to address the requirements associated with the project as stipulated in the relevant provisions under Project Approval 09\_0186 issued by the DPE (CDM Smith, 2012a).. There were no construction activities undertaken throughout the reporting period.

## 4. Operations during reporting period

Ash placement operations for MPPS, including LNAR, are undertaken by contracted specialists in the handling and management of ash. Service Stream is the current service provider for EA NSW regarding ash and dust management associated with the repository. The LNAR is currently managed under an ‘operate and maintain’ contract.

A summary of operations at the LNAR within the reporting period can be found in Table 5. It is noted that there will be an increase in ash delivered to the LNAR. This is due to the MPAR approaching its approved capacity but will ultimately depend upon actual electricity generation.

**Table 5 Operations Summary**

Activity	Previous reporting period	This reporting period	Next reporting period
Fly Ash delivered (T)	421,768	526,109	
Total ash produced at MPPS (T)	655,330	736,447	
Total Ash Footprint (ha)	16.7	16.7	
Area of repository capped (ha)	1.3	1.3	

† Estimate figure based on current year. \*Figure based on average of previous years.

### 4.1 Normal operating hours

The normal hours of operation for the Project are between 6 am and 8 pm Monday to Friday, and 6 am to 5 pm Saturday and Sunday in accordance with CoA E1. Operations outside these hours are defined as abnormal or emergency operating conditions and are subject to specific requirements in accordance with E2 (Section 2.2.1 OEMP). As discussed in section 3.1 modification to the LNAR consent to extend the operating hours is in progress.

### 4.2 Abnormal or emergency operating conditions

Conditions under which operations outside the normal hours of operation can occur have been specified in the Project Approval and can be described as follows:

- Where it is required to avoid the loss of lives, property and/or to prevent environmental harm; or
- Where a breakdown of plant and/or equipment at the repository or the MPPS and the MPPS Extension project with the effect of limiting or preventing ash storage at the power station outside the normal operating hours Condition E1 (Section 3.1 OEMP).
- Where a breakdown of an ash haulage truck(s) or the conveyor belts prevents haulage during the operating hours stipulated under Condition E1 combined with insufficient storage capacity at MPPS to store ash outside of the normal operating hours; or

- In the event that the National Electricity Market Management Company (NEMMCO), or a person authorised by NEMMCO, directs EA NSW (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 MPPS to allow for the ash to be stored.

Under these circumstances, EA NSW is required to notify the EPA, and nearby sensitive receivers prior to any emergency ash haulage or placement operations outside of the 'normal operation' hours, and the Secretary of the DPE within 7 days after the emergency operations have occurred. All works were undertaken within the CoA specified hours of operation during the current reporting period.

### 4.3 Activities conducted during the current reporting period

The following activities were undertaken during the reporting period:

- 526,109 tonnes of Fly Ash was placed in LNAR during the reporting period.
- Brine condition ash was placed in LNAR the stage 1 area (see Plates 1-2)
- The Stage 2 Leachate Barrier System area was prepared, constructed and commissioned, with ash placement beginning toward the end of the reporting period (see Plates 3-6)
- The engineering design works for Stage 2B of the leachate management system were commenced.
- The spraying and removal of targeted weed species in the LNAR.
- Planning and organisation of tree plantings within the Biodiversity Offset Area, as detailed in section.



Plate 1 Installation of the leachate barrier in LNAR Stage 1A (Photo taken during Q3 2022)



Plate 2 Aerial view of Mount Piper Ash Repository (MPAR) and LNAR Stage 1 (A and B) areas (Photo taken 16 August 2023)



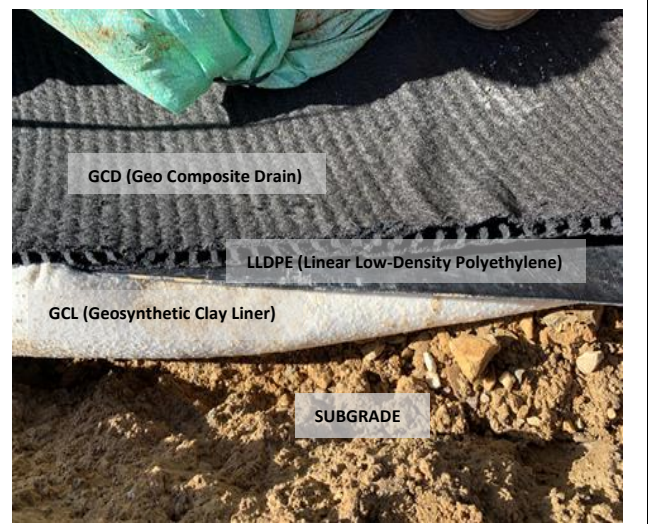
**Plate 3 Linear Pipework Installation at LNAR Stage 2**



**Plate 4 Installation of Linear**



**Plate 5 LNAR Stage 2 Set-up**



**Plate 6 Geosynthetic Lining Materials Placement**

## 5. No further Action Required for the previous AOCR

Table 6 Actions required from last AOCR

Item	Action required from 2023 AOCR	Requested by	Action taken	Status	Where discussed in AOCR
1	Upload a copy of the Annual Review to the EnergyAustralia website.	DPE	Annual Review uploaded onto EA website 1 <sup>st</sup> January 2024	C	5

## 6. Environmental management and performance

Environmental monitoring of the operations at LNAR is designed to comply with the regulatory requirements specified in Section 3 of the AOCR, and to provide an ongoing analysis of the condition of the environment surrounding the operations. Environmental monitoring is performed at the sites indicated within Figure 3 and the results are used to determine the effectiveness of the environmental controls and management practices at the LNAR.

Detailed procedures outlining the environmental monitoring responsibilities of key stakeholders and the impacts to be mitigated are described in the relevant sub-plans of the OEMP. Details regarding the environmental responsibilities, key stakeholders, and the impacts to be mitigated regarding construction activities are described in the CEMP. A summary of the environmental management measures and associated performance are provided in Table 7.

Table 7 Environmental Performance

Aspect	Approval Criteria / EIS prediction	Status	Trends / Management Implications	Management Actions
Noise	Criteria Day 42 dB(A) Evening 38 dB(A) Night 35 dB(A)	Compliant	The noise associated with LNAR was largely inaudible/unable to be measured. Any measurements obtained were compliant.	No action required
Air Quality	PM10 annual <30ug/m <sup>3</sup> 24 hour <50ug/m <sup>3</sup> Depositional dust Increase in total 2g/m <sup>2</sup> /month to maximum of 3.5g/m <sup>2</sup> /month	Compliant	PM <sub>10</sub> results are reflective of background conditions and below the daily standard limit for entire reporting period. Minor increase in depositional dust trends.	No additional action required



Biodiversity	Submit a biodiversity offset plan for approval	Compliant	The 2017 & 2020 revegetation works continue to establish. Plantings activities are scheduled for September 2024 Biennial flora & fauna monitoring will take place in October 2024	Area managed in accordance with the Biodiversity Conservation Agreement
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Performance against contract requirements is provided by Service Stream as a monthly Client Service Report (Service Stream, 2023; 2024) and through external consultant and internal data and reports. Summaries of these reports are provided in the sections below (1.1 –7.2) and in Appendix C-F.

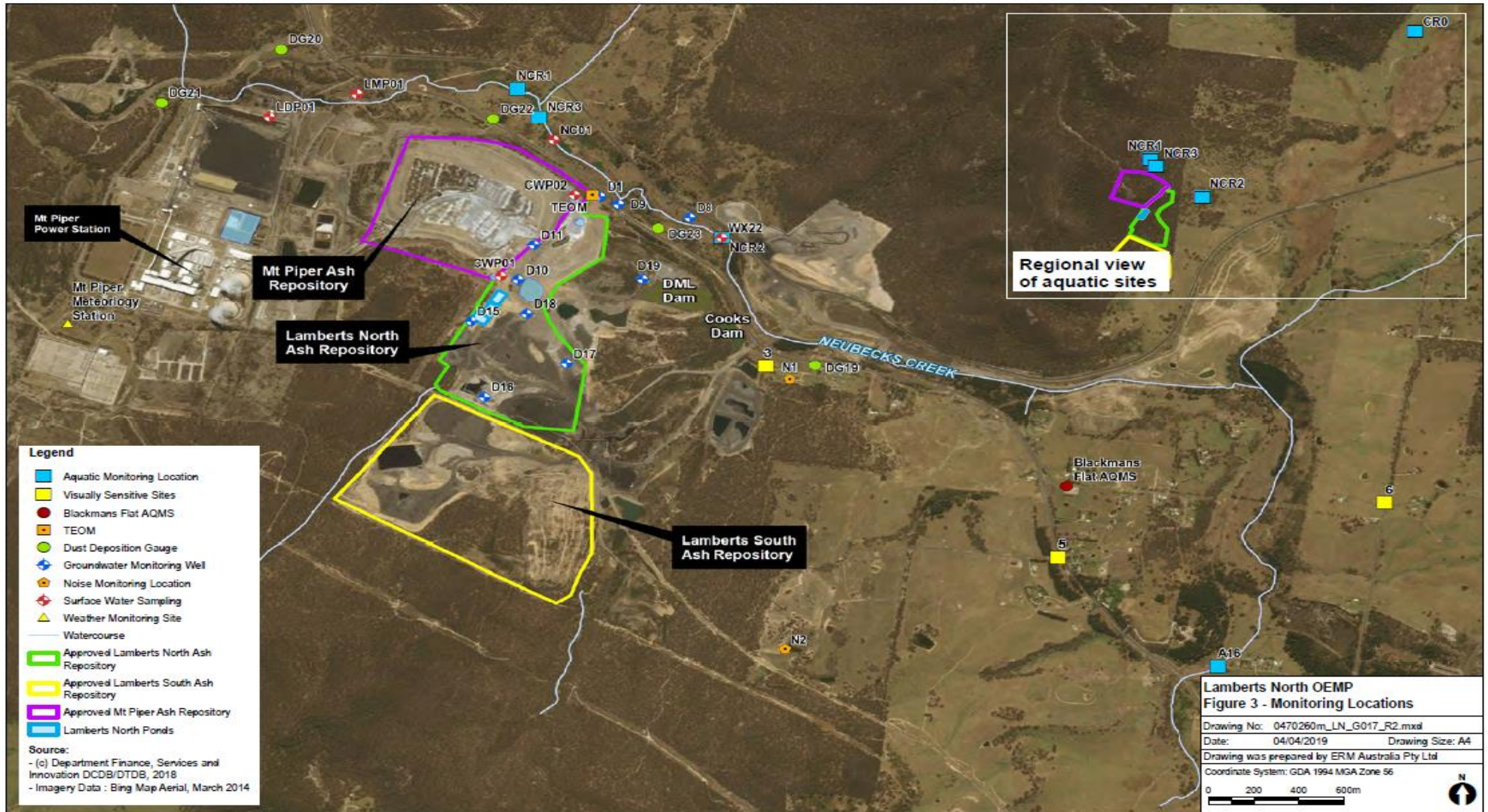


Figure 3 Environmental monitoring locations

## 6.1 Ash delivery and placement

### 6.1.1 Environmental Management

Ash generated as a by-product from the operation of MPPS is transported by conveyer from the MPPS to ash silos at the MPAR as part of the existing approved operations. Ash is then transported by heavy haulage vehicles (generally one to two trucks) from the silos to either the MPAR, or the LNAR. Transport to LNAR is facilitated via the southern boundary haulage road in the existing ash repository. On delivery to the LNAR, the water conditioned ash is deposited at the working face where compactors and bulldozers are then used to place the ash in stable landforms with appropriate drainage infrastructure. Ash placement can be broadly described as including the following processes (see also Figure 4):

- Identifying the current operational location for placement of ash.
- Placing ash at the existing face using truck and shaping of ash with a bulldozer.
- The ash is treated to achieve an average compaction of 95%, relative to its maximum standard compaction, through controlled combination of water addition and machine compaction with the use of rollers and rubber-tyred vehicles.
- Ash is placed in layers and stepped to produce an overall batter slope of approximately 1(V):4(H), with benches added every 10 m in vertical height change. This process of ash placement produces an average batter length of 40 m.
- The sequence of ash placement will entail initially placing ash across the site starting from the most northerly part, then towards the east and south of LNAR, working to reach a final design height of 980 metres (m) Australia Height Datum (AHD) through abutment with the MPAR.
- Boundary faces are sequentially covered with material to be sourced from locally available material. Once the cover material is placed, vegetation replanting and restoration activities are undertaken. The process is repeated until LNAR is filled to its maximum permissible height and extent.
- Ash will be placed to the desired height (0.5 m to 1 m lifts) in pads, with materials that have been moisture-conditioned with water placed in the lower layers to an elevation as specified in approved design drawings, with corresponding heights of 10 m.
- Methods for the placement of ash materials to optimise compaction and stability of the emplacement areas include target moisture contact, compaction density, and progressive capping and vegetation.

Capping of exposed ash areas has been undertaken progressively as LNAR reaches its approved design height. Progressive revegetation of batters will commence once the final perimeter batters are constructed and keyed into the adjoining MPAR.

### 6.1.2 Environmental Performance

During the reporting period a total of 526,109 tonnes of fly ash was placed in the LNAR, consisting of 142,214 tonnes (T) of water-conditioned fly ash placed in LNAR Stage 2 and 383,895 T of brine-conditioned ash placed in lined LNAR Stages 1A and 1B. Furnace bottom ash generated during the reporting period has been utilised in the construction of the LNAR.

Inspections on the ash repository are performed monthly by the contractor and the results are summarised in Appendix B. The management and mitigation measures specified in the approved OEMP were found to be generally complied with.

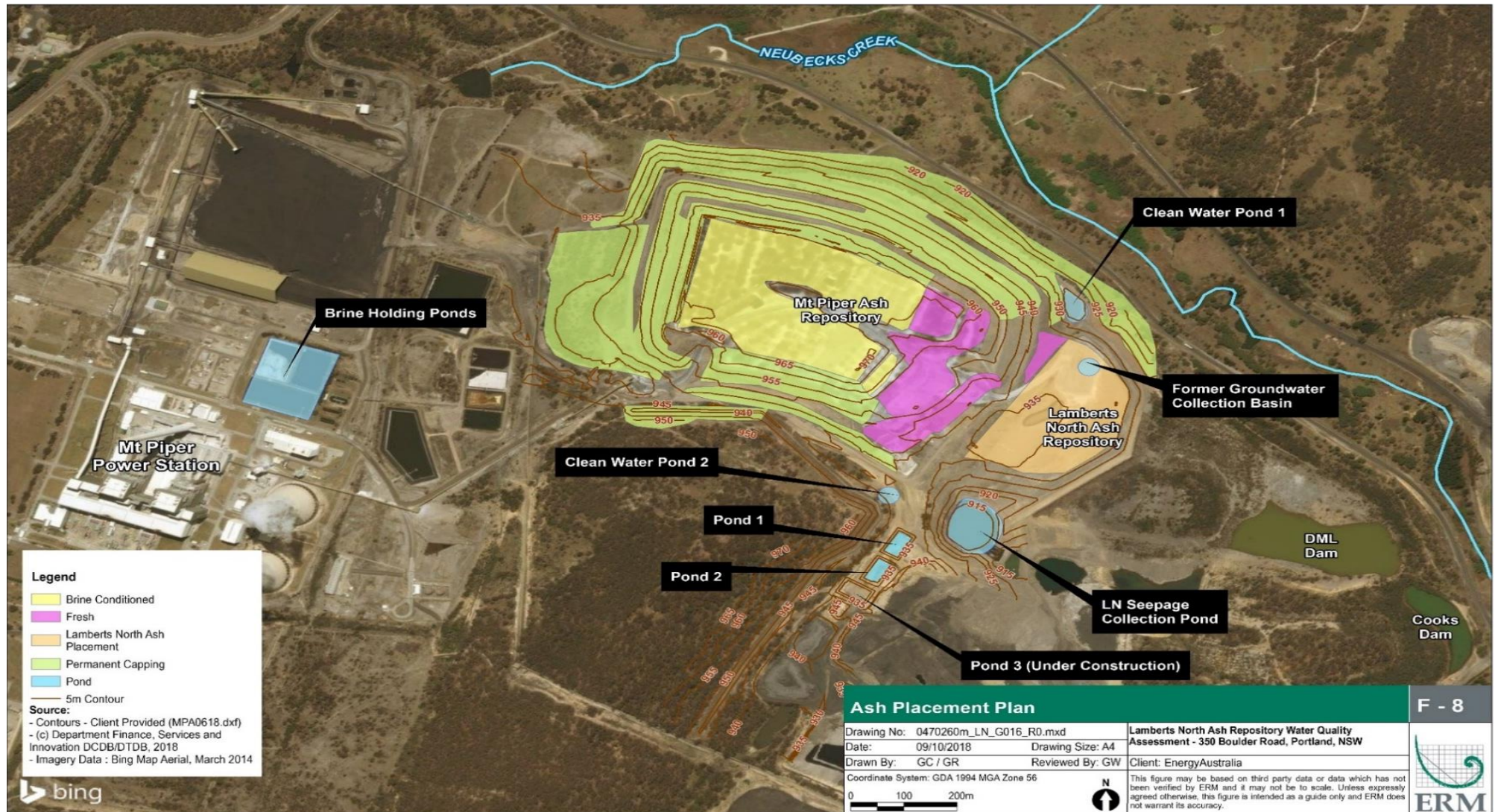


Figure 4 Ash Placement Plan

Objective ID: A2217873

### 6.1.3 Reportable Incidents

No reportable incidents have been recorded against ash delivery and placement for the reporting period.

### 6.1.4 Further Improvements

- Continue installing and managing the leachate barrier management system. Stage 2A is currently in progress, and preparations for Stage 2B are underway, with mobilisation planned for October 2024.
- Mt Piper is continuing to work with NuRock, who are utilising fly-ash from Mt Piper to manufacture bricks, pavers and concrete blocks. NuRock are currently constructing a new plant on site and are continuing to develop their operations. It is expected that the new plant will be commissioned by the end of 2024. During stage one it is estimated that the plant will re-use an estimated 150k T of fly ash, per year.
- Mt Piper will continue to supply and market the reuse of fly ash to cement manufacturers.

## 6.2 Operational Noise Monitoring

### 6.2.1 Environmental Management

The LNAR Operational Noise Management & Monitoring Plan (ONMMP) has been developed to address the specific requirements of the CoA D3(a) and E7 to E14 for the Project. The ONMMP provides the framework to manage operational noise emissions and minimise potential noise impacts to sensitive receivers during the operation of the Project. The level of noise received by a sensitive receiver will depend on the location of the receiver, the type and duration of works and intervening topography, and existing building structures between the noise emission source and receiver.

The residential community of Blackmans Flat is located to the east of the private haul road and ash repository site. The following residential properties, located within 1100 m from LNAR, have been identified as the nearest potentially affected sensitive receivers to noise from the repository site (Table 8):

**Table 8 Representative noise measurement locations**

Sensitive Receiver	Distance to Haulage Road (m)
1. Blackmans Flat (east of Lamberts North)	1100
2. Blackmans Flat (west of Castlereagh Highway)	1100

During the reporting period compliance monitoring was conducted in April 2024 during the early morning and evening periods as per the requirements outlined in the ONMMP. The applicable operational noise criteria are outlined in the Project Approval (No. 09\_0186), the OEMP and ONMMP. The criteria are summarised as follows:

The cumulative operational noise from the ash placement area and ash haulage activity shall not exceed a  $L_{Aeq}(15 \text{ minute})$  dB(A) as defined in condition E7 and identified in Table 9.

**Table 9 Operational Noise Criterion (LAeq(15 minutes) dB(A))**

Location	Day (7 am – 6 pm)	Evening (6 pm – 10pm)	Night (10 pm – 7 am)
All private sensitive receivers within the township of Blackmans Flat	42	38	35
Blackmans Flat (west of Castlereagh Highway)	42	38	35

This criterion applies under all meteorological conditions except for any of the following:

- a) Wind speeds greater than 3 m/s at 10 m above ground.
- b) Stability category F temperature inversion conditions and wind speed greater than 2m/s at 10m above ground level; and
- c) Stability category G temperature inversion conditions.

## 6.2.2 Environmental Performance

EMM Consulting Pty Ltd (EMM) were engaged by EnergyAustralia NSW to conduct an independent annual noise survey, of operations at the LNAR (EMM Consulting, 2024). The noise measurements were performed during April 2024 (Appendix C). Noise monitoring was performed in accordance with the methods described in the approved ONMMP. The results of the measured noise levels at the sensitive receivers stipulated in the CoA (Location 1 and Location 2) can be found in Appendix C.

The maximum 15-minute daytime equivalent sound pressure levels ( $LA_{eq}$ ) at both locations during the recording period were dominated by traffic noise from the Castlereagh Highway. Other frequently mentioned noise sources included ongoing industrial activities from a neighbouring mining operation and the nearby air quality monitoring station. The daytime survey at location 1 indicated that whilst reverse alarms and impact noise from LNAR were occasionally audible at very low levels, they were unable to be measured due to continuous road traffic noise. The LNAR was inaudible during the measurement. The primary sources of the total measured noise levels were the local conveyors and the breeze rustling through nearby foliage. Birds contributed minimally to the measured  $LA_1$  and  $LA_{eq}$  levels (EMM Consulting, 2024).

The total measured noise levels for both locations were in excess of the noise targets set for LNAR. However, due to the presence of other surrounding simultaneous noise sources at Location 1, it was not possible to conclusively determine the noise contribution from LNAR, during all the recorded time periods. Other commonly noted sources of noise included other industrial activities in the area, birds, bats, insects, dogs and breeze in the foliage.

To quantify the likely noise contribution from the LNAR at location 1 and 2, calculations were undertaken to estimate the noise emissions. The measurements are based on a worst-case operational scenario at both assessment locations and include adjustments for activities as outlined in Fact Sheet C of the EPA's *Noise Policy for Industry* (EPA, 2017).

Based on the worst-case noise modelling predictions undertaken, the noise resulting from the operations at the LNAR are below the  $LA_{eq(15min)}$  42dBA CoA criterion and are therefore deemed to comply with the OEMP (and PA 09\_0186) at the representative residential receivers Location 1 and Location 2 (Table 10). The distances shown in Table 8 are considered minimum between the operational works and the respective receiver zones. (EMM Consulting, 2024)

**Table 10 Summary of Cumulative Noise Emissions against the Noise Criteria (dBA)**

Location	Description	Maximum predicted noise	Day limit 42 dBA (07:00-18:00)	Evening limit 38 dBA (18:00-22:00) ^	Night limit 35 dBA (22:00-07:00) ^
1	Blackmans Flat (approx. 1.4km)	Inaudible	Inaudible	Not Measurable	Inaudible
2	Wallerawang (approx. 2.5km)	Inaudible	Inaudible	Inaudible	Inaudible

## 6.2.3 Reportable Incidents

No reportable incidents have been recorded against operational noise for the reporting period.

## 6.2.4 Further Improvements

No further improvements have been identified for the next reporting period.

## 6.3 Biodiversity Offset Area (BOA)

An area of land adjacent to Thompsons Creek Reservoir was identified as a suitable BOA for LNAR (Figure 5). In confirming the BOA, various government and community organisations were consulted and the BOA was selected to build upon existing revegetation programs undertaken at Thompsons Creek Reservoir, with the aim of improving native vegetation connectivity in the region.

The BOA is a 6.8 ha land parcel comprised of two lots:

- Lot 243 of DP 801915 east site estimated 4.7 ha with approximately 605 m of foreshore.
- Lot 432 of DP 803501 south side estimated 2.1 ha with 200 m of foreshore.

The BOA is located on the eastern foreshore of Thompsons Creek Reservoir which is owned and operated by EA NSW for water storage purposes. The BOA is bounded by EA NSW landholdings except for private landholdings along the southern boundary.

EA NSW secured the Thompsons Creek Reservoir BOA in perpetuity during the 2021-22 reporting period. Guidance was sought from the Biodiversity Conservation Trust (BCT) for the suitability of managing the BOA under a formal conservation agreement. The intention of this was to secure the BOA and provide the financial and management resources required to enhance its biodiversity values. An application for a Conservation Agreement was submitted to the BCT in March 2021. The Conservation Agreement was granted by the BCT in March 2022.

The Biodiversity Conservation Agreement (BCA) (BCT, 2022) details the management actions to be performed within the BOA to enhance habitat for native flora and fauna species through site rehabilitation and revegetation. Biennial, flora and fauna monitoring within the BOA is required to be performed in accordance with the BCA, the next monitoring will be carried out in 2024.

A Landholder Report for the Thompsons Creek BOA is required to be prepared and submitted annually to the BCT in accordance with Attachment 3, Part 4, Clauses 2 (a) and (c) of the BCA. The first Landholder report was submitted to the BCT on 28 February 2024, which was reviewed by the BCT following their site visit on 13 March 2024 and approved 23 October 2024.

### 6.3.1 Environmental Management

Revegetating works were undertaken across the BOA in 2017, with approximately 2,000 seedlings planted across a 1 ha (approximate) section of the BOA (Plate 7 & Plate 8). To improve the native vegetation connectivity in the BOA, EA NSW engaged a contractor in October 2020 to undertake direct seeding works in areas devoid of native tree cover after the required flora and fauna monitoring was performed. A total area of 1.5 hectares was directly sown with a tree, shrub, and groundcover seed mixture in Spring 2020. An exclusion zone of 30-40 metres from the Thompson Creek Reservoir high-water level was created to maintain access along the foreshore for recreational fishing activities. Thinning works were conducted in August 2023, in accordance with recommendations from the Biodiversity Conservation Trust. The tree planting conducted in September 2023 continues to progress and develop well. The newly established trees are establishing well, demonstrating robust growth and resilience, contributing overall success of the revegetation efforts.



Figure 5 Biodiversity Offset Area





**Plate 7 Developing tubestock plantings from 2017 – Polygon 4 (Photo Credit: Tom Kelly, 2022)**



**Plate 8 Established plantings within BOA (Photo taken July 2024)**



**Plate 9 Growth from Last Year's Tree Planting (Photo taken July 2024)**

Eco Logical Australia (ELA) were engaged by EA NSW to perform the biennial flora and fauna monitoring within the BOA. The monitoring was performed in October 2022, in accordance with the requirements within the BOMP and the report is provided as Appendix D (Eco Logical Australia, 2022).

The 2022 flora monitoring found an overall increase in total flora and native species diversity, with a total of 67 flora species (47 native species, 20 exotic species) being recorded. Above average rainfall in 2020 is believed to have influenced these results. Revegetation and natural regeneration have continued to develop, in regard to height and stem density, as well as species diversity. Since the 2020 assessment, the height of 2017 tubestock plantings have grown significantly, with overall height now ranging from 1.5 – 3 metres tall, whilst the direct seeding plantings conducted in 2021 have grown up to 1 m in height. The presence of exotic species has remained variable throughout the area, however it is currently not affecting the re-establishment of native woodland species. Previously recorded priority weeds, Blackberry and St Johns Wort were still present within the BOA, whilst Serrated Tussock was no longer recorded during this monitoring period (Eco Logical Australia, 2022).

The fauna monitoring recorded a total of 33 bird species, which was the highest abundance of birds since the commencement of the monitoring program. The Australian Magpie was the most commonly recorded species with 17 individuals identified, whilst the Yellow-Rumped Thornbill was the most abundant, with 19 individuals recorded. Overall, there was an increase in the diversity of native woodland bird species with five species from the Honeyeater family being recorded. Four threatened bird species were identified, including two newly identified species, being the Dusky Woodswallow (Plate 10 ) and the Speckled Warbler. One pest bird species, the Common Starling was also recorded. An additional 13 bird species, 3 amphibian, 3 mammal and 3 reptile species were recorded opportunistically. The previously identified pest, the European Rabbit was not recorded during this period, whilst the Eastern Grey Kangaroo was frequently recorded, however there was no indication that the species was negatively impacting the plantings or natural regeneration (Eco Logical Australia, 2022).

The next flora and fauna monitoring period is scheduled for Spring 2024 (October), these surveys have been completed, with the results to be included in the 2025 AOCR.



**Plate 10 Threatened species the Dusky Woodswallow (Photo Credit: Tom Kelly, 2022)**

### **6.3.2 Reportable Incidents**

No reportable incidents have been recorded against the BOA for the reporting period.

### **6.3.3 Further Improvements**

- Perform targeted herbicide treatment of the two listed weed species (Blackberry & St John’s Wort).
- Perform manual removal of Blackberry post-herbicide treatment to avoid the potential of re-shooting.
- Implement Management Plan Actions as required by the Biodiversity Conservation Agreement.
- Consult the adjoining landholder on fence design improvement, monitor for any wildlife entrapment or injury to enhance wildlife safety.

## 6.4 Ecological Monitoring

### 6.4.1 Environmental Management

The Ecological Monitoring Program (EMP) of the OEMP seeks to address the specific requirements of the CoA. The EMP provides for the requirements for the monitoring of aquatic ecology, in particular macro-invertebrates' aquatic habitat in accordance with CoA B7. EA NSW will maintain the EMP for a minimum of five years after the final capping of the LNAR in accordance with approval conditions.

The EMP was implemented in November 2012 prior to construction activities and then during construction in April 2013. In December 2023, the sample sites (Figure 3) included in the program were as follows:

- NCR1 on Wangcol Creek, upstream of the project area
- NCR2 on Wangcol Creek, adjacent to the project area
- NCR3 on Wangcol Creek upstream of the project area
- Control A16 on the Cox River at Lidsdale, downstream of the confluence with Wangcol Creek

The EMP aims to monitor and quantify the impacts on the ecology of Wangcol Creek and the associated riparian environment.

The specific objectives of the 2023-2024 study was to:

- Assess whether any impacts to the aquatic ecology of Wangcol Creek were detected in the vicinity of LNAR and determine whether any such impacts were attributable to the project
- Provide recommendations on actions, to minimize or improve impacts to the aquatic environment, as well as inform whether or not any changes need to be made to subsequent monitoring events to improve the effectiveness of the EMP.

### 6.4.2 Environmental Performance

EA NSW engaged Stantec to conduct the EMP in accordance with the requirements of the OEMP. The assessment of aquatic habitat, water quality and macroinvertebrate assemblages were undertaken on 5 December 2026 during the Spring sampling season (Appendix E).

The biotic indices used in the monitoring program included the following:

- The total number of taxa
- The number of pollution sensitive Ephemeroptera, Plecoptera and Trichoptera (EPT) taxa
- The OE50 taxa score
- SIGNAL2 score

These indices were utilised in order to determine whether any changes had occurred to macroinvertebrates, that may relate to the project.

There was no evidence of any change in spring 2023 data compared with previous sampling events that would suggest an impact due to the Project. None of the statistical tests indicated any change through time at NCR2 that could have indicated an impact (Stantec, 2024).

There was no evidence of a change in SIGNAL2 Score in spring of 2020, 2021, 2022 and 2023 following the reduction in this indicator observed previously in autumn 2020. A native mountain galaxiid fish was captured at one of the control sites in autumn and spring 2018 and 2021, indicating that Wangcol Creek provides habitat for at least one native species of fish. Some differences in the macroinvertebrate multivariate assemblage structure were detected following the most recent analysis in spring 2022 and in spring 2021, however this did not provide evidence of any impact related to the project (Stantec, 2024).



Figure 6 Aquatic ecology monitoring sites and long-term water quality monitoring sites

The OE50 Taxa Score is a biotic index of aquatic habitat and water quality, the score ranges are outlined below:

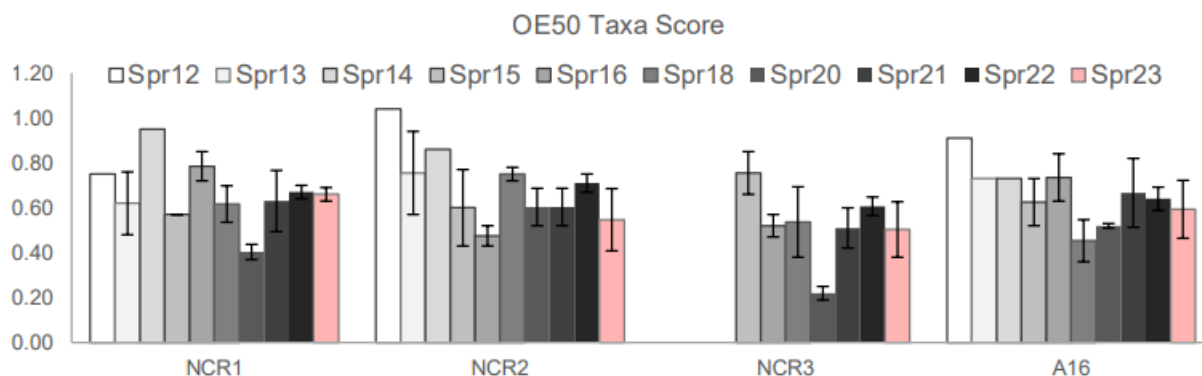
- Band A – 0.84 to 1.16 indicate habitat equivalent to reference condition
- Band B – 0.52 to 0.83 – significantly impaired habitat
- Band C – 0.20 to 0.51 – severely impaired habitat
- Below 0.20 – extremely impaired habitat

The OE50 Taxa Score for each location is listed in Table 11.

**Table 11 OE50 Taxa Score for Spring 2023**

Location	OE50 Taxa Score
NCR1	0.36 to 0.95
NCR2	0.2 to 1.04
NCR3	0.19 to 0.85
A16	0.34 to 0.91

These results indicated that on all but one occasion (NCR2 in Spring 2012) the macroinvertebrate assemblages sampled were less diverse than predicted (i.e., OE50 Taxa Score < 1.0). There was limited evidence to suggest a decrease in OE50 Taxa score between spring 2012 and spring 2016 at NCR2, however the OE50 Taxa score in spring 2018 was relatively high. OE50 Taxa Scores at control sites NCR1 and NCR3 in spring 2020 were also the lowest recorded during the EMP, though there was an apparent increase in the OE50 Taxa Score at these sites in subsequent surveys (Stantec, 2024).



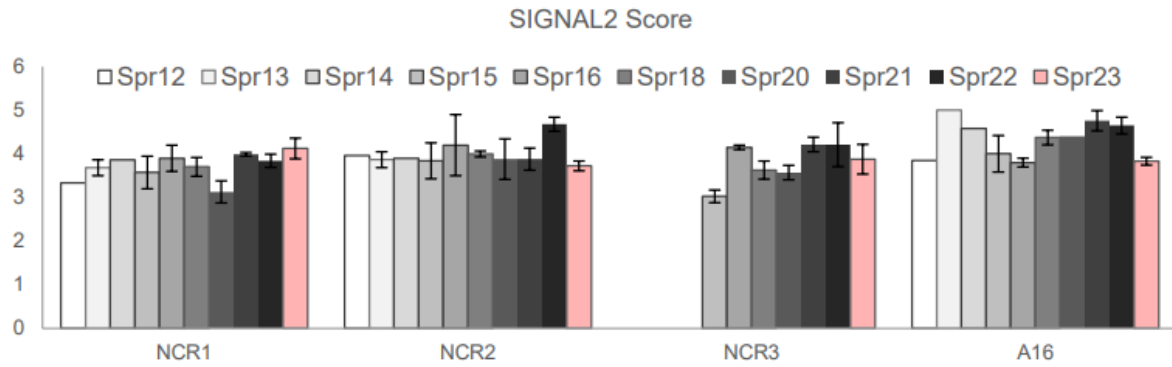
**Figure 7 OE50 results for impact and control sites for the period of 2012-2023**

The SIGNAL2 Score is a biotic index of water pollution. The scores for Spring 2023 are listed in Table 12.

**Table 12 SIGNAL2 Score for Spring 2023**

Location	SIGNAL2 score	Pollution Level
NCR1	3.1 to 4.6	Indicative of severe to moderate pollution
NCR2	3.4 to 5.0	indicative of severe to moderate pollution
NCR3	2.9 to 5.2	indicative of severe to mild pollution
A16	3.6 to 5.2	Indicative of severe to mild pollution

These results suggest that all monitoring sites experience some degree of environmental stress due to poor water quality. However, there were no obvious trends in the SIGNAL2 data that indicate an impact related to the project (Stantec, 2024).



**Figure 8 Signal2 results for impact and control sites for the period of 2012-2023**

The complex interaction that exists between the various types of disturbances (e.g., those to habitat, water quality and flow) experienced in Wangcol Creek make any changes in water quality, and thus associated changes in macroinvertebrates, difficult to distinguish from those that could be due to the Project. Nevertheless, the EMP adds value to the wider monitoring program, and it is expected that any large magnitude and / or cumulative impacts to aquatic biota would be detected, allowing appropriate management actions to be implemented. Recent changes to the monitoring of aquatic ecology, including the addition of two further macroinvertebrate control sites, will assist in identifying any potential future impacts and help inform remediation efforts as necessary (Stantec, 2024).

### 6.4.3 Reportable Incidents

No reportable incidents have been recorded against ecological monitoring for the reporting period.

### 6.4.4 Further Improvements

- As per the project approval, ongoing monitoring should continue throughout the life of the project and for at least two (2) sampling periods following ash placement. This will maximise the validity of data and allow for more accurate comparisons between baseline data. Data from ongoing surveys will allow more confident conclusions to be made on the presence and duration of any potential impact in Wangcol Creek that could be attributed to the project. It is recommended that sampling continue with the next event to be undertaken in Spring 2024 (Stantec, 2024).
- Sampling should continue at the additional control sites established on Wangcol Creek (NCR3). While no baseline data is available from this site, control data collected here during future surveys would improve the power of statistical tests and aid in the detection of impacts (Stantec, 2024).
- Three replicate AUSRIVAS samples should continue to be collected from each site during future surveys. This will provide a measure of the variation present in each indicator at each site, thereby, improving the ability to detect any future impact by enabling the use of appropriate statistical analysis (Stantec, 2024).
- At this stage no project specific mitigation, impact minimisation or ameliorative actions are recommended (Stantec, 2024).

## 6.5 Air Quality Monitoring

### 6.5.1 Environmental Management

The OEMP (EA NSW, 2022) outlines the Air Quality Monitoring Program, as required under the CoA (CoA D3 (d) and E18) as stipulated by PA 09\_0186. The Air Quality Monitoring Program includes specific site management pertaining to the transport and emplacement of ash, managing dust within the ash repository using an extensive sprinkler system and water cart applications, meteorological monitoring and continuous monitoring for dust/airborne particulates. Sprinklers and compaction are used to minimise fugitive dust from the LNAR. Water trucks are used to manage fugitive dust from the haul roads.

Dust management at the LNAR is included in the responsibilities of all activities, including:

- Daily monitoring from weather station.

- Fly ash conditioning.
- Mobile sprinkler system
- Use of perimeter sprays at the ash placement area
- Wash-down of security roadways, haul road/s and vehicle access roads – water carts
- Static dust monitors
- Ash placement operations
- Final and temporary capping of ash; and
- General maintenance of the ash placement area (Lend Lease, 2012)

### 6.5.1.1.1 Sprinklers and Pumps

Dust suppression is a key performance objective for ash placement activities. Dust suppression concerns all aspects of exposed ash and ancillary aspects of vehicular traffic during permanent capping and other activities. The main dust suppression method on exposed ash is the use of sprinklers with water sourced from wash down ponds and the blow down towers from Mount Piper’s cooling water system – no clean water is used in this application. Water application (measured in sprinkler hours) is based on wind velocity, humidity and temperature. Sprinklers are also used for haul roads. Water source, volumes and sprinkler numbers are monitored daily by Service Stream and reported to EA NSW monthly.

The OEMP (EA NSW, 2022) provides a guide for sprinkler hours at an optimum of 4 hours per day during low evaporation at less than 3 mm per day to ensure that a target of 5 mm by irrigation application is not exceeded ( Table 13).

**Table 13 Water use guideline**

Water use guidelines based on temperature and wind speed	Water use guidelines
>25° >20km/hr (10hrs/day)	15° <20km/hr (<4 hours/day)
15-24° <20km/hr (8 hrs/day)	
15° <20km/hr (4 hours/day)	
<b>Evaporation 3 – 7 mm per day</b>	<b>Evaporation &lt; 3 mm per day</b>
Oct, Nov, Dec, Jan, Feb, Mar	April, May, June, July, Aug, Sept

\*Operation of sprinklers in extreme hot and dry conditions requires extended irrigation hours

### 6.5.1.1.2 Air quality monitoring

Air quality impacts at LNAR are managed pursuant to PA 09\_0186 and the approved Air Quality Management Plan (AQMP). The AQMP provides the assessment criteria for the LNAR which are monitored through a network of dust monitors.

The monitoring network consists of

- 5 dust deposition gauges (Figure 3), including Dust Gauges 19, 20, 21, 22 and 23
- 1 Tapered Element Oscillating Microbalance (TEOM) measuring <10 µm (PM<sub>10</sub>) as shown on Figure 3.
- Air Quality Monitoring Station (AQMS) located at Blackmans Flat.

Dust monitoring results are recorded monthly with colour and textural observations.

Performance indicators recommended in the OEMP for air quality monitoring are as follows:

- Increase in Total Suspended Particulates (TSP) by > 2g/m<sup>2</sup>/month to a maximum of 3.5g/m<sup>2</sup>/month at dust deposition gauges outside the ash placement area
- PM<sub>10</sub> annual average is <30µg/ m<sup>3</sup> and 24 hour maximum does not exceed 50µg/m<sup>3</sup>

The installed dust gauges meet the requirements for the methods for sampling and analysis of ambient air (AS/NZS 3580.10.1:2003).

## 6.5.2 Environmental Performance

### 6.5.2.1.1 Dust suppression – Lamberts North Sprinkler system

Figure 9 reflects a relationship between sprinkler application and evaporation to identify that the target or maximum application rates for irrigation at 5 mm / day was achieved. Net irrigation was calculated by subtracting the daily evaporation from the daily sprinkler irrigation rate.

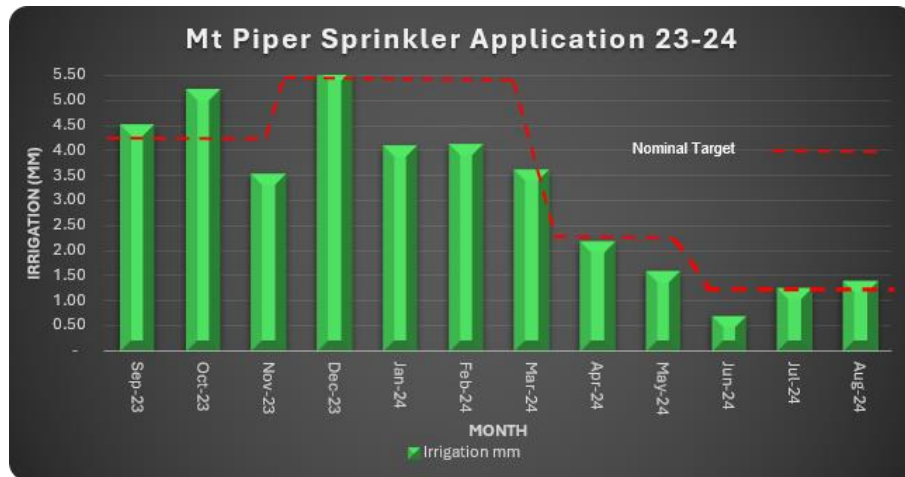


Figure 9 Efficacy of irrigation operations September 2023 – August 2024

### 6.5.2.1.2 Air quality monitoring

The 2023/2024 reporting period was characterised by slightly above average temperatures during winter and summer. Summer 2023-2024 experienced rainfall 10% above the average, coupled with above average temperatures, making it the 10<sup>th</sup> warmest summer in record since 1910. Winter 2024 saw below average rainfall and temperature higher than usual, placing it as the 10<sup>th</sup> warmest winter on record since 1910 (Bureau of Meteorology, 2024).

Dust activity across the state was greatly varied throughout the reporting period. The Department of Climate Change, Energy, the Environment and Water DustWatch reports highlighted an increase in dust during October, driven by higher winds and rainfall. However, in November there was a notable decrease in wind strength and rainfall, contributing to higher dust level, while January reported a decrease in dust activity due to lower wind speeds and increased rainfall and continued to vary through April. The remainder of the 2024 reporting period had varying dust levels with several spikes occurring largely due to unstable rainfall, groundcover variability and soil stability (DECCEW, 2023-2024).

Climatic conditions, state-wide dust activity and localised bushfires can influence air quality near the LNAR as reflected in previous Annual Reports. These extreme events can impact on air quality in the Lithgow Local Government Area and are not related to impacts or activities at the LNAR.

Depositional dust results across gauges DG19-DG23 from September 2023 to August 2024 are shown in Table 14 (Amp Control Group, September 2023- August 2024). The results for all gauges across the reported months, except for DG21 in January 2024, were below the assessment criteria of 3.5 g/m<sup>2</sup>.

The results remained variable throughout the reporting period which is largely in line with the 2023-2024 DustWatch Reports released by DECCEW (DECCEW, 2023-2024). The spike in depositional dust results during January 2024 is less than half the January average DustWatch results reported for the state. However, the Bureau of Meteorology (2024) stated that the rainfall total for January 2024 was 28.3% above the 1961–1990 average. With the northeast winds brought humid air, drier condition contributed to localized dust activity in parts of western New South Wales. Furthermore, the average wind direction for January was generally south. Gauge DG22 is located Northeast of the Repository, whilst the



other gauges are also located generally to the North of LNAR. Therefore, it appears unlikely that increased dust levels during that period would have been because of activities at LNAR.

Comparative annual average depositional dust data for the previous seven-year period is also presented in Table 14. The increase in annual averages from September 2017 through to January 2020 is generally reflective of the extended drought conditions, increased frequency of dust storms and bush fires experienced statewide over that period. The annual average for most of the gauges began to increase from 2021 – 2023, coinciding with increased rainfall, that broke the extended drought conditions experienced in previous years. The 2024 annual averages have again increased across most of the gauges, which is likely attributed to the above average rainfall and warmer weather conditions experienced during the reporting period.

**Table 14 Annual depositional dust summaries**

Date 1 <sup>st</sup> September 2023 – 31 <sup>st</sup> August 2024	Total Insoluble solids (g/m <sup>2</sup> /month)				
	DG 19	DG 20	DG 21	DG 22	DG 23
	Insol.	Insol.	Insol.	Insol.	Insol.
Sep-23	0.75	1.64	1.11	1	0.99
Oct-23	0.5	0.9	0.8	0.7	0.4
Nov-23	0.6	0.4	0.9	0.1	2.1
Dec-23	1	0.6	1	0.4	0.7
Jan-24	0.2	0.3	5.1	0.3	0.6
Feb-24	1.2	0.4	0.5	0.7	0.6
Mar-24	1.2	1.5	2.2	1.4	1.8
Apr-24	0.86	0.69	0.94	0.56	0.49
May-24	0.2	0.3	0.9	0.2	0.1
Jun-24	1.4	1.4	2	1.3	1.3
Jul-24	1.4	1.4	1.4	0.4	0.1
Aug-24	0.3	0.8	0.9	0.6	0.3
Annual averages					
2024	0.8	0.9	1.5	0.6	0.8
2023	1.0	0.9	0.9	0.7	0.6
2022	0.7	0.5	0.9	0.6	1.1
2021	0.6	0.4	1.2	0.8	1.1
2020	1.8	1.8	2.1	1.1	2.3
2019	1.7	1.8	2.4	2.2	2.7
2018	0.9	1.4	1.4	1.1	1.0
2017	0.4	0.7	1.1	1.4	1.0
2016	0.6	0.7	1.5	0.6	0.7

Comparative depositional dust data for each of the five OEMP dust deposition gauges are presented in Figure 10-Figure 14.

Depositional dust concentrations from September 2020 – August 2023 remained relatively consistent, with three separate anomalous peaks above the 3.5 µg/m<sup>2</sup> per month limit – These peaks recorded in gauge DG21 in July 2021 (Figure 12), gauge DG23 in February 2022 (Figure 14) and gauge DG19 February 2023 (Figure 10). All three anomalies were determined to be unrelated to activities at LNAR.

During the current reporting period, depositional dust concentrations, continued to remain relatively consistent across all the gauges. There was one anomalous peak recorded at dust gauge D21 during January 2024 (Figure 12). This high result has been deemed to not be associated with operations at Lamberts North, due to drier weather conditions and the average wind direction during the period was not travelling from LNAR towards the impacted gauge. The consistently low results surrounding January 2024 and the dust suppression management strategies in place at LNAR, also indicate that spikes in dust results are unlikely to be associated with activities at LNAR.

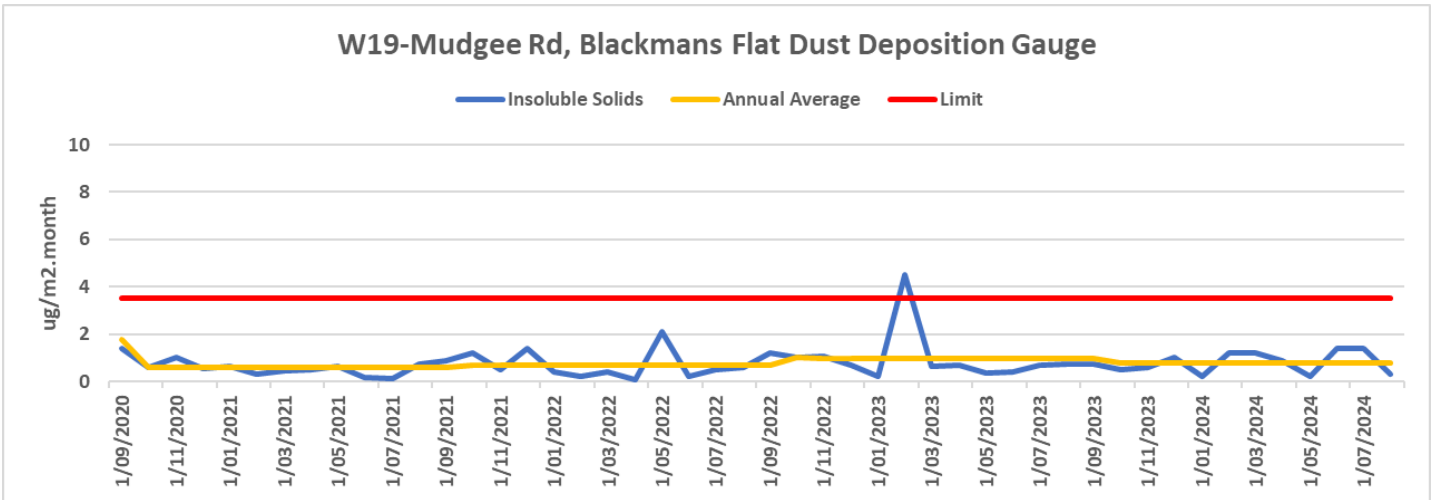


Figure 10 Depositional Dust Summary for Dust Gauge 19

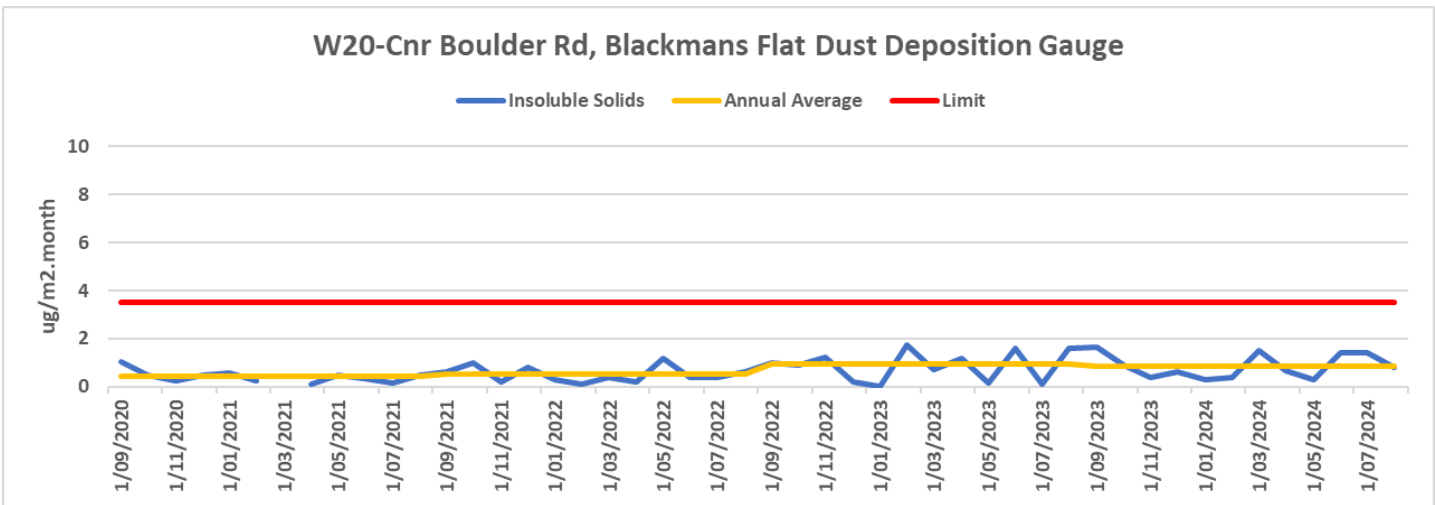


Figure 11 Depositional Dust Summary for Dust Gauge 20

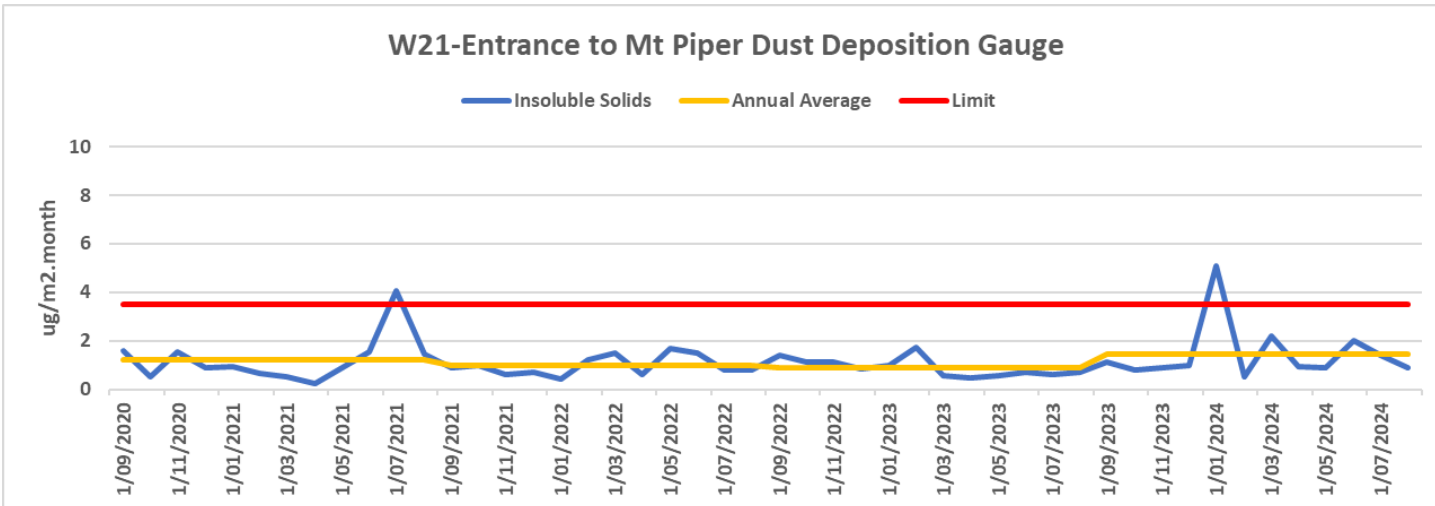


Figure 12 Depositional Dust Summary for Dust Gauge 21

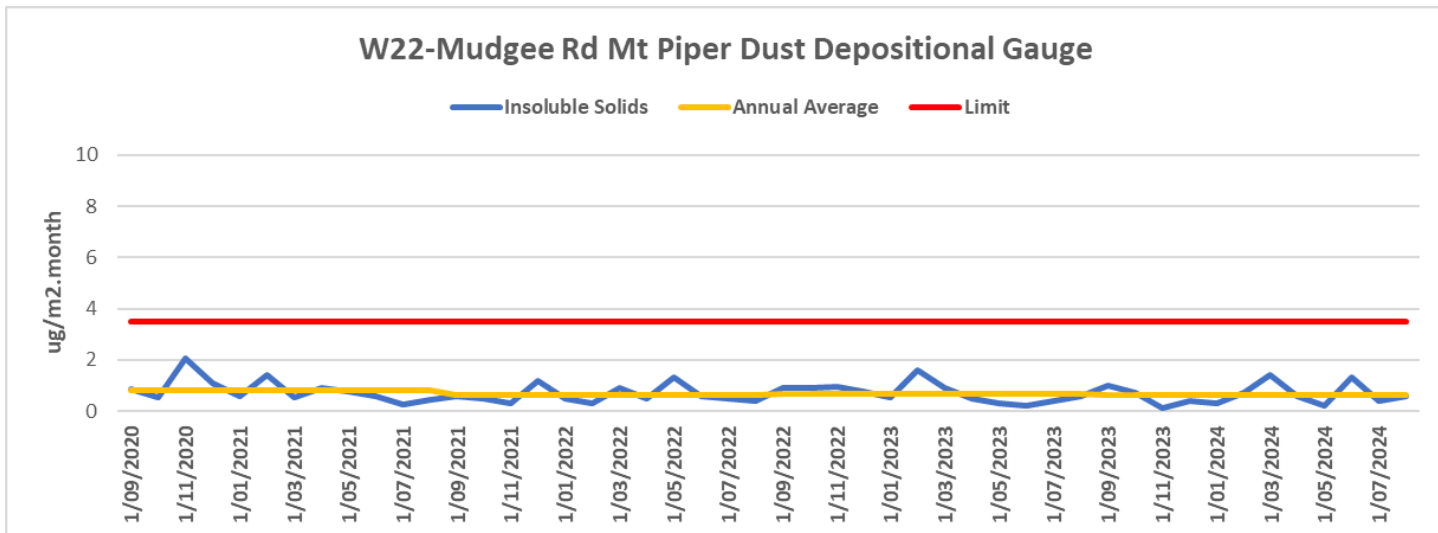


Figure 13 Depositional Dust Summary for Dust Gauge 22

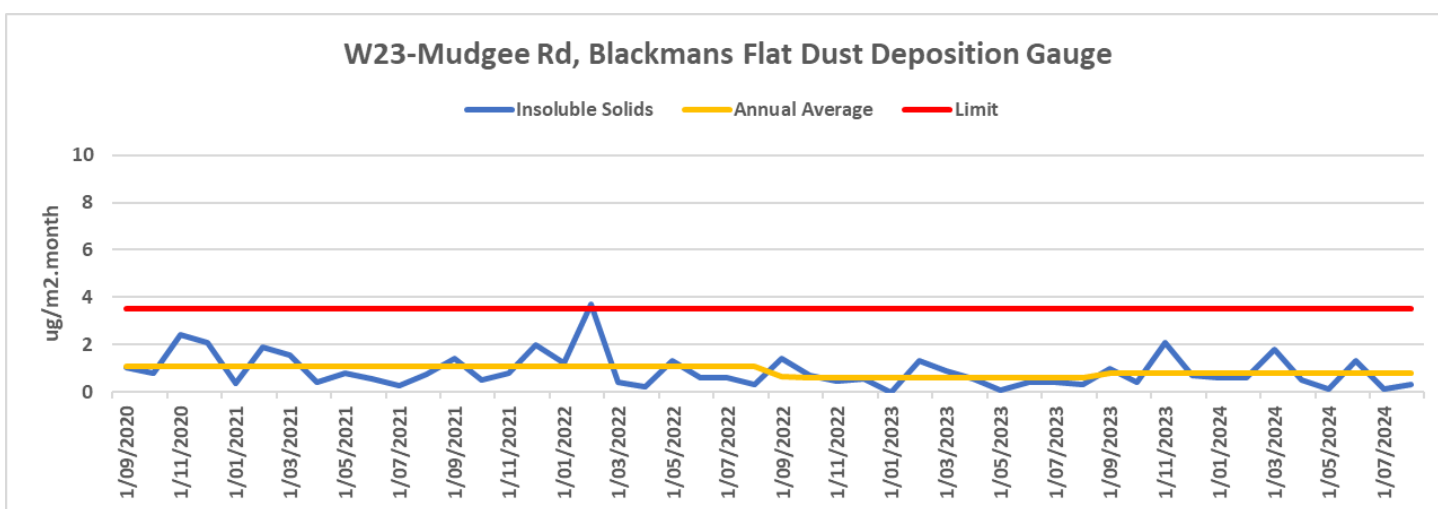


Figure 14 Depositional Dust Summary for Dust Gauge 23

EA NSW monitors fine particulates at LNAR, Blackmans Flat and Wallerawang air quality stations. These are located to the northwest, east and southern directions from the LNAR. Analysis of continuous air quality ( $\text{PM}_{10}$ ) monitoring data from the Blackmans Flat, Wallerawang and LN air quality stations was undertaken for the reporting period (Figure 15).

The results show a generally consistent trend of fine particulate matter over the reporting period, with all results below the National Environment Protection Measures (NEPM) Daily Standard Limit for  $\text{PM}_{10}$  (Figure 15). Above average rainfall has likely attributed to the fine particulate concentration levels remaining at the typically background levels for the region throughout the reporting period.

During the 2023-24 reporting period, the annual average  $\text{PM}_{10}$  result for LNAR was  $8.5 \mu\text{g}/\text{m}^3$ , which is well below the annual average criteria of  $30 \mu\text{g}/\text{m}^3$ . The other local monitoring sites recorded  $\text{PM}_{10}$  results of  $6.4 \mu\text{g}/\text{m}^3$  at Blackmans Flat and  $13.1 \mu\text{g}/\text{m}^3$  at Wallerawang. Dust suppression systems were operating and functional at LNAR during the reporting period, therefore it appears more likely that any anomalies in  $\text{PM}_{10}$  concentrations would be attributed to sources external to LNAR.

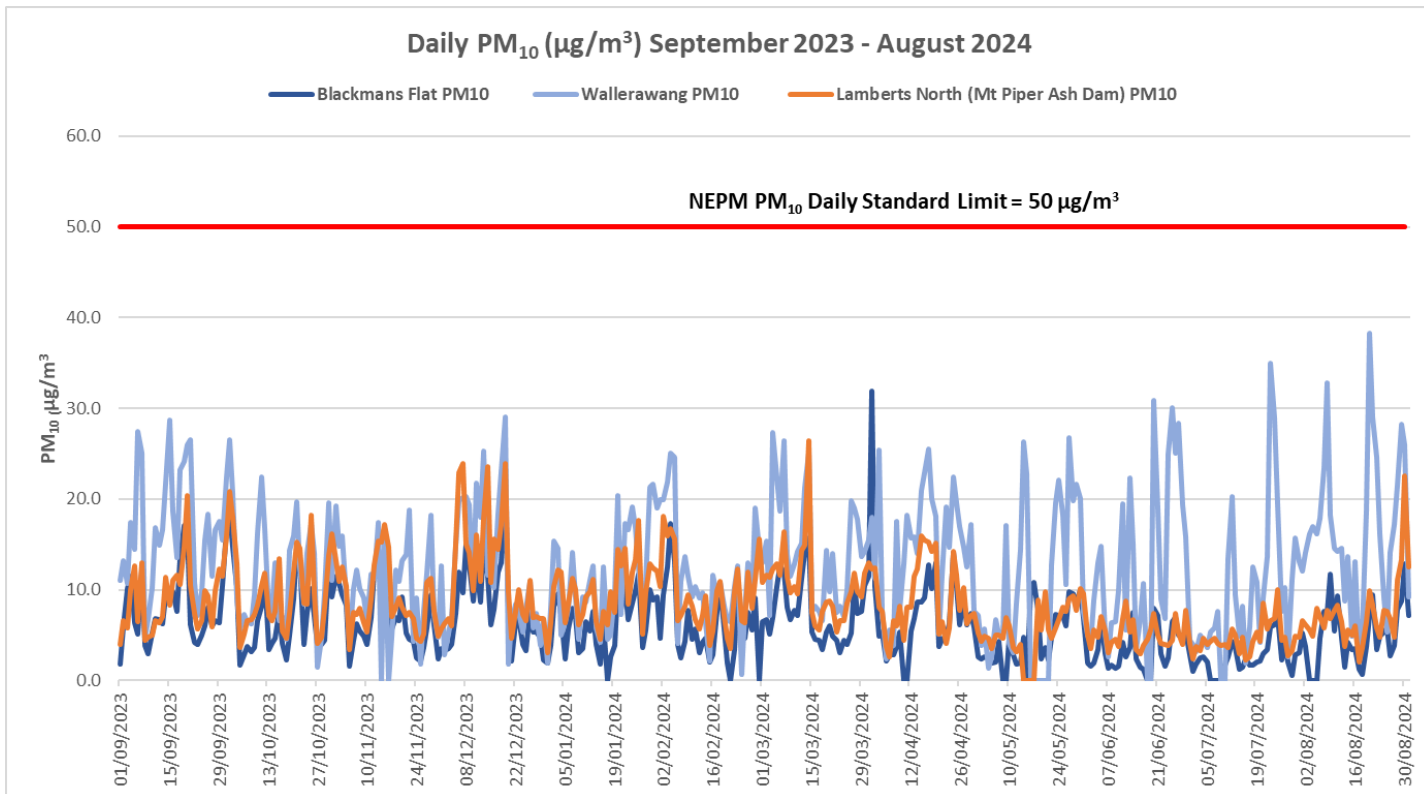


Figure 15 Average PM<sub>10</sub> from the Mt Piper TEOM from September 2023 to August 2024

### 6.5.3 Reportable Incidents

No reportable incidents have been recorded against air quality management for the reporting period.

### 6.5.4 Further Improvements

Pontoon pumps are being installed into LNAR ponds to provide a wider range for pumping. This means more water will be available for dust suppression. It has been operating as per design.

## 6.6 Waste Management

### 6.6.1 Environmental Management

Waste disposal practices at the LNAR are managed in accordance with Environmental Protection Licence 13007 and the Waste Management Sub-Plan (WMP, OEMP Section 5.9). Waste materials are assessed and classified in accordance with the EPA's Waste Classification Guidelines (EPA, 2014) and managed as required by the POEO Act. The WMP addresses waste management on site, and satisfies CoA D2 (g), E23, E24 and E25.

The WMP provides a framework for EA NSW, its contractors and vendors to manage waste and to minimise the potential for adverse impacts to sensitive receivers during the operation of the Project and is comprised of the following targets:

- To ensure waste at the LNAR is managed in accordance with the conditions of EPL 13007.
- To ensure that all Staff and associated contractors involved in the LNAR operations are made aware of the waste management measures contained in the WMP, that waste generated on LNAR is recycled or disposed of in accordance with the WMP.

EA NSW and associated contractors:

- Are not to 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, including no wastes except as permitted by the licence or an exemption certificate.
- Waste generated by site personnel (including maintenance wastes such as oils and greases) are collected on a regular basis to be recycled or disposed of at an appropriate facility.
- Evidence of a recycling system in use and site-generated waste being disposed of to an appropriate facility.
- Waste management details are recorded in the monthly environmental report.

Waste-related documents and records reflect adherence to these protocols, thereby providing the foundations for a transparent approach to waste management. The WMP provides further guidance and detail on specific waste streams and applicable management measures (OEMP Section 5.9).

## **6.6.2 Environmental Performance**

The activities at the LNAR were deemed to have met the WMP targets for waste management for the 2023-2024 reporting year. There were no non-conformances identified and the WMP requirements were found to be compliant.

## **6.6.3 Reportable Incidents**

No reportable incidents have been recorded against waste management for the reporting period.

## **6.6.4 Further Improvements**

No further improvements are planned for the next reporting year.

## **6.7 Heritage Management (Aboriginal & non-Aboriginal)**

### **6.7.1 Environmental Management**

Project Approval 09\_186 contains CoA's concerning heritage management in Part B – Prior to Construction (B5 (f)) and Part C – During Construction (C8 – 9). These conditions are managed under Section 5.6 of the CEMP. The LNAR has progressed into the operational phase and CoA Part B and C no longer apply.

Whilst there are no specific CoAs for Project Approval 09\_0186 for Part E – During Operations, regarding heritage management, contract personnel are educated on their due diligence duties in respect of the protection of Aboriginal and non-indigenous heritage sites and items.

### **6.7.2 Environmental Performance**

No additional heritage sites have been recorded within the vicinity of the LNAR.

### **6.7.3 Reportable Incidents**

No reportable incidents have been recorded against heritage management for the reporting period.

### **6.7.4 Further Improvements**

No further improvements have been identified for the next reporting period.

## 7. Water management

### 7.1 Surface Water Quality Monitoring.

#### 7.1.1 Environmental Management

The Soil and Surface Water Management Plan (SSWMP) is a sub-plan as outlined in the OEMP and addresses the specific requirements of the CoA D3 I and E16. The SSWMP addresses soil and water cycle management on site, including a surface water monitoring program at receiving waters that is comprised of the following targets:

- The water quality at Wangcol Creek is not impacted by LNAR operations;
- Zero environmental incidents that relate to pollution of waters at Wangcol Creek.
- Erosion to be effectively managed on site and not have an influence and/or impact on surrounding lands outside the boundary of LNAR.

Performance criteria:

- The Environmental Goals adopted have taken into consideration local baseline surface water conditions in Wangcol Creek prior to the commencement of ash placement in the eastern side of the MPAR (referred to as pre-placement). Baseline conditions were specifically established based on the 90<sup>th</sup> percentiles of the water quality dataset from monitoring site WX22 in Wangcol Creek. An early warning is triggered when the post-ash placement 50<sup>th</sup> percentiles for the various water quality indicators at each of the surface water monitoring sites, exceed the pre-placement 90<sup>th</sup> percentiles (Aurecon 2017).
- Ecological results at Wangcol Creek will indicate no significant variation from historical baseline data.
- No visual evidence of erosion and sedimentation impacts on Wangcol Creek following significant rainfall events.

Runoff water from the LNAR is contained in clean and dirty water sediment ponds and forms the primary source of water for dust suppression on exposed ash and capped areas as well as irrigation of the revegetated areas. The CoAs stipulate that a monitoring program must be implemented to record and observe water quality and potential impacts from repository operations on regional surface waters. The OEMP for the LNAR requires sampling at three locations which are outlined in Figure 3 and Table 15.

**Table 15 Location of Surface Water Monitoring Points**

Site ID	Location Description	Monitoring Frequency
LMP01	Final Holding Pond Weir – monitoring point is located north-west of the MPAR. This monitoring site is located in an upstream position relative to the LNAR.	Monthly <sup>1</sup> /Quarterly <sup>2</sup>
NC01	Located in Wangcol Creek. This monitoring site is located upstream to the LNAR and to the north of the MPAR and is an aquatic life background site.	Monthly <sup>1</sup> /Quarterly <sup>2</sup>
WX22	Located in Wangcol Creek at a stream gauge to the east/down-stream of the MPAR and LNAR and monitoring site LDP01. This monitoring site is also situated down-stream of monitoring bore D8.	Monthly <sup>1</sup> /Quarterly <sup>2</sup>
1. Selected field parameters monitored on a monthly basis as required 2. Monitoring undertaken by analytical laboratory Nalco Water – Ecolab		

Changes in the water quality and trace metals at Wangcol Creek receiving water site (WX22), from pre-ash placement (October 2012 to August 2013) to the post-ash placement period (September 2013 to August 2017) was examined in the past by Aurecon reported within their Water Quality Monitoring Reports. For the 2023-24 reporting period Environmental Resources Management Australia (ERM) was commissioned by EA NSW to carry out the Water Quality Monitoring Report (WQMR), refer to Appendix F.



## 7.1.2 Environmental Performance

ERM was commissioned to assess the results from the surface water monitoring program as set out in the OEMP and as required by Project Approval 09\_0186 during the reporting period. A copy of the WQMR is contained in Appendix F. The surface water monitoring carried out monitors for changes in water quality in Wangcol Creek, caused by multiple land uses in the area and is not restricted to LNAR activities.

Concentrations for the last 12 months, including those above the Environmental Goals, are presented in the tabulated surface water results in the annual water quality monitoring report in Appendix F.

Over the reporting period, concentrations of target analyt in surface water at midstream monitoring location, particularly (SW\_E) and downstream of LNAR were reported above the Environment Goal. These elevated concentrations align with previous reporting period, and historical reporting and trend analysis, they are unlikely to be related to ash placement activities at LNAR. Since the last reporting period, EA NSW have completed an independent groundwater investigation, aimed at evaluating groundwater and surface water conditions in the vicinity of MPAR and LNAR and assessing the potential for groundwater to interact with surface water in Wangcol Creek. The findings of the investigation indicate that any impacts to the surface water, are most likely associated with legacy impacts from MPAR, rather than the LNAR. The results of the independent groundwater investigation will be discussed further in section 7.2.2

During the reporting period, surface water results from locations upstream of the Ash repositories (LMP01) remained below the of the Environmental Goals. Given the location of the LNAR relative to these surface water monitoring locations, activities at the LNAR are not considered to have contributed to exceedances at these locations. Concentrations of EC and TDS at upstream monitoring locations, demonstrated mostly stable trend throughout the reporting period remaining below the Environmental Goal and generally with in the historical ranges. All metals concentration at LMP01 were within historical ranges except for boron (filtered), which recorded its highest concentration during January 2024 monitoring event. Based on the outcomes from the independent investigation these results are unlikely to be related to activities at LNAR.

A review of concentration trends in surface water with respect to key indicators including chloride (Figure 16), nickel (Figure 17), sulfate (Figure 18) and TDS (Figure 19) are presented below. These indicators were selected based on the results being above the Environmental Goals for surface water, the potential increase in concentration observed downstream of the Ash Repositories and/or trend analysis presented in previous annual monitoring reports. The detailed surface water analysis is presented in full in Appendix F.

At the Mid-stream monitoring locations, sampling results from NC01 and SW\_C were generally similar to each other, however SW\_E showed higher concentration of certain key analytes over the monitoring period. Historic data over the last 10 years shows that EC and TDS concentration at NC01 And SW\_C have remained low and stable, below the Environmental goals for surface water.

Consistent with increased TDS and EC values, chloride and sulfate concentration at SW\_E spiked during 2019/20, however returned to concentrations below the environmental goal during the 2020/21 reporting period. Although the concentrations of chloride and sulfate did not exceed the environmental goals during this reporting period, EC and TDS values at SW\_E remained higher than those further upstream at NC01 and SW\_C. This increase is deemed to not be associated with activities at LNAR.

Graphs showing the concentration trends over the last 10 years for WX22 and SW\_G show EC and TDS levels at this location have fluctuated over time and have typically decreased during summer months. Chloride and sulfate concentration have also varied over time and tend to align with TDS trends, specifically November 2023. Although the EC and TDS concentration at both downstream locations were above the Environmental goals they remained within the historical ranges throughout the reporting period. Additionally, boron (total and filtered) and nickel (total and filtered) concentrations exceeded the relevant Environmental Goal for surface water at WX22 and/or SW\_G on certain occasion The increasing trends identified are considered to reflect the drier conditions experienced during the reporting period where surface water flows were lower and are not considered to be related to operations at LNAR.

The WQMR (ERM, 2024) outlines the relationship between surface water in the area and the associated impacts from MPAR. Therefore, based on the independent groundwater investigation, the historical data and the location and design of LNAR, it is unlikely that activities at LNAR are impacting the surface water.

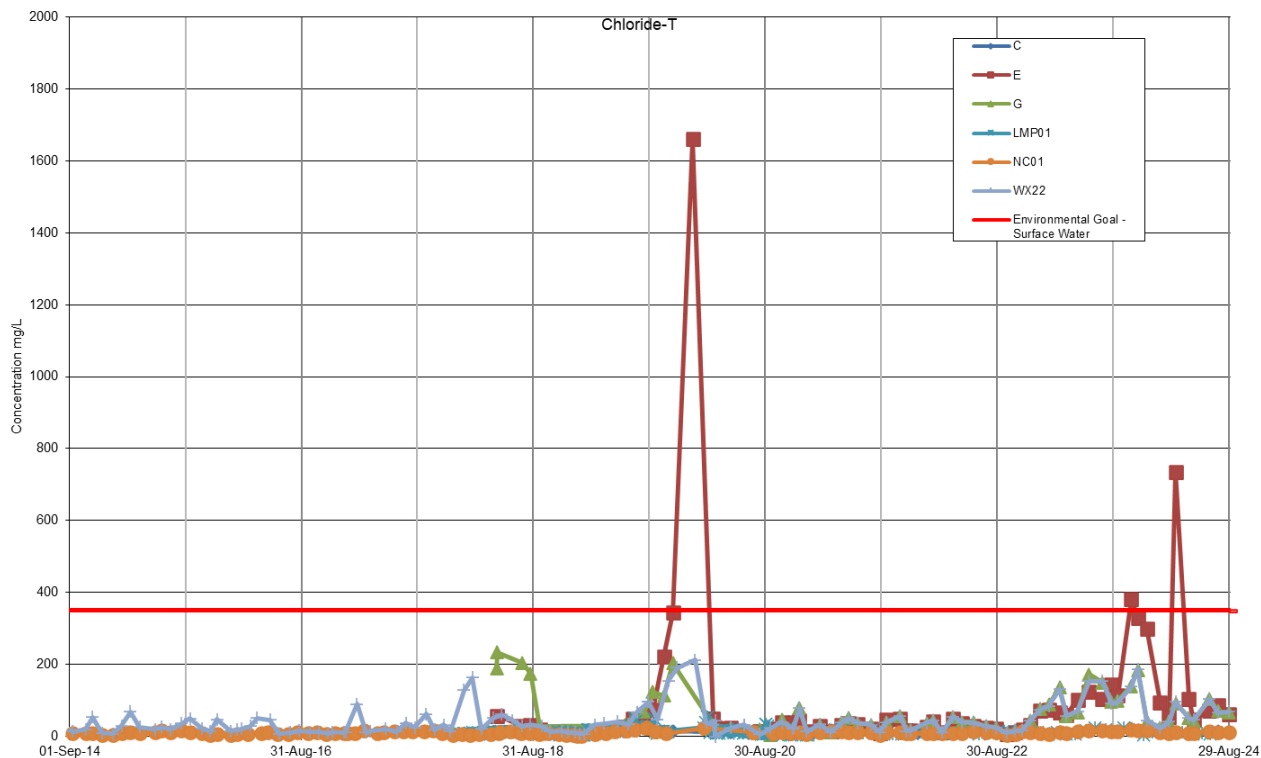


Figure 16 Chloride Concentrations in Surface Water

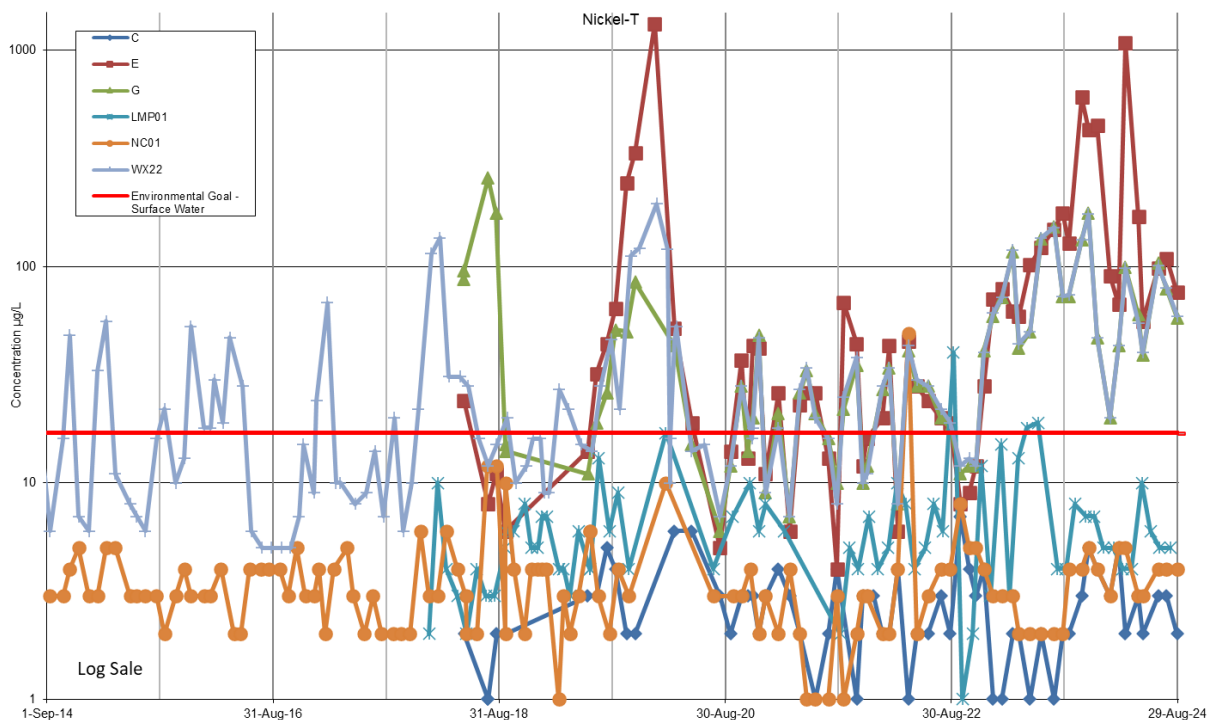


Figure 17 Nickel Concentrations in Surface Water

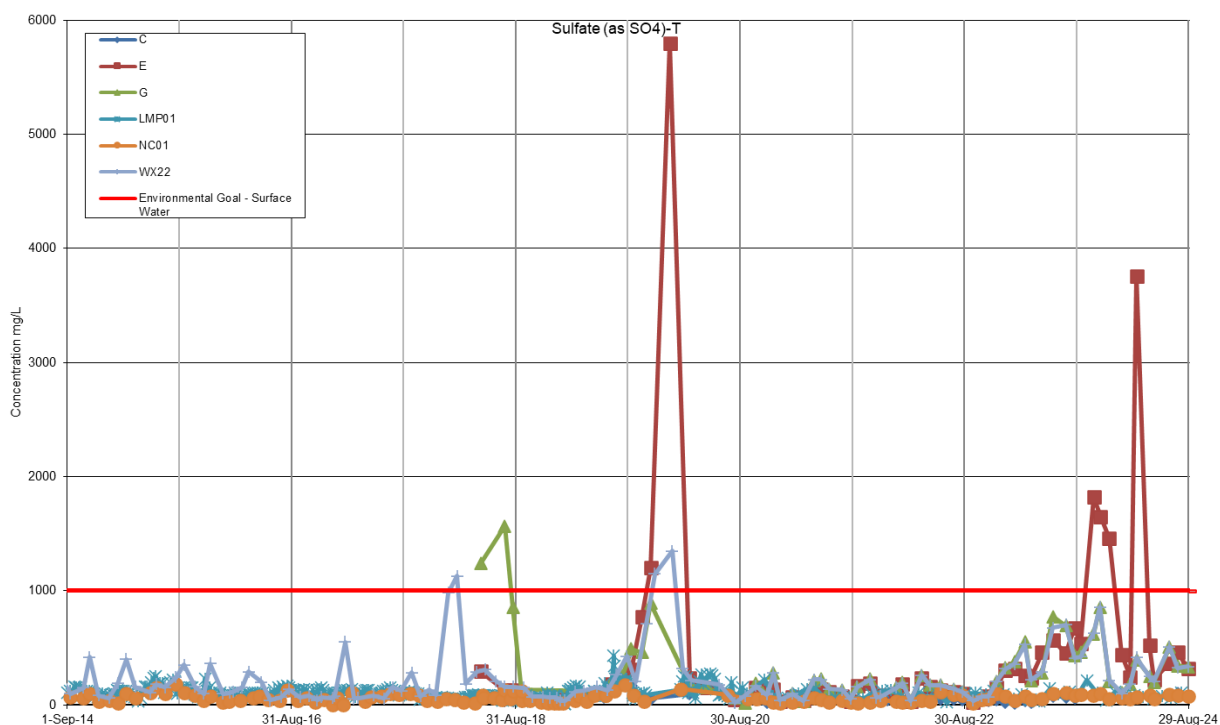


Figure 18 Sulfate Concentrations in Surface Water

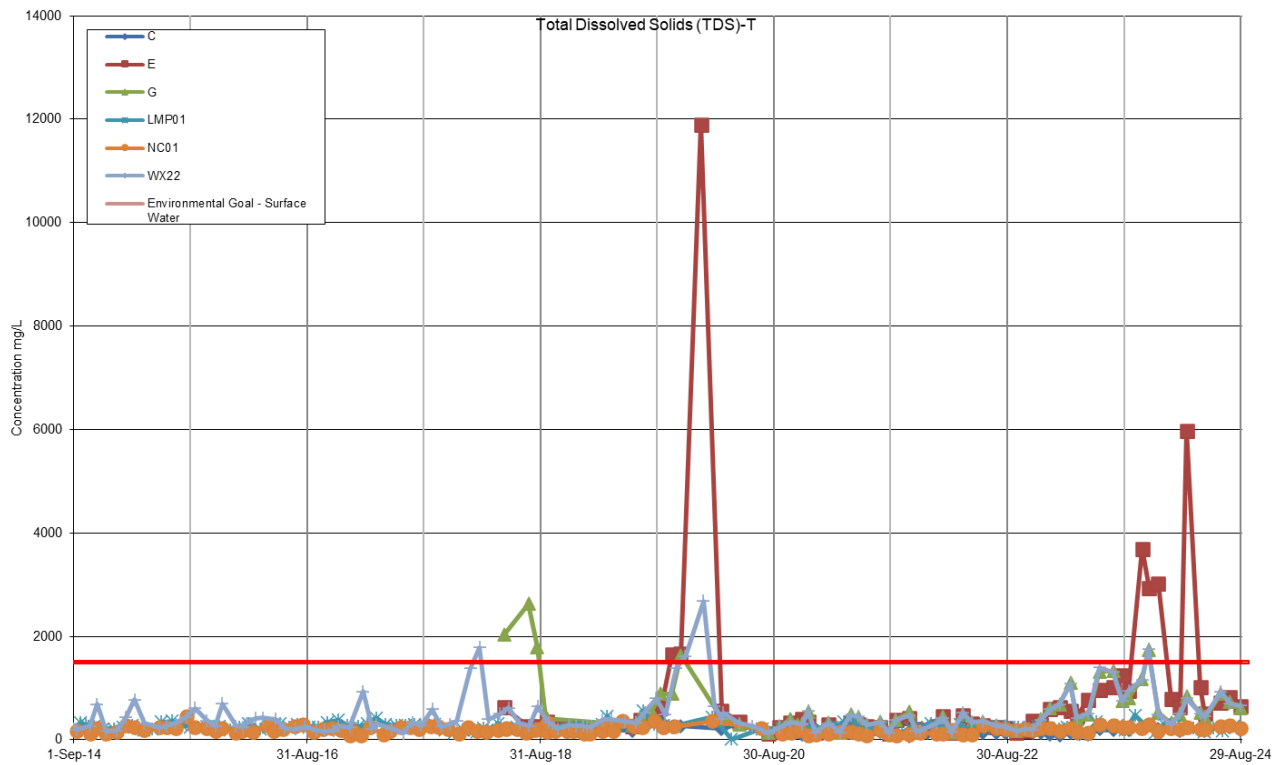


Figure 19 TDS Concentrations in Surface Water

### 7.1.3 Reportable Incidents

No reportable incidents have been recorded against surface water management for the reporting period.

### 7.1.4 Further Improvements

- Surface water will continue to be monitored and appropriate action taken to mitigate potential impacts to Wangcol Creek.
- The results of the independent groundwater investigation will be utilised to advise on future management and mitigation options for MPAR and will inform the continued design and implementation of the liner for LNAR.
- The stage 2 Leachate Barrier Management System area were prepared, constructed and commissioned towards the end of the reporting period.

## 7.2 Groundwater Monitoring

### 7.2.1 Environmental Management

The Groundwater Management and Monitoring Plan (GMMP) is a sub-plan of the OEMP and seeks to address the specific requirements of the CoA D3 (b), E15 and E17. The objective of the GWMP is to assess compliance with the CoAs. The GMMP provides for the requirements for the ongoing groundwater monitoring program in accordance with CoA E15. The GMMP was established and implemented in October 2012 prior to construction activities and in addition to the existing monitoring regime for MPAR.

In terms of performance criteria, water quality trigger values set out in the OEMP (CDM Smith 2013), as modified by Aurecon (2017), have been adopted as Environmental Goals for the analytes. In addition to the Environmental Goals outlined above, an early warning is triggered when the post-ash placement 50<sup>th</sup> percentiles for the various water quality indicators, exceed the pre-ash placement 90<sup>th</sup> percentiles (Aurecon 2017) (for further details, see Appendix F).

The GMMP provides the procedures and protocols that apply to the monitoring and testing of water quality and involves quarterly sampling of existing long-term bores associated with MPAR and new bores located south of Huon Gully. The locations of the groundwater monitoring sites are presented in Figure 3 and listed below:

- Bore D9: East of Huon Gully and south of Wangcol Creek, located outside the ash placement area. Used to monitor groundwater quality and potential influence on Wangcol Creek
- Bore D8: North of Wangcol Creek. Used to monitor groundwater quality and potential influence on Wangcol Creek
- Bore D10 & D11: Located on the western side of the ash placement area monitor groundwater quality in the former Huon Gully area. Bore D11 was decommissioned in February 2023 as part of the LNAR 1B Liner Installation works. Final water sample and level checks were completed prior to capping.
- Bore D1: North of Huon Gully, used to detect seepage from the north-eastern MPAR where BCA is emplaced and monitor groundwater quality and potential influence on Wangcol Creek.
- Bore D15: Inside of LNAR approval area, south and cross-hydraulic gradient of the currently active LNAR ash placement area and south of multipurpose storage ponds Pond BWA – Pond BWC
- Bores D16 & D17: Inside of LNAR approval area, south and cross-hydraulic gradient of the currently active LNAR ash placement area and north of the Centennial Coal reject emplacement areas
- Bore D18: Inside of LNAR approval area, south and cross-hydraulic gradient of the currently active LNAR ash placement area
- Bore D19: Downgradient of LNAR approval area, adjacent to Centennial's DML Dam

Bores D10 and D11 are considered to be upgradient of the LNAR with the results used to indicate groundwater contributions from the MPAR. Exceedances of the Environmental Goals for these bores are considered to be unrelated to either background groundwater conditions in the region or to potential impacts resulting from activities at the LNAR. These groundwater conditions are currently subject to review and management as part of the independent groundwater investigation.

Bores D15, D16 and D17 in the southern portion of the LNAR are considered to be south of and across gradient of the LNAR, with the results used to indicate baseline groundwater contributions. The Environmental Goal exceedances in this area are considered unlikely to be a result of activities at the LNAR based on the inferred direction of groundwater flow.

Bores D1, and D8 and D9, are considered to be downgradient of the LNAR and the MPAR. Elevated detections of Environmental Goals in these bores are also elevated relative to concentrations in bores to the south/across gradient of the LNAR and are considered to be reflective of the same groundwater conditions reported at D10 and D11 (i.e. upgradient relative to groundwater flow direction). It is considered that exceedances of Environmental Goals are not a result of activities at LNAR. These groundwater conditions are currently subject to review and management as part of the independent groundwater investigation.

## 7.2.2 Environmental Performance

ERM was commissioned to assess the results from the groundwater monitoring program required by the OEMP and Project Approval 09\_0186 during the reporting period. A copy of the WQMR is contained in Appendix F. Previous groundwater monitoring identified a number of exceedances of water quality goals contained in the GMMP, this therefore triggered contingency measures that required the commencement of an independent groundwater investigation. Between 2018 and 2023, an independent groundwater investigation (ERM, 2024) was conducted to investigate elevated chloride levels in groundwater at Bore D10 and the associated impacts on surface water in the area. In summary, the investigation found that elevated concentrations of some analytes in surface water and groundwater, were most likely linked to legacy impacts associated with the nearby MPAR. There was no indication that activities at LNAR were contributing to these elevated levels. The results of the investigation have been used to advise on future management and mitigation options for MPAR and have been used to inform the redesign and lining of the LNAR (ERM, 2024).

During the reporting period, concentrations of target analytes in groundwater were reported above the Environmental Goals, at monitoring locations within the LNAR and cross- and downgradient of LNAR. Elevated concentration of key analytes including EC, TDS, chloride, sulfate, boron and nickel are not considered to be related to operations at the LNAR and have been assessed as part of an independent investigation. During the reporting period concentration of key analytes in ground water from several wells increased, however they remained within the historical ranges.

A review of concentration trends over the last 10 years with respect to key indicators including chloride (Figure 20), nickel (Figure 21), sulfate (Figure 22) and TDS (Figure 23) are presented for locations downgradient of the LNAR. Concentrations of the key analytes in groundwater have fluctuated over time and several bores have had concentrations above the environmental goals. However, based on review of the historical data and the conclusions outlined in the WQMR (ERM, 2024) it is apparent that increased concentrations were present prior to ash placement at LNAR.

During the reporting period, concentrations of chloride (Figure 20) at bores D1, D9, D102 were above the environmental goals, which is consistent with historical data. Concentrations of chloride at D2, D8, D19, D103, D104, D105 and D113 have decreased in previous years and have remained below the environmental goals during the period.

Nickel concentrations (Figure 21) at bores D1, D9, D102, D103, D105, D113 and D19 were above the environmental goals during the period, however this is consistent with historical data. D1 and D102 showed slight decrease compared to previous year. These increases are deemed to not be associated with LNAR. Concentrations at bores

D2, D8, D19 and D104 were below the environmental goals during the period and concentrations at D103 and D19 and D113 have decreased since 2020.

Sulfate concentrations (Figure 22) in groundwater from bores D2, D8 and D104 were below the environmental goals during the period, with concentrations at D2 decreasing since 2020. All other bores downgradient were above the environmental goals, this is consistent with historical data and not associated with LNAR.

TDS concentrations (Figure 23) at bores D2, D8 and D104 were below the environmental goals during the period, whilst the remaining downgradient bores were above the environmental goals. Data from the last 10 years shows that TDS in groundwater from several wells has increased over time, starting with D1 and D9 around 2011, however these increases are deemed not to be associated with LNAR. TDS concentrations in wells D19, D102, D103, D105 and D113 have remained above the Environmental Goal for the last ten years, meanwhile TDS concentrations in well D2 decreased in 2020, to below the environmental goal.

Although the groundwater results indicate that several key analytes are above the environmental goals these results are deemed not to be related to activities at LNAR. The WQMR (ERM, 2024) outlines the relationship between the flow of groundwater and the associated impacts from MPAR. Overall, the historical data demonstrates that there were elevated concentrations of analytes in groundwater prior to the placement of BCA in LNAR. Therefore, there is strong evidence that elevated results are not associated with activities at LNAR.

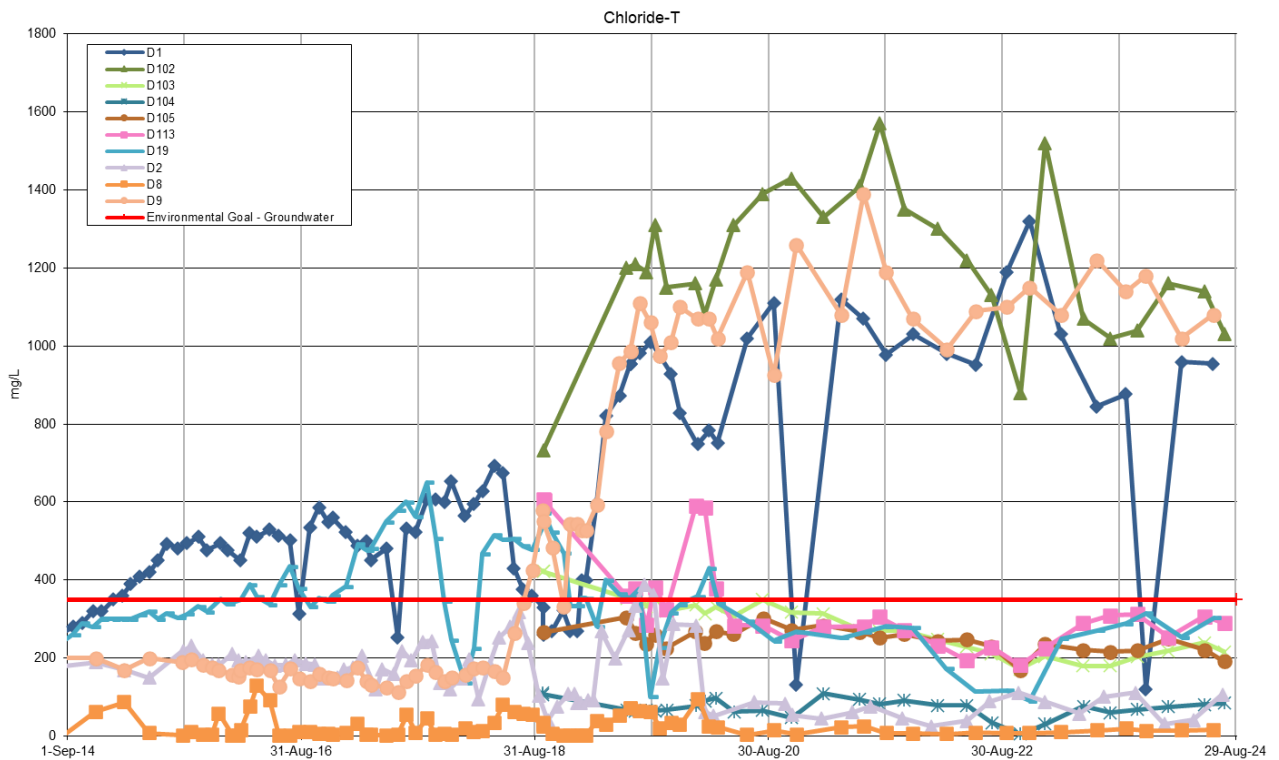


Figure 20 Chloride Concentrations in Groundwater

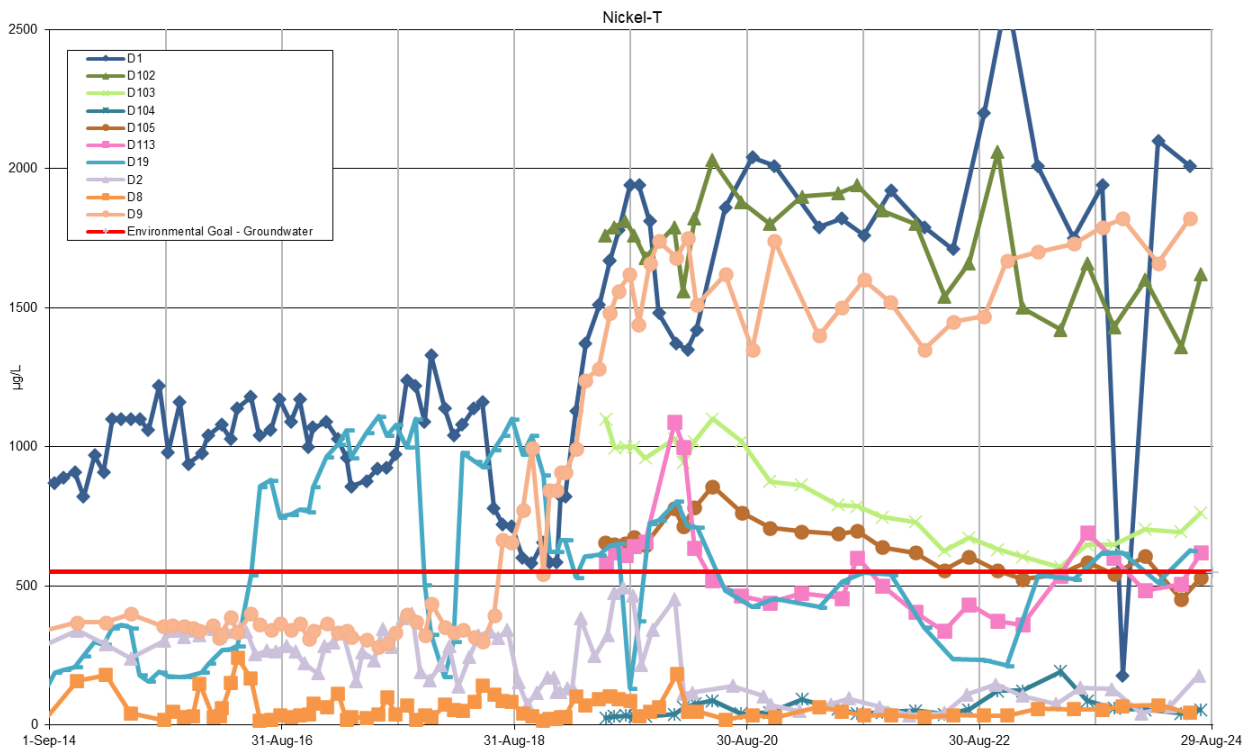


Figure 21 Nickel Concentrations in Groundwater

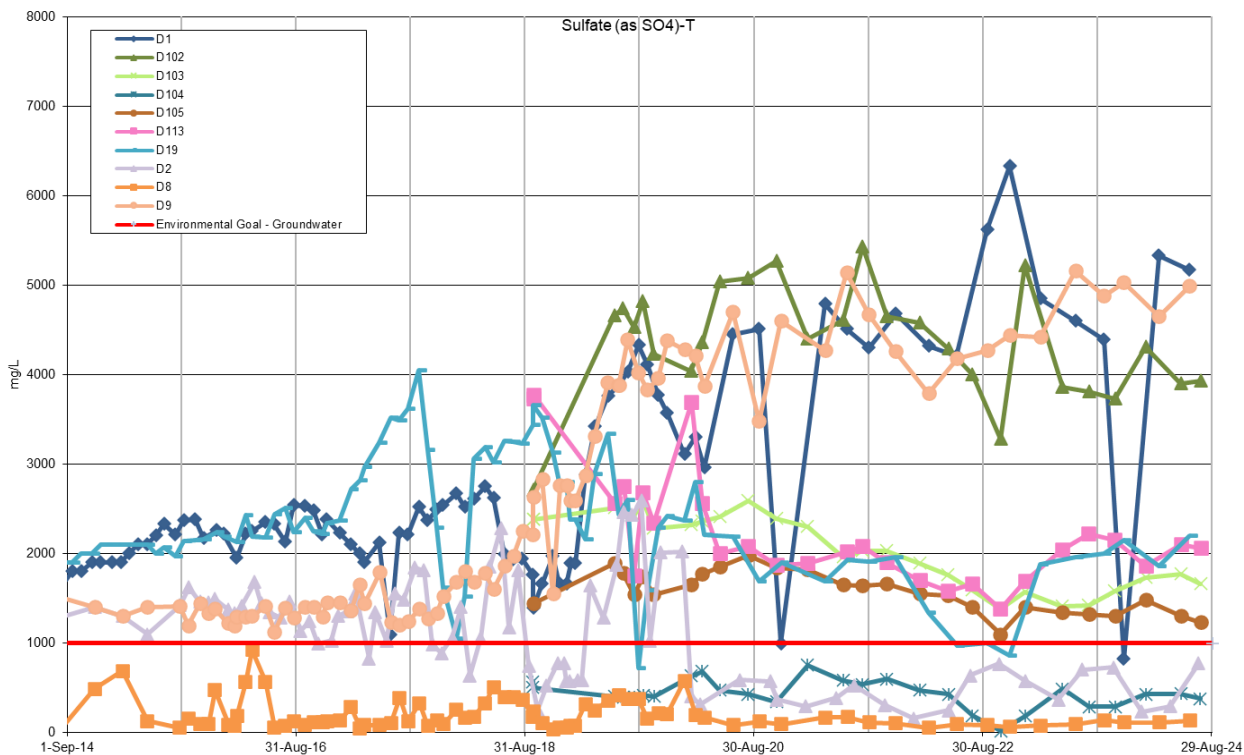


Figure 22 Sulfate Concentrations in Groundwater



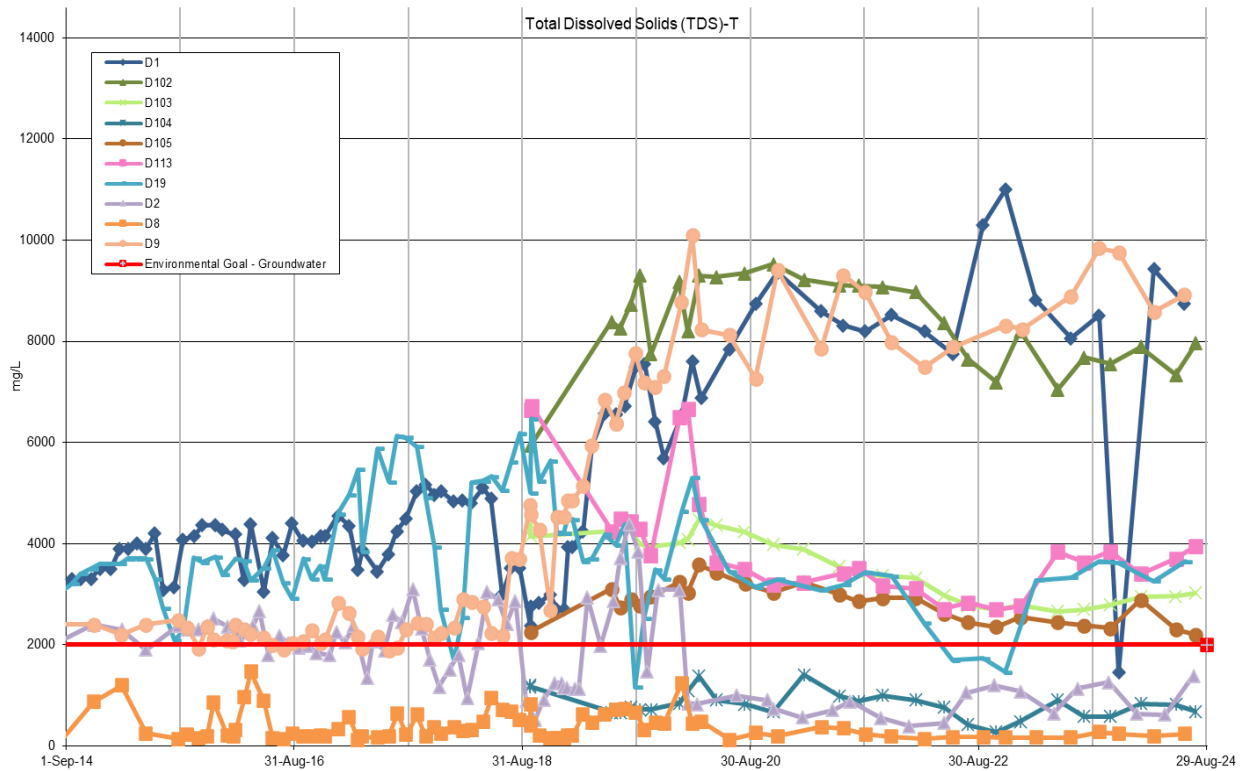


Figure 23 TDS Concentrations in Groundwater

### 7.2.3 Reportable Incidents

No reportable incidents have been recorded against groundwater managed for the reporting period.

### 7.2.4 Further Improvements

- The results of the independent groundwater investigation will be utilised to advise on future management and mitigation options for MPAR and inform the continued design and implementation of the liner for LNAR.
- A leachate barrier management system is being installed to prevent any potential leachate impacts to groundwater from the LNAR.

## 7.3 Hydrological Monitoring

The hydrological monitoring program, required by CoA E17, was incorporated into the GMMP because of the change in design to LNAR addressed in the Consistency Report (SKM, 2012). It is noted that this condition relates to assessing and quantifying the impacts and effectiveness of the transformed section of Huons Creek into a subsurface drainage line. Monitoring was undertaken for a period of five years and is now completed.

## **7.4 Erosion and Sediment Control**

### **7.4.1 Environmental Management**

The LNAR catchment area uses external batters and laybacks to stabilise the ash placement and direct runoff to swale drains that are situated parallel to the batters. The swale directs the water towards a controlled point, being an off-flow structure placed approximately every 100m along the batter. The off-flow structure, which is typically a rock-lined chute, directs the water to a containment pond.

The trucks deliver ash to the working face and create a number of piles next to each other, prior to final placement. The piles of ash allow for any runoff to be directed to the dirty water sediment pond(s). The ash is then graded into its final position and compacted by rollers to specific compaction criteria to mitigate erosion and infiltration.

### **7.4.2 Environmental Performance**

Management of the ash benches is the primary principle of eliminating uncontrolled runoff over any batter. All benches associated with the LNAR area are graded west to ensure security against a breach from any external boundary. All surface water runoff from the ash footprint of the LNAR is managed within the boundary of the ash placement area.

The completion of the LNAR Stage 1 Leachate Barrier introduces a 100% Surface Water Retention to the Brine Conditioned Ash (BCA) Footprint. Surface Water is collected adjacent to Collection Sump 4 and pumped to the LNAR Lined Pond System (Plate 11 and Plate 12) for storage and reticulated onto the Repository BCA Active Placement Pad.

Based on site observations and information reviewed, potential impacts from the operation of the LNAR regarding erosion and sediment control, have been effectively mitigated and managed.

### **7.4.3 Reportable Incidents**

No reportable incidents have been recorded regarding erosion and sediment controls for the reporting period.



**Plate 11 Lined LNAR Pond 3 (Photo taken November 2023)**



**Plate 12 Lined LNAR Ponds 4 and 5 (left to right) (Photo taken November 2023)**

#### **7.4.4 Further Improvements**

- Implementation of LNAR stage 1 perimeter bund, which will maintain brine and salt water, separating it from clean water.
- Additional pond interconnector piping works.
- Construction of Eastern Boundary Windrow (adjacent to Western Coal Services)

## 8. Landscape and Revegetation

### 8.1.1 Environmental Management

During the reporting year, no rehabilitation work was undertaken due to the construction of the Geomembrane system. Rehabilitation works at the LNAR is planned to occur when the 937m contour layback has been constructed around the perimeter of the ash repository.

### 8.1.2 Environmental Performance

Ash Placement activities at the LNAR were undertaken within the existing capping levels. As such no additional land preparation or rehabilitation work was required during the reporting period. The rehabilitation status of the LNAR is detailed in Table 16. The rehabilitation status of the Lamberts North and the adjoining Mt Piper Ash Repository is shown in Appendix G.

**Table 16 Rehabilitation Status**

Area Type	Prev. Reporting Period Sept 2022 – Aug 2023 Hectares	This Reporting Period Sept 2023 – Aug 2024 Hectares	Next Reporting Period Sept 2024 – Aug 2025 Hectares
Total Footprint	19.8	19.8	19.8
Total active disturbance	16.7	16.7	16.7
Land being prepared for rehabilitation	0	0	0
Land under active rehabilitation	1.3	1.3	1.3
Completed rehabilitation	0	0	0

### 8.1.3 Reportable Incidents

No reportable incidents have been recorded against landscape and revegetation management for the reporting period.

### 8.1.4 Further Improvements

- Stage 2a bulk excavation component is scheduled for the next reporting period. This will work toward capping more of the repository.
- Water Conditioned Ash Area 2 (WCA2) – bulk excavation
- Batter rehabilitation in progress Zone 2

## 9. Community

### 9.1 Community Engagement

During the reporting period Community Consultation Committee (CCC) meetings were held on 5 December 2023, 13 February 2024 and 11 June 2024. The CCC comprises representatives from the local community and EA NSW. The CCC meets three times per year to discuss matters relating to operations at MPPS, including activities at the ash repositories – MPAR and LNAR. The CCC minutes are made publicly available via the Mt Piper Community page on EA NSW website [Mt Piper Community page-EnergyAustralia](#).

### 9.2 Community Contributions

The MPPS and the associated LNAR has contributed to the economy of the district and State through the purchase of materials and services from local and regional suppliers, and by direct and indirect employment. EA NSW continues to support several community groups and organisations through in-kind support and financial sponsorship programs. During the reporting period, EA NSW had the opportunity to support up to 38 different community organisations and events during the reporting period. A list of these organisations and events are included in Appendix H.

### 9.3 Community Complaints

There were no community complaints reported to EA NSW relating to the LNAR during the reporting period (Appendix I). EA NSW maintains a 24-hour hotline for the public to report incidents, complaints or enquiries with contact details available on the EnergyAustralia website. EA NSW records the details of all complaints received in a Complaints Register.

### 9.4 Website Information

A project specific webpage has been developed to keep the broader community up to date with recent activities at the LNAR in accordance with CoA B10. Copies of the following documents are made publicly available on the EA NSW website:

<https://www.energyaustralia.com.au/about-us/what-we-do/generating-energy/lamberts-north-ash-repository>

- Environment Assessment
- Project Approval 09\_0186
- Modification 1 Report and Response to Submissions
- Construction Environment Management Plan
- Operation Environmental Management Plan
- Annual Reports
- Environment Protection Licence 13007
- Pollution Incident Response Management Plan
- CCC Minutes

## 10. Independent Environmental Audit

### 10.1 Independent Environmental Audit

An independent environmental audit was performed in October 2018 (SLR, 2018) and all the recommendations and findings have been completed.

### 10.2 Environmental Representative Audit

The audit focused on compliance with the Leachate Barrier Management System in Stage 1 and Stage 2 areas, ensuring alignment with the Lamberts North Ash Placement Project Approval and the Operation Environmental Management Plan (OEMP). The audit reviewed Leachate Barrier System 2.2.4, Linear Installation 5.11.2.1 and Leachate Management 5.11.3 (OEMP, 2022). No non-compliances were found, and the detailed audit report is available in Appendix J.

The installation of the Leachate Barrier Management system in the LNAR demonstrates EnergyAustralia's commitment to achieve environment compliance. The installation of this type of lined ash repository is a large undertaking and requires detailed planning, construction and operational commitment. The lined ash repository is an environmental control measure and improvement to previous practices that are being successfully executed on the LNAR.

## 11. Activities Proposed in the next reporting period

Activities to be conducted in the next reporting period will include:

- Stage 2 design and liner implementation.
- Continued dust suppression activities to minimise potential air quality impacts from the LNAR Stage 1 and Stage 2.
- Water management works, including the maintenance of sediment and erosion control structures.
- Further tree plantings and management of the Biodiversity Offset Area.
- Continued execution of the Conservation Agreement management actions as outlined and required by the Conservation Agreement.
- Continue marketing the reuse of fly ash to cement manufacturers and other potential users.
- Environmental compliance monitoring for noise emissions, air quality and water quality.
- Continue monitoring the ecological health of Wangcol Creek throughout the life of the Project. The monitoring will continue after final capping of the LNAR for a minimum of five years in accordance with approval conditions.

### 11.1 Environmental Management Targets and Strategies for the Next Year

Environmental measures to be implemented in the next reporting period are detailed in 17.

**Table 17 Measures to be implemented in the next reporting period.**

Environment Management Area	Target / Strategy	Timeframe
<b>Ash Delivery and Placement</b>	Continue installing and managing the leachate barrier management system. Stage 2A is currently in progress, and preparations for Stage 2B are underway, with mobilisation planned for October 2024.	2024 onwards
	Mt Piper is continuing to work with NuRock, who are utilising fly-ash from Mt Piper to manufacture bricks, pavers and concrete blocks. NuRock are currently constructing a new plant on site and are continuing to develop their operations. It is expected that the new plant will be commissioned by the end of 2023. During stage one it is estimated that the plant will re-use an estimated 250-280 T of fly ash, per day.	
	Mt Piper will continue to supply and market the reuse of fly ash to cement manufacturers.	
<b>Biodiversity Offset Area</b>	Perform targeted herbicide treatment of the two listed weed species (Blackberry & St John's Wort).	2024 onwards
	Perform manual removal of Blackberry post-herbicide treatment to avoid the potential of re-shooting.	
	Implement Management Plan Actions as required by the Biodiversity Conservation Agreement	

<b>Ecological Monitoring</b>	As per the Project Approval, ongoing monitoring should continue throughout the life of the project and for at least two (2) sampling periods following ash placement. This will maximise the validity of data and allow for more accurate comparisons between baseline data. Data from ongoing surveys will allow more confident conclusions to be made on the presence and duration of any potential impact in Wangcol Creek that could be attributed to the project. It is recommended that sampling continue with the next event to be undertaken in Spring 2024 (Stantec, 2024).	2024 onwards
	Sampling should continue at the additional control sites established on Wangcol Creek (NCR3). While no baseline data is available from this site, control data collected here during future surveys would improve the power of statistical tests and aid in the detection of impacts (Stantec, 2024).	
	Three replicate AUSRIVAS samples should continue to be collected from each site during all future surveys. This will provide a measure of the variation present in each indicator at each site, thereby, improving the ability to detect any future impact by enabling the use of appropriate statistical analysis (Stantec, 2024).	
	At this stage no project specific mitigation, impact minimisation or ameliorative actions are recommended (Stantec, 2024).	
<b>Water Quality</b>	The results of the independent groundwater investigation and ongoing monitoring will be utilised to advise on future management and mitigation options for LNAR.	2024 onwards
	Complete the installation of the leachate barrier management system in Stage 2 area to prevent any potential leachate impacts to groundwater from the LNAR.	2024 onwards.



## 12. References

- Amp Control Group. (September 2023- August 2024). *Energy Australia Air Monitoring Network Environmental Report*.
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## 13. Glossary of Terms

µg/m <sup>3</sup>	Microgram per cubic metre
AHD	Australian Height Datum
ANZECC	Australian & New Zealand Environmental & Conservation Council
AOCR	Annual Operation Compliance Report
AQMP	Air Quality Management Plan
AQMS	Air Quality Monitoring Station
BCA	Brine-conditioned Ash
BCT	Biodiversity Conservation Trust
BOA	Biodiversity Offset Area
BOM	Bureau of Meteorology
BOMP	Biodiversity Offset Management Plan
CCC	Community Consultative Committee
CEMP	Construction Environmental Management Plan
CoA	Conditions of Approval (Project Approval 09_0186)
dB	decibel
DE	Delta Electricity
DECCEWOEH	Office of Environment & Heritage Department of Climate Change, Energy, the Environment and Water
DPE-Water	– Department of Planning & Environment – Water
DPHIE	Department of Planning Housing & Infrastructure Environment
DPI-Fisheries	Department of Primary Industries - Fisheries
EA NSW	EnergyAustralia NSW
ELA	Eco Logical Australia
EMP	Ecological Monitoring Program
EP&A Act	<i>Environment Planning &amp; Assessment Act 1979</i>
EPA	Environment Protection Authority
EPL	Environment Protection Licence
ERM	Environmental Resources Management Australia Pty Ltd
GMMP	Groundwater Management & Monitoring Plan
ha	hectares
LLS	Local Land Services
LN	Lamberts North
LNAR	Lamberts North Ash Repository
LSAR	Lamberts South Ash Repository
m	metres
m/s	Metres per second
Mod	Modification
MPAR	Mt Piper Ash Repository

MPPS	Mt Piper Power Station
MW	Megawatt
NEMMCO	National Electricity Market Management Company
NEPM	National Environmental Protection Measures
NRAR	Natural Resource Access Regulator
NSW	New South Wales
OEMP	Operational Environmental Management Plan
ONMMP	Operational Noise Management & Monitoring Plan
PM	Particulate Matter
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
SoC	Statement of Commitments
SPL	Sound Power Level
SSWMP	Soil & Surface Water Management Plan
T	tonnes
TEOM	Tapered Element Oscillating Membrane
TSP	Total Suspended Particulates
WAL	Water Access Licence
WMP	Waste Management Plan
WQMR	Water Quality Monitoring Report

## Appendix A Conditions of Approval Compliance checklist and status

## Appendix B Annual Summary of Ash Repository Environment Management

## **Appendix C Lamberts North Operational Noise Assessment – April 2024**

## **Appendix D Lamberts North Biodiversity Offset Area Flora & Fauna Monitoring Reports 2022**



## Appendix E Wangcol Creek Ecological Monitoring Program – Spring 2023

## **Appendix F Lamberts North Ash Placement Project - Annual Water Quality Monitoring Report 2023– 2024**

## Appendix G Mt Piper Ash Repository & Lamberts North Rehabilitation Plan

## Appendix H EnergyAustralia NSW Community Sponsorships and Donations from 1 September 2023 – 31 August 2024

Date	Name	Project	Type
Sept 23	Lithgow High School	EnergyAustralia Community Award	Sponsorship
Sept 23	Rydal Show Society	Annual Show	Sponsorship
Sept 23	Lithgow High School	EnergyAustralia Community Award	Sponsorship
Sept 23	Wallerawang Acclimatisation Society	Gone Fishing Day	Sponsorship
Sept 23	St Josephs School Portland	EnergyAustralia Community Award	Sponsorship
Sept 23	Lithgow City Council	Halloween	Sponsorship
Sept 23	Beatlesfest	Beatles Festival	Sponsorship
Oct 23	La Salle Academy Lithgow	EnergyAustralia Community Award	Sponsorship
Oct 23	Portland Central School	EnergyAustralia Community Award	Sponsorship
Oct 23	Jack & Jill Preschool	Wellbeing Program	Grant
Oct 23	Lithgow Bowling Club	Sensory Play Area	Grant
Oct 23	One Mob Aboriginal Corp	Native bush tucker garden	Grant
Oct 23	Pied Piper Preschool Association	Bush Kindy Program	Grant
Oct 23	Portland Central School	Grip Leadership Program	Grant
Oct 23	Lithgow Public School	EnergyAustralia Community Award	Sponsorship
Oct 23	Zig Zag Public School	EnergyAustralia Community Award	Sponsorship
Oct 23	Blinky Bill Preschool	Fundraiser	Donation
Nov 23	Wallerawang Public School	EnergyAustralia Community Award	Sponsorship
Nov 23	St Patricks School	EnergyAustralia Community Award	Sponsorship
Nov 23	St Joseph's Spring Fete	Fundraiser	Donation
Nov 23	Lithgow City Orchestra	Music for Community Mental Wellbeing & Social Inclusion	Grant
Nov 23	Legacy	Fundraiser	\$4\$
Dec 23	Capertee Public School	EnergyAustralia Community Award	Sponsorship

Dec 23	Cooerwull Public School	EnergyAustralia Community Award	Sponsorship
Dec 23	Hampton Public School	EnergyAustralia Community Award	Sponsorship
Dec 23	Lithgow District Chamber of Commerce	Black Rose Business Awards	Sponsorship
Dec 23	Cullen Bullen Rural Fire Service	Christmas BBQ Event	Donation
Dec 23	Movember	Fundraiser	\$4\$
Jan 24	Cullen Bullen Public School	EnergyAustralia Community Award	Sponsorship
Jan 24	Portland Business Association	Portland Soundtrail	Sponsorship
Feb 24	Portland Foundations	Portland Easter Twilight Markets	Donation
March 24	Portland Art Show	Sponsorship of Local Art Show	Sponsorship
March 24	Lithgow Show Society	Annual Show	Sponsorship
April 24	Portland Foundations	Ironfest	Sponsorship
April 24	Lithgow Council	Lithglow	Sponsorship
May 24	Nanna's Touch	Meals for Disadvantaged/Homeless	Sponsorship
June 24	Lithgow Community Projects	Portland Family Fun Day	Grant
June 24	Lithgow High School	Schools Solar & Engineering Challenge	Grant
June 24	Blinky Bill	Uncle Brett Art workshop	Grant
June 24	Oakey Park Resident's Assoc	Meeting Place	Grant
June 24	Brett Battersby Appeal	Fundraiser	\$4\$
July 24	Portland Central School	STEM Robotics	Grant
Aug 24	Meadow Flat Public School	EnergyAustralia Community Award	Sponsorship
Aug 24	Lithgow City Womens Bowling Club	2024 Carnival	Donation
Aug 24	Portland Golf Club	Centenary Celebrations	Donation
Aug 24	Dry July	Fundraiser	\$4\$

## Appendix I Complaints Register

Complaints No.	Date Received	Nature (Enquiry / Notification / Complaint)	Issue(s)	EA NSW Response	Corrective Actions Required	Actions Completed	
						Y / N	Date
No complaints received during reporting period.							

## Appendix J Independent Environmental Audit Finding