

Independent Environmental Audit

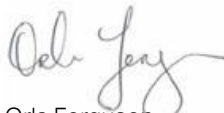

Liddell Open Cut Coal Mine
Development Approval 305-11-01

Liddell Coal Operations Pty Ltd

Project number: 60676450

April, 22 2022

Quality information

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Revision History

Revision	Revision date	Details	Name	Position
1.0	11 April 2022	IEA Draft Report – Review by Operator	KM	Lead Auditor
2.0	22 April 2022	IEA Final Report – For Issue to DPE	KM	Lead Auditor

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Table of Contents

1.	Introduction	9
1.1	Audit Objectives and Scope	9
1.2	Audit Criteria	11
1.3	Audit Period.....	11
2.	Overview of the Development	12
2.1	Liddell Coal Mine Overview	12
2.1.1	Approvals History	12
2.1.3	Topography and Surrounding Land Use.....	15
2.1.4	Operations	15
3.	Methodology.....	18
3.1	Audit Team Selection and Endorsement.....	18
3.2	Audit Program	20
3.2.1	Pre-audit meeting.....	20
3.2.2	Audit Checklist.....	20
3.2.3	Site Inspection.....	20
3.2.4	On-site interviews	21
3.2.5	Audit Evidence	21
3.2.6	Audit Reporting.....	22
3.3	Agency and Community Consultation	22
3.4	Compliance Assessment Criteria	32
4.	Audit Findings	34
4.1	Compliance Overview	34
4.1.1	Development Consent DA 305-11-01.....	34
4.1.2	EPL 2094	36
4.1.3	Mining Leases	38
4.2	Status of the 2019 IEA Recommendations	39
5.	Review of Management Plans.....	42
6.	Environmental Performance Overview	45
6.1	Environmental Aspect Review	45
6.1.1	Noise.....	45
6.1.2	Blasting and Vibration	46
6.1.3	Air Quality	46
6.1.4	Water.....	47
6.1.4.1	Erosion and Sediment Control.....	47
6.1.4.2	Surface Water	47
6.1.4.3	Groundwater.....	50
6.1.5	Biodiversity	54
6.1.6	Aboriginal Cultural Heritage	56
6.1.7	Traffic and Transport.....	56
6.1.8	Visual Impact	56
6.1.9	Waste.....	57
6.1.10	Bushfire Management.....	57
6.1.11	Rehabilitation	58
6.2	Summary of Regulator Actions	63
6.3	Incident Reporting	64
6.4	Complaints Management.....	67

6.5	LCO Environmental Operating Systems.....	67
6.5.1	Compliance Monitoring - CMO	67
6.5.2	Internal Assurance	67
6.5.3	Monthly Inspections	67
6.5.4	Ground Disturbance Permit Process.....	68
7.	IEA Recommendations and Continual Improvement Opportunities.....	69
7.1	Recommendations	69
7.2	Continual Improvement Opportunities.....	69
8.	Limitations	70
	Appendix A Compliance Checklists	71
	Appendix B DPE Endorsement of the Audit Team	72
	Appendix C Photographic Log.....	73
	Appendix D Agency and Community Consultation	74
	Appendix E Audit Plan	75
	Appendix F Independent Audit Declaration Form.....	76

Figures

Figure 1	Site Locality <Source: EA MOD 7 , Hansen Bailey 2018>	14
Figure 2	Site Layout <Source: Annual Review 2020, Glencore 2021>	17
Figure 3	Agency and Community Consultation Feedback Request Example	23

Tables

Table 1.	Non-Compliance Summary	7
Table 2.	Development Consent 305-11-01 IEA Conditions	9
Table 3.	2015 Audit Guideline Requirements	10
Table 4	Development Consent Modification History.....	12
Table 5.	2022 Audit Team.....	18
Table 6.	LCO Attendance at the Opening and Closing Meetings	21
Table 7.	Regulatory Agency and Community Consultation Request Summary	24
Table 8.	Compliance assessment criteria	32
Table 9.	Risk levels for non-compliances.....	32
Table 10.	Non-compliances identified against DA 305-1-01.....	34
Table 11.	Non-compliances identified against EPL 2094	36
Table 12.	Summary of 2019 IEA findings	39
Table 13.	Management Plan Review Summary	42
Table 14.	Surface Water Trigger Summary	49
Table 15	Summary of water level and quality exceedances	51
Table 16	Rehabilitation Status Summary	60
Table 17.	Recorded Incident and Non-Compliance Summary	64
Table 18.	Summary of 2022 IEA Recommendations.....	69
Table 19.	Summary of 2022 IEA Recommendations.....	69

Abbreviations

Term	Description
ACHMP	Aboriginal Cultural Heritage Management Plan
AECOM	AECOM Australia Pty Ltd
AQMMP	Air Quality Management and Monitoring Plan
BAM	BioBanking Assessment Methodology
BAM	Biodiversity Assessment Methodology
BMP	Biodiversity Management Plan
BOMP	Biodiversity Offset Management Plan
CCC	Community Consultative Committee
CHPP	Coal Handling Preparation Plant
CL	Consolidated Lease
COPI	Chain of Ponds Inn
DAWE	Department of Agriculture Water and Environment
DPE	Department of Planning, Industry and Environment
E&C	Environment and Community
EA	Environmental Assessment
EC	Electrical Conductivity
EC	Electrical Conductivity
EMS	Environmental Management System
EPA	Environmental Protection Authority
EPL	Environmental Protection Licence
ESCP	Erosion and Sediment Control Plan
GCAA	Glencore Coal Assets Australia
GDP	Ground Disturbance Permit
HRSTS	Hunter River Salinity Trading Scheme
IWMS	Integrated Water Management System
MIA	Mine Infrastructure Area
ML	Mining Lease
MOD	Modification to Development Consent
MOP	Mining Operations Plan
MSC	Muswellbrook Shire Council
Mtpa	Mega Tonnes Per Annum
NMP	Noise Management Plan
NRAR	Natural Resources Access Regulator
OEH	Office of Environment and Heritage

Term	Description
OFI	Opportunity for Improvement
OGM	Organic Growth Mater
PAD	Potential Archaeological Deposit
RMP	Rehabilitation Management Plan
ROM	Run of Mine Coal
RR	DPE, Resource Regulator
SAL	Sensitive Archaeological Landforms
SC	Singleton Council
Secretary	Secretary of the Department of Planning and Environment or delegate
STP	Sewage Treatment Plant
SWB	Site Water Balance
SWMP	Surface Water Monitoring Program
TARP	Trigger Action Response Protocol
TDS	Total Dissolved Solids
TEOM	Tapered Element Oscillating Microbalance
TSS	Total Suspended Solids
WAL	Water Access Licence
WMP	Water Management Plan

Executive Summary

AECOM Australia Pty Ltd (AECOM) was engaged by Liddell Coal Operations (LCO) to conduct an Independent Environmental Audit (IEA) of the Liddell Coal Mine located in the Upper Hunter Valley, New South Wales. The audit was conducted in accordance with Condition 4 of Schedule 5 of the LCO Development Consent (Development Application (DA)-305-11-01) as issued by the Department of Planning and Environment (DPE or the Department) and also the *Independent Audit Guideline - Post-approval requirements for State significant developments* (DPE, October 2015).

The audit period to which this audit applies is inclusive of the period 7 February 2019 to 11 February 2022. This report presents the findings of this audit.

The audit team consisted of auditors Kate Michelmores (Lead Auditor) and Shani Walton (Auditor) with technical expertise provided by specialists Amanda Kerr (Surface Water), Sian Cox (Groundwater), Patrick Martinez (Noise) and Helen Vickers (Rehabilitation and Mine Closure). Appointment of the audit team was approved by DPE on 3 December 2021.

The audit was inclusive of the following:

- Consultation with regulatory agencies and the chair of the community consultative committee (CCC) to obtain feedback and identification of any key issues to focus on during the audit.
- A four-day site inspection at Liddell Coal Mine which included interviews with key site personnel, inspection of all key aspects of the development
- An assessment of the environmental performance of the development through review of the implementation of key environmental management strategies, plans and programs, non-compliances documented in annual reporting, regulatory actions, incidents and complaints.
- An assessment of compliance against all conditions of DA 305-11-01, Environmental Protection Licence (EPL) 2094 and active mining leases.
- A review of the adequacy of the environmental management strategies, plans and programs required under the consent.

Audit finding summary

The IEA identified a total of seven (7) non-compliances against the conditions of DA 305-11-01, EPL 2094 and mining leases. The identified non-compliances have been summarised in the table below.

Table 1. Non-Compliance Summary

Source	Topic	Non-Compliance Description
DA 305-11-01, SH2, C2b	General – Compliance with conditions of the consent	As a number of non-compliances were identified against DA 305-11-01 this condition is found to be non-compliant. No recommendation is required. Refer to non-compliances below for details of the identified non-compliances.
DA 305-11-01, S3, C4	Blasting	LCO failed to record vibration data at Newdell Zone Substation on 26 October 2021. The reporting failure was due to the cord connecting the vibration monitor being severed by ground maintenance.
DA 305-11-01, S3, C19	Air	LCO failed to meet data collection targets as defined in the AQMMMP on a number of occasions during the audit period.
DA 305-11-01, S5, C5	Report Submission	The 2019 IEA Report was not submitted in accordance with the Department's requested timeframe.
EPL 2094, Condition O5.1	Waste	LCO exceeded the maximum number of 10 tyres per disposal site at five disposal sites on two occasions during the audit period.

Source	Topic	Non-Compliance Description
EPL 2094, Condition M2.2	Air	A number of monitoring points failed to achieve statistically valid samples (which require a minimum 75% data availability for a 24 hour period) during the audit period
EPL 2094, Condition M2.3	Water	Monitoring Point 6 (HRSTS discharge point) failed to monitor turbidity continuously during discharge in accordance with Condition M2.3 due to equipment error between 20/03/2021 and 22/03/2021.

Non-compliances identified against relevant approvals are identified and discussed in Section 4.0. A summary of LCO's overall environmental performance is summarised in Section 6.0 and recommendations for improvement are summarised in Section 7.0.

2022 IEA Conclusion

With regards to environmental management of the site, LCO is led by a competent and knowledgeable environmental department who provided all evidence requested during the audit and diligently facilitated the site inspection component of the audit.

The LCO Environment and Community (E&C) Department has implemented the site's environmental management systems to ensure they are not reliant on the actions of the environment department to remain effective. This approach is complimented by the established systems in place which include corporate Glencore systems and internal site-specific measures.

LCO were transparent with data availability and were open to receiving feedback and discussing contemporary measures with the audit team specialists.

A critical review of the site's approved management plans was conducted by AECOM in 2019 as part of the previous independent audit. Twenty (20) opportunities for improvement (OFI) were made in 2019 following review of the approved management plans, strategies and programs. LCO has adequately addressed the recommendations made in the 2019 IEA. The 2022 IEA identified limited non-compliances or additional OFIs from assessment of the site's DA 305-11-001, EPL 2094, mining leases and approved management plans.

1. Introduction

AECOM Australia Pty Ltd (AECOM) was engaged by Liddell Coal Operations (LCO) to conduct an Independent Environmental Audit (IEA) of the Liddell Coal Mine located in the Upper Hunter Valley, New South Wales.

Condition 4 of Schedule 5 of the LCO Development Consent requires LCO to commission an IEA within a year of the approval of modification application DA 305-11-01 MOD 5, and every 3 years thereafter. To meet this requirement AECOM was commissioned prior to the end of December 2021 to conduct the IEA.

1.1 Audit Objectives and Scope

The core objective of the IEA was to assess LCO's compliance with all requirements of the following regulatory approvals:

- DA 305-11-01 (as modified)
- EPL 2094
- Mining Lease (ML) 1313
- ML 1552
- ML 1597
- Coal Lease (CL) 708.

The requirements for the IEA are set out in Schedule 5 Condition 4 and 5 of the DPE Development Consent 305-11-01 as detailed in Table 2 below.

Table 2. Development Consent 305-11-01 IEA Conditions

DA Condition	Requirement	IEA Reference
DA 305-11-01 Schedule 5 Condition 4	Within a year of the approval of modification application DA 305-11-01 MOD 5, and every 3 years thereafter, unless the Secretary directs otherwise, the Applicant shall commission and pay the full cost of an Independent Environmental Audit of the development. This audit must:	This Report
DA 305-11-01 Schedule 5 Condition 4 (a)	be conducted by a suitably qualified, experienced, and independent team of experts whose appointment has been endorsed by the Secretary;	Appendix B
DA 305-11-01 Schedule 5 Condition 4(b)	include consultation with relevant agencies;	Section 3.3
DA 305-11-01 Schedule 5 Condition 4(c)	assess the environmental performance of the development, and its effects on the surrounding environment	Section 6
DA 305-11-01 Schedule 5 Condition 4(d)	assess whether the development is complying with the relevant standards, performance measures, and statutory requirements;	Appendix A and Section 4
DA 305-11-01 Schedule 5 Condition 4(e)	review the adequacy of any strategy/plan/program required under this consent; and, if necessary,	Section 5
DA 305-11-01 Schedule 5 Condition 4(f)	recommend measures or actions to improve the environmental performance of the development, and/or any strategy/plan/program required under this consent.	Section 7
DA 305-11-01 Schedule 5 Condition 4	Note: This audit team must be led by a suitably qualified auditor and include experts in the field of mine rehabilitation and mine closure.	Appendix A

DA Condition	Requirement	IEA Reference
DA 305-11-01 Schedule 5 Condition 5	Within 6 weeks of completing this audit, or as otherwise agreed by the secretary, the Applicant shall submit a copy of the audit report to the Secretary with a response to any recommendations contained in the audit report.	An extension to the date of submission was granted by the Department on 3 March 2022. The IEA report is required to be submitted before 26 April 2022.

The Department requested the audit be conducted in accordance with the Independent Audit Guideline - Post-approval requirements for State significant developments (2015 audit guideline). The requirements of the 2015 audit guideline are summarised in the table below along with where they have been addressed in the report.

Table 3. 2015 Audit Guideline Requirements

Requirement	IEA Reference
Include the audit objectives, scope and criteria, and other relevant introductory information.	Section 1
Provide a brief overview of the development	Section 2
Include a discussion of the methodology used for the audit including: <ul style="list-style-type: none"> the audit team (with details of qualifications and experience), the approvals and documents audited, and other key documents reviewed, the coverage of the site inspection, including persons interviewed the assessment criteria used 	Section 3 Section 3.1 Section 1.1 Section 3.2.4 Section 3.4
Documentation of the agency and community consultation undertaken and the outcomes of this consultation	Section 3.3
A brief discussion of the actions arising from the previous audit and progress made on addressing these actions	Section 4.2
Checklists for the relevant approval conditions appended to the report identifying each condition, assessing compliance status, documenting verified evidence and providing recommendations for any non-compliance	Appendix A
A summary of the compliance assessment against the relevant approvals in the main audit report followed by specific discussion of any non-compliances, in the order of the condition number	Section 4.1
A discussion of compliance with any management plan requirements, including a summary of overall compliance and specific discussion of any non-compliances and improvement opportunities	Section 5.0 Appendix A
A discussion of compliance with commitments and key project features from the environmental assessment documentation referred to in the consent (e.g. Environmental Impact Statement (EIS), Environmental Assessment (EA), Response to Submissions etc.)	Section 6.0
A discussion of any incidents (including any penalty infringement notices) and complaints and the performance of the development in relation to response and management of these	Section 6.0
A discussion of environmental performance, including: <ul style="list-style-type: none"> a thorough review and assessment of the development's environmental performance addressing each of the key environmental aspects relevant to the development. the effectiveness of the development's environmental management system, review of relevant operational systems (e.g. maintenance of environmental controls), management commitment, risk assessment and management, and training. 	Section 6.0
Identification of any continual improvement opportunities identified as part of the audit	Section 7.0

1.2 Audit Criteria

The audit criteria were developed to achieve the objectives of the audit and to address the request made by the Department, as the lead regulator and feedback received during the consultation process with the relevant environmental regulators.

Compliance with each condition of LCO's Development Consent, EPL and Mining Leases was assessed as part of the audit. Checklists addressing each condition from these approvals, licenses and leases is provided in Appendix A.

In addition, the audit also assessed compliance against relevant criteria relating to LCO's environmental assessment documentation, approved management plans, water licences and sewage treatment plant approvals.

Key criteria considered by the audit, following consultation with key environmental regulatory agencies, are summarised in Section 3.3 below.

1.3 Audit Period

The last IEA carried out at the site under Development Consent DA 305-11-01 was conducted for the period of 31 December 2015 to 7 February 2019. The audit period to which this audit applies is inclusive of the period from the completion date of the last IEA (7 February 2019) to the 11 February 2022 (date of last day of audit site inspection). This report presents the findings of this audit.

2. Overview of the Development

2.1 Liddell Coal Mine Overview

LCO is an established open cut mine located at Ravensworth, approximately 25 kilometres north-west of Singleton in the Upper Hunter Valley of New South Wales (refer to Figure 1). The mining boundary is situated within the jurisdictions of both Muswellbrook Shire Council to the West and Singleton Shire Council to the east. LCO is operated and managed by Liddell Coal Operations Pty Limited, a wholly owned subsidiary of Glencore Coal Pty Limited (Glencore), on behalf of a joint venture between Glencore (67.5%) and Mitsui Matsushima Australia (32.5%).

Mining operations at LCO have been continuous since the 1950s. Operations prior to the 1950s were intermittent, with underground operations commencing in 1923 and open cut operations in 1946. Current open cut operations access the coal reserves previously not mined by the underground operations. The current open cut mining operation has been in operation since 1990.

2.1.1 Approvals History

Development Consent DA 305-11-01 was originally approved on 20 November 2002. The Consent has been modified six times since its approval. The approved modifications (MODs) are detailed in Table 4.

Table 4 Development Consent Modification History

Modification	Description	Date Approved
MOD 2	<ul style="list-style-type: none"> Increase in the maximum total Run of Mine (ROM) coal production from 4.5 to 8 Mtpa; Increase in the mining footprint within the approved South and Barrier Pits by 47 hectares. Construction of a new preparation section of the Coal Handling and Preparation Plant (CHPP) Establishment of a new supplementary coal stockpile; Receival and delivery of up to 1.5 million tonnes per annum (Mtpa) of coal to and from Cumnock No. 1 Colliery; Increase in the maximum transportation rate of reclaimed tailings from 0.3 to 0.5 Mtpa to Macquarie Generation; Realignment of an already approved access road and services corridor relocation of part of the Old New England Highway; Relocation and construction of the open cut mining offices, workshops and associated infrastructure to the southeastern portion of the Liddell development consent area; Construction of a bridge over the Main Northern Railway to provide for more efficient movement of coal and overburden between open cut pits; and Modifications to the footprint and size of the already approved Dam 13B. 	18/07/2007
MOD 3	<ul style="list-style-type: none"> Alterations to the approved intersection layout for the Old New England Highway/mine access road intersection; Minor realignment of the development consent boundary to accommodate the road works; Reuse of treated effluent from the office/workshop complex; and Corrections to numbering in the development consent. 	07/05/2008

Modification	Description	Date Approved
MOD 4	<ul style="list-style-type: none"> Additions to the Mining Infrastructure Area including: Two additional high machinery workshop bays; Additional relocatable admin & workshop offices; Fuel farm extension; Storage shed and compound. 	27/10/2009
MOD 5	<ul style="list-style-type: none"> Extension of the South and Entrance Pits to the southeast and, upon completion of mining in these pits, the mining of coal resources under the Mine Infrastructure Area (MIA) during which time the MIA will be relocated to temporary facilities. The extension will enable the recovery of an additional approximate 38 million tonnes (Mt) of ROM coal. The extension of open cut mining activities will lead to an associated extension of the life of mine at LCO from 2023 to 2028. A tailings emplacement area will be constructed within the final void of the South Pit to dispose of the additional tailings associated with the extension of open cut mining activities. Minor additional infrastructure including: Construction and commissioning of a transfer point and conveyor connected to the existing Mount Owen / Glendell / Macquarie Generation conveyor, enabling LCO to send coal to Ravensworth, and receive coal and crushed gravel from Mt Owen, via the existing conveyor system. The new conveyor will deliver/take material to/from a new 50,000 tonne stockpile; and Infrastructure and ancillary surface disturbance to support the new mining areas will be required, including but not limited to, power lines, water management infrastructure and haul roads. 	01/12/2014
MOD 6	<ul style="list-style-type: none"> Constructing approximately 11 kilometres of tailings pipeline connecting both the Ravensworth Complex and Liddell Colliery Coal Handling and Preparation Plants to the West Pit Void Ravensworth East. Constructing a flocculent plant near the West Pit Void at Ravensworth East. Staged emplacement of tailings generated from Ravensworth and Liddell within the Ravensworth East West Pit Void. Interim utilisation of the Narama Void as a central water storage facility for the Greater Ravensworth Area. 	16/02/2016
MOD 7	<ul style="list-style-type: none"> Minor adjustment to the northern boundary of the consent area to facilitate remediation works in the completed Mountain Block Mining Area. Disturbance of approximately 1 hectare (ha) of remnant vegetation within the established Mountain Block Offset Area to facilitate these remediation works. Minor administrative amendments. 	12/02/2019

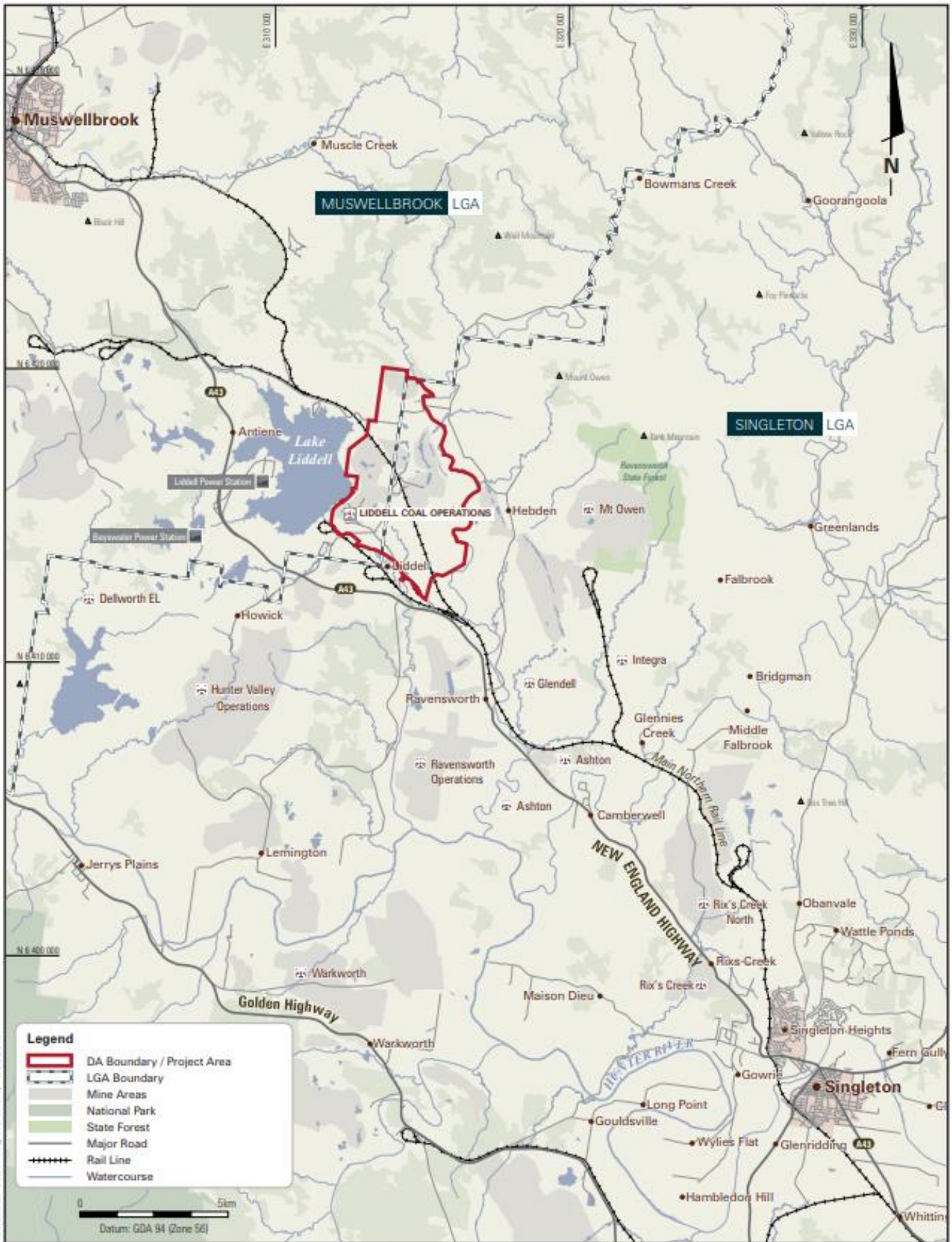


Figure 1 Site Locality <Source: EA MOD 7, Hansen Bailey 2018>

2.1.3 Topography and Surrounding Land Use

The topography at LCO is typically undulating to hilly, extending to lower areas associated with waterways and drainage lines. Natural topography at LCO and the surrounding area has undergone major alterations as a result of progressive open cut mining activities since the early 1950s.

LCO is located within the catchments of Bowmans and Bayswater Creeks and their minor tributaries, which traverse the area in a southerly direction connecting with the Hunter River.

Significant surrounding land use includes the following:

- Ravensworth Operations to the south
- Ravensworth Underground Mine and Ravensworth Central Coal Processing facility to the immediate southwest and AGL Bayswater Power Station further to the southwest
- The Mount Owen Complex to the east
- Lake Liddell and AGL Power Station to the west
- The Main Northern Railway line traverses through LCO from the northwest to the southeast
- Farmland used for grazing to the northeast and northwest.

2.1.4 Operations

LCO has approval to extract up to 8 million tonnes per annum of ROM coal. Mining operations occur in accordance with the approved Mining Operations Plan (MOP) from the Lemington, Pikes Gully, Arties, Liddell, Barrett and Hebden seams. Mining utilises excavator and truck shovel methods of operation to extract both semi-soft and thermal coal.

Product coal is transported to Newcastle Port by rail via the Hunter Valley Rail Loop and Main Northern Railway Line, for sale to the export market.

The site operates 24 hours a day, 7 days a week with a workforce of up to 360 full time workers and approx. 100 contractors. Major components of LCO are summarised below and in Figure 2:

- Mine infrastructure area (MIA) buildings
- Product coal and ROM coal stockpiles
- ROM coal processing in the LCO CHPP
- Co-emplacement of coarse rejects within overburden emplacements
- Tailing's emplacement (Mount Owen West Pit)
- Water management infrastructure including two STPs and oily water separator
- Rail loading facility
- Open cut mining in the South Pit and Entrance Pit
- Rehabilitation areas
- Offset areas.

LCO also has approval to process ROM coal produced from Mt Owen coal mine and to transport ROM coal to Ravensworth CHPP for processing. During the audit period all coal was processed from the LCO CHPP and no coal from Mt Owen was processed on site.

Activities conducted during the audit period include:

- Continued progression of mining operations in a southerly direction in the south pit and entrance pit as well as final clearance and mining in the Bayswater Pit

- Finalised construction and commissioning of the tailings pipeline to Mt Own Complex West Pit. The pipeline is utilised to transport tailings to the West Pit Tailings Emplacement Area at Mt Owen Complex.
- Rehabilitation of the Antiene Tailings Dam.
- Shaping and rehabilitation of Dam 4
- Commencement and completion of the earthworks and remediation of the Mountain Block
- Rehabilitation works in accordance with the MOP.

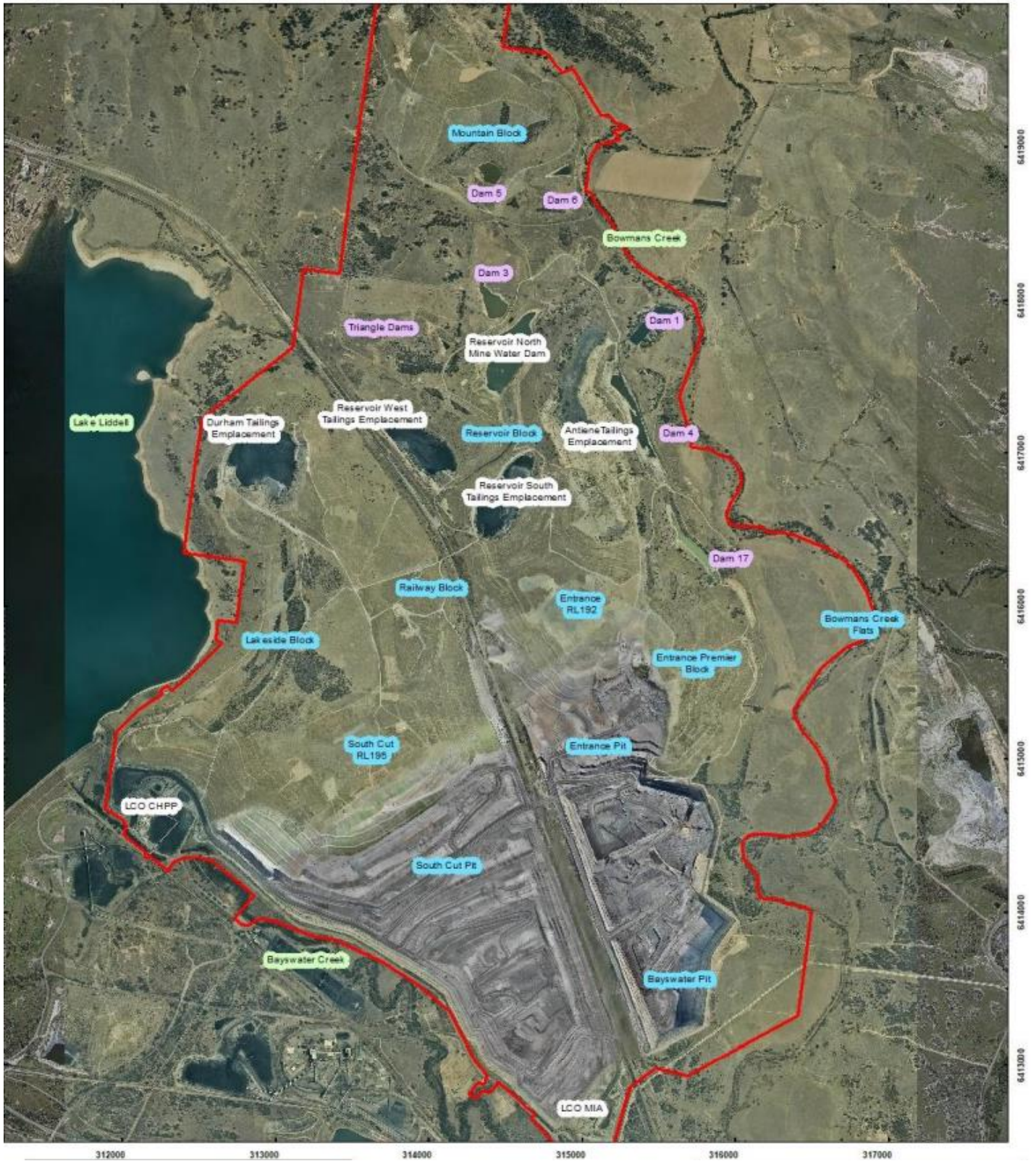


Figure 2 Site Layout <Source: Annual Review 2020, Glencore 2021>

3. Methodology

3.1 Audit Team Selection and Endorsement

The Audit Team consisted of the following qualified, experienced and independent personnel listed in Table 5.

Table 5. 2022 Audit Team

Name	Role on Audit
Kate Michelmore	Lead Auditor and Project Manager
Shani Walton	Auditor
Amanda Kerr	Surface Water Specialist
Sian Cox	Groundwater Specialist
Patrick Martinez	Noise Specialist
Helen Vickers	Rehabilitation and Mine Closure
Orla Ferguson	Deliverable Verifier

Department formally endorsed the AECOM audit team to conduct the 2022 IEA on 3 December 2021 (refer to Appendix B).

A summary of experience and qualifications for each member of the audit team is provided below.

Kate Michelmore is an Exemplar Global certified Auditor and Senior Environmental Scientist with AECOM. Her background in environmental law and science has seen her work in the environmental and safety compliance space for the past 10 years. Kate has been approved by the Department on numerous occasions to conduct independent audits for various coal mines and other industries in NSW. These have included Liddell Coal Mine, Integra Underground Coal Mine, Wilpinjong Coal Mine, Cleanaway Rutherford, IXOM Botany Chloro-Alkali Plant, Warkworth Coal Mine, Mount Thorley Coal Mine and Mount Arthur Mine.

Kate has led various environmental compliance projects for mining, manufacturing, defence, energy, and various industrial clients. She has extensive experience managing complex audit programs and determining compliance with environmental audit criteria in NSW and VIC. Kate currently holds Lead Auditor certification with Exemplar Global as an OHS auditor and Principal Auditor certification as an environmental auditor.

Kate was the Lead Auditor for the LCO IEA, she attended the site visit and was responsible for the consistency and quality of AECOMs deliverable. Kate prepared the audit report with assistance provided by Shani Walton.

Shani Walton is an environmental consultant and project manager with over 25 years' experience in environmental and civil engineering. Shani is certified as a Lead Environmental Auditor by Exemplar Global. Shani has a thorough knowledge of environmental legislation and regulatory requirements and has a proven record in environmental management and approvals. Shani is an experienced environmental manager who has developed construction and operational environmental management plans across a range of industries. Shani's environmental compliance auditing experience includes IEAs as required by Conditions of Consent, environmental performance, compliance with ISO14001 and due diligence audits in the mining, aviation, waste, energy, manufacturing, industrial and corporate sectors.

Shani was an auditor for the LCO IEA. Shani attended the site visit and assisted with determination of audit findings, and development of the audit report.

Amanda Kerr was the **Surface Water Specialist** on the LCO IEA. Amanda has over 22 years professional experience specialising in environmental impact assessment, environmental management, water quality assessment, stormwater management and drainage design. In addition, her fields of expertise include subsidence management, hydrologic and hydraulic analysis and modelling for flood studies, surface water quality and stormwater treatment, flood modelling and erosion and sediment controls.

Her experience includes the preparation of a wide range of post-approval environmental management plans to address: surface water, erosion, mining subsidence, acid sulphate soils, construction impacts and waste.

Amanda has previously been approved by the Department as a surface water specialist and conducted the 2018 IEAs at Wilpinjong Coal Mine, 2019 IEA at Liddell Coal Mine and the 2020 IEA at Integra Underground Coal Mine. Amanda previously assisted the site audit through review of surface water requirements and implementation of monitoring and management actions, as required by the site's Development Consent; and completed the same role as part of the 2022 IEA.

Sian Cox was the **Groundwater Specialist** on the LCO IEA. Sian is a Senior Hydrogeologist with over 10 years' experience working in the environmental consulting industry and is based in Newcastle. Her experience in clean water regional groundwater investigations, contaminated groundwater/soil investigations and environmental site assessments includes: groundwater characterisation, hydrogeological site conception, plume stability modelling, aquifer testing, environmental and resource well design and installation, groundwater and soil sampling, interpretation of soil and groundwater geochemistry, technical reporting, project management and data management.

Sian has experience in site auditing and contaminated site investigation and monitoring at sites including: petroleum depots, fuel facilities, quarries, chemical facilities and various other properties.

Patrick Martinez was the **Noise Specialist** on the LCO IEA. Patrick has over 25 years of acoustic consultancy experience across a range of environmental, mining, transportation, industrial and building acoustic projects. Patrick has extensive experience in noise and vibration impact assessment and has completed many large environmental and transportation design projects. Patrick has also been involved in many large residential planning studies impacted by transportation and industrial noise. Patrick is competent in noise and vibration monitoring, environmental noise modelling and in writing environmental noise and vibration assessment reports.

Patrick has been approved by the Department on numerous occasions to act as a noise specialist on an independent audit team. In relation to mining and environmental projects, Patrick has been responsible for monitoring and assessing: open-cut blasting; noise and vibration associated with mining activities in the Hunter Valley; and has completed scheduled noise monitoring surveys for Bengala, Dartbrook, Ravensworth and Anvil Hill in the Hunter Valley and Newcastle region. Patrick was also responsible for modelling (using SoundPLAN) mining activities for Ravensworth mine. In addition, Patrick has undertaken a number of whole-body vibration studies associated with haul trucks and other mining plant equipment. Patrick has prepared various environmental noise and vibration studies for input into key reports such as Review of Environmental Factors (REF), Statement of Environmental Effects (SEE), Environmental Impact Statement (EIS), and Environmental Management Plan (EMP).

Dr Helen Vickers was the **Rehabilitation and Mine Closure Specialist** on the LCO IEA. Helen has been a practicing ecologist in research and consultancy for over 15 years. During this time she has worked across a broad range of fields including mined land rehabilitation, fire ecology and land management.

Helen has been involved in the following key mining projects: revegetation assessment and development of completion criteria for Rio Tinto's Weipa bauxite operations; impact assessment and reporting within endangered shrub swamps for Centennial Coal's Clarence Colliery; and on-going assessment, reporting and recommendations for CRL/Unimin's Stradbroke Island mineral sands operations. Helen has also worked extensively throughout Central Queensland and the Hunter Valley on a range of coal and phosphate mines where she assessed the status of mined land rehabilitation and provided expert advice and recommendations.

Helen was previously approved by the Department in the role of rehabilitation and mine closure specialist for the 2019 Liddell IEA.

Orla Ferguson was the **Deliverable Verifier** on the LCO IEA. Orla is an experienced Environmental auditor within the industrial, power and high technology sectors and is a certified Lead Environmental Auditor with Exemplar Global. Orla specialises in managing large-scale projects across geographies for compliance assessments, site assessment, remedial selection, and has been the Region Lead for the Regional Contamination Investigation Program (RCIP) for management of contamination risk for Department of Defence across its estate in NSW and the ACT. Orla has been the lead verifier for various successfully delivered environmental auditing projects over the past 2 years. This includes a large-scale environmental compliance program for AGL, InfraBuild, Cleanaway and various other confidential clients.

Orla conducted independent review and detailed checks of audit deliverables. Review of deliverables by an approved AECOM verifier is a requirement of AECOMs certified quality management system.

3.2 Audit Program

3.2.1 Pre-audit meeting

A pre-audit project kick off telephone call was held on 18 January 2022 between the AECOM audit team and LCO's Environment and Community Manager.

3.2.2 Audit Checklist

Audit checklists were prepared prior to the site inspection, based on the requirements of Development Consent DA 305-11-01, EPL 2094 and ML 1597, ML 1313, ML 1552 and CCL 708. The completed checklists are provided in Appendix A.

3.2.3 Site Inspection

An audit plan was prepared for the site component of the IEA. A copy of the audit plan is provided in Appendix E.

A four-day site inspection was conducted at LCO between 8 and 11 February 2022. During the site inspection the weather conditions were hot and mostly sunny with the daytime temperature ranging from 22°C in the morning to 35°C in the afternoon. Rainfall in the region had been above average over the 12 months prior to the audit.

The following areas were inspected by the audit team:

- Haul and Light vehicle roads
- Mining Infrastructure Area
- Workshop
- Chemical storage areas
- Wash bays
- Rehabilitation areas
- Biodiversity offset
- Coal Handling Preparation Plant (CHPP)
- Train loading facilities
- Tailings Dams
- Sewage Treatment Plants
- Water storages

- A sample of environmental monitoring locations.

In accordance with *ISO 19011:2014 Guidelines for auditing management systems* an opening and closing meeting was held during the Site inspection. A summary of the LCO attendees at the opening and closing meeting is provided in the table below.

Photographs taken during the audit inspection are provided in Appendix C.

Table 6. LCO Attendance at the Opening and Closing Meetings

Name	Title	Attendance
Ben De Somer	Environment and Community Manager	Opening & Closing Meeting
Jarith Young	Environment and Community Coordinator	Opening & Closing Meeting
Lori Depczynski	Environment and Community Officer	Opening & Closing Meeting
Lyndall Ingram	Environment and Community Officer	Opening & Closing Meeting
Murray Gregson	Operations Manager	Opening & Closing Meeting
Xavier Wagner	Regional General Manager	Opening meeting
Ben Campbell	Financial Controller	Opening & Closing Meeting
Alan Burns	Maintenance Manager	Opening & Closing Meeting
Neil Gibbs	CHPP Manager	Opening & Closing Meeting
Daniel Nowak	Health, Safety and Training Manager	Opening & Closing Meeting
Steven Claridge	Commercial Manager	Opening & Closing Meeting
Ned Stephenson	Environment and Climate Change Manager (GCAA)	Opening meeting

3.2.4 On-site interviews

Interviews were conducted with key the following personnel:

- Environment and Community Manager
- Environment and Community Coordinator
- Environment and Community Officer's
- Maintenance Manager
- Drill and Blast Engineer's
- Dispatch Operator.

3.2.5 Audit Evidence

The auditors undertook verification activities to confirm the reliability of audit evidence. This included interviews, data checking, the examination of records, and site inspections. Records were provided in electronic and/or hard copy by site personnel and additional documents were reviewed whilst on site.

Some aspects of the audit process may have relied on information, such as judgements and assumptions where external supporting evidence was unavailable or limited. Where this information

was considered, its validity was confirmed to the extent possible prior to use by the auditors and is noted in appropriate areas of the audit checklists.

The majority of information was assessed off-site (e.g. review of management plans). The site inspections concentrated on assessment of the effectiveness of environmental management and adequacy of performance. The extent of audit activities was limited to the time available for the audit site inspections and interviews over four days.

The audit involved the review of a significant amount of evidence. Evidence sighted to validate compliance against each audit condition is summarised in the audit checklists in Appendix A.

3.2.6 Audit Reporting

The outcomes of the audit have been documented in this audit report. The report has been written utilising neutral tone that reflects the facts gathered by the audit team and specialists. Any opinions or conclusions of the audit team that are recorded in the report have been identified as such, along with supporting evidence.

Specialist involvement in the audit involved the following:



- Review of relevant management plans, monitoring undertaken during the audit period and regulatory correspondence received
- Input into the audit site inspection
- Review of relevant sections of the audit report and checklists and provided technical input where required.

3.3 Agency and Community Consultation

In accordance with the Independent Audit Guideline (DPE, 2015) the Lead Auditor informed relevant government agencies of the IEA and provided an opportunity for feedback or comments to be provided. Requests for feedback were sent via email on the 24 January 2022, refer to Figure 3 below for an example of the email request sent.

Figure 3 Agency and Community Consultation Feedback Request Example

RE: Liddell Coal Operations Pty Ltd Independent Environmental Audit - DPIE Agency Consultation Request

 Michelmore, Kate
To  compliance@planning.nsw.gov.au

[Reply](#) [Reply All](#) [Forward](#) [...](#)

Mon 24/01/2022 11:44 AM

Independent Environmental Audit Liddell Coal Mine – REQUEST FOR FEEDBACK PRIOR TO AUDIT SITE INSPECTION
Regulatory Agency – NSW Department of Planning, Industry and Environment

Good Morning,

AECOM Australia Pty Ltd (AECOM) has been endorsed by the Department of Planning, Industry and Environment (the Department) to conduct the 2022 Independent Environmental Audit (IEA) of **Liddell Coal Mine** (the Site) as required by Schedule 5, Condition 4 of the Site's development consent DA 305-11-01, as modified (the consent).

The IEA is to be conducted in accordance with the conditions of the consent, and the Department's *Independent Audit Guideline* ([October 2015](#)). As part of the IEA process we are required to contact each of the key agencies with a role in regulating the Site, to obtain feedback and identify any key issues the audit should focus on, within the audit scope.

To assist with preparation of the IEA site inspection I would appreciate if you could provide any feedback or key issues you may wish to identify which relate to the environmental performance and management of the Site. The IEA period will be from 7 February 2019 to 8 February 2022 and will assess compliance against the conditions from the Sites consent (DA 305-11-01), EPL 2094, Mining Leases and Water Licences. In addition the IEA will review and assess the adequacy of all strategies, programs and plans required under the Consent.

The audit team will be on site to conduct the audit site inspection between the 8 – 11 February 2022. As such, I would appreciate any feedback or information to please be provided prior to the commencement of the audit site inspection on **8 February 2022**.

Please note that a summary of any feedback received will be made public in the IEA report. In addition, copies of all correspondence from regulators will be provided to the Department with the submission of the IEA report.

If you wish to discuss this matter, please contact myself at kate.michelmore@aecom.com or on 0402 156 250.

Kind regards,

Kate Michelmore
Endorsed IEA Lead Auditor
Senior Environmental Scientist, ANZ NAC
M +61 402 156 250
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A summary of the feedback requests sent, and any responses received is provided in Table 7 below. Copies of consultation received is provided in Appendix D.

Table 7. Regulatory Agency and Community Consultation Request Summary

Agency	Consultation	Feedback Summary	2022 IEA Response to Feedback
DPE		Nil received	Nil
NSW Environmental Protection Agency (EPA)		Nil received	Nil
Biodiversity and Conservation Division (BCD)	Letter received on 4 February 2022	Schedule 3, Condition 27 'Long Term Security of Offsets' Has this condition been met? According to the 2019 Independent Environmental Audit Report Conservation Agreements were in progress in September 2018.	Refer to evidence against Schedule 3, Condition 27 in Appendix A The audit concluded that LCO were complying with the requirements of Schedule 3, Condition 27. The Conservation Agreements were formally executed in May 2019 and registered on title by October 2019. Refer to Appendix A for details
		Schedule 3, Condition 28 'Waterbird Habitat' Has this consent condition been triggered? If so, has this condition been met?	Refer to evidence against Schedule 3, Condition 28 in Appendix A Dam 13B has not been constructed, therefore Schedule 3, Condition 28 remains not triggered.
		Schedule 3, Condition 38 'Progressive Rehabilitation' Has this condition been met?	Refer to evidence against Schedule 3, Condition 38 in Appendix A Progressive rehabilitation occurred across the site during the audit period. The audit concluded that LCO were complying with the requirements of Schedule 3, Condition 38. Refer to Appendix A for details.
Singleton Shire Council		Nil received	
Muswellbrook Shire Council	Email received on 7 February 2022	Council staff are particularly interested in the performance of rehabilitation work completed in the Mountain Block MOD7 Area to date and the planning carried out in respect of future rehabilitation work necessary to address rehabilitation requirements of the project approval.	A summary of the status of Mountain Block Rehabilitation is provided in Section 6.1.11.
		Whether management and monitoring measures outlined in Table 8 of the 'Environmental Assessment Modification 7 to DA 305-11-01' (Hansen Bailey, 2018) (MOD7 EA) have been addressed;	The auditors confirm the following has occurred, as required by the MOD 7 EA: <ul style="list-style-type: none"> All required management plans were updated to address the requirements and additional controls associated with MOD 7

Agency Consultation Feedback Summary

2022 IEA Response to Feedback

<p>Whether MOD7 EA commitments have been addressed i.e., employees completed a cultural heritage induction prior to commencing work; and whether a nest box has been established within the neighbouring offset for every hollow bearing tree disturbed as part of MOD7;</p>	<ul style="list-style-type: none"> • The Ground Disturbance Permit (GDP) process was implemented during the audit period for all remediation works conducted. • Targeted pre-clearance surveys were conducted by the LCO E&C Department utilising the Glencore Pre-Clearance form LIDOC-90533967-3989. • The site plans have been updated to incorporate the extension of the DA boundary in the northern section of the Mountain Block Offset Area. <p>MOD 7 EA commitments were incorporated into the revised approved management plans during 2019 revisions following approval of MOD 7. Employees and contractors working at LCO undertake an induction prior to starting any works onsite; that induction and site familiarisation includes general cultural heritage information. As per the ground disturbance permit (GDP) for the MOD 7 area, there were no cultural heritage artefacts identified within the project work area.</p> <p>Hollow bearing trees were identified in the pre-clearance survey conducted on 29 November 2019, as required by the GDP. 19 habitat features were identified and marked in the field with pink tape and spray paint. The 19 habitat features were within the original project footprint however upon review all 19 habitat features were determined to be outside the final clearing extent and were able to be retained.</p> <p>No felling of hollow bearing trees took place and therefore no nest boxes were required to be established. The reduced extent of vegetation clearance is recorded in Table 8 of the LCO Biodiversity Management Plan.</p>
<p>A description of pest and weed control works (including timing and frequency) and a description of follow up maintenance undertaken;</p>	<p>Weed management of target weed species identified by Umwelt through their Biodiversity Monitoring Reports is undertaken by a contractor Enright Land Management. Evidence of the weed species targeted, and their location has been sighted, and in subsequent Umwelt reports, information relating to the success of weed spraying (in general) is recorded. Site inspection noted that weed management is currently occurring and is required to continue throughout rehabilitated areas and offset areas. Annual weed management plans prepared by Enright Land Management were sighted for 2019, 2020 and 2021.</p>
<p>A description of the monitoring program i.e. timing, frequency and monitoring aspect. Please include whether Triggers Action Response</p>	<p>A review against the site’s approved management plans was conducted and identified LCO utilise TARPs as a key mechanics of environmental management on site.</p>

Agency	Consultation	Feedback Summary	2022 IEA Response to Feedback
		<p>Plans (TARPs) have been developed. It is expected that the monitoring program/TARPs would include a review of the following aspects (at least):</p> <ul style="list-style-type: none"> • Ground failure; • Exposed sodic soils; • Vegetation cover; and • Erosion from surface water. 	
		<p>Confirm the status of revegetation and stabilisation and timing for when the Mountain Block MOD7 Area is expected to be managed under the provisions of the Biodiversity Offset Management Plan (BOMP). Noting:</p> <ul style="list-style-type: none"> • Table 3-13 of the BOMP states that in Year 6 "if remediation and revegetation has been completed, the Modification 7 Area transferred back under management of BOMP". Year 6 is described as Aug 2020 – Aug 2021 • Section 5 of the Biodiversity Management Plan (BMP) describes the monitoring program and shows the closest monitoring location to the Mountain Block MOD7 Area being the "Mountain Block Dam" which monitors waterbirds only. It is unclear how the Mountain Block MOD7 Area itself is being monitored (i.e. floristic monitoring, fauna monitoring, soil analysis, stygofauna monitoring) 	<p>Remediation of the Mountain Block MOD 7 area was conducted in 2020, as part of the Mountain Block remediation project. At the time of the audit site inspection, establishment of rehabilitation in the area was being monitored under the requirements of the Biodiversity Management Plan (BMP). Once the area is sufficiently revegetated and stabilised the management of the area will be transferred to the Biodiversity Offset Management Plan (BOMP).</p> <p>The Mountain Block MOD 7 area is included within the BMP footprint, as detailed in the BMP Figures. As stated in Section 3.4 of the BMP, overall management of the Mountain Block MOD 7 area is under the provisions of the BMP. As such, the area is subject to the management controls specified in Section 4 of the BMP.</p> <p>The BMP does not specify monitoring locations in the Mountain Block MOD 7 area, as noted by Muswellbrook Council, however, Section 5.0 of the BMP states the following:</p> <p><i>Additional monitoring sites will be added to assess progressive rehabilitation as it establishes. Until rehabilitation is established, a rehabilitation monitoring program is conducted under the Mining Operations Plan (LIDOC-90533967-5095) to monitor the success of rehabilitation measures and ensure remedial actions are undertaken as necessary.</i></p> <p>Following completion of the remediation project in November 2020, LCO implemented an ongoing monitoring program to determine the success of the remediation project in the Mountain Block MOD 7 area. The monitoring program involves a soil sampling program and a photo monitoring program (including arial mapping) conducted by external consultant SLR Consulting, and the conduct of routine inspections by the LCO E&C Department. Refer to Section 6.1.11 for further details.</p>

Agency Consultation Feedback Summary

2022 IEA Response to Feedback

In addition, annual biodiversity monitoring of the Mountain Block Offset Area was undertaken, by external consultant Umwelt, in accordance with the BOMP. Refer to Section 6.1.5 for further details.

Based on the evidence reviewed the auditors conclude that the Mountain Block MOD 7 area was subject to the management controls detailed in the BMP, however monitoring is also occurring in accordance with the BOMP.

Management of the Mountain Block Offset Area following the completion of the Mountain Block remediation project is complex. Detailed ongoing monitoring and inspections were observed to be being undertaken and no issues were identified with the overall management and monitoring of the area by LCO.

How the management of the area is documented, particularly the delineation and transfer of management between the BMP and the BOMP, is not clearly detailed in either the BMP or BOMP. The auditors are of the view that this is an administrative finding that did not impact the actual management of the area during the audit period. Furthermore, once the area reaches a suitable level of stability and establishment, and management of the area transfers to the BOMP, it is anticipated that the management and monitoring requirements of the Mountain Block MOD 7 Area will be more clearly defined. No timeframe for when this will occur has been provided at this time.

In the immediate future the BMP could benefit from more clearly outlining how biodiversity management of the Mountain Block MOD 7 Area is being undertaken at this time.

A review of mine closure preparedness would be beneficial. Additionally, an outline of how the site will be managed once mining operations have ceased, e.g. management plan updates and/or consolidation (if any) and appropriate water licencing for final landform.

Coal extraction was being undertaken during the audit period. The audit reviewed mine closure planning as part of the assessment of compliance with the condition of DA 305-11-01. Refer to Section 6.1.11

Please pay particular attention to Schedule 3 Condition 5 of DA 305-11-01.

This condition requires LCO to ensure that blasting does not cause any exceedances of the performance measures at the Chain of Ponds Inn (COPI). LCO has developed a Blast Management Strategy – Chain of Ponds Inn (Version 6.0, dated 6 January 2021) with a stated objective of ensuring that blasting at LCO does not cause loss of heritage value and / or have a negligible impact on the structural integrity of the external fabric of the Inn compared to its 2014 condition.

At the time of the audit inspection there were minimal blasts remaining which would be conducted within the 350m control zone of COPI. Once blasting in the

Agency Consultation Feedback Summary

2022 IEA Response to Feedback

	<p>vicinity of COPI has passed the control zone (estimated to be in Q3 of 2022), LCO will conduct any required repairs and progress to close out the COPI Blast Management Strategy. Finalisation of the management commitments of the COPI and the closure of the management strategy should be followed up in the next IEA.</p> <p>Based on the evidence reviewed including the mitigation measures implemented and monitoring results provided by structural engineers from Bill Jordan & Associates, the auditors consider that the performance measures of negligible loss of heritage value and negligible impact on the structural integrity of the internal and external fabric of the Inn are being achieved.</p> <p>Refer to Appendix A for further details.</p>
<p>Majority of the land in the Muswellbrook LGA has a proposed final land use of "grassland-rehabilitation area". As some of this land may be used for cattle grazing, it is expected that it would be required to have appropriate fencing as well as contain sufficient water resources for stock. Please confirm if this is being considered in the closure planning process.</p>	<p>Cattle grazing trials were conducted during the audit period. At the time of the audit, 86 cattle were grazing in South Cut RL 195 Dump rehabilitation area. The area was fenced ensuring cattle could not leave the enclosed area.</p> <p>LCO did not have a final fencing plan at the time of the audit however the location of fencing and water resources for stock were given consideration during the design of final landform.</p>
<p>Confirm that proponent has considered the key finding (Table 3) of the Resources Regulator Compliance Priorities Outcomes (attached) for the Reservoir West and Durham Tailings Emplacements.</p>	<p>Following the Tailings Compliance Priority Project in 2018 RR undertook a planned inspection program at various sites in NSW. A planned inspection of tailings management activities at LCO took place on the 17 December 2019. This targeted assessment of the tailings processes and storage was undertaken to identify risks associated with tailings management and assess compliance with statutory obligations. Following the inspection, LCO was issued a Notice under Section 240 of the <i>Mining Act 1992</i> (s240 notice).</p> <p>Following issue of the s240 notice, LCO progressed the mine closure rehabilitation planning with consideration to the notice directions to adequately identify risks to rehabilitation of tailings emplacement and implement appropriate measures.</p> <p>LCO addressed also the key finding (Table 3) of the Resources Regulator Compliance Priorities Outcomes in the Tailings Rehabilitation Strategy and within the current Mining Operations Plan 2021-2023.</p> <p>Refer to Section 6.2 for additional details on the s240 Tailings Notice.</p>

Agency	Consultation	Feedback Summary	2022 IEA Response to Feedback
Natural Resources Access Regulator (NRAR)		Nil received	Nil
RR	Letter received on 28 January 2022	Review relevant mining leases and exploration licences as agreed with Resources Regulator.	Refer to Appendix A – mining lease checklist.
		Undertake an assessment of compliance against the conditions of title related to environmental management	The IEA scope is detailed in Section 1.1. Details of the assessment of compliance conducted against the DA 305-11-01, EPL and Mining Leases is provided in Appendix A.
		Verify that there is a current Mining Operations Plan (MOP) in place, and it has been approved by the Regulator – review compliance against any conditions of approval of the MOP.	LCO were operating under the MOP 2021-2023 which was approved by RR on 18 March 2021. Refer to Schedule 3, Condition 38 of the DA 305-11-01 Checklist in Appendix A and the Mining Lease Checklist.
		Undertake a critical review of the MOP, including an assessment of its compatibility with the description of operations contained in the planning approval.	The IEA included a review of the MOP to assess its adequacy and implementation status during the audit period. Refer Section 6.1.11 and Appendix A.
		Review the development and implementation of any rehabilitation monitoring programs to assess performance against the nominated objectives and completion criteria – verified by reviewing monitoring reports and rehabilitation inspection records	The auditors reviewed monitoring reports prepared by external consultants during the audit period. In addition, inspection checklists were reviewed to verify compliance with internal rehabilitation monitoring targets. Refer to Section 6.1.11.
		Determine if a rehabilitation care and maintenance program has been developed and implemented based on the outcomes of monitoring program – verified by reviewing Annual Rehabilitation Programs or similar documentation.	No Care and Maintenance program had been developed at the time of the audit. However, this requirement is met through development of the current MOP 2021-2023 and the BMP. LCO have developed an annual rehabilitation plan and annual rehabilitation report card assessment which assess the outcomes of the monitoring programs against the targets in the MOP and BMP.
		Confirm that mining operations are being conducted in accordance with the approved MOP (production, mining sequence etc.), including within the designated MOP approval boundary – to be verified by site plans and site inspection.	The auditors were provided site plans and surveys showing current mining activities occurring during the audit period. Mining operations were conducted within the approved MOP approval boundary and no evidence was reviewed which indicated mining operations were not in accordance with the MOP 2021-2023.

Agency	Consultation	Feedback Summary	2022 IEA Response to Feedback
		<p>Confirm that rehabilitation progress is consistent with the approved MOP as verified by site plans and a site inspection. This should include an evaluation against rehabilitation targets and whether the final landform is being developed in accordance with conceptual final landform in the Project Approval</p>	<p>The auditors sighted site figures showing rehabilitation progress in 2019, 2020, 2021 and at the time of the inspection on 8 February 2022. Rehabilitation progress was consistent with the approved MOP 2021-2023. The auditors reviewed the summaries provided in the Annual Reviews and did not identify any inconsistencies with the data reported compared to rehabilitation monitoring results and site plans.</p>
		<p>Based on a visual inspection, determine if there are any rehabilitation areas that appear to have failed or that have incurred an issue that may result in a delay in achieving the successful rehabilitation outcomes</p>	<p>The auditors remark on the significant progress in rehabilitation of the site since the previous IEA inspection conducted in 2019. Areas of failed rehabilitation sighted in 2019 were reviewed, including the Mountain Block MOD 7 rehabilitation area. Refer to Section 6.1.11 for details.</p>
		<p>the audit should note observations where rehabilitation procedures, practices and outcomes represent best industry practice.</p>	<p>Refer to Section 6.1.11, of note is LCO's approach to ecosystem connectivity not only within the LCO boundaries but across the region.</p>
Department of Agriculture Water and Environment (DAWE)	<p>Email received on 7 February 2022</p>	<p>The Department is seeking clarification of the cause of repeated groundwater trigger exceedances which are required to be reported by the Liddell Coal Operations Water Management Plan. In particular, the department is seeking information to enable it to determine if continued groundwater trigger exceedances are the result of mining activity or another cause.</p>	<p>The groundwater specialist conducted a review of the investigations undertaken in response to the groundwater trigger exceedances recorded in the audit period. Refer to Section 6.1.4 for details. It is noted the audit did not assess compliance with the conditions of approval for EPBC 2013/6908.</p>
		<p>The Department would also like to ensure that the following is being collected in a manner that ensures confidence in the data.</p> <ul style="list-style-type: none"> • all ground and surface water monitoring data associated with this EPBC Approval, including for control/reference sites. This includes baseline data and data collected since the project reporting commenced. • details of any groundwater extractions undertaken for this approved project. This includes baseline data and data collected since the project reporting commenced. • a log of all water trigger exceedances, and the associated investigation reports. All data collected since the project reporting commenced. 	<p>It is noted the audit did not assess compliance with the conditions of approval for EPBC 2013/6908. The audit assessed compliance with the conditions of DA 305-11-01 and EPL 2094.</p> <p>A review was conducted against raw data obtained from compliance monitoring undertaken during the audit period and the summaries provided in the Annual Reviews. The auditors confirmed that the summaries provided in the Annual Reviews were reflective of raw data monitoring results.</p> <p>A detailed review of water trigger exceedances was undertaken by the surface water and groundwater specialists. No deficiencies in LCO's management of the water trigger exceedances was identified. The auditors note that the IEA was limited to review of existing data and processes in place during the audit period. No on-site monitoring was conducted.</p> <p>LCO have in place comprehensive systems to assist with data capture and record keeping of water monitoring. Data was available for review</p>

Agency	Consultation	Feedback Summary	2022 IEA Response to Feedback
CCC Chair	Email received	CCC Independent Chair remarked that she considers this team (the LCO E&C Department) one of the most responsible rehabilitation teams in the Hunter. No further feedback was received.	Nil required

3.4 Compliance Assessment Criteria

The compliance status for each audit condition was assessed in accordance with the criteria in Table 8.

Table 8. Compliance assessment criteria

Assessment	Criteria
Compliant	Where the auditor has collected sufficient verifiable evidence to demonstrate that the intent and all elements of the requirement of the regulatory approval have been complied with within the scope of the audit.
Not verified	Where the auditor has not been able to collect sufficient verifiable evidence to demonstrate that the intent and all elements of the requirement of the regulatory approval have been complied with within the scope of the audit. In the absence of sufficient verification the auditor may in some instances be able to verify by other means (visual inspection, personal communication, etc.) that a requirement has been met. In such a situation, the requirement should still be assessed as not verified. However, the auditor could note in the report that they have no reasons to believe that the operation is non-compliant with that requirement.
Non-compliant	Where the auditor has collected sufficient verifiable evidence to demonstrate that the intent of one or more specific elements of the regulatory approval have not been complied with within the scope of the audit.
Administrative non-compliance	A technical non-compliance with a regulatory approval that would not impact on performance and that is considered minor in nature (e.g. report submitted but not on the due date, failed monitor or late monitoring session). This would not apply to performance-related aspects (e.g. exceedance of a noise limit) or where a requirement had not been met at all (e.g. noise management plan not prepared and submitted for approval).
Not triggered	A regulatory approval requirement has an activation or timing trigger that had not been met at the time of the audit inspection, therefore a determination of compliance could not be made.
Observation	Observations are recorded where the audit identified issues of concern which do not strictly relate to the scope of the audit or assessment of compliance. Further observations are considered to be indicators of potential non-compliances or areas where performance may be improved.
Note	A statement or fact, where no assessment of compliance is required.

Risk levels for any identified non-compliance were categorised as either high, medium, low or administrative, in accordance with the below table.

Table 9. Risk levels for non-compliances

Risk level	Colour code	Description
High		Non-compliance with potential for significant environmental consequences, regardless of the likelihood of occurrence
Medium		Non-compliance with: <ul style="list-style-type: none"> potential for serious environmental consequences, but is unlikely to occur; or potential for moderate environmental consequences, but is likely to occur
Low		Non-compliance with: <ul style="list-style-type: none"> potential for moderate environmental consequences, but is unlikely to occur; or potential for low environmental consequences, but is likely to occur

Risk level	Colour code	Description
Administrative		Only to be applied where the non-compliance does not result in any risk of environmental harm (e.g. submitting a report to government later than required under approval conditions)

4. Audit Findings

4.1 Compliance Overview

This section includes a specific discussion of the identified non-compliances.

4.1.1 Development Consent DA 305-11-01

Table 10. Non-compliances identified against DA 305-11-01

Ref	Source	Requirement	Finding
LC004	SH2, C2b	The Applicant must: comply with the conditions of this consent.	<p>Non-Compliance (Risk Level - Low)</p> <p>A detailed review of compliance was conducted against LCO's Project Approval (PA) 305-11-01. The results from that review are included in this checklist.</p> <p>As a number of non-compliances were identified against DA 305-11-01 this condition is found to be non-compliant. No recommendation is required. Refer to non-compliances detailed below for details of the identified non-compliances.</p> <p>Recommendation - Not required, refer to individual non-compliances.</p>
LC044	S3, C4	<p>Impact Assessment Criteria</p> <p>The Applicant must ensure that blasts on site do not exceed the criteria in Table 2.</p>	<p>Non-Compliance (Risk Level - Low)</p> <p>LCO failed to record vibration data at Newdell Zone Substation on 26 October 2021. The reporting failure was due to the cord connecting the vibration monitoring being severed by ground maintenance not associated with LCO's activities. LCO notified the Department of the failure to report and stated that this will be reported as a non-compliance in the 2021 Annual Review (which was in preparation at the time of the audit).</p> <p>On the basis that LCO failed to record blast vibration data in one instance during the audit period a non-compliance has been made against this condition. LCO had rectified the damaged monitor and additional delineation of the vibration monitoring equipment was added, in consultation with Ausgrid, to prevent this from reoccurring.</p> <p>Recommendation - No recommendation for improvement has been applied in relation to this non-compliance as LCO's response and implemented actions were considered adequate.</p>
LC057	S3, C19	Air Quality Monitoring	<p>Non-Compliance (Risk Level - Low)</p>

Ref	Source	Requirement	Finding
		The Applicant must update and subsequently implement the Air Quality Monitoring Program for the development to the satisfaction of the Secretary.	<p>During the audit period LCO failed to meet data collection targets are defined in the AQMMP on a number of occasions as detailed in the DA 302-11-01 audit checklist against Schedule 3, Condition 19.</p> <p>Section 4.4 of the AQMMP states that LCO continue to work towards achieving a 100% data completeness for compliance dust deposition and HVAS monitoring stations and 90% data availability for real-time monitors. Data availability objectives are further defined in Sections 4.1.1.3.5. In addition, the AMMP defines the data completeness criterion for the purpose of calculating period averages for TEOMs, dust gauges and HVAS to be 75%.</p> <p>A non-compliance has been found with regards to the implementation of the AQMMP. As LCO failed to capture data in accordance with the data completeness targets defined in the AQMMP this condition is found to be non-compliant.</p> <p>Recommendation: <i>No recommendation required</i></p>
LC102	S5, C5	Within 6 weeks of completing this audit, or as otherwise agreed by the Secretary, the Applicant must submit a copy of the audit report to the Secretary with a response to any recommendations contained in the audit report.	<p>Non-Compliance (Risk Level - Administrative)</p> <p>The Department requested a copy of the audit report be submitted within 6 weeks of the audit inspection date. The 2019 IEA site inspection was conducted on 04-07 February 2019. The IEA report was therefore due for submission before the 21 March 2019.</p> <p>This non-compliance was an administrative error that is unlikely to be repeated. LCO have an action in the compliance monitoring database CMO to submit the IEA report before the 26 April 2022. On this basis no recommendation for improvement is deemed to be required.</p> <p>Recommendation: <i>No recommendation required</i></p>

4.1.2 EPL 2094

Table 11. Non-compliances identified against EPL 2094

Ref	Source	Requirement	Finding								
LC143	O5.1	<p>Waste Management</p> <p>The Licensee is authorised to dispose of heavy Plant-tyre waste generated on the premises, in the pit.</p> <p>The Licensee must:</p> <p>a) ensure that heavy Plant waste tyres are re-used on the premises as much as practical;</p> <p>b) ensure that heavy Plant waste tyres are laid flat with a maximum of 10 tyres per site and a minimum distance of 10m between sites;</p> <p>c) ensure that any surplus heavy Plant waste tyres can be emplaced by being spread out on the pit-floor and buried as deep as practical, but, covered by at least 20m of inert material beneath any final rehabilitated surface;</p> <p>d) place heavy Plant waste tyres at least 10m away from coarse reject material or tailings emplacement areas;</p> <p>e) not place any heavy Plant waste tyres near heated material or carbonaceous material; and</p> <p>f) not place any heavy Plant waste tyres in an area likely to leach to any water-course.</p>	<p>Non-Compliance (Risk Level - Low)</p> <p>The maximum number of 10 tyres per disposal site was exceeded at 5 disposal sites on 2 occasions during the audit period including 3 March 2021 and 15 June 2021. Details include the following:</p> <ul style="list-style-type: none"> • 3 sites were identified with 11 tyres • 1 site was identified with 12 tyres • 1 site was identified with 14 tyres <p>LCO reported the exceedance as a non-compliance in the 2020-2021 Annual Return and will report the non-compliance in the 2021 Annual Review, which was in preparation at the time of the audit.</p> <p>2022-REC-01: LCO to develop and implement a tyre disposal checklist.</p>								
LC149	M2.2	<p>Air Monitoring Requirements</p> <p>POINT 9,10,11,12</p> <table border="1"> <thead> <tr> <th>Pollutant</th> <th>Units of measure</th> <th>Frequency</th> <th>Sampling Method</th> </tr> </thead> <tbody> <tr> <td>PM10</td> <td>micrograms per cubic metre</td> <td>Continuous</td> <td>Special Method 1</td> </tr> </tbody> </table>	Pollutant	Units of measure	Frequency	Sampling Method	PM10	micrograms per cubic metre	Continuous	Special Method 1	<p>Non-Compliance (Risk Level - Low)</p> <p>This condition is found to be non-compliant on the basis that LCO failed to achieve statistically valid samples (which require a minimum 75% data availability for a 24 hour period) in the following instances:</p> <p>2019</p> <ul style="list-style-type: none"> • Monitoring Point 9 / SX38-D3: (8 dates in 2019), Annual data availability in 2019 was 98.4% • Monitoring Point 10 / SX38-D4: (2 dates in 2019), Annual data availability in 2019 was 99.3% • Monitoring Point 11 / SX38-D5: (21 dates in 2019), Annual data availability in 2019 was 95.5%
Pollutant	Units of measure	Frequency	Sampling Method								
PM10	micrograms per cubic metre	Continuous	Special Method 1								

Ref	Source	Requirement	Finding
			<ul style="list-style-type: none"> • Monitoring Point 12 / SW38-D6: (12 dates in 2019), Annual data availability in 2019 was 97.9% <p>2020</p> <ul style="list-style-type: none"> • Monitoring Point 9 / SX38-D3: (8 dates in 2020), Annual data availability in 2020 was 98.4% • Monitoring Point 10 / SX38-D4: (11 dates in 2020), Annual data availability in 2020 was 98.0% • Monitoring Point 11 / SX38-D5: (17 dates in 2020), Annual data availability in 2020 was 97.4% • Monitoring Point 12 / SW38-D6: (25 dates in 2020), Annual data availability in 2020 was 94.9% <p>2021</p> <ul style="list-style-type: none"> • Monitoring Point 9 / SX38-D3: (20 dates in 2021), Annual data availability in 2021 was 96.5% • Monitoring Point 10 / SX38-D4: (14 dates in 2021), Annual data availability in 2021 was 98.5% • Monitoring Point 11 / SX38-D5: (13 dates in 2021), Annual data availability in 2021 was 98.7% • Monitoring Point 12 / SW38-D6: (12 dates in 2021), Annual data availability in 2021 was 99.0% <p>Section 4.5 of the National Environment Protection (Ambient Air Quality) Measure Technical Paper No. 5 – Data Collection and Handling, 2001 (Prepared by the National Environment Protection Council Peer Review Committee) identifies that an average concentration can only be valid if it is based on at least 75% of the expected samples in the averaging period. However it is not clear whether this approach has been fully adopted by the EPA. In July 2019 LCO sought clarification from the EPA on an appropriate data availability target for continuous monitoring to factor in a reasonable period of monitor downtime. At the time of the audit LCO had not received a response from the EPA and continue to report EBAM availability for transparency.</p> <p>The evidence reviewed indicates that LCO continues to implement measures to address data failures within its control to the extent practicable. This includes operation of an extensive maintenance program and actions to minimise the occurrence of equipment failures, as detailed in the 2019 IEA report.</p> <p>Despite the above instances in which the four EBAM boundary monitors failed to achieve PM₁₀ daily availability greater than 75%, the overall valid data availability for each unit remained above 94% for all units across the audit period.</p> <p>This condition is found to be non-compliant however based on the actions taken by LCO no recommendation is considered to be necessary.</p> <p>Recommendation: <i>No recommendation required</i></p>

Ref	Source	Requirement	Finding																			
LC150	M2.3	Water and/ or Land Monitoring Requirements	<p>Non-Compliance (Risk Level - Low)</p> <p>Monitoring Point 6 (HRSTS discharge point) failed to monitor turbidity continuously during discharge in accordance with Condition M2.3 due to equipment error between 20/3/21 and 22/3/21.</p> <p>The failure to report was attributed to an equipment error associated with the monitoring sensor. LCO replaced the monitoring sensor and installed a replacement sonde on 22 March 2021. LCO conduct Bi-monthly maintenance on the HRSTS water quality meter. Given the equipment has been repaired and maintenance occurring in accordance with the WMP and manufacturer recommendations no recommendation for improvement has been made.</p> <p><i>Recommendation: No recommendation required</i></p>																			
		<p>POINT 6</p> <table border="1"> <thead> <tr> <th>Pollutant</th> <th>Units of measure</th> <th>Frequency</th> <th>Sampling Method</th> </tr> </thead> <tbody> <tr> <td>Conductivity</td> <td>microsiemens per centimetre</td> <td>Continuous during discharge</td> <td>A probe designed to measure the range 0 to 10,000 uS/cm</td> </tr> <tr> <td>pH</td> <td>pH</td> <td>Daily when wastes discharged</td> <td>Grab sample</td> </tr> <tr> <td>Total suspended solids</td> <td>milligrams per litre</td> <td>Daily when wastes discharged</td> <td>Grab sample</td> </tr> <tr> <td>Turbidity</td> <td>nephelometric turbidity units</td> <td>Continuous during discharge</td> <td>In line instrumentation</td> </tr> </tbody> </table>		Pollutant	Units of measure	Frequency	Sampling Method	Conductivity	microsiemens per centimetre	Continuous during discharge	A probe designed to measure the range 0 to 10,000 uS/cm	pH	pH	Daily when wastes discharged	Grab sample	Total suspended solids	milligrams per litre	Daily when wastes discharged	Grab sample	Turbidity	nephelometric turbidity units	Continuous during discharge
Pollutant	Units of measure	Frequency	Sampling Method																			
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Total suspended solids	milligrams per litre	Daily when wastes discharged	Grab sample																			
Turbidity	nephelometric turbidity units	Continuous during discharge	In line instrumentation																			

4.1.3 Mining Leases

No non-compliances in relation to Mining Lease conditions were identified during the audit period.

4.2 Status of the 2019 IEA Recommendations

The last IEA was conducted by AECOM for the period 31 December 2015 to 7 February 2019. A summary of the 2019 IEA findings and their status at the time of the 2022 IEA is provided in the Table below.

Table 12. Summary of 2019 IEA findings

Reference	2019 IEA Recommendation	2022 IEA Status
2019 IEA REC 001	Obtain building certificates which verify the building was constructed in accordance with the requirements of condition 8, schedule 2.	COMPLETE A construction / occupation certificate could not be obtained in retrospect for the buildings constructed during the previous audit period. LCO instead obtained verification from external contractors Kleinfelder and AcroCert that the building additions were safe to occupy in line with the requirements of the BCA and AS3959-2009. The auditors sighted the completed assessment (dated 16/05/2019 and 22/08/2019) and response from the Department. The Department sent an email on 13 September 2019 acknowledging Liddell's approach and note that they will not take any enforcement action for the breach.
2019 IEA REC 002	Report on waste management and minimisation in the Annual Review	COMPLETE LCO have updated the Annual Reviews to include this information. This is included in Section 6.10 in the 2018, 2019 and 2020 Annual Reviews Liddell have noted this for inclusion in future Annual Reviews
2019 IEA REC 003	Seek clarification from the EPA on an appropriate data availability target for continuous monitoring to factor in a reasonable period of monitor downtime. This could be in the form of a variation to the EPL to include a minimum percentage of time on line (e.g. 90%) for the continuous monitors	COMPLETE In July 2019 LCO sought clarification from the EPA on an appropriate data availability target for continuous monitoring to factor in a reasonable period of monitor downtime. At the time of the audit LCO had not received a response from the EPA and continue to report EBAM availability for transparency. LCO consider this matter to be closed at this time.
2019 IEA OFI 001	Update the Monitoring Plans in Appendix A of the Environmental Management Strategy to reflect current monitoring undertaken e.g. include new groundwater monitoring bore ALV9 and additional realtime monitor (E-BAM) locations.	COMPLETE Appendix A was adequately updated to address this OFI.
2019 IEA OFI 002	It is recommended that the AQMMP reference the specific requirements of EPL monitoring condition M2.2 and improve the discussion of how LCO are complying with the requirements of this condition, specifically the requirement for continuous monitoring and how this is defined.	COMPLETE The LCO AQMMP was updated to reference the specific requirements of EPL monitoring condition M2.2. A discussion on how compliance will be achieved was also included.
2019 IEA OFI 003	It is recommended that the figures in the AQMMP include reference to EPL Monitoring Point numbers (point 9, 10, 11 & 12) or clearly outline the link between the EPA monitoring Point numbers and the LCO unit references (e.g. SX38-D3)	COMPLETE The figures in the AQMMP were revised to include reference to the EPL monitoring point numbers and the LCO unit numbers.

Reference	2019 IEA Recommendation	2022 IEA Status
2019 IEA OFI 004	It is recommended that Section 2.11 of the AQMMP, Air Quality Monitoring, is reviewed and updated to improve readability. For example, improvements could be made to the heading level structure to clearly delineate which monitoring method the sub sections are referring to	COMPLETE Section 2.11 of the AQMMP was updated to improve reliability and clarity as recommended.
2019 IEA OFI 005	Monitor the impacts of grazing by native herbivores (e.g. kangaroos) on vegetation establishment during annual rehabilitation and or biodiversity monitoring and if impacts are identified investigate management strategies to exclude herbivores from impacted areas	COMPLETE Section 5.6 of the BMP was updated to include monitoring of impacts caused by grazing by native herbivores. The impacts and proposed management strategies are assessed during the rehabilitation area walkover inspections.
2019 IEA OFI 006	Include further details in the MOP (RMP) of how the TARP is used as a tool to track progress towards meeting the rehabilitation completion criteria. This could better reflect the input from the annual rehabilitation monitoring, biodiversity monitoring and biodiversity offset monitoring and the recommendations made in these monitoring reports by the specialist ecologists.	COMPLETE The MOP was updated and this OFI was addressed in Section 9.2 of MOP 2021-2023.
2019 IEA OFI 007	It is recommended that LCO review its flora monitoring methodology and analysis with contemporary methods. Any changes adopted should be documented within the BMP.	COMPLETE LCO engaged external consultant Umwelt to provide recommendations on the flora monitoring methodology and analysis within the BMP. Following this the BMP was updated to include the revised methodological from BioBanking Assessment Methodology (BBAM) to the Biodiversity Assessment Methodology (BAM) to bring the document in alignment with contemporary, approved methods.
2019 IEA OFI 008	Biodiversity Management Plan Section 3.3.4 Introduced Species. This Section would benefit from including the species <i>Hyparrhenia hirta</i> (Coolata grass) given its prevalence at nearby offset sites and invasive capability	COMPLETE Section 3.4.4 of the BMP was updated to include Coolatai grass.
2019 IEA OFI 009	Biodiversity Management Plan Section 4.3 Topsoil Management. This section could benefit from a statement that explains that stockpiled soil will be used as soon as practicable to minimise loss of seed store. In addition, this section of the BMP could be enhanced with a statement that indicates that a register detailing the location of topsoil removal and deposition is kept.	COMPLETE Section 4.3 of the BMP was updated to address this OFI.
2019 IEA OFI 010	Include discussion of vehicle weed hygiene management within the BMP and BOMP.	COMPLETE This has been included in the BMP and BOMP
2019 IEA OFI 011	Biodiversity Management Plan Section 4.10 Remnant Vegetation and Habitat Management, this Section could benefit from referencing the Bushfire Management Plan or including information from the Bushfire Management Plan relating to ecological burns and fire intervals for the different communities.	COMPLETE Section 4.3 Topsoil Management has been updated in accordance with this OFI
2019 IEA OFI 012	Biodiversity Management Plan Section 4.11.1 Post-Mining Land Use Design Objectives. This section refers to the rehabilitation strategy which aims to emulate the pre-mining grazing areas yet does not discuss what these pre-mining grazing areas were like. For example, it does not indicate if these pre-mining grazing areas were dominated by native or exotic pastures. It is	COMPLETE Section 4.11.1 of the BMP was updated in accordance with this action.

Reference	2019 IEA Recommendation	2022 IEA Status
	recommended reference to 'pre-mining grazing' areas should be removed and the objective of establishing pasture (native or exotic) suitable for grazing stated.	
2019 IEA OFI 013	Update Section 8.6.4 of the WMP – Ensure consistency with regards to soil type and more clearly detail the design standards LCO adopts demonstrating it is consistent with the Managing Urban Stormwater Soil and Construction, Volume 2E: Mines and Quarries.	COMPLETE Section 8.6.4 of the WMP was updated to address this OFI
2019 IEA OFI 014	Include discussion in the WMP of the oil water separator and the management of the treated water and waste solids. This could reference the Waste Management Bioremediation Area Procedure.	COMPLETE WMP was updated to address this requirement.
2019 IEA OFI 015	Update Figure 9-1, in the WMP, to include the location of the Licensed Discharge Points (LDP 5 and LDP 6) and also show Dam 6.	COMPLETE Figure 9-1 of the WMP was updated to address this requirement.
2019 IEA OFI 016	Change reference to LCO Rehabilitation Plan in WMP to reference the MOP.	COMPLETE Reference to the rehabilitation management has been changed to MOP in the WMP.
2019 IEA OFI 017	Replace faded signage at the CHPP STP	COMPLETE Signage replaced at the CHPP, pipeline delineation replaced.
2019 IEA OFI 018	Biodiversity Offset Strategy Section 3.4 Grazing Management is predominantly focussed on grazing by stock and has limited discussion on the potential impacts of overgrazing by native species (e.g. kangaroos). The BOMP could benefit from some discussion on potential management strategies for overabundant native species.	COMPLETE The BOMP was updated in June 2019 to address this OFI. Specifically, Section 3.4 was updated to discuss potential management strategies for overabundant native species.
2019 IEA OFI 019	With the next EPL Variation, request that the completed Pollution Reduction Programs and Special Conditions are removed from the Licence	COMPLETE LCO submitted a request to the EPA on 28 June 2019 for the completed PRPs and Special Conditions to be removed from the EPL. The EPA removed the completed conditions from EPL 2094 on 12 June 2020 (Licence Variation Notice No. 1590104 s.58 licence variation)
2019 IEA OFI 020	Update the PIRMP to reflect the requirement of ML 1552 to report environmental incidents to the RR.	COMPLETE LCO updated Section 5.1 of the PIRMP to address this OFI.

5. Review of Management Plans

Schedule 5, Condition 4(c) requires the IEA to conduct a review of the adequacy of each management plan required under DA 305-11-01. In addition to address the requirements of the 2015 audit guideline a review of each management plans implementation was conducted to assess if LCO is adequately implementing the controls and management measures committed to within each plan.

In 2019 a detailed review of the approved management plans was conducted by AECOM. A number of opportunities for improvement (OFI) were made which have been addressed by LCO in the audit period. Review for the 2022 IEA found that the management plans were developed generally in accordance with the conditions of DA 302-11-01, and minimal OFIs were made since those identified in 2019.

The results of the implementation review conducted against each plan, strategy and program required by DA 305-11-01 are detailed in the corresponding conditions in the DA 305-11-01 Audit Checklists in Appendix A. A summary of the findings from the reviews is provided in Table 13 below.

Table 13. Management Plan Review Summary

Management Plan	Review Summary
Aboriginal Cultural Heritage Management Plan, LIDOC-90533967-3607, Version 8.0, dated 11/11/2021	<p>Required by Schedule 3, Condition 31 of DA 305-11-01.</p> <p>The Aboriginal and Cultural Heritage Management Plan (ACHMP) was revised twice in the audit period. The most current version (Version 8.0) was developed in consultation with the registered aboriginal parties (RAP) and was subsequently approved by the Department on 17 December 2021.</p> <p>The contents of the ACHMP addressed the requirements of Schedule 3, Condition 31 of DA 305-11-01. Evidence that the ACHMP was adequately implemented during the audit period was provided. No recommendations or opportunities for improvement have been made following review of this plan.</p>
Air Quality Management and Monitoring Plan, LIDOC-90533967-2800, Version 7.0, dated 10/02/2021	<p>Required by Schedule 3, Condition 19 of DA 305-11-01.</p> <p>The Air Quality Management Monitoring Program (AQMMP) was revised twice in the audit period. This includes review and updates made in August 2019 and July 2020. The Department approved the updated and most recent version on 29 January 2021.</p> <p>The AQMMP was revised following approval of MOD 7 of DA 305-11-01 to address the change in the note applicable to short term PM₁₀ criteria. The AQMMP was reviewed to assess its adequacy in reducing and controlling dust emission from the site. The LCO AQMMP is a comprehensive document which covers all of the areas required of an AQMMP for a coal mine. The review determined that the AQMMP is generally adequate in addressing the requirements of DA 305-11-01 and EPL 2094. No recommendations or opportunities for improvement have been made following review of this plan.</p>
Biodiversity Management Plan, LIDOC-90533967-3689, Version 12.0, dated 27/10/2021	<p>Required by Schedule 3, Condition 29 of DA 305-11-01.</p> <p>The Biodiversity Management Plan (BMP) was updated on three occasions during the audit period. The most recent version, Version 12.0 as approved by the Department on 29 January 2021.</p> <p>Recommendations and OFIs made by AECOM in the previous IEA were addressed in the revisions of the BMP. Following review the auditors consider the BMP addressed the requirements of Schedule 3, Condition 29 of DA 305-11-01. Evidence that the BMP was adequately implemented during the audit period was provided.</p> <p>One OFI has been made for LCO to consider clearly outlining how biodiversity management of the Mountain Block MOD 7 Area is being undertaken at this time.</p>
Biodiversity Offset Management Plan, LIDOC-	Schedule 3, Condition 24 of DA 305-11-01 requires LCO to implement the biodiversity offset strategy described in the original EA.

Management Plan

Review Summary

90533967-3755, Version 10.0, dated 17/02/2021	<p>The Biodiversity Offset Management Plan (BOMP) was updated on three occasions during the audit period. Version 11 of the BOMP was submitted to the Department for approval on 6 August 2021 and subsequently approved by the Department on 29 July 2021.</p> <p>Evidence that the BOMP was adequately prepared and implemented during the audit period was provided.</p> <p>One OFI has been made for LCO consider adding to the BOMP a monitoring point in the MOD 7 offset area to enable monitoring against the offset objectives.</p>
Blast Management Plan, LIDOC-90533967-3742, dated 05/01/2021	<p>Required by Schedule 3, Condition 15A of DA 305-11-01.</p> <p>The Blast Management Plan was updated two times since the last IEA was conducted. The latest revised version (Version 8.0) of the BMP was approved by the Department 23 December 2020.</p>
Blast Management Strategy – Chain of Ponds Inn	<p>The contents of the BMP addressed the requirements of Schedule 3, Condition 15A of DA 305-11-01. Evidence that the Blast Management Plan and associated sub plans were adequately implemented during the audit period was provided. No recommendations or opportunities for improvement have been made following review of this plan.</p>
Blast Management Strategy – Newdell Zone Substation	<p>It is noted that once blasting in the vicinity of COPI and Newdell Zone Substation has passed the 350m control zone (estimated to be in Q3 of 2022), LCO will conduct required repairs and progress to close out the Blast Management Strategy for COPI and Newdell Zone Substation. Finalisation of the management commitments of the COPI and closure of the management strategies should be followed up in the next IEA.</p>
Environmental Management Strategy, LIDOC-90533967-797, Version 13.0, dated 19/03/2021	<p>Required by Schedule 5, Condition 1 of DA 305-11-01.</p> <p>The Environmental Management Strategy (EMS) was updated twice during the audit period. This includes the following:</p> <ul style="list-style-type: none"> • Version 12.0 which was submitted to the Department for approval on 5 August 2019. The Department approved Version 12.0 of the EMS on 8 August 2019. • Version 13.0 which was submitted to the Department for approval on 19 March 2021. The Department approved Version 13.0 of the EMS on 24 March 2021.
Mining Operations Plan 2021 – 2023, Version 1.0, dated 18/03/2021	<p>LCO's Rehabilitation Management Plan is incorporated within the site's Mining Operations Plan (MOP). Refer to Section 6.1.11 for details on development of the MOP during the audit period.</p> <p>The current MOP for the period 2021-2023 was approved by RR on 18 March 2021.</p> <p>The MOP was prepared in consultation with the required agencies, including the NRAR, Department of Industry (formerly DPI-Water), Biodiversity and Conservation Division (BCD – formerly OEH), Muswellbrook Council and Singleton Council.</p> <p>A review of rehabilitation activities conducted in accordance with the MOP was undertaken as part of the IEA. Section 6.1.11 of this report documents the findings from this review.</p> <p>The auditors were satisfied that the MOP 2021-2023 was adequately implemented since its commencement.</p>
Noise Monitoring Plan, LIDOC-90533967-1114, Version 11.0, dated 23/12/2021	<p>Required by Schedule 3, Condition 3 of DA 305-11-01.</p> <p>The Noise Management plan (NMP) was updated three times since the last IEA was conducted. The latest revised version (Version 11.0) of the NMP was approved by the Department 3 February 2021.</p> <p>The contents of the NMP addressed the requirements of Schedule 3, Condition 3 of DA 305-11-01. Evidence that the NMP was adequately implemented during the audit period was provided. No recommendations or opportunities for improvement have been made following review of this plan.</p>

Management Plan

Water Management Plan,
LIDOC-90533967-3694,
Version 13.0, dated
01/07/2021

Review Summary

General

Required by Schedule 3, Condition 23 of DA 305-11-01.

The Water Management Plan (WMP) was revised and updated on two occasions during the audit period. This includes on 2 July 2019 to reflect approval of MOD 7 and on 20 July 2021 to include revised EPL points and requirements. The Department approved the latest version of the WMP, version 13.0, on 20 May 2021.

The auditors were satisfied the WMP had been prepared in accordance with Schedule 3, Condition 23. Recommendations made in the 2019 IEA by AECOM had been addressed during revision of the WMP. Following review of the implementation of the WMP the auditors concluded that the WMP was being adequately implemented during the audit period. No recommendations for improvement of the WMP were identified.

Erosion and Sediment Control Plan

Required by Schedule 3, Condition 23ii of DA 305-11-01.

The Erosion and Sediment Control Plan (ESCP) is included in Section 8 of the WMP. The 2019 IEA found that the ESCP (part of the WMP) generally complied with Schedule 2, Condition 23 (ii). However the 2019 IEA recommended that Section 8.6.4 of the WMP be updated to ensure consistency with regards to soil type and more clearly detail the design standards LCO adopts demonstrating it is consistent with the Managing Urban Stormwater Soil and Construction, Volume 2E: Mines and Quarries.

WMP Section 8 Erosion and Sediment Control has been updated to reference Managing Urban Stormwater Soil and Construction, Volume 2E: Mines and Quarries. Section 8.6.4 Sediment Dams states that typically sizing calculations assume Type F or D soil material; and includes typical sediment dam design details.

Surface Water Management Plan

Required by Schedule 3, Condition 23iii of DA 305-11-01.

The Surface Water Management Plan (SWMP) is included in Section 10.1 of the WMP. The structure and content of the WMP, Surface Water Management Plan (SWMP) were reviewed in detail during the 2019 IEA. The auditors carried out a high-level review and determined that the WMP continues to meet the requirements of this condition.

The SWMP provides a baseline on surface water quality in potentially affected waterbodies, description of the water management system, performance criteria, monitoring program and response plan in the event of exceedances.

The SWMP is considered to be generally adequate at addressing the requirements of DA 305-11-01 and EPL 2094.

Groundwater Management Plan

Required by Schedule 3, Condition 23iv of DA 305-11-01.

The Groundwater Management Plan (GWMP) is included within the WMP, specifically Sections 5,6 and Section 9.2.2. The GWMP details LCO's requirements and methodology for monitoring the bore network in a clear and efficient manner. The GWMP also outlines the response measures that will be implemented should an exceedance of trigger levels for water level and groundwater quality occur.

6. Environmental Performance Overview

In order to address the requirement of Schedule 5, Condition 4(c) a review of the environmental performance at LCO over the audit period was conducted. To satisfy the requirements of the 2015 Audit Guideline the environmental performance review included the following:

- a review of each of the key environmental aspects relevant to the development including a discussion of compliance with EA commitments.
- A review of any regulatory actions or instructions given during the audit period
- A review of incidents and incident investigation results during the audit period
- A review of community complaints received during the audit period
- A review of relevant operating systems, risk management approach, management interaction as well as training and competencies of staff, contractors and visitors at LCO.

Findings have been succinctly summarised in the below sections. Further details on each topic reviewed can be found in the relevant sections of the audit checklist provided in Appendix A.

6.1 Environmental Aspect Review

6.1.1 Noise

The main sources of noise at LCO include:

- Mine generated noise from heavy vehicles
- Operations conducted at the CHPP
- Train Loading - Train loading is scheduled by the Hunter Valley Coal Chain, and occurs concurrently with other generators on the loop to maximise the capacity of the system
- Construction noise – where and when construction is occurring
- Road Traffic Noise – identified by Global Acoustics to be minimal.

Noise at LCO is managed in accordance with the NMP. LCO operates a comprehensive Noise Management System that uses a combination of predictive meteorological forecasting and real-time noise monitoring data to guide the day-to-day planning of mining operations.

Various operational controls were implemented during the audit site inspection. The controls were consistent with those outlined in the NMP and internal noise management procedure. A summary of the operational noise controls implemented during the audit period has been provided in the Audit Checklist against Schedule 3, Condition 2 of DA 305-11-01.

LCO has engaged Global Acoustics to undertake monthly attended noise monitoring at two approved locations in close proximity to the assigned residential locations specified in Table 1 of DA 305-11-01. Attended noise monitoring is undertaken once per calendar month at the representative locations in accordance with the EPA 'Industrial Noise Policy' (INP) guidelines and Australian Standard AS 1055 'Acoustics, Description and Measurement of Environmental Noise'. The attended noise monitoring survey is used to quantify and describe the acoustic environment at each monitoring location and assess compliance with the noise impact assessment criteria outlined in Schedule 3, Condition 1 of the Development Consent.

Review of Global Acoustics monthly noise survey results and evidence provided by LCO, i.e. noise complaints register, indicates that LCO are compliant with Development Consent and EPL's noise and vibration requirements.

No exceedances of noise criteria limits occurred during the audit period. In addition, no complaints were received in relation to noise emitted from site.

Based on the evidence reviewed, the NMP was considered to have been generally implemented at the time of the audit.

6.1.2 Blasting and Vibration

Blast management is coordinated in accordance with the LCO Blast Management Plan, as well as the Blast Management Strategy Chain of Ponds Inn and the Blast Management Strategy Newdell Zone Substation. Monitoring of overpressure and vibration associated with blasting activities at LCO is undertaken at two privately owned residences, the Chain of Ponds Inn and the Newdell Zone Substation. Ecotec monitors are in place in accordance with the Blast Management Plan with blast results made available on the LCO website each month.

The auditors reviewed raw data obtained from each blast which occurred in the audit period (a total of 327) and conducted a review of non-compliances, complaints and incidents. No exceedances of blast criteria were recorded during the audit period however LCO did fail to record vibration data at Newdell Zone Substation on 26 October 2021. The reporting failure was due to the cord connecting the vibration monitoring being severed by ground maintenance conducted by the Substation owner. LCO notified the Department of the failure to report and stated that this will be reported as a non-compliance in the 2021 Annual Review.

One incident occurred on 11 June 2021 following a blast event which resulted in a Level 4 blast fume rating being recorded. The fume rating was identified in accordance with the LCO Post Blast Fume Procedure. Notification to the Department is required for any post blast fume event that rates a 4 or 5.

LCO reported the incident to the Department on 11 May 2021. Reporting and actions following the incident were conducted in accordance with the blast management plan. Following the incident LCO made updates to the blast loading procedures to require loading of the waterproof Fortis product in low lying areas where ponding is possible due to seam dip or mine sequence regardless of the rainfall forecast. The incident will be reported in the 2021 Annual Review.

6.1.3 Air Quality

LCO manages air quality in accordance with the AQMMP. The following air quality monitoring is undertaken:

- Compliance Monitoring – Utilising a network of total suspended particles (TSP) and PM₁₀ monitors, Real time Tapered Element Oscillating Microbalance (TEOM) monitors and dust deposition gauges.
- Management Monitoring – Real time monitoring utilised for reactive dust management in accordance with the LCO Dust Management Trigger Action Response Plan (TARP) (E-BAM monitoring stations).
- Supplementary Boundary Monitoring – relocatable boundary monitoring (E-BAM monitoring stations)

As summarised against Schedule 3, Condition 16 of DA 305-11-01 (Appendix A) a number of exceedances of short-term impact assessment criteria for PM₁₀ were recorded during the audit period. This included

- Monitoring unit SX38-D1: 37 exceedances in 2019 and 8 exceedances in 2020.
- Monitoring unit SX38-D2: 48 exceedances in 2019 and 9 exceedances in 2020.
- Monitoring unit HVAS 21: 7 exceedances in 2019 and 1 exceedance in 2020.
- Monitoring unit HVAS 12: 8 exceedances in 2019 and 1 exceedance in 2020.

In all instances LCO investigations determined that extraordinary events or regional conditions resulted in the exceedances opposed to direct contribution by LCO operations. In reaching the conclusion that LCO activities did not cause the exceedance, LCOs investigation considered the meteorological data (prevailing winds), real-time monitoring results (no alarms had been triggered),

boundary monitoring results and Upper Hunter Air Quality Monitoring Network. No recommendations for improvement of the investigation process were identified.

MOD 7 of LCO's DA 305-11-01 was approved on 12 February 2019. Prior to this note 'a' to Table 3-5 of DA 305-11-01, short term impact criteria, was applicable to the Total Impact i.e. the incremental increase in concentrations due to the development plus background contributions due to all other sources. Following approval of MOD 7, the updated consolidated consent amended the short term PM₁₀ criteria to be subject to note 'b' Incremental Impact (i.e. incremental increase in concentrations due to the development on its own). The exceedances noted above would not have been considered non-compliant (after the date of approval of MOD 7) as they were considered to be caused by increased background concentrations from other sources.

LCO failed to conduct continuous air quality monitoring for PM₁₀ in accordance with DA 305-11-01 and EPL 2094 requirements. A summary of the non-compliance is provided against Schedule 3, Condition 16 of DA 305-11-01 and M2.2 of EPL 2094 (Appendix A).

6.1.4 Water

LCO manages water through an Integrated Water Management System which includes groundwater, surface runoff, mine water from the open cut and underground mining areas and decant from the CHPP tailings storages. Water is managed in accordance with the site's WMP. The WMP incorporates the following:

- Site Water Balance (Condition 23(c)(i), Schedule 3 of DA 305-11-01)
- Erosion and Sediment Control Plan (Condition 23(c)(ii), Schedule 3 of DA 305-11-01)
- Groundwater Management Plan (Condition 23(c)(iv), Schedule 3 of DA 305-11-01)
- Surface Water Management Plan (Condition 23(c)(iii), Schedule 3 of DA 305-11-01)

6.1.4.1 Erosion and Sediment Control

The ESCP is outlined in Section 8 of the WMP. LCO identifies the following potential erosion and sedimentation impacts which may result from LCOs mining operations and related activities:

- increased runoff volumes and velocities from the removal of vegetation, land disturbance and the introduction of impervious surfaces on the hard stand areas
- increased potential for sedimentation to occur from increased erosion and runoff associated with open cut mining, stockpiling of material and the construction of surface facilities, access roads/tracks and exploration drilling
- potential decline in water quality and degradation of local amenities through increased potential for transfer of sediment and dust to nearby watercourses
- potential for changes in discharge volumes and quality under the LCO discharge licence.

The ESCP provides control measures appropriate for these activities in order to prevent adverse impacts on surrounding catchment areas and receiving waters. The ESCP was considered to be well implemented. Evidence sighted during the audit to demonstrate this included example of monthly environmental inspection reports, pre and post rainfall inspection reports, completed Ground Disturbance Permits, and sediment basin calculations.

The audit site inspection observed that drains, water management controls, and erosion and sediment controls were typically in well-maintained order.

6.1.4.2 Surface Water

Water at LCO is managed through an Integrated Water Management System (IWMS) encompassing groundwater, surface runoff, mine water from open cut and (former) underground mining areas and decant from tailings storages. Water is sourced from groundwater in the former underground mining voids, and surface water that accumulations in above ground mind storages, open cut sumps and tailings decant.

Water intercepted by the mining operations meets the site raw water supply requirement (WMP, 2021). Surplus water onsite can be either discharged under the Hunter River Salinity Trading Scheme (HRSTS), pumped back into underground workings or transferred offsite. Off-site transfer decisions are guided using a life-of-mine water balance model and Greater Ravensworth Area Water System which predicts future water supply security and risks of excess open cut pit water.

As mining progresses, new water management structures are constructed and/or decommissioned, as required, to ensure containment of mine-affected water. The IWMS enables pumping of water around the site, typically from the Reservoir North Dam as the central storage for the site. The Reservoir North Dam supplies the LCO CHPP, and occasionally Ravensworth CHPP, Hunter Valley Operations Howick and Newdell CHPPs, and the Mt Owen Complex.

To prevent water inflow to the open cut pits (from former underground workings) from disrupting the open cut operations, water is extracted from the former underground workings and transferred primarily to the Reservoir North Dam, via a number of staging dams and pumps. Surface water runoff collected in both open cut pits and other dams can also be pumped to the Reservoir North Dam.

Water is preferentially recycled on site for use in the CHPP washing process, for haul road dust suppression, to maintain the statutory volumes of water required for operational purposes and to control spontaneous combustion in the open cut pits. Water is also lost through evaporation or discharged via Licences Discharge Points. Sewage is treated onsite and either reused within the IWMS or disposed of at a designated effluent irrigation area.

Surface Water Monitoring

Surface water monitoring is undertaken along the two creek lines adjacent to the operation (Bayswater Creek and Bowmans Creek) as well as on site water storages. The monitoring program applies site-specific water quality trigger limits for the identification of potential adverse impacts.

The surface water quality monitoring program applies the following methodology:

- Monitoring locations: three sites on Bayswater Creek, and eight sites on Bowmans Creek, representing a range of upstream, midstream and downstream locations
- sampling parameters include: pH, electrical conductivity (EC), total suspended solids (TSS), total dissolved solids (TDS), and turbidity
- collection and analysis of surface water samples on a monthly frequency.

The trigger limits/ impact assessment criteria were determined on a statistical analysis of data collected over a five (5) year period (between 2009 - 2014) and are documented in the WMP. Impact assessment criteria was determined based on adoption of the 90th percentile concentration (when creek is flowing) or Maximum values (no flow).

In addition to the above water quality monitoring, the surface water monitoring program at LCO includes:

- annual monitoring program to monitor creek line channel stability and health of riparian vegetation
- stream flow gauging on Bowmans Creek (upstream and downstream of the active mining areas)
- monitoring of treated effluent generated from the wastewater treatment plan (for E. coli).

Under the WMP, three or more consecutive exceedances of the impact assessment criteria / water quality trigger levels instigates an Investigation Trigger Action Response Plan (ITARP).

Investigation into Surface Water Exceedances

A review of surface water trigger exceedances was conducted as part of the IEA. The following triggers were identified during the audit period, as captured in the WMP Surface Water Trigger Summary spreadsheet provided to the auditors:

Table 14. Surface Water Trigger Summary

Monitoring Site	2019	2020	2021
Bowmans Creek (BCK) 1	No Exceedances reported	Exceedance of TSS in January	No Exceedances reported
BCK1A	Exceedances of EC and TDS in all months except September	Exceedances of EC in January, February, March, May and June. Exceedance of TSS in January and February Exceedance of TDS in January, February, March and May	No Exceedances reported
BCK2	No Exceedances reported	Exceedance of pH in August	No Exceedances reported
BCK2A	No Exceedances reported	No Exceedances reported	No Exceedances reported
BCK3	Exceedance of TSS in May	Exceedance of TSS in March and July	No Exceedances reported
BCK4	No Exceedances reported	Exceedance of TSS in November	No Exceedances reported
BCK5	No Exceedances reported	Exceedance of TSS in December	No Exceedances reported
BCK6	No Exceedances reported	Exceedance of pH in April	No Exceedances reported
Bayswater Creek Upstream	No Exceedances reported	No Exceedances reported	Exceedance of TDS in August
Bayswater Creek Midstream	No Exceedances reported	No Exceedances reported	Exceedance of EC and TDS in March, April, May, July, August, September, October and November (also February for TDS) Exceedance of pH in November
Bayswater Creek Downstream	No Exceedances reported	No Exceedances reported	Exceedance of pH in November

As per the WMP, an investigation is required when a nominated trigger value is exceeded three or more times consecutively. Action to be taken includes checking flow conditions within the creek, resampling, and reviewing of all data as required. Evidence of investigations being conducted and notifications to the Department being made were sighted and reviewed during the course of this IEA.

Investigation Trigger Action Response Plans conducted and reported to the Department concluded that (in summary):

- the exceedances were the result of background variations in response to low rainfall, prolonged drought conditions and were not the result of any mining activities at LCO. The extreme climatic conditions had resulted in an elevated EC and limited surface water flow.
- it was unlikely that actual or potential environmental harm had occurred.

These findings were supported by the hydrogeological assessment conducted by WSP in 2021.

LCO's response to surface water triggers was in accordance with the approved WMP. Investigations appear to be thorough and monitoring records are consistent with those reported by LCO in the Annual Reviews. LCO provides detailed summaries of the actions taken to investigate water quality

triggers. The auditors reviewed the summaries reported in the Annual Reviews against the data captured from monthly monitoring and information presented in water quality reports provided by external consultants. The auditors conclude that the information reported by LCO is consistent with the data collected and trigger investigation summaries.

LCO continue to implement the water monitoring program outlined in the WMP and continues to collect and analyse monthly surface water data.

6.1.4.3 Groundwater

Water at LCO is managed as per the WMP approved under NSW DA305-11-01 and EPBC 2013/6908. The GWMP is outlined in Section 9.2 of the WMP (Liddell Glencore, 2021).

The groundwater monitoring network comprises a network of 13 piezometers located across the site. Groundwater level and limited water quality (electrical conductivity and pH) monitoring is carried out at least monthly on the shallow, unconfined, water table aquifers of Bowmans Creek alluvium and the underlying shallow bedrock. Water pressure monitoring is carried out at least monthly on the deeper, confined, hard rock aquifers.

In accordance with condition 23 (c)(iv) of DA 305-11-01, the GWMP was developed to monitor:

- groundwater inflows to the mining operations
- seepage/leachate from water storages, emplacements and final voids
- background changes in groundwater yield/quality against mine-induced changes
- impacts of the development on:
 - regional and local (including alluvial) aquifers
 - groundwater dependant ecosystems and riparian vegetation
 - the seepage/leachate from water storages, emplacements, backfilled voids and final voids
 - any impacts on the Bowmans Creek alluvial aquifer.

Water at LCO is managed through the Integrated Water Management System (IWMS) which incorporates groundwater, surface runoff, mine water from the two open cut operations (South Pit and Entrance Pit), several former underground mining areas, and decant from the CHPP tailings storages. The open cuts have and are advancing from north to south with overburden placement behind (i.e. to the north of) active mining operations. The groundwater component is made up of groundwater bores that target the alluvial aquifers associated with Bayswater and Bowmans Creeks, the shallow (weathered) bedrock, overburden, Pikes Gully Seams and the Hazeldene (Liddell) workings.

Potential groundwater dependant environmental receptors that may be affected by mining operations at LCO include aquatic and riparian ecosystems associated with Bowmans and Bayswater Creeks, and in particular the Bowmans Creek alluvial aquifer.

Groundwater Trigger Response Action Plan

The Groundwater Response Plan is outlined in Section 10.2 of the WMP (Liddell Glencore, 2021). Baseline data collected from monitoring well locations between July 2005 and May 2017 were utilised to calculate site specific trigger values. If an exceedance of trigger values is observed in the groundwater data, a TARP is followed.

There are three components to the groundwater level trigger definitions, as summarised below:

1. Drawdown trigger – A drawdown trigger is groundwater drawdown of 2 m in the alluvium compared to the local reference site for the northern and southern impact zone as shown in the WMP; only applicable at ALV9 and ALV8L.
2. Investigation trigger – An investigation trigger and is measurement below the monthly, baseline (10th percentile) water level on three consecutive occasions. The purpose of this trigger is to identify unexpected changes to groundwater level. ALV9 does not have an investigation trigger

because these triggers were developed using historical baseline data and ALV9 was a more recent installation (December 2017) to provide greater coverage for the identification of alluvial groundwater impacts in the northern drawdown area.

3. Subsequent Investigation Trigger - A Subsequent Investigation Trigger is designed to address the potential for harm to listed threatened species, communities and migratory species of concern to EPBC Approval 2013/6908. Following an investigation of an exceedance of Groundwater Level Trigger Definition #2 that concludes the exceedance is not mining-related, should groundwater levels continue to be measured below the lower 10th percentile for a further nine months, such that the exceedance has continued continuously for 12 months, then a subsequent investigation shall be undertaken to confirm that the exceedance remains unrelated to mining activity.

There are two components to the groundwater quality trigger definitions, as summarised below:

1. EC investigation trigger – An investigation trigger because of a monthly measurement either below the baseline (20th percentile) or above the monthly baseline (80th percentile) on three consecutive occasions. Note the 20th percentile triggers levels are designed to identify downward leakage from the alluvium to the shallow bedrock to provide another mechanism to detect potential alluvial impacts in addition to the water level triggers.
2. pH investigation trigger - An investigation trigger because of a monthly measurement either above or below the default pH trigger values from ANZECC (2000) for lowland rivers located in NSW, on three consecutive occasions.

An investigation trigger will include:

- Assessment of the extent of drawdown from mining operations and whether the piezometers triggered are within the drawdown area.
- Any potential seepage sources. If necessary, further water quality sampling to characterise the anions and cations to assess if the groundwater has been impacted by mine affected water.
- Review of the cumulative rainfall deficit to determine if water levels are responding to climatic variations or if the piezometers that have exceeded the trigger limits are anomalous to general trends.
- If any exceedances are outside the maximum ranges recorded or would impact down gradient beneficial uses.

Investigation into Groundwater Level and Quality Exceedances

The groundwater specialist conducted a review of instances where groundwater level and quality has exceeded the trigger values outlined in Section 10 of the WMP. A summary of water level and water quality (EC only) trigger level exceedances for each monitoring well location is provided in Table 15.

Table 15 Summary of water level and quality exceedances

Bore(s)	Month Exceeding Water Level Triggers	Month Exceeding Electrical Conductivity Triggers
ALV1L	February 2019 – March 2020	March - May 2019, July and August 2019, October 2019 - October 2021, December 2021
ALV1S	February 2019 – March 2020	September and October 2019, February, March, May and June 2021
ALV2L	February 2019 – April 2020	April - June 2020, August 2020 - December 2021
ALV2S	February 2019 – July 2020	February 2019 - May 2019, July and August 2019, October 2019 - March 2020, May 2020 - December 2021
ALV3L	February 2019 – March 2020	March - May 2019, July, August, October and November 2019, February, March, May, July, August and November 2020
ALV3S	February 2019 – March 2020	No exceedances
ALV4L	February 2019 – March 2020	No exceedances

Bore(s)	Month Exceeding Water Level Triggers	Month Exceeding Electrical Conductivity Triggers
ALV4S	February 2019 – March 2020	March-May 2019, July, August, October and November 2019, January-March 2020, May-July 2020, September-December 2021
ALV7L	February 2019 – March 2021, August 2021 and October 2021	September – November 2021
ALV7S	February 2019 – December 2021	March 2019 – December 2021
ALV8L	February 2019 – November 2021	April to May 2021
ALV8S	February 2019 – December 2021	December 2021
ALV9*	No exceedances	No exceedances
LBH	February 2019 - March 2020	March – May 2019, November 2019, January – March 2020, July 2020 – March 2021

*ALV9 does not have trigger levels

Water level exceedances

Prior to February 2019, all locations, with the exception of ALV9, had already been investigated due to water level exceedances. Between February 2019 and December 2021, subsequent investigations were conducted due to ongoing water level exceedances. A majority of monitoring wells had water levels increase between early- to mid-2020, to within acceptable limits with the exception of ALV7L, ALV7S, ALV8L and ALV8S.

Monitoring well ALV7L saw an increase of water levels to within acceptable limits in April 2021 and on occasion water levels have decreased, exceeding trigger levels. Water levels at monitoring well ALV8L has only recently increased to within acceptable limits in December 2021. Monitoring wells ALV7S and ALV8S continue to exceed trigger levels.

Water levels at ALV8L and ALV9 were compared to their nominated local reference site, ALVL and ALV2L, respectively. There were no drawdown triggers during this audit period.

Water quality exceedances

Between February 2019 and December 2021, there have been numerous occasions where the requirement for an investigation has been triggered by three consecutive exceedances of the upper EC limit. Locations include ALV1L, ALV2L, ALV2S, ALV3L, ALV4S, ALV7L, ALV7S and LBH, as summarised in **Table 6**.

There were several instances of minor exceedances of the pH during February 2019 and December 2021, however none of which were sustained or triggered a pH investigation trigger.

Investigation findings

Various investigations into water level and quality exceedances were completed by either Jacobs or LCO, between 2019 and 2021. LCO have concluded as part of the investigations that there is a direct relationship between groundwater level and rainfall; as well as a trending relationship with EC and residual mass curves, suggesting that groundwater measurements are due to climatic variation rather than a specific mining related impact, as further discussed in the following subsections. Since the groundwater system is responding to climatic variation, LCO concludes that there is no potential for environmental harm.

CRD plots

During LCO investigations, cumulative relative difference (CRD) plots were developed with respect to rainfall and evaporation. The CRD shows that the baseline period (2005-2017) used to calculate site specific trigger values was dominated by average to above average rainfall conditions. Between 2017 and late 2019, there has been drought conditions, with rainfall generally below average and evaporation generally above average. This period has been followed by above average rainfall and below average evaporation.

Statistical analysis

As per request from the Department, LCO engaged Jacobs to undertake a statistical analysis (May 2020) to quantitatively establish a relationship between groundwater measurements and climatic factors during differing climatic periods. Outcomes of the statistical analysis showed that water level measurements for all groundwater monitoring sites indicated a consistent positive correlation with rainfall CRD. EC measurements for alluvial sites have a moderate to very strong negative correlation with CRD across all climatic periods analysed; indicating EC tends to increase with declining CRD. EC measurements for shallow bedrock sites have a predominately negligible to no correlation for all climate periods assessed. The results of correlation between EC and water levels demonstrated there was predominately moderate to no correlatability. This is due to the complexity and variability of the groundwater recharge/discharge processes that influence groundwater EC.

LCO have concluded that high EC values are either due to declining rainfall during dry periods; or as a result of a groundwater recharge period after a prolonged dry period. An increase in water level causes salt to be mobilised from the saline shallow bedrock, which is what has been observed since rainfall increased mid/late 2019.

Mining activities

LCO have concluded that mining activities at the site have not resulted in the observed groundwater level and quality exceedances based on the following:

- According to LCO there has not been any failure of the mine water containment system
- Mining extraction has not extended beyond approved limits and additionally, mining extraction is not planned to extend to the full extent of approved depths, lateral limits or through geological features (Davis creek fault) associated with modelled peak groundwater impacts
- A review of the operations groundwater impact modelling every three years is required by DA305-111-01 Schedule 3 Condition 23. LCO engaged independent technical support for the 2021 groundwater impact model validation assessment which indicated the model is fit for purpose and remains conservative. The modelling suggests the following key points:
 - the alluvium and to a slightly lesser extent the underlying shallow bedrock remain disconnected/uninfluenced by the Permian measures below (low vertical hydraulic conductivity)
 - There are no additional drawdown impacts due to mining beyond what has been approved.

Findings and recommendations

Based on the audit, the groundwater specialist has made the following finding and recommendations:

- The site inspection and desktop study identified that the following groundwater management measures and controls were in place and being operated appropriately at the time of the audit:
 - Groundwater monitoring including level and water quality was being conducted routinely and in an appropriate manner
 - The management systems in place to capture, store and evaluate data is an efficient tool to enable incident response management
- The identification and response to trigger exceedances were managed as per the WMP and done so in an efficient manner.
- The Annual Reviews were in line with what was presented in the raw data files and information presented in the investigation reports
- It is recommended that there is a review of the groundwater investigation triggers, as already proposed by LCO in the September and December 2021 Groundwater Investigation Trigger Reports. It is evident from the CRD plot that the baseline period (2005-2017) used to calculate site specific trigger values was dominated by average to above average rainfall conditions and therefore does not adequately represent natural variability

- Since late 2019 average rainfall has generally increased. Although water levels at majority of the monitoring wells have increased to acceptable levels by early/mid 2020, there are still monitoring wells, particularly ALV7S and ALV8S, which have not completely recovered from the drought conditions which occurred between 2017 and late 2019. Additionally, EC measurements are continuing to exceed trigger levels at multiple monitoring well locations. It is recommended that LCO conduct a trigger assessment in the areas of predicted impact. Monitoring data should be reviewed against rainfall data to ensure that the exceedances are climatic driven and not due to mining activities.
- In November 2021, the NSW Department of NRAR provided LCO with two recommendations following the review of six groundwater investigation reports submitted in 2020 and 2021:
 - statistical analysis of salt/metal concentrations in shallow groundwater and rainfall occurrence at all TARP exceedance monitoring sites from 2018 forward
 - investigating and reporting on risks to ecological receptors of sustained elevated salinity/metals concentrations in shallow groundwater and devise practical mitigation strategies that could manage such risk

It is understood that LCO is currently reviewing the advice for inclusion for future investigation reports.

6.1.5 Biodiversity

Biodiversity on site is generally managed in accordance with the BMP. While the BOMP was developed to provide direction for the short to long term management and enhancement of the biodiversity values of the LCO biodiversity offset areas, as well as to provide a description of the measures to be implemented to achieve this over the next three years.

LCO manages impacts to biodiversity at the site through a range of plans and programs, including the BMP, BOMP and MOP. Active implementation of several of these plans and programs was evident during the field visit and by review of documentation (e.g. weed and pest control programs, rehabilitation trials, GDP process including pre-clearing checks).

A number of recommendations for improvement to the BMP and BOMP were made in the 2019 IEA. These recommendations had been addressed in recent revisions of the plans. Biodiversity monitoring is conducted in accordance with the BMP and BOMP. Targeted results are summarised below.

LCO engage Umwelt to conduct biodiversity monitoring of the following features, in accordance with the BMP and BOMP:

- Terrestrial flora and vegetation communities
- Habitat
- Diurnal woodland birds
- Micro-bats
- Diurnal herpetofauna
- Nocturnal fauna
- Spotted-tail quoll
- Terrestrial fauna
- Water birds
- Nest boxes
- Landscape function analysis
- Assessment of progress of active revegetation areas

- Pathogens
- Stygofauna
- In-stream and riparian ecological condition

Findings from biodiversity monitoring conducted during the audit period were reported by Umwelt. The biodiversity summaries provided in the LCO Annual Reviews were consistent with the data presented in the monitoring reports.

Weed Management

Weed management of target weed species identified by Umwelt through their Biodiversity Monitoring Reports is undertaken by Enright Land Management. Evidence of the weed species targeted, and their location has been sighted, and in subsequent Umwelt reports, information relating to the success of weed spraying (in general) is recorded.

Results from biodiversity monitoring indicate that LCO are actively managing biodiversity across the site. The consistent finding from biodiversity monitoring is the increase in the presence of weeds across the site. High weed growth at all monitoring sites has been attributed to good growing conditions since 2020.

Site inspection indicated that weed management is currently occurring and is required to continue throughout rehabilitated areas and offset areas. Annual weed management plans prepared by Enright Land Management were sighted for 2019, 2020 and 2021.

Pest Management

Evidence of pest management (e.g. wild dog and fox baiting) was sighted for the audit period and undertaken by Enright Land Management. Weed and pest management plans were sighted for 2019, 2020 and 2021.

Results of pest control activities (in the form a vertebrate pest control register) was sighted for 2019 through to 2021. Feral cats have been noted to be problematic and a potential issue for the Spot Tailed Quoll which was recorded across all offset sites during 2020. Based on the vertebrate pest control register, cat control (i.e. trapping) has not been successful to date. It is recommended LCO continue trialling strategies, or more frequent trapping to control cats (refer 2022-OFI-06).

Mountain Block MOD 7 Biodiversity Monitoring

The BOMP, version 11.0, was last updated in April 2022 and applies to the following years:

- Year 7: August 2021 – August 2022
- Year 8: August 2022 – August 2023
- Year 9: August 2023 – August 2024

Version 11.0 of the BOMP states that management of MOD 7 area (Mountain Block) will be transferred back under BOMP Management when monitoring confirms MOD 7 area is stabilised and revegetated sufficiently. At the time of the audit the Mountain Block Rehabilitation Project was complete, and monitoring was underway to assess progress in accordance with the BMP and MOP 2021-2023.

Biodiversity monitoring of the Mountain Block MOD 7 area was conducted during the audit period and appears to have been conducted in accordance with the BOMP. The auditors sighted evidence of the following monitoring being undertaken:

- Floral BBAM monitoring in the Remnants Narrow leaved Ironbark Bulloak Open Forest and Spotted Gum Woodland (monitoring sites W04 and W05).
- Flora BAM monitoring in revegetated areas Bulloak open forest and Spotted Gum Woodland (monitoring sites WR03, WR04 and WR05).
- Photo monitoring (monitoring sites WR01, WR05, WR03, WR04 and WR05)

- General Fauna monitoring (monitoring sites WR01, WR05, WR03, WR04 and WR05)

Monitoring is conducted Biennially in accordance with the monitoring schedule outlined in the BOMP. Monitoring of biodiversity in the Mountain Block Area was reported in the Annual Biodiversity Offset Management Monitoring Reports prepared by Umwelt. The BOMP could benefit from the addition of another monitoring point in the MOD 7 offset area in order to better monitor offset objectives (refer 2022-OFI-05).

Further evidence is detailed in Section 3.4 in response to feedback received from Muswellbrook Shire Council.

6.1.6 Aboriginal Cultural Heritage

The ACHMP outlines the management measures to be implemented to ensure LCO operates in accordance with relevant legislation, in consultation with Registered Aboriginal Parties (RAPs) and to satisfy Development Consent requirements.

The main commitments of the ACHMP related to Aboriginal stakeholder consultation, site surveys, reporting, impact assessment, site assessment, monitoring and management of Aboriginal cultural heritage sites.

LCO engage OzArk Environmental & Heritage Management (OzArk) to conduct due diligence surveys of the site in accordance with the ACHMP and the NSW Minerals Industry Due Diligence Code of Practice for the Protection of Aboriginal Objects (NSW Minerals Council 2010). The following Due Diligence surveys were conducted in the audit period:

- March 2020; Buffer land near Hebden Road (two new sites identified)
- June 2020; Buffer land near Bowmans Creel (two new sites identified and one previously identified site confirmed)
- May 2021; Bowmans Creek eastern banks regeneration tree planting. No aboriginal sites or areas of significance were identified.

Findings from the due diligence surveys conducted by Ozark are summarised in the Annual Review and were reflective of the data provided by Ozark.

No incidents or complaints were recorded in relation to aboriginal heritage during the audit period.

6.1.7 Traffic and Transport

LCO have approval, under Schedule 3 Condition 32, to transport coal tailings by truck and to transport ROM coal to and from Ravensworth Central Coal Processing Facility (RCCPF). During the audit period LCO did not utilise this approval as no tailings were transported by truck and no ROM coal was transported to or from the RCCPF.

All product coal is transported by rail to the Port of Newcastle for export. ROM coal extraction and processing figures for the audit period were below the limits enforced in DA 305-11-01.

6.1.8 Visual Impact

LCO implement visual amenity controls in line with the requirements of Schedule 3, Condition 34. This includes implementing the commitments in the LCO MOP and the Lighting Management Procedure (LIDOC-90533967-802), version 4.0, dated 12/11/2020.

LCO's general approach to minimise visual amenity related impacts is to commence rehabilitation activities as soon as possible following completion of mining activities in a particular area. This is in line with the commitments made in the site's environmental assessments. Open cut mining occurring during the audit period was moving in a southerly direction away from the nearest privately owned receptors.

There have been no additional visual impacts caused by the development since the previous audit period. No changes to fixed lighting have occurred with the exception of LCO progressively upgrading lighting by replacing halogen lights across the site with LED lighting. There was one complaint during the audit period with regards to lighting. The complaint related to a mobile lighting clamp which was located on a dump tip head. The complainant was a local resident who asked if the light could be moved.

Following the complaint LCO ceased work for the night and an investigation was conducted. Investigation into the source of the complaint identified that tipping at night with a mobile light pole pointed North where dumping was occurring. As soon as the light was turned off the complainant was called to confirm the issue had been rectified. The complainant was thankful and confirmed the issue was solved. The next day the tip head orientation was switched to allow the light to shine towards the South.

The auditors sighted plantings which had been made along the mine's boundary to the Old New England Highway which are intended to screen the mine from the New England Highway. Vegetation growth was evident from the previous IEA inspection conducted in 2019.

6.1.9 Waste

Waste onsite at LCO is managed in accordance with the LCO Waste Management Plan (LIDOC-90533967, 27/07/2020). Waste management on site was undertaken by contractors JR Richards who was reappointed as the primary waste contractor onsite in 2021.

Waste quantities and types are tracked and reported each month. Data is provided by JR Richards in the form of a monthly waste tracking spreadsheet. LCO report waste quantities each month as a corporate reporting requirement. This information is entered into the Glencore sustainability reporting database each month.

Evidence of waste segregation was observed during the audit site inspection. Separate bins for batteries, scrap metal, recycling, oil filters and cardboard recycling were observed. The auditors sighted the two oil water separators which were in use. One is located in proximity to the workshop, and one is located at the CHPP.

Two sewage treatment systems operate at LCO which were inspected by the auditors. This includes the CHPP sewage treatment plant (STP) which processes sewage generated by the CHPP and associated workshop and offices. Sewage is processed before being pumped to the aerated sewage treatment plant prior to disposal at the designated effluent irrigation area. The second STP treats effluent from the mine infrastructure area (MIA). MIA effluent is treated onsite, the treated water is sent to the mines dirty water system for storage in the storage reservoir and then use on site or discharge under the HRSTS discharge approval. The treated water from the MIA is not irrigated onsite.

Both the STPs and oil water separators are included in LCOs planned maintenance system. Maintenance, sampling and inspection records were reviewed by the auditors to verify compliance with Conditions of DA 305-11-01 and EPL 2094.

Overall waste on site was being proactively managed and accurately reported. Raw waste data, monitoring records and maintenance reports were reviewed and compared to the information and summaries reporting in the Annual Reviews. Waste data was included in the site's 2019 and 2020 Annual Reviews and the data reported in the Annual Review was consistent with the information reviewed by the auditors.

6.1.10 Bushfire Management

To ensure compliance with the requirements of the Rural Fires Act 1997 LCO prepared a Bushfire Management Plan (LIDOC-90533967-5406, Version 2.0, dated 9/2/2022) for its landholdings which includes both the operational and designated offset areas.

LCO engaged Kleinfelder Australia in September 2021 to complete a hazard assessment and fuel loadings assessment and provide information for inclusion in the bushfire management plan. The

purpose of the review was to reflect current conditions, legislation and policies as well as incorporate hazard mitigation measures appropriate to the existing LCO Landholdings. LCO updated the Bushfire management plan to address this information.

Three bushfire events occurred on site during the audit period. Details are summarised below:

- A grass fire occurred on 20 February 2019 in the reservoir area (from the Hazeldene bore to Dam 17) which was caused by a powerline fault. RFS attended the scene. The auditors sighted photos of the event which showed LCO water carts being used to assist RFS in extinguishing the fire.
- Small grass fire occurred on 17 May 2021 at the Bowmans Creek access road north side (Hazeldene bore). The fire was caused by power lines which had contacted due to birds contacting the 11kv power lines. The fire was inspected by RFS however the fire was extinguished using an onsite water cart.
- A grassfire in the railway corridor occurred on 20 December 2019 due to sparks caused by a passing train. Water carts attended the fire first before RFS attended and extinguished the fire. The auditors sighted the emergency communication log for the incident which showed that LCO provided assist the RFS.

The following controls were sighted by the auditors during the audit inspection:

- Established first response team who assess all emergency incidents
- No smoking policy on site
- Maintenance of fire trails and access tracks
- Fire extinguishers
- Water carts
- Spray pumps
- Maintained water fill points.

6.1.11 Rehabilitation

The IEA team utilised the same auditor and rehabilitation and mine closure specialist as the 2019 IEA, as such a comparison of rehabilitation progress was able to be conducted utilising the findings and data captured in the current and previous audit periods.

Liddell's Rehabilitation Management Plan, required by Schedule 3, Condition 39 of DA 305-11-01, is incorporated within the site's MOP. The following MOPs were in effect during the audit period:

- MOP 2018-2020, LCO operated under the MOP 2018-2020 which had a MOP term to 1 December 2020
- MOP 2020-2023; LCO prepared a new MOP for the period 2020-2023. Following consultation with RR from June to October 2020, the MOP was submitted for approval by RR on 30 September 2020. RR requested additional information to be provided in the MOP and requested the information be provided before the 14 December 2020. As this was after the cessation of the MOP 2018-2020 term an extension to the 2018-2020 MOP was granted by RR until 31 March 2021
- MOP 2021-2023; LCO updated the MOP to address the information requests made by RR. The updated MOP now covered the period 18 March 2021 to 1 December 2023. The MOP was submitted for approval on 19 February 2021 and subsequently approved by RR on 18 March 2021.

The 2019 IEA stated that the MOP 2018-2020 addressed the conditions of DA 305-11-01 and was adequately implemented during the audit period. The 2022 IEA therefore reviewed the adequacy and implementation status of the MOP 2021-2023.

The MOP 2021-2023 includes the following information:

- Proposed mining operations
- Long-term mine closure principles and proposed final land use outcomes
- Proposed rehabilitation methods and progress during the MOP term.

Key changes from the previous MOP to the current MOP include:

- The MOP covers a three-year term and is inclusive of current extraction activities and planned cessation of extraction (estimated for 2023)
- A production schedule and description of primary overburden emplacement rehabilitation and tailings emplacement area rehabilitation
- Details of mine closure planning to be undertaken during the MOP term
- Tailing's emplacement rehabilitation strategy
- Revised rehabilitation completion criteria
- An updated site rehabilitation cost estimate utilising the current NSW Resources Regulator Assessment Tool
- Introduction of rehabilitation planning domains to more clearly divide site assets and rehabilitation activities
- Final landform and post mining land use plan providing for habitat connectivity.

Mining operations are currently approved until the end of 2028 however Glencore Coal Assets Australia has announced that extraction of coal at LCO will cease in approximately Quarter 3 of 2023. The current MOP term is for the period 2021 – 2023 which, based on the current Life of Mine Plan, encompasses coal extraction and the subsequent cessation of coal mining.

The site was advancing to mine closure with progressive implementation of the LCO MOP 2021-2023 to ensure achievement of the rehabilitation objectives. Key findings from the audit inspection are summarised below

Rehabilitation Targets

Rehabilitation status, area of disturbance and targets set within the MOP have been accurately reflected within the Annual Reviews for 2019 and 2020, with the exception of a typo on table 9-2 MOP rehabilitation status in the 2020 Annual review, which erroneously states that in 2019 39 hectares (ha) was disturbed, when only 13 ha was disturbed. The variance totals provided are correct.

Rehabilitation Monitoring

In summary the following monitoring was conducted during the audit period:

- Quarterly monitoring conducted by SLR.
- Quarterly aerial mapping has also been done which includes Mountain Block
- Future Harvest conduct annual walkover and pasture monitoring
- SLR conduct additional Mountain Block monitoring
- Umwelt conduct woodland monitoring
- Neil Nelson Advice conduct additional pasture monitoring
- GeoTech Monitoring conduct on the slope of Mountain Block by Lambert GeoTech.

The Annual Reviews provide an update of the rehabilitation status (number of hectares disturbed and rehabilitated during the year and includes a figure/map showing the areas. Further details of the number of hectares of each ecosystem are provided in Appendix H of the Annual Review. The

rehabilitation specialist reviewed the 2019 and 2020 Annual Reviews. These reports accurately reflect the results that have been reported to Liddell Coal through the rehabilitation monitoring conducted during the audit period, with the exception of a typo on table 9-2 MOP rehabilitation status in the 2020 Annual review, which erroneously states that in 2019 39 ha was disturbed, when only 13 ha was disturbed. The variance totals provided are however correct.

Rehabilitation Status

Rehabilitation Status during the audit period is outlined in the Table below.

Table 16 Rehabilitation Status Summary

Mine Area	2019 (ha)	2020 (ha)	2021 (ha)
Total mine footprint	1628	1637	1638
Total active disturbance	706	664	682
Land being prepared for rehabilitation	0	0	36
Land under active rehabilitation	922	943	956
Complete rehabilitation	0	0	0

LCO have a progressive rehabilitation schedule which commits to rehabilitation targets per hectare as well as tailing emplacement facilities and legacy areas which require rehabilitating. The auditors sighted various rehabilitation works during the audit inspections. Refer to Appendix C for photographs from the audit inspection. Areas of rehabilitation inspected included the following:

- Reservoir south tailings dam: Reservoir North and South Tailings dam were being decommissioned at the time of the audit in preparation for rehabilitation
- South Cut RL 195 Dump: Rehabilitation works conducted in approx. 2011. The area is in its final land use and Liddell is in preparation for application for certification with RR. Once monitoring indicates that the rehabilitated areas are nearing completion the process will be initiated with RR, estimated to commence in early 2023
- Entrance 2020 Rehabilitation: Woodland's rehabilitation conducted in 2020 showing good progress
- Area regarded as '2021 Rehabilitation': Rehabilitation conducted in December 2021. A cover crop used in this area. Millet grasses visible as the main species present at the time of the inspection. LCO expects natives to be visible once cover crop dies back. No monitoring conducted on this site yet. Constructed drainage channels sighted
- Entrance Premier emplacement: This area has varying ages of rehabilitation present (up to five years). Some failed tube stock which failed as a result of the 2019 drought were identified. However, new tube stock planted in 2021 was sighted and looked healthy. Habitat resources were sighted in this area. Evidence of weed management activities also sighted in this area. Weed management of *Galenia pubescens* evident
- Bowmans Creek Riparian Corridor: this is a 200m strip from the creek west. Sighted spray lines. A combination of tube stock, strip seeding and direct seeding was conducted in this area in the audit period
- Dam 4 remediation: Dam 4 was a disused open cut void adjacent to Bowmans Creek at the north-eastern end of the mine area. The auditors sighted shaping and rehabilitation works in progress during the inspection
- Antiene Tailings Dam Rehabilitation: This area is positioned to the northeast of the site adjacent to Bowmans's creek where historic open cut operations have occurred. Hydro mulch seeded with drone in late 2021. Vegetated topsoil stockpiles sighted here.

In summary, no failed rehabilitation was sighted during the audit period. LCO have a very competent E&C Department who are knowledgeable in mine site rehabilitation and the site conditions present at LCO. This, in conjunction with the implementation of rehabilitation monitoring has resulted in the site

personnel actively managing rehabilitation of the site in accordance with the targets in the approved MOP 2021-2023.

Mountain Block Remediation Project

The Mountain Block area was a remnant highwall leftover from previous mining activities which ceased in 2003. The highwall was approximately 120 m high and 450 m long with slopes between 35 and 45 degrees. Previous stability assessments and rehabilitation works have occurred prior to the commencement of the audit period with varying degrees of success, including some areas where rehabilitation failed, as reported in the 2019 IEA Report.

On 12 February 2019 MOD 7 was approved to extend the DA Boundary in order to facilitate the required remediation activities to be undertaken in the northern section of the Mountain Block Offset Area. Remediation works concluded in November 2020 and included the following:

- Minor vegetation clearing
- Earthworks to establish a less erodible landform and water drainage paths
- Reshaping and stabilisation of steep slope areas
- Soil amendment and preparation works
- Establishment of erosion and sediment control structures.

LCO engaged Lambert Geotech to conduct a geotechnical inspection of the Mountain Block Rehabilitation Area in September 2020. The purpose of the inspection was to provide a post construction assessment of the performance of the landform, specifically the remediated east and west slip sites, areas of developing instability and drainage features.

LCO conducted remediation works on the east and west slip areas of Mountain Block in mid-late 2020. The geotechnical inspection did not recommend any additional works or surveys for the area. The report identified some areas where additional improvements may be required with regards to drainage in the area, this includes amendments to a contour drains and vegetation growth to reduce erosion.

Minor cracking was observed in the western slip area, which was regarded as normal and expected, and as a result no rectification works were recommended.

Two small scale slumps were identified which were isolated and of no consequence, therefore negating the need for remedial works. One larger slump (approximately 50m² in area) was identified in the eastern slip area. A recommendation for ongoing visual inspections was made to determine if remedial works were required.

Additional regeneration works were also conducted in 2021, this included strip seeding of target vegetation in Mountain Block South.

Management of the rehabilitation of the Mountain Block area is conducted under the BMP. LCO implemented a monitoring program to determine the success of the remediation project at Mountain Block. The monitoring program involves a soil sampling program, photo monitoring program (including aerial mapping) and routine inspections by the LCO E&C Department.

The auditors reviewed the January 2022 Photo Monitoring Report prepared by SLR Consulting. Baseline photos were taken in September 2020 at twelve locations for ongoing monitoring. Photos are taken every three months to track rehabilitation progress. The auditors also reviewed the results of a Phase 1 and Phase 2 study on invasive plant assessment conducted in the Mountain Block MOD 7 area. The studies included fly over aerial photography and use of the MyDendra Insights Package to determine trend changes of erosion and high priority species.

At the time of the audit LCO had completed the remediation project at Mountain Block and was undertaking routine monitoring and maintenance work as required, and in accordance with the approved MOP 2021-2023. LCO plan to monitor rehabilitation progress until adequate erosion protection is achieved.

The auditors sighted the Mountain Block remediation works during the audit inspection. A combination of excavated natural material, biomix (composted biosolids) and two different hydromulch products were utilised as soil ameliorants, growth medium and slope stabiliser in this location. Seeding was completed through hydromulching via truck and helicopter due to slope steepness and difficult access. Seeding mix was consistent with grassland rehabilitation with pockets of spotted gum/ironbark woodland PCT 1602 where the rehabilitation meets the northern Mountain Block Offset. The cover crop, from revegetation works conducted in 2020, was visible during the audit inspection.

Significant improvement in the Mountain Block Area was evident, compared to the condition of the area during the 2019 IEA inspection.

Final Landform Tracking

Following approval of MOD 7 in 2019 the modified conditions of DA 305-11-01 resulted in a change to Schedule 3, Condition 37. MOD 7 amended the wording of the condition to ensure rehabilitation is "generally consistent" with the proposed rehabilitation strategy in the EIS, and as shown conceptually in Appendix 3 of DA 305-11-01. This was opposed to the previous wording which required rehabilitation to "be consistent" with the proposed rehabilitation strategy in the EIS. The small amendment in wording provides LCO with a degree of flexibility in the design of the final landform. The intent of the flexibility was to make allowance for assumptions made in the design and modelling phases of the final landform which make it difficult to achieve a landform that is entirely consistent with the Conceptual Final Landform.

The approved post-mining landform is detailed in the LCO MOP 2021-2023 and will consist predominantly of Central Hunter Box – Ironbark Woodland and Grassland suitable for grazing. It includes overburden emplacement areas and associated landforms rehabilitated with native woodland and open grassland with pockets of native vegetation and two final void areas within the South Pit and Entrance Pit mining areas. The final landform specified in the MOP 2021-2023 is consistent with the conceptual final landform specified in Appendix 3 of DA 305-11-01.

To meet the targets set in the MOP and other biodiversity related commitments outlined in the BMP and BOMP, LCO develops and implements an Annual Rehabilitation and Closure Plan (ARCP). LCO track progress against the rehabilitation targets and reports on the progress in the Annual Reviews.

LCO is transparent where rehabilitation progress is not consistent with final landform and/or completion criteria. Where rehabilitation monitoring has triggered the MOP TARP additional actions are identified, such as additional planting or weed control, to manage the trigger.

The success of woodland vegetation on site, which was in some areas identified to be lacking species diversity, groundcover density and abundance, is an identified area of concern which requires additional actions in order to achieve final landform completion criteria. Despite the MOP TARP being triggered throughout the audit period and LCO required to implement additional actions in response to these triggers, rehabilitation of native woodland was progressing as per the MOP schedule, based on review of monitoring data recorded during the audit period. The actions in place by LCO were sufficient at the time of the audit to manage the risks to woodland rehabilitation.

Topsoil Management

LCO track topsoil stockpiles across the site and record quantities and mediums of topsoil available in the topsoil stockpile register. The register was reviewed by the auditors and identified that nine (9) stockpiles were located across the site with varying compositions including woodland, pasture and mix. Topsoil stockpile reserves, according to the register, detailed that there was 67,126m³ of topsoil available which fulfilled an allowance of 67 ha when spread at a depth of 100mm. At the time of reviewing the register approx. 526 ha of rehabilitation was remaining.

LCO is aware that there is a deficit of topsoil for completing rehabilitation and therefore substitute materials are required to be used where feasible. At the time of the audit LCO continued to use suitable topsoil alternatives with consideration to rehabilitation performance. This included biomix, biosolids and mulch to promote growth on newly established rehabilitation areas.

LCO have identified the lack of topsoil availability in the MOP Trigger Action Response Plan. LCO continue to monitor the risks associated with topsoil availability and report on the status of this risk in the Annual Review. LCO's response to the topsoil availability aspect was they were investigating options and alternatives to meet future topsoil requirements. The auditors note that LCO did report that Organic Growth Matter (OGM) would be considered as a topsoil alternative however this was incorrect as LCO do not have a resource exemption to receive OGM on site and do not plan to use it (refer 2022-OFI-07). In addition, in October 2018 the EPA revoked the general and specific Resource Recovery Orders and Resource Recovery Exemptions for the application of mixed waste organic outputs (MWOO) to land due to risks associated with chemical and physical contaminants.

6.2 Summary of Regulator Actions

A review of information available on the Department's and the EPA's public registers as well as consultation with regulatory agencies and information provided by LCO was conducted in order to identify and review any notices, orders, penalty notices or prosecutions which may have been issued in relation to the site's operation during the audit period.

On 4 June 2019 the EPA issued LCO with a Penalty Notice (Notice No. 3173527812) in response to a discharge of sediment laden water offsite which occurred in November 2018. The incident was apparently caused by the combination of a blocked drain, a failure to inspect the blast area and heavy rain causing sediment laden runoff to breach the onsite containment drain and subsequently flow into a pool in nearby Bowmans Creek.

LCO took action to pump the runoff back to the mine site, however, as there was potential for environmental harm, including from turbidity, which the EPA considered may have been avoided if the blocked drain had been cleared, the EPA issued a Penalty Notice to LCO.

On 17 December 2019, the RR's Mining Act and Mine Safety Inspectorate performed a planned inspection of tailings management activities associated with LCO's Mining Leases. This targeted assessment of the tailings processes and storage was undertaken to identify risks associated with tailings management and to assess compliance with statutory obligations. The inspection identified that there was a risk of adverse impact to the environment through limited closure planning, delayed capping and rehabilitation of tailings facilities.

A Section 240(1)(c) Notice (NTCE0004640) was issued to LCO on 17 February 2020 that required the following:

- A risk assessment addressing the tailings management strategy for active and inactive tailings dams
- Provision of details of the final tailings landform design that takes into account the outcomes of the risk assessment
- An options analysis for capping design of the tailings dams.

Following consultation with LCO, a revised Section 240(1)(c) Notice (NTCE0005007) was issued on 18 March 2020 that required the following:

- A risk assessment addressing the tailings management strategy for active and inactive tailings dams.

Detailed mine closure planning commenced in accordance with Glencore Coal Assets Australia (GCAA) internal processes that are consistent with requirements of Integrated Mine Closure: Good Practice Guide (ICMM 2019). During 2020, LCO engaged mine closure specialists Integrated Environmental Management Australia (IEMA) to facilitate a rehabilitation and closure knowledge baseline review. This review established the technical preparedness (current available information) for rehabilitation planning and identified risks to rehabilitation and appropriate mitigation measures. As part of this review, LCO engaged several teams of specialists across a number of technical areas to conduct a technical review against each area. The outcomes of each technical review included a risk

assessment and each was subsequently compiled and reviewed in a workshop held on 28 July 2020, facilitated by IEMA and undertaken consistent with AS/NZS ISO 31000:2009.

LCO developed a Tailings Emplacement Rehabilitation Strategy which is included in the MOP 2021 - 2023. The strategy provides a clear process, informed by the risk assessment outcomes, identifying risks and appropriate controls. The strategy separates the rehabilitation process into distinct phases wherein particular 'controls' are implemented to manage specific risks.

No other actions were taken by environmental regulators during the audit period.

6.3 Incident Reporting

LCO has developed a site-specific incident reporting procedure, LIDOC-90533967-656: Hazard & Incident Management to detail how it manages and reports hazards and incidents including environmental incidents. Included in this procedure is an incident report form that is completed by personnel or contractors involved in an incident. The LCO E&C Department reports environmental incidents in CMO, the compliance management tool used by GCAA, and determines the appropriate corrective or preventative action using the Incident Cause Analysis Method (ICAM) where required.

LCO define an environmental incident or non-conformance as:

- Any inspection/test result that does not meet the acceptance criteria specified in any
- environmental approvals or relevant standard or legislation;
- Any notice of non-compliance issued by a government agency with environmental jurisdiction;
- Any non-conformance with identified objectives and targets;
- Any action that causes unapproved environmental harm;
- A community complaint.

A reportable incident is defined in DA 305-11-01 as an *occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance*. A non-compliance is defined in DA 305-11-01 as an *occurrence, set of circumstances or development that is a breach of this consent*.

A summary of non-compliances and incident occurrences during the audit period is provided in Table 15 below. The auditors reviewed the incidents and non-compliance details and the response taken by LCO with regards to the investigations undertaken and reporting provided to relevant regulatory agencies. The results of the review is also summarised in the table below.

Table 17. Recorded Incident and Non-Compliance Summary

Topic	Year	Incident / Non-Compliance	Incident Summary and LCO Action Taken
Air Quality	2019	DA 305-11-01 Schedule, Condition 16 PM ₁₀ exceedances of the short term the 24-hour averaging period	<p>The following short term impact assessment criterion for PM₁₀ exceedances of the 24-hour averaging period occurred in 2019:</p> <ul style="list-style-type: none"> • 37 exceedances at monitoring unit SX38-D1 • 48 exceedances at monitoring unit SX38-D2 • 7 exceedances at monitoring unit HVAS 21 • 8 exceedances at monitoring unit HVAS 12. <p>LCO Response to Incident</p> <p>In all instances LCO investigations determined that extraordinary events or regional conditions resulted in the exceedances opposed to contribution by LCO operations. In reaching the conclusion that LCO activities did not cause the exceedance, LCO's investigation considered the meteorological data (prevailing winds), real-time monitoring results (no alarms had been triggered), boundary monitoring results and Upper Hunter Air Quality Monitoring Network results.</p>

Topic	Year	Incident / Non-Compliance	Incident Summary and LCO Action Taken
			<p>MOD 7 of LCO's DA 305-11-01 was approved on 12 February 2019. Prior to this note 'a' to Table 3-5 of DA 305-11-01, short term impact criteria was applicable to the Total Impact i.e. the incremental increase in concentrations due to the development plus background contributions due to all other sources. Following approval of MOD 7, the updated consolidated consent amended the short term PM₁₀ criteria to be subject to note 'b' Incremental Impact (i.e. incremental increase in concentrations due to the development on its own). The exceedances noted above would not have been considered non-compliant (after the date of approval of MOD 7) as they were considered to be caused by increased background concentrations from other sources.</p> <p>2022 IEA Review Findings</p> <p>LCO corresponded with the Department with regards to the exceedances recorded in 2019. The auditors sighted email correspondence from the Department verifying the extraordinary event dates. Review of the incident investigation process implemented by LCO for each exceedance recorded did not identify any inconsistencies with the conclusions LCO made. Since DA 305-11-01 was modified and the short-term criteria became subject to note 'b' incremental impact, there have been no exceedances of PM₁₀ which, according to investigation results, were caused as a result of LCO's operations.</p>
Air Quality	2020	DA 305-11-01 Schedule 3, Condition 16 PM ₁₀ exceedances of the short term the 24-hour averaging period	<p>The following short term impact assessment criterion for PM₁₀ exceedances of the 24-hour averaging period occurred in 2020:</p> <ul style="list-style-type: none"> • 8 exceedances at monitoring unit SX38-D1 • 9 exceedances at monitoring unit SX38-D2 • 1 exceedance at monitoring unit HVAS 21 • 1 exceedance at monitoring unit HVAS 12 <p>LCO Response to Incident</p> <p>The exceedances of short term PM₁₀ criteria in 2020 were attributed to extraordinary regional conditions, classified by the Department and therefore Note D of Schedule 3, Condition 16 applies, which states "<i>Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fire incidents or any other activity agreed by the Secretary</i>". After excluding results impacted by extraordinary events, the short-term 24-hour criterion (50 µg/m³) was not exceeded during 2020.</p> <p>2022 IEA Review Findings</p> <p>LCO corresponded with the Department with regards to the exceedances recorded in 2020. The auditors sighted email correspondence from the Department verifying the extraordinary event dates which were generally in response to the drought conditions and bushfires occurring in 2020.</p>
Air Quality		EPL 2094, Condition M2.3 Failure to continuously monitor PM ₁₀	<p>LCO failed to achieve statistically valid samples (which require a minimum 75% data availability for a 24 hour period) at EPL Monitoring Points 9, 10, 11 and 12 throughout the audit period. Refer to Section 4.1.2 for details.</p>

Topic	Year	Incident / Non-Compliance	Incident Summary and LCO Action Taken
Air Quality	2021	DA 305-11-01 Schedule, 3 Condition 19 Failure to monitor PM ₁₀	Monitoring unit HVAS 12 (Scrivens) failed to monitor PM ₁₀ on 15/04/2021 LCO Response to Incident PM ₁₀ monitoring occurred at the same location using another compliance monitor. 2022 IEA Review Findings The unit was repaired and was operational at the time of the audit.
Water	2021	EPL 2094, Condition M2.3 Failure to monitor continuously monitor turbidity	Monitoring Point 6 (HRSTS discharge point) failed to monitor turbidity continuously during discharge in accordance with Condition M2.3. LCO Response to Incident LCO reported the failure to monitor was due to an equipment error which occurred between 20/3/21 and 22/3/21. The failure to report was attributed to an equipment error associated with the monitoring sensor. LCO replaced the monitoring sensor and installed a replacement sonde on 22 March 2021. 2022 IEA Review Findings LCO to continue bi-monthly maintenance on the quality meter to ensure the monitor is operating as required.
Blasting	2021	Blast management plan Level 4 post blast fume event	Post blast fume rating of Level 4 onsite, from blast in the Entrance Pit on 11 June 2021. LCO Response to Incident LCO notified the Department of the incident on the day the incident occurred and submitted an incident report within 7 days. 2022 IEA Review Findings The fume rating was identified in accordance with the LCO Post Blast Fume Procedure. Notification to the Department is required for any post blast fume event that rates a 4 or 5. LCO reported the incident to the Department on 11 May 2021. Reporting and actions following the incident were conducted in accordance with the blast management plan. The incident will be reported in the 2021 Annual Review.
Vibration	2021	DA 305-11-01, Schedule 3, Condition 11 Failure to record vibration data	Failure to record vibration results at Newdell Zone Substation on 26 October 2021. LCO Response to Incident Failure to report was due to the cord connecting the vibration monitoring being severed by ground maintenance not associated with LCO's activities. LCO notified the Department on 5 November 2021 after becoming aware of the issue on 3 November 2021. The Department responded on 14 February 2022. 2022 IEA Review Findings In response to the incident, LCO utilised a portable monitor until the unit could be repaired. The unit was repaired at the time of the audit inspection. LCO implemented additional controls including demarcation of monitoring equipment and consultation with the asset owner to prevent a recurrence of this incident in future.
Waste	2021	EPL 2094, Condition O5 Exceedance of waste tyre disposal limits	LCO exceeded the limit of waste tyres disposed of onsite. On 03/03/2021 11 tyres were disposed of at the following sites: 6, 12 and 14. On 18/06/2021 12 tyres were disposed of at site 2, and 14 tyres disposed of at site 5. 2022 IEA Review Findings In response to this incident LCO developed a checklist which is to be utilised by personnel completing the disposal of tyres. This will allow verification of compliance with EPL Condition O5 prior to burial.

In general, it was considered that LCO had an effective system in place for recording, investigating and reporting environmental incidents. Investigations into environmental incidents appeared thorough and detailed, including supporting documents which were readily available in CMO.

6.4 Complaints Management

LCO has established a Community Complaint & Enquiry Management Procedure (LIDOC-90533967-798) which aligns with the GCAA complaint response protocol, to respond to community complaints. LCO operates a free Community Complaints and Blasting Information Hotline which operates 24 hours per day, 7 days per week. The number is 1800 037 317. The auditors called the telephone complaints line at the time of the audit site inspection and verified it was operating at the time of the audit.

The auditors reviewed the complaints register for the audit period and verified that LCO had received only one complaint in the audit period. The complaint was received on the 17 September 2020 and was in relation to lighting impacting a nearby resident. Details are provided in Section 6.1.8 Visual Impacts. Prior to this complaint LCO had not received a complaint since October 2016.

The complaint was recorded in the complaints register which is publicly available on the LCO website. Complaints are also recorded in CMO to allow for internal corrective actions to be assigned.

6.5 LCO Environmental Operating Systems

6.5.1 Compliance Monitoring - CMO

GCAA utilise CMO Compliance Software as a management tool across all of its sites. The CMO Compliance Management database system is used to store and track compliance with development consents, leases, licences, and other approvals and their associated conditions. CMO is updated regularly as triggered by actions or the addition of new or modified approvals. CMO is also utilised to assign and complete inspections and to track complaints, actions arising from internal or external consultation practices or actions following an audit.

During the audit site inspection, LCO demonstrated its use of CMO to the auditors. The CMO database included the requirements of the Development Consent, EPL, Mining Leases, STP approvals and the key commitments / requirements of each management plan. The LCO E&C Team used CMO to pull up evidence to demonstrate compliance with specific conditions of consent.

6.5.2 Internal Assurance

GCAA implements an internal audit program which is conducted in accordance with the Glencore corporate procedure for internal and external auditing. The audit program involves internal compliance audits conducted every three years prior to an IEA. The internal compliance audit assesses compliance against the site's Development Consent conditions and associated approval conditions which have been entered into CMO. LCO is required to enter evidence into CMO against each relevant condition to assist with the compliance review process.

6.5.3 Monthly Inspections

The LCO E&C department conducts monthly environmental inspections of the site. The monthly inspections are conducted to:

- Identify any potential non-conformances or environmental incidents that have not been previously identified/reported
- Maintain a visual presence around the site to promote environmental awareness to mine personnel and contractors
- Maintain site familiarity by ensuring E&C personnel are aware of any physical changes to operations or processes at the site.

The monthly environmental inspections include a description of general environmental conditions as well as checks of specific areas (South Pit, Entrance Pit, Fuel Storage and Service Bay, Workshop Area and Stores, MIA STP, CHPP and CHPP STP, Rehabilitation Areas, Mountain Block and Priority Erosion and Sediment Controls). The inspections include identified actions, an action category, due date and status and include photos and attachments where relevant. Depending on the category of the action, it may be entered into CMO and tracked.

The auditors sighted examples of completed inspections conducted by the LCO E&C Department. Inspections were observed to be undertaken monthly. The reports were considered to be sufficiently detailed and well completed with appropriate actions identified for issues raised.

In addition to the monthly environmental inspections, the auditors sighted evidence that LCO was undertaking pre and post rainfall inspections. These inspections focused on erosion and sediment control and are required for areas of risk prior to and following rainfall events of >25mm in any 24-hour period.

6.5.4 Ground Disturbance Permit Process

LCO implements a work permit system in accordance with the GCAA Work Authorisation and Permit Management procedure. In the event that ground disturbance is identified during the Work Authorisation process a Ground Disturbance Permit (GDP) is required to be completed. The GDP is a risk management tool designed to ensure the proposed works have the required environmental approval and that the person undertaking the works has appropriately managed risks to minimise impacts on the environment and community. The GDP provides a checklist of environmental aspects that must be completed by the employee / contractor initiating the work and approved by the E&C Department prior to the commencement of any work.

The auditors sighted examples of completed GDP forms. Part 1 of the GDP form requires the person requesting the permit to include task details. It includes checks of whether the task area is within approval boundaries and how the boundaries have been identified. It also requests details of topsoil and/or vegetation removal and whether erosion and sediment control is required (amongst other details). Part 2 of the form requires the E&C representative to visit the work area. Part 3 discusses erosion and sediment control including sediment dam calculations. Parts 4, 5 and 6 are completed by the E&C representative and assess community interaction, cultural heritage and ecology. Part 7 assesses clearing and stockpiles including topsoil management and vegetation management. Part 8 enables the permit issuer to include specific permit conditions. Part 9 is the authority to proceed and includes sign off by the E&C representative, Permit Holder and Permit Issuer. Part 10 includes a boundary check and erosion control sign off. The Permit also includes a list of attachments (e.g. risk assessment, erosion and sediment control plan, pre-clearance survey etc.), a record of planned and unplanned task monitoring and inspections, a section for worker sign on review and re-sign (Part 14), a post-disturbance assessment (completed by the E&C representative on permit completion / cancellation) and a sign off upon permit completion / cancellation. The completed GDPs that were reviewed were considered to be well completed.

7. IEA Recommendations and Continual Improvement Opportunities

This section satisfies the requirement for the IEA to identify recommendations for each non-compliance and continual improvement opportunities identified as part of the audit. It is noted that LCO are required to submit a copy of this audit report to the Department with a response to any recommendations contained in the audit report.

7.1 Recommendations

Table 18 below summarises the recommendations which LCO must respond to in the response to recommendations (RAR) action plan.

Table 18. Summary of 2022 IEA Recommendations

Reference	2022 IEA Recommendation
2022-REC-01	LCO to develop and implement a tyre disposal checklist.
2022-REC-02	It is recommended that there is a review of the groundwater investigation triggers, as already proposed by LCO in the September and December 2021 Groundwater Investigation Trigger Reports. In particular LCO should conduct a trigger assessment in the areas of predicted impact. Monitoring data should be reviewed against rainfall data to ensure that the exceedances are climatic driven and not due to mining activities.
2022-REC-03	LCO to action recommendations made by NRAR in 2021 with regards to groundwater investigations conducted on site. In particular the following to be addressed: <ul style="list-style-type: none"> statistical analysis of salt/metal concentrations in shallow groundwater and rainfall occurrence at all TARP exceedance monitoring sites from 2018 forward investigating and reporting on risks to ecological receptors of sustained elevated salinity/metals concentrations in shallow groundwater and devise practical mitigation strategies that could manage such risk.

7.2 Continual Improvement Opportunities

Table 19 below summarises any continual improvement opportunities which LCO should consider addressing.

Table 19. Summary of 2022 IEA Recommendations

Reference	2022 IEA Opportunity for Improvement
2022-OFI-01	It is suggested Table 11-1 of the future Annual Reviews (LCO Incidents and non-compliances) clearly identify which is an incident and which is a non-compliance.
2022-OFI-02	It is suggested LCO included reference to SX38-D5 in Table 4-5 of the AQMMP.
2022-OFI-03	It is suggested LCO better outline in the BMP and BOMP how biodiversity management and monitoring of the Mountain Block MOD 7 Area is being undertaken at this time.
2022-OFI-04	It is suggested LCO, in the next revision of the blast management plan, clearly state which EPL monitoring point each blast monitoring site is referring to.
2022-OFI-05	It is suggested LCO add to the BOMP a monitoring point in the MOD 7 offset area to enable monitoring against the offset objectives.
2022-OFI-06	It is suggested LCO continue trialling strategies for more frequent trapping to control feral cats on site.
2022-OFI-07	It is suggested LCO review the actions reported against topsoil availability to ensure they reflect current practices. For example, reference to Organic Growth Medium (OGM) should be removed if this is not being considered as an alternative to manage the risk of topsoil availability on site.

8. Limitations

AECOM Australia Pty Limited (AECOM) has prepared this report in accordance with the usual care and thoroughness of the consulting profession for the use of LCO and only those third parties who have been authorised in writing by AECOM to rely on this Report.

It is based on generally accepted practices and standards at the time it was prepared. No other warranty, expressed or implied, is made as to the professional advice included in this Report.

It is prepared in accordance with the scope of work and for the purpose outlined in AECOM's proposal dated 19 November 2021. Where this report indicates that information has been provided to AECOM by third parties, AECOM has made no independent verification of this information except as expressly stated in the Report. AECOM assumes no liability for any inaccuracies in or omissions to that information.

This Report was prepared between 08 February 2022 and 22 April 2022 and is based on the conditions encountered and information reviewed at the time of preparation. AECOM disclaims responsibility for any changes that may have occurred after this time.

This report should be read in full. No responsibility is accepted for use of any part of this report in any other context or for any other purpose or by third parties. This report does not purport to give legal advice. Legal advice can only be given by qualified legal practitioners.

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Appendix A Compliance Checklists

2022 IEA Audit Checklist – Development Approval 305-11-01

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 2 ADMINISTRATIVE CONDITIONS						
Obligations to Minimise Harm to the Environment						
LC001	SH2 C1	In addition to meeting the specific performance criteria established under this consent, the Applicant must implement all reasonable and feasible measures to prevent and/or minimise any harm to the environment that may result from the construction, operation, or rehabilitation of the development.	As detailed in the audit checklists	The auditors and specialists conducted a review of incident and non-compliance occurrences, complaints received, as well as a review of the general environmental performance of the site in relation to LCO's various environmental management plans during the audit period. Other than where issues have been identified, LCO generally appeared to be compliant with its obligation to minimise harm to the environment. An Environmental Management Strategy (EMS) and associated management plans and procedures have been established and generally implemented to identify, plan for, and manage environmental impacts related to the operation of the LCO site in order to prevent and/or minimise any potential material harm to the environment.	Compliant	
Terms of Consent						
LC002	SH2 C2	The Applicant must:				
LC003	SH2 C2a	carry out the development generally in accordance with the EIS, MOD 1 EA, MOD 2 EA, MOD 3 EA, MOD 4 EA, MOD 5 EA, MOD 6 EA, MOD 7 EA and the Development Layout Plans; and	As detailed in the audit checklists	LCO's EMS and associated management plans were updated following the approval of each modification to the Project Approval. Each update included incorporation of the controls detailed in the relevant Environmental Assessment (EA) into the respective management plans. Based on a high-level review of these documents, LCO is considered to be carrying out operations in general accordance with the project EA and modification EAs.	Compliant	
LC004	SH2 C2b	comply with the conditions of this consent.	As detailed in the audit checklist	A detailed review of compliance was conducted against LCO's Project Approval (PA) 305-11-01. The results from that review are included in this checklist. As a number of non-compliances were identified against DA 305-11-01 this condition is found to be non-compliant. No recommendation is required. Refer non-compliances detailed below for details of the identified non-compliances.	Non-Compliant (Risk Level – Low)	Recommendation not required, refer to individual non-compliances in this checklist
LC005	SH2 C3	If there is any inconsistency between the documents in condition 2(a), the most recent documents must prevail to the extent of the inconsistency. The conditions of this consent must prevail over documents in condition 2(a) to the extent of any inconsistency.		This is noted	Noted	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
LC006	SH2 C4a	<p>The Applicant must comply with any reasonable requirement/s of the Secretary arising from the Department’s assessment of:</p> <ul style="list-style-type: none"> any strategies, programs, reviews, audits, reports, plans or correspondence that are submitted in accordance with this consent. any reports, reviews or audits commissioned by the Department regarding compliance with this consent; and the implementation of any actions or measures contained in these reports, plans or correspondence. 	Audit evidence referenced in the Audit checklists	All evidence reviewed indicated compliance with all Department requirements.	Compliant	
Mining, Processing and Transport Limits on Consent						
LC007	SH 2 C5	<p>Mining operations may take place on the site until 31 December 2028.</p> <p><i>Note: Under this consent, the Applicant is required to rehabilitate the site to the satisfaction of either the Secretary or DRE. Consequently, this consent will continue to apply in all other respects other than the right to conduct mining operations until the site has been rehabilitated to a satisfactory standard.</i></p>		This IEA was undertaken in 2022. The current life of mine plan was for mining to cease in 2023.	Noted	
LC008	SH2 C6	The Applicant must not:				
LC009	SH2 C6a	extract more than 8 million tonnes of ROM coal per annum from the site: or	<p>CMO Review Interview with staff 2019 E12 Forecast Summary 2020 E12 Forecast Summary 2021 E12 Forecast Summary</p>	<p>Tracking of coal production is managed by the Tech Services Department. The auditors were provided the 'E12 Forecast Summary' Spreadsheets which include a summary of production for each year. The figures relevant to this condition are stated below:</p> <p>ROM Coal values:</p> <ul style="list-style-type: none"> 2019 <ul style="list-style-type: none"> 5,863,647 tonnes extracted 5,637,204 tonnes processed 2020 <ul style="list-style-type: none"> 5,746,444 tonnes extracted 5,939,904 tonnes processed 2021 <ul style="list-style-type: none"> 4,986,655 tonnes extracted 4,920,864 tonnes processed <p>No ROM coal was processed from Mt Owen during the audit period. The figures from the forecast spreadsheets were compared to those reported in the Annual Reviews. No inconsistencies were noted.</p>	Compliant	
LC010	SH2 C6b	process more than 8 million tonnes of ROM coal per annum at the Liddell CHPP, including up to 2 million tonnes per year of ROM coal from Mt Owen; or				

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
LC011	SH2 C6c	transport more than 1.5 million tonnes of ROM coal per annum to Ravensworth Central Coal Processing Facility for processing; or		No coal was transported to Ravensworth during the audit period.	Not Triggered	
LC012	SH2 C6d	extract more than 0.5 million tonnes of coal tailings per annum with residual energy content from the site for transport to Liddell and Bayswater Power Stations.		No tailings / fines were transported to power stations during the audit period.	Not Triggered	
LC013	SH2 C7	The Applicant must ensure that all product coal from the site is transported by rail.	Site Inspection Interview with Staff Train Haulage Summary 2019, 2020 Train Movement Report 2021	Train haulage is published in the Annual Review. The auditors reviewed the train movement reports for 2019,2020 and 2021. The reports detail, for each load, the train, the coal product quantities transferred and the ship ID for export. Site inspection and data reviewed indicated that all coal was being transported from site by rail east to the Port of Newcastle for export.	Compliant	
Structural Adequacy						
LC014	SH2 C8a	The Applicant must ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with: <i>Notes:</i> <ul style="list-style-type: none"> Under Part 4A of the EP&A Act, the Applicant is required to obtain construction and occupation certificates for the proposed building works. Part 8 of the EP&A Regulation sets out the requirements for the certification of development. <ul style="list-style-type: none"> the relevant requirements of the BCA. the relevant requirements of AS3959-2009 Construction of buildings in bushfire-prone areas; and any additional requirements of the SA NSW. 	Email from THE DEPARTMENT, dated 13/09/2019 Certification of BAL and RA for Maintenance Building Extension, Kleinfelder, dated 16/05/2019 BCA Audit Report for Covering electrical office area and crib room stand alone building, AcroCert, dated 22/08/2019	No new buildings or structures were constructed during the audit period. Follow up of previous IEA findings: A construction / occupation certificate could not be obtained in retrospect for the buildings constructed during the previous audit period. Liddell instead obtained verification from external contractors Kleinfelder and AcroCert that the building additions were safe to occupy in line with the requirements of the BCA and AS3959-2009. The Department sent an email on 13 September 2019 acknowledging Liddell's approach and noted that they will not take any enforcement action for the breach. The auditors sighted the completed assessment (dated 16/05/2019 and 22/08/2019) and response from the Department.	Compliant	
Demolition						
LC015	SH2 C9	The Applicant must ensure that all demolition work is carried out in accordance with Australian Standard AS 2601-2001: The Demolition of Structures, or its latest version.	Discussion with LCO personnel Site Inspection	No demolition work occurred during the audit period	Not Triggered	
Operation of Plant and Equipment						
LC016	SH2 C10	The Applicant must ensure that all plant and equipment used at the site, and equipment used off-site to monitor the performance of the project is:	Discussion with LCO personnel Site inspection	The auditors reviewed a significant amount of evidence in relation to this condition. In summary, the site was considered to be maintaining and operating plant and equipment in a proper and efficient manner.	Compliant	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
		<p>(a) maintained in a proper and efficient condition; and (b) operated in a proper and efficient manner.</p>	<p>EcoTech Monthly Summary Reports (Various sighted) Blast Monitor Inspection Site Visit report 01.22, 07.21, Q2 2020 and Q3&Q4 2019 Maintenance Order – Inspection /Service record DT352 Mechanical Service, dated 09/02/2019 Maintenance Order – Inspection /Service record – Sound suppression testing, dated 25/11/2020 Maintenance Order – Inspection /Service record – Track Dozer Cat D10t, dated 08/07/2021 HRSTS Discharge Point Service Record, CBased 21/12/2021 HVAS Calibration Form, CBased dated 10/11/2021 Bowmans Creek Flow Monitoring System Maintenance Form, CBased 30/11/2021 Discussion with LCO personnel Weather station field check, CBased Environmental – Annual Calibration record, dated 16/04/2019 Hydrometric consulting services, service record for Bowmans Creek flow</p>	<p><u>Maintenance of plant and equipment</u> The site uses a computerised maintenance system, SAP, to manage maintenance requirements for all mining equipment and plant. SAP is utilised by the maintenance, and coal handling and preparation plant personnel. The system generates work orders for maintenance according to equipment or plant maintenance requirements. Mobile plant servicing requirements are based on the number of hours operated. Stationary plant and equipment servicing requirements are managed using a calendar schedule.</p> <p><u>Air Quality Monitoring Equipment</u> Glencore Corporate has a group contract with Novecom to supply, inspect and maintain the real time monitoring network (noise and dust monitors) at all Glencore mines in New South Wales. Novecom implements an inspection and maintenance schedule in accordance with the relevant Australian standard (sighted examples of calibration certificates and service reports). Data and maintenance reports are available in the Sentinex platform which is a software application that manages the acquisition, aggregation, reporting and communication of continuous monitoring data from the real time monitoring network at LCO.</p> <p>The Meteorological Station is maintained by CBased Environmental (CBased). Annual inspection and calibration certificate sighted.</p> <p>CBased are also engaged to maintain the HVAS monitoring network. Monthly monitoring reports are provided which contain HVAS servicing / calibration records.</p> <p><u>Blast Monitoring Equipment</u> EcoTech are engaged to conduct maintenance and servicing of the blast monitoring units. EcoTech conduct background data checks, calibration, maintenance, and servicing of the units. EcoTech issue a quarterly and monthly service report which summarises the data collected, calibrations, servicing and maintenance undertaken as well as upcoming servicing and maintenance requirements.</p> <p>Blast technicians from EcoTech also provide a quarterly site visit report. The information is summarised in the monthly reports outlined above.</p> <p>The auditors sighted the folder where all EcoTech maintenance and service records are kept. Records dating back to 2017 were available for review.</p> <p><u>Water Monitoring Equipment</u> Hunter River Salinity Trading Scheme (HRSTS) Discharge Point – Flow monitoring, Hydrolab (probe installed to monitor water quality during discharge), and upstream and downstream flow gauges. Hydrometric Consulting Services were engaged to operate and maintain this equipment until July 2019. From this date until current CBased have been engaged to operate and maintain this equipment. From Sep 2019 the CBased monitoring reports include HRTS LDP6 and streamflow gauging servicing and calibration records.</p>		

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
			<p>monitoring sites, dated 31/07/2019</p> <p>CBased Environmental, Monthly Environmental Monitoring Report, dated Sep 2019</p> <p>Certificate of calibration, cert no. SLM 24965 sound and vibration analyser, dated 18/06/2019</p> <p>Sentinex Noise Unit Field Service Report, Dated 19/08/2019</p> <p>Sentinex dust unit maintenance and calibration reports (sample from audit period sighted)</p>	<p>Two oily water separators were observed on site. One in proximity to the workshop, near the MIA, and one at the CHPP. Maintenance records for the oily water separators were sighted by the auditors and indicated they were being maintained and operated in a proper and efficient manner.</p> <p>CBased are engaged to conduct surface water and groundwater monitoring. Monitoring units are maintained by CBased.</p> <p>Waste</p> <p>Waste and spill containment equipment were being maintained by J.R Richards. Spot checks were carried out on spill containment equipment during the audit site inspection and were found to have been replenished.</p> <p>Operation of plant and equipment</p> <p>General environmental awareness training is provided to all personnel who are inducted to work on site. This includes reference to the site's approvals and licences and outlines workers' environmental responsibilities. Incident reporting and key environmental risks and mitigation measures are also outlined.</p> <p>Job specific training packages are provided by the site's Environment and Community (E&C) Department to relevant personnel who may be responsible for responding to a trigger alarm. This is outlined in the E&C Training Needs Analysis (TNA) Procedure.</p> <p>The auditors sighted the TNA personnel register, which is maintained on the web-based platform, <i>Scenario</i>. The TNA register contained a list of personnel who have conducted environment training and sets the training requirements and frequencies for each person.</p> <p>Only qualified and inducted personnel are permitted to operate specific plant and equipment on site. LCO maintains a stringent training and approval process with regards to operating light vehicles in the pit area and operation of mine specific vehicles and plant i.e., dozers, excavators, trucks etc.</p>		
Protection of Public Infrastructure						
LC017	SH2 C11	<p>Unless the Applicant and the applicable authority agree otherwise, the Applicant must:</p> <ul style="list-style-type: none"> • repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the development; and • relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the development, however this condition does not apply where the Applicant has entered into an agreement with the owner of such public infrastructure that covers the repair and/or maintenance of the infrastructure. 	Discussion with LCO personnel	<p>(a) It was reported that no damage to public Infrastructure had occurred during the audit period.</p> <p>(b) It was reported that no relocation of public infrastructure was required during the audit period</p>	Not Triggered	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
Updating and Staging of Strategies, Plans or Programs						
LC018	SH2 C12	<p>With the approval of the Secretary, the Applicant may submit any strategies, plans or programs required by this consent on a progressive basis. To ensure the strategies, plans or programs under the conditions of this consent are updated on a regular basis, the Applicant may at any time submit revised strategies, plans or programs to the Secretary for approval.</p> <p>With the agreement of the Secretary, the Applicant may prepare any revised strategy, plan or program without undertaking consultation with all parties under the applicable condition of this consent.</p> <p>Notes:</p> <ul style="list-style-type: none"> • While any strategy, plan or program may be submitted on a progressive basis, the Applicant must ensure that the existing operations on site are covered by suitable strategies, plans or programs at all times; and • If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program must clearly describe the specific stage to which the strategy, plan or program applies, the relationship of this stage to any future stages, and the trigger for updating the strategy, plan or program. 	Discussion with LCO personnel	No staged submission of any strategies, plans or programs was required during the audit period.	Not Triggered	
Planning Agreements						
LC019	SH2 C13	By the end of May 2015, or as otherwise agreed by the Secretary, the Applicant must enter into a planning agreement with Singleton Council (SC) in accordance with the general terms in Appendix 8	<p>Extract from Glencore Accounting System showing payment out, on 14/01/2020</p> <p>Council reconciliation letter, VPA, Trim record 15/7574</p> <p>2019 IEA Report</p>	<p>LCO entered into a planning agreement with Singleton Council in 2015, prior to the commencement of the audit period.</p> <p>Appendix 8 requires LCO to make the following contributions:</p> <ul style="list-style-type: none"> • Hebden Hall/ Rural Halls: \$200,000 initiated following approvals – Payments were completed prior to commencement of the audit period • Lake St Clair Recreational Park: \$75,000 per annum for the first two years and \$50,000 per annum for the next three years • Rose Point Netball Amenities Upgrade: \$80,000 – Payments were completed prior to commencement of the audit period <p>LCO has been in consultation with Singleton Council since 2018 with regards to the Lake St Clair recreational park. At the time of the 2019 IEA LCO was awaiting Singleton Council's invoice for the 5th and final payment for the Lake St Clair recreational park in July 2019.</p> <p>During the audit period the 5th and final invoice was issued by Singleton Council on 31/12/2019 and was paid by Glencore on the 14/01/2020. The Voluntary Planning Agreement (VPA) was completed during the audit period and no further action was required.</p> <p>An extract from Glencore Accounting System was sighted showing a payment out of \$50,000.00 on 14/01/2020.</p>	Compliant	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
				Council provided a total reconciliation letter showing the total VPA amount of \$380,000.00 and the total contributions had been paid, with the VPA now completed.		
LC020	SH2 C14	By the end of May 2015, or as otherwise agreed by the Secretary, the Applicant must enter into a planning agreement with Muswellbrook Shire Council (MSC) in accordance with the general terms in Appendix 9.	2019 IEA Report	LCO entered into a planning agreement with Muswellbrook Shire Council in 2014, prior to the commencement of the audit period. Payments for this agreement were completed prior to the commencement of the IEA period.	Compliant	
Evidence of Consultation						
LC021	SH2 C15	Where conditions of this consent require consultation with an identified party, the Applicant must: <ul style="list-style-type: none"> consult with the relevant party prior to submitting the subject document; and (b) provide details of the consultation undertaken including: <ol style="list-style-type: none"> the outcome of that consultation, matters resolved and unresolved; and details of any disagreement remaining between the party consulted and the Applicant and how the Applicant has addressed the matters not resolved. 	Consultation Manager – Sighted Discussion with LCO personnel	LCO utilises CMO to identify and track compliance with consultation requirements as specified in the consent. Compliance with consultation requirements with identified parties has been assessed against each relevant condition in the Consent. LCO is required to track all external consultation in the Glencore corporate tool, <i>Consultation Manager</i> . The auditors sighted this system during the audit inspection and verified that the site was using it to track consultation with regulatory agencies, community members, contact from other mines etc. Actions arising from consultation are entered into CMO. Where a condition of consent requires consultation to be undertaken with an identified party compliance has been assessed against each individual condition in this checklist.	Compliant	
Compliance						
LC022	SH2 C16	The Applicant must ensure that all of its employees, contractors (and their sub-contractors) are made aware of, and are instructed to comply with, the conditions of this consent relevant to activities they carry out in respect of the development.	Environmental Management Strategy: LIDOC-90533967-797, dated 19/03/2021 Environment and Community Training Needs Analysis Procedure, LIDOC-905533967-5392, dated 22/04/2021 E&C Training Compliance Tracking Spreadsheet Supervisor environmental training package Supervisors' environmental	This requirement has specifically been included in the updated Environmental Management Strategy (EMS). The EMS states that <i>"In accordance with this condition, training specific to environmental management and compliance requirements is delivered to all LCO personnel and contractors in the site familiarisation induction."</i> During the audit period, Liddell implemented a new training procedure which highlights what training is required regarding environment and community training. Appendix A of the procedure includes a training needs analysis table which summarises each training topic and which roles are required to complete each of the training topics. This includes a requirement for staff and contractors to comply with legal requirements. The auditor sighted the training package provided to supervisors. The training package includes review of key legislation and development consent requirements. The requirement to address Schedule 2, Condition 16 is specifically included in the training package. The auditors sighted an extract from Scenario (the system used to track training conducted) 'Skill Topic Training Matrix'.	Compliant	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
			awareness assessment	<p>The extract reviewed showed that of 412 personnel who have completed the environmental awareness training, 380 are current. The difference is accounted for by personnel who have left site / no longer working on site.</p> <p>The E&C team run reports on each department to confirm that E&C training is current and complies with the training needs analysis procedure.</p> <p>The system for reviewing and maintaining training is very comprehensive. The auditors were walked through the process of reviewing the training that was being conducted and were satisfied the E&C team are adept in the conduct and maintenance of training.</p> <p>The auditors were satisfied that LCO employees and contractors are made aware of, and are instructed to comply with, the conditions of DA 305-11-01.</p>		
Applicability of Guidelines						
LC023	SH2 C17	References in the conditions of this consent to any guideline, protocol, Australian Standard, or policy are to such guidelines, protocols, Standards, or policies in the form they are in as at the date of this consent.		This is noted.	Noted	
LC024	SH2 C18	However, consistent with the conditions of this consent and without altering any limits or criteria in this consent, the Planning Secretary may, when issuing directions under this consent in respect of ongoing monitoring and management obligations, require compliance with an updated or revised version of such a guideline, protocol, Standard or policy, or a replacement of them.	Letter from the Department, RE: Liddell Coal Mine Proposed IEA Team 2022, Dated 3/12/2021	Review of records of consultation and discussion with LCO indicated that no requests had been made by the Department to comply with a revised version of a guideline, protocol, standard or policy, with the exception of the Department requesting the IEA be conducted in accordance with the Independent Audit Guideline for Post-approval requirements for State significant developments (the Department, October 2015). This IEA has been conducted in accordance with the 2015 Guideline as per the Department's request.	Compliant	

SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS

Noise

LC025	SH3 C1	<p>Impact Assessment Criteria</p> <p>The Applicant must ensure that the noise generated by the development does not exceed the noise impact assessment criteria in Table 1 at any residence.</p> <p>Table 1: Noise impact assessment criteria dB(A)</p> <table border="1"> <thead> <tr> <th>Assigned residential location number</th> <th>Day (7:00am - 7:00pm)</th> <th>Evening (7:00pm - 10:00pm)</th> <th>Night (10:00pm - 7:00am)</th> <th>Night (Excessive)</th> </tr> </thead> <tbody> <tr> <td>1 (2, 3, 7, 8, 9, 10, 11, 12, 13, 14)</td> <td>55</td> <td>50</td> <td>45</td> <td>45</td> </tr> <tr> <td>2</td> <td>55</td> <td>50</td> <td>45</td> <td>45</td> </tr> <tr> <td>3</td> <td>55</td> <td>50</td> <td>45</td> <td>45</td> </tr> <tr> <td>4</td> <td>55</td> <td>50</td> <td>45</td> <td>45</td> </tr> <tr> <td>5 (No other privately-owned dwellings)</td> <td>55</td> <td>50</td> <td>45</td> <td>45</td> </tr> </tbody> </table> <p>NOTE: To interpret the sound level limits in Table 1, see Appendix 2.</p> <p>noise generated at the development is to be measured in accordance with the relevant requirements of the NSW Industrial Noise Policy. Appendix 6 sets out the meteorological conditions under which these criteria apply and the requirements for evaluating compliance with these criteria.</p> <p>However, these criteria do not apply if the Applicant has an agreement with the owner(s) of the relevant residence or land to generate higher noise levels, and the Applicant has advised the Department in writing of the terms of this agreement.</p>	Assigned residential location number	Day (7:00am - 7:00pm)	Evening (7:00pm - 10:00pm)	Night (10:00pm - 7:00am)	Night (Excessive)	1 (2, 3, 7, 8, 9, 10, 11, 12, 13, 14)	55	50	45	45	2	55	50	45	45	3	55	50	45	45	4	55	50	45	45	5 (No other privately-owned dwellings)	55	50	45	45	<p>LCO Public Website - Monitoring documents (glencore.com.au)</p> <p>LCO Environmental Noise Monitoring Reports, Global Acoustics Pty Ltd (February 2019 – February 2022)</p> <p>Annual Review 2019</p> <p>Annual Review 2020</p> <p>Discussion with LCO Personnel (E&C Department & Control Room Operator)</p>	<p>LCO has engaged Global Acoustics to undertake monthly attended noise monitoring at two approved locations in close proximity to the assigned residential locations specified in Table 1. Monitoring locations were selected to be representative of currently occupied properties identified in Table 1 of the Development Consent and include:</p> <ul style="list-style-type: none"> 1317 Hebden Road 1246 Hebden Road <p>The auditors and noise specialist conducted a review of attended noise monitoring results for the audit period. The attended noise monitoring results indicated that the noise criteria were being met during the audit period. Noise monitoring reports refers to the NSW Industrial Noise Policy an Appendix 6 requirements.</p> <p>LCO's noise monitoring program (NMP) outlines that attended noise monitoring results are utilised to determine compliance with development consent criteria.</p> <p>LCO also maintains a real time noise monitor. This unattended monitoring is used as a noise management tool to proactively manage noise by modifying mining operations as required when a trigger level is reached.</p>	Compliant	
Assigned residential location number	Day (7:00am - 7:00pm)	Evening (7:00pm - 10:00pm)	Night (10:00pm - 7:00am)	Night (Excessive)																																
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5 (No other privately-owned dwellings)	55	50	45	45																																
LC026	S3 C2	<p>Operating Conditions</p> <p>The Applicant must:</p> <p>to the satisfaction of the Secretary.</p>		<p>Operational noise controls are summarised in the Noise Monitoring Program which has been approved by the Department. In addition, LCO report on the status of noise management on site in the Annual Reviews which are reviewed and approved by the Department.</p>	Compliant																															
LC027	S3 C2a	<p>implement all reasonable and feasible measures to minimise the construction, operational, road and rail noise of the development;</p>	<p>Noise Management Procedure Noise Management Procedure (LIDOC-90533967-746), dated 21/01/2019 (review due 21/01/2022)</p> <p>Sentinex noise alarm recording – Red Alarm (16/01/2022 02:30:10)</p> <p>Discussion with LCO personnel</p>	<p>LCO operates a comprehensive Noise Management System that uses a combination of predictive meteorological forecasting and real-time noise monitoring data to guide the day-to-day planning of mining operations.</p> <p>LCO has in place an internal Noise Management Procedure which complements the Noise Monitoring Plan and outlines the specific management measures and exceedance response protocols in place.</p> <p>The noise management procedure outlines the response to noise levels triggered on the real time monitor. Alarms are issued under the categories of Amber and Red. Should an alarm be triggered there are actions required to be taken depending on the alarm. These actions involve considering the operations being undertaken, review weather and continue surveillance. For a red</p>	Compliant																															

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
			<p>Noise Management PTO, dated CMO Ref 2020062378.0, dated 23/06/2020</p> <p>SPL Testing Summary spreadsheet, 220209</p> <p>Red Noise Alarm Summary 2019</p> <p>Red Noise Alarm Summary 2020</p> <p>Red Noise Alarm Summary 2021</p>	<p>alarm this requires decisive actions to reduce noise within 75 minutes of receipt.</p> <p>The auditors reviewed the Sentinex portal which provides the real time noise levels as well as a live stream which allows personnel on site to listen to noise being recorded. The auditors listened to the live stream (as at 11:56am on 10/02/2022) as well a selection of alarm recordings. Should an alarm activate the system stores 30 minutes of recordings which is reviewed during the investigation. Staff are notified to the alarm via SMS.</p> <p>The shift supervisor or dispatcher will enter details into the system which detail any changes that required to be taken and also an explanation for the noise recorded i.e., train passing by.</p> <p>The auditors reviewed the 'red alarm summary' for the audit period and verified each red alarm received is investigated and managed appropriately in accordance with the sites NMP and internal noise management procedure.</p> <p>Noise Screening Process</p> <p>Screening of plant – Each item of equipment has a sound power level which is reviewed and measured against by external consultant Global Acoustics. If the results of testing is below the consent requirements no action is taken. If the equipment fails the noise test an investigation is undertaken to determine the source of noise (i.e., exhaust, noise attenuation failure etc.). Equipment is aimed to be tested at least once every three years. This process considers existing equipment as well as new equipment and hire equipment.</p> <p>The auditors sighted the SPL Testing Summary spreadsheet which summarises all noise screening conducted on each item of equipment and plant. Examples were sighted where vehicles, such as Bucurus SKF (501), failed its noise screening which triggered an investigation and subsequent maintenance. Following the maintenance work the vehicle passed it noise screening.</p> <p>If an item of plant or equipment fails, the noise screening test the item of plant and equipment remains in use however undergoes maintenance at the next available time to identify and rectify the issues. As the site is complying with the limits of the Consent and EPL LCO does not deem it necessary to place equipment out of service if it fails a noise screening. This is conducted in line with the approved noise management plan.</p> <p>Additional operational controls</p> <p>LCO has in place additional controls which aim to reduce the site's noise impacts These included:</p> <ul style="list-style-type: none"> Glencore company procurement program has basic criteria that all plant and equipment must comply with. This is taken into account when purchasing or hiring equipment. 		

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				<ul style="list-style-type: none"> General induction raises awareness of noise pollution (all people inducted on site, including contractors). Dedicated resources have been employed for monitoring real time noise levels during the day and night (interviewed Dispatch Operator) Task Specific training is provided for noise. This outlines the methods for responding to alarms, how to download noise results, play them back and what to do in response. Dispatch receives trigger alarms from Sentinex and are the first responders to these alarms. 		
LC028	S3 C2b	operate a noise management system on site that uses attended noise monitoring data to ensure compliance with the relevant conditions of consent;		<p>Refer to comments against SCH 3 C1.</p> <p>Noise impacts on site are monitored and managed in accordance with the approved NMP. The noise monitoring locations have been selected to be representative of the local community and properties that may be impacted by site operational noise. The locations are representative of currently occupied properties identified in the Development Consent DA 305-11-01.</p>	Compliant	
LC029	S3 C2c	evaluate the effectiveness of the noise management system;	<p>Noise Management Planned Task Observation. LIDOC-90533967-5310, date 23/06/2020</p> <p>LCO Shift Managers Report, 19/09/2020</p> <p>E&C Monthly Inspections (sample reviewed)</p>	<p>LCO evaluates the effectiveness of the noise management system through the review of monitoring results, inspections, trigger action responses and complaints.</p> <p>LCO conducts Planned Task Observations (PTO) quarterly. These PTOs involve a staff member conducting a review of particular topics, as assigned by the E&C Department. Past PTOs on noise were reviewed by the audit team. The PTOs for noise require the person conducting it to confirm:</p> <ul style="list-style-type: none"> Noise monitoring is conducted Noise monitoring results are published That noise results are communicated to Liddell CCC every 6 months That noise monitoring checklists have been completed accurately That any 'Red' noise alarms have been actioned appropriately. <p>The PTOs are an effective means of reviewing measures implemented by the E&C Department, verifying the competency of operational staff at implementing controls and keeping senior leadership informed of the compliance requirements and associated management measures for the site.</p> <p>Monthly inspections are conducted by the LCO E&C Department which include a review of noise controls.</p> <p>As detailed above LCO has a system in place to screen and review noise generating equipment.</p>	Compliant	

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SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
				The effectiveness of the Noise management system is also evaluated through review of the red alarms received via the real time Noise monitoring network (refer evidence above).		
LC030	S3 C2d	minimise the noise impacts of the development during meteorological conditions when the noise criteria in this consent does not apply (see Appendix 6); and	Site Inspection LCO Public Website - Monitoring documents (glencore.com.au) LCO Environmental Noise Monitoring Reports, Global Acoustics Pty Ltd (February 2019 – February 2022)	LCO monitors weather conditions via the on-site meteorological station and have engaged a third-party provider, Jacobs, to provide a daily weather forecasting service to assist operations in the prediction of likely adverse meteorological conditions that have the potential to exacerbate noise levels. These daily forecast reports are reviewed and discussed during the daily 10am production review meetings held with LCO operational personnel.	Compliant	
LC031	S3 C2e	monitor and report on compliance with the relevant noise conditions of this consent,	LCO Public Website - Monitoring documents (glencore.com.au) Annual Review 2019 Annual Review 2020 Annual Returns (audit period)	LCO conducts attended and unattended monitoring of noise produced at the site. Results of compliance monitoring are reported monthly on the LCO Public Website. In addition, LCO summarise noise monitoring results in the LCO Annual Review and EPL Annual Returns.	Compliant	
LC032	S3 C3	Monitoring Program The Applicant must update and subsequently implement the Noise Monitoring Program for the development to the satisfaction of the Secretary. This program must be submitted to the Secretary by the end of May 2015 and must include regular attended monitoring in accordance with Appendix 6, and a noise monitoring protocol for evaluating compliance with the noise impact assessment criteria in this consent.	Letter from Department, Noise Monitoring Management Plan, dated 03/02/2021 Noise Monitoring Program LIDOC-90533967-1114, Version 11.0, dated 23/12/2021	The Noise Monitoring Program (NMP) was initially submitted to the Department on 14/05/2015. The Department approved the NMP (Version 1.0) on 18/08/2015. The NMP was updated three times since the last IEA was conducted. The latest revised version (Version 11.0) of the NMP was approved by the Department on 3 February 2021. Attended Noise Monitoring The NMP requires attended noise monitoring to be undertaken once per calendar month at the two locations specified in Section 4.1 of the NMP. Monitoring must be conducted at night between 10:00pm and 7:00am. Attended noise monitoring is conducted by Global Acoustics Consultants during unannounced visits. Monitoring takes into account the applicable meteorological conditions and was conducted monthly at night, as evidenced by monthly monitoring reports available on the LCO Public Website. Monitoring reports reference the NSW Industrial Noise Policy. The attended noise monitoring process and required response flow chart detailed in Figure 4-2 of the NMP was not triggered during the audit period. Unattended Noise Monitoring	Compliant	

SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS

				<p>Unattended real-time noise monitoring was being conducted in accordance with the NMP. Evidence of LCO managing amber and red alarms adequately was provided and included evidence showing modification of operations occurring.</p> <p>Sound Power Testing</p> <p>Refer to audit findings above with regards to sound power testing. A continuous program of regular sound power screening testing was in place during the audit period.</p> <p>Reporting</p> <p>All noise monitoring results are available on the LCO Public website. Noise monitoring data is also summarised in the Annual Reviews, Annual Returns and in the CCC meetings.</p> <p>Noise Exceedance Notifications</p> <p>There were no exceedances of noise criteria during the audit period. As a result, this section of the NMP was not triggered.</p> <p>Incidents and Complaints</p> <p>There were no complaints received or incidents occurrences in relation to noise generated from LCO during the audit period.</p> <p>Summary</p> <p>The auditors conclude, based on the audit evidence outlined against Schedule 3, Conditions 1 and 2 that the NMP contains the required content and was adequately implemented during the audit period.</p>		
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Blasting and Vibration

LC033	S3 C4	<p>Impact Assessment Criteria</p> <p>The Applicant must ensure that blasts on site do not exceed the criteria in Table 2.</p> <table border="1"> <caption>Table 2: Blasting impact assessment criteria</caption> <thead> <tr> <th>Location</th> <th>Maximum overpressure level (dB(L_{eq} Peak))</th> <th>Maximum vibration (mm/s)</th> <th>Attributable exceedance</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Residence on privately owned "zone 1"</td> <td>115</td> <td>12</td> <td>% of the total number of blasts over a period of 12 months</td> </tr> <tr> <td>120</td> <td>16</td> <td>0%</td> </tr> <tr> <td rowspan="2">Newdell zone substation</td> <td>-</td> <td>35 (median)</td> <td>10% of the total number of blasts over a period of 12 months</td> </tr> <tr> <td>-</td> <td>35 (median)</td> <td>0%</td> </tr> <tr> <td>Other public infrastructure</td> <td>-</td> <td>50</td> <td>0%</td> </tr> </tbody> </table> <p>However these criteria do not apply if the Applicant has:</p> <p>(a) a written agreement with the relevant owner to exceed these criteria, and has advised the Department in writing of the terms of this agreement; or</p> <p>(b) in the event that the Applicant is unable to secure a written agreement with an infrastructure owner, demonstrated to the satisfaction of the Secretary that blasting can be carried out at levels in excess of the criteria without causing any damage to the infrastructure.</p>	Location	Maximum overpressure level (dB(L _{eq} Peak))	Maximum vibration (mm/s)	Attributable exceedance	Residence on privately owned "zone 1"	115	12	% of the total number of blasts over a period of 12 months	120	16	0%	Newdell zone substation	-	35 (median)	10% of the total number of blasts over a period of 12 months	-	35 (median)	0%	Other public infrastructure	-	50	0%	<p>LCO Public Website - Monitoring documents (glencore.com.au)</p> <p>Annual Review 2019</p> <p>Annual Review 2020</p> <p>Annual Returns (audit period)</p> <p>Monthly Blast Result Summaries (Audit Period)</p> <p>2019 Liddell Blasting Summary</p> <p>2020 Liddell Blasting Summary</p> <p>2021 Liddell Blasting Summary</p>	<p>Blast monitoring is undertaken at two privately owned residences, the Chain of Ponds Inn (COPI) and the Newdell Zone Substation. Ecotech monitors are in place in accordance with the Blast Management Plan with blast results made available on the LCO website each month. The auditors sighted the blast and vibration monitors located at Scrivens (privately owned residence), the Newdell Zone Substation and the COPI during the audit site inspection.</p> <p>The auditors reviewed raw data obtained from each blast which occurred in the audit period.</p> <p>2019</p> <ul style="list-style-type: none"> 126 blasts conducted No exceedances of criteria recorded. <p>2020</p> <ul style="list-style-type: none"> 109 blasts conducted. One instance of monitoring recording an overpressure at Burlings of 115dB_L on 6/01/2020. This exceedance was within the allowable exceedances as per Table 2 of DA 305- 	<p>Non-Compliant (Low)</p>	<p>Recommendation - No recommendation for improvement has been applied in relation to this non-compliance as LCO's response and implemented actions were considered adequate.</p>
Location	Maximum overpressure level (dB(L _{eq} Peak))	Maximum vibration (mm/s)	Attributable exceedance																									
Residence on privately owned "zone 1"	115	12	% of the total number of blasts over a period of 12 months																									
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Newdell zone substation	-	35 (median)	10% of the total number of blasts over a period of 12 months																									
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Other public infrastructure	-	50	0%																									

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SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
		<p>Notes:</p> <ul style="list-style-type: none"> The interim criteria for the Newdell zone substation are based on consultation with the substation owner (Ausgrid). It is acknowledged that alternative criteria may be agreed as part of the blast management strategy for the substation (see condition 15A). An alternate limit for public infrastructure may be agreed to by the Secretary if it can be justified in accordance with the structural design methodology in AS2187.2-2006, or another methodology agreed to by the Secretary. 		<p>11-01 as the number of exceedances did not exceed 5% of the total number of blasts fired over the year.</p> <p>2021</p> <ul style="list-style-type: none"> 92 blasts conducted. No exceedances of criteria however LCO did fail to record vibration data at Newdell Zone Substation on 26 October 2021. The reporting failure was due to the cord connecting the vibration monitoring being severed by ground maintenance conducted by the Substation owner. LCO notified the Department of the failure to report and stated that this will be reported as a non-compliance in the 2021 Annual Review (which was in preparation at the time of the audit). <p>A review against the blast summary information available on the LCO Public Website and the information summarised in the Annual Reviews was conducted against the raw data provided in the Liddell Blasting Spreadsheets. Data had been accurately reported by LCO however one inconsistency was noted with regards to the blast which occurred on 7 September 2020. The blast, which occurred from South Pit, recorded ground vibration, at the vibration monitor at COPI, of 43.65mm/s. The Annual Review and Blast Summary reports reported that this blast occurred on 9 July 2020. This appears to be a minor mix up when reciting the dates. No other inconsistencies with recorded data and reported results in the Annual Reviews were identified.</p> <p>On the basis that LCO failed to record blast vibration data in one instance during the audit period a non-compliance has been made against this condition. LCO had rectified the damaged monitor and additional delineation of the vibration monitoring equipment was added, in consultation with Ausgrid, to prevent this from reoccurring.</p>		
LC034	S4 C5	<p>Chain of Ponds</p> <p>The Applicant must ensure that blasting at the development does not cause any exceedances of the following performance measures at the Chain of Ponds Inn, to the satisfaction of the Secretary:</p> <p>(a) negligible loss of heritage value; and</p> <p>(b) negligible impact on structural integrity of the internal and external fabric of the Inn, having regard to the existing condition and structural integrity of the Inn at November 2014.</p> <p>Notes:</p> <p>a) The Applicant will be required to define more detailed performance indicators (including impact assessment criteria) in the Blast Management Plan.</p>	<p>Chain of Ponds Inn Blast Management Strategy, LIDOC-90533967-3636, Version 6.0, dated 6/01/2021</p> <p>Annual Review 2019</p> <p>Annual Review 2020</p> <p>Annual Returns (audit period)</p> <p>Monthly Blast Result Summaries (Audit Period)</p>	<p>The COPI Complex is under the ownership and management of the Hunter Valley Operations Joint Venture and is listed on the NSW State Heritage Register.</p> <p>LCO has developed a Blast Management Strategy – Chain of Ponds Inn (Version 6.0, dated 6 January 2021) with a stated objective of ensuring that blasting at LCO does not cause loss of heritage value and / or have a negligible impact on the structural integrity of the external fabric of the Inn compared to its 2014 condition.</p> <p>The Blast Management Strategy for the COPI details that blast vibration levels up to 50mm/s peak particle velocity (PPV) will be acceptable at the COPI. Blast criteria was initially set at up to 20mm/s PPV and has progressively increased based on a review</p>	Compliant	

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SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
		<p>b) <i>Measurement and/or monitoring of compliance with performance measures and indicators is to be undertaken using generally accepted methods that are appropriate for the heritage item. These methods are to be fully described in the Blast Management Plan.</i></p> <p>c) <i>The requirements of this condition only apply to the impacts and consequences of mining operations undertaken following the date that consent is granted to DA 305-11-01 MOD 5.</i></p>	<p>2019 Liddell Blasting Summary 2020 Liddell Blasting Summary 2021 Liddell Blasting Summary Former COPI & Outbuildings Continuing Dilapidation reports, Bill Jordan & Associates dated 10/02/2016 and 27/06/2016 Quarterly monitoring conducted by Bill Jordan & Associates.</p>	<p>of blast impacts and mitigation works. LCO has advanced the trigger levels at COPI via the following schedule:</p> <ul style="list-style-type: none"> • 10 – 20mm/s PPV; implemented August 2015 • 20 – 30mm/s PPV; implemented April 2016 • 30 – 40mm/s PPV; Implemented June 2016 • 40 – 50mm/s PPV; Implemented October 2019 <p>In addition, various monitoring and reporting requirements were implemented during the audit period, including:</p> <ul style="list-style-type: none"> • Strict protocols in place to ensure blast design, loading and events are well controlled when within 350 meters of the Inn. This includes monitoring conducted by a structural engineer - Bill Jordan & Associates (structural and conservation engineers) - at each blast event. • Introduction of trigger levels for monitoring. • Quarterly monitoring conducted by Bill Jordan & Associates. • Management of flyrock via the Terrock flyrock model. • Monthly report conducted on vibration results. <p>Previous impacts were identified in 2017 and were reported on in the 2018 IEA report. The auditors identified the following findings in relation to the COPI:</p> <ul style="list-style-type: none"> • 9 October 2019; identified loose plaster which had fallen. The damage was considered insignificant and not causing structural impacts to the Inn. • 16 December 2019; larger than expected blast recorded at the top of the monitored chimney. Additional structural monitoring and assessments were conducted following this event which concluded that no impacts had been caused by blasting operations. • 7 September 2020; a dilapidation report was triggered following a peak particle velocity (PPV) of 43.65mm/s measured at COPI. The survey methodology was amended for this survey to include use of drones and virtual 3D capture of the building. The dilapidation survey did not identify any impacts which were not already known and reported on. • No exceedances of blast criteria were recorded during the audit period. In addition, on site blast monitoring was conducted on 6 occasions in 2019, 5 occasions in 2020 and one occasion in 2021. In all instances monitoring did not indicate any amendments in monitoring or criteria was required. • No blast related impacts were identified at the COPI during 2021. 		

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				<p>At the time of the audit inspection there were minimal blasts remaining which would be conducted within the 350m control zone of COPI. Once blasting in the vicinity of COPI has passed the control zone (estimated to be in Q3/4 of 2022) LCO will conduct any required repairs and progress to close out the COPI Blast Management Strategy. Finalisation of the management commitments of the COPI and the closure of the management strategy should be followed up in the next IEA.</p> <p>Based on the evidence reviewed, including the mitigation measures implemented and monitoring results provided by structural engineers from Bill Jordan & Associates, the auditors consider that the performance measures of negligible loss of heritage value and negligible impact on the structural integrity of the internal and external fabric of the Inn are being achieved.</p>		
LC035	S4 C9	<p>Blasting Hours</p> <p>The Applicant must carry out blasting at the development only between 9 am and 5 pm Monday to Saturday inclusive. No blasting is allowed on Sundays, public holidays, or at any other time without the written approval of the Secretary.</p>	<p>2019 Liddell Blasting Summary</p> <p>2020 Liddell Blasting Summary</p> <p>2021 Liddell Blasting Summary</p>	<p>The auditors viewed the LCO Blast Tracking Spreadsheets for 2019,2020 and 2021 as well as records of blasts which have occurred in 2022. No blasts were identified to have occurred before 9am or after 5pm.</p> <p>No blasts were identified to have occurred on a Sunday or Public Holiday.</p>	Compliant	
LC036	S4 C10	<p>Blasting Frequency</p> <p>The Applicant may carry out a maximum of:</p> <p>(a) 3 blasts a day; and</p> <p>(b) 8 blasts a week, average over a calendar year on the site.</p> <p>This condition does not apply to blasts that generate ground vibration of 0.5mm/s or less at any residence on privately-owned land, blast misfires or blasts required to ensure the safety of the mine, its workers or the general public.</p> <p>Note: For the purposes of this condition, a blast refers to a single blast event, which may involve a number of individual blasts fired in quick succession in a discrete area of the mine.</p>	<p>2019 Liddell Blasting Summary</p> <p>2020 Liddell Blasting Summary</p> <p>2021 Liddell Blasting Summary</p>	<p>A sample of data from each year was analysed by the auditors. No instances of blast events occurring at a frequency exceeding 3 blasts a day or 8 blasts a week (on average) were noted. The Drill and Blast team were aware of the blast frequency limits and tracked blast occurrences to ensure compliance.</p>	Compliant	
LC037	S3 C11	<p>Operating Conditions</p> <p>During mining operations, the Applicant must:</p> <p>(a) implement all reasonable and feasible management measures to:</p> <ul style="list-style-type: none"> protect the safety of people and livestock in the area surrounding blasting operations; protect public or private infrastructure/property in the area surrounding blasting operations from blasting damage; and minimise the dust and fume emissions from blasting at the mine; <p>(b) operate a suitable system to enable the public to get up-</p>	<p>Site Inspection</p> <p>Drill Pattern and Blast Design Procedure, LIDOC-90533967-75, Version 18.0, dated 04/02/2021</p> <p>LCO Meteorological Assessment, Blast Monitoring and Reporting</p>	<p>Blast management measures were implemented in accordance with the LCO Blast Management Plan and associated sub plans. Section 4.1 of the Blast Management plan outlines the blast management practices that will be implemented over the life of the project. Key controls sighted by the auditors included:</p> <ul style="list-style-type: none"> No exceedances of blast criteria were recorded during the audit period The auditors sighted blast compliance checklists which showed that detailed design is undertaken for each blast, prior to each blast occurring. 	Compliant	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
		to-date information on the proposed blasting schedule on site; and (c) monitor and report on compliance with the relevant blasting conditions in this consent, to the satisfaction of the Secretary.	<p>Procedure, LIDOC-905339672877, Version 12.0, Dated 16/07/2020</p> <p>Blasting Design Compliance Checklist, Shot No. 1738A, Dated 10/02/2022</p> <p>Blast Summary Forms, LIDOC-90533967-128, Version 7.0, dated 11/06/2021</p> <p>Blast Management Plan PTO, Dated 25/02/2020</p> <p>CCC Meeting Minutes</p> <p>Letter from the Department, Blast Management Plan, dated 23/12/2020</p>	<ul style="list-style-type: none"> Blasting is undertaken in accordance with a number of internal procedures including the LCO Pre-Blasting Assessment and Drill Pattern and Blast Design Procedure The auditors were onsite when a blast was to be conducted in South Pit allowing communications, exclusion zone implementation, pre and post blast assessment processes to be verified. One Level 4 blast fume rating was recorded from a blast fired on 11 June 2021. LCO notified the Department and conducted an adjustment of blast loading procedures to require loading of the waterproof Fortis product in low lying areas where ponding is possible. <p>LCO utilises the following methods to provide the public with up-to-date information on proposed blasting:</p> <ul style="list-style-type: none"> LCO operates a free call Community Response and Blasting Information Line operating 24 hours per day, 7 days per week. The number (1800 037 317) was dialled by the auditors on the 2/02/2022 and a voice recording of the next scheduled blast was heard Updates on blast operations are provided in the CCC meetings A blast notification sign was observed at the entrance to LCO and was in place on public roads LCO sends notification emails, phone calls or text messages to the potentially impacted residences or business on the day of each blast event. <p>Blast monitoring and reporting on compliance was being undertaken. Refer evidence against Schedule 3, Condition 15A. The Department's satisfaction is provided via the Department's approval of the following:</p> <ul style="list-style-type: none"> Blast Management Plan Annual Reviews – refer Schedule 5, Condition 3 Attendance at CCC meetings which include summary of blast events and mitigations employed Incident Investigation for fume generated by a blast event Agreement to support LCOs justification to increase blast vibration criteria at Newdell Zone Substation and COPI. 		
LC038	S3 C11A	The Applicant must not undertake blasting on site within 500 metres of any public road or any land outside the site that is not owned by the Applicant unless the Applicant has: (a) demonstrated to the satisfaction of the Secretary that the blasting can be carried out closer to the infrastructure or land without comprising the safety of people or livestock or damaging the infrastructure and/or other buildings and	Blast Management Plan (LIDOC-90533967-103), Version 8.0, dated 05/01/2021	In 2016 the Department stated that Liddell Coal has demonstrated that blasting can be carried out as per Condition 11A(a) and that the Blast Management Plan includes specific measures as required by Condition 11A(b). The letter goes on to note that given the satisfaction of the above conditions, there is no requirement for Liddell Coal to enter into an agreement with Coal and Allied as required by condition 11A(c).	Compliant	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
		structures; and (b) updated the Blast Management Plan to include specific measures that would be implemented while blasting is being carried out within 500 metres of infrastructure or land; or (c) a written agreement with the relevant landowner to allow blasting to be carried out closer to the infrastructure or land, and the Applicant has advised the Department in writing of the terms of this agreement.	Letter by the Department approving Blast Management Strategy dated 28/01/16			
LC039	S3 C12	Public Notice By the end of February 2015, the Applicant must: (a) re-notify the landowner/occupier of any residence within 2 km of the development that they are entitled to register an interest in being notified of the blasting schedule of the mine; and (b) re-notify the landowner/occupier of any residence within 2 km of the development of the blasting schedule at the mine, if that landowner/occupier registers an interest in being so notified; to the satisfaction of the Secretary.	2016 IEA Report (Hansen Baily)	As detailed in the 2016 IEA Report (Hansen Baily), re-notification was provided to private landholders within 2 km of the Development Approval Boundary in January and February 2015.	Compliant	
LC040	S3 C13	By the end of February 2015, the Applicant must advise all landowners of privately-owned land within 2 km of the development that they are entitled to a structural property inspection.	2016 IEA Report (Hansen Baily)	As detailed in the 2016 IEA Report (Hansen Baily), re-notification was provided to private landholders with 2 km of the Development Approval Boundary in January and February 2015.	Compliant	
LC041	S3 C14	If the Applicant receives a written request for a structural property inspection from any landowner of privately-owned land within 2 km of the development, the Applicant must within 3 months of receiving this request: (a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Secretary, to inspect the condition of any building or structure on the land, and recommend measures to mitigate any potential blasting impacts; and (b) give the landowner a copy of the property inspection report.	Consultation with Regulatory Agencies and CCC IC Discussion with LCO personnel	LCO stated that this had not occurred during the audit period. The auditors were satisfied, based on the evidence reviewed, that this condition was not triggered during the audit period.	Not Triggered	
LC042	S3 C15	Property Investigations If any landowner of privately-owned land within 2 km of the site claims that buildings and/or structures on his/her land have been damaged as a result of blasting at the development, the Applicant must within 3 months of receiving this request: (a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Secretary, to investigate the claim; and (b) give the landowner a copy of the property investigation report. If this independent property investigation confirms the	Consultation with Regulatory Agencies and CCC IC Discussion with LCO personnel	LCO stated that this had not occurred during the audit period. The auditors were satisfied, based on the evidence reviewed, that this condition was not triggered during the audit period.	Not Triggered	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
		landowner's claim, and both parties agree with these findings, then the Applicant must repair the damages to the satisfaction of the Secretary. If the Applicant or landowner disagrees with the findings of the independent property investigation, then either party may refer the matter to the Secretary for resolution. If the matter cannot be resolved within 21 days, the Secretary must refer the matter to an Independent Dispute Resolution Process (see Appendix 4).				
LC043	S3 C15A	<p>Blast Management Plan The Applicant must prepare a Blast Management Plan for the development to the satisfaction of the Secretary, this plan must:</p> <p>(a) be submitted to the Secretary for approval by the end of May 2015, unless otherwise agreed by the Secretary;</p> <p>(b) describe the measures that would be implemented to ensure compliance with the blasting criteria and operating conditions of this consent;</p> <p>(c) propose and justify any alternative ground vibration limits for any public infrastructure in the vicinity of the site (if required);</p> <p>(d) include a monitoring program for evaluating and reporting on compliance with the blasting criteria and operating conditions;</p> <p>(e) include a specific Blast Management Strategy for the Chain of Ponds Inn. This Strategy must:</p> <ul style="list-style-type: none"> • be prepared in consultation with the Heritage Council and Coal & Allied, and endorsed by the Heritage Council; • incorporate the recommendations of the Former Chain of Ponds Inn Buildings – Investigation of Blast Vibration and Vulnerability Report (Bill Jordan and Associates, 2013) and Blast Management Strategy (Enviro Strata, 2013); • provide details on the management of potential flyrock impacts on the Chain of Ponds Inn; • provide details on how the stabilisation measures will be implemented and a timetable for implementation; • provide details of the ongoing monitoring and maintenance procedures for the Chain of Ponds Inn; • repair any damage to the Chain of Ponds (should any damage occur) within 6 months of the damage occurring; • provide and submit an annual report on the condition of the Chain of Ponds Inn to the Heritage Council; and <p>(f) include a specific Blast Management Strategy for the Newdell Zone Substation. This Strategy must:</p>	<p>Site Inspection Drill Pattern and Blast Design Procedure, LIDOC-90533967-75, Version 18.0, dated 04/02/2021</p> <p>LCO Meteorological Assessment, Blast Monitoring and Reporting Procedure, LIDOC-905339672877, Version 12.0, Dated 16/07/2020</p> <p>Blasting Design Compliance Checklist, Shot No. 1738A, Dated 10/02/2022</p> <p>Blast Summary Forms, LIDOC-90533967-128, Version 7.0, dated 11/06/2021</p> <p>Blast Management Plan PTO, Dated 25/02/2020</p> <p>CCC Meeting Minutes</p> <p>Letter from the Department, Blast Management Plan, dated 23/12/2020</p> <p>Letter from LCO to Department re alternative vibration</p>	<p>LCO submitted the Blast Management Plan to the Department for review on 28/05/2015 and then again on the 7/01/2016. The Blast Management Plan was originally approved by the Department on 26/01/2016.</p> <p>The Blast Management Plan was updated on two occasions during the audit period. Once in June 2019 to conduct a review post approval of MOD 7 and again in September 2020 to update EPL reporting requirements and to amend management measures now when blasting operations moved outside 500m of the Hunter Valley Loading Point. The Department approved Version 8.0 of the Blast Management Plan on 23 December 2020.</p> <p>Section 4.1 outlines the operational controls that will be implemented over the life of the project with regards to blast management practices.</p> <p>Section 3.1.2 of the blast management plan outlines that the impact assessment criteria for infrastructure do not apply if LCO has a written agreement with the infrastructure owner. As per evidence detailed against Condition 4, Schedule 3 LCO has an executed agreement with Ausgrid to exceed blast vibration thresholds specified in the Development Approval. LCO undertook a staged approved to increase the blasting limits at Newdell Zone Substation. This is outlined in the Blast Management Strategy – Newdell Zone Substation. Alternative vibration criteria are in place for ARTC infrastructure and the Main Northern Line. This is outlined in Appendix A of the Blast Management Plan and was agreed with ARTC on 10 May 2019.</p> <p>Section 5 of the Blast Management Plan outlines the Blast Monitoring Program to be implemented at LCO.</p> <p>COPI; The Blast Management Strategy – Chain of Ponds Inn was approved by the Department on 23 December 2020. The Strategy was prepared in consultation with Coal & Allied and the NSW Heritage Council as per letters dated 13/02/15 and 14/04/15, respectively.</p> <p>Newdell Zone Substation; The Blast Management Strategy – Newdell Zone Substation was approved by the Department on 23 December 2020. Ongoing consultation with Ausgrid regarding</p>	Compliant	2022-OFI-01: it is suggested Table 11-1 of the Annual Review (LCO Incidents and non-compliances) clearly identify which is an incident and which is a non-compliance.

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
		<ul style="list-style-type: none"> • be prepared in consultation with the owner of the substation; • if alternative criteria to those in Table 2 are proposed, include detailed justification for the criteria based on investigations by a suitably qualified expert(s) whose appointment has been endorsed by the Secretary in consultation with the owner of the substation; • provide details on the management of potential ground vibration and flyrock impacts to ensure that blasting does not affect the structural integrity or serviceability of the substation; • include a monitoring program for blast vibration and structural integrity at the substation; and • include a protocol for repairing any damage to the substation in the event that this occurs. <p>The Applicant must implement the management plan as approved by the Secretary.</p>	<p>criteria for ARTC infrastructure, dated 15/05/2019</p> <p>Chain of Ponds Inn, blast management strategy, LIDOC-90533967-3636, dated 06/01/2021</p> <p>Newdell Zone substation; Blast Management Strategy, LIDOC-90533967-3741, dated 05/01/2021</p> <p>Letter from Ausgrid, Re: Blast vibration limit temporary increase, dated 24/09/2019</p> <p>LCO Post Blast Fume Procedure, LIDOC-90533967-1415, dated 03/02/2020</p> <p>Letter to Department for Fume incident, dated 11/05/2021</p> <p>Letter from Department approving the BMP, dated 23/12/2020</p>	<p>blasting impacts at the Newdell Zone Substation was sighted by the auditors.</p> <p>Implementation Review</p> <p>A detailed review against the management measures outlined in the Blast Management Plan was conducted to confirm the plan was being adequately implemented during the audit period.</p> <p>Monitoring and Inspection</p> <p>Refer to findings against Schedule 3, Condition 11. No exceedances of blast criteria were recorded during the audit period. Blast monitors at Scrivens, Chain of Ponds Inn and Newdell Zone Substation were sighted during the audit inspection.</p> <p>General compliance with controls detailed in the plan</p> <p>Refer evidence against Schedule 3, Condition 11.</p> <p>Blast Planned Task Observations (PTO) are assigned quarterly to relevant personnel as a component of the Monthly Visible Leadership Plan. These PTOs are based on the Blast Management Plan PTO checklist and asks those assigned to verify:</p> <ul style="list-style-type: none"> • Blast monitoring results for the last 4 months have been compared against criteria • Blast monitoring results are published and saved on the internal intranet • The Blast Hotline is operational • Select two blast events from the past 4 months and verify with the drill and blast engineer that a pre and post blast checklist was completed accurately. <p>This process enables any gaps to be identified and closed out. The auditors sighted completed PTOs.</p> <p>Review of incidents and non-compliances</p> <p>One incident occurred on 11 June 2021 following a blast event which resulted in a Level 4 blast fume rating being recorded. The fume rating was identified in accordance with the LCO Post Blast Fume Procedure. Notification to the Department is required for any post blast fume event that rates a 4 or 5.</p> <p>LCO reported the incident to the Department on 11 May 2021. Reporting and actions following the incident were conducted in accordance with the blast management plan. The incident will be reported in the 2021 Annual Review.</p> <p>Review of complaints received</p> <p>No complaints were recorded in relation to blasting during the audit period.</p> <p>Review of Consultation Feedback</p>		

SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS

				<p>Feedback received during the audit consultation process did not identify any key areas of focus with regards to blast operations and management at LCO.</p> <p>Review of reporting conducted by LCO Refer findings against Schedule 3, Condition 4</p> <p>Conclusion Based on the evidence reviewed the blast management plan was considered to be prepared and implemented in accordance with Schedule 3, Condition 15A.</p>		
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AIR QUALITY

LC044	S3 C16	<p>Impact Assessment Criteria</p> <p>The Applicant must ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate emissions generated by the development do not exceed the air quality impact assessment criteria listed in Tables 3, 4, and 5 at any residence on privately-owned land.</p> <p><i>Table 3: Long term impact assessment criteria for particulate matter</i></p> <table border="1"> <thead> <tr> <th>Pollutant</th> <th>Averaging period</th> <th>*Criterion</th> </tr> </thead> <tbody> <tr> <td>Total suspended particulate (TSP) matter</td> <td>Annual</td> <td>*90 µg/m³</td> </tr> <tr> <td>Particulate matter < 10 µm (PM₁₀)</td> <td>Annual</td> <td>*30 µg/m³</td> </tr> </tbody> </table> <p><i>Table 4: Short term impact assessment criterion for particulate matter</i></p> <table border="1"> <thead> <tr> <th>Pollutant</th> <th>Averaging period</th> <th>*Criterion</th> </tr> </thead> <tbody> <tr> <td>Particulate matter < 10 µm (PM₁₀)</td> <td>24-hour</td> <td>*50 µg/m³</td> </tr> </tbody> </table> <p><i>Table 5: Long term impact assessment criteria for deposited dust</i></p> <table border="1"> <thead> <tr> <th>Pollutant</th> <th>Averaging period</th> <th>Maximum increase in deposited dust level</th> <th>Maximum total deposited dust level</th> </tr> </thead> <tbody> <tr> <td>*Deposited dust</td> <td>Annual</td> <td>*2 g/m²/month</td> <td>*4 g/m²/month</td> </tr> </tbody> </table> <p>Notes to Tables 3-5:</p> <p>a Total impact (i.e. incremental increase in concentrations due to the development plus background concentrations due to all other sources;</p> <p>b Incremental impact (i.e. incremental increase in concentrations due to the development on its own);</p> <p>c Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS3580.10:2003: Methods for Sampling and Analysis of Ambient Air Determination of Particulate Matter – Deposited Matter – Gravimetric Method; and</p> <p>d Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fire incidents or any other activity agreed by the Secretary.</p>	Pollutant	Averaging period	*Criterion	Total suspended particulate (TSP) matter	Annual	*90 µg/m ³	Particulate matter < 10 µm (PM ₁₀)	Annual	*30 µg/m ³	Pollutant	Averaging period	*Criterion	Particulate matter < 10 µm (PM ₁₀)	24-hour	*50 µg/m ³	Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level	*Deposited dust	Annual	*2 g/m ² /month	*4 g/m ² /month	<p>Air Quality Management Monitoring Program 20200703 Liddell Dust Availability Spreadsheet 19-20 2021_12 Liddell Monitoring Workbook CBased Air Quality PTO, dated 13/11/2019</p> <p>Air Quality PTO, dated 27/08/2020</p> <p>Air Quality PTO, dated 31/05/2021</p> <p>Dust Management TARP Version 10.0</p> <p>Email from the Department, extraordinary AQ events in 2019, dated 21/02/2020</p> <p>Email from the Department, extraordinary dust events in 2020, dated 02/02/2021</p>	<p>LCO manages air quality in accordance with the Air Quality Management Monitoring Program (AQMMP). The following air quality monitoring is undertaken:</p> <ul style="list-style-type: none"> Compliance Monitoring – Utilising a network of TSP and PM₁₀ monitors, Real time TEOM monitors and dust deposition gauges. This includes the following monitors: <ul style="list-style-type: none"> SX38-D1 and SX38-D2 – TEOM-PM₁₀ compliance monitors HVAS 11 and HVAS 20 – TSP compliance monitors HVAS 12 and HVAS 21 – HVAS-PM₁₀ compliance monitors D55 and D62 – Deposited dust compliance monitors Management Monitoring – Real time monitoring utilised for reactive dust management in accordance with the LCO Dust Management TARP (E-BAM monitoring stations) Supplementary Boundary Monitoring – E-BAM monitoring stations determined in consultation with the EPA as EPL Monitoring Points 9, 10, 11 and 12. <p>CBased conduct the depositional monitoring (HVAS and TSP). A monthly report of air quality data is sent to Liddell. CBASED also provide a summary report in Liddell’s monitoring template. A spreadsheet of data is also provided. A summary of monthly data is published to the LCO Public Website. The auditors sighted a sample of monthly reports as well as raw data from the spreadsheet provided by CBASED to verify data presented in Annual Reviews and the monthly reports on the website were correct.</p> <p>A review of the air quality compliance monitoring data identified the following.</p>	Compliant	
Pollutant	Averaging period	*Criterion																											
Total suspended particulate (TSP) matter	Annual	*90 µg/m ³																											
Particulate matter < 10 µm (PM ₁₀)	Annual	*30 µg/m ³																											
Pollutant	Averaging period	*Criterion																											
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Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level																										
*Deposited dust	Annual	*2 g/m ² /month	*4 g/m ² /month																										

			<p><u>2019 Air Quality Monitoring Data Review</u></p> <p>Exceedances of DA 305-11-01, Schedule 3, Condition 16:</p> <p>The following short term impact assessment criterion for PM₁₀ exceedances of the 24-hour averaging period occurred in 2019:</p> <ul style="list-style-type: none"> • 37 exceedances at monitoring unit SX38-D1 occurred in 2019 • 48 exceedances at monitoring unit SX38-D2 occurred in 2019 • 7 exceedances at monitoring unit HVAS 21 occurred in 2019 • 8 exceedances at monitoring unit HVAS 12 occurred in 2019. <p>Only a portion of these exceedances fell within the audit period, which commenced on the 8 February 2019.</p> <p>In all instances LCO investigations determined that extraordinary events or regional conditions resulted in the exceedances opposed to contribution by LCO operations. In reaching the conclusion that LCO activities did not cause the exceedance, LCOs investigation considered the meteorological data (prevailing winds), real-time monitoring results (no alarms had been triggered), boundary monitoring results and Upper Hunter Air Quality Monitoring Network results.</p> <p>MOD 7 of LCO's DA 305-11-01 was approved on 12 February 2019. Prior to this note 'a' to Table 3-5 of DA 305-11-01, short term impact criteria was applicable to the Total Impact i.e. the incremental increase in concentrations due to the development plus background contributions due to all other sources. Following approval of MOD 7, the updated consolidated consent amended the short term PM₁₀ criteria to be subject to note 'b' Incremental Impact (i.e. incremental increase in concentrations due to the development on its own). The exceedances noted above would not have been considered non-compliant (after the date of approval of MOD 7) as they were considered to be caused by increased background concentrations from other sources.</p> <p><u>2020 Air Quality Monitoring Data Review</u></p> <p>2020 Exceedances of DA 305-11-01, Schedule 3, Condition 16:</p> <p>The following short term impact assessment criterion for PM₁₀ exceedances of the 24-hour averaging period occurred in 2020:</p> <ul style="list-style-type: none"> • 8 exceedances at monitoring unit SX38-D1 occurred in 2020 • 9 exceedances at monitoring unit SX38-D2 occurred in 2020 • 1 exceedance at monitoring unit HVAS 21 occurred in 2020 • 1 exceedance at monitoring unit HVAS 12 occurred in 2020 <p>The exceedances of short term PM₁₀ criteria in 2020 were attributed to extraordinary regional conditions, classified by the Department and therefore Note D of Schedule 3, Condition 16 applies, which states "<i>Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fire incidents or any other activity agreed by the Secretary</i>". After excluding results</p>		
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Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
				<p>impacted by extraordinary events, the short-term 24-hour criterion (50 µg/m³) was not exceeded during 2020.</p> <p>Based on review of air quality monitoring data there have not been any exceedance of air quality impact assessment criteria listed in Tables 3, 4, and 5 at any residence on privately-owned land which constitute a non-compliance against this condition.</p>		
LC045	S3 C17	DELETED		Noted	Noted	
LC046	S3 C18	<p>Operating Conditions</p> <p>The Applicant must:</p> <p>(a) implement all reasonable and feasible air quality management measures to minimise odour, fume and dust emissions from the development;</p> <p>(b) implement all reasonable and feasible measures to minimise the release of greenhouse gas emissions from the site;</p> <p>(c) minimise any visible air pollution generated by development;</p> <p>(d) minimise surface disturbance on the site;</p> <p>(e) operate an air quality management system that uses a combination of high volume samplers and dust deposition gauges to ensure compliance with the relevant conditions of consent; and</p> <p>(f) minimise the air quality impacts of the development during adverse meteorological conditions and extraordinary events to the satisfaction of the Secretary.</p>	<p>Dust Management Tarp Procedure LIDOC-90533967-2387, 16/12/2020</p> <p>Shift Managers Report, 19/09/2020</p> <p>Shift Managers Report, 24/05/2021</p> <p>General E&C Awareness training</p> <p>Visitor Induction Slides</p> <p>Air Quality PTO, dated 13/11/2019</p> <p>Air Quality PTO, dated 27/08/2020</p> <p>Air Quality PTO, dated 31/05/2021</p> <p>Spontaneous Combustion Management Plan, LIDOC-90533964-84, Version 13.0, dated 17/06/2021</p> <p>Sentinex Live Site Sighted</p>	<p>The management of Air Quality on site is undertaken in accordance with the LCO AQMMP. In addition, the LCO Dust Management TARP and LCO Spontaneous Combustion Management Plan are used for the ongoing management of air quality. A review of air quality controls was conducted by the auditors. The following is noted:</p> <p>Spontaneous Combustion</p> <p>Spontaneous combustion was visible at the time of the audit inspection in the Entrance Pit. Liddell underground mine ceased operations in 1995. There are underground mine workings in the Liddell Seam which are intersected with Liddell's open cut mining operations. The Spontaneous combustion event was caused when mine pit progression reached the old underground working in the E05 strip. Controls to manage Spontaneous combustion onsite were in accordance with the LCO Spontaneous Combustion Management Plan. A spontaneous combustion event occurred on 24 December 2021. A flare up was caused by the spontaneous combustion event which was visible offsite from the New England Highway. LCO notified the Department of the event.</p> <p>Dust Management</p> <p>Management and contingency measures are triggered by visual monitoring and alerts from the real time operational monitoring and forecast systems as outlined in the LCO Dust Management TARP. The Dust Management TARP contains a number of triggers including monitoring triggers, operational triggers and weather condition alarms.</p> <p>Dust cameras are in place as per the dust TARP. These are accessible from the control room, the enviro office and select personnel as required.</p> <p>The auditors sighted the Sentinex live site during the audit inspection to verify validity and data capture.</p> <p>LCO has a daily meeting at 10am with operational, supervisor, safety and environmental staff which outlines what level of the dust TARP has been triggered for the previous dayshift and nightshift. The auditors attended a 10am shift meeting and verified weather conditions and dust control measures were discussed in the meeting.</p>	Compliant	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
				<p>Other dust management measures in place at the time of the audit included:</p> <ul style="list-style-type: none"> • Progressive rehabilitation sighted on site • Major haul roads were maintained in a damp condition by water carts • Water sprays in place at CHPP, stockpiles and train loading facility • Graders were identified in operation to maintain road surfaces • Water cart filling stations were sighted • Speed limit signage was in place on site. <p>The Mining Supervisor maintains a Daily Inspection Report book which includes notes from activities which occurred during each shift. This includes a section which outlines if the dust TARP was activated and what level.</p> <p>Fume Management</p> <p>LCO implements a Post Blast Fume Procedure which is included as an appendix to the Blast Management Plan. During the blast design process, the engineers ensure that product selection (low fume product), meteorological conditions and other blast details are aimed at reducing fumes.</p> <p>Following each blast, fume is reviewed by the drill and blast engineer and recorded in the post blast checklist. If fume is identified this is recorded and rated and actions made according to the fume rating. One Level 4 fume rating was recorded during the audit period. Refer Schedule 3, Condition 15A for details.</p> <p>Complaints and Incidents Review</p> <p>No complaints have been received during the audit period in relation to air quality or odour. Incident and non-compliance occurrences were limited to those referenced in Schedule 3, Condition 16 and above.</p> <p>Training and Review</p> <p>General E&C Awareness training includes training on the Dust Tarp. Supervisors' training has more detail including responding to alarms and requirements to alter operations in response to dust triggers.</p> <p>LCO has in place a visible leadership Program which requires planned task observations (PTO) and work tasks to be completed for various topics across the mine's operations. This includes environmental PTOs which are required to be completed four times a month. There is a PTO for each environment topic including Air Quality which is required to be completed three times a year.</p>		

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
				<p>A PTO is completed by a representative from another department. The auditors sighted completed Air Quality Management PTO's.</p> <p>LCO is subject to NGERs reporting as well as shareholder and investor reporting and as such monitor greenhouse gas emissions and energy production.</p> <p>LCO continues to have in place a fuel save program, which is managed by the Tech Services Department. This program assesses a range of scenarios to identify anticipated outcomes with relation to fuel usage saved, reductions in fugitive emissions, and cost savings.</p> <p>The auditors sighted the dispatch control room in operation and the methods for management of air quality complaints or elevated levels of dust. The controls in place were considered to be adequate at minimising visible air pollution.</p> <p>LCO minimises the site disturbance footprint through progressive rehabilitation. Progressive rehabilitation was observed during the site visit. Glencore also have an established a Ground Disturbance Permit (GDP) process to ensure proposed ground disturbance is appropriate assessed and measures identified and implemented to mitigate impacts (sighted examples of completed GDPs).</p> <p>The compliance air quality monitoring network at LCO consists of TSP and PM₁₀ monitors, real time TEOM monitors, and dust deposition gauges situated at privately owned residences. Refer evidence against Schedule 3, Condition 16.</p> <p>LCO reviews a range of meteorological data which influences operations and air quality controls for each day. Glencore has engaged Jacobs to provide daily dust risk forecast information to each mine in NSW. LCO receive an email from Jacobs approximately 5:30am each morning which enables the site manager to review the information prior to shift commencement. This is discussed in the site pre-start meeting.</p> <p>The above measures are described in the AQMMP which was approved by the Secretary (refer Schedule 3, Condition 19 below). Reporting of air quality performance is included in the Annual Review which is provided to the Department.</p>		
LC047	S3 C19	<p>Air Quality Monitoring</p> <p>The Applicant must update and subsequently implement the Air Quality Monitoring Program for the development to the satisfaction of the Secretary. This program must be submitted to the Secretary by the end of May 2015 and must include a combination of real-time air quality monitors and supplementary monitors to monitor the dust emissions of the development; and an air quality monitoring protocol for</p>	<p>Letter from the Department, re; air quality management plan, dated 29/01/2021</p> <p>Dust Management Tarp Procedure LIDOC-90533967-2387, 16/12/2020</p>	<p>The AQMMP was initially approved by the Department on 13/08/2015. The AQMP was revised twice in the audit period. This includes:</p> <ul style="list-style-type: none"> August 2019, the Department approved the updated plan on 9/8/2019 July 2020, the Department approved the updated and most recent version on 29/01/2021 	Non-Compliant (Low)	<p>2022-OFI-02: It is suggested LCO included reference to SX38-D5 in Table 4-5 of the AQMMP.</p>

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
		evaluating compliance with the air quality impact assessment criteria in this consent.		<p>The amendments to the AQMP are documented in the change table in the AQMP. The auditors sighted the approval letter from the Department.</p> <p>The air quality monitoring program is discussed in Section 2.11 of the AQMMP. This includes HVAS monitors (TSP, and PM₁₀) real time TEOM monitors (PM₁₀) and dust deposition gauges for assessing compliance as well as real-time E-BAM monitors and meteorological monitoring for use as a management tool for reactive dust management. Supplementary boundary monitoring (using E-BAMS) is also included to supplement the reactive dust management system and aid determination of LCO's contribution to local dust concentrations.</p> <p>Implementation of the Monitoring Program</p> <p>Air quality monitoring was undertaken in accordance with the AQMMP, specifically Section 2.11 – Air Quality Monitoring. Results of monitoring are provided in the Annual Reviews and uploaded onto the LCO website each month. A sample of monitoring locations was sighted during the site inspection. Refer also to Schedule 3, Condition 16.</p> <p>Monitoring Data Availability</p> <p>During the audit period LCO failed to meet data collection targets for PM₁₀ monitoring in the following instances:</p> <p>2019</p> <ul style="list-style-type: none"> SX38-D1; 11 dates throughout 2019 due to maintenance and hardware failures. Annual data availability in 2019 was 97.9% SX38-D2; 11 dates throughout 2019 due to maintenance and hardware failures. Annual data availability in 2019 was 97.7% Monitoring Point 9 / SX38-D3: (8 dates in 2019), Annual data availability in 2019 was 98.4% Monitoring Point 10 / SX38-D4: (2 dates in 2019), Annual data availability in 2019 was 99.3% Monitoring Point 11 / SX38-D5: (21 dates in 2019), Annual data availability in 2019 was 95.5% Monitoring Point 12 / SW38-D6: (12 dates in 2019), Annual data availability in 2019 was 97.9% <p>2020</p> <ul style="list-style-type: none"> SX38-D1; 13 dates throughout 2020 due to maintenance and hardware failures. Annual data availability in 2020 was 96.9% SX38-D2; 26 dates throughout 2020 due to maintenance and hardware failures. Annual data availability in 2020 was 93.3% 		Recommendation not required.

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
				<ul style="list-style-type: none"> HVAS 21 (Antiene) failed to monitor PM10 on two occasions in 2020 HVAS 12 (Scrivens) failed to monitor PM10 on three occasions in 2020 Monitoring Point 9 / SX38-D3: (8 dates in 2020), Annual data availability in 2020 was 98.4% Monitoring Point 10 / SX38-D4: (11 dates in 2020), Annual data availability in 2020 was 98.0% Monitoring Point 11 / SX38-D5: (17 dates in 2020), Annual data availability in 2020 was 97.4% Monitoring Point 12 / SW38-D6: (25 dates in 2020), Annual data availability in 2020 was 94.9% <p>2021</p> <ul style="list-style-type: none"> HVAS 12 (Scrivens) failed to monitor PM10 on 15/04/2021 Monitoring Point 9 / SX38-D3: (20 dates in 2021), Annual data availability in 2021 was 96.5% Monitoring Point 10 / SX38-D4: (14 dates in 2021), Annual data availability in 2021 was 98.5% Monitoring Point 11 / SX38-D5: (13 dates in 2021), Annual data availability in 2021 was 98.7% Monitoring Point 12 / SW38-D6: (12 dates in 2021), Annual data availability in 2021 was 99.0% <p>Section 4.4 of the AQMMP states that LCO continue to work towards achieving a 100% data completeness for compliance dust deposition and HVAS monitoring stations and 90% data availability for real-time monitors.</p> <p>Data availability objectives are further defined in Sections 4.11.3.5. In addition, the AMMP defines the data completeness criterion for the purpose of calculating period averages for TEOMs, dust gauges and HVAS to be 75%.</p> <p>A non-compliance has been found with regards to the implementation of the AQMMP. As LCO failed to capture data in accordance with the data completeness targets defined in the AQMMP this condition is found to be non-compliant.</p> <p>The evidence reviewed indicates that LCO continues to implement measures to address data failures within its control to the extent practicable. This includes operation of an extensive maintenance program and actions to minimise the occurrence of equipment failures, as detailed in the 2019 IEA report. Refer additional comments against Condition M2.2 of EPL 2094.</p>		
METEOROLOGICAL MONITORING						
LC048	S3 C20	Meteorological Monitoring The Applicant must ensure that there is a suitable	Liddell Met Calibration records,	LCO operates a meteorological station on site (sighted by auditors). The requirement for a meteorological station is also	Compliant	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
		<p>meteorological station operating in the vicinity of the development in accordance with the requirements in Approved Methods for Sampling of Air Pollutants in New South Wales; and to the satisfaction of the EPA and Secretary.</p>	<p>CBased Environmental Pty Limited, dated 12/04/2021</p> <p>Envirodata weather station specialists, technical specification sheet.</p> <p>Vaisala Transcat, humidity and temperature sensor technical specifications sheet.</p> <p>Model TB4 tipping bucket rain gauge technical specifications sheet</p>	<p>included in the sites EPL. The weather station was initially approved for operation in 2008. It was supplied and was maintained, at the time of the audit, by CBased.</p> <p>The meteorological data is recorded and available in the TeleData platform and saved in the environment monitoring database (EMD), which is maintained by CBased. Annual inspection and calibration reports from 2019 were sighted by the auditors.</p> <p>The auditors sighted the teledata platform to verify live continuous data is available for the following:</p> <ul style="list-style-type: none"> • Temperature and humidity • Wind speed and direction • Rainfall • Solar radiation & 24hr evaporation • Barometric pressure • Dire danger index <p>Annual Inspection and Calibration reports outline that the weather station is operating in accordance with the Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales. The auditors sighted technical specification sheets for the met station. Reference was made to AM-2 in the spec sheets however detailed review against the technical spec sheets and the requirements of AM-2 and AM-4 sampling methods was not conducted as part of the audit.</p>		
SURFACE AND GROUND WATER						
LC049	S3 C21	<p>Water Supply</p> <p>The Applicant must ensure that it has sufficient water for all stages of the development, and if necessary, adjust the scale of mining operations to match its available water supply, to the satisfaction of the Secretary.</p> <p><i>Note: The Applicant is required to obtain all necessary water licences and approvals for the development under the Water Act 1912 and/or Water Management Act 2000.</i></p>	<p>Liddell Coal Operations Water Balance Model Calibration Update, HEC, June 2020</p>	<p>LCO manages water through an Integrated Water Management System which includes groundwater, surface runoff, mine water from the open cut and underground mining areas and decant from the CHPP tailings storages.</p> <p>Water is sourced from groundwater in former underground workings, and surface water that accumulates in above ground mine storages including open cut sumps and tailings decant. These water sources meet the sites raw water supply requirement.</p> <p>Reservoir North Dam with a capacity of 2000 ML is the main water storage on site. The Reservoir North Dam receives water pumped from both open cut pits, other dams and the former Liddell underground workings via bores. The Reservoir North Dam provides make-up supply to the CHPP, water sharing with neighbouring Hunter Valley Operations, Ravensworth Operations and Mt Owen/Glendell and water-truck fill points for dust suppression.</p>	Compliant	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation									
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS															
				<p>As a tool to support decision making on site in relation to water management, a detailed Site Water Balance Model (Goldsim) has been developed for LCO and the Greater Ravensworth Area.</p> <p>The model did not identify any water supply shortfalls in any of the climatic scenarios simulated for the remaining mine life, implying a high level of water supply security. LCO monitors the mine water balance periodically. For example a monthly water inventory report is prepared which includes the current water inventory and 12-month prediction. These inventory reports include levels at which action should be taken. Predictions include both 5th percentile, median and 95th percentile to guide decisions on water inventory (i.e. reduction or site water inventory, normal conditions, etc.).</p> <p>The model and its calibration are discussed further under Schedule 3, Condition 23.</p>											
LC050	S3 C21A	Unless an EPL or the EPA authorises otherwise, the Applicant must comply with Section 120 of the POEO Act and the Protection of the Environment Operations (Hunter River Salinity Trading Scheme) Regulation 2002.	Hunter River Salinity Trading Scheme Report, LCO, 1 July 2020 – 30 June 2021	<p>Section 120 of the POEO Act prohibits the pollution of waters.</p> <p>LCO reported one non-compliance in relation to water during the audit period, when equipment error led to failure to monitor turbidity continuously during discharge at the HRSTS discharge point between 20/03/2021 and 22/03/2021.</p> <p>According to the HRSTS Report for 2020/2021, as soon as LCO became aware of the erroneous turbidity results, action was taken to replace the water quality sensor. Grab samples and observation photos were taken twice daily during the period the turbidity sensor was down, with an average result of 14.6 NTU and maximum of 25 NTU.</p> <p>The auditors concluded that no pollution of waters occurred during the audit period.</p>	Compliant										
LC051	S3 C21B	The Applicant must ensure that treated effluent from the wastewater treatment plant does not exceed the discharge limits in Table 6, unless otherwise agreed by the EPA.	Monitoring Workbook Monthly Environmental Monitoring Reports Liddell Public Website Annual Reviews Annual Returns	<p>Treated effluent from the plant undergoes UV disinfection and is recycled into the mine dirty water system and contained onsite.</p> <p>No incidents or non-compliances in relation to treated effluent discharge from the wastewater treatment plant were reported during the audit period. Following exceedances recorded in 2018 maintenance work was conducted on the MIA STP. Since this work, ongoing monitoring indicates the STP is performing adequately, and E. coli levels have remained within the limits since 23 July 2018.</p>	Compliant										
LC052	S3 C21C	The Applicant must monitor the quality of treated effluent to be discharged from the wastewater treatment plant (by sampling and obtaining results by analysis) as specified in Table 6, or as otherwise agreed by the EPA.	Discussion with LCO personnel Site Inspection	<p>Monitoring at five STP sites (including the MIA STP discharge point) was being undertaken on a fortnightly basis for a number of parameters including E. coli. Sampling was being undertaken by CBased Environmental Pty Ltd (CBased) and sterile samples sent to Australian Laboratory Services (ALS) for E. coli analysis. The auditors sighted a sample of monitoring reports for the audit period to verify E. coli was being monitored in accordance with</p>	Compliant										
		<table border="1"> <thead> <tr> <th>Parameter</th> <th>Units of Measure</th> <th>Frequency</th> <th>Sampling Method</th> <th>Measurement Limit (100 per cent)</th> </tr> </thead> <tbody> <tr> <td>E. coli</td> <td>Colony Forming Units (CFU)</td> <td>Monthly</td> <td>Pre-sterilized membrane</td> <td>100</td> </tr> </tbody> </table>	Parameter	Units of Measure	Frequency	Sampling Method	Measurement Limit (100 per cent)	E. coli	Colony Forming Units (CFU)	Monthly	Pre-sterilized membrane	100			
Parameter	Units of Measure	Frequency	Sampling Method	Measurement Limit (100 per cent)											
E. coli	Colony Forming Units (CFU)	Monthly	Pre-sterilized membrane	100											

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
				Schedule 3, Condition 21C. No exceedances of E. coli were identified by the auditors from the evidence reviewed in addition, no exceedances were reported by LCO during the audit period. The auditors sighted the EPL discharge monitoring point at the STPs during the audit inspection.		
LC053	S3 C22	Desalination Unit Prior to the construction of the desalination unit, the Applicant must conduct investigations and identify options concerning the most appropriate method for the treatment and/or disposal of brine, to the satisfaction of the Secretary, DPI – Water and EPA.	Site Inspection Discussion with LCO personnel	The desalination unit was not constructed. This condition is not triggered.	Not Triggered	
LC054	S3 C23	Water Management Plan The Applicant must prepare a Water Management Plan for the development to the satisfaction of the Secretary. This Plan must: (a) be prepared in consultation with DPI – Water and EPA by suitably qualified and experienced persons whose appointment has been approved by the Secretary; (b) be submitted to the Secretary for approval by the end of May 2015, unless the Secretary agrees otherwise; (c) this plan must include a:	Water Management Plan (LIDOC-90533967-3694), Version 13.0, dated 01/07/2021 Letter from the Department dated 20/05/2021 LCO letter to the Department (WMP Consultation Summary) dated 4/02/2021 Sighted THE DEPARTMENT-Water letter dated 22/02/2021	The Water Management Plan (WMP) was developed and approved initially on 18 August 2015. Evidence of consultation and approval is included as Appendices to the WMP. The WMP was revised and updated on two occasions during the audit period. This includes on 2 July 2019 to reflect approval of MOD 7 and on 20 July 2021 to include revised EPL points and requirements. The Department approved the latest version of the WMP, version 13.0, on 20 May 2021. Sighted LCO letter to THE DEPARTMENT dated 4 February 2021 in which LCO noted that WMP had been provided to the EPA and NRAR for comment. The letter noted that a response from the EPA had been received and recorded in the portal on 10 August 2020. THE DEPARTMENT-Water (formerly NRAR) provided a letter dated 22 February 2021 which included comment on the updated WMP. The auditors were satisfied the WMP had been prepared in accordance with Schedule 3, Condition 23.	Compliant	
LC055	S3 C23(i)	(i) Site Water Balance that: • includes details of: - sources and security of water supply, including contingency planning for future reporting periods; - water use and management on site; - reporting procedures, including the preparation of a site water balance for each calendar year; • describes the measures that would be implemented to minimise clean water use on site;	Water Management Plan (LIDOC-90533967-3694), Version 13.0, Dated 01/07/2021 Liddell Coal Operations Water Balance Model Calibration Update, HEC, June 2020	Section 7 of the WMP discusses the Site water balance. It describes the Life of Mine water balance model that was developed for LCO and since been integrated with the two neighbouring Glencore mines (Ravensworth Operations and the Mt Owen Complex). It provides an overview of the model and a summary of the model results. The WMP discusses water sources, supply, management and use. Water balance monitoring, model calibration and review and reporting are discussed in Section 7.5. Measures to minimise clean water use on site are outlined in Section 7.3 Water efficiency. Evidence that the water balance model was being reviewed and calibrated was sighted including: • Model Calibration undertaken by Hydro Engineering & Consulting Pty Ltd (HEC) initially in 2020	Compliant	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
				<ul style="list-style-type: none"> Dashboard/ interface and monthly status update “Water Accounting Framework” tool <p>Annual Reviews providing a summary of the water balance results. Site water balance reported in AR, including 3-year calibration.</p>		
LC056	S3 C23(ii)	<p>(ii) Erosion and Sediment Control Plan that:</p> <ul style="list-style-type: none"> is consistent with the requirements of Managing Urban Stormwater: Soils and Construction, Volume 1, 4th Edition, 2004 (Landcom), or its latest version; identifies activities that could cause soil erosion, generate sediment or effect flooding; describes measures to minimise soil erosion and the potential for the transport of sediment to downstream waters, and manage flood risk; and describe what measures would be implemented to maintain the structures over time; 	<p>Water Management Plan (LIDOC-90533967-3694), Version 13.0, Dated 01/07/2021</p> <p>Antiene and Dam 4 Rehabilitation works GDP Erosion and Sediment Control Plan Checklists – dated 10/02/2020 and 15/02/2021</p>	<p>The water management system has been designed to capture the majority of runoff within the footprint of mining disturbance and rehabilitation areas.</p> <p>The 2019 IEA found that the ESCP (part of the WMP) generally complied with Schedule 2, Condition 23 (ii). However the 2019 IEA recommended that Section 8.6.4 of the WMP be updated to ensure consistency with regards to soil type and more clearly detail the design standards LCO adopts demonstrating it is consistent with the <i>Managing Urban Stormwater Soil and Construction, Volume 2E: Mines and Quarries</i>.</p> <p>WMP Section 8 Erosion and Sediment Control has been updated to reference <i>Managing Urban Stormwater Soil and Construction, Volume 2E: Mines and Quarries</i>. Section 8.6.4 Sediment Dams states that typically sizing calculations assume Type F or D soil material; and includes typical sediment dam design details.</p> <p>The Ground Disturbance Permit (GDP) process is the main ESCP control for the site. The auditors sighted the Antiene Dam ESCP summary and ESCP design checklist, dated 10 December 2000. The ESCP shows the 1 in 100-year flood level.</p> <p>Site inspection observed that drains, water management controls and erosion sediment controls were typically in well-maintained order.</p>	Compliant	
LC057	S3 C23(iii)	<p>(iii) Surface Water Management Plan, that includes:</p> <ul style="list-style-type: none"> reference to detailed baseline data on water flows and quality contained in the EA;• a detailed description of the water management system on site; design objectives and performance criteria for the: <ul style="list-style-type: none"> design and management of final voids; design and management for sodic and dispersible soils and acid or sulphate generating materials; reinstatement of drainage lines on the rehabilitated areas of the site; and control of any potential water pollution from the rehabilitated areas of the site; surface water assessment criteria, including trigger levels for investigating any potentially adverse impacts for the following: 	<p>Water Management Plan (LIDOC-90533967-3694), Version 13.0, dated 01/07/2021</p> <p>Annual Review 2020 Antiene and Dam 4 Rehabilitation works GDP Erosion and Sediment Control Plan Checklists – dated 10/02/2020 and 15/02/2021</p> <p>Antiene & Dam 4 ESCP Plan 1, date created 4/12/2020</p>	<p>The structure and content of the WMP, Surface Water Management Plan (SWMP) were reviewed in detail during the 2019 IEA. The auditors carried out a high-level review and determined that the WMP continues to meet the requirements of this condition.</p> <p>WMP Section 6.1 has been updated to reference both the LCO Rehabilitation Plan and the MOP as per the 2019 IEA recommendation.</p> <p>Implementation <u>Surface Water Monitoring Program</u></p> <p>Surface water monitoring is undertaken along the two creek lines adjacent to the operation (Bayswater Creek and Bowmans Creek) as well as on site water storages. The monitoring program applies site-specific water quality trigger limits for the identification of potential adverse impacts.</p>	Compliant	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
		<ul style="list-style-type: none"> - the water management system, including mine water storages and sediment dams; - downstream surface water quality; and - stream and riparian vegetation health; • a program to monitor and report on: <ul style="list-style-type: none"> - the effectiveness of the water management system; - surface water flows and quality, stream and riparian vegetation health in the watercourses that could be affected by the development; and - stream health and channel stability; • reporting procedures for the results of the monitoring program; • a plan to respond to any exceedances of the performance criteria, and mitigate any adverse surface water impacts of the development including: <ul style="list-style-type: none"> - a protocol for the investigation, notification and mitigation of any exceedances; - measures to mitigate and/or compensate potentially affected landowners for the loss of surface flows in Bowmans Creek downstream of the development resulting from the development; and - the procedures that would be followed if any unforeseen impacts are detected during the development. 	<p>Antiene & Dam 4 ESCP Plan V2 Eastern Detail, dated 15/02/2021</p> <p>Screenshots showing CAD design of diversion bunds (GDP Ext Feb 2021–Detail.pdf and 20200204 ESCP Plan v2 Containment Drain Details.pdf)</p> <p>Advice from WSP to LCO regarding volumetric calculations for catchment runoff reporting to the Antiene tailings dam spillway and Dam, dated 14/02/2020</p> <p>BCK1A Surface Water Investigation TARP</p> <p>Surface Water Investigation TARP BCK1A – EC & TDS, 14 December 2018</p> <p>Surface Water Investigation TARP BCK1A – EC & TDS, 8 March 2019</p> <p>Surface Water Investigation TARP BCK1A – EC & TDS, 27 May 2019</p>	<p>The surface water quality monitoring program applies the following methodology:</p> <ul style="list-style-type: none"> • Monitoring locations: three sites on Bayswater Creek, and eight sites on Bowmans Creek, representing a range of upstream, midstream, and downstream locations • sampling parameters include pH, electrical conductivity (EC), total suspended solids (TSS), total dissolved solids (TDS), and turbidity • collection and analysis of surface water samples on a monthly frequency. <p>The trigger limits/impact assessment criteria were determined on a statistical analysis of data collected over a five (5) year period (between 2009 - 2014) and are documented in the WMP. Impact assessment criteria was determined based on adoption of the 90th percentile concentration (when creek is flowing) or Maximum values (no flow).</p> <p>In addition to the above water quality monitoring, the surface water monitoring program at LCO includes:</p> <ul style="list-style-type: none"> • annual monitoring program to monitor creek line channel stability and health of riparian vegetation • stream flow gauging on Bowmans Creek (upstream and downstream of the active mining areas) • monitoring of treated effluent generated from the wastewater treatment plan (for E. coli). <p>Under the WMP, three or more consecutive exceedances of the impact assessment criteria / water quality trigger levels instigates an Investigation Trigger Action Response Plan (ITARP).</p> <p><u>Investigation into SW exceedances</u></p> <p>Commencing in May 2018, a series of consecutive water quality exceedances were recorded at monitoring station BCK1A. As per the WMP, an investigation is required when a nominated trigger value is exceeded three or more times consecutively. Action to be taken includes checking flow conditions within the creek, resampling, and reviewing of all data as required.</p> <p>Evidence of these investigations being conducted and notifications to the Department being made were sighted and reviewed during the course of this IEA.</p> <p>Refer audit findings detailed in Section 6.1.4.2.</p> <p>Investigation Trigger Action Response Plans conducted and reported to the Department concluded that the exceedances were the result of background variations in response to low rainfall, prolonged drought conditions and were not the result of any mining activities at LCO. The extreme climatic conditions had resulted in an elevated EC and limited surface water flow.</p>		

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
				<p>Investigations also concluded that it was unlikely that actual or potential environmental harm had occurred.</p> <p>These findings were supported by the hydrogeological assessment conducted by WSP in 2021.</p> <p>LCO's response to surface water triggers was in accordance with the approved WMP. Investigations appear to be thorough and monitoring records are consistent with those reported by LCO in the Annual Reviews. LCO provides detailed summaries of the actions taken to investigate water quality triggers. The auditors reviewed the summaries reported in the Annual Reviews against the data captured from monthly monitoring and information presented in water quality reports provided by external consultants. The auditors conclude that the information reported by LCO is consistent with the data collected and trigger investigation summaries.</p> <p>LCO continue to implement the water monitoring program outlined in the WMP and continues to collect and analyse monthly surface water data.</p>		
LC058	S3 C23(iv)	<p>(iv) Groundwater Management Plan, that includes:</p> <ul style="list-style-type: none"> • reference to baseline data on groundwater levels, yield and quality contained in the EA; • a detailed description of the groundwater management system on site; • design objectives and performance criteria, for the: <ul style="list-style-type: none"> - emplacement areas for tailings, acid forming and potentially acid forming materials, and saline and sodic materials; - final voids; • groundwater assessment criteria, including trigger levels for investigating any potentially adverse groundwater impacts beyond those predicted in the EA for Mod 5; • measures to minimise, prevent or offset groundwater leakage from the Bowmans Creek alluvial aquifer in excess of the drawdown predicted in the EA for Mod 5; • measures to mitigate any direct hydraulic connection between the backfilled open cuts and the Bowmans Creek alluvium if the potential for adverse impacts is detected; • a program to monitor and report on: <ul style="list-style-type: none"> - groundwater inflows to the mining operations; - the seepage/leachate from water storages, emplacements and final voids; - background changes in groundwater yield/quality against mine-induced changes; - impacts of the development on: 	<p>Water Management Plan (LIDOC-90533967-3694), Version 13.0, Dated 01/07/2021</p> <p>Annual Reviews, 2019, 2020</p> <p>Summary of WMP Groundwater Investigations, LCO 2021</p> <p>Raw excel data of water quality parameters (pH and EC) and water levels, February 2019 to December 2021</p> <p>ALV4L 12 Month Water Level Trigger Investigation, Jacobs, July 2019</p> <p>ALV8L Groundwater trigger exceedance review, Jacobs, November 2019</p>	<p>The structure and content of the WMP, Groundwater Monitoring Program (GMP) were reviewed in detail during the 2019 audit. Auditors carried out a high-level review and determined that the WMP continues to meet the requirements of this condition.</p> <p><u>Implementation</u></p> <p><u>Groundwater Monitoring Program</u></p> <p>Water at LCO is managed through the Integrated Water Management System (IWMS) which incorporates groundwater, surface runoff and mine water from the two open cut operations (South Pit and Entrance Pit), several former underground mining areas, and decant from the CHPP tailings storages. The open cuts have advanced and are advancing from north to south with overburden placement behind (i.e. to the north of) active mining operations. The groundwater component is made up of groundwater bores that target the alluvial aquifers associated with Bayswater and Bowmans Creeks, the shallow (weathered) bedrock, overburden, Pikes Gully Seams and the Hazeldene (Liddell) workings.</p> <p>Potential groundwater dependant environmental receptors that may be affected by mining operations at LCO include aquatic and riparian ecosystems associated with Bowmans and Bayswater Creeks, and in particular the Bowmans Creek alluvial aquifer.</p> <p>The GMP is outlined in Section 9.2 of the WMP.</p> <p>The groundwater monitoring network comprises a network of 13 piezometers located across the site. Groundwater level and limited water quality (electrical conductivity and pH) monitoring is carried out at least monthly on the shallow, unconfined, water</p>	Compliant	<p>2022-REC-02: It is recommended that there is a review of the groundwater investigation triggers, as already proposed by LCO in the September and December 2021 Groundwater Investigation Trigger Reports. In particular LCO should conduct a trigger assessment in the areas of predicted impact. Monitoring data should be reviewed against rainfall data to ensure that the exceedances are climatic driven</p>

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
		<ul style="list-style-type: none"> o regional and local (including alluvial) aquifers; o groundwater dependent ecosystems and riparian vegetation; o the seepage/leachate from water storages, emplacements, backfilled voids and final voids; o impacts on the Bowmans Creek alluvial aquifer; • procedures for the verification of the groundwater model; • a review of existing network to identify additional monitoring locations for the alluvial system focusing on areas where additional drawdown is predicted; • reporting procedures for the results of the monitoring program and model verification; • a plan to respond to any exceedances of the predicted groundwater impacts, and mitigation of any unpredicted adverse groundwater impacts of the development; 	<p>Liddell Glencore, 2020. September 2020 - ALV7S Groundwater Trigger Investigation Report</p> <p>October 2020 - ALV8L Groundwater Trigger Investigation Report, LCO</p> <p>May 2021 - ALV2S and ALV2L Groundwater Trigger Investigation Report, LCO</p> <p>September 2021 – ALV8L Groundwater Trigger Investigation Report, LCO</p> <p>December 2021 – Groundwater Investigation Trigger Report, LCO</p>	<p>table aquifers of Bowmans Creek alluvium and the underlying shallow bedrock. Water pressure monitoring is carried out at least monthly on the deeper, confined, hard rock aquifers.</p> <p><u>Groundwater Trigger Response Action Plan</u></p> <p>The Groundwater Response Plan is outlined in Section 10.2 of the WMP. Baseline data collected from monitoring well locations between July 2005 and May 2017 were utilised to calculate site specific trigger values. If an exceedance of trigger values is observed in the groundwater data, a Trigger Action Response Plan (TARP) is followed.</p> <p>There are three components to the groundwater level trigger definitions, as summarised below:</p> <ul style="list-style-type: none"> • Drawdown trigger - groundwater drawdown of 2 m in the alluvium compared to the local reference site for the northern and southern impact zone as shown in the WMP (only applicable at ALV9 and ALV8L) • Investigation trigger - measurement below the monthly, baseline (10th percentile) water level on three consecutive occasions. The purpose of this trigger is to identify unexpected changes to groundwater level. It should be noted that ALV9 does not have an investigation trigger because these triggers were developed using historical baseline data and ALV9 was a more recent installation (December 2017) to provide greater coverage for the identification of alluvial groundwater impacts in the northern drawdown area • Subsequent investigation trigger - designed to address the potential for harm to listed threatened species, communities and migratory species of concern to EPBC Approval 2013/6908. Following an investigation of an exceedance of Groundwater Level Trigger Definition #2 that concludes the exceedance is not mining-related, should groundwater levels continue to be measured below the lower 10th percentile for a further nine months, such that the exceedance has continued continuously for 12 months, then a subsequent investigation shall be undertaken to confirm that the exceedance remains unrelated to mining activity. <p>There are two components to the groundwater quality trigger definitions, as summarised below:</p> <ul style="list-style-type: none"> • EC investigation trigger - monthly EC measurement either below the baseline (20th percentile) or above the monthly baseline (80th percentile) on three consecutive occasions. Note the 20th percentile triggers levels are designed to identify downward leakage from the alluvium to the shallow 		<p>and not due to mining activities.</p> <p>2022-REC-03: LCO to action recommendations made by NRAR in 2021 with regards to groundwater investigations conducted on site. In particular the following to be addressed:</p> <ul style="list-style-type: none"> • statistical analysis of salt/metal concentrations in shallow groundwater and rainfall occurrence at all TARP exceedance monitoring sites from 2018 forward • investigating and reporting on risks to ecological receptors of sustained elevated salinity/metals concentrations in shallow groundwater and devise practical mitigation strategies that could manage such risk.

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
				<p>bedrock to provide another mechanism to detect potential alluvial impacts in addition to the water level triggers.</p> <ul style="list-style-type: none"> pH investigation trigger - monthly measurement either above or below the default pH trigger values from ANZECC (2000) for lowland rivers located in NSW, on three consecutive occasions. <p><u>Investigation into Groundwater Exceedances</u></p> <p>The groundwater specialist conducted a review of instances where groundwater level and quality has exceeded the trigger values outlined in Section 10 of the WMP.</p> <p>Prior to February 2019, all locations, with the exception of ALV9, had already been investigated due to water level exceedances. Between February 2019 and December 2021, subsequent investigations were conducted due to ongoing water level exceedances. A majority of monitoring wells had water levels increase between early- to mid-2020, to within acceptable limits with the exception of ALV7L, ALV7S, ALV8L and AVL8S.</p> <p>Monitoring well ALV7L saw an increase of water levels to within acceptable limits in April 2021 and on occasion water levels have decreased, exceeding trigger levels. Water levels at monitoring well ALV8L has only recently increased to within acceptable limits in December 2021. Monitoring wells ALV7S and ALV8S continue to exceed trigger levels.</p> <p>Water levels at ALV8L and ALV9 were compared to their nominated local reference site, ALVL and ALV2L, respectively. There were no drawdown triggers during this audit period.</p> <p>Between February 2019 and December 2021, there have been numerous occasions where the requirement for an investigation has been triggered by three consecutive exceedances of the upper EC limit. Locations include ALV1L, ALV2L, ALV2S, ALV3L, ALV4S, ALV7L, ALV7S and LBH.</p> <p>There were several instances of minor exceedances of the pH during February 2019 and December 2021, however none of which were sustained or triggered a pH investigation trigger.</p> <p>Various investigations into water level and quality exceedances were completed by either LCO or specialist consultant Jacobs, between 2019 and 2021. LCO have concluded as part of the investigations that there is a direct relationship between groundwater level and rainfall; as well as a trending relationship with EC and residual mass curves, suggesting that groundwater measurements are due to climatic variation rather than a specific mining related impact, as further discussed in the following subsections. Since the groundwater system is responding to climatic variation, LCO concludes that there is no potential for environmental harm.</p>		

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
				<p>LCO have concluded that mining activities at the site have not resulted in the observed groundwater level and quality exceedances based on the following:</p> <ul style="list-style-type: none"> • According to LCO there has not been any failure of the mine water containment system. • Mining extraction has not extended beyond approved limits and additionally, mining extraction is not planned to extend to the full extent of approved depths, lateral limits or through geological features (Davis creek fault) associated with modelled peak groundwater impacts. • A review of the operations groundwater impact modelling every three years is required by DA305-111-01 Schedule 3 Condition 23. LCO engaged independent technical support for the 2021 groundwater impact model validation assessment which indicated the model is fit for purpose and remains conservative. The modelling suggests the following key points: <ul style="list-style-type: none"> ○ The alluvium and to a slightly lesser extent the underlying shallow bedrock remain disconnected/uninfluenced by the Permian measures below (low vertical hydraulic conductivity). ○ There are no additional drawdown impacts due to mining beyond what has been approved. <p>Since late 2019 average rainfall has generally increased. Although water levels at majority of the monitoring wells have increased to acceptable levels by early/mid 2020, there are still monitoring wells, particularly ALV7S and ALV8S, which have not completely recovered from the drought conditions which occurred between 2017 and late 2019. Additionally, EC measurements are continuing to exceed trigger levels at multiple monitoring well locations. It is recommended that monitoring is continued at all locations in accordance with the WMP, and monitoring data is reviewed against rainfall data to ensure that the exceedances are climatic driven and not due to mining activities.</p> <p><u>Regulator recommendations</u></p> <p>In November 2021, the NSW Department of Natural Resources Access Regulator (NRAR) provided LCO with two recommendations following the review of six groundwater investigation reports submitted in 2020 and 2021:</p> <ul style="list-style-type: none"> • statistical analysis of salt/metal concentrations in shallow groundwater and rainfall occurrence at all TARP exceedance monitoring sites from 2018 forward. • investigating and reporting on risks to ecological receptors of sustained elevated salinity/metals concentrations in 		

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
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				<p>shallow groundwater and devise practical mitigation strategies that could manage such risk.</p> <p>It is understood that LCO is currently reviewing the advice for inclusion for future investigation reports.</p> <p><u>Conclusion</u></p> <p>The site inspection and desktop study identified that groundwater management measures and controls were in place and being operated appropriately at the time of the audit.</p> <p>It is recommended that there is a review of the groundwater investigation triggers, as already proposed by LCO in the September and December 2021 Groundwater Investigation Trigger Reports. It is evident from the CRD plot that the baseline period (2005-2017) used to calculate site specific trigger values was dominated by average to above average rainfall conditions and therefore does not adequately represent natural variability.</p>		
LC059	S3 C23(v)	a program to validate the water balance and groundwater model for the development every 3 years, and compare monitoring results with modelled predictions; and	Liddell Coal Operations – Review of Groundwater Model Predictions (2021), Australasian Groundwater & Environmental Consultants, 12/11/2021	<p>Calibration of the water balance model against observed data was completed in 2021 by Australasian Groundwater and Environmental Consultants. The previous calibration was completed by HEC in 2018.</p> <p>The 2021 calibration model concluded that overall, the model performed well compared to observed measurements; the model generally predicted similar or larger impacts to those observed and is considered suitable for ongoing use to assess impacts from LCO.</p>	Compliant	
LC060	S3 C23(vi)	<p>a protocol that has been prepared in consultation with the owners of any nearby mines to:</p> <ul style="list-style-type: none"> • minimise cumulative water quantity and quality impacts; • review opportunities of water sharing between the mines; • share water monitoring data where practicable; • undertake joint investigations/studies in relation to complaints/exceedances of trigger levels where cumulative impacts are considered likely; and • where practicable, co-ordinate modelling programs for validation, re-calibration and re-running of water models. 	<p>Water Management Plan (LIDOC-90533967-3694), Version 13.0, Dated 01/07/2021</p> <p>Greater Ravensworth Water Management System Plan (Glencore, Version 5.0 dated 7/06/2019)</p>	<p>Section 13 of the WMP discusses water and data sharing. It discusses the water sharing systems that operate across the Glencore mining operations (LCO, Ravensworth Complex and Mt Owen Complex).</p> <p>A Greater Ravensworth Area Water Balance Model has been developed with three separate sub-models for the three operations. The results from the model enable predictions of water balance to minimise cumulative impacts in relation to water resources from the three operations.</p> <p>Monitoring data across the Glencore sites is stored on EMD. Data for key monitoring sites such as those where a cumulative impact could be detected is shared between the operations.</p> <p>The WMP states that where an incident investigation in relation to a complaint or trigger level exceedance identified potential cumulative impacts, joint investigation will be initiated to determine the appropriate mitigation / remediation strategy. This had not been triggered during the audit period.</p> <p>In addition, Glencore Assets Australia provides an over-arching water management protocol for operations. A Greater</p>	Compliant	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation												
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS																		
				<p>Ravensworth Water Management System Plan is utilised for the “management of water and infrastructure required to facilitate the Greater Ravensworth Water Management System within the Operations of Liddell Coal, Mt Owen Mine, and coal handling plant (CHPP), Glendell Operations, Ravensworth Operations and CHPP, and Ravensworth Underground Mine”.</p> <p>The Greater Ravensworth Water Management System Plan considers the Greater Ravensworth Water Management System and supports coordination for water sharing, risk identification and management, operating procedures, inspections, monitoring and verification, incidents, system review and evaluation, responsibilities etc.</p>														
LC061	S3 C23	The Applicant must implement the management plan as approved by the Secretary.		Implementation has been assessed under the relevant sections.	Compliant													
BIODIVERSITY																		
LC062	S3 C24	<p>Biodiversity Offset Strategy</p> <p>The Applicant must implement the biodiversity offset strategy described in the EA, summarised in Table 7 and conceptually shown in Appendix 7.</p> <p><i>Table 7: Summary of the Biodiversity Offset Strategy</i></p> <table border="1"> <thead> <tr> <th>Area</th> <th>Offset Type</th> <th>Minimum Size (ha)</th> </tr> </thead> <tbody> <tr> <td>Mountain Block Offset</td> <td>Existing vegetation and vegetation to be established</td> <td>168</td> </tr> <tr> <td>Bowmans Creek Riparian Corridor</td> <td>Existing vegetation and vegetation to be established</td> <td>185</td> </tr> <tr> <td>Total</td> <td></td> <td>353</td> </tr> </tbody> </table> <p><i>Note: To identify the areas referred to in Table 7 refer to the applicable figures in Appendix 7.</i></p>	Area	Offset Type	Minimum Size (ha)	Mountain Block Offset	Existing vegetation and vegetation to be established	168	Bowmans Creek Riparian Corridor	Existing vegetation and vegetation to be established	185	Total		353	<p>LCO 2020 Biodiversity Monitoring Report, Umwelt January 2021</p> <p>LCO 2019 Biodiversity Monitoring Report, Umwelt January 2020</p> <p>Biodiversity Offset Management Plan, LIDOC-90533967-3755, Version 10.0, dated 17/02/2021</p> <p>Discussion with LCO personnel</p>	<p>The Biodiversity Offset Management Plan (BOMP) was initially developed in March 2015 to address the requirements of Schedule 3, Condition 24 of DA 305-11-01 and has been updated three times during this audit period. The version, Version 11 dated 1 April 2022 covers management of the Biodiversity Offset Areas (BOA) for years 7 (2021) to 9 – (2023).</p> <p>As noted in the 2019 IEA the image shown conceptually in Appendix 7 of DA 305-11-01 has changed since the DA was initially approved. This is noted in the change history in Section 9.3 of the BOMP.</p> <p>MOD 7 was approved on 12 February 2019 and incorporated a 14.81 ha portion of the Mountain Block BOA to facilitate required rehabilitation works on extensive erosion, landform stability issues, and to assist in achieving positive biodiversity outcomes in the medium to long term. Following the approval of MOD 7 in January 2019 Table 7 of DA 305-11-01 was amended to increase the minimum size of the Mountain Block Offset area and Bowmans Creek Riparian Corridor. This has been reflected in the updated version of the BOMP.</p> <p>The BOMP refers to the following three BOAs in the vicinity of LCO:</p> <ul style="list-style-type: none"> The Bowmans Creek Riparian Corridor which runs in a north/south direction on the eastern boundary of LCO and is 185.52 hectares (ha) in size. Mountain Block Offset Area which is 168.34 ha in size and is located to the immediate north of the LCO, and Mitchell Hills South which is located approximately three kilometres northwest of Mountain Block and is 40.5 ha in size. 	Compliant	2022-OFI-03: It is suggested LCO better outline in the BMP and BOMP how biodiversity management and monitoring of the Mountain Block MOD 7 Area is being undertaken at this time.
Area	Offset Type	Minimum Size (ha)																
Mountain Block Offset	Existing vegetation and vegetation to be established	168																
Bowmans Creek Riparian Corridor	Existing vegetation and vegetation to be established	185																
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SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
				<p>GIS diagrams were available to show the size of each offset area and confirm they were meeting the minimum size requirements as specified in Table 7 of DA 305-11-01.</p> <p>Monitoring Review</p> <p>Umwelt has been engaged to conduct the biodiversity monitoring on site during the audit period. Umwelt provide an annual report which compiles and analyses the results of monitoring completed each year and compares results against the BMP performance indicators.</p> <p>Key changes to monitoring is the floristic monitoring methodology was changed from the BioBanking Assessment Methodology (BBAM) to the Biodiversity Assessment Methodology (BAM) in 2019.</p> <p>Mountain Block MOD 7 Remediation Area</p> <p>The Modification 7 Area remediation was completed in 2020. Additional findings are detailed in Section 6.11.1 of the IEA Report. The BOMP states that the area is still being managed under the provisions of the Biodiversity Management Plan until monitoring confirms it has stabilised and revegetated sufficiently. After which, the management and monitoring obligations will be transferred back to the BOMP.</p> <p>At the time of the audit LCO were monitoring the success of remediation works conducted in 2020. The Mountain Block MOD 7 area was yet considered to be stabilised and sufficiently revegetated. As such the are was still being managed under the BMP.</p> <p>Biodiversity monitoring of the Mountain Block MOD 7 area was conducted during the audit period and appears to have been conducted in accordance with the BOMP. The auditors sighted evidence of the following monitoring being undertaken:</p> <ul style="list-style-type: none"> • Floral BBAM monitoring in the Remnants Narrow leaved Ironbark Bullock Open Forest and Spotted Gum Woodland (monitoring sites W04 and W05). • Flora BAM monitoring in revegetated areas Bullock open forest and Spotted Gum Woodland (monitoring sites WR03, WR04 and WR05). • Photo monitoring (monitoring sites WR01, WR05, WR03, WR04 and WR05) • General Fauna monitoring (monitoring sites WR01, WR05, WR03, WR04 and WR05). <p>The BMP states the following:</p> <p>The Modification 7 Area remediation was completed in 2020. The area is still being managed under the provisions of the BMP until monitoring confirms it has stabilised and revegetated sufficiently.</p>		

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
				<p>After which, the management and monitoring obligations will be transferred back to the BOMP.</p> <p>The Mountain Block MOD 7 area is included within the BMP footprint, as detailed in the BMP Figures. As stated in Section 3.4 of the BMP, overall management of the Mountain Block MOD 7 area is under the provisions of the BMP. As such, the area is subject to the management controls specified in Section 4 of the BMP.</p> <p>The BMP does not specify monitoring locations in the Mountain Block MOD 7 area, as noted by Muswellbrook Council, however, Section 5.0 of the BMP states the following:</p> <p>Additional monitoring sites will be added to assess progressive rehabilitation as it establishes. Until rehabilitation is established, a rehabilitation monitoring program is conducted under the Mining Operations Plan (LIDOC-90533967-5095) to monitor the success of rehabilitation measures and ensure remedial actions are undertaken as necessary.</p> <p>Following completion of the remediation project in November 2020, LCO implemented an ongoing monitoring program to determine the success of the remediation project in the Mountain Block MOD 7 area. The monitoring program involves a soil sampling program and a photo monitoring program (including arial mapping) conducted by external consultant SLR Consulting, and the conduct of routine inspections by the LCO E&C Department. Refer to Section 6.1.11 for further details.</p> <p>In addition, annual biodiversity monitoring of the Mountain Block Offset Area was undertaken, by external consultant Umwelt, in accordance with the BOMP. Refer to Section 6.1.5 for further details.</p> <p>Based on the evidence reviewed the auditors conclude that the Mountain Block MOD 7 area was subject to the management controls detailed in the BMP, however monitoring is also occurring in accordance with the BOMP.</p> <p>Management of the Mountain Block Offset Area following the completion of the Mountain Block remediation project is complex. Detailed ongoing monitoring and inspections were observed to be being undertaken and no issues were identified with the overall management and monitoring of the area by LCO.</p> <p>How the management of the area is documented, particularly the delineation and transfer of management between the BMP and the BOMP, is not clearly detailed in either the BMP or BOMP. The auditors are of the view that this is an administrative finding that did not impact the actual management of the area during the audit period. Furthermore, once the area reaches a suitable level of stability and establishment, and management of the area transfers to the BOMP, it is anticipated that the management and</p>		

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SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
				<p>monitoring requirements of the Mountain Block MOD 7 Area will be more clearly defined. No timeframe for when this will occur has been provided at this time.</p> <p>In the immediate future the BMP could benefit from more clearly outlining how biodiversity management of the Mountain Block MOD 7 Area is being undertaken at this time.</p> <p>Pathogen Management</p> <p>Umwelt conduct pathogen management review during monitoring.</p> <p>The BOMP was considered to have been adequately implemented during the audit period.</p>		
LC063	S3 C25	<p>The Applicant must ensure that the offset strategy and/or rehabilitation strategy is focused on the re-establishment of:</p> <p>(a) significant and/or threatened plant communities, including:</p> <ul style="list-style-type: none"> • Central Hunter Box – Ironbark Woodland EEC; • Narrow-Leaved Ironbark – Spotted Gum Woodland EEC; • Narrow-Leaved Ironbark – Bulloak Open Forest EEC; <p>(b) significant and/or threatened plant species; and</p> <p>(c) habitat for significant and/or threatened animal species including the Spotted-tailed Quoll.</p>	<p>LCO BOMP</p> <p>Biodiversity Management Plan, LIDOC-90533967-3689, Version 12.0, dated 27/10/2021</p> <p>Biodiversity Offset Management Plan, LIDOC-90533967-3755, Version 10.0, dated 17/02/2021</p>	<p>Audit findings reported in the 2019 IEA remain consistent.</p> <p>Biodiversity Offset Management Plan</p> <p>The most recent version of the BOMP continues to focus on the passive, active and natural restoration of the following communities:</p> <ul style="list-style-type: none"> • Central Hunter Box – Ironbark Woodland EEC • Narrow-Leaved Ironbark – Spotted Gum Woodland EEC • Narrow-Leaved Ironbark – Bulloak Open Forest EEC <p>Restoration of the above vegetation communities in disturbed lands or grasslands of the biodiversity offset areas is documented with species composition and richness targets noted. Through supplementary planting, exclusion of humans and cattle with fences and rehabilitation techniques, the LCO aim to re-establish/restore the vegetation communities documented. This will also enhance habitat and connectivity for the Spotted-tailed quoll and other threatened species.</p> <p>Mining Operations Plan</p> <p>The rehabilitation plan focuses on the re-establishment of Central Hunter Grey Box-Ironbark Woodland, whilst grasslands will be rehabilitated to a standard suitable for future grazing by livestock. Where possible, LCO continue to plan for the linkage and integration of rehabilitated areas with existing vegetated areas will be undertaken to enhance ecological function and provide fauna habitat.</p>	Compliant	
LC064	S3 C26	<p>Spotted-Tailed Quoll Contribution</p> <p>The Applicant must contribute \$200,000 over 5 years towards the implementation of recovery actions under OEH's Saving Our Species Action Statement and/or Final Draft National Recovery Plan for the Spotted-tailed Quoll 2008 for the Spotted-tailed Quoll. The initial payment of at least \$50,000 must be made by the end of June 2015,</p>	<p>LCO Indirect Offset Management Plan (LIDOC-90533967-3776), version 7.0, dated 04/11/2020</p> <p>2019 IEA Report</p>	<p>The Indirect Offset Management Plan outlines, in reference to this condition, that recovery actions to be considered are those defined within the Draft National Recovery Plan for the Spotted-tailed Quoll - <i>Dasyurus maculatus</i> (Long and Nelson 2008) or in the BCD Saving Our Species Project Species Action Statement. Schedule 3, Condition 26 requires LCO to contribute a total of \$200,000 towards this program, while an additional \$43,000 is</p>	Compliant	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
		<p>unless otherwise agreed by the Secretary. The timing and quantum of the subsequent payments is to be determined in consultation with OEH.</p>	<p>Indirect offsets management payments summary Extract from SAP – payments made to UNE Bank transfer statements, LCO Doc no. 1500018960, for amount \$31,650.30, dated 28/02/2019 Bank transfer statements, LCO Doc no. 1500025465, for amount \$12,155.00, dated 17/04/2020 Bank transfer statements, LCO Doc no. 1500027888, for amount \$28,179.80, dated 30/10/2020 Bank transfer statements, LCO Doc no. 1500032027, for amount \$12,190.20, dated 24/09/2021 Indirect Offset management plan, 2019 Annual progress report Indirect Offset management plan, 2020 Annual progress report Indirect Offset management plan, 2021 Annual progress report</p>	<p>required by the LCO EPBC Approval 2013-6908. This makes a total of \$243,000 to be provided over a period of five years. An initial \$50,000 was paid on the 30 June 2016 in agreement with the Department.</p> <p>A payment schedule outlining the approximate cost associated with various activities over a 5-year period is included in the Indirect Offset Management Plan which demonstrates an intention to spend a total of \$243,000.</p> <p>The auditors reviewed the following evidence:</p> <ul style="list-style-type: none"> • Payment summary table outlining that a total of \$217,523.00 excluding GST in payments had been made. This included 4 payments which were made in the audit period for the following: <ul style="list-style-type: none"> ○ 2019: \$27,773.00 to University of New England (UNE) ○ 2020: \$11,050.00 to UNE ○ 2020: \$25,618.00 to UNE ○ 2021: \$11,082.00 to UNE • Extract from SAP showing payments made to UNE since 2018 and verifying the figures entered into the payment's summary. • Transfer statements from LCO to UNE verifying the above figures were transferred. <p>LCO prepares an annual summary report of the Spotted-tailed Quoll conservation program. The progress report includes budget tracking and an update on project progress throughout the financial year. The reports were provided to the auditors for review.</p> <p>Table 7-1 of the indirect offset management plan details the following commitments for payments to UNE:</p> <ul style="list-style-type: none"> • 2019: <ul style="list-style-type: none"> ○ \$20,989.00 on consumables, transport accommodation and DNA analysis ○ \$15,850.00 on collars, hardware, transport and accommodation • 2020 <ul style="list-style-type: none"> ○ \$20,989.00 on consumables, transport, accommodation and DNA analysis ○ \$14,893.00 on collars, transport and accommodation. • 2021 <ul style="list-style-type: none"> ○ \$22,189.00 on consumables, transport and accommodation 		

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
				<ul style="list-style-type: none"> o \$15,478.00 on collars, transport and accommodation. <p>A review of the payments made against the schedule in the Indirect Offset Management Plan showed that contributions made were slightly less than those predicted. It is noted that the Indirect Offset Management Plan notes the costs as approximates only. In reality LCO had spent \$217,523.00, with a remaining \$25,477.00 funds required to be contributed to achieve the target of \$243,000.</p> <p>LCO made final payments to UNE totalling the balance of \$25K under the research agreement with UNE. Payments were pending completion of the required reporting which is required to be completed before June 2022.</p>		
LC065	S3 C27	<p>Long Term Security of Offsets</p> <p>By the end of December 2015, unless the Secretary agrees otherwise, the Applicant must make suitable arrangements to provide appropriate long-term security for the land within the biodiversity offset strategy identified in Table 7, to the satisfaction of the Secretary.</p>	<p>Letter from BCD confirming offset conservation agreements, 06/12/2019</p> <p>Letter from the Department, Extension of time to secure offset areas, dated 18/10/2019</p> <p>Discussion with LCO</p> <p>Annual Review's Sighted evidence of Conservation Agreement registered with NSW Land Registry Service</p>	<p>LCO received a number of extensions to make arrangements for the security of biodiversity offset areas between 2015 and May 2019. LCO wrote to the Department on 19 September 2019 requesting a further extension of time to make suitable arrangements for the long-term security of Glencore's offset areas. The Department noted that conservation agreements for the various offset areas have been signed by the relevant parties and have been sent to the NSW Land Registry Service for registration on the relevant land titles. However, further time was needed to respond to requisitions from the NSW Land Registry Service in order to register the remaining agreements. In their letter, dated 18 October 2019, the Department approved the extension of the deadline until 30 November 2019.</p> <p>The following conservation agreements were in place at the time of the audit and cover each biodiversity offset area outlined in the biodiversity offset strategy:</p> <ul style="list-style-type: none"> • Mitchell's hill south conservation area VC00505 • Mountain Block Conservation Area VC0525 • Bowmans Creek Riparian Corridor VC00506 • Bowmans Creek Riparian Corridor East VC00516 <p>The above Conservation Agreements were formally executed in May 2019 and registered on title by October 2019.</p>	Compliant	
LC066	S3 C28	<p>Waterbird Habitat</p> <p>Prior to the construction of Dam 13B, the Applicant must undertake habitat enhancement measures to Dam 3 to increase habitat for water birds to the satisfaction of OEH and the Secretary. The Applicant must in addition establish a dam in the Mountain Block area to provide habitat for waterbird species to the satisfaction of OEH and the Secretary. Where achievable, the habitat enhancement measures for each dam must include:</p>	<p>Discussion with LCO personnel</p> <p>Site Inspection</p>	<p>Dam 13B was not constructed, therefore this commitment was not triggered.</p>	Not Triggered	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
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		(a) a maximum water depth of 5 metres over at least half the surface area; (b) gently sloping banks (apart from the dam wall) of less than 10 degrees; (c) areas of mustow back waters around the dams; (d) appropriate levels of vegetation; and (e) appropriate fencing and signposting.				
LC067	S3 C28A	Compensatory Planting The Applicant must plant and maintain, until established, 10 River Oak trees for every established River Oak tree removed during construction of the tailings pipeline under MOD 6. Note: An established River Oak tree is considered to be two metres or greater in height.	Preclearance survey for pipeline construction GDP – Pipeline construction Site Inspection	This condition was not triggered as no established trees were removed during pipeline construction. Sighted photo of pipeline showing and GDP for the pipeline works which showed removal of minor growth only	Not Triggered	
LC068	S3 C29	Biodiversity Management Plan The Applicant must prepare a detailed Biodiversity Management Plan for the site to the satisfaction of the Secretary. This plan must: (a) be prepared in consultation with OEH and be submitted to the Secretary for approval by the end of May 2015, unless otherwise agreed by the Secretary; (b) describe how the implementation of the offset strategy would be integrated with the overall rehabilitation of the site (see below); (c) include: (i) a description of the short, medium and long term measures that would be implemented to: • implement the offset strategy; and • manage the remnant vegetation and habitat on the site in the offset areas; (ii) detailed performance and completion criteria for the implementation of the offset strategy; (iii) a detailed description of the measures that would be implemented over the next 3 years, including the procedures to be implemented for: • implementing revegetation and regeneration with the disturbance areas and offset areas, including establishment of canopy, sub-canopy (if relevant), understorey and ground strata; • protecting vegetation and soil outside the disturbance areas; • rehabilitating creeks and drainage lines that occur on the site; • managing salinity; • conserving and reusing topsoil	Letter from Department, Biodiversity Offset Management Plan Approval, dated 12/03/2021 Letter from Department, approving BMP, dated 29/01/2021 Biodiversity Management Plan, LIDOC-90533967-3689, Version 12.0, dated 27/10/2021 biodiversity monitoring inspection form, dated 27/11/2020 JUPP Earthmoving Works docket 20-27/11/2020. Sighted Future Harvest email dated 19/6/2021 (seed collection) and seed collection invoices dated 30/3/2020 (seed collection and storage) and 24/1/2020	The Biodiversity Management Plan (BMP) was updated on three occasions during the audit period. The most recent version, Version 12.0 as approved by the Department on 29 January 2021. Recommendations and OFIs made by AECOM in the previous IEA were addressed in the revisions of the BMP. Following review, the auditors consider the BMP addressed the requirements of Schedule 3, Condition 29 of DA 305-11-01. Evidence that the BMP was adequately implemented during the audit period was provided. Implementation Review Review of Biodiversity Monitoring LCO engage Umwelt to conduct biodiversity monitoring of the following features, in accordance with the BMP. The auditors reviewed the biodiversity monitoring reports prepared by Umwelt for the audit period. The biodiversity summaries provided in the LCO Annual Reviews were consistent with the data presented in the monitoring reports. Future Harvest conduct annual pasture sites monitoring and Enright Land management conduct annual weed management Tiger Orchid Translocation Recommendations put forward by Umwelt in relation to managing the translocated tiger orchids have been implemented (e.g., chicken mesh on tree to help reduce split in trunk). Evidence was sighted of twice-yearly monitoring of these individuals. Biodiversity Offset Monitoring Regular biodiversity offset monitoring has been undertaken within Bowmans Creek Riparian Corridor, Mitchell Hills, Mountain block by Umwelt Australia and reported in the BOMP – Annual	Compliant	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
		<ul style="list-style-type: none"> • undertaking pre-clearance surveys; • managing impacts on fauna; • collecting and propagating seed; • salvaging and reusing material from the site for habitat enhancement; • salvaging, transplanting and/or propagating threatened flora in accordance with the Guidelines for the Translocation of Threatened Plants in Australia (Vallee et al., 2004); • controlling weeds and feral pests including investigating alternate technologies to reduce poisoning of non-target species; • managing grazing and agriculture; • controlling access; • bushfire management; • habitat enhancement works; • seasonal monitoring of in-stream and riparian ecological condition; • survey of stygofauna in Bowmans Creek alluvial aquifer (prior to predicted drawdown); and • monitoring of stygofauna populations every 6 months following the occurrence of the predicted drawdown; <p>(iv) a seasonally-based program to monitor the effectiveness of these measures, and progress against the performance and completion criteria;</p> <p>(v) a description of the potential risks to successful revegetation, and a description of the contingency measures that would be implemented to mitigate these risks; and</p> <p>(vi) details of who would be responsible for monitoring, reviewing and implementing the plan. The Applicant must implement the approved management plan as approved from time to time by the Secretary.</p> <p>The Applicant must implement the approved management plan as approved from time to time by the Secretary.</p>	<p>2020 seed collection invoice, Future Harvest, invoice no. 654, dated 30/01/2020</p> <p>Biodiversity PTO, dated 10/12/2021</p> <p>Biodiversity Monitoring Inspection, LCO dated January 2022</p> <p>BMP nest box installation report, Toolijooa environmental restoration, dated July 2020</p> <p>Stygofauna and in-stream monitoring and riparian ecological condition monitoring results, Umwelt 05/06/2019</p> <p>Stygofauna and in-stream monitoring and riparian ecological condition monitoring results, Umwelt 17/07/2020</p> <p>LCO 2019 Winter Bird Monitoring, Umwelt, dated 31/07/2019</p> <p>LCO 2020 Winter Bird Monitoring, Umwelt, dated 31/08/2020</p> <p>LCO 2021 Winter Bird Monitoring, Umwelt, dated 07/07/2021</p> <p>LCO Translocated Tiger Orchid Monitoring report, Umwelt, dated 19/02/2019</p>	<p>Monitoring reports. Actions identified within monitoring reports have been implemented.</p> <p>Weed Management</p> <p>Weed management of target weed species identified by Umwelt through their Biodiversity Monitoring Reports is undertaken by Enright Land Management. Evidence of the weed species targeted, and their location has been sighted, and in subsequent Umwelt reports, information relating to the success of weed spraying (in general) is recorded.</p> <p>Results from biodiversity monitoring indicate that LCO are actively managing biodiversity across the site. The consistent finding from biodiversity monitoring is the increase in the presence of weeds across the site. High weed growth at all monitoring sites has been attributed to good growing conditions, from higher rainfall accompanied by higher-than-average temperatures since 2020.</p> <p>Site inspection indicated that weed management is currently occurring and is required to continue throughout rehabilitated areas and offset areas. Annual weed management plans prepared by Enright Land Management were sighted for 2019, 2020 and 2021.</p> <p>Pest Management</p> <p>Evidence of pest management (e.g., wild dog and fox baiting) was sighted for the audit period and undertaken by Enright Land Management. Weed and pest management plans were sighted for 2019, 2020 and 2021.</p> <p>Results of pest control activities (in the form a vertebrate pest control register) was sighted for 2019 through to 2021. Feral cats have been noted to be problematic and a potential issue for the Spot Tailed Quoll which was recorded across all offset sites during 2020. Based on the vertebrate pest control register, cat control (i.e., trapping) has not been successful to date. It is recommended LCO continue trialling strategies, or more frequent trapping to control cats.</p> <p>Bowmans Creek Riparian Corridor</p> <ul style="list-style-type: none"> • Rehab and revegetation works – none required during the audit period other than tubestock along Bowmans Creek • Bank stabilisation – not required during the audit period • Bushfire protection – slashing as fuel reduction method (cattle grazing also used in established pasture areas) • Monitoring for biodiversity management and erosion issues – sighted biodiversity monitoring inspection form, dated 27/11/2020, including erosion rill closeout and JUPP Earthmoving Works docket 20-27/11/2020. <p>Seed Collection</p>		

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
			<p>LCO Translocated Tiger Orchid Monitoring report, Umwelt, dated 28/02/2020</p> <p>LCO Translocated Tiger Orchid proposal to conduct monitoring in 2021, Umwelt, dated 23/02/2021</p> <p>Topsoil stockpile register</p> <p>Vertebrate Pest Control Register</p> <p>LCO weed and Pest Annual Management plan, Enright Land Management, dated 10/03/2021, 20/03/2020 and 20/02/2019</p> <p>LCO Wild Dog & Fox Baiting Report, Enright Land Management, Autumn 2021</p> <p>Weed works work order summary, 2019, 2020 & 2021.</p> <p>LCO site plan showing fence lines on site.</p> <p>Site Inspection</p>	<p>No significant clearing occurred during the audit period. The auditors sighted evidence of seed collection and handling being undertaken in accordance with the BMP. This work is undertaken by external consultant Future Harvest.</p> <p>Nest Boxes</p> <p>Nest box assessments are reported on in the annual biodiversity monitoring reports prepared by Umwelt. Nest boxes have been placed in locations based on recommendations made by Umwelt Ecologists. Next boxes were installed during the audit period, including 56 in 2020 and 60 in 2019, the figures for 2021 were not available at the time of the audit.</p> <p>Protection Fencing</p> <p>Protecting vegetation outside of disturbance areas – Fencing observed which delineate offset areas from mining disturbance. In particular, fencing and signage around creek lines observed to be effective and in good condition.</p> <p>Topsoil Management</p> <p>LCO track topsoil stockpiles across the site and record quantities and mediums of topsoil available in the topsoil stockpile register. The register was reviewed by the auditors and identified that nine (9) stockpiles were located across the site with varying compositions including woodland, pasture and mix. Topsoil stockpile reserves, according to the register, detailed that there was 67,126m3 of topsoil available which fulfilled an allowance of 67 ha when spread at a depth of 100mm. At the time of reviewing the register approx. 526 ha of rehabilitation was remaining.</p> <p>LCO is aware that there is a deficit of topsoil for completing rehabilitation and therefore substitute materials are required to be used where feasible. At the time of the audit LCO continued to use suitable topsoil alternatives with consideration to rehabilitation performance. This included biomix, biosolids and mulch to promote growth on newly established rehabilitation areas.</p> <p>Inspections</p> <p>Biodiversity inspection forms cover the following areas:</p> <ul style="list-style-type: none"> • LCO BMP Area (mine site) • Bowmans Creek Riparian Corridor (BOA) • Mountain Block (BOA), and • Mitchell Hills BOA <p>Inspection forms address the following BMP requirements:</p> <ul style="list-style-type: none"> • Twice yearly inspections (nominally March and September) of fence lines and tracks • Weed inspections every two months • Twice yearly weed inspections of rehabilitation areas 		

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
				<ul style="list-style-type: none"> Annual inspection of remnant vegetation areas for weeds. Inspect for presence of cattle every 2 months. <p>LCO also conduct inspection of biodiversity areas and assets on site through the implementation of the PTO program and E&C monthly inspection programs.</p> <p>Review of incidents and non-compliances</p> <p>No incidents were recorded in relation to biodiversity during the audit period.</p> <p>Review of complaints received</p> <p>No complaints were recorded in relation to biodiversity during the audit period.</p> <p>Summary</p> <p>The auditors reviewed a significant amount of data which supported the conclusion that the BMP was sufficiently implemented during the audit period.</p>		
LC069	S3 C30	<p>Conservation Bond</p> <p>Within 6 months of the approval of the Biodiversity Management Plan, the Applicant must lodge conservation and biodiversity bond with the Department to ensure that the biodiversity offset strategy is implemented in accordance with the performance and completion criteria of the Biodiversity Management Plan. The sum of the bond must be determined by:</p> <p>(a) calculating the full cost of implementing the biodiversity offset strategy (other than land acquisition costs); and</p> <p>(b) employing a suitably qualified consultant to verify the calculated costs, to the satisfaction of the Secretary. The calculation of the Conservation Bond must be submitted to the Department for approval at least 1 month prior to lodgement of the final bond. If the offset strategy is completed generally in accordance with the completion criteria in the Biodiversity Management Plan to the satisfaction of the Secretary, the Secretary will release the bond. If the offset strategy is not completed generally in accordance with the completion criteria in the Biodiversity Management Plan, the Secretary will call in all, or part of the conservation bond, and arrange for the satisfactory completion of the relevant works.</p> <p><i>Notes:</i></p> <ul style="list-style-type: none"> Alternative funding arrangements for long term management of the biodiversity offset strategy, such as provision of capital and management funding as agreed by OEHL as part of a Biobanking Agreement or transfer to conservation reserve estate can be used to reduce the liability of the conservation bond. 	Letter from the Department, Re Conservation Bond, dated 03/02/2021	<p>Refer to evidence from 2018 IEA Report.</p> <p>The Conservation Bond was updated in 2020 and resubmitted to the Department for approval.</p> <p>The Department provided a letter to LCO stating that they the Conservation Bond had been reviewed and the Department were satisfied that the revision completed on the Conservation Bond met the requirements of the Conditions of Approval.</p> <p>The Department approved the reviewed Conservation Bond (July 2020).</p>	Compliant	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
		<ul style="list-style-type: none"> The sum of the bond may be reviewed in conjunction with any revision to the biodiversity offset strategy or completion of major milestones within the approved plan. 				
ABORIGINAL CULTURAL HERITAGE						
LC070	S3 C31	<p>Heritage Management Measures</p> <p>By the end of May 2015, the Applicant must revise and subsequently implement its Aboriginal Cultural Heritage Management Plan to include management measures as identified in Table 7.16 of the EIS, in consultation with relevant Aboriginal stakeholders and OEHL and to the satisfaction of the Secretary.</p>	<p>Letter from the Department requesting additional information, dated 26/08/2021</p> <p>Letter from the Department requesting additional information, dated 15/10/2021</p> <p>Letter from the Department approving the ACHMP, dated 16/12/2021</p> <p>ACHMP, Version 8.0 LIDOC-90533967-3607, dated 11/11/2021</p> <p>ACHMP Consultation Log</p> <p>Aboriginal Due Diligence Assessment Report, Liddell Track Maintenance, November 2020, OzArk</p> <p>Aboriginal Due Diligence Assessment Report, Bowmans Creek Regenerative Tree Planting, May 2021, OzArk</p>	<p>The Aboriginal and Cultural Heritage Management Plan (ACHMP) was updated to include the management measures identified in Table 7.16 of the EIS. This version of the ACHMP was approved by the Department on 16/01/2015. The ACHMP was revised twice in the audit period. The most current version (Version 8.0) was developed in consultation with the registered aboriginal parties (RAP) and was subsequently approved by the Department on 16 December 2021.</p> <p>LCO submitted the ACHMP to Heritage NSW via the Major Projects Portal on 12/08/2021. The Department responded with a request for additional information on 26 August 2021 which was addressed. LCO resubmitted the ACHMP on 7 October 2021. The Department responded with another request for additional information on 15 October 2021. LCO resubmitted the ACHMP which was subsequently approved on 16 December 2021.</p> <p>Implementation Review</p> <p>The main commitments of the ACHMP related to Aboriginal stakeholder consultation, site surveys, reporting, impact assessment, site assessment, monitoring and management of Aboriginal cultural heritage sites.</p> <p>Monitoring and Inspection</p> <p>LCO engaged OzArk Environmental & Heritage Management (OzArk) to conduct due diligence surveys of the site in accordance with the ACHMP and the NSW Minerals Industry Due Diligence Code of Practice for the Protection of Aboriginal Objects (NSW Minerals Council 2010). The following Due Diligence surveys were conducted in the audit period:</p> <ul style="list-style-type: none"> March 2020; Buffer land near Hebden Road (2 new sites identified) June 2020; Buffer land near Bowmans Creel (2 new sites identified and one previously identified site confirmed) May 2021; Bowmans Creek eastern banks regeneration tree planting. No aboriginal sites or areas of significance were identified. <p>No due diligence surveys were conducted in 2019.</p> <p>Identification of new sites was conducted in accordance with the methodology specified in Section 6.2 of the ACHMP.</p> <p>LCO conducts an annual site inspection of Liddell Mine with members from Registered Aboriginal Parties (RAPs). This inspection and meeting minutes were sighted by the auditors for</p>	Compliant	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
			<p>LCO Annual Cultural Heritage Meeting Slides, 28/01/2022</p> <p>Compliance Review of Aboriginal Cultural Heritage, LID CHPP Maintenance, Workplace Interaction form (PTO), dated 22/06/2021</p> <p>Monthly E&C Inspections (sample sighted from audit period)</p>	<p>inspections and meetings held on 8 October 2019, 10 November 2020, and 28 January 2022 (Online meeting only). The annual inspections comprise a site inspection of Aboriginal artefact sites at LCO as well as a meeting in the LCO offices to discuss any relevant matters, including:</p> <ul style="list-style-type: none"> • Consultation requests relating to updates of the ACHMP • A review of the blast results and potential impacts to artefacts. • Discussion regarding the due diligence process for the offset areas. • Raising any matters of concern that may be held by the RAPs <p>General compliance with controls detailed in the plan</p> <p><u>Salvages:</u> LCO conduct salvaging of aboriginal artefacts under the Aboriginal Heritage Impact Permit (AHIP) C0000623 (AHIMS Permit ID 3765) which was issued by OEH on 3 December 2014 for the salvage of all sites within the impact footprint of Development Modification 5.</p> <p>LCO salvaged archaeologically sensitive topsoil in 2019 and 2020. This topsoil will be re-distributed on Bayswater rehabilitation in 2022.</p> <p><u>Ground Disturbance Process:</u> The GDP process includes due diligence to determine whether a proposed activity will harm an Aboriginal object under the NSW Minerals Industry Due Diligence Code of Practice for the Protection of Aboriginal Objects (NSW Minerals Council 2010). A detailed review of the GDP process was conducted against the implementation review of the Environmental Management Strategy, refer Schedule 5, Condition 1.</p> <p><u>Erosion Control:</u> Erosion and sedimentation controls were sighted during the audit inspection and were in accordance with the controls listed in the relevant GDP for the area where work was being undertaken.</p> <p><u>Bushfire Hazard Reduction:</u> Three bushfires occurred during the audit period, refer details against Schedule 3, Condition 36. The bushfires did not trigger restrictions to be implemented as the fires were not in the vicinity of SALs that contain aboriginal sites.</p> <p><u>Stock Exclusion:</u> The auditors sighted the areas dedicated to cattle grazing and verified that the area does not allow stock to access aboriginal</p>		

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
				<p>sites. Fencing in place was sturdy and sufficient to keep stock out.</p> <p><u>Vegetation removal and weed control:</u> Enright Land Management is contracted to conduct vegetation removal and weed control of the site. Vegetation condition and weeds are reviewed monthly during the E&C monthly inspections. In addition, weeds are managed in line with the Weed Action Plan and vegetation removal is in accordance with the GDP process.</p> <p><u>Revegetation in Offset Areas:</u> Revegetation works are conducted in accordance with the MOP and Biodiversity Management Plan. Revegetation works within the vicinity of an aboriginal site or SAL is conducted in accordance with the ACHMP.</p> <p><u>Fencing of Aboriginal sites and SALs</u> Photos were sighted of fencing around aboriginal sites and SALs.</p> <p>Review of incidents and non-compliances No incidents were recorded in relation to aboriginal heritage during the audit period.</p> <p>Review of complaints received No complaints were recorded in relation to aboriginal heritage during the audit period.</p> <p>Review of Consultation Feedback Consultation with regulatory agencies and the independent chair of the CCC was conducted in preparation for the audit site inspection. No feedback was received in relation to the site's management of aboriginal heritage.</p> <p>Review of reporting conducted by LCO Findings from the due diligence surveys conducted by Ozark are summarised in the Annual Review.</p> <p>Conclusion The review of the ACHMP identified that the plan was generally being implemented during the audit period.</p>		
TRAFFIC AND TRANSPORT						
LC071	S3 C32	<p>Road Transport The Applicant must: (a) ensure that transport of: • coal tailings by truck along the New England Highway is restricted to old tailings with residual energy content and at a rate of no more than 114 truck movements per day (i.e. 57 loaded trucks), 5 days per week; and</p>	<p>Meeting notes, Singleton Council Meeting with LCO May 2021. Correspondence from LCO to</p>	<p>There were no tailings transported by truck during the audit period. It was reported that no ROM coal was transported to / from Ravensworth Central Coal Processing Facility during the audit period.</p> <p>At the conclusion of the previous audit in February 2019 LCO had requested from Singleton Council an update on the status of the road closure application.</p>	Compliant	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
		<ul style="list-style-type: none"> transport of ROM coal to and from Ravensworth Central Coal Processing Facility is restricted to internal mine haul roads, Pikes Gully Road and Liddell Station Road. use its reasonable endeavours to close Liddell Station Road as a public road to the satisfaction of SC, by the end of December 2015 unless otherwise agreed by the Secretary. 	<p>Singleton Council, July 2021</p> <p>Correspondence from Singleton Council to LCO, July 2021</p> <p>Email to Singleton Council requesting a meeting, dated 21/10/2021</p>	<p>LCO met with Singleton Council in May 2021 to discuss the progress of the road closure. Singleton Council advised that they are only able to close the eastern side of the road as the western section lies within Muswellbrook Shire Council's jurisdiction. In addition, objections were received in 2016 from NSW DPI – Lands and Ausgrid with regards to access requirements for the road following closure. Council were considering pathways to solve the problems and advised that they would advise a suitable option accordingly. Future meetings had not occurred due to conflicting schedules and COVID.</p> <p>The LCO E&C Manager emailed Singleton Council in July 2021 to request an update on the matter. Singleton Council replied in July 2021 providing a status update and stated that they were undergoing an evaluation process and would get back in touch with LCO with the outcome. On 21 October 2021 the Liddell E&C Manager sent an email to Singleton Council requesting a meeting to obtain an update on the matter. No response had been received at the time of the audit.</p> <p>From review of the correspondence to and from Singleton Council with regards to closing Liddell Station Road the auditors consider that Liddell have used 'reasonable endeavours' to progress the closure of Liddell Station Road.</p>		
LC072	S3 C33	<p>Monitoring of Coal Transport</p> <p>The Applicant must:</p> <p>(a) keep records of the:</p> <ul style="list-style-type: none"> amount of coal transported from the site each year; and number of coal haulage train movements generated by the development (on a daily basis); and <p>(b) include these records in the Annual Review.</p>	<p>Train Haulage Summary 2019, 2020 & 2021</p> <p>Coal Receipts 2021</p> <p>2018 Annual Review</p> <p>2019 Annual Review</p> <p>2020 Annual Review</p>	<p>LCO Commercial Department track the amount of coal transported from site as well as the daily coal haulage train movements. The LCO Commercial Department provide an annual summary to the E&C team for inclusion in the Annual Review each year.</p> <p>The auditors reviewed the train loading reports for the years 2019, 2020 and 2021 which record the train movements from site and the amount of coal transported from the site. The auditors verified the number of coal haulage train movements generated by LCO and the amount of coal transported from site was being tracked. These figures are reported in the Annual Reviews.</p>	Compliant	
VISUAL IMPACT						
LC073	S3 C34	<p>Visual Amenity and Lighting</p> <p>The Applicant must:</p> <p>(a) implement all reasonable and feasible measures to mitigate visual and off-site lighting impacts from the development;</p> <p>(b) ensure no outdoor lights shine above the horizontal;</p> <p>(c) undertake screen plantings along the western boundary of the proposed office and workshop area to further minimise potential visual impacts on the New England Highway; and</p> <p>(d) ensure that all external lighting associated with the</p>	<p>LCO Lighting Management Procedure (LIDOC-90533967-802), version 4.0, dated 12/11/2020</p> <p>Complaint register</p> <p>Compliance Lighting Audit, prepared by</p>	<p>There have been no changes from the previous audit period. Fixed lighting has not changed, LED lighting has been replacing halogen lights across the site.</p> <p>a) Lighting sources which may present potential impacts with regards to off-site lighting impacts include:</p> <ul style="list-style-type: none"> The mine pit The overburden emplacement areas The CHPP and ROM Stockpile The Product Stockpile 	Compliant	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
		<p>development complies with Australian Standard AS4282 (INT) 1995 – Control of Obtrusive Effects of Outdoor Lighting, to the satisfaction of the Secretary.</p>	<p>EMM, dated 10/06/2015 2018 Annual Review 2019 Annual Review 2020 Annual Review Complaints Register Discussion with LCO Personnel</p>	<ul style="list-style-type: none"> • The maintenance area and sheds • Site Conveyors which have fixed lighting • The rail loader • Locomotives attending and departing site. <p>LCO has developed a Lighting Management Procedure which defines the control measures to be implemented for the management of lighting impacts from site. Key management measures include:</p> <ul style="list-style-type: none"> • Design of overburden emplacement areas to shield operations from view. • Revegetation of the overburden emplacement areas. • Visual bunding, planting and fencing. • Lighting treatments for specific infrastructure, plant and equipment to reduce light spillage. <p>b) Assessed as part of the Lighting Compliance Audit discussed under Condition 34(d)</p> <p>c) The auditors sighted plantings which had been made along the mine’s boundary to the Old New England Highway which are intended to screen the mine from the New England Highway. Vegetation growth was evident from the previous IEA inspection conducted in 2019.</p> <p>d) LCO engaged EMM in 2015 to conduct a Compliance Lighting Audit of the site. The purpose of the audit was to assess the sites compliance with the requirements of Condition 34, Schedule 3 (excluding c), screen plantings).</p> <p>The Compliance Lighting Audit assessed the mine against the requirements of AS 4282 using both qualitative and quantitative assessments. Lux readings were taken at external viewpoints to determine compliance with AS 4282 and qualitative analysis of the light spill and contribution to sky glow also undertaken.</p> <p>The Compliance Lighting Audit concluded that based on the field measurements and qualitative assessment, illuminance at all viewpoints were well within the allowable criteria set out under AS 4282.</p> <p>There have been no significant changes to fixed lighting since the 2015 Lighting Compliance Audit. There was one complaint during the audit period with regards to lighting. The lighting was located on a dump tip head and was a mobile lighting clamp. The complainant was a local resident who asked if the light could be moved. Tipping was occurring to the North with the light pointed towards where dumping was occurring. Following the complaint the work was ceased for the night. As soon as the light was turned off the complainant was called to confirm the issue had been rectified. The complainant was thankful and confirmed the</p>		

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
				<p>issue was solved. The next day the tip head orientation was switched to allow the light to shine towards the North.</p> <p>A summary of lighting and visual impacts is made in Section 6.4 of the annual review each year which is provided and approved by the Department.</p>		
WASTE MINIMISATION						
LC074	S3 C35	<p>The Applicant must:</p> <p>(a) monitor the amount of waste generated by the development;</p> <p>(b) investigate ways to minimise waste generated by the development;</p> <p>(c) implement reasonable and feasible measures to minimise waste generated by the development;</p> <p>(d) ensure irrigation of treated wastewater is undertaken in accordance with EPA's Environmental Guideline for the Utilisation of Treated Effluent; and</p> <p>(e) report on waste management and minimisation in the Annual Review, to the satisfaction of the Secretary.</p>	<p>Waste Management Plan LIDOC-90533967, 27/07/2020</p> <p>Liddell Waste Statistics Spreadsheet</p> <p>Liddell Coal Waste Statistics 1912</p> <p>Liddell Coal Waste Statistics 2012</p> <p>Liddell Coal Waste Statistics 2112</p> <p>J.R Richards Weekly Waste Inspection Form</p> <p>Annual Review 2018</p> <p>Annual Review 2019</p> <p>Annual Review 2020</p> <p>Muswellbrook Council Sewage Treatment Plant Approval (Approved 24/04/2014)</p> <p>CMO Review</p> <p>MSC Approval to operate on-site sewage management system (WTA 2/2006)</p> <p>Monthly Environmental Inspection Report</p> <p>LCO Waste Site Review Forms,</p>	<p>Waste is managed in accordance with the LCO Waste Management Plan. Waste management on site was undertaken by contractors JR Richards (contract renegotiated in 2021). JR Richards provides monthly waste data which includes a breakdown of the types of waste collected for disposal or recycling. LCO maintains a waste tracking spreadsheet as a corporate requirement which must be reported to Glencore Corporate on a monthly basis. The auditors sighted the Liddell waste statistics spreadsheet for which is provided by JR Richards each month. This data is input into Glencores internal sustainability reporting.</p> <p>The data in the waste spreadsheet was compared to that reported in the Annual Review. The data reported in the Annual Review was consistent with that in the waste tracking spreadsheets.</p> <p>The waste management plan identifies waste streams, waste monitoring and tracking procedures and details management measures to ensure the generation of waste is minimised and recycling of waste is maximised where practicable.</p> <p>LCO has set an internal recycling target of 92%. The recycling percentage for the audit period was:</p> <ul style="list-style-type: none"> • 2019 – 92.43% • 2020 – 92.46% • 2021 – 92.94% <p>Evidence of waste segregation was observed during the audit site inspection. Separate bins for batteries, scrap metal, recycling, oil filters and cardboard recycling were observed.</p> <p>Sewage generated by the CHPP, and associated workshop and offices is collected in the CHPP sewage treatment tanks and pumped to the aerated sewage treatment plant prior to disposal at the designated effluent irrigation area.</p> <p>MIA effluent is treated onsite, the treated water is sent to the mine's dirty water system for storage in the storage reservoir and then use on site or discharge under the HRSTS discharge approval. The treated water from the MIA is not irrigated onsite.</p> <p>This audit did not assess compliance against the EPA's Environmental Guideline for the Utilisation of Treated Effluent. LCO approval to operate the CHPP STP from MSC was granted</p>	Compliant	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
			<p>10/11/2021, 11/09/2019, 14/10/2020, 19/03/2019, 21/04/2020, 25/05/2021</p> <p>CHPP WWTP Email to MSC provided evidencing correspondence with MSC, dated 27/04/2021</p>	<p>on the 25/06/14. The approval was renewed throughout the audit period but expired in 2021. Muswellbrook Council stated on 27 April 2021 that they were satisfied that the EPL conditions covered the STP operation and did not require the STP Approval to be reissued.</p> <p>All the conditions associated with the Approval were entered into CMO and were actively being tracked and managed by LCO. Waste management and minimisation was reported in the Annual Reviews (section 6.10).</p>		
BUSHFIRE MANAGEMENT						
LC075	S3 C36	<p>The Applicant must:</p> <p>(a) ensure that the development is suitably equipped to respond to any fires on site; and</p> <p>(b) assist the RFS and emergency services as much as practicable if there is a fire in the vicinity of the site.</p>	<p>LCO Bushfire Management Plan (LIDOC-90533967-5406), Version 2.0, dated 9/2/2022</p> <p>Fuel loadings assessment and report for land under LCO responsibility, report by Kleinfelder, dated 16/09/2021</p> <p>Bushfire hazard inspection form September 2021, Kleinfelder</p> <p>LCO Emergency Management Plan (LIDOC-90533967-1052), 02/09/2021</p> <p>LCO Pollution Incident Response Management Plan (LIDOC-9053367-2175)</p> <p>RFS Consultation evidence, dated 11/09/2020</p> <p>Emergency communication log, dated 20/12/2019</p>	<p>To ensure compliance with the requirements of the Rural Fires Act 1997 LCO prepared a Bushfire Management Plan for its landholdings which includes both the operational and designated offset areas.</p> <p>LCO engaged Kleinfelder Australia in September 2021 to complete a hazard assessment and fuel loadings assessment and provide information for inclusion in the bushfire management plan. The purpose of the review was to reflect current conditions, legislation and policies as well as incorporate hazard mitigation measures appropriate to the existing LCO Landholdings. LCO updated the Bushfire management plan to address this information.</p> <p>Emergency response is conducted in accordance with the site's Emergency Management Plan which incorporates the requirements of the Pollution and Incident Response Management Plan (PIRMP).</p> <p>The Bushfire Management Plan was prepared in consultation with RFS. Evidence of consultation sighted by the auditors.</p> <p>Bushfire events during the audit period</p> <ul style="list-style-type: none"> A grass fire occurred on 20 February 2019 in the reservoir area (from the Hazeldene bore to Dam 17) which was caused by a powerline fault. RFS attended the scene. The auditors sighted photos of the event which showed LCO water carts being used to assist RFS in extinguishing the fire. Small grass fire occurred on 17 May 2021 at the Bowmans Creek access road north side (Hazeldene bore). The fire was caused by power lines which had contacted due to birds contacting the 11kv power lines. The fire was inspected by RFS however the fire was extinguished using an onsite water cart. 	Compliant	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
				<ul style="list-style-type: none"> A grassfire in the railway corridor occurred on 20 December 2019 due to sparks caused by a passing train. Water carts attended the fire first before RFS attended and extinguished the fire. The auditors sighted the emergency communication log for the incident which showed that LCO provided assist the RFS. <p>Bushfire Controls in Place</p> <p>Controls sighted by the auditors for bushfire management remain the same from the previous IEA and include:</p> <ul style="list-style-type: none"> Established first response team who assess all emergency incidents No smoking policy on site Maintenance of fire trails and access tracks Fire extinguishers Water carts Spray pumps Maintained water fill points. <p>It is noted that while LCO have various controls in place to manage fire the auditors are not fire safety engineers and as such are not qualified to determine if a site is equipped to respond to any type of fire on site.</p>		
REHABILITATION						
LC076	S3 C37	The Applicant must rehabilitate the site to the satisfaction of Resources Regulator. The rehabilitation must comply with the objectives in Table 8, and be generally consistent with the proposed rehabilitation strategy in the EIS and as shown conceptually in Appendix 3.	Figure – LCO Habitat Connectivity Figure – Final Landform surface water drainage patterns LCO Annual Rehabilitation Monitoring Report, Future Harvest, February 2020. Site Inspection Annual reviews E&C monthly inspections MOP 2021-2023 Rehabilitation Procedure LIDOC-	<p>Safe Stable and non-polluting</p> <p>Rehabilitation observed during site inspection and from annual reports to be stable (i.e. no erosion) and non-polluting.</p> <p>Final landform designed to incorporate micro-relief and connectivity with surrounds</p> <p>Final landforms were observed to be incorporating micro-relief (i.e. undulations across surface to create microhabitats) and integrate with surrounding landforms. Documented in MOP and the Biodiversity Management Plan (BMP) as a rehabilitation objective. Visual amenity dumps sighted throughout inspection. Fluvial landform work also being conducted e.g., Antiene tailings dam and all tailings' facilities planned to be rehabilitated with the shaping methodology.</p> <p>The proposed final landform and land use for LCO includes woodland habitat corridors that connect with proposed native vegetation rehabilitation at Ravensworth Operations, Mount Owen Complex and the Ravensworth Operations Hillcrest Offset Area.</p>	Compliant	

SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS

Table 8: Rehabilitation Objectives

Feature	Objective
Mine site (as a whole)	<ul style="list-style-type: none"> Safe, stable and non-polluting. Final landforms designed to incorporate micro-relief and integrate with surrounding natural landforms. Constructed landforms drain to the natural environment (excluding the final voids). Minimise visual impact of final landforms as far as reasonable and feasible. Ensure there are no adverse flood impacts to privately owned properties.
Final voids	<ul style="list-style-type: none"> Minimise to the greatest extent practicable: <ul style="list-style-type: none"> the size and depth of final voids the drainage catchment of final voids
Surface infrastructure	<ul style="list-style-type: none"> To be decommissioned and removed, unless the Secretary agrees otherwise.
Revegetation	<ul style="list-style-type: none"> Restore ecosystem function, including maintaining or establishing self-sustaining ecosystems comprising: <ul style="list-style-type: none"> at least 731 hectares of Central Hunter Box-Ironbark Woodland habitat for threatened flora and fauna species including habitat connectivity for the Spotted-tailed Quoll Maintain, establish and/or restore grassland areas with pockets of native vegetation to support sustainable agricultural activities, as shown conceptually in Appendix 3.
Community	<ul style="list-style-type: none"> Ensure public safety. Minimise the adverse socio-economic effects associated with mine closure.
Final land use	<ul style="list-style-type: none"> Restore or maintain land capability generally as described in the EA and as shown conceptually in Appendix 3.

90533967-507, dated 09/07/2020
 Dumping Procedure LIDOC-90533967-2841, dated 26/07/2021
 Geotechnical Monitoring Procedure
 Biodiversity Offset Management Plan, LIDOC-90533967-3755, Version 10.0, dated 17/02/2021
 Biodiversity Management Plan, LIDOC-90533967-3689, Version 12.0, dated 27/10/2021
 Mining Operations Plan, 2021-2023
 Approved 18/03/2021

The auditors sighted a figure titled LCO Habitat Connectivity which outlined the planned rehabilitation outcomes for the Greater Ravensworth Region. This is further outlined in the Biodiversity and Offset Management Plan (BOMP).

Constructed landform drain to the natural environment
 The auditors sighted a figure showing the surface water drainage plan for the mine’s final landform. Drainage patterns have been assessed and the landform design planned to allow for drainage to the natural environment. When planning rehabilitation LCO considers contour drains and surface water flow directions. For example - additional drainage lines have been designed which will lead to Bayswater creek. This correlates to the concept drainage design shown in PLAN 4 of the MOP.

Minimise visual impacts of final landforms
 Efforts to reduce visual impact of edges has been undertaken (e.g. revegetating slopes with woodland and tops of overburden with grassland in general). Further example – The auditors sighted micro-relief visual amenity at the site entrance; 185. 5 meters of overburden was placed on top of this dump and seeded with woodland seed mix.

No adverse flood impacts to privately owned properties
 At the time of the audit site drainage remained within LCO’s containment systems (water was not being delivered to creeks at the time). The drainage system for final landform will align with the drainage concept in the MOD 5 EIS / MOP. The surface water assessment conducted for MOD 5 concluded that final drainage design would not have a significant impact on surrounding creeks with respect to flooding.

The final landform has been constructed in general accordance with the approved Final Landform & Rehabilitation Plan. Water management structures such as dams, embankments, spillways for any remaining dams have been constructed in accordance with engineered hydrological design.

Final Voids
 MOP details plans to progressively backfill open cut pit with overburden (observed during site visit). However mining was yet to cease therefore final void design was not completed at the time of the audit.

Surface Infrastructure
 Surface infrastructure was still in use at the time of the audit and had triggered decommissioning and rehabilitation requirements.

Revegetation
 Evidence was sighted during the audit site inspection to support compliance with the revegetation objectives. The MOP 2021-

SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS

				<p>2023 was written to reference the default mix of seed to be planted. The seed used in reality is dependent on what is available and the conditions at the time but remains consistent with the MOP.</p> <p>Completion criteria in MOP detail requirements requiring multiple structural characteristics (e.g. canopy, mid layer, groundcover) and evidence of reproductive material (e.g. flowering, seedling). None of the rehabilitated areas on site have yet been assessed against the MOP completion criteria for the purpose of formal relinquishment.</p> <p>LCO conduct a series of rehabilitation monitoring to track compliance with the objectives in the MOP 2021-2023. The rehabilitation objectives outlined in DA 305-11-01 have been incorporated into the MOP.</p> <p>Community</p> <p>The mine is still operational and is a closed site with restricted access. Rehabilitation and final land use consider public safety. Social and socio-economic effects have been considered in risk assessments. These measures have not been triggered yet, but LCO is reviewing them and taking them into consideration for future.</p> <p>Final Land Use</p> <p>The primary post mining land use goal for LCO is to establish a mix of grasslands capable of supporting sustainable grazing, and native vegetation corridors to enhance habitat connectivity.</p> <p>Post mining land use is outlined in section 4.0 of the MOP 2021-2023. Post mining land use goal for LCO were developed in consultation with regulatory authorities, reviewed and assessed during the preparation of the DA 305-11-01 MOD 5 Rehabilitation Strategy (included in the MOD 5 EA (Umwelt, 2013)). Due to the nature of MOD 6 and MOD 7 the post mining land use goal did not require modification to the strategy. DA 305-11-01 Appendix 3 provides a plan of the approved conceptual final landform prepared during MOD 5 to satisfy DA 305-11-01 Schedule 3 Condition 37.</p> <p>LCO report in the Annual Reviews that the overall condition of rehabilitation at LCO is moderate and trending towards rehabilitation targets. Review of monitoring reports supports this conclusion. At the time of the audit LCO was progressing with rehabilitation of the site in line with the approved MOP however, no rehabilitation areas onsite have been assessed against the MOP completion criteria for the purpose of formal relinquishment to date. Therefore, RR approval for the rehabilitation objectives outlined in Table 8 of DA 305-11-01 had not been triggered.</p>		
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SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS

LC077	S3 C38	<p>Progressive Rehabilitation The Applicant must carry out rehabilitation progressively, that is, as soon as reasonably, practicable following disturbance. All reasonable and feasible measures must be taken to minimise the total area exposed for dust generation at any time. Interim rehabilitation strategies must be employed when areas prone to dust generation cannot yet be permanently rehabilitated. Note: It is accepted that parts of the site that are progressively rehabilitated may be subject to further disturbance in the future.</p>	<p>Site Inspection Annual Reviews Rehabilitation Procedure LIDOC-90533967-507, dated 09/07/2020. Rehabilitation Establishment and Methodology Record, Entrance Pit, dated 27/10/2021 Rehabilitation Establishment and Methodology Record, South Pit Woodland, dated December 2019 Rehabilitation Establishment and Methodology Record, Entrance Pit, dated 7/10/2020 LCO Annual Rehabilitation Monitoring Report, Future Harvest, February 2020. LCO 2019 Annual Rehabilitation Monitoring Report, Umwelt, January 2020 LCO Mountain Block Rehabilitation Report, SLR, dated 20/01/2022</p>	<p>Progressive rehabilitation was evident on site during the audit inspection. Evidence of monthly reports for rehabilitation works undertaken by Toolijooa Env restoration within various locations across LCO was sighted for 2019 and 2021. Toolijooa Env focused efforts on tubestock infill planting within woodland areas and were adaptable in their approach where required. Evidence of regular seed supply, treatment, and delivery for direct seeding of target seed species has been sighted. Seed supply and application is provided by Future Harvest Native Revegetation Services who document appropriate seed mixes for the relevant PCTs stated within the plan. No exceedances of air quality criteria were recorded, which investigations concluded LCO operations were the direct cause. Rehabilitation Status during the audit period is outlined in the Table below.</p> <table border="1"> <thead> <tr> <th>Mine Area</th> <th>2019 (ha)</th> <th>2020 (ha)</th> <th>2021 (ha)</th> </tr> </thead> <tbody> <tr> <td>Total mine footprint</td> <td>1628</td> <td>1637</td> <td>1638</td> </tr> <tr> <td>Total active disturbance</td> <td>706</td> <td>664</td> <td>682</td> </tr> <tr> <td>Land being prepared for rehabilitation</td> <td>0</td> <td>0</td> <td>36</td> </tr> <tr> <td>Land under active rehabilitation</td> <td>922</td> <td>943</td> <td>956</td> </tr> <tr> <td>Complete rehabilitation</td> <td>0</td> <td>0</td> <td>0</td> </tr> </tbody> </table> <p>Additional evidence of progressive rehabilitation sighted during the audit inspection is detailed in the IEA report. LCO were considered to be actively conducting progressive rehabilitation during the audit period, to the extent required by Schedule 3, Condition 28.</p>	Mine Area	2019 (ha)	2020 (ha)	2021 (ha)	Total mine footprint	1628	1637	1638	Total active disturbance	706	664	682	Land being prepared for rehabilitation	0	0	36	Land under active rehabilitation	922	943	956	Complete rehabilitation	0	0	0	Compliant	
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LC078	S3 C39	<p>Rehabilitation Management Plan The Applicant must prepare a Rehabilitation Management Plan for the development to the satisfaction of DRG, This plan must: (a) be submitted to DRE for approval by the end of June 2015; (b) be prepared in consultation with the Department, Dol, OEH, MSC and SC;</p>	<p>Consultation and Approval by Resource Regulator (RR):</p>	<p>LCO's Rehabilitation Management Plan is incorporated within the site's Mining Operations Plan (MOP). The following MOPs were in effect during the audit period:</p> <ul style="list-style-type: none"> MOP 2018-2020 - LCO operated under MOP 2018-2020, which had a MOP term to 1 December 2020 MOP 2020-2023 - LCO prepared a new MOP for the period 2020-2023. Following consultation with RR from June to 	Compliant																									

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
		<p>(c) be prepared in accordance with relevant DRE guidelines;</p> <p>(d) describe how the rehabilitation of the site would be integrated with the implementation of the biodiversity offset strategy;</p> <p>(e) include a detailed performance and completion criteria for evaluating the performance of the rehabilitation of the site, and triggering remedial action (if necessary);</p> <p>(f) describe the measures that would be implemented to ensure compliance with the relevant conditions of this consent, and address all aspects of rehabilitation including mine closure, final landform including final voids and final land use;</p> <p>(g) include interim rehabilitation where necessary to minimise the area exposed for dust generation;</p> <p>(h) include a program to monitor and report on the effectiveness of the measures, and progress against the detailed performance and completion criteria; and</p> <p>(i) build to the maximum extent practicable on other management plans required under this consent.</p> <p>The Applicant must implement the management plan as approved by the Secretary.</p> <p><i>Note: The Rehabilitation Management Plan may be combined with a Mining Operations Plan, or similar plan, required under a mining lease granted under the Mining Act 1992 for the development.</i></p>	<p>Meeting Notes, LCO and RR, dated 24/06/2020</p> <p>Presentation slides to DRG, dated 12/08/2020</p> <p>Letter to RR requesting extension to MOP 2018-2020 term, dated 18/11/2020</p> <p>Letter from RR approving the MOP 2021-2023, dated 18/03/2021</p> <p>Letter from RR approving extension to MOP 2018-2020 term, dated 24 November 2020</p> <p>Consultation with the Department (DPE – Planning)</p> <p>LCO Rehabilitation presentation to the Department, dated 28/08/2020</p> <p>Letter from Department, MOP Approval, dated 10/02/2021</p> <p>Major Projects Portal screenshot, Plan review, Form No. 20200915033134</p> <p>Consultation with Department of Industry:</p> <p>Email from LCO to DoI, MOP Feedback, dated 15/09/2020</p>	<p>October 2020, the MOP was submitted for approval by RR on 30 September 2020. RR requested additional information to be provided in the MOP and requested the information be provided before the 14 December 2020. As this was after the cessation of the MOP 2018-2020 term an extension to the 2018-2020 MOP was granted by RR until 31 March 2021.</p> <ul style="list-style-type: none"> MOP 2021-2023; LCO updated the MOP to address the information requests made by RR. The updated MOP now covered the period 18 March 2021 to 1 December 2023. The MOP was submitted for approval on 19 February 2021 and subsequently approved by RR on 18 March 2021. <p>Review of MOP 2021-2023 (the MOP)</p> <ul style="list-style-type: none"> The MOP was prepared in consultation with the required agencies, including the Natural Resources Access Regulator (NRAR), Department of Industry (formerly DPI-Water), Biodiversity and Conservation Division (BCD – formerly OEH), Muswellbrook Council and Singleton Council. At the time of this audit RR require MOPs to be prepared in accordance with <i>ESG3: Mining operations plan (MOP) guidelines</i> (RR, September 2013). The MOP references the guideline, and a general assessment indicates it was prepared in accordance with the guideline, however due to time constraints a detailed assessment was not conducted as part of the IEA. The MOP was approved by RR who assess compliance with the guideline. The MOP details that Domain 10: Biodiversity Offset Area will be rehabilitated in accordance with the Biodiversity Offset Management Plan. The BOMP details how the rehabilitated areas are to be integrated with the implementation of the Biodiversity Offset strategy. The BMP, BOMP and MOP documents work together to achieve this goal. Section 6 of the MOP outlines performance indicators and completion criteria Section 7 of the MOP details rehabilitation implementation across the site. While Section 8 details monitoring of the rehabilitation and research. Interim rehabilitation measures are covered within the MOP. Refer Schedule 3, Condition 38 for evidence of progressive rehabilitation during the audit period. LCO complete Rehabilitation Report Cards, as documented in Section 8.1 of the MOP. The purpose of Rehabilitation Report Card is to demonstrate the effectiveness of 		

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
			<p>Letter to NRAR (DoI), Rehabilitation and Water Licencing, dated 15/09/2020</p> <p>Consultation with Biodiversity and Conservation Division:</p> <p>Letter to BCD, Rehabilitation, dated 15/09/2020</p> <p>Email from LCO to BCD, MOP Feedback, dated 15/09/2020</p> <p>Letter from BCD, MOP 2020-2023, dated 02/10/2020</p> <p>Consultation with Muswellbrook Council:</p> <p>Email from LCO to Muswellbrook Council, MOP Feedback, dated 15/09/2020</p> <p>Letter to Muswellbrook Council, Rehabilitation, dated 15/09/2020</p> <p>Consultation with Singleton Council:</p> <p>Email from LCO to Singleton Council, MOP Feedback, dated 15/09/2020</p> <p>Letter to Singleton Council, Rehabilitation, dated 15/09/2020</p> <p>Letter from Singleton Council,</p>	<p>rehabilitation and relevant information at the appropriate lifecycle stage of the rehabilitation and to ensure that if a critical failure is identified, the rehabilitation will not progress onto the next stage until the issue has been addressed. As addressed in Section 8.1.1 of the MOP all rehabilitated areas are monitored on an annual basis, including ecological monitoring as detailed in the BOMP, BMP and the Annual Rehabilitation Report.</p> <ul style="list-style-type: none"> Annual Rehabilitation Monitoring is also reported in the LCO Annual Reviews. Multiple management plans work in sync together to establish and monitor the success of rehabilitation across site. This is outlined within the MOP. <p>Implementation Review</p> <p>Rehabilitation Monitoring</p> <p>Evidence of implementation of the annual rehabilitation monitoring program was sighted. The rehabilitation monitoring program involves flora plot monitoring, habitat assessment, biobanking transects at woodland sites, pasture transects and rehabilitation walkover inspections. The 2019 and 2020 Annual Rehabilitation Monitoring Reports included specific recommendations for each site within a rehabilitation domain as well as general recommendations. In summary the following monitoring was conducted during the audit period:</p> <ul style="list-style-type: none"> Quarterly monitoring conducted by SLR Quarterly aerial mapping has also been done which includes Mountain Block Future Harvest conduct annual walkover and pasture monitoring SLR conduct additional Mountain Block monitoring Umwelt conduct woodland monitoring Neil Nelson Advice conduct additional pasture monitoring GeoTech Monitoring was conducted on the slope of Mountain Block (Lambert GeoTech). <p>Annual monitoring is entered into CMO as an event, so a reminder is sent to ensure monitoring is conducted.</p> <ul style="list-style-type: none"> 2019 and 2020 monitoring reports provided. 2021 – draft reports provided however had not been finalised at the time of the audit. <p>The Annual Reviews provide an update of the rehabilitation status (number of hectares disturbed and rehabilitated during the year and includes a figure/map showing the areas. Further</p>		

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS						
			MOP 2020-2023, dated 23/10/2020	<p>details of the number of hectares of each ecosystem are provided in Appendix H of the Annual Review.</p> <p>Cumulative rehabilitation targets are being achieved.</p> <p>Topsoil</p> <p>Organic growth material (OGM) was no longer permitted for use in rehabilitation. A concern for the site is the likely deficit of topsoil available for rehabilitation upon closure. LCO continue to use suitable topsoil alternatives with consideration to rehabilitation performance. This included biomix, biosolids and mulch to promote growth on newly established rehabilitation areas.</p> <p>The site maintains a topsoil register.</p> <p>Refer Section 6.1.11 of the IEA Report for additional evidence of the MOP's implementation during the audit period.</p> <p>The auditors were satisfied that the MOP 2021-2023 was adequately implemented since its commencement.</p>		

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 4 ADDITIONAL PROCEDURES						
LC079	S4 C1	By 31 October 2007, the Applicant must notify the landowners of the land listed in Table 1 that they have the right to an independent review in accordance with Condition 4 of Schedule 4 if they consider that the development is exceeding the relevant impact assessment criteria at any stage during the life of the development.	Hansen Baily, 2016 IEA AECOM, 2019 IEA	This condition was completed outside of the audit period and verified in previous IEAs	Compliant	
LC080	S4 C2	If the results of monitoring required in Schedule 3 identify that impacts generated by the development are greater than the impact assessment criteria, except where this is predicted in the EA, and except where a negotiated agreement has been entered into in relation to that impact, then the Applicant must notify the Secretary and the affected landowners and/or existing or future tenants (including tenants of mine owned properties) accordingly, and provide quarterly monitoring results to each of these parties until the results show that the development is complying with the criteria in Schedule 3.	LCO Website	Monthly monitoring results are published on the LCO website. This condition had not been triggered during the audit period.	Not Triggered	
LC081	S4 C3	The Applicant must send a copy of the NSW Health fact sheet entitled 'Mine Dust and You' (as may be updated from time to time) to advise landowners and/or existing or future tenants (including tenants of mine owned properties) of the possible health and amenity impacts associated with exposure to particulate matter, to the satisfaction of the Secretary where the predictions in the EA identify that the dust emissions generated by the development are likely to be greater than the air quality criteria in Schedule 3.	Letter from DPE to LCO acknowledging receipt of the fact sheet, dated 31/12/2018 Letter to landowners dated 02/01/2019 with mine dust and you fact sheet attached LCO Public website Community documents (glencore.com.au)	The NSW Health fact sheet was last distributed to relevant landowners on 2/01/2019 following an update. The NSW Health fact sheet was also sent to recreational area landowner (Lake Liddell) so that it may be passed onto recreational users at Lake Liddell. The NSW Health fact sheet is available on the community section of website.	Compliant	
LC082	S4 C4	If a landowner of privately-owned land considers the development to be exceeding the impact assessment criteria in Schedule 3, then he/she may ask the Secretary in writing for an independent review of the impacts of the development on his/her land. If the Secretary is satisfied that an independent review is warranted, the Applicant must within 2 months of the Secretary decision: (a) commission a suitably qualified, experienced and independent expert, whose appointment has been approved by the Secretary, to: • consult with the landowner to determine his/her concerns;	Discussion with LCO personnel Review of monitoring data Consultation with CCC Chair	This had not occurred during the audit period.	Not Triggered	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 4 ADDITIONAL PROCEDURES						
		<ul style="list-style-type: none"> • conduct monitoring on the land, to determine whether the development is complying with the relevant impact assessment criteria in Schedule 3; and • if the development is not complying with these criteria then: <ul style="list-style-type: none"> - determine if more than one mine is responsible for the exceedances; and if so the relevant share of each mine regarding the impact of the land; - identify measures that could be implemented to ensure compliance with the relevant criteria; (b) give the Secretary and landowner a copy of the independent review.				
LC083	S4 C5	If the independent review determines that the development is complying with the relevant impact assessment criteria in Schedule 3, then the Applicant may discontinue the independent review with the approval of the Secretary.	Discussion with LCO personnel Review of monitoring data Consultation with CCC Chair	This had not occurred during the audit period.	Not Triggered	
LC084	S4 C6	If the independent review determines that the development is not complying with the relevant impact assessment criteria in Schedule 3, and that the development is primarily responsible for this non-compliance, then the Applicant must:(a) take all reasonable and feasible measures, in consultation with the landowner and appointed independent expert to ensure that the development complies with the relevant criteria; or(b) secure a written agreement with the landowner to allow exceedances of the criteria in Schedule 3,to the satisfaction of the Secretary.If the additional monitoring referred to above subsequently determines that the development is complying with the relevant criteria in Schedule 3, then the Applicant may discontinue the independent review with the approval of the Secretary.If measures referred to in (a) do not achieve compliance with the criteria in Schedule 3, and the Applicant cannot secure a written agreement with the landowner to allow these exceedances within 3 months, then upon receiving a written request from the landowner, then the Applicant or landowner may refer the matter to the Secretary for resolution.	Discussion with LCO personnel Review of monitoring data Consultation with CCC Chair	This had not occurred during the audit period.	Not Triggered	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 5 ENVIRONMENTAL MANAGEMENT, AUDITING & REPORTING						
ENVIRONMENTAL MANAGEMENT STRATEGY						
LC085	S5 C1	<p>The Applicant must prepare an Environmental Management Strategy for the development to the satisfaction of the Secretary. This strategy must:</p> <p>(a) provide the strategic context for environmental management of the development;</p> <p>(b) identify the statutory requirements that apply to the development;</p> <p>(c) describe in general how the environmental performance of the development would be monitored and managed;</p> <p>(d) describe the procedures that would be implemented to:</p> <ul style="list-style-type: none"> • keep the local community and relevant agencies informed about the operation and environmental performance of the development; • receive, handle, respond to, and record complaints; • resolve any disputes that may arise during the course of the development; • respond to any non-compliance; • manage cumulative impacts; and • respond to emergencies; <p>(e) describe the role, responsibility, authority, and accountability of all the key personnel involved in environmental management of the development; and</p> <p>(f) include:</p> <ul style="list-style-type: none"> • copies of various strategies, plans and programs that are required under the conditions of this consent once they have been approved; and • a clear plan depicting all the monitoring to be carried out in relation to the development. <p>The Applicant must implement the approved strategy as approved from time to time by the Secretary.</p>	<p>LCO Environmental Management Strategy, LIDOC-90533967-797, dated 19/03/2021</p> <p>Letter from the Department, Approving EMS, dated 8/08/2019</p> <p>Letter from the Department, Approving EMS, dated 24/03/2021</p> <p>Letter from LCO to the Department, Version 12.0 EMS, dated 5/08/2019</p> <p>Letter from LCO to the Department, Version 13.0 EMS, dated 19/03/2021</p> <p>E&C monthly inspection reports dated Feb 2019, Nov 2020</p> <p>E&C monthly inspection forms dated 28/06/2019, May 2020</p> <p>Daily pipeline inspection reports dated 13-16/05/2020 and 10-12/12/2021</p> <p>Pre- and post-rainfall event ESC inspection forms dated 28/03/2019-1/04/2019, 16/09-2019-18/09/2019, 2/04/2020-6/04/2020, 22/07/2020, 8/10/2021-15/10/2021,</p>	<p>The LCO Environmental Management Strategy (EMS) was developed in 2015 and originally approved by the Department on 14/12/2015. The EMS was operational from 08/01/2016 and has been revised and updated multiple times since its original approval. The EMS was updated twice during the audit period. This includes the following:</p> <ul style="list-style-type: none"> • Version 12.0 which was submitted to the Department for approval on 5 August 2019. The Department approved Version12.0 of the EMS on 8 August 2019. • Version 13.0 which was submitted to the Department for approval on 19 March 2021. The Department approved Version13.0 of the EMS on 24 March 2021. <p>A review of the EMS, version 13.0 was conducted as part of the IEA. The following was identified:</p> <ul style="list-style-type: none"> • Section 3 of the EMS outlines how the EMS provides the strategic context for the environmental management of LCO and the framework from which the Environmental Management System is implemented. • Section3.8 and 3.9 of the EMS outlines the legislation and regulatory requirements applicable to LCO. • Section 3.1 Section 5 • Section 4.7 – community and agencies informed, Section 4.9 complaints management, Section 4.10 Dispute resolution, Section 5.0 non-compliance management, Section 4.5 cumulative impact management, Section 4.12 emergency response. • Section 7 summarises the roles and responsibilities for personnel involved in environmental management of the Site • Appendix B includes a publication list of LCO management plans, strategies and programs and includes hyperlinks to the documents on the LCO website. Appendix A outlines the monitoring plans for LCO and specifically shows the monitoring locations for surface and groundwater monitoring and air quality, noise, and blast monitoring <p>A review of the implementation of the controls detailed in the EMS was conducted as part of the audit. Key findings include:</p> <ul style="list-style-type: none"> • Monthly inspections were undertaken by the E&C Department. Sighted both hand-written inspection forms and CMO inspection reports. Monthly inspection forms cover: <ul style="list-style-type: none"> ○ maintenance areas including workshop, store, fuel farm, tyre pad, wash bay, build pad 		

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 5 ENVIRONMENTAL MANAGEMENT, AUDITING & REPORTING						
			23/12/2021-29/12/2021	<ul style="list-style-type: none"> workshop sediment dam and Min Infrastructure Area sewage treatment plant o rehabilitation areas o mining areas o CHPP and CHPP sewage treatment plant o priority erosion and sediment controls o Mt Block biodiversity offset area. • Personnel from the E&C Department informed the auditors that the following were inspected on a daily basis: high level alarms, high risk pipelines (located outside containment areas). Sighted daily pipeline inspection reports marked up by hand. • LCO implement a ground disturbance permit process. Evidence of GDPs being developed and implemented was sighted. Additional information is provided in the main IEA report. • Internal audits - LCO conduct an internal audit/ system check process every 3 years prior to each IEA • Monitoring - Refer to relevant sections in Schedule 3. • Consultation - a community Newsletter – now biannual – published on website and letterbox drop. The site operates a CCC which meets twice a year. • Complaints – Refer main IEA report. In summary only one complaint was received during the audit period in relation to the location of mobile lights during night works. • Emergency management is managed in accordance with the LOC Emergency Management Plan – internal document, v20, dated 2/9/2021 and the Pollution Incident Response Management Plan, which is updated every year, tested and is available on the LCO public website. <p>Based on the evidence reviewed, it was considered that in general the EMS was being implemented by LCO.</p>		
ANNUAL REVIEW						
LC086	S5 C3	Each year, the Applicant must prepare an Annual Review to the satisfaction of the Secretary. This review must: (a) identify the standards and performance measures that apply to the development; (b) describe the works carried out in the last 12 months; (c) describe the works that will be carried out in the next 12 months; (d) include a comprehensive review of monitoring results and complaints received during the past year, and compare the	Letter from the Department, 2019 Annual Review, dated 27/05/2020 Evidence of submission of 2018 Annual Review,	<p>2018 Annual Review</p> <p>The 2018 Annual Review for the period of 1 Jan 2019 – 31 December 2019 was submitted to the Department on 29 March 2019. The Department reviewed the 2018 Annual Review and stated, in their letter dated 14 May 2019, that they were generally satisfied with the Annual Review. No actions were identified for follow up.</p> <p>2019 Annual Review</p>	Compliant	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 5 ENVIRONMENTAL MANAGEMENT, AUDITING & REPORTING						
		results against: <ul style="list-style-type: none"> • limits/criteria in this consent, statutory requirements and performance measures/criteria; • monitoring results from previous years; and (e) predictions in the latest EA; (f) identify any trends in the monitoring over the life of the development; (g) identify and discuss any non-compliance during the previous year and describe what actions were (or are being) taken to ensure compliance; (h) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and (i) describe what measures will be implemented over the next year to improve the environmental performance of the development.	dated 29 March 2019 Email from the Department verifying submission of 2019 Annual Review, dated 27/03/2020 Email from LCO to Council, Heritage, NRAR, dated 31/03/2021 Email from the Department, re: submission of 2020 Annual Review. Dated 1/04/2021 Letter from the Department, 2020 Annual Review, dated 28/07/2021 LCO public Website 2018 Annual Review 2019 Annual Review 2020 Annual Review	The 2019 Annual Review for the period of 1 Jan 2019 – 31 December 2019 was submitted to the Department on 27 March 2020. The Department reviewed the Annual Review and stated, in their letter dated 27 May 2020, that they were generally satisfied with the Annual Review however requested that future Annual Reviews include the key inputs and outputs into that contribute to the site water balance. 2020 Annual Review The 2020 Annual Review for the period of 1 Jan 2019 – 31 December 2019 was submitted to the Department on 31 March 2021. The Department reviewed the Annual Review and stated, in their letter dated 28 July 2021, that they were generally satisfied with the Annual Review however requested that future Annual Reviews include the following: <ul style="list-style-type: none"> • Clearly include a comparison of monitoring results for all environmental aspects against the relevant predictions in the latest EA • Clearly identify any trends in the monitoring data for all environmental aspects over the life of the development. 2021 Annual Review The 2021 Annual Review was in draft at the time of the audit. The auditors reviewed the 2018, 2019 and 2020 Annual Reviews and verified they contained the required information as specified by Schedule 5, Condition 3. In addition, each Annual Review, where required, adequately addressed any requests made by the Department following the Departments review of the previous Annual Review.		
INDEPENDENT ENVIRONMENTAL AUDIT						
LC087	S5 C4	Within a year of the approval of modification application DA 305-11-01 MOD 5, and every 3 years thereafter, unless the Secretary directs otherwise, the Applicant must commission and pay the full cost of an Independent Environmental Audit of the development. This audit must: <ul style="list-style-type: none"> (a) be conducted by a suitably qualified, experienced, and independent team of experts whose appointment has been endorsed by the Secretary; (b) include consultation with relevant agencies; (c) assess the environmental performance of the development, and its effects on the surrounding environment; (d) assess whether the development is complying with the relevant standards, performance measures, and statutory requirements; (e) review the adequacy of any strategy/plan/program required under this consent; and, if necessary, 	2019 IEA Report, AECOM Letter from Department approving the 2022 IEA team, dated 3/12/2021	The 2019 IEA was undertaken by AECOM Australia Pty Ltd for the period 31 December 2015 to 07 February 2019. The auditors reviewed the 2019 IEA report and verified it contained the required information as specified in Schedule 5, Condition 4. The 2022 IEA (this IEA) is being undertaken by AECOM. The Department approved the audit team and specialists to conduct the audit on 3 December 2021.	Compliant	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 5 ENVIRONMENTAL MANAGEMENT, AUDITING & REPORTING						
		<p>(f) recommend measures or actions to improve the environmental performance of the development, and/or any strategy/plan/program required under this consent.</p> <p>Note: This audit team must be led by a suitably qualified auditor and include experts in the field of mine rehabilitation and mine closure.</p>				
LC088	S5 C5	<p>Within 6 weeks of completing this audit, or as otherwise agreed by the Secretary, the Applicant must submit a copy of the audit report to the Secretary with a response to any recommendations contained in the audit report.</p>	<p>Letter from the Department, 2019 IEA, dated 18/06/2019</p> <p>Letter from Department, 2019 IEA, dated 09/01/2019</p> <p>2019 IEA report, AECOM</p> <p>Evidence of submission of 2019 IEA on the Major Projects Portal, dated 29/03/2019</p>	<p>The Department requested a copy of the audit report be submitted within 6 weeks of the audit inspection date. The 2019 IEA site inspection was conducted on 04-07 February 2019. The IEA report was therefore due for submission before the 21 March 2019.</p> <p>The 2019 IEA report and response to auditor recommendations (RAR) was submitted to the Department by LCO on 29 March 2019.</p> <p>The auditors sighted a letter from the Department, dated 18 June 2019, which stated that they were generally satisfied with the 2019 IEA and had no further comments. The Department did not make note of the late submission of the IEA.</p> <p>LCO identified the late submission of the 2019 IEA as a technical non-compliance in their internal compliance monitoring system.</p> <p>A copy of this report along with LCO's response to any recommendations contained in the audit report is available on LCO's public website.</p> <p>On the basis that the 2019 IEA report was submitted to the Department one week late an administrative non-compliance has been found.</p> <p>This non-compliance was an administrative error that is unlikely to be repeated. LCO have an action in the compliance monitoring database CMO to submit the IEA report before the 26 April 2022. On this basis no recommendation for improvement is deemed to be required.</p>	Non-Compliance (Administrative)	Recommendation not required
COMMUNITY CONSULTATIVE COMMITTEE						
LC089	S5 C7	<p>The Applicant must maintain a Community Consultative Committee for the development to the satisfaction of the Secretary. The CCC must be operated in accordance with the Guidelines for Establishing and Operating Community Consultative Committees: State Significant Projects (2016)</p> <p>Notes:</p> <ul style="list-style-type: none"> The CCC is an advisory committee. The Department and other relevant agencies are responsible for ensuring that the Applicant complies with this consent. In accordance with the Guideline, the Committee should 	<p>Email from the Department, IC Appointment to CCC, dated 25/09/2019</p> <p>Community Consultative Committee: State Significant Projects</p>	<p>LCO has an established Community Consultative Committee (CCC) which meets twice a year (in May and November). The CCC consists of representatives from LCO, MSC, SCC and the local community. A representative from the Department is also invited to the meetings and attends on an ad hoc basis.</p> <p>The CCC Independent Chair, Jennifer Lecky, was appointed by the Department on 25/09/2019.</p> <p>The CCC guideline – Community Consultative Committee: State Significant Projects was last updated in January 2019. The updated guideline required the appointment of new CCC members is to be</p>	Compliant	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 5 ENVIRONMENTAL MANAGEMENT, AUDITING & REPORTING						
		comprise an independent chair and appropriate representation from the Applicant, Councils and the community.	(NSW Government 2019) CCC Meeting Minutes – Audit Period LCO Public Website - Community documents (glencore.com.au)	overseen by the Independent Chair. At the time of the audit the CCC had one community position vacant. The auditors reviewed meeting minutes from the CCC meetings held within the audit period. These minutes are available on the LCO Public Website. All meetings were held during the audit period except for the May 2020 CCC meeting. After advice received by the CCC Chair, a face-to-face CCC meeting was not held in May 2020 due to Federal and NSW Government restrictions relating to COVID-19. A presentation was sent out to all CCC members on 12th June 2020, and an offer to contact Liddell Environment and Community team and/or Chairperson Jennifer Lecky to discuss any issues raised was provided. A summary of the CCC meetings and actions from the CCC is included in the Annual Reviews which are approved by the Department.		
ACCESS TO INFORMATION						
LC090	S5 C9	By the end of February 2015, and for the remainder of the life of the development, the Applicant must: (a) make the following information publicly available on its website: • a copy of all current statutory approvals for the development; • a copy of the current environmental management strategy and associated plans and programs; • a summary of monitoring results of the development, which have been reported in accordance with the various plans and programs approved under the conditions of this consent; • a complaints register, which is to be updated in a monthly basis; • a copy of the CCC minutes; • a copy of any Annual Reviews (over the last 5 years); • a copy of any Independent Environmental Audit, and the Applicant's response to the recommendations in any audit; • any other matter required by the Secretary; and (b) keep this information up to date to the satisfaction of the Secretary.	LCO Public Website	A review of the LCO public website was conducted on 1 February 2021. Information available on the LCO website is displayed consistently with Glencore Corporate requirements. Documentation is well organised and easily accessible. Following the review, the auditors verified that all required information was available, up to date, easy to locate and presented in a logical format.	Compliant	
REVISION OF STRATEGIES, PLANS AND PROGRAMS						
LC091	S5 C10	Within 3 months of: (a) the submission of an Annual Review under condition 3 above; (b) the submission of an incident report under condition 11 below; (c) the submission of an audit under condition 4 above; or (d) any modification to the conditions of this consent,	Email from LCO E&C Manager to the Department, dated 9/05/2019 Refer evidence against each relevant condition in the Checklist	The following reviews were triggered during the audit period: • 2019 - Trigger for reviews included the submission of the 2018 Annual Review on 29 March 2019), the submission of the 2019 IEA report on 29 March 2019) and the approval of MOD 7 on 12 February 2019. The Department submitted updated management plans to the Department on 9 May 2021. • 2020 - Trigger for reviews included the submission of the 2019 Annual Review on 25 June 2020. An annual management	Compliant	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 5 ENVIRONMENTAL MANAGEMENT, AUDITING & REPORTING						
		<p>the Applicant must review, and if necessary, revise, the strategies, plans, and programs required under this consent to the satisfaction of the Secretary. Where this review leads to revisions in any such document, then within 2 months of the review the revised document must be submitted to the Secretary for approval, unless the conditions in Schedule 3 provide for an alternative timing and/or the Secretary agrees otherwise.</p> <p><i>Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the development.</i></p>		<p>plan review was conducted in accordance with Glencore requirements and to comply with the requirements of Condition 10, Schedule 5.</p> <ul style="list-style-type: none"> • 2021 - Trigger for reviews included the submission of the 2020 Annual Review on 30 June 2021. <p>All plans, strategies and programs were reviewed and revised, if required, where a review was triggered as summarised above. Detailed summaries of each plans review and revisions during the audit period are included against each relevant condition in the checklist.</p>		
INCIDENT NOTIFICATION						
LC092	S5 C11	<p>The Applicant must immediately notify the Department and any other relevant agencies immediately after it becomes aware of an incident. The notification must be in writing to compliance@planning.nsw.gov.au and identify the development (including the development application number and name) and set out the location and nature of the incident.</p>	<p>Incident Register – audit period Discussion with LCO Blast Fume Notification to the Department, dated 11/05/2021</p>	<p>An Incident is defined by the Development Consent as an occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance</p> <p>LCO notified the Department of the following incidents:</p> <ul style="list-style-type: none"> • 2019 – air quality exceedances which not deemed to be a result of LCO operations. DA 305-11-01 was modified in Feb 2019 (following MOD 7 approval) and as a result these exceedances would not be considered non-compliances following the change in the notes of Schedule 3, Condition 16. • 2020 - air quality exceedances which were deemed to be the result of an extraordinary event associated with the 2019/2020 bushfire season. • 2021 - A post blast fume rating of Level 4 was recorded onsite following a blast in the Entrance Pit on 11 June 2021. LCO notified the Department on the day the incident occurred and submitted an incident report within 7 days. It is noted that the date of the letter submitted to the Department quotes 11 May 2021. This is believed to be an administrative error. <p>It is noted that material harm is defined in the Consent as harm that:</p> <p>(a) involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial, or</p> <p>(b) results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000 (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment)</p> <p>A review of incidents recorded during the audit period was conducted by the auditors. No incidents occurred during the audit</p>	Compliant	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 5 ENVIRONMENTAL MANAGEMENT, AUDITING & REPORTING						
				period which were considered to cause or threaten to cause material harm to the environment.		
NON-COMPLIANCE NOTIFICATION						
LC093	S5 C12	<p>Within seven days of becoming aware of a non-compliance, the Applicant must notify the Department of the non-compliance. The notification must be in writing to compliance@planning.nsw.gov.au and identify the development (including the development application number and name), set out the condition of this approval that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.</p> <p><i>Note: A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance</i></p>	<p>Emails to Department, Re – Notification of Air Quality Monitoring PM10 TEOM Exceedances (various dates throughout the audit period)</p> <p>PM10 Exceedance Investigation Reports, (various dates throughout the audit period)</p> <p>Email to Department Re: notification of failure to monitor PM10 HVAS, dated 12/03/2020 and written report on 11/02/2020</p> <p>Letter to Department, Re – report detailing failure to monitor blast vibration at Newdell Zone Substation, dated 5 November 2021</p> <p>Emails to Department, Re – Failure to monitor PM10 from TEOM (various dates throughout the audit period)</p> <p>Email verification of notification to Department on</p>	<p>A non-compliance is defined by the Development Consent as <i>an occurrence, set of circumstances or development that is a breach of this consent.</i></p> <p>This condition was a new condition added when the Consent was modified following approval of MOD 7 in 2019.</p> <p>LCO were aware of the following non-compliances during the audit period:</p> <ul style="list-style-type: none"> Air Quality: Exceedances of short term PM₁₀ 24 hour averaging criteria Air Quality: Failures to monitor air quality at HVAS 21 and HVAS 12. IEA Report Submission: Failure to submit the IEA report within the required timeframe Blasting: Failure to record vibration data at Newdell Zone Substation <p>Incident reports and correspondence to the Department was provided to the auditors for review. LCO provided adequate notification of non-compliances in accordance with Schedule 5, Condition 12.</p>	Compliant	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
SCHEDULE 5 ENVIRONMENTAL MANAGEMENT, AUDITING & REPORTING						
			5/11/2021 for failure to record blast vibration data at Newdell Zone Substation. Evidence of submission of 2019 IEA on the Major Projects Portal, dated 29/03/2019			
LC094	S5 C13	Any condition of this consent that requires the carrying out of monitoring or an environmental audit, whether directly or by way of a plan, strategy or program, is taken to be a condition requiring monitoring or an environmental audit under Division 9.4 of Part 9 of the EP&A Act. This includes conditions in respect of incident notification, reporting and response, non-compliance notification, compliance report and independent audit. <i>Note: For the purposes of this condition, as set out in the EP&A Act, "monitoring" is monitoring of the development to provide data on compliance with the consent or on the environmental impact of the development, and an "environmental audit" is a periodic or particular documented evaluation of the development to provide information on compliance with the consent or the environmental management or impact of the development.</i>		This condition is noted.	Noted	

2022 IEA Audit Checklist – EPL 2094

Ref #	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation									
1 Administrative Conditions															
LC095	A1.1	<p>WHAT THE LICENCE AUTHORISES AND REGULATES</p> <p>This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.</p> <p>Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.</p> <table border="1"> <thead> <tr> <th>Scheduled Activity</th> <th>Fee Based Activity</th> <th>Scale</th> </tr> </thead> <tbody> <tr> <td>Coal works</td> <td>Coal works</td> <td>> 5000000 T annual handing capacity</td> </tr> <tr> <td>Mining for coal</td> <td>Mining for coal</td> <td>> 5000000 T annual production capacity</td> </tr> </tbody> </table>	Scheduled Activity	Fee Based Activity	Scale	Coal works	Coal works	> 5000000 T annual handing capacity	Mining for coal	Mining for coal	> 5000000 T annual production capacity	<p>CMO Review</p> <p>Interview with staff</p> <p>2019 E12 Forecast Summary</p> <p>2020 E12 Forecast Summary</p> <p>2021 E12 Forecast Summary</p>	<p>Tracking of coal production is managed by the Tech Services Department. The auditors were provided the 'E12 Forecast Summary' Spreadsheets which include a summary of production for each year. The figures relevant to this condition are stated below:</p> <p>ROM Coal values:</p> <ul style="list-style-type: none"> • 2019 <ul style="list-style-type: none"> ○ 5,863,647 tonnes extracted ○ 5,637,204 tonnes processed • 2020 <ul style="list-style-type: none"> ○ 5,746,444 tonnes extracted ○ 5,939,904 tonnes processed • 2021 <ul style="list-style-type: none"> ○ 4,986,655 tonnes extracted ○ 4,920,864 tonnes processed 	Compliant	
Scheduled Activity	Fee Based Activity	Scale													
Coal works	Coal works	> 5000000 T annual handing capacity													
Mining for coal	Mining for coal	> 5000000 T annual production capacity													
LC096	A2.1	<p>PREMISES OR PLANT TO WHICH THIS LICENCE APPLIES</p> <p>The licence applies to the following premises:</p> <table border="1"> <thead> <tr> <th>Premises Details</th> </tr> </thead> <tbody> <tr> <td>LIDDELL COAL OPERATIONS</td> </tr> <tr> <td>OLD NEW ENGLAND HIGHWAY RAVENSWORTH VIA SINGLETON</td> </tr> <tr> <td>RAVENSWORTH</td> </tr> <tr> <td>NSW 2330</td> </tr> <tr> <td>AS SHOWN ON MAP TITLED 'LIDDELL COAL OPERATIONS - EPL 2094 PREMISES BOUNDARY' RECEIVED BY THE EPA ON 20 DECEMBER 2013. EPA FILE REFERENCE DOC13/96613.</td> </tr> </tbody> </table>	Premises Details	LIDDELL COAL OPERATIONS	OLD NEW ENGLAND HIGHWAY RAVENSWORTH VIA SINGLETON	RAVENSWORTH	NSW 2330	AS SHOWN ON MAP TITLED 'LIDDELL COAL OPERATIONS - EPL 2094 PREMISES BOUNDARY' RECEIVED BY THE EPA ON 20 DECEMBER 2013. EPA FILE REFERENCE DOC13/96613.		Noted	Noted				
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LC097	A3.1	<p>Other activities</p> <p>This licence applies to all other activities carried on at the premises, including:</p> <table border="1"> <thead> <tr> <th>Ancillary Activity</th> </tr> </thead> <tbody> <tr> <td>Sewage Treatment Systems</td> </tr> </tbody> </table>	Ancillary Activity	Sewage Treatment Systems		<p>Sewage generated by the Mine Infrastructure Area (MIA) complex is treated by a wastewater treatment system to a concentration of <100 CFU of E.coli per 100mL as per the requirements Condition L.2.4 of EPL 2094 and Schedule 4 Condition 21C. The treated effluent is pumped to the Integrated Water Management System via Licenced Discharge Point (LDP) 5 for reuse.</p>	Compliant								
Ancillary Activity															
Sewage Treatment Systems															

Ref #	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation																														
				Sewage generated by the CHPP and associated infrastructure is collected in the CHPP sewage treatment tanks, and pumped to the aerated sewage treatment plant prior to disposal at the designated effluent irrigation area																																
LC103	A4.1	<p>INFORMATION SUPPLIED TO THE EPA</p> <p>Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.</p> <p>In this condition the reference to "the licence application" includes a reference to:</p> <p>a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998;</p> <p>and</p> <p>b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.</p>	<p>Observations</p> <p>Site Inspection</p>	<p>LCO reported that no works and activities outside those specified in the EPL application have been undertaken during the audit period.</p> <p>The original licence application was not reviewed.</p> <p>No works and activities outside those specified in EPL 2094 were observed during the site inspection.</p>	Compliant																															
2 Discharges to Air and Water and Applications to Land																																				
LC104	P1.1	<p>LOCATION OF MONITORING/DISCHARGE POINTS AND AREAS</p> <p>The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the air from the point.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">EPA Identification no.</th> <th style="text-align: left;">Type of Monitoring Point</th> <th style="text-align: left;">Type of Discharge Point</th> <th style="text-align: left;">Location Description</th> </tr> </thead> <tbody> <tr> <td>9</td> <td>Particulate Matter Monitoring</td> <td></td> <td>PM10 monitoring at co-ordinates 313190 6417158 (Easting Northing) shown as Point 9 on Figure 1.</td> </tr> <tr> <td>10</td> <td>Particulate Matter Monitoring</td> <td></td> <td>PM10 monitoring at co-ordinates 316399 6413362 (Easting Northing) shown as Point 10 on Figure 1.</td> </tr> <tr> <td>11</td> <td>Particulate Matter Monitoring</td> <td></td> <td>PM10 monitoring at co-ordinates 312296 6415170 (Easting Northing) shown as Point 11 on Figure 1.</td> </tr> <tr> <td>12</td> <td>Particulate Matter Monitoring</td> <td></td> <td>PM10 monitoring at co-ordinates 316738 6414414 (Easting Northing) shown as Point 12 on Figure 1.</td> </tr> </tbody> </table>	EPA Identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description	9	Particulate Matter Monitoring		PM10 monitoring at co-ordinates 313190 6417158 (Easting Northing) shown as Point 9 on Figure 1.	10	Particulate Matter Monitoring		PM10 monitoring at co-ordinates 316399 6413362 (Easting Northing) shown as Point 10 on Figure 1.	11	Particulate Matter Monitoring		PM10 monitoring at co-ordinates 312296 6415170 (Easting Northing) shown as Point 11 on Figure 1.	12	Particulate Matter Monitoring		PM10 monitoring at co-ordinates 316738 6414414 (Easting Northing) shown as Point 12 on Figure 1.	<p>EPL Monitoring Reports</p> <p>AQMMP</p> <p>Site Inspection</p>	<p>A review of the monitoring data for the audit period indicated that monitoring was being undertaken at the monitoring points specified in the EPL.</p> <p>The EPL Monthly Monitoring reports include a map which references the four PM₁₀ monitoring locations by EPA ID number. The auditors observed the four E-BAM monitors during the audit site inspection. The location of the E-BAMs appeared to be generally in accordance with the location shown on the map. The following is noted:</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">EPL Point Ref</th> <th style="text-align: center;">LCO AQMMP Ref</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">9</td> <td style="text-align: center;">SX38-D3</td> </tr> <tr> <td style="text-align: center;">10</td> <td style="text-align: center;">SX38-D4</td> </tr> <tr> <td style="text-align: center;">11</td> <td style="text-align: center;">SX38-D5</td> </tr> <tr> <td style="text-align: center;">12</td> <td style="text-align: center;">SX 38-D6</td> </tr> </tbody> </table>	EPL Point Ref	LCO AQMMP Ref	9	SX38-D3	10	SX38-D4	11	SX38-D5	12	SX 38-D6	Compliant	
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LC105	P1.2	<p>The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.</p>		None Specified	Noted																															

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LC106	P1.3	<p>The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.</p> <table border="1"> <thead> <tr> <th colspan="4">Water and land</th> </tr> <tr> <th>EPA Identification no.</th> <th>Type of Monitoring Point</th> <th>Type of Discharge Point</th> <th>Location Description</th> </tr> </thead> <tbody> <tr> <td>5</td> <td>Discharge quality monitoring Effluent quality monitoring</td> <td>Discharge quality monitoring Effluent quality monitoring</td> <td>Discharge to on-site dam from the wastewater treatment plant at co-ordinates 315155 6412504 (Easting, Northing) shown as Point 5 on Figure 2.</td> </tr> <tr> <td>6</td> <td>Discharge of saline water under the Hunter River Salinity Trading Scheme (HRSTS) Discharge Quality Volume Monitoring</td> <td>Discharge of saline water under the Hunter River Salinity Trading Scheme (HRSTS) Discharge Quality Volume Monitoring</td> <td>HRSTS discharge to Bayswater Creek at the site boundary adjacent to the Old New England Highway a co-ordinates 312395 641445 (Easting, Northing) shown as Point 6 on Figure 1.</td> </tr> <tr> <td>16</td> <td></td> <td>Discharge to pipeline</td> <td>Mine water transfer to Ravensworth Mine at co-ordinates 312281 6414277 (Easting, Northing) shown as Ravensworth Ops Water Transfer on Figure 2.</td> </tr> <tr> <td>17</td> <td></td> <td>Discharge to Pipeline</td> <td>Mine water transfer to Mt Owen Mine at co-ordinates 316423 6415400 (Easting, Northing) shown as Mt Owen Water Transfer on Figure 2.</td> </tr> <tr> <td>18</td> <td></td> <td>Discharge to pipeline</td> <td>Mine water transfer to HV Operations Mine at co-ordinates 312262 6414295 (Easting, Northing) shown as Newdell Water Transfer 1 on Figure 2.</td> </tr> <tr> <td>19</td> <td>Ambient water quality monitoring</td> <td></td> <td>Upstream monitoring of Bowmans Creek at co-ordinates 316123 8419902 (Easting, Northing) shown as Point 16 on Figure 1.</td> </tr> <tr> <td>20</td> <td>Ambient water quality monitoring</td> <td></td> <td>Monitoring of Bowmans Creek at co-ordinates 315032 8418675 (Easting, Northing) shown as Point 17 on Figure 1.</td> </tr> <tr> <td>21</td> <td>Ambient water quality monitoring</td> <td></td> <td>Monitoring of Bowmans Creek at co-ordinates 315094 6417477 (Easting, Northing) shown as Point 18 on Figure 1.</td> </tr> <tr> <td>22</td> <td>Ambient water quality monitoring</td> <td></td> <td>Monitoring of Bowmans Creek at co-ordinates 315972 6418520 (Easting, Northing) shown as Point 19 on Figure 1.</td> </tr> <tr> <td>23</td> <td>Ambient water quality monitoring</td> <td></td> <td>Monitoring of Bowmans Creek at co-ordinates 316579 6415503 (Easting, Northing) shown as Point 20 on Figure 1.</td> </tr> <tr> <td>24</td> <td>Ambient water quality monitoring</td> <td></td> <td>Monitoring of Bowmans Creek at co-ordinates 316370 6414490 (Easting, Northing) shown as Point 21 on Figure 1.</td> </tr> <tr> <td>25</td> <td>Ambient water quality monitoring</td> <td></td> <td>Monitoring of Bowmans Creek at co-ordinates 316693 6413606 (Easting, Northing) shown as Point 22 on Figure 1.</td> </tr> </tbody> </table>	Water and land				EPA Identification no.	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LC07	P1.4	<p>The following points referred to in the table below are identified in this licence for the purposes of weather and/or noise monitoring and/or setting limits for the emission of noise from the premises.</p> <table border="1"> <thead> <tr> <th>EPA Identification no.</th> <th>Type of monitoring point</th> <th>Location description</th> </tr> </thead> <tbody> <tr> <td>7</td> <td>Air blast overpressure & ground vibration peak particle velocity monitoring</td> <td>Blast monitor at co-ordinates 315931 6418820 (Easting, Northing) shown as Point 7 on Figure 1.</td> </tr> <tr> <td>8</td> <td>Air blast overpressure & ground vibration peak particle velocity monitoring</td> <td>Blast monitor at co-ordinates 309999 6420401 (Easting, Northing) shown as Point 8 on Figure 1.</td> </tr> <tr> <td>13</td> <td>Meteorological Station</td> <td>Meteorological monitoring at co-ordinates 315140 6412432 (Easting, Northing) shown as Point 13 on Figure 1.</td> </tr> <tr> <td>14</td> <td>Noise monitoring</td> <td>Noise Monitoring at co-ordinates 316263 6419409 (Easting, Northing) shown as Point 14 on Figure 1.</td> </tr> <tr> <td>15</td> <td>Noise monitoring</td> <td>Noise monitoring at co-ordinates 316162 6420177 (Easting, Northing) shown as Point 15 on Figure 1.</td> </tr> </tbody> </table>	EPA Identification no.	Type of monitoring point	Location description	7	Air blast overpressure & ground vibration peak particle velocity monitoring	Blast monitor at co-ordinates 315931 6418820 (Easting, Northing) shown as Point 7 on Figure 1.	8	Air blast overpressure & ground vibration peak particle velocity monitoring	Blast monitor at co-ordinates 309999 6420401 (Easting, Northing) shown as Point 8 on Figure 1.	13	Meteorological Station	Meteorological monitoring at co-ordinates 315140 6412432 (Easting, Northing) shown as Point 13 on Figure 1.	14	Noise monitoring	Noise Monitoring at co-ordinates 316263 6419409 (Easting, Northing) shown as Point 14 on Figure 1.	15	Noise monitoring	Noise monitoring at co-ordinates 316162 6420177 (Easting, Northing) shown as Point 15 on Figure 1.	<p>NMP EPL Monitoring Reports Site Inspection</p>	<p>A review of the monitoring data for the audit period indicated that monitoring was being undertaken at the monitoring points specified in the EPL. The following is noted:</p> <table border="1"> <thead> <tr> <th>EPL Point Ref</th> <th>LCO Ref</th> </tr> </thead> <tbody> <tr> <td>7</td> <td>Scrivens</td> </tr> <tr> <td>8</td> <td>Burlings</td> </tr> <tr> <td>13</td> <td>Weather station</td> </tr> <tr> <td colspan="2">NMP</td> </tr> <tr> <td>14</td> <td>1317 Scrumlo Road</td> </tr> <tr> <td>15</td> <td>1246 Scrumlo Road</td> </tr> </tbody> </table> <p>It is noted that blast monitoring is conducted at locations referred to as 'Scrivens' and 'Burlings', in accordance with the Blast Management Plan. The plan does not state which location is monitoring point 7 and which is monitoring point 8. The auditors sighted monitoring point 7 during the site inspection; the EPL monitoring reports also include a map identifying the monitoring point locations. This verified that monitoring point 7 is Scrivens and monitoring point 8 is Burlings.</p>	EPL Point Ref	LCO Ref	7	Scrivens	8	Burlings	13	Weather station	NMP		14	1317 Scrumlo Road	15	1246 Scrumlo Road	Compliant	<p>2022-OFI-04: It is suggested LCO, in the next revision of the Blast Management Plan, clearly state which EPL monitoring point the blast monitoring sites are. This will ensure monitoring reports are consistent with LCO's management plans which do include this information.</p>
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LC108	P1.5	<p>For the purposes of condition P1.1, P1.2, P1.3 and P1.4 Figure 1 refers to the plan titled "EPL 2094 Plan 2 - Monitoring Locations" dated 6 April 2020, EPA Reference DOC20/277070.</p>		<p>This is noted</p>	Noted																																	

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LC109	P1.6	For the purposes of condition P1.2 and P1.3 Figure 2 refers to the plan titled "EPL 2094 Plan 3 - Water Access Bores, STPs and Transfer Points" dated 6 April 2020, EPA Reference DOC20/277070.		This is noted	Noted																															
LC110	P1.7	The datum for grid references in this Licence is the Geodetic Datum of Australia 1994 (GDA94), Zone 56.		This is noted	Noted																															
3 Limit Conditions																																				
LC111	L1.1	POLLUTION OF WATERS Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.	Schedule 3, Condition 21A of DA 305-11-01	Refer to evidence against schedule 3, condition 21A of DA 305-11-01. The auditors concluded that no pollution of waters occurred during the audit period.	Compliant																															
LC112	L2.1	CONCENTRATION LIMITS For each monitoring/discharge point or utilisation area specified in the tables below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.	Refer to evidence against Condition L2.4	Refer to evidence against Condition L2.4	Compliant																															
LC113	L2.2	Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.		Noted	Noted																															
LC114	L2.3	To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table\.		Noted	Noted																															
LC115	L2.4	Water and/or Land Concentration Limits POINT 5 <table border="1"> <thead> <tr> <th>Pollutant</th> <th>Units of Measure</th> <th>50 percentile concentration limit</th> <th>90 percentile concentration limit</th> <th>3DGM concentration limit</th> <th>100 percentile concentration limit</th> </tr> </thead> <tbody> <tr> <td>E. coli</td> <td>colony forming units per 100 millilitres</td> <td></td> <td></td> <td></td> <td>100</td> </tr> </tbody> </table> POINT 6 <table border="1"> <thead> <tr> <th>Pollutant</th> <th>Units of Measure</th> <th>50 percentile concentration limit</th> <th>90 percentile concentration limit</th> <th>3DGM concentration limit</th> <th>100 percentile concentration limit</th> </tr> </thead> <tbody> <tr> <td>pH</td> <td>pH</td> <td></td> <td></td> <td></td> <td>6.5-9.0</td> </tr> <tr> <td>Total suspended solids</td> <td>milligrams per cubic metre</td> <td></td> <td></td> <td></td> <td>120</td> </tr> </tbody> </table>	Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit	E. coli	colony forming units per 100 millilitres				100	Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit	pH	pH				6.5-9.0	Total suspended solids	milligrams per cubic metre				120	Annual Review 2018-2019 Annual Review 2019-2020 Annual Review 2020-2021 Monthly Monitoring Reports 2019-2021	The auditors reviewed monitoring data records for the audit period and the Annual Returns submitted to the EPA by LCO for the periods 2018-2019, 2019-2020 and 2020-2021. No exceedances of EPL criteria were identified.	Compliant	
Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit																															
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LC116	L3.1	VOLUME AND MASS LIMITS For each discharge point or utilisation area specified below (by a point number), the volume/mass of:	Annual Review 2018-2019	LCO did not undertake any HRSTS discharge events during the 2018-2019 and 2019-2020 reporting periods.	Compliant																															

Ref #	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation																																			
		a) liquids discharged to water; or; b) solids or liquids applied to the area; must not exceed the volume/mass limit specified for that discharge point or area. <table border="1"> <thead> <tr> <th>Point</th> <th>Unit of Measure</th> <th>Volume/Mass Limit</th> </tr> </thead> <tbody> <tr> <td>6</td> <td>megalitres per day</td> <td>100</td> </tr> </tbody> </table>	Point	Unit of Measure	Volume/Mass Limit	6	megalitres per day	100	Annual Review 2019-2020 Annual Review 2020-2021 HRSTS Report 2020-2021	One discharge event occurred in March 2021 over a 14 day period. The auditors reviewed LCO's discharge record sheets from EPA monitoring point 6 (HRSTS Monitoring Point) during the audit period. The volume discharge per day did not exceed the maximum volume/mass limit specified in EPL Condition L3.1. The maximum daily discharge volume was 37.5 ML.																															
Point	Unit of Measure	Volume/Mass Limit																																							
6	megalitres per day	100																																							
LC117	L4.1	Waste The licensee must not cause, permit or allow any waste to be received at the premises, except the wastes expressly referred to in the column titled "Waste" and meeting the definition, if any, in the column titled "Description" in the table below. Any waste received at the premises must only be used for the activities referred to in relation to that waste in the column titled "Activity" in the table below. Any waste received at the premises is subject to those limits or conditions, if any, referred to in relation to that waste contained in the column titled "Other Limits" in the table below. This condition does not limit any other conditions in this licence. <table border="1"> <thead> <tr> <th>Code</th> <th>Waste</th> <th>Description</th> <th>Activity</th> <th>Other Limits</th> </tr> </thead> <tbody> <tr> <td>NA</td> <td>General solid waste (non-putrescible)</td> <td>Biomix</td> <td>As specified in each particular resource recovery exemption</td> <td>For use in mine rehabilitation</td> </tr> <tr> <td>NA</td> <td>General solid waste (non-putrescible)</td> <td>Excavated natural material</td> <td>As specified in each particular resource recovery exemption</td> <td>For use in mine rehabilitation</td> </tr> <tr> <td>NA</td> <td>General solid waste (non-putrescible)</td> <td>Biosolids</td> <td>As specified in each particular resource recovery exemption</td> <td>For use in mine rehabilitation</td> </tr> <tr> <td>NA</td> <td>General solid waste (non-putrescible)</td> <td>Plasterboard</td> <td>As specified in each particular resource recovery exemption</td> <td>For use in mine rehabilitation</td> </tr> <tr> <td>NA</td> <td>General solid waste (non-putrescible)</td> <td>Compost</td> <td>As specified in each particular resource recovery exemption</td> <td>For use in mine rehabilitation</td> </tr> <tr> <td>NA</td> <td>General solid waste (non-putrescible)</td> <td>Pasteurised garden organics</td> <td>As specified in each particular resource recovery exemption</td> <td>For use in mine rehabilitation</td> </tr> </tbody> </table>	Code	Waste	Description	Activity	Other Limits	NA	General solid waste (non-putrescible)	Biomix	As specified in each particular resource recovery exemption	For use in mine rehabilitation	NA	General solid waste (non-putrescible)	Excavated natural material	As specified in each particular resource recovery exemption	For use in mine rehabilitation	NA	General solid waste (non-putrescible)	Biosolids	As specified in each particular resource recovery exemption	For use in mine rehabilitation	NA	General solid waste (non-putrescible)	Plasterboard	As specified in each particular resource recovery exemption	For use in mine rehabilitation	NA	General solid waste (non-putrescible)	Compost	As specified in each particular resource recovery exemption	For use in mine rehabilitation	NA	General solid waste (non-putrescible)	Pasteurised garden organics	As specified in each particular resource recovery exemption	For use in mine rehabilitation	Notice of Variation of EPL 2094, dated 12/06/2020 1912 Liddell Coal Waste Statistics Spreadsheet, JR Richards 2012 Liddell Coal Waste Statistics Spreadsheet, JR Richards 2112 Liddell Coal Waste Statistics Spreadsheet, JR Richards LCO Waste Management Plan, LIDOC-90533967-2264, Version 5.0, dated 27/07/2020 LCO Site Review, waste inspections sheet, 10/11/2021 LCO Site Review, waste inspections sheet, 11/09/2019 LCO Site Review, waste inspections sheet, 14/10/2020	EPL 2094 was varied on 12 June 2020. This condition was added to EPL 2094 at this time. The auditors reviewed waste data for the audit period, the Annual Returns and Annual Reviews submitted and held discussions with LCO personnel. All waste received at the site was for use in mine rehabilitation, in accordance with the exemption list. No evidence of waste being received at the site other than those approved under EPL Condition L4.1 was identified. All waste received at the premises appeared to be used for the approved activity only.	Compliant	
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			<p>LCO Site Review, waste inspections sheet, 19/03/2019</p> <p>LCO Site Review, waste inspections sheet, 21/04/2020</p> <p>Annual Reviews, 2018, 2019 and 2020</p> <p>Annual Returns 2018-2019, 219-2020 and 2020-2021</p> <p>Site Inspection</p>			
LC118	L4.2	The Licensee must not dispose of waste on the premises unless authorised by a condition of the Licence.	Refer to Condition L4.1	Refer to evidence against L4.1 and site inspection. No evidence of LCO disposing of waste on site, unless authorised by EPL 2094, was identified.	Compliant	
LC119	L4.3	The Licensee is authorised to receive mine water under the Greater Ravensworth Area Water Sharing Scheme from Mt Owen, HV Operations and Ravensworth Operations Coal Mines for storage and use in activities authorised by the Licence.	WAF and GCP Interface Spreadsheet 2021	<p>LCO received water from both Mount Owen and HV Operations during the audit period. Ravensworth Operations rarely send water to LCO however LCO did transfer to Ravensworth Operations during the audit period.</p> <p>All transfers of water under the Greater Ravensworth Area Water Sharing Scheme are tracked in the internal Water Accounting Framework and Water Balance. This information is summarised in the Annual Reviews each year.</p>	Compliant	
LC120	L4.4	The Licensee must not dispose of more than 400 heavy Plant waste tyres on the premises in any annual return year period.	<p>Heavy Plant-Tyre Disposal Report 2019-2020</p> <p>Heavy Plant-Tyre Disposal Report 2020-2021</p> <p>Discussion with LCO personnel</p> <p>Site Inspection</p>	<p>LCO track heavy plant waste tyre disposal in accordance with LIDOC-90533967-2855 Mine Tyre Disposal Procedure.</p> <p>Disposal of heavy plant waste tyres:</p> <ul style="list-style-type: none"> • 2019-2020 = 186 tyres disposed in pit • 2020-2021 = 338 tyres disposed in pit • 2021-31 Jan 2022 = 108 tyres disposed in pit up to 31 January 2022 <p>A Heavy Plant Tyre Disposal Report is submitted to the EPA along with the Annual Return in accordance with EPL Condition R5.8.</p>	Compliant	

Ref #	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation																														
			Waste Inspection Records E&C Monthly Inspection records																																	
LC121	L5.1	<p>Noise Noise generated at the premises must not exceed the noise limits presented in the table below.</p> <table border="1"> <thead> <tr> <th>Location</th> <th>Day LAeq(15min)</th> <th>Evening LAeq(15min)</th> <th>Night LAeq(15min)</th> <th>Night LA1(15min)</th> </tr> </thead> <tbody> <tr> <td>EPA Point 14 & 15</td> <td>35</td> <td>35</td> <td>35</td> <td>45</td> </tr> <tr> <td>Residences 1,5,6,7,8,9,10,11,12 & 14</td> <td>35</td> <td>35</td> <td>35</td> <td>45</td> </tr> <tr> <td>Residence 2</td> <td>35</td> <td>35</td> <td>36</td> <td>45</td> </tr> <tr> <td>Residence 3</td> <td>35</td> <td>35</td> <td>37</td> <td>45</td> </tr> <tr> <td>Residence 4</td> <td>36</td> <td>35</td> <td>36</td> <td>45</td> </tr> </tbody> </table>	Location	Day LAeq(15min)	Evening LAeq(15min)	Night LAeq(15min)	Night LA1(15min)	EPA Point 14 & 15	35	35	35	45	Residences 1,5,6,7,8,9,10,11,12 & 14	35	35	35	45	Residence 2	35	35	36	45	Residence 3	35	35	37	45	Residence 4	36	35	36	45	<p>LCO Public Website - Monitoring documents (glencore.com.au)</p> <p>LCO Environmental Noise Monitoring Reports, Global Acoustics Pty Ltd (February 2019 – February 2022) Annual Review 2019 Annual Review 2020</p> <p>Discussion with LCO Personnel (E&C Department & Control Room Operator)</p>	<p>LCO has engaged Global Acoustics to undertake monthly attended noise monitoring at two approved locations in close proximity to the assigned residential locations specified in Table 1. Monitoring locations were selected to be representative of currently occupied properties identified in Table 1 of the Development Consent and include:</p> <ul style="list-style-type: none"> • 1317 Hebden Road • 1246 Hebden Road <p>The auditors and noise specialist conducted a review of attended noise monitoring results for the audit period. The attended noise monitoring results indicated that the noise criteria were being met during the audit period. Noise monitoring reports refer to the NSW Industrial Noise Policy Appendix 6 requirements.</p> <p>LCO's noise monitoring program (NMP) outlines that attended noise monitoring results are utilised to determine compliance with development consent criteria.</p> <p>LCO also maintains a real time noise monitor. This unattended monitoring is used as a noise management tool to proactively manage noise by modifying mining operations as required when a trigger level is reached.</p>	Compliant	
Location	Day LAeq(15min)	Evening LAeq(15min)	Night LAeq(15min)	Night LA1(15min)																																
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LC122	L5.2	For the purposes of Condition L5.1 of the Licence residences referenced are from consent DA 305-11-01 Mod 6 January 2019 and within the document titled "Liddell Coal Operations Appendix M Environmental Noise and Blasting Assessment" by Global Acoustics 2013, EPA Reference DOC13/64737.		This is noted	Noted																															
LC123	L5.3	For the purposes of Condition L5.1: a) Day is defined as the period from 7am to 6pm Monday to Saturday and 8am to 6pm Sundays and Public Holidays, b) Evening is defined as the period from 6pm to 10pm, and c) Night is defined as the period from 10pm to 7am Monday to Saturday and 10pm to 8am Sundays and Public Holidays		This is noted	Noted																															

Ref #	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
LC124	L5.4	The noise limits set out in condition L5.1 apply under all meteorological conditions except for the following: a) Wind speeds greater than 3 metres/second at 10 metres above the ground level; b) Stability category F temperature inversion conditions and wind speeds greater than 2 metres/second at 10 metres above ground level; or c) Stability category G temperature inversion conditions.		This is noted and captured in the noise monitoring reports prepared by Global Acoustics.	Noted	
LC125	L5.5	For the purposes of condition L5.3: a) Data recorded by the closest and most representative meteorological station installed on the premises at EPA Identification Point 13 must be used to determine meteorological conditions; and b) Temperature inversion conditions (stability category) are to be determined by the methods referred to in Fact Sheet D of the Noise Policy for Industry (2017).		This is noted and captured in the noise monitoring reports prepared by Global Acoustics.	Noted	
LC126	L6.1	BLASTING Blasting in or on the premises must only be carried out between 0900 hours and 1700 hours, Monday to Saturday. Blasting in or on the premises must not take place on Sundays or Public Holidays without the prior approval of the EPA.	2019 Liddell Blasting Summary 2020 Liddell Blasting Summary 2021 Liddell Blasting Summary	The auditors viewed the LCO Blast Tracking Spreadsheets for 2019, 2020 and 2021 as well as records of blasts which have occurred in 2022. No blasts were identified to have occurred before 9am or after 5pm. No blasts were identified to have occurred on a Sunday or Public Holiday.	Compliant	
L127	L6.2	The airblast overpressure level from blasting operations in or on the premises must not exceed: 115 dB (Lin Peak) for more than 5% of the total number of blasts during each reporting period; at either monitoring point 7 or 8 in Condition P1.4.	Schedule 3, Condition 4 and Condition 5 of DA 305-11-01	No exceedances of blast criteria were recorded during the audit period. Refer to evidence against Schedule 3, Condition 4 and Condition 5 of DA 305-11-01.	Compliant	
LC128	L6.3	The airblast overpressure level from blasting operations in or on the premises must not exceed: 120 dB (Lin Peak) at any time; at either monitoring point 7 or 8 in Condition P1.4.	Schedule 3, Condition 4 and Condition 5 of DA 305-11-01	No exceedances of blast criteria were recorded during the audit period. Refer to evidence against Schedule 3, Condition 4 and Condition 5 of DA 305-11-01.	Compliant	
LC129	L6.4	The ground vibration peak particle velocity from blasting operations carried out in or on the premises must not exceed: 5 mm/second for more than 5% of the total number of blasts during each reporting period; at either monitoring point 7 or 8 in Condition P1.4.	Schedule 3, Condition 4 and Condition 5 of DA 305-11-01	No exceedances of blast criteria were recorded during the audit period. Refer to evidence against Schedule 3, Condition 4 and Condition 5 of DA 305-11-01.	Compliant	
LC130	L6.5	The ground vibration peak particle velocity from blasting operations carried out in or on the premises must not exceed:	Schedule 3, Condition 4 and	No exceedances of blast criteria were recorded during the audit period.	Compliant	

Ref #	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
		10 mm/second at any time; at either monitoring point 7 or 8 in Condition P1.4.	Condition 5 of DA 305-11-01	Refer to evidence against Schedule 3, Condition 4 and Condition 5 of DA 305-11-01.		
LC131	L6.6	<p>Offensive blast fume must not be emitted from the premises.</p> <p><i>Definition:</i> <i>Offensive blast fume means post-blast gases from the detonation of explosives at the premises that by reason of their nature, duration, character or quality, or the time at which they are emitted, or any other</i></p> <p><i>circumstances:</i></p> <ol style="list-style-type: none"> 1. are harmful to (or likely to be harmful to) a person that is outside the premises from which it is emitted, or 2. interferes unreasonably with (or is likely to interfere unreasonably with) the comfort or repose of a person who is outside the premises from which it is emitted. 	<p>LCO Post Blast Fume Procedure, LIDOC-90533967-1415, dated 03/02/2020</p> <p>Letter to Department for Fume incident, dated 11/05/2021</p> <p>Site Inspection</p>	<p>One incident occurred on 11 June 2021 following a blast event which resulted in a Level 4 blast fume rating being recorded. The fume rating was identified and managed in accordance with the LCO Post Blast Fume Procedure. LCO notified the Department and conducted an adjustment of blast loading procedures to require loading of the waterproof Fortis product in low lying areas where ponding is possible. LCO did not define this blast event as an event which caused offensive blast fume.</p>	Compliant	
4 Operating Conditions						
LC132	O1.1	<p>ACTIVITIES MUST BE CARRIED OUT IN A COMPETENT MANNER</p> <p>Licensed activities must be carried out in a competent manner. This includes:</p> <ol style="list-style-type: none"> a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity. 	<p>Notice of Variation of EPL 2094, dated 12/06/2020</p> <p>1912 Liddell Coal Waste Statistics Spreadsheet, JR Richards</p> <p>2012 Liddell Coal Waste Statistics Spreadsheet, JR Richards</p> <p>2112 Liddell Coal Waste Statistics Spreadsheet, JR Richards</p> <p>LCO Waste Management Plan, LIDOC-90533967-2264, Version 5.0, dated 27/07/2020</p> <p>LCO Site Review, waste inspections sheet, 10/11/2021</p>	<p>(a) LCO has established processes for managing the processing, handling, movement and storage of coal including:</p> <ul style="list-style-type: none"> • 24/7 site operational control via Dispatch which includes monitoring of site conditions and weather forecasts and other controls as required • Trained and competent staff • Spill recovery systems and processes to recover as much product coal as possible • Complaints and incident investigation process to determine the cause of a complaint or incident and implementation of control measures <p>(b) Waste is managed in accordance with the LCO Waste Management Plan. Waste management on site was undertaken by contractors JR Richards (contract renegotiated in 2021). JR Richards provides monthly waste data which includes a breakdown of the types of waste collected for disposal or recycling. LCO maintains a waste tracking spreadsheet as a corporate requirement which must be reported to Glencore Corporate on a monthly basis. The auditors sighted the Liddell waste statistics</p>	Compliant	

Ref #	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
			<p>LCO Site Review, waste inspections sheet, 11/09/2019</p> <p>LCO Site Review, waste inspections sheet, 14/10/2020</p> <p>LCO Site Review, waste inspections sheet, 19/03/2019</p> <p>LCO Site Review, waste inspections sheet, 21/04/2020</p> <p>Annual Reviews, 2018, 2019 and 2020</p> <p>Annual Returns 2018-2019, 219-2020 and 2020-2021</p> <p>Site Inspection</p>	<p>spreadsheet which are provided by JR Richards each month. This data is input into Glencore's internal sustainability reporting.</p>		
LC133	O2.1	<p>MAINTENANCE OF PLANT AND EQUIPMENT All plant and equipment installed at the premises or used in connection with the licensed activity: a) must be maintained in a proper and efficient condition; and b) must be operated in a proper and efficient manner.</p>		<p>Refer to evidence against schedule 2, condition 10 of DA 305-11-01.</p>	Compliant	
LC134	O2.2	<p>Sewage Treatment System The licensee is responsible for the correct operation of the sewage treatment system on the premises.</p>	<p>Email correspondence between LCO and All septic services regarding septic reports</p> <p>Periodic septic service report records for LCO – MIA STP dated, 20/11/2019</p> <p>Periodic septic service report</p>	<p>LCO operate two sewage treatment plants (STPs):</p> <ul style="list-style-type: none"> MIA STP – all wastewater from the MIA is collected in a standalone pump station and periodically transferred to the STP where it is treated to a secondary level, chlorinated and UV irradiated prior to transfer to the Integrated Water Management System via Licenced Discharge Point (LDP) 5 for reuse. CHPP STP – all wastewater from the CHPP is collected and treated using aeration and chlorine prior to discharge via irrigation. 	Compliant	

Ref #	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
			<p>records for LCO – CHPP STP dated, 19/03/2020</p> <p>Letter to Singleton Council, Re: LCO onsite Sewage Management System, dated 18/12/2019</p> <p>Email to Muswellbrook Council, Re Liddell CHPP Septic Report, dated 24/03/2020 and 26/02/2021</p> <p>Email to Singleton Council, Re: 20200915 LCO to SSC Re PN 1804 OSSM 3916-2008, dated 15/09/2020</p> <p>Operation and maintenance plan for Sewage System at Liddell Coal Mine, All Septic Services</p> <p>Annual Sewage Treatment System Report 2020-2021</p>	<p>Both STPs are managed by specialist contractor All Septic Services who maintain the systems and conduct monthly inspections.</p> <p>The auditors sighted the following evidence:</p> <ul style="list-style-type: none"> Quarterly maintenance records for the MIA STP provided to Singleton Council in accordance with OSSM 3916/2008 Maintenance Records from contractor 'All Septic Services' for both the CHPP and MIA STPs Quarterly maintenance records for the CHPP STP provided to Muswellbrook Council Monitoring results provided to Singleton Council as per OSSM 3916/2008 Annual Sewage Treatment System report for 2020-2021, submitted to the EPA with the Annual Return. This report includes records of maintenance servicing and monitoring conducted during the reporting period Operation and maintenance plan for the sewage treatment systems at LCO provided by All Septic Services. 		
LC135	O2.3	Correct operation involves regular supervision and system maintenance. The licensee must be aware of the system management requirements and must ensure that the necessary service contracts are in place.	Operation and maintenance plan for Sewerage System at Liddell Coal Mine, CHPP and MIA (All Septic Services)	<p>Both STPs are maintained by specialist contractor All Septic Services who maintain the systems and conduct monthly inspections.</p> <p>An operation and maintenance plan has been developed by All Septic Services for the MIA and CHPP STPs.</p>	Compliant	

Ref #	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
LC136	O2.4	The sewage treatment system must be serviced by a suitably qualified and experienced wastewater technician at least once in each quarterly period and a minimum of four times per year.	<p>Service Reports for Liddell coal mine, All Septic Services, dated 20/11/2019, 19/06/2020</p> <p>Service Reports for Liddell Coal mine CHPP, All Septic Services, dated 19/03/2020, 24/02/2021</p>	<p>STPs are inspected and routine maintenance carried out on a monthly basis by specialist contractor All Septic Services. Actions are logged in the SAP service system and the maintenance planner will log any maintenance required. Much of the required maintenance is completed at the time of inspection.</p> <p>Refer to additional evidence against Condition O2.3.</p>	Compliant	
LC137	O2.5	The licensee must record each inspection and any actions required or recommended by the technician including all results of tests performed on the sewage treatment system by the technician as required in Condition O2.4.	<p>Refer to O2.4 for inspection records sighted</p> <p>Quarterly monitoring results, LCO, dated 18/12/2019, 15/09/2020, 5/07/2021</p> <p>Annual Sewage Treatment System Report 2020-2021</p>	<p>Auditors sighted a sample of STP inspection and maintenance records for both the MIA and the CHPP STPs.</p> <p>Based on the samples reviewed and evidence sighted the auditors were satisfied LCO were keeping adequate records of inspections, maintenance and servicing conducted on the sewage treatment systems.</p>	Compliant	
LC138	O2.6	The licensee must prepare a sewage treatment system maintenance program. The program must include: a) Certification from the system provider that the sewage treatment system is operating within its capacity; b) Date, time and results of all routine maintenance procedures undertaken to the sewage treatment system; and c) Provide written records of each quarterly inspection	Refer to O2.4 for inspection records sighted	<p>An operation and maintenance plan has been developed by All Septic Services for the MIA and CHPP STPs.</p> <p>STPs are inspected and routine maintenance carried out on a monthly basis by specialist contractor All Septic Services. Monthly reports are signed by the serviceman and include a number of standard checks. Reports record any maintenance activities that were conducted during the inspection. Date and time of the inspection are recorded on the inspection form.</p>	Compliant	
LC139	O3.1	DUST The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.	Dust Management TARP Version 10.0	LCO manages air quality in accordance with the Air Quality Management Monitoring Program (AQMMP).	Compliant	

Ref #	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
			<p>Email from Jacobs to LCO, dated 9/02/2022 with daily dust risk forecast</p> <p>Refer to evidence against DA 305-11-01 Schedule 3, Condition 18</p>	<p>Management and contingency measures are triggered by visual monitoring and alerts from the real time operational monitoring and forecast systems as outlined in the LCO Dust Management TARP. The Dust Management TARP (the dust TARP) contains a number of triggers including monitoring triggers, operational triggers and weather condition alarms.</p> <p>Dust cameras are in place as per the dust TARP. These are accessible from the control room, the E&C Department office and select personnel as required.</p> <p>The auditors sighted the Sentinex live site during the audit inspection to verify validity and data capture.</p> <p>LCO has a daily meeting at 10am with operational, supervisor, safety and environmental staff which outlines what level of the dust TARP has been triggered for the previous dayshift and nightshift. The auditors attended a 10am shift meeting and verified weather conditions and dust control measures were discussed in the meeting.</p> <p>Other dust management measures in place at the time of the audit included:</p> <ul style="list-style-type: none"> • Progressive rehabilitation sighted during site inspection • Major haul roads being maintained in a damp condition by water carts • Water sprays in place at CHPP, stockpiles and train loading facility • Graders identified in operation to maintain road surfaces • Water cart filling stations sighted during site inspection • Speed limit signage on site. <p>The Mining Supervisor maintains a Daily Inspection Report book which includes notes from activities which occurred during each shift. This includes a section which outlines if the dust TARP was activated and what level.</p>		

Ref #	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
				All pre-strip activities were completed in 2020. Liddell is now at its full extraction footprint. The Land Clearing and Topsoil Stripping Procedure is still active however is only used for minor works as pre-strip activities have ceased.		
LC140	O3.2	All trafficable areas, coal storage areas and vehicle manoeuvring areas in or on the premises must be maintained, at all times, in a condition that will minimise the generation, or emission from the premises, of wind-blown or traffic generated dust.	<p>Site inspection</p> <p>Haul road dust monitoring report, 22/10/2021</p> <p>Refer to evidence against DA 305-11-01 Schedule 3, Condition 18</p>	<p>The following was noted with regards to maintaining the site in a condition to minimise wind-blown or traffic generated dust:</p> <ul style="list-style-type: none"> Graders maintain the road to ensure it is in a condition that is trafficable. Site based graders maintain all heavy vehicle roads/tracks. LCO contract external graders to maintain light vehicle tracks Water carts maintain roads to prevent dust generation. During site inspection auditors witnessed water carts being requested to areas of the pit via radio and observed water carts in operation. Wheel generated dust monitoring has not identified a requirement for additional controls on haul roads Personnel are trained in the requirements of the dust TARP. Interviews with Mining Supervisors and Dispatch Control Room Operators indicated good knowledge and understanding of the dust TARP In 2019 LCO trialled the use of chemical dust suppressant on light vehicle roads. This was no longer being used as it was deemed that the water carts were more effective and more financially viable as an option, as dust has not been a significant issue on site during the audit period. LCO consider there is no great need for chemical suppression at this time. Water sprays were observed to be operational on coal stockpiles and train loader facilities. Wheel Generated Dust Monitoring Reports (audit period) – The requirement to capture wheel generated dust monitoring is outlined in the AQMP. The auditors sighted actions each quarter listed in CMO to ensure this is conducted. The auditors sighted the January 	Compliant	

Ref #	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
				wheel generated dust monitoring report. AECOM (Singleton) are engaged to come to site each quarter to conduct monitoring of dust generated from wheels.		
LC141	O3.3	All operations and activities occurring at the premises must be carried out in a manner that will minimise the emission of dust from the premises.	Refer to evidence against Conditions O3.1 and O3.2	Refer to evidence against Conditions O3.1 and O3.2	Compliant	
LC142	O4	Emergency Response Note: The licensee must maintain, and implement as necessary, a current Pollution Incident Response Management Plan (PIRMP) for the premises. The licensee must keep the incident response plan on the premises at all times. The incident response plan must document systems and procedures to deal with all types of incidents (e.g. spills, explosions or fire) that may occur at the premises or that may be associated with activities that occur at the premises and which are likely to cause harm to the environment. The licensee must develop a Pollution Incident Response Management Plan in accordance with the requirements in Part 5.7A of the Protection of the Environment Operations (POEO) Act 1997 and POEO regulations.	LCO Pollution Incident Response Plan, LIDOC-90533967-2175, Version 17.0 Dated 19/08/2021 LCO Public Website Site Inspection	LCO has an established PIRMP which was last updated on 19 August 2021. The PIRMP is available at the LCO office and on the LCO public website. The PIRMP summarises the requirements of Part 5.7A of the Protection of the Environment Operations (POEO) Act 1997 and POEO regulations and where this is addressed in the PIRMP.	Compliant	
LC143	O5.1	Waste Management The Licensee is authorised to dispose of heavy Plant-tyre waste generated on the premises, in the pit. The Licensee must: a) ensure that heavy Plant waste tyres are re-used on the premises as much as practical; b) ensure that heavy Plant waste tyres are laid flat with a maximum of 10 tyres per site and a minimum distance of 10m between sites; c) ensure that any surplus heavy Plant waste tyres can be emplaced by being spread out on the pit-floor and buried as deep as practical, but, covered by at least 20m of inert material beneath any final rehabilitated surface; d) place heavy Plant waste tyres at least 10m away from coarse reject material or tailings emplacement areas; e) not place any heavy Plant waste tyres near heated material or carbonaceous material; and f) not place any heavy Plant waste tyres in an area likely to leach to any water-course.	2020-2021 Heavy Plant-Tyre Disposal Report Discussion with LCO personnel Site Inspection	(a) The auditors sighted the tyre disposal yard and processes in place to ensure tyres are reused on the premises as much as practical. (b) The maximum number of 10 tyres per disposal site was exceeded at 5 disposal sites on 2 occasions during the audit period including 3 March 2021 and 15 June 2021. Details include the following: <ul style="list-style-type: none"> 3 sites were identified with 11 tyres 1 site was identified with 12 tyres 1 site was identified with 14 tyres LCO reported the exceedance as a non-compliance in the 2020-2021 Annual Return and will report the non-compliance in the 2021 Annual Review, which was in preparation at the time of the audit. (c) The auditors sighted the heavy waste plant tyre pad which is where waste tyres are stored prior to disposal. The requirements of Condition O5.1c are incorporated into LCO's tyre disposal procedures.	Non-Compliant (Low)	2022-REC-01: LCO to develop and implement a tyre disposal checklist.

Ref #	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
				<p>(d) Tyre disposal areas are identified on survey maps and provided in Section 4.1 of the Heavy Plant-Tyre Disposal Report. Disposal locations are not within 10m of any coarse reject material or tailings emplacement areas.</p> <p>(e) Tyre disposal areas are identified on survey maps and provided in Section 4.1 of the Heavy Plant-Tyre Disposal Report. Tyres are not disposed of near heated material or carbonaceous material.</p> <p>(f) The requirements of Condition O5.1f are incorporated into LCO's tyre disposal procedures to ensure locations selected are not likely to cause leaching into any watercourses.</p>		
LC144	O6.1	<p>OTHER OPERATING CONDITIONS</p> <p>There must be no incineration or open burning of any material(s) on the premises, except as specifically authorised by the EPA.</p>	Site Inspection	LCO stated that it does not incinerate or conduct open burning on site. No evidence was seen which indicated the site has conducted incineration on site during the audit period.	Compliant	
LC145	O6.2	All above-ground tanks containing material that is likely to cause environmental harm must be bunded or have an alternative spill containment system in place.	Site Inspection	All above ground tanks containing materials that are likely to cause environmental harm were identified to be bunded with a concrete bund. Inspections are conducted by the LCO safety department with regards to the bunds' integrity and compliance with the Work Health and Safety Legislation. The E&C Department inspect bunding as part of the monthly inspection process.	Compliant	
5 Monitoring and Recording Conditions						
LC145	M1.1	<p>MONITORING RECORDS</p> <p>The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.</p>		This is noted	Noted	
LC146	M1.2	<p>All records required to be kept by this licence must be:</p> <p>a) in a legible form, or in a form that can readily be reduced to a legible form;</p> <p>b) kept for at least 4 years after the monitoring or event to which they relate took place; and</p> <p>c) produced in a legible form to any authorised officer of the EPA who asks to see them.</p>	Monitoring Data Records	All monitoring data was in a legible form and retained for, at a minimum, the required time intervals.	Compliant	

Ref #	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation								
LC147	M1.3	The following records must be kept in respect of any samples required to be collected for the purposes of this licence: a) the date(s) on which the sample was taken; b) the time(s) at which the sample was collected; c) the point at which the sample was taken; and d) the name of the person who collected the sample.	Monitoring Data Records	The auditors reviewed monitoring records for water quality sample collections as required from monitoring points 5 and 6. Monitoring records contained the required information as outlined in Condition M1.3.	Compliant									
LC148	M2.1	REQUIREMENT TO MONITOR CONCENTRATION OF POLLUTANTS DISCHARGED For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:	Conditions M2.2 and M2.3	Refer to evidence against conditions M2.2 and M2.3	Compliant									
LC149	M2.2	Air Monitoring Requirements POINT 9,10,11,12 <table border="1"> <thead> <tr> <th>Pollutant</th> <th>Units of measure</th> <th>Frequency</th> <th>Sampling Method</th> </tr> </thead> <tbody> <tr> <td>PM10</td> <td>micrograms per cubic metre</td> <td>Continuous</td> <td>Special Method 1</td> </tr> </tbody> </table> <p><i>Note: Special Method 1 requires the Licensee to undertake the monitoring of PM10 concentration in strict accordance with the manufacturer's operating manual supplied with the continuous monitoring equipment and titled "E-BAM Rapid Deployment Particulate Monitor - Operation Manual for PM10 or PM2.5 Continuous Monitoring E-Bam-9800 REV L" dated 2008.</i></p>	Pollutant	Units of measure	Frequency	Sampling Method	PM10	micrograms per cubic metre	Continuous	Special Method 1	Air Quality Management Monitoring Program 20200703 Liddell Dust Availability Spreadsheet 19-20 2021_12 Liddell Monitoring Workbook CBased Email from the Department, extraordinary AQ events in 2019, dated 21/02/2020 Email from the Department, extraordinary dust events in 2020, dated 02/02/2021 Discussion with LCO personnel	The auditors reviewed air quality monitoring data recorded during the audit period as well as reporting conducted by LCO with regards to air quality monitoring. This condition is found to be non-compliant on the basis that LCO failed to achieve statistically valid samples (which require a minimum 75% data availability for a 24 hour period) in the following instances: 2019 <ul style="list-style-type: none"> Monitoring Point 9 / SX38-D3: (8 dates in 2019), Annual data availability in 2019 was 98.4% Monitoring Point 10 / SX38-D4: (2 dates in 2019), Annual data availability in 2019 was 99.3% Monitoring Point 11 / SX38-D5: (21 dates in 2019), Annual data availability in 2019 was 95.5% Monitoring Point 12 / SW38-D6: (12 dates in 2019), Annual data availability in 2019 was 97.9% 	Non-Compliant (Low)	Recommendation not required
Pollutant	Units of measure	Frequency	Sampling Method											
PM10	micrograms per cubic metre	Continuous	Special Method 1											

			<p>2020</p> <ul style="list-style-type: none"> Monitoring Point 9 / SX38-D3: (8 dates in 2020), Annual data availability in 2020 was 98.4% Monitoring Point 10 / SX38-D4: (11 dates in 2020), Annual data availability in 2020 was 98.0% Monitoring Point 11 / SX38-D5: (17 dates in 2020), Annual data availability in 2020 was 97.4% Monitoring Point 12 / SW38-D6: (25 dates in 2020), Annual data availability in 2020 was 94.9% <p>2021</p> <ul style="list-style-type: none"> Monitoring Point 9 / SX38-D3: (20 dates in 2021), Annual data availability in 2021 was 96.5% Monitoring Point 10 / SX38-D4: (14 dates in 2021), Annual data availability in 2021 was 98.5% Monitoring Point 11 / SX38-D5: (13 dates in 2021), Annual data availability in 2021 was 98.7% Monitoring Point 12 / SX38-D6: (12 dates in 2021), Annual data availability in 2021 was 99.0% <p>Section 4.5 of the National Environment Protection (Ambient Air Quality) Measure Technical Paper No. 5 – Data Collection and Handling, 2001 (Prepared by the National Environment Protection Council Peer Review Committee) identifies an average concentration can only be valid if it is based on at least 75% of the expected samples in the averaging period. However this has not clearly been adopted by the EPA. In July 2019 LCO sought clarification from the EPA on an appropriate data availability target for continuous monitoring to factor in a reasonable period of monitor downtime. At the time of the audit LCO had not received a response from the EPA and continued to report EBAM availability for transparency.</p>		
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Ref #	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
				<p>The evidence reviewed indicates that LCO continuous to implemented measures to address the causes of data failures within its control to the extent practicable. This includes operation of an extensive maintenance program and actions to attempt to minimise the occurrence of equipment failures, as detailed in the 2019 IEA report.</p> <p>Despite the above instances in which the four EBAM boundary monitors failed to achieve PM10 daily availability greater than 75%, the overall valid data availability for each unit remained above 94% for all units across the audit period.</p> <p>This condition is found to be non-compliant however based on the actions taken by LCO no recommendation is considered to be necessary.</p>		

Ref #	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation																																																				
LC150	M2.3	<p>Water and/ or Land Monitoring Requirements</p> <p>POINT 5</p> <table border="1"> <thead> <tr> <th>Pollutant</th> <th>Units of measure</th> <th>Frequency</th> <th>Sampling Method</th> </tr> </thead> <tbody> <tr> <td>Faecal Coliforms</td> <td>colony forming units per 100 millilitres</td> <td>Once a month (min. of 4 weeks)</td> <td>Grab sample</td> </tr> <tr> <td>pH</td> <td>pH</td> <td>Once a month (min. of 4 weeks)</td> <td>Grab sample</td> </tr> </tbody> </table> <p>POINT 6</p> <table border="1"> <thead> <tr> <th>Pollutant</th> <th>Units of measure</th> <th>Frequency</th> <th>Sampling Method</th> </tr> </thead> <tbody> <tr> <td>Conductivity</td> <td>microsiemens per centimetre</td> <td>Continuous during discharge</td> <td>A probe designed to measure the range 0 to 10,000 uS/cm</td> </tr> <tr> <td>pH</td> <td>pH</td> <td>Daily when wastes discharged</td> <td>Grab sample</td> </tr> <tr> <td>Total suspended solids</td> <td>milligrams per litre</td> <td>Daily when wastes discharged</td> <td>Grab sample</td> </tr> <tr> <td>Turbidity</td> <td>nephelometric turbidity units</td> <td>Continuous during discharge</td> <td>In line instrumentation</td> </tr> </tbody> </table> <p>POINT 19,20,21,22,23,24,25,26,27,28,29</p> <table border="1"> <thead> <tr> <th>Pollutant</th> <th>Units of measure</th> <th>Frequency</th> <th>Sampling Method</th> </tr> </thead> <tbody> <tr> <td>Electrical conductivity</td> <td>microsiemens per centimetre</td> <td>Monthly</td> <td>Grab sample</td> </tr> <tr> <td>pH</td> <td>pH</td> <td>Monthly</td> <td>Grab sample</td> </tr> <tr> <td>Total suspended solids</td> <td>milligrams per litre</td> <td>Monthly</td> <td>Grab sample</td> </tr> <tr> <td>Turbidity</td> <td>nephelometric turbidity units</td> <td>Monthly</td> <td>Grab sample</td> </tr> </tbody> </table>	Pollutant	Units of measure	Frequency	Sampling Method	Faecal Coliforms	colony forming units per 100 millilitres	Once a month (min. of 4 weeks)	Grab sample	pH	pH	Once a month (min. of 4 weeks)	Grab sample	Pollutant	Units of measure	Frequency	Sampling Method	Conductivity	microsiemens per centimetre	Continuous during discharge	A probe designed to measure the range 0 to 10,000 uS/cm	pH	pH	Daily when wastes discharged	Grab sample	Total suspended solids	milligrams per litre	Daily when wastes discharged	Grab sample	Turbidity	nephelometric turbidity units	Continuous during discharge	In line instrumentation	Pollutant	Units of measure	Frequency	Sampling Method	Electrical conductivity	microsiemens per centimetre	Monthly	Grab sample	pH	pH	Monthly	Grab sample	Total suspended solids	milligrams per litre	Monthly	Grab sample	Turbidity	nephelometric turbidity units	Monthly	Grab sample	<p>Hunter River Salinity Trading Scheme Report, 1 July 2020 – 30 June 2021</p> <p>Hunter River Salinity Trading Scheme Report, dated 10 August 2020</p> <p>Hunter River Salinity Trading Scheme Report Letter to EPA, dated 28/08/2019</p> <p>Raw excel data of water quality parameters (pH and EC) and water levels, February 2019 to December 2021</p> <p>Annual Returns 2018-2019, 2019-2020 and 2020-2021</p> <p>Annual Reviews 2019 and 2020</p> <p>EPL Monitoring Reports (audit period)</p>	<p>Point 5 – MIA Sewage Treatment Plant LCO continue to engage consultants CBased to conduct monitoring of the MIA Sewage Treatment Plant. ALS Certificate of Analysis is included in the monitoring records and confirms Faecal Coliforms and pH are measured.</p> <p>Point 6 – HRSTS Discharge Point Hydrometric Consulting Services were engaged to operate and maintain this equipment until July 2019. From this date until current CBased have been engaged to operate and maintain this equipment.</p> <p>Monitoring Point 6 failed to monitor turbidity continuously during discharge in accordance with Condition M2.3 due to equipment error between 20 March 2021 and 22 March 2021.</p> <p>The failure to report was attributed to an equipment error associated with the monitoring sensor. LCO replaced the monitoring sensor and installed a replacement sonde on 22 March 2021.</p> <p>LCO reported this non-compliance in the 2020-2021 Annual Return and will report it in the 2021 Annual Review, which was in development at the time of the audit.</p> <p>This condition is found to be non-compliance due to the failure to record turbidity at Monitoring Point 6 during the audit period.</p> <p>Given the equipment has been repaired and maintenance occurring in accordance with the WMP and manufacturer recommendations no recommendation for improvement has been made.</p> <p>Points 19-29 Ambient surface water monitoring points CBased continue to be engaged to conduct surface water and groundwater monitoring at LCO. No exceedances of ambient water quality criteria were recorded.</p>	Non-Compliant (Low)	Recommendation not required
Pollutant	Units of measure	Frequency	Sampling Method																																																							
Faecal Coliforms	colony forming units per 100 millilitres	Once a month (min. of 4 weeks)	Grab sample																																																							
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LC151	M3.1	<p>TESTING METHODS – CONCENTRATION LIMITS</p> <p>Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with:</p>	<p>Sentinex Monitoring Reports</p> <p>E-BAM Monitoring Reports</p>	<p>Condition M2.2 requires that PM₁₀ monitoring is undertaken continuously by the sampling methodology – ‘Special Method 1’. This is defined as in strict accordance with the manufacturer’s operating manual titled “E-BAM Rapid Deployment Particle Monitor – Operation Manual for PM10 or</p>	Compliant																																																					

Ref #	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation																																								
		<p>a) any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or</p> <p>b) if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or</p> <p>c) if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.</p> <p><i>Note: The Protection of the Environment Operations (Clean Air) Regulation 2010 requires testing for certain purposes to be conducted in accordance with test methods contained in the publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".</i></p>		<p>PM2.5 Continuous Monitoring E-BAM-9800 REV L". A review against the Operating Manual was not conducted. The E-BAM Monitoring Reports state that monitoring was undertaken in accordance with the Operating Manual.</p> <p>Sentinex dust unit maintenance and calibration reports detail that monitoring and calibration is conducted in accordance with AS/NZS 3580.9.9.2006.</p>																																										
LC152	M3.2	Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.	<p>ALS Certificate of Analysis</p> <p>Steel River Testing Certificates of Analysis</p>	All certificates of analysis sighted for water monitoring noted that monitoring was conducted in accordance with approved methods of testing.	Compliant																																									
LC153	M4.1	<p>WEATHER MONITORING</p> <p>At the point(s) identified below, the licensee must monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1 of the table below, using the corresponding sampling method, units of measure, averaging period and sampling frequency, specified opposite in the Columns 2, 3, 4 and 5 respectively.</p> <table border="1"> <thead> <tr> <th>Parameter</th> <th>Sampling method</th> <th>Units of measure</th> <th>Averaging period</th> <th>Frequency</th> </tr> </thead> <tbody> <tr> <td>Rainfall</td> <td>AM-4</td> <td>millimetres</td> <td>1 hour</td> <td>Continuous</td> </tr> <tr> <td>Sigma Theta</td> <td>AM-2 & AM-4</td> <td>Degrees</td> <td>15 minutes</td> <td>Continuous</td> </tr> <tr> <td>Temperature at 2 metres</td> <td>AM-4</td> <td>Celsius</td> <td>15 minutes</td> <td>Continuous</td> </tr> <tr> <td>Temperature at 10 metres</td> <td>AM-4</td> <td>Celsius</td> <td>15 minutes</td> <td>Continuous</td> </tr> <tr> <td>Total Solar Radiation</td> <td>AM-4</td> <td>Watts per square metre</td> <td>15 minutes</td> <td>Continuous</td> </tr> <tr> <td>Wind Direction at 10 metres</td> <td>AM-2 & AM-4</td> <td>Degrees</td> <td>15 minutes</td> <td>Continuous</td> </tr> <tr> <td>Wind Speed at 10 metres</td> <td>AM-2 & AM-4</td> <td>metres per second</td> <td>15 minutes</td> <td>Continuous</td> </tr> </tbody> </table> <p><i>Note: All methods are specified in the Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales and all monitoring must be conducted strictly in accordance with the requirements outlined in this document.</i></p>	Parameter	Sampling method	Units of measure	Averaging period	Frequency	Rainfall	AM-4	millimetres	1 hour	Continuous	Sigma Theta	AM-2 & AM-4	Degrees	15 minutes	Continuous	Temperature at 2 metres	AM-4	Celsius	15 minutes	Continuous	Temperature at 10 metres	AM-4	Celsius	15 minutes	Continuous	Total Solar Radiation	AM-4	Watts per square metre	15 minutes	Continuous	Wind Direction at 10 metres	AM-2 & AM-4	Degrees	15 minutes	Continuous	Wind Speed at 10 metres	AM-2 & AM-4	metres per second	15 minutes	Continuous	<p>Refer to DA 305-11-01, Schedule 3 Condition 20</p>	<p>Refer to DA 305-11-01, Schedule 3 Condition 20.</p> <p>The auditors verified that the required parameters were being monitored by the LCO weather station.</p> <p>Annual Inspection and Calibration reports outline that the weather station is operating in accordance with the Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales.</p>	Compliant	
Parameter	Sampling method	Units of measure	Averaging period	Frequency																																										
Rainfall	AM-4	millimetres	1 hour	Continuous																																										
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Ref #	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
LC154	M5.1	<p>RECORDING OF POLLUTION COMPLAINTS</p> <p>The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.</p>	<p>Complaints Register</p> <p>LCO Public Website</p>	<p>One complaint had been received during the audit period. The complaint was in regard to mobile lighting used during night works. Refer to Schedule 3, Condition 4 for details.</p> <p>The site's complaints register is available on the LCO Public Website. All complaints are also logged in CMO and are reported in the monthly EPL reports and Annual Returns.</p>	Compliant	
LC155	M5.2	<p>The record must include details of the following:</p> <p>a) the date and time of the complaint;</p> <p>b) the method by which the complaint was made;</p> <p>c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;</p> <p>d) the nature of the complaint;</p> <p>e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and</p> <p>f) if no action was taken by the licensee, the reasons why no action was taken.</p>	<p>CMO</p> <p>Complaints Register</p> <p>LCO Public Website</p>	<p>The auditors reviewed the CMO record for the one complaint received during the audit period and verified the required information was being captured.</p>	Compliant	
LC156	M5.3	<p>The record of a complaint must be kept for at least 4 years after the complaint was made.</p>	<p>CMO</p> <p>Complaints Register</p> <p>LCO Public Website</p>	<p>Prior to the complaint received in 2020 the last complaint received was in 2016. Record of the 2016 and 2020 complaint was available on the LCO Public Website. All complaints are also available in CMO.</p>	Compliant	
LC157	M5.4	<p>The record must be produced to any authorised officer of the EPA who asks to see them.</p>		<p>This was not requested during the audit period</p>	Not Triggered	
LC158	M6.1	<p>TELEPHONE COMPLAINTS LINE</p> <p>The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.</p>	<p>Community Complaint & Enquiry Management Procedure (LIDOC-90533967-798)</p> <p>Community Complaints and Blasting hotline</p> <p>LCO Public Website</p>	<p>LCO has established a Community Complaint & Enquiry Management Procedure (LIDOC-90533967-798) which aligns with the GCAA complaint response protocol, to respond to community complaints. LCO operates a free Community Complaints and Blasting Information Hotline which operates 24 hours per day, 7 days per week. The number is 1800 037 317. The auditors called the telephone complaints line at the time of the audit site inspection and verified it was operating at the time of the audit.</p> <p>The complaints line is managed by external agency Oracle CMS. When a complaint is lodged a text message and email is sent to relevant LCO</p>	Compliant	

Ref #	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation									
				personnel including the E&C Department, the mine manager, Operations manager, CHPP manager, and production superintendent.											
LC159	M6.2	The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.	LCO Public Website Discussion with LCO Personnel 2019 IEA Report	The Community Complaints and Blasting Information Hotline telephone number is advertised on the LCO public website. The blasting hotline / complaints line has also been advertised in the Singleton Newspaper in the past, last known advertisement was in 2018. The community complaints line is also included in the community newsletters distributed to LCO's neighbouring landowners.	Compliant										
LC160	M6.3	The preceding two conditions do not apply until 3 months after: the date of the issue of this licence.		This is noted	Noted										
LC161	M7.1	<p>REQUIREMENT TO MONITOR VOLUME OR MASS</p> <p>For each discharge point or utilisation area specified below, the licensee must monitor:</p> <p>a) the volume of liquids discharged to water or applied to the area;</p> <p>b) the mass of solids applied to the area;</p> <p>c) the mass of pollutants emitted to the air;</p> <p>at the frequency and using the method and units of measure, specified below.</p> <table border="1"> <thead> <tr> <th colspan="3">POINT 6</th> </tr> <tr> <th>Frequency</th> <th>Unit of Measure</th> <th>Sampling Method</th> </tr> </thead> <tbody> <tr> <td>Continuous during discharge</td> <td>megalitres per day</td> <td>By Calculation (volume flow rate or pump capacity multiplied by operating time)</td> </tr> </tbody> </table>	POINT 6			Frequency	Unit of Measure	Sampling Method	Continuous during discharge	megalitres per day	By Calculation (volume flow rate or pump capacity multiplied by operating time)	Annual Return 2018-2019 Annual Return 2019-2020 Annual Return 2020-2021 HRSTS Report 2020-2021	LCO did not undertake any HRSTS discharge events during the 2018-2019 and 2019-2020 reporting periods. One discharge event occurred in March 2021 over a 14 day period. The auditors reviewed LCO's discharge record sheets from EPA monitoring point 6 (HRSTS Monitoring Point) during the audit period. The volume discharge per day did not exceed the maximum volume/mass limit specified in EPL Condition L3.1. The maximum daily discharge volume was 37.5 ML. LCO determine the flow rate through continuous monitoring of flow depth through a designed weir. The volume of water discharged is then calculated using the flow rate multiplied by the operating time (start and finish time of discharge event).	Compliant	
POINT 6															
Frequency	Unit of Measure	Sampling Method													
Continuous during discharge	megalitres per day	By Calculation (volume flow rate or pump capacity multiplied by operating time)													

Ref #	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation												
LC162	M8.1	<p>BLASTING</p> <p>To determine compliance with conditions L6.2, L6.3, L6.4 and L6.5:</p> <p>a) Airblast overpressure and ground vibration levels must be measured and electronically recorded for monitoring points 7 and 8 for the parameters specified in Column 1 of the table below; and</p> <p>b) The licensee must use the units of measure, sampling method, and sample at the frequency specified opposite in the other columns.</p> <table border="1"> <thead> <tr> <th>Parameter</th> <th>Units of Measure</th> <th>Frequency</th> <th>Sampling Method</th> </tr> </thead> <tbody> <tr> <td>Airblast Overpressure</td> <td>Decibels (Linear Peak)</td> <td>All blasts</td> <td>Australian Standard AS 2187.2-2006</td> </tr> <tr> <td>Ground Vibration Peak Particle Velocity</td> <td>millimetres/second</td> <td>All blasts</td> <td>Australian Standard AS 2187.2-2006</td> </tr> </tbody> </table>	Parameter	Units of Measure	Frequency	Sampling Method	Airblast Overpressure	Decibels (Linear Peak)	All blasts	Australian Standard AS 2187.2-2006	Ground Vibration Peak Particle Velocity	millimetres/second	All blasts	Australian Standard AS 2187.2-2006	<p>LCO Public Website - Monitoring documents (glencore.com.au)</p> <p>Annual Review 2019</p> <p>Annual Review 2020</p> <p>Annual Returns (audit period)</p> <p>Monthly Blast Result Summaries (Audit Period)</p> <p>2019 Liddell Blasting Summary</p> <p>2020 Liddell Blasting Summary</p> <p>2021 Liddell Blasting Summary</p>	<p>Ecotech calibration reports for the blast monitors were sighted by the audit team.</p> <p>Ecotech monthly summary reports are provided to LCO and include a summary of the blasts which occurred in the past month. The methods used by the blast monitoring network are detailed in the reports and comply with the requirements of Condition M8.1</p>	Compliant	
Parameter	Units of Measure	Frequency	Sampling Method															
Airblast Overpressure	Decibels (Linear Peak)	All blasts	Australian Standard AS 2187.2-2006															
Ground Vibration Peak Particle Velocity	millimetres/second	All blasts	Australian Standard AS 2187.2-2006															
LC163	M9.1	<p>OTHER MONITORING AND RECORDING CONDITIONS</p> <p>HRSTS Monitoring</p> <p>The licensee must continuously operate and maintain communication equipment which makes the conductivity and flow measurements, taken at Point 6 available to the "Service provider" within one hour of those measurements being taken and makes them available in the format specified in the "Hunter River Salinity Trading Scheme Discharge Point Site Equipment" as published by the Department of Land and Water Conservation on 7 May 2002.</p>	<p>Hydrolab calibration certificate, 29/07/2019</p> <p>Hydrometric Consulting Services, record of routine service visit HRSTS Discharge Point, dated 31/07/2019</p> <p>Liddell Coal Monthly Environmental Monitoring Report, Cbased, September 2020 and 2019</p> <p>Water monitoring calibration</p>	<p>Hydrometric Consulting Services were engaged to operate and maintain this equipment until July 2019. From this date until current CBased have been engaged to operate and maintain this equipment.</p> <p>The HRSTS monitoring point and communication equipment was sighted by the auditors during the site inspection.</p> <p>The auditors sighted calibration and service records of Monitoring Point 6 communication equipment. Information collected from communication equipment is available within one hour of measurements being taken.</p> <p>Auditors also reviewed data sent to WaterNSW via telemetry and checked time lag, confirming that data was provided within the one hour timeframe required.</p> <p>The calibration reports provided by Hydrometric Consulting Services and Cbased confirmed the margin of error is within EPL limits.</p>	Compliant													
LC164	M9.2	<p>The licensee must ensure that all monitoring data is within a margin of error of 5% for conductivity measurements and 10% for discharge flow measurement.</p>			Compliant													

Ref #	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation								
			certificate, Cbased 28/09/2020											
LC165	M9.3	The licensee must mark monitoring point 6 with a sign which clearly indicates the name of the licensee, whether the monitoring point is up or down stream of the discharge point(s) and that it is a monitoring point for the Hunter River Salinity Trading Scheme.	Site Inspection	The LDP6 sign was sighted during audit inspection and verified to contain required information.	Compliant									
LC166	M9.4	Requirement to Monitor Particulate Matter The licensee must record the average PM10 concentration at monitoring points 9,10,11 and 12 at intervals of 10 minutes. This data must be made available upon request by any Authorised Officer of the EPA who asks to see it.	Sentinex Daily monitoring summary	Sentinex units email the E&C Department each day with a summary of data for each monitor. These were sighted by the auditors and include a list of data collected every 10 minutes. It was reported that there had been no requests by any Authorised Officers of the EPA for this data.	Compliant									
LC167	M10.1	Noise Monitoring To assess compliance with the noise limits specified within this licence, the licensee must undertake operator attended noise monitoring at each specified noise monitoring point in accordance with the table below POINT 14,15 <table border="1"> <thead> <tr> <th>Assessment period</th> <th>Minimum frequency in a reporting period</th> <th>Minimum duration within assessment period</th> <th>Minimum number of assessment period</th> </tr> </thead> <tbody> <tr> <td>Night</td> <td>Monthly</td> <td>15 minutes</td> <td>1 operation day</td> </tr> </tbody> </table>	Assessment period	Minimum frequency in a reporting period	Minimum duration within assessment period	Minimum number of assessment period	Night	Monthly	15 minutes	1 operation day	LCO Public Website - Monitoring documents (glencore.com.au) LCO Environmental Noise Monitoring Reports, Global Acoustics Pty Ltd (February 2019 – February 2022) Annual Review 2019 Annual Review 2020 Discussion with LCO Personnel (E&C Department & Control Room Operator)	LCO has engaged Global Acoustics to undertake monthly attended noise monitoring at two approved locations in close proximity to the assigned residential locations specified in Table 1. Monitoring locations were selected to be representative of currently occupied properties identified in Table 1 of the Development Consent 305-11-01 and EPL Monitoring Points 14 and 15 and included: <ul style="list-style-type: none"> 1317 Hebden Road 1246 Hebden Road The auditors and noise specialist conducted a review of attended noise monitoring results for the audit period. The attended noise monitoring results indicated that the noise criteria were being met during the audit period. Noise monitoring reports refers to the NSW Industrial Noise Policy an Appendix 6 requirements. LCO's noise monitoring program (NMP) outlines that attended noise monitoring results are utilised to determine compliance with development consent criteria. LCO also maintains a real time noise monitor. This unattended monitoring is used as a noise management tool to proactively manage noise by modifying mining operations as required when a trigger level is reached.	Compliant	
Assessment period	Minimum frequency in a reporting period	Minimum duration within assessment period	Minimum number of assessment period											
Night	Monthly	15 minutes	1 operation day											

Ref #	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
LC168	M10.2	To assess compliance with condition L5.1, attended noise monitoring must be undertaken in accordance with Conditions L5.2 to L5.4: a) at the EPA points 14 and 15 identified in P1.4; and b) occur every calendar month in a reporting period; and c) occur during one nighttime period as defined in the Noise Policy for Industry 2017 for a minimum of 15 minutes at each location from a), and when relevant b) during the night.	LCO Environmental Noise Monitoring Reports, Global Acoustics Pty Ltd (February 2019 – February 2022)	The noise specialist reviewed noise monitoring records provided by Global Acoustics during the audit period. The noise specialist was satisfied that attended noise monitoring was being undertaken in accordance with the requirements of Condition M10.2 and M10.3 of EPL 2094.	Compliant	
LC169	M10.3	For the purposes of compliance monitoring and determining the noise generated at the premises the modification factors in the EPA's Fact Sheet C of the Noise Policy for Industry (2017) must be applied, as appropriate, to the noise levels measured by noise monitoring equipment. Definitions Noise refers to 'sound pressure levels' for the purpose of conditions L5.1 to L5.4 and condition M10.			Compliant	
LC170	M10.4	Where required in writing by the EPA, the Licensee must carry out attended monitoring at sensitive receivers in addition the monitoring required by Condition M10.2		This had not occurred during the audit period.	Not Triggered	
6 Reporting Conditions						
LC171	R1.1	ANNUAL RETURN DOCUMENTS The licensee must complete and supply to the EPA an Annual Return in the approved form comprising: 1. a Statement of Compliance, 2. a Monitoring and Complaints Summary, 3. a Statement of Compliance - Licence Conditions, 4. a Statement of Compliance - Load based Fee, 5. a Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan, 6. a Statement of Compliance - Requirement to Publish Pollution Monitoring Data; and 7. a Statement of Compliance - Environmental Management Systems and Practices. At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.	2019 Annual Return 2020 Annual Return 2021 Annual Return Letter from EPA, licence 2094, Anniversary Notice, dated 30/06/2019	The anniversary date of EPL 2094 is 30 June and as such the EPL Annual Return is required to be submitted to the EPA by 28 August, as specified by the EPA. The auditors sighted the 2019, 2020 and 2021 Annual Returns. Annual Returns were submitted during the audit period in accordance with EPL requirements. Annual Returns are signed by LCO Directors.	Compliant	
LC172	R1.2	An Annual Return must be prepared in respect of each reporting period, except as provided below. Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.			Compliant	

Ref #	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
LC173	R1.3	Where this licence is transferred from the licensee to a new licensee: a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period. Note: An application to transfer a licence must be made in the approved form for this purpose.		No licence transfer occurred during the audit period	Not Triggered	
LC174	R1.4	Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on: a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.		No licence surrender occurred during the audit period.	Not Triggered	
LC175	R1.5	The Annual Return for the reporting period must be supplied to the EPA via eConnect EPA or by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').	Annual Return Submission emails (eConnect EPA), 2019, 2020, 2021	The EPL Annual Returns are required to be submitted to the EPA by 28 August each year. Annual Returns were submitted via eConnect EPA on the following dates: <ul style="list-style-type: none"> 2018-2019 Annual Return submitted via eConnect EPA on 26 August 2019 2019-2020 Annual Return submitted via eConnect EPA on 26 August 2020 2020-2021 Annual Return submitted via eConnect EPA on 25 August 2021 	Compliant	
LC176	R1.6	The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.	Discussion with LCO personnel CMO	All Annual Returns submitted by LCO were available on the LCO server.	Compliant	
LC177	R1.7	Within the Annual Return, the Statements of Compliance must be certified, and the Monitoring and Complaints Summary must be signed by: a) the licence holder; or b) by a person approved in writing by the EPA to sign on behalf of the licence holder.	Condition R1.1	Refer to evidence against Condition R1.1	Compliant	

Ref #	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
LC178	R1.8	The licensee must supply, with each Annual Return, a Blast Monitoring Report which must include the following information relating to each blast carried out within the premises during the reporting period covered by the Annual Return: a) the date and time of the blast; b) the location of the blast on the premises; c) the blast monitoring results at each blast monitoring station; and d) an explanation for any missing blast monitoring results.	EPL Blast Monitoring Report 2018/2019, EPL 2094, LCO dated August 2019 Blast Monitoring Report 2019/2020, date not specified Blast Monitoring Report EPL 2094, 1 July 2020 – 30 June 2021, date not specified	LCO prepare a blast monitoring report which is submitted along with the Annual return each year. The auditors reviewed the blast monitoring reports submitted along with the 2019, 2020 and 2021 Annual Returns. Appendix 1 of the blast monitoring reports contained the information required by Condition R1.8.	Compliant	
LC179	R2.1	NOTIFICATION OF ENVIRONMENTAL HARM Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act. R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.	Incident Register Discussion with LCO personnel	No incidents occurred during the audit period which triggered reporting to the EPA under Condition R2.1.	Not Triggered	
LC180	R2.2	The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.		No incidents occurred during the audit period which triggered reporting to the EPA under Condition R2.1.	Not Triggered	
LC181	R3.1	WRITTEN REPORT Where an authorised officer of the EPA suspects on reasonable grounds that: a) where this licence applies to premises, an event has occurred at the premises; or b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence, and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.	Discussion with LCO Review of EPA Website	A written report had not been requested by the EPA during the audit period.	Not Triggered	
LC182	R3.2	The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.				
LC183	R3.3	The request may require a report which includes any or all of the following information: a) the cause, time and duration of the event;				

Ref #	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
		<p>b) the type, volume and concentration of every pollutant discharged as a result of the event;</p> <p>c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;</p> <p>d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;</p> <p>e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;</p> <p>f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and</p> <p>g) any other relevant matters.</p>				
LC184	R3.4	The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.		This had not occurred during the audit period.	Not Triggered	
LC185	R4.1	<p>OTHER NOTIFICATIONS</p> <p>Notification of pollution of waters</p> <p>The Licensee must notify the EPA by telephoning the Environment Line service on 131 555 immediately after the Licensee becomes aware of any contravention or potential contravention of Condition L1 of the Licence</p>	Refer to evidence against Schedule 3, Condition 21A of DA 305-11-01	Refer to evidence against Schedule 3, Condition 21A of DA 305-11-01	Not Triggered	
LC186	R4.2	The Licensee must provide written details of the notification to the EPA Director Hunter at hunter.region@epa.nsw.gov.au within 7 days of the date of the notification.		This condition was not triggered during the audit period.	Not Triggered	
LC187	R4.3	<p>Blast exceedance notification</p> <p>The licensee must report any exceedance of licence blasting limits to the EPA Hunter at hunter.region@epa.nsw.gov.au as soon as practicable after the exceedance becomes known to the licensee or to one of the licensee's employees or agents.</p>		This condition was not triggered during the audit period.	Not Triggered	
LC188	R4.4	<p>Noise exceedance notification</p> <p>The licensee must report any exceedance of licence noise limits to the EPA Hunter at hunter.region@epa.nsw.gov.au as soon as practicable after the exceedance becomes known to the licensee or to one of the licensee's employees or agent</p>		This condition was not triggered during the audit period.	Not Triggered	

Ref #	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
LC190	R5.1	<p>OTHER REPORTING CONDITIONS</p> <p>HRSTS reporting</p> <p>The Licensee must compile a written report of the activities under the Scheme for each scheme year. The scheme year shall run from 1 July to 30 June each year. The written report must be submitted to the EPA's regional office within 60 days after the end of each scheme year and be in a form and manner approved by the EPA. The information will be used by the EPA to compile an annual scheme report.</p>	<p>Email from LCO to EPA, HRSTS Annual report 2020-21, dated 24/08/2021</p> <p>Hunter River Salinity Trading Scheme Report, 1 July 2020 – 30 June 2021</p> <p>Email from LCO to EPA, HRSTS Annual Report 2018-19, dated 28/08/2019</p> <p>Hunter River Salinity Trading Scheme Report, dated 10 August 2020</p> <p>Email from LCO to EPA, HRSTS Annual Report 2019-20 Letter to EPA, dated 10/08/2020</p> <p>Hunter River Salinity Trading Scheme Report Letter to EPA, dated 28/08/2019</p>	<p>HRSTS reporting is provided to the EPA each year. The auditors sighted the following information:</p> <ul style="list-style-type: none"> • The HRSTS Annual Report for 2018/19 was submitted to the EPA by email dated 28 August 2019. • The HRSTS Annual Report for 2019/20 was submitted to the EPA by email dated 10 August 2020. • The HRSTS Annual Report for 2020/21 was submitted to the EPA by email dated 24 August 2021. 	Compliant	

Ref #	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
LC191	R5.2	The Licensee must include graphical analysis of turbidity measured at EPA Point 6 for the length of any discharges from EPA Point 6 within the HRSTS Report.	EPA Licence Variation – notice of Variation of Licence no. 2094, dated 12/06/2020 Refer to evidence against R5.1	This condition was added to EPL 2094 on 12 June 2020. <ul style="list-style-type: none"> 2018-2019 Annual Report – Notification made to the EPA that LCO did not discharge under the HRSTS during the reporting period. 2019-2020 Annual Report – Notification made to the EPA that LCO did not discharge under the HRSTS during the reporting period. 2020-2021 Annual Report – one discharge event was complete over 14 days during the reporting period. Graphical analysis of turbidity measured at EPL Point 6 was provided in Section 3 of the Annual Report. 	Compliant	
LC192	R5.3	Blast monitoring report The results of the blast monitoring required by the licence must be submitted to the EPA, with each Annual Return, at the end of each reporting period. The monitoring results must identify any exceedance of licence limits.	EPA Licence Variation – notice of Variation of Licence no. 2094, dated 12/06/2020 Blast Monitoring Report, 2018-2019, dated August 2019 Blast Monitoring Report, 2019-2020, date not included Blast Monitoring Report, 2020-2021, date not included	This condition was added to EPL 2094 on 12 June 2020. Blast Monitoring Reports containing the information required by Condition R5.3 were submitted to the EPA along with the 2019-2020 Annual Return and 2020-2021 Annual Return.	Compliant	
LC193	R5.4	Water Quality Monitoring Report The licensee must provide the EPA with its Annual Return an annual water quality monitoring report prepared by an appropriately qualified and experienced person that includes the following: a) for the monitoring required by the licence during the reporting period to which the Annual Return relates: (i) a summary of results for all ambient water quality monitoring required by the licence in table form and graphical form; (ii) total daily rainfall records from the premises meteorological monitoring required by the licence on the day that the sampling was undertaken in table form;	EPA Licence Variation – notice of Variation of Licence no. 2094, dated 12/06/2020 Water Quality Monitoring Report, 2019-2020, date not included Water Quality Monitoring Report,	This condition was added to EPL 2094 on 12 June 2020. Water Quality Monitoring Reports containing the information required by Condition R5.4 were submitted to the EPA along with the 2019-2020 Annual Return and 2020-2021 Annual Return.	Compliant	

Ref #	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
		(iii) total daily continuous rainfall records in graphical form; and (iv) a plan with the monitoring locations. b) A graphical presentation of the trends of monitoring results required by the licence for the reporting period to which the Annual Return relates and the preceeding data for the period of record the licensee has monitoring results for the licensed location (this is the entire dataset). c) A graphical representation of total daily continuous rainfall records required by the licence for the record that matches the ambient water quality results, if available.	2020-2021, date not included			
LC194	R5.5	Sewage treatment system report The sewage treatment system maintenance program required by Condition O2.6 must be submitted annually to the EPA with the Annual Return.	EPA Licence Variation – notice of Variation of Licence no. 2094, dated 12/06/2020 Sewage Treatment System Report 2020-2021, date not specified Sewage Treatment System Report 2019-2020, date not specified	This condition was added to EPL 2094 on 12 June 2020. Sewage treatment system reports containing the information required by Condition R5.5 were submitted to the EPA along with the 2019-2020 Annual Return and 2020-2021 Annual Return.	Compliant	
LC195	R5.6	The licensee must retain a copy of each report required by Condition O2.5 for 3 years from the date each record is made.	EPA Licence Variation – notice of Variation of Licence no. 2094, dated 12/06/2020 Sighted maintenance records	This condition was added to EPL 2094 on 12 June 2020. LCO maintain records of the results of services and maintenance performed on the sewage treatment system.	Compliant	
LC196	R5.7	Noise compliance assessment report The licensee must retain a copy of each report required by Condition O2.5 for 3 years from the date each record is made.	EPA Licence Variation – notice of Variation of Licence no. 2094, dated 12/06/2020 Environmental Noise Compliance Assessment Report 2019-2020, Global Acoustics, dated 24/08/2020	This condition was added to EPL 2094 on 12 June 2020. Noise Compliance Assessments, prepared by Global acoustics in accordance with the requirements of Condition R5.7, were submitted to the EPA along with the 2019-2020 Annual Return and 2020-2021 Annual Return.	Compliant	

Ref #	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
			Environmental Noise Compliance Assessment Report 2020-2021, Global Acoustics, dated 3/08/2021			
LC197	R5.8	<p>Heavy plant-tyre disposal report</p> <p>The Licensee must provide the EPA with the Annual Return a Heavy Plant-Tyre Disposal Report. The Report must include: a) a plan of the disposed heavy plant waste tyres on the premises for the period that includes:</p> <ul style="list-style-type: none"> (i) each tyre serial number; (ii) purchase date of each tyre; (iii) disposal date of each tyre; (iv) co-ordinates (easting and northings) of the disposal of each tyre; (v) the Reduced Level (RL) in metres AHD of each tyre placed in the pit; (vi) the number of tyres buried in a particular area; and (vii) the cumulative number of tyres disposed of at the premises each year. 	<p>EPA Licence Variation – notice of Variation of Licence no. 2094, dated 12/06/2020</p> <p>Heavy Plant-Tyre Disposal Report 2020, date not specified</p> <p>Heavy Plant-Tyre Disposal Report 2021, date not specified</p>	<p>This condition was added to EPL 2094 on 12 June 2020.</p> <p>Heavy plant-tyre disposal reports containing the information required by Condition R5.8 were submitted to the EPA along with the 2019-2020 Annual Return and 2020-2021 Annual Return.</p>	Compliant	
7 General Conditions						
LC198	G1.1	<p>COPY OF LICENCE KEPT AT THE PREMISES OR PLANT</p> <p>A copy of this licence must be kept at the premises to which the licence applies.</p>	LCO Public Website	A link to the LCO EPL is included on the LCO Public website. An electronic copy of the EPL is available on LCO's system. A hard copy was available with the E&C Department.	Compliant	
LC199	G1.2	The licence must be produced to any authorised officer of the EPA who asks to see it.		The Licence is available however no requests had been made during the audit period.	Not Triggered	
LC200	G1.3	The licence must be available for inspection by any employee or agent of the licensee working at the premises.		The EPL is available for inspection by employees via the website, LCO electronic document storage system or through the E&C Department.	Compliant	

Ref #	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
LC201	G2.1	OTHER GENERAL CONDITIONS			Noted	
		Completed program				
		Program	Description	Completed Date		
		LCO shall provide written report on spon.comb.	LCO shall provide written report on spon.comb. LCO shall report by 31st August on LC	01-September-2009		
		Coal Mine Particulate Matter Control Best Practice	Site specific determination of particulate matter control against best practice.	13-February-2012		
		Premises Noise Limits	The licensee is to determine noise limits for the premises in accordance with the INP or otherwise as consistent with the project approval and develop a compliance monitoring program to assess compliance with those limits.	29-May-2013		
		Particulate matter Control Best Practice - Wheel Generated Dust	Implementation of particulate matter best management practices to address wheel-generated dust.	15-August-2014		
		Particulate Matter Control Best Practice - Disturbing and Handling Overburden under Adverse Weather Conditions	Implementation of particulate matter best management practices to address the handling of overburden during adverse weather.	15-August-2014		
Particulate Matter Control Best Practice - Trial of Best Practice Measures for Disturbing and Handling Overburden	Investigation to establish best practice measures for the handling of overburden.	15-August-2014				
Coal Mine Wind Erosion of Exposed Land Assessment	Assessment of predicted vs actual exposed land	29-May-2015				
8 Special Conditions						
LC202	E1.1	Hunter River Salinity Trading Scheme This licence authorises the discharge of saline water into the Hunter River Catchment from an authorised discharge point (or points), in accordance with the Protection of the Environment Operations (Hunter River Salinity Trading Scheme) Regulation 2002.		Noted	Noted	
LC203	E1.2	For the purposes of Clauses 23 and 29 of the Protection of the Environment Operations (Hunter River Salinity Trading Scheme) Regulation 2002 the licensee must apply the conversion factor of 0.6.	HRSTS Discharge Calculation Sheet	LCO utilises a Discharge Calculation Spreadsheet as a tool for determining the maximum discharge volumes that would meet the allowable salt load. A factor 0.6 was observed to be used in the Discharge Calculation Spreadsheet	Compliant	
LC204	E1.3	The licensee must not exceed the hourly volume discharge limit calculated using the following formula, at all discharge point(s) on this licence titled "Discharge of saline water under the Hunter River Salinity Trading Scheme (HRSTS)": H = V / RRT Where: H is the hourly volume discharge limit (in megalitres per hour); V is the licence holder's volume discharge limit for the block (in megalitres) calculated in accordance with clause 23 of the	HRSTS Discharge Calculation Sheet	Discharge worksheet is used to calculate the volume that can be discharged in any 24 hour period. The volume discharged is modified based on the EC level that has been recorded (by river water quality monitoring). LCO maintain a buffer to ensure volume discharge limit is not exceeded. Auditors sighted the HRSTS Discharge Calculation Sheet which LCO utilise to calculate the hourly	Compliant	

Ref #	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
		<p>Protection of the Environment Operations (Hunter River Salinity Trading Scheme) Regulation (2002); and</p> <p>RRT is the difference between the discharge stop and start times shown on the river register for that block (in hours)</p> <p><i>Note 1: The intent of this condition is to prevent spikes of saline water in the Hunter River as a result of discharges of less than the duration permitted by the river register.</i></p> <p><i>Note 2: A river register is issued by the Service Co-ordinator and allows participants of the Hunter River Salinity Trading Scheme (HRSTS) to discharge saline to the Hunter River during a discharge period.</i></p>		<p>volume discharge limit based on the required calculation.</p>		

2022 IEA Audit Checklist – Mining Leases

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
CONSOLIDATED CHECKLIST – ML 1597, ML 1313, ML 1552, CL 708						
LC208	Condition 1 ML 1597 ML 1313 ML 1552 CL 708	<p>Within a period of three months from the date of grant/renewal of this lease or within such further time as the Minister may allow, the lease holder must serve on each landholder of the land a notice in writing indicating that this lease has been granted/renewed and whether the lease includes the surface. An adequate plan and description of the lease area must accompany the notice.</p> <p>If there are ten or more landholders affected, the lease holder may serve the notice by publication in a newspaper circulating in the region where the lease area is situated. The notice must indicate that this lease has been granted/renewed; state whether the lease includes the surface and must contain an adequate plan and description of the lease area.</p>	Notification letter sent to landowners, dated 31 January 2008	Notifications to landowners were sent on 31 January 2008 to Glendell, Singleton Council, Transgrid, Muswellbrook Council, Australian Rail Track Corporation (ARTC), Ausgrid, Lake Liddell Trust and Department of Lands.	Compliant	
LC209	Condition 2 ML 1597 ML 1313 ML 1552	The proponent shall implement all practicable measures to prevent and/or minimise any harm to the environment that may result from the construction, operation, or rehabilitation of the development.	Schedule 2, Condition 1	Refer to evidence against Schedule 2, Condition 1	Compliant	
LC210	Condition 3 ML 1597 ML 1313 ML 1552 Condition 2 CL 708	<p>(a) Mining operations must not be carried out otherwise than in accordance with a Mining Operations Plan (MOP) which has been approved by the Director General of the Department of Primary Industries – Mineral Resources</p> <p>(b) The MOP must:</p> <ul style="list-style-type: none"> • Identify areas that will be disturbed by mining operations; • Detail the staging of specific mining operations; • Identify how the mine will be managed to allow mine closure; • Identify how mining operations will be carried out on site in order to prevent and or minimise harm to the environment; • Reflect the conditions of approval under; <ul style="list-style-type: none"> i. The <i>Environment Planning and Assessment Act 1979</i> ii. The <i>Protection of the Environment Operations Act 1997</i> 	Refer evidence against Schedule 3, Condition 39 of DA 305-1-01	<p>The following MOPs were in effect during the audit period:</p> <ul style="list-style-type: none"> • MOP 2018-2020- LCO operated under the MOP 2018-2020 which had a MOP term to 1 December 2020. • MOP 2020-2023 - LCO prepared a new MOP for the period 2020-2023. Following consultation with the Resource Regulator (RR) from June to October 2020, the MOP was submitted for approval by RR on 30 September 2020. RR requested additional information to be provided in the MOP and requested the information be provided before the 14 December 2020. As this was after the cessation of the MOP 2018-2020 term an extension to the 2018-2020 MOP was granted by RR until 31 March 2021. • MOP 2021-2023 - LCO updated the MOP to address the information requests made by RR. The updated MOP now covers the period 18 March 2021 to 1 December 2023. The MOP was submitted for approval on 19 February 2021 and subsequently approved by RR on 18 March 2021. <p>The MOP was prepared in consultation with the required agencies, including the Natural Resources Access Regulator (NRAR), Department of Industry (formerly DPI-Water),</p>	Compliant	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
		<p>iii. Any other approvals relevant to the development including the conditions of this lease; and</p> <ul style="list-style-type: none"> Have regard to any relevant guidelines adopted by the Director-General. <p>(c) The titleholder may apply to the Director-General to amend an approved MOP at any time.</p> <p>(d) It is not a breach of this condition if:</p> <ol style="list-style-type: none"> The operations constituting the breach were necessary to comply with a lawful order or direction given under the <i>Mining Act 1992</i>, The <i>Environment Planning and Assessment Act 1979</i>, The <i>Protection of the Environment Operations Act 1997</i> or the <i>Occupational Health and Safety Act 2000</i>; and The Director-General has been notified in writing of the terms of the order or direction prior to the operations constituting the breach being carried out. <p>A MOP ceases to have affect 7 years after date of approval or other such period as identified by the Director-General. An approved amendment to the MOP under condition 5 does not constitute an approval for the purpose of this paragraph unless otherwise identified by the Director-General.</p>		<p>Biodiversity and Conservation Division (BCD – formerly OEH), Muswellbrook Council and Singleton Council.</p> <p>At the time of this audit RR require MOPs to be prepared in accordance with ESG3: Mining operations plan (MOP) guidelines (September 2013). The MOP references the guideline, and a general assessment indicates it was prepared in accordance with the guideline, however due to time constraints a detailed assessment was not conducted as part of the IEA. The MOP was approved by RR who assess compliance with the guideline.</p>		
LC211	Condition 4 ML 1597 ML 1313 ML1552	<p>Environmental Management Reporting</p> <p>The lease holder must lodge Environmental Management Reports (EMR) with the Director-General annually or at dates otherwise directed by the Director-General.</p>	Refer evidence against Schedule 5, Condition 3.	<p>The Environmental Management Reports have been combined with the LCO Annual Review required by the Development Consent Conditions. The Annual Review is submitted to RR along with submission to the Department.</p> <p>The auditors reviewed the 2018, 2019 and 2020 Annual Reviews and verified they contained the information required by Condition 4 and 5 and as requested by the RR.</p>	Compliant	
LC212	Condition 5 ML 1597 ML 1313 Condition 4 ML 1552	<p>The EMR must:</p> <ul style="list-style-type: none"> Report against compliance with the MOP; Report on progress in respect of rehabilitation completion criteria; Report on the extent of compliance with regulatory requirements; and <p>Have regard to any relevant guidelines adopted by the Director-General</p>				
LC213	Condition 6 ML 1597 ML 1313 ML1552	<p>Additional Environmental Reports</p> <p>Additional environmental reports may be required on specific surface disturbing operations or environmental incidents from time to time as directed in writing by the Director-General and must be lodged as instructed.</p>	Discussion with LCO Personnel	Additional reports were not requested during the audit period.	Not Triggered	
LC214	Condition 7 ML 1597	<p>Rehabilitation</p>	Section 6.1.11 of IEA Report,	The status of rehabilitation was reviewed by the auditors. A summary is provided in Section 6.1.11 of the IEA report.	Compliant	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
	ML 1313 ML1552 Condition 13 CL 708	Disturbed land must be rehabilitated to a sustainable/agreed end land use to the satisfaction of the Director-General.	Refer evidence against Schedule 3, Condition 37-39	The site was advancing to mine closure with progressive implementation of the LCO MOP 2021-2023 to ensure achievement of the rehabilitation objectives. At the time of the audit no rehabilitation had reached completion status, requiring approval by RR. South Cut RL 195 Dump had progressed to its final land use and LCO was in preparation for application for certification by RR. Once monitoring indicates that the rehabilitated areas are nearing completion the process will be initiated with RR, estimated to commence in early 2023.		
LC215	Condition 8 ML 1597 ML 1313 ML1552 Condition 4 CL 708	<p>Subsidence Management</p> <p>(a) The lease holder shall prepare a Subsidence Management Plan prior to commencing any underground mining operations which will potentially lead to subsidence of the land surface.</p> <p>(b) Underground mining operations which will potentially lead to subsidence include secondary extraction panels such as longwalls or miniwalls, associated first workings (gateroads, installation roads and associated main headings, etc.), and pillar extractions, and are otherwise defined by the Applications for Subsidence Management Approvals guidelines (EDG17)</p> <p>(c) The lease holder must not commence or undertake underground mining operations that will potentially lead to subsidence other than in accordance with a Subsidence Management Plan approved by the Director-General, an approval under the Coal Mine Health and Safety Act 2002, or the document New Subsidence Management Plan Approval Process — Transitional Provisions (EDPO9).</p> <p>(d) Subsidence Management Plans are to be prepared in accordance with the Guideline for Applications for Subsidence Management Approvals.</p> <p>Subsidence Management Plans as approved shall form part of the Mining Operations Plan required under Condition 2 and will be subject to the Annual Environmental Management Report process as set out under Condition 3. The SMP is also subject to the requirements for subsidence monitoring and reporting set out in the document New Approval Process for Management of Coal Mining Subsidence - Policy.</p>	Discussion with LCO Personnel Site Inspection	No underground mining has occurred during the audit period.	Not Triggered	
LC216	Condition 9 ML 1597 ML 1313 ML1552 Condition 5	<p>Working Requirement</p> <p>The Lease holder must:</p> <p>(a) ensure that at least 83 (ML1597), 3 (ML1552), 15 (ML 1313), 130 (CL708) competent people are efficiently employed on the lease area on each</p>	Letter from RR approving variation to condition 9, dated 10 Sep 2018	On 10 September 2018 RR approved the omission of this condition from the mining lease. The RR stated that in accordance with Clause 12 of Schedule 1B of the Mining Act 1992 I have determined to vary the conditions of ML 1597 by omitting condition 9, which related to labour and expenditure in accordance with the attached instrument of variation.	Compliant	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
	CL 708	<p>weekday except Sunday or any weekday that is a public holiday, OR</p> <p>(b) expend on operations carried out in the course of prospecting or mining the lease area, an amount of not less than \$1,452,500 (ML 1597), \$52,500 (ML1552), \$262,500 (ML1313), \$2,275,000 (CL 708) per annum whilst the lease is in force.</p> <p>The Minister may at any time or times, by instrument in writing served on the lease holder, increase, or decrease the expenditure required or the number of people to be employed.</p>		Deletion of the relevant condition took effect from 8 October 2018. Prior to this date the mine maintained 390 full time and full-time equivalent staff.		
LC217	<p>Condition 10 ML 1597 ML 1313 Condition 6 CL 708</p>	<p>Control of Operations</p> <p>(a) If an Environmental Officer of the Department believes that the lease holder is not complying with any provision of the Act or any condition of this lease relating to the working of the lease, he may direct the lease holder to:-</p> <p>(i) cease working the lease; or</p> <p>(ii) cease that part of the operation not complying with the Act or conditions; until in the opinion of the Environmental Officer the situation is rectified.</p> <p>(b) The lease holder must comply with any direction given. The Director-General may confirm, vary or revoke any such direction.</p> <p>(c) A direction referred to in this condition may be served on the Mine Manager.</p>	Discussion with LCO Personnel Site Inspection	This had not occurred during the audit period	Not Triggered	
LC218	<p>Condition 11 ML 1597 ML 1313 Condition 7 CL 708</p>	<p>Reports</p> <p>The lease holder must provide an exploration report, within a period of twenty-eight days after each anniversary of the date this lease has effect or at such other date as the Director-General may stipulate, of each year. The report must be to the satisfaction of the Director-General and contain the following:</p> <p>(a) Full particulars, including results, interpretation and conclusions, of all exploration conducted during the twelve months period;</p> <p>(b) Details of expenditure incurred in conducting that exploration;</p> <p>(c) A summary of all geological findings acquired through mining or development evaluation activities;</p> <p>(d) Particulars of exploration proposed to be conducted in the next twelve months period;</p> <p>All plans, maps, sections and other data necessary to satisfactorily interpret the report</p>	<p>Annual Exploration Report CCL708, ML1313, ML1552 & ML1597, dated 10/06/2021</p> <p>Annual Exploration Report CCL708, ML1313, ML1552 & ML1597, dated 05/06/2020</p>	<p>LCO submitted a request to the Department of Resources and Energy (DRE now RR) to consolidate reporting for all mining leases (CL708, ML1313, ML1552, ML1597) on 5 March 2013, which was approved on 11 March 2013.</p> <p>The anniversary date for the consolidated exploration report is 17 June, as approved by RR on 17 May 2018. The following reports were reviewed:</p> <ul style="list-style-type: none"> • Exploration Report 18 May 2019 – 17 May 2020 • Exploration Report 18 May 2020 – 17 May 2021 <p>The next exploration report for the period 18 May 2021 – 17 May 2022 is due to be submitted to RR by 17 June 2022.</p> <p>The exploration reports submitted to RR contained the required information.</p>	Compliant	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
LC219	Condition 12 ML 1597 ML 1313 Condition 8 CL 708	<p>Licence to Use Reports</p> <p>(a) The lease holder grants to the Minister, by way of a non-exclusive licence, the right in copyright to publish, print, adapt and reproduce all exploration reports lodged in any form and for the full duration of copyright.</p> <p>The non-exclusive licence will operate as a consent for the purposes of section 365 of the Mining Act 1992.</p>		This condition is noted	Noted	
LC220	Condition 13 ML 1597 ML 1313 Condition 9 CL 708	<p>Confidentiality</p> <p>(a) All exploration reports submitted in accordance with the conditions of this lease will be kept confidential while the lease is in force, except in cases where:</p> <ol style="list-style-type: none"> the lease holder has agreed that specified reports may be made non-confidential. reports deal with exploration conducted exclusively on areas that have ceased to be part of the lease. <p>(b) Confidentiality will be continued beyond the termination of a lease where an application for a flow-on title was lodged during the currency of the lease. The confidentiality will last until that flow-on title or any subsequent flow-on title, has terminated.</p> <p>The Director-General may extend the period of confidentiality.</p>		This condition is noted	Noted	
LC221	Condition 14 ML 1597 ML 1313 Condition 10 CL 708	<p>Terms of the non-exclusive licence</p> <ol style="list-style-type: none"> the Minister may sub-licence others to publish, print, adapt and reproduce but not on-licence reports. the Minister and any sub- licensee will acknowledge the lease holder's and any identifiable consultant's ownership of copyright in any reproduction of the reports, including storage of reports onto an electronic database. the lease holder does not warrant ownership of all copyright works in any report and, the lease holder will use best endeavours to identify those parts of the report for which the lease holder owns the copyright. there is no royalty payable by the Minister for the licence <p>if the lease holder has reasonable grounds to believe that the Minister has exercised his rights under the non-exclusive copyright licence in a manner which adversely affects the operations of the lease holder, that licence is revocable on the giving of a period of not less than three months' notice.</p>		This condition is noted	Noted	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
LC222	Condition 15 ML 1597 ML 1313 Condition 11 CL 708	<p>Blasting</p> <p>(a) <u>Ground Vibration</u></p> <p>The lease holder must ensure that the ground vibration peak particle velocity generated by any blasting within the lease area does not exceed 10 mm/second and does not exceed 5 mm/second in more than 5% of the total number of blasts over a period of 12 months at any dwelling or occupied premises as the case may be, unless determined otherwise by the Department of Climate Change and Environment.</p> <p>(b) <u>Blast Overpressure</u></p> <p>The lease holder must ensure that the blast overpressure noise level generated by any blasting within the lease area does not exceed 120 dB (linear) and does not exceed 115 dB (linear) in more than 5% of the total number of blasts over a period of 12 months, at any dwelling or occupied premises, as the case may be, unless determined otherwise by the Department of Climate Change and Environment.</p>	Refer evidence against Schedule 3, Condition 4	No exceedances of blast criteria were recorded during the audit period.	Compliant	
LC223	Condition 16 ML 1597 ML 1313 Condition 11 ML 1552 Condition 12 CL 708	<p>Safety</p> <p>Operations must be carried out in a manner that ensures the safety of persons or stock in the vicinity of the operations. All drill holes shafts and excavations must be appropriately protected, to the satisfaction of the Director-General, to ensure that access to them by persons and stock is restricted. Abandoned shafts and excavations opened up or used by the lease holder must be filled in or otherwise rendered safe to a standard acceptable to the Director-General.</p>	Audit site inspection Monthly E&C Inspections (audit period) Discussion with LCO E&C Personnel	<p>Safety was not assessed in detail as part of this audit; however, the following comments are made:</p> <ul style="list-style-type: none"> LCO manages a safety management system which is enforced by Glencore Corporate. The site is a secure facility with fences and locked gates. Boundary fencing inspected by the auditors was observed to be intact. Monthly E&C inspections and bimonthly biodiversity inspections which include a review of fencing. Glencore owns most of the buffer land surrounding the lease area. LCO does not have any abandoned shafts or excavations. <p>Refer comments in Section 6.2 of the IEA report with regards to a targeted assessment conducted by RR during the audit period.</p>	Compliant	
LC224	Condition 17 ML 1597 ML 1313 Condition 15 CL 708	<p>Exploration Drilling</p> <p>(1) At least twenty-eight days prior to commencement of drilling operations the lease holder must notify the relevant Department of Climate Change and Environment regional hydrogeologist of the intention to drill exploratory drill holes together with information on the location of the proposed holes.</p> <p>(2) If the lease holder drills exploratory drill holes he must satisfy the Director- General that: -</p> <p>a. all cored holes are accurately surveyed and permanently marked in accordance with Departmental guidelines so that their location can be easily established;</p>	Site Inspection Discussion with LCO personnel	No exploratory drilling was conducted during the audit period.	Not Triggered	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
		<p>b. all holes cored or otherwise are sealed to prevent the collapse of the surrounding surface;</p> <p>c. all drill holes are permanently sealed with cement plugs to prevent surface discharge of groundwaters;</p> <p>d. if any drill hole meets natural or noxious gases it is plugged or sealed to prevent their escape;</p> <p>e. if any drill hole meets an artesian or sub-artesian flow it is effectively sealed to prevent contamination of aquifers.</p> <p>f. once any drill hole ceases to be used the hole must be sealed in accordance with Departmental guidelines. Alternatively, the hole must be sealed as instructed by the Director-General.</p> <p>once any drill hole ceases to be used the land and its immediate vicinity is left in a clean, tidy, and stable condition.</p>				
LC225	Condition 18 ML 1597	<p>Prevention of Soil Erosion and Pollution</p> <p>Operations must be carried out in a manner that does not cause or aggravate air pollution, water pollution (including sedimentation) or soil contamination or erosion, unless otherwise authorised by a relevant approval, and in accordance with an accepted Mining Operations Plan. For the purpose of this condition, water shall be taken to include any watercourse, waterbody or groundwaters. The lease holder must observe and perform any instructions given by the Director-General in this regard.</p>	Refer evidence against Schedule 3, Conditions 18, 21A and 23 of DA 305-11-01	Refer to evidence against the Development Consent DA 305-11-01 Checklist: <ul style="list-style-type: none"> Schedule 3, Condition 18 – air pollution Schedule 3, Condition 21A – water pollution Schedule 3, Condition 23 – water pollution and erosion 	Compliant	
LC226	Condition 12 ML 1552 Condition 18 ML 1313 Condition 16 CL 708					
LC227	Condition 19 ML 1597 ML 1313 Condition 13 ML 1552 Condition 17 CL 708	<p>Transmission lines, Communication lines and Pipelines</p> <p>Operations must not interfere with or impair the stability or efficiency of any transmission line, communication line, pipeline, or any other utility on the lease area without the prior written approval of the Director-General and subject to any conditions he may stipulate.</p>	Site Inspection Discussion with LCO Personnel	No issues were reported or identified with regards to transmission lines, communications lines, or pipelines, during the audit period.	Compliant	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
LC228	Condition 20 ML 1597 ML 1313 Condition 18 CL 708	Fences and Gates (a) Activities on the lease must not interfere with or damage fences without the prior written approval of the owner thereof or the Minister and subject to any conditions the Minister may stipulate. Gates within the lease area must be closed or left open in accordance with the requirements of the landholder.	Site Inspection	Glencore is the landowner for all fences and gates within the ML boundary. No issues were reported or identified with regards to fences and gates, during the audit period.	Compliant	
LC229	Condition 21 & 22 ML 1597 ML 1313 Condition 14 ML 1552 Condition 19 & 20 CL 708	Roads and Tracks (a) Operations must not affect any road unless in accordance with an accepted Mining Operations Plan or with the prior written approval of the Director-General and subject to any conditions he may stipulate. (b) The lease holder must pay to the designated authority in control of the road (generally the local council or the Roads and Traffic Authority) the cost incurred in fixing any damage to roads caused by operations carried out under the lease, less any amount paid or payable from the Mine Subsidence Compensation Fund. Access tracks must be kept to a minimum and be positioned so that they do not cause any unnecessary damage to the land. Temporary access tracks must be ripped, topsoiled and revegetated as soon as possible after they are no longer required for mining operations. The design and construction of access tracks must be in accordance with specifications fixed by the Department of Climate Change and Environment.	Discussion with LCO Personnel Site Inspection	LCO is the landowner of all roads and tracks within the ML boundary. It was reported that to date operations had not affected any roads. No additional access tracks have been constructed outside of the mine footprint during the audit period. Temporary access tracks are managed through the Ground Disturbance Permit (GDP) process.	Compliant	
LC230	Condition 23 ML 1597 ML 1313 Condition 21 CL 708	Trees and Timber (a) The lease holder must not fell trees, strip bark or cut timber on the lease without the consent of the landholder who is entitled to the use of the timber, or if such a landholder refuses consent or attaches unreasonable conditions to the consent, without the approval of a warden. (b) The lease holder must not cut, destroy, ringbark or remove any timber or other vegetative cover on the lease area except such as directly obstructs or prevents the carrying on of operations. Any clearing not authorised under the Mining Act 1992 must comply with the provisions of the Native Vegetation Act 2003. The lease holder must obtain all necessary approvals or licences before using timber from any Crown land within the lease area.	Discussion with LCO Personnel Site Inspection	LCO reported that it had not cleared any trees which required consent from another landholder entitled to the use of the timber. All clearing is conducted in accordance with the LCO MOP 2021-2023 and under the permission of the GDP Process.	Compliant	
LC231	Condition 25 ML 1597	Resource Recovery (a) Notwithstanding any description of mining methods and their sequence or of proposed resource recovery contained within the Mining Operations Plan, if at any	Discussion with LCO Personnel Site Inspection	This has not occurred during the audit period.	Not Triggered	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
ML 1313 Condition 17 ML 1552 Condition 23 CL 708		<p>time the Director-General is of the opinion that minerals which the lease entitles the lease holder to mine and which are economically recoverable at the time are not being recovered from the lease area, or that any such minerals which are being recovered are not being recovered to the extent which should be economically possible or which for environmental reasons are necessary to be recovered, he may give notice in writing to the lease holder requiring the holder to recover such minerals.</p> <p>(b) The notice shall specify the minerals to be recovered and the extent to which they are to be recovered, or the objectives in regard to resource recovery, but shall not specify the processes the lease holder shall use to achieve the specified recovery.</p> <p>(c) The lease holder must, when requested by the Director-General, provide such information as the Director-General may specify about the recovery of the mineral resources of the lease area.</p> <p>(d) The Director-General shall issue no such notice unless the matter has firstly been thoroughly discussed with and a report to the Director-General has incorporated the views of the lease holder.</p> <p>(e) The lease holder may object to the requirements of any notice issued under this condition and on receipt of such an objection the Minister shall refer it to a Warden for inquiry and report under Section 334 of the Mining Act, 1992.</p> <p>After considering the Warden's report the Minister shall decide whether to withdraw, modify or maintain the requirements specified in the original notice and shall give the lease holder written notice of the decision. The lease holder must comply with the requirements of this notice.</p>				
LC232 Condition 26 ML 1597 ML 1313 Condition 18 ML 1552 Condition 24 CL 708		<p>Indemnity</p> <p>The lease holder must indemnify and keep indemnified the Crown from and against all actions, suits, claims and demands of whatsoever nature and all costs, charges and expenses which may be brought against the lease holder or which the lease holder may incur in respect of any accident or injury to any person or property which may arise out of the construction, maintenance or working of any workings now existing or to be made by the lease holder within the lease area or in connection with any of the operations notwithstanding that all other conditions of this lease shall in all respects have been observed by the lease holder or that any such accident or injury shall arise from any act or thing which the lease holder may be licensed or compelled to do.</p>		Noted	Noted	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
LC233	<p>Condition 28 ML 1597 ML 1313</p> <p>Condition 21 ML 1552</p> <p>Condition 26 CL 708</p>	<p>Security</p> <p>(a) The single security given and maintained with the Minister by the lease holder for the purpose of ensuring the fulfilment by the lease holder of obligations under Mining Leases 1313, 1552 (Act 1992) and Consolidated Coal Lease 708 (Act 1973) is extended to apply to this lease.</p> <p>If the lease holder fails to fulfil any one or more of the obligations under this lease, then the security held may be applied at the discretion of the Minister towards the cost of fulfilling such obligations. For the purpose of this clause the lease holder shall be deemed to have failed to fulfil the obligations of the lease if the lease holder fails to comply with any condition or provision hereof, any provision of the Act or regulations made there under or any condition or direction imposed or given pursuant to a condition or provision hereof or of any provision of the Act or regulations made thereunder.</p>	Refer evidence detailed in the 2019 IEA report	Compliance with this condition was verified in the 2019 IEA. All security deposit funds were issued by 2018.	Compliant	
LC234	<p>Condition 29 ML 1597 ML 1313</p> <p>Condition 27 CL 708</p>	<p>Prescribed Dams</p> <p>(A) Notwithstanding any Mining Operations Plan, the lease holder must not mine within any part of the lease area which is within the notification area of the Liddell Cooling Water, Chain of Ponds 13B or Antiene Mine Lease Tailings Dams without the prior written approval of the Minister and subject to any conditions he may stipulate.</p> <p>(B) Where the lease holder desires to mine within the notification area he must:</p> <ol style="list-style-type: none"> a. at least twelve (12) months before mining is to commence or such lesser time as the Minister may permit, notify the Minister of the desire to do so. A plan of the mining system to be implemented must accompany the notice; and i. provide such information as the Minister may direct. <p>(C) The Minister must not, except in the circumstances set out in sub-paragraph (ii), grant approval unless sub-paragraph (i) of this paragraph has been complied with. This sub-paragraph is complied with if:</p> <ol style="list-style-type: none"> a. the Dams Safety Committee as constituted by Section 7 of the Dams Safety Act 1978 and the owner of the dam have been notified in writing of the desire to mine referred to in paragraph (B). b. the notifications referred to in clause (a) are accompanied by a description or plan of the area to be mined. c. the Director-General has complied with any reasonable request made by the Dams Safety 	Email from LCO to Dam Safety Committee, Antiene Tailings Dam Decommissioning, dated 11/12/2014	<p>The status of each prescribed dam is provided below:</p> <ul style="list-style-type: none"> • Liddell Cooling Water – Lake Liddell: LCO is not actively mining within the notification area • Chain of Ponds Dam 13B – this dam had not been constructed (MOD 5) <p>Antiene Mine Lease Tailings Storage Facility – LCO applied to the Dams Safety Committee in 2014 to discontinue the use of the Antiene Tailings Dam. Rehabilitation execution works were undertaken on the Antiene Tailings Storage Facility (TSF) in line with site Tailings Rehabilitation Strategy. LCO will apply to the Dam Safety Committee to deprecise the Antiene TSF once capping is complete. This is anticipated to be in late 2022.</p>	Compliant	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
		<p>Committee or the owner of the dam for further information in connection with the mining proposal.</p> <p>d. the Dams Safety Committee has made its recommendations concerning the mining proposal or has informed the Minister in writing that it does not propose to make any such recommendations; and</p> <p>e. where the Dams Safety Committee has made recommendations the approval is in terms that are:</p> <ul style="list-style-type: none"> - in accordance with those recommendations; or - where the Minister does not accept those recommendations or any of them - in accordance with a determination under sub-paragraph (ii) of this paragraph. <p>a. Where the Minister does not accept the recommendations of the Dams Safety Committee or where the Dams Safety Committee has failed to make any recommendations and has not informed the Minister in writing that it does not propose to make any recommendations, the approval shall be in terms that are, in relation to matters dealing with the safety of the dam:</p> <ul style="list-style-type: none"> b. as determined by agreement between the Minister and the Minister administering the Dams Safety Act 1978; or c. in the event of failure to reach such agreement - as determined by the Premier <p>(D) The Minister, on notice from the Dams Safety Committee, may at any time or times:</p> <ul style="list-style-type: none"> a. cancel any approval given where a notice pursuant to Section 18 of the Dams Safety Act 1978 is given. b. suspend for a period of time, alter, omit from or add to any approval given or conditions imposed. 				
LC235	Condition 30 ML 1597	<p>Special Conditions</p> <p>The lease holder unless with the consent of the Minister and subject to such conditions as the Minister may impose shall not mine for, win or remove any coal from that part of the subject area within 30 metres horizontally distant from either side of the easement of the Main Northern Railway.</p>	Survey Plan of Mining operations	As per the findings from the 2019 IEA LCO provided the auditors with a Survey Plan of mine operations which shows the area within a 30m offset of the main northern railway easement. Pit limits are not close to the eastern buffer.	Compliant	
LC236	Condition 31 ML 1597	<p>Special Conditions</p> <p>The lease holder unless with the consent of the Minister and subject to such conditions as the Minister may impose shall</p>	Discussion with LCO Personnel Site Inspection	This has not occurred.	Not Triggered	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
		not work or cause to be worked any seam of coal by underground methods within the subject area within the barrier as defined as follows: The land within the zone beneath and adjacent to the Main Northern Railway enclosed by an angle of draw of 35 degrees from the vertical plane of the boundary parallel to a thirty (30) metres horizontal distance from either side of the railways lands, such angle of draw being measured outwards from the point on the vertical plane of the said boundary at the surface or at the level of the horizontal plane of the railway tracks, whichever may be the higher, to the floor of the coal seam in which mining operations are being carried out.				
LC237	Condition 32 ML 1597 Condition 31 ML 1313	Special Conditions The lease holder shall maintain an underground reserve of water of a minimum of 2000 mega litres in disused underground mine workings of the land hereby demised and shall at all times permit Coal and Allied Operations Pty Limited and it's successors and assigns to have access to that underground reserve for the purpose of obtaining water for use in connection with the operations of the Hunter Valley Mine.	WAF and GCP Interface v7, dated December 2021	The Water Access framework (WAF) interface states that <i>the former Liddell Underground workings (Middle and M49), and former Hazeldene Underground workings contain a significant amount of water, though with mining progression water in the Middle Liddell workings is no longer accessible with dewatering bores as parts have been intersected by mining.</i> Underground storages of water were specified to be the following as at December 2021: <ul style="list-style-type: none"> Hazeldene Colliery – 1,718.99ML Middle (Liddell Colliery Middle Liddell Seam) – 943.85ML M49 (Liddell Colliers Upper Liddell Seam) – 2863.65ML Even with the Middle Liddell working not being accessible LCO still have access to more than 2000 ML of water in the underground reserves.	Compliant	
LC238	Condition 23 ML 1552 Condition 28 CL 708	The holder of a lease (or consolidated mining lease) may not suspend mining operations in the mining area other than in accordance with the consent of the minister.	LCO Legal Advice (provided in 2019)	As per the 2019 IEA, LCO does not mine within all mining lease boundaries however legal advice provided to the E&C Department indicated that because LCO has continued to actively mine in one of its mining lease boundaries and because the RR has approved a consolidated lease and grouping of mining lease reporting, LCO operations do not constitute a suspension of mining operations in one lease area.	Compliant	
LC239	Condition 5 ML 1552	Incident reporting (a) The lease holder must report any environmental incidents. The report must: <ol style="list-style-type: none"> Be prepared according to any relevant Department guidelines; Be submitted within 24 hours of the environmental incident occurring (b) For the purpose of this condition, environmental incident includes: <ol style="list-style-type: none"> Any incident causing or threatening material harm to the environment 	Discussion with LCO Personnel Site Inspection Incident Register (audit period) EPA Public Website Regulator consultation	No incidents have occurred in the lease boundary of ML 1552 which required reporting within 7 days as per the condition requirement. The requirement to notify the RR is not included in the PIRMP. The PIRMP notification requirements reflect the agencies specified by the POEO Regulations.	Not Triggered	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
		(ii) Any breach of conditions 1-9 and 11-24; (iii) Any breach of environmental protection legislation (iv) A serious complaint from landholders or the public (c) For the purpose of this condition, harm to the environment is material if (d) (i) if involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or It results in actual or potential loss or property damage of an amount or amounts in aggregate, exceeding \$10,000 where loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent mitigate or make good harm to the environment				
Mining Lease 1597 – Ancillary Mining Activity Conditions (21 January 2020)						
Schedule A						
LC240	1	Rehabilitation The lease holder must rehabilitate the land described in Schedule C that is or may be affected by the carrying out of the ancillary mining activity(s).	LCO Annual Rehabilitation Monitoring Report, Future Harvest, February 2020. LCO 2019 Annual Rehabilitation Monitoring Report, Umwelt, January 2020 LCO Mountain Block Rehabilitation Report, SLR, dated 20/01/2022 Site Inspection Annual Reviews Rehabilitation Procedure LIDOC-90533967-507, dated 09/07/2020. Rehabilitation Establishment and Methodology Record, Entrance	An ancillary mining activity is defined in Schedule 2 of the licence variation document as: <ul style="list-style-type: none"> Construction, maintenance or use of any drain or water race associated with the rehabilitation of the Mountain Block area, as identified on the indicative plan at Attachment A prepared by Liddell Coal Operations Pty Limited. Removal, stockpiling or depositing of overburden or ore associated with the rehabilitation of the Mountain Block Area, as identified on the indicative plan at Attachment A prepared by Liddell Coal Operations Pty Limited. Schedule 3 refers to the land described in the survey plan M38632 for AMA1020, approved on 10 December 2019 which is not embraced by the lease plan M27018 attached to Mining Lease 1597. LCO have a progressive rehabilitation schedule which commits to rehabilitation targets per hectare as well as tailing emplacement facilities and legacy areas which require rehabilitating. The auditors sighted various rehabilitation works during the audit inspections. A review of rehabilitation works conducted in the Mountain Block area located to the north of the site was conducted by the auditors. Previous stability assessments and rehabilitation works have occurred prior to the commencement of the audit period with varying degrees of success, including some areas where rehabilitation failed, as reported in the 2019 IEA Report. LCO engaged Lambert Geotech to conduct a geotechnical inspection of the Mountain Block Rehabilitation Area in September 2020. The purpose of the inspection was to provide a post construction	Compliant	

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
			<p>Pit, dated 27/10/2021 Rehabilitation Establishment and Methodology Record, South Pit Woodland, dated December 2019</p>	<p>assessment of the performance of the landform, specifically the remediated east and west slip sites, areas of developing instability and drainage features.</p> <p>LCO conducted remediation works on the east and west slip areas of Mountain Block in mid-late 2020. The geotechnical inspection did not recommend any additional works or surveys for the area. The report identified some areas where additional improvements may be required with regards to drainage in the area, this included amendments to contour drains and vegetation growth to reduce erosion.</p> <p>Minor cracking was observed in the western slip area, which was regarded as normal and to be expected, and as a result no rectification works were recommended.</p> <p>Two small scale slumps were identified which were isolated and of no consequence, therefore negating the need for remedial works. One larger slump (approximately 50m² in area) was identified in the eastern slip area. A recommendation for ongoing visual inspections was made to determine if remedial works were required.</p> <p>LCO conducted significant earth works and rehabilitation in 2020 of the Mountain Block area which concluded in November 2020. Activities included shaping, soil amelioration, rock drain construction, revegetation, surface protection, maintenance, and establishment of a monitoring program.</p> <p>Additional regeneration works were also conducted in 2021, this included strip seeding of target vegetation in Mountain Block South.</p> <p>LCO implemented a monitoring program to determine the success of the remediation project at Mountain Block. The monitoring program involves a soil sampling program, photo monitoring program (including arial mapping) and routine inspections by the LCO E&C Department.</p> <p>The auditors reviewed the January 2022 Photo Monitoring Report prepared by SLR Consulting. Baseline photos were taken in September 2020 at twelve locations for ongoing monitoring. Photos are taken every three months to track rehabilitation progress. The auditors also reviewed the results of a Phase 1 and Phase 2 study on invasive plant assessment conducted in the Mountain Block MOD 7 area. The studies included fly over aerial photography and use of the MyDendra Insights Package to determine trend changes to erosion and high priority species.</p> <p>At the time of the audit LCO had completed the remediation project at Mountain Block and was undertaking routine monitoring and maintenance work as required, and in accordance with the approved MOP 2021-2023. LCO plan to monitor rehabilitation progress until adequate erosion protection is achieved.</p> <p>The auditors sighted the Mountain Block remediation works during the audit inspection. A combination of excavated natural</p>		

Ref#	Source	Condition Requirement	Evidence Reviewed	Audit Comments	Audit Finding	Recommendation
				<p>material, biomix (composted biosolids) and two different hydromulch products were utilised as soil ameliorants, growth medium and slope stabiliser in this location. Seeding was completed through hydromulching via truck and helicopter due to slope steepness and difficult access. Seeding mix was consistent with grassland rehabilitation with pockets of spotted gum/ironbark woodland PCT 1602 where the rehabilitation meets the northern Mountain Block Offset. The cover crop, from revegetation works conducted in 2020, was visible during the audit inspection.</p> <p>Significant improvement in the Mountain Block Area was evident, compared to the condition of the area during the 2019 IEA inspection.</p>		
LC241	2.1	<p>Mining Operations Plan and Annual Rehabilitation Report Condition 2 of Mining Lease 1597 relevant to the Mining Operations Plan (MOP) and annual rehabilitation report applied to the ancillary activity(s).</p>	<p>Mining Operations Plan, 2021-2023 Approved 18/03/2021 LCO public Website 2018 Annual Review 2019 Annual Review 2020 Annual Review</p>	<p>The MOP 2021-2023 details the variation made to ML 1597 on 21 January 2020. The MOP includes ancillary buildings and equipment as per this condition's requirement.</p> <p>The Annual Reviews submitted to satisfy the requirements of the annual rehabilitation report. The scope of the annual review includes those ancillary activities referenced in Schedule B.</p>	Compliant	
LC242	2.1	<p>Mining Operations Plan and Annual Rehabilitation Report The lease holder must update the MOP to incorporate the carrying out of the ancillary mining activity(s) and submit the updated MOP to the Minister for approval within 45 days of this variation.</p>	<p>Refer evidence against Schedule 3, Condition 39 of DA 305-1-01</p>	<p>The variation of ML 1597 was approved on 21 January 2020. The current MOP 2021-2023 addresses the requirement to incorporate the carrying out of the ancillary mining activities.</p> <p>The MOP was submitted for approval on 19 February 2021 and subsequently approved by RR on 18 March 2021.</p>	Compliant	

Appendix B DPE Endorsement of the Audit Team



Mr Ben de Somer
Environment & Community Manager
Liddell Coal Operations
Wonnarua Country

Via email only: ben.desomer@glencore.com.au

03/12/2021

Dear Mr De Somer

**Liddell Coal Mine (DA 305-11-01)
Proposed IEA Team 2022**

Reference is made to correspondence from Liddell Coal Pty Ltd (Liddell) dated 26 November 2021 seeking endorsement of the proposed audit team for the upcoming Independent Environmental Audit (IEA) required by Schedule 5, Condition 4 of development consent DA 305-11-01, as modified (the consent) for the Liddell Coal Mine (the site).

The Secretary has considered Bloomfield's request and endorses the following audit team from AECOM for the 2022 IEA:

- Ms Kate Michelmore – Lead auditor
- Ms Shani Walton – Assistant Auditor
- Ms Amanda Kerr – Surface water specialist
- Ms Sian Cox – Groundwater specialist
- Mr Patrick Martinez – Noise specialist
- Ms Helen Vickers – Rehabilitation and mine closure

The IEA is to be conducted in accordance with the conditions of the consent, and the Department's *Independent Audit Guideline* (October 2015).

The IEA shall include a focus on assessing the environmental performance of the project, and its effects on the surrounding environment (Schedule 5, Condition 4(c) of the consent), the adequacy of plans (including management plans) (Schedule 5, Condition 4(e) of the consent), and recommend measures or actions to improve the environmental performance of the project or any plan ((Schedule 5, Condition 4(f) of the consent)).

The IEA period shall be from 7 February 2019 to approximately 7 February 2022 (i.e. to the date of the first day of the site inspection), or as otherwise agreed with the Secretary.

The IEA report together with responses to any recommendations (RAR) contained in the IEA report, and proposed completion dates (DD/MM/YYYY) for actions to be implemented, should be submitted via the Department's Major Projects website within six (6) weeks of completing the IEA, i.e. from the audit inspection date.

Finally, please ensure that a copy of this correspondence is appended to the audit report.

If you wish to discuss the matter further, please contact Ms Ann Hagerthy, Senior Compliance Officer, on (02) 6575 3407.

Yours sincerely

Heidi Watters
Team Leader Northern
Compliance

As nominee of the Planning Secretary



Department of Planning and Environment

Mr Ben de Somer
Environment & Community Manager
Liddell Coal Operations
Wonnarua Country

Via email only: ben.desomer@glencore.com.au

03/03/2022

Dear Mr Desomer

**Liddell Coal (DA305-11-01)
IEA report extension request**

I refer to your request (DA305-11-01-PA-69) for an extension of time to submit the Independent Environmental Audit (IEA) report and responses to any recommendations (RAR) required by Schedule 5, Condition 4 of development consent DA 305-11-01, as modified (the consent) for the Liddell Coal Mine.

The Department notes that the IEA site inspection was conducted between 8-11 February 2022 and, as per Schedule 5, Condition 5 of the consent, the IEA report and RAR is due to be submitted by 25 March 2022. Ms Kate Michelmore, the approved Lead Auditor, has requested a one month extension to the IEA report and RAR to allow adequate time to collate information from the audit team specialists and for Liddell Coal Operations to review the report and prepare the RAR.

Accordingly, the Planning Secretary has granted an extension of time until 26 April 2022 to submit the IEA report and RAR.

If you wish to discuss the matter further, please contact Heidi Watters, Team Leader Compliance on 02 6575 3401 or compliance@planning.nsw.gov.au

Yours sincerely

Heidi Watters
Team Leader Northern
Compliance

As nominee of the Planning Secretary

Appendix C Photographic Log

Photographic Log




Photo #	Comment	Photo
P-1	<p>Topic – Rehabilitation</p> <p>2020 Rehabilitation – Entrance woodlands rehabilitation conducted in 2020</p>	
P-2	<p>Topic – Rehabilitation</p> <p>2021 Rehabilitation - Rehabilitation conducted in 2021. A cover crop used in this area. Millet grasses visible. Site expects natives to be visible once cover crop dies back. No monitoring conducted on this site yet</p>	
P-3	<p>Topic – Rehabilitation</p> <p>2021 Rehabilitation - 2021 rehabilitation. Drainage channel visible</p>	




Photo #	Comment	Photo
P-4	<p>Topic – Rehabilitation</p> <p>2021 rehabilitation. Drainage channel visible</p>	
P-5	<p>Topic – Rehabilitation</p> <p>Entrance Premier emplacement, which is an east facing emplacement - Weed management of Galenia (<i>Galenia pubescens</i>) sighted.</p>	
P-6	<p>Topic – Rehabilitation</p> <p>Entrance Premier emplacement, which is an east facing emplacement - Varying ages of rehabilitation (up to 5 years). Some failed tube stock which had struggled during 2019 drought sighted.</p>	




Photo #	Comment	Photo
P-7	<p>Topic - Rehabilitation</p> <p>Entrance Premier emplacement, which is an east facing emplacement - New tubestock planted last year which looks good. Habitat resources were sighted in this area</p>	
P-8	<p>Topic – Rehabilitation</p> <p>Entrance Premier emplacement, which is an east facing emplacement - Bowmans Creek Riparian Corridor visible in the distance – this is a 200 m strip from the creek west. Sighted spray lines. A combination of tube stock, strip seeding and direct seeding was conducted in this area in the audit period</p>	
P-9	<p>Topic – Rehabilitation</p> <p>Entrance Premier emplacement – successful tube stock sighted throughout rehabilitation area</p>	




Photo #	Comment	Photo
P-10	<p>Topic – Rehabilitation</p> <p>Dam 4 was a disused water storage void adjacent to Bowmans Creek at the north-eastern end of the mine area</p> <p>Shaping and rehabilitation in progress</p>	
P-11		
P-12		




Photo #	Comment	Photo
P-13	<p>Topic – Rehabilitation</p> <p>Antiene Tailings Dam Rehabilitation. This area is positioned to the north east of the site adjacent to Bowmans Creek where historic open cut operations have occurred - Hydro mulch seeded and seeded by drone in late 2021. Vegetated topsoil stockpiles sighted here. Not many topsoil stockpiles remain</p>	
P-14		
P-15		




Photo #	Comment	Photo
P-16	<p>Topic – Rehabilitation</p> <p>Mountain Block Rehabilitation area entry gate</p>	
P-17	<p>Topic – Rehabilitation</p> <p>The Mountain Block area at in the northern extent of the DA boundary and the slope is predominately facing south.</p> <p>Rehabilitation progress visible from seed planted in 2020</p>	
P-18		




Photo #	Comment	Photo
P-19	<p>Topic – Rehabilitation</p> <p>Reservoir South Tailings Dam.</p> <p>Reservoir North and South Tailings dam were being decommissioned at the time of the audit in preparation for rehabilitation</p>	
P-20		
P-21	<p>Topic – Rehabilitation</p> <p>South Cut RL 195 Dump (looking South)</p>	




Photo #	Comment	Photo
P-22	<p>Topic – Rehabilitation</p> <p>South Cut RL 195 Dump (looking North) - Rehab approx. 2011</p> <p>The area is in its final land use and LCO is in preparation for application for certification. Once monitoring indicates that the rehabilitated areas are nearing completion the process will be initiated (estimated to commence in early 2023)</p>	
P-23	<p>Topic – Rehabilitation</p> <p>South Cut RL 195 Dump - Sighted cattle yards. 86 cows grazing in the fenced area</p>	
P-24	<p>Topic – Rehabilitation</p> <p>South Cut RL 195 Dump - Rehabilitation monitoring inspection point</p>	

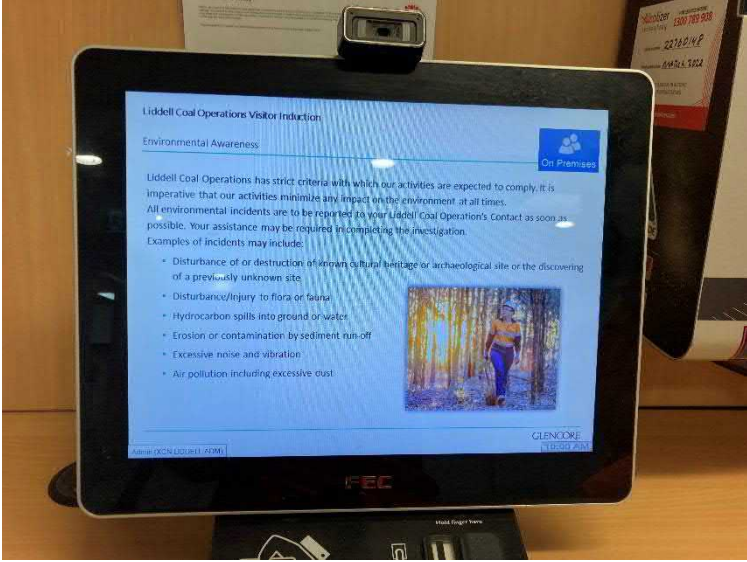


Photo #	Comment	Photo
P-25	<p>Topic – General Environmental Awareness section of visitor induction</p>	
P-26	<p>Topic – Noise Real time noise monitor</p>	
P-27	<p>Topic – Blasting Chain of Ponds Inn - Vibration monitor located and sighted</p>	




Photo #	Comment	Photo
P-28	Topic – Noise Attended noise monitoring location – 1246 Hebden Road	
P-29	Topic – Noise Approximate attended noise monitoring location – 1317 Hebden Road	
P-30	Topic – Noise SX-37 Location - Real time noise monitor	




Photo #	Comment	Photo
P-31	<p>Topic – Noise</p> <p>Fencing to real time monitor had been upturned at the bottom. Site organised maintenance to come and fix this during the site inspection</p>	
P-32	<p>Topic – Noise</p> <p>Scrivens location - Airblast overpressure microphone</p>	
P-33	<p>Topic – Noise</p> <p>Scrivens Location - Geophone</p>	




Photo #	Comment	Photo
P-34	<p>Topic – General</p> <p>Entrance Pit - Active mining area</p>	
P-35	<p>Topic – General</p> <p>Topsoil stockpile – Revegetated for stability. Signage identifies topsoil location</p>	
P-36	<p>Topic – General</p> <p>Scattered timber left in place to provide fauna habitat</p>	




Photo #	Comment	Photo
P-37	Topic – General Bowmans Creek riparian zone	
P-38	Topic – Water Dam 6	
P-39	Topic – Water Dam 6	




Photo #	Comment	Photo
P-40	Topic -Rehabilitation Eastern side of Mountain Block	
P-41	Topic -Rehabilitation New planting in offset area	
P-42	Topic – Rehabilitation Entry to Mountain Block Offset Area	




Photo #	Comment	Photo
P-43	Topic – General Site access signage	
P-44	Topic – Water Reservoir North	
P-45	Topic – General Landform and drainage channels	




Photo #	Comment	Photo
P-46	<p>Topic – General</p> <p>Landform and drainage channels. Rock from stockpiles used for drainage across site</p>	
P-47	<p>Topic – General</p> <p>South Pit - Active mining area</p>	
P-48	<p>Topic – General</p> <p>South Pit - Active mining area</p>	




Photo #	Comment	Photo
P-49	<p>Topic – Air Quality Monitors</p> <p>SX38-D1 TEOM, HVAS 11 TSP and HVAS 12 PM₁₀</p>	
P-50	<p>Topic – Maintenance</p> <p>LCO Workshop</p>	
P-51	<p>Topic – Maintenance</p> <p>LCO Workshop - Oil station with bunding present</p>	

Photo #	Comment	Photo
P-52	<p>Topic – Waste</p> <p>Waste segregation sighted across the site</p>	
P-53	<p>Topic – Water</p> <p>Waste segregation sighted across the site</p>	
P-54	<p>Topic – General</p> <p>Workshop external looking at bulk chemical storage</p>	




Photo #	Comment	Photo
P-55	Topic – General Workshop external looking at washdown bay	
P-56	Topic – Water MIA wash down bay	
P-57	Topic – General General laydown area next to MIA	




Photo #	Comment	Photo
P-58	Topic – Water MIA wash down bay	 <p>A photograph showing a muddy, gravel-covered area, likely a wash down bay, with a concrete structure and a yellow metal platform in the background under a cloudy sky.</p>
P-59	Topic – Waste Spent tyre storage area	 <p>A wide-angle photograph of a large, flat, gravel-covered area used for storing spent tyres. Numerous stacks of black tyres are visible in the background under a cloudy sky.</p>
P-60	Topic – Maintenance Outside maintenance area	 <p>A photograph of a yellow maintenance truck with a large, raised metal structure on its bed, parked on a gravel surface. The truck has the number '359' and 'CAT' visible on its side.</p>




Photo #	Comment	Photo
P-61	<p>Topic – Chemical Management</p> <p>Bulk chemical storage within concrete banded area</p>	 <p>A photograph showing several large, cylindrical metal storage tanks (labeled 'DIESEL TANK 12A', 'DIESEL TANK 11A', 'DIESEL TANK 10A') situated within a concrete banded area. The tanks are surrounded by a chain-link fence and yellow safety railings. A concrete walkway with a yellow safety line runs alongside the tanks.</p>
P-62	<p>Topic – Chemical Management</p> <p>Chemical fill point</p>	 <p>A photograph of a chemical fill point area. It features a complex network of orange and blue pipes, a green motor, and various pieces of equipment. A yellow fire extinguisher is visible in the foreground. The area is paved and appears to be part of an industrial facility.</p>
P-63	<p>Topic – Water</p> <p>MIA STP</p>	 <p>A photograph of an industrial site. In the foreground, there is a concrete area with a manhole cover. To the right, there is a green shed labeled 'STP PUMP SHED'. The background shows a gravel area, some trees, and a cloudy sky.</p>




Photo #	Comment	Photo
P-64	Topic – Water MIA STP EPL Monitoring Point	
P-65	Topic – Meteorology LCO weather station	
P-66	Topic – Meteorology LCO weather station	




Photo #	Comment	Photo
P-67	Topic – Water HRSTS monitoring point	
P-68	Topic – Water HRSTS monitoring point	
P-69	Topic – Water HRSTS monitoring point	




Photo #	Comment	Photo
P-70	Topic – Water CHPP STP irrigation area	
P-71	Topic – General View of the CHPP and ROM coal stockpile area. No stockpiles were present at the time of the audit	
P-72	Topic – Chemical Management Chemicals adequately banded at CHPP	




Photo #	Comment	Photo
P-73	Topic – Chemical Management Spill kits present at CHPP	 A photograph showing industrial equipment at a facility. In the foreground, there are two yellow spill kits and a blue and white traffic cone. Behind them is a large green cylindrical tank with a label that reads "TK-201 FLOCCULANT POWDER HOPPER". The tank also has "SNF AUSTRALIA" written on it. The background shows more industrial structures and pipes.
P-74	Topic – General CHPP train loading facility	 A photograph of a train loading facility. A paved road leads towards a large green cylindrical silo structure supported by a metal frame. The area is surrounded by trees and a clear blue sky. A fence is visible on the right side of the road.
P-75	Topic – General CHPP train loading facility – water sprays present	 A close-up photograph of the structural steel framework of the train loading facility. The image shows a complex network of green-painted steel beams and supports. A metal staircase is visible, and there are various pipes and mechanical components. The sky is blue with some clouds.

Photo #	Comment	Photo
P-76	Topic – General CHPP train loading facility – coal spillage and water capture sump	 A photograph showing a large, rectangular concrete water capture sump. The sump is situated next to a set of railway tracks. The ground around the sump appears to be a mix of concrete and gravel, with some dark spots that could be coal spillage. The background shows some greenery and a cloudy sky.
P-77	Topic – General CHPP stockpiles	 A photograph of a large industrial facility, likely a coal processing plant. In the foreground, there are several large, dark piles of coal. A long, elevated conveyor belt system is visible, extending from the right side of the frame towards the coal piles. The sky is blue with scattered white clouds.
P-78	Topic – General CHPP Control Room	 A photograph of a control room. A person wearing an orange shirt is partially visible on the left side of the frame. The desk is equipped with several computer monitors. The largest monitor in the center displays a live video feed of a dirt road winding through a wooded area. Other monitors show various data dashboards and graphs. The room has a window with white blinds on the right.

Photo #	Comment	Photo
P-79	Topic – General CHPP Control Room	
P-80	Topic – Water CHPP STP	
P-81	Topic – Water CHPP dam	





Photo #	Comment	Photo
P-82	Topic – Visual Amenity Visual bund present from public road	
P-83	Topic – Visual Amenity Visual bund present from public road	
P-84	Topic – Visual Amenity Shade cloth in place to obscure mining area from road	

Photo #	Comment	Photo
P-85	Topic – Visual Amenity Shade cloth in place to obscure mining area from road	 A photograph showing a stone wall in the foreground with a sign that reads "LIDDELL COAL OPERATIONS". Behind the wall is a wooden fence and a large green shade cloth covering a mining area. There are trees and a blue sky with clouds in the background.

Appendix D Agency and Community Consultation

AREQ0024842

Ms Kate Michelmore
AECOM
Level 21
420 George Street
Sydney NSW 2000
By email: Kate.Michelmore@aecom.com

Dear Ms Michelmore

Subject: Liddell Coal Operations – Independent Environmental Audit

Thank you for your email dated 24 January 2022 requesting consultation on the independent audit to be undertaken of the Liddell Coal Operations which is covered by the following mining leases:

- CCL708 (1973)
- ML1552 (1992)
- ML1313 (1992)
- ML1597 (1992)

The Resources Regulator requires that the following issues be addressed in independent environmental audits undertaken in accordance with a planning consent condition.

- Review relevant mining leases and exploration licences as agreed with Resources Regulator.
- Undertake an assessment of compliance against the conditions of title related to environmental management.
- Verify that there is a current Mining Operations Plan (MOP) in place and it has been approved by the Regulator – review compliance against any conditions of approval of the MOP.
- Undertake a critical review of the MOP, including an assessment of its compatibility with the description of operations contained in the planning approval. In particular:
 - Review the rehabilitation strategy as outlined in the MOP to determine if it is consistent with the Project Approval in terms of progressive rehabilitation schedule; and proposed final land use(s).
 - Review the rehabilitation objectives and completion criteria as outlined in the MOP to determine if they have been developed in accordance with the proposed final land use(s) as outlined in the Project Approval.

- Review the development and implementation of any rehabilitation monitoring programs to assess performance against the nominated objectives and completion criteria – verified by reviewing monitoring reports and rehabilitation inspection records.
- Determine if a rehabilitation care and maintenance program has been developed and implemented based on the outcomes of monitoring program – verified by reviewing Annual Rehabilitation Programs or similar documentation.
- Confirm that mining operations are being conducted in accordance with the approved MOP (production, mining sequence etc.), including within the designated MOP approval boundary – to be verified by site plans and site inspection.
- Confirm that rehabilitation progress is consistent with the approved MOP as verified by site plans and a site inspection. This should include an evaluation against rehabilitation targets and whether the final landform is being developed in accordance with conceptual final landform in the Project Approval.
- Based on a visual inspection, determine if there are any rehabilitation areas that appear to have failed or that have incurred an issue that may result in a delay in achieving the successful rehabilitation outcomes.

In addition to the above, the audit should note observations where rehabilitation procedures, practices and outcomes represent best industry practice.

It would be appreciated if a copy of the final audit report could be sent to the Regulator at nswresourcesregulator@service-now.com upon completion of the audit.

Yours sincerely

Jenny Ehmsen
Principal Compliance Auditor

28 January 2022



Our ref: DOC22/47276-1

Ms Kate Michelmore

Endorsed IEA Lead Auditor
Senior Environmental Scientist, ANZ NAC
AECOM Australia Pty Ltd
kate.michelmore@aecom.com

Dear Ms Michelmore

Liddell Coal Mine (DA 305-11-01) – Independent Environmental Audit

I refer to your e-mail dated 24 January 2022 in which the AECOM Pty Ltd requested feedback from Biodiversity and Conservation Division (BCD) in relation to any key issues to focus on for the forthcoming Independent Environmental Audit for the Liddell Coal Mine (DA 305-11-01).

BCD have reviewed the consent conditions and the 2019 Independent Environmental Audit Report. From this review BCD recommend that during the forthcoming audit that particular focus is given to how the following consent conditions have been met:

- Schedule 3, Condition 27 'Long Term Security of Offsets'
Has this condition been met? According to the 2019 Independent Environmental Audit Report Conservation Agreements were in progress in September 2018.
- Schedule 3, Condition 28 'Waterbird Habitat'
Has this consent condition been triggered? If so, has this condition been met?
- Schedule 3, Condition 38 'Progressive Rehabilitation'
Has this condition been met?

If you have any further questions in relation to this matter, please contact Robert Gibson, Senior Regional Biodiversity Conservation Officer, on 4927 3154 or via email at huntercentralcoast@environment.nsw.gov.au

Yours sincerely

STEVEN CRICK
Senior Team Leader Planning
Hunter Central Coast Branch
Biodiversity and Conservation Division

4 February 2022

Michelmore, Kate

From: Theresa Folpp <Theresa.Folpp@muswellbrook.nsw.gov.au>
Sent: Monday, 7 February 2022 9:03 AM
To: Michelmore, Kate
Subject: [EXTERNAL] RE: Liddell Coal Operations Pty Ltd Independent Environmental Audit - Council Agency Consultation Request
Attachments: compliance-priorities-outcomes-constructing%2C-operating-and-decommissioning-tailings-storage-facilities.pdf
Follow Up Flag: Follow up
Flag Status: Flagged

Hi Kate,

Apologies for the late reply.

Thank you for the opportunity to provide input to the IEA for the Liddell Mine. In this regard, please find Council staff feedback/key issues below.

Mountain Block Slope Stability

The Mountain Block area is situated to the north of the site and when mining ceased in 2003 a remnant highwall remained that was approximately 120 m high and 450 m long with slopes between 35 and 45 degrees. Several slips and failures of the historic highwall have occurred since ~2003. A geotechnical monitoring program was established in 2015 to inform a remediation strategy to address the slip areas, and in 2019, Modification 7 (MOD7) was approved to facilitate the required remediation works (hereby referred to as the Mountain Block MOD7 Area). The Mountain Block Remediation Project works commenced early 2020 and were completed November 2020. Activities included:

- Bulk shaping;
- Soil amelioration;
- Rock drain construction;
- Revegetation;
- Surface erosion protection;
- Follow up maintenance; and
- Establishment of ongoing monitoring program

The status of rehabilitation of the Mountain Block MOD7 Area is discussed in the 2020 Annual Review which states “Initial strike by cover crop at the time of seeding. Monitoring program to continue to determine success and development of ameliorated soil and vegetation. Monitoring and inspections to date give appearance to the slope being stable with no major rills or erosion developing with recent rainfall. It is expected that the area will change significantly as it develops over the first 3 years.”

Council staff are particularly interested in the performance of rehabilitation work completed in the **Mountain Block MOD7 Area** to date and the planning carried out in respect of future rehabilitation work necessary to address rehabilitation requirements of the project approval. Council wishes to ensure that both the planned and implemented mine-site rehabilitation is meeting its requirements, conforms with industry best standards and will be effective in achieving final rehabilitation outcomes. In this regard, please review/provide the following information as part of the audit:

- Whether management and monitoring measures outlined in Table 8 of the ‘Environmental Assessment Modification 7 to DA 305-11-01’ (Hansen Bailey,2018) (MOD7 EA) have been addressed;
- Whether MOD7 EA commitments have been addressed i.e employees completed a cultural heritage induction prior to commencing work; and whether a nest box has been established within the neighbouring offset for every hollow bearing tree disturbed as part of MOD7;
- A description of pest and weed control works (including timing and frequency);

- A description of follow up maintenance undertaken;
- A description of the monitoring program i.e. timing, frequency and monitoring aspect. Please include whether Triggers Action Response Plans (TARPs) have been developed. It is expected that the monitoring program/TARPs would include a review of the following aspects (at least):
 - Ground failure;
 - Exposed sodic soils;
 - Vegetation cover; and
 - Erosion from surface water.
- It is the understanding of Council staff that the Mountain Block MOD7 Area is managed under the provisions of the Biodiversity Management Plan (BMP) until monitoring confirms rehabilitation is a success, after which, the provisions of the Biodiversity Offset Management Plan provision will apply. Could you please confirm the status of revegetation and stabilisation and timing for when the Mountain Block MOD7 Area is expected to be managed under the provisions of the BOMP. Noting:
 - Table 3-13 of the BOMP states that in Year 6 “if remediation and revegetation has been completed, the Modification 7 Area transferred back under management of BOMP”. Year 6 is described as Aug 2020 – Aug 2021
 - Section 5 of the BMP describes the monitoring program and shows the closest monitoring location to the Mountain Block MOD7 Area is the “Mountain Block Dam” which monitors waterbirds only. It is unclear how the Mountain Block MOD7 Area itself is being monitored (i.e floristic monitoring, fauna monitoring, soil analysis, stygofauna monitoring)

Other areas of focus

- As mining operations under DA 305-11-01 will cease in December 2028, Council staff are particularly interested in the status of Closure activities. Specifically, a review of mine closure preparedness would be beneficial. Additionally, an outline of how the site will be managed once mining operations have ceased, e.g management plan updates and/or consolidation (if any) and appropriate water licencing for final landform.
- Please pay particular attention to Schedule 3 Condition 5 of DA 305-11-01.
- Majority of the land in the Muswellbrook LGA has a proposed final land use of “grassland-rehabilitation area”. As some of this land may be used for cattle grazing, it is expected that it would be required to have appropriate fencing as well as contain sufficient water resources for stock. Please confirm if this is being considered in the closure planning process.
- Confirm that proponent has considered the key finding (Table 3) of the Resources Regulator Compliance Priorities Outcomes (attached) for the Reservoir West and Durham Tailings Emplacements.

Regards,
Theresa



Muswellbrook Shire Council | Theresa Folpp | Development Compliance Officer | Administration Building

T: (02) 6549 3700 | **E:** Theresa.Folpp@muswellbrook.nsw.gov.au | **W:** www.muswellbrook.nsw.gov.au

Please consider the environment before printing this email

From: Michelmore, Kate <Kate.Michelmore@aecom.com>

Sent: Monday, 24 January 2022 11:57 AM

To: Muswellbrook Shire Council <council@muswellbrook.nsw.gov.au>

Subject: RE: Liddell Coal Operations Pty Ltd Independent Environmental Audit - Council Agency Consultation Request

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Independent Environmental Audit Liddell Coal Mine – REQUEST FOR FEEDBACK PRIOR TO AUDIT SITE INSPECTION
Regulatory Agency – Muswellbrook Shire Council

Good Morning,

AECOM Australia Pty Ltd (AECOM) has been endorsed by the Department of Planning, Industry and Environment (the Department) to conduct the 2022 Independent Environmental Audit (IEA) of **Liddell Coal Mine** (the Site) as required by Schedule 5, Condition 4 of the Site's development consent DA 305-11-01, as modified (the consent).

The IEA is to be conducted in accordance with the conditions of the consent, and the Department's *Independent Audit Guideline* ([October 2015](#)). As part of the IEA process we are required to contact each of the key agencies with a role in regulating the Site, to obtain feedback and identify any key issues the audit should focus on, within the audit scope.

To assist with preparation of the IEA site inspection I would appreciate if you could provide any feedback or key issues you may wish to identify which relate to the environmental performance and management of the Site. The IEA period will be from 7 February 2019 to 8 February 2022 and will assess compliance against the conditions from the Sites consent (DA 305-11-01), EPL 2094, Mining Leases and Water Licences. In addition the IEA will review and assess the adequacy of all strategies, programs and plans required under the Consent.

The audit team will be on site to conduct the audit site inspection between the 8 – 11 February 2022. As such, I would appreciate any feedback or information to please be provided prior to the commencement of the audit site inspection on **8 February 2022**.

Please note that a summary of any feedback received will be made public in the IEA report. In addition, copies of all correspondence from regulators will be provided to the Department with the submission of the IEA report.

If you wish to discuss this matter, please contact myself at kate.michelmore@aecom.com or on 0402 156 250.

Kind regards,

Kate Michelmore
Endorsed IEA Lead Auditor
Senior Environmental Scientist, ANZ NAC
M +61 402 156 250
kate.michelmore@aecom.com

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Muswellbrook Shire Council ABN 86 864 180 944

Michelmore, Kate

From: Nathan O'Brien <Nathan.O'Brien@awe.gov.au>
Sent: Monday, 7 February 2022 5:57 PM
To: Michelmore, Kate
Cc: Thomas Long
Subject: [EXTERNAL] FW: Liddell Coal Operations Pty Ltd Independent Environmental Audit - DAWE Agency Consultation Request [SEC=OFFICIAL]

Importance: Low

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Kate

Thank you for providing the Department of Agriculture, Water and the Environment with the opportunity to provide feedback into the proposed independent environmental audit of the Liddell Coal Mine. The department does have a concern relating to the implementation of the Liddell Coal Operations Water management Plan. I hope our feedback is not too late considering your inspection is tomorrow.

The department is seeking clarification of the cause of repeated groundwater trigger exceedances which are required to be reported by the Liddell Coal Operations Water Management Plan. In particular, the department is seeking information to enable it to determine if continued groundwater trigger exceedances are the result of mining activity or another cause.

A report authored by Glencore, dated December 2021, states that groundwater trigger exceedances are the result of climatic conditions rather than mining activity. This reiterates information that has been included in earlier reports by the approval holder. Furthermore, the approval holder has concluded that, since triggers have been a result of dry climatic conditions or do not result in environmental harm, mitigation measures are not required and do not appear to have been implemented.

However, the Commonwealth Office of Water Science (OWS) notified the department in 2020 that the water exceedances are possibly attributable to mining activity. While OWS concluded that although monitoring results may be partially influenced by recent drought conditions in the area, results indicate that this may not be the only cause. OWS is of the view that trigger exceedances are, at least in part, due to mine operation and, as such mitigation measures should be implemented.

The department is seeking to clarify the above in order to ensure that the approval holder is compliant with the conditions of approval for EPBC 2013/6908.

The department would also like to ensure that the following is being collected in a manner that ensures confidence in the data.

- all ground and surface water monitoring data associated with this EPBC Approval, including for control/reference sites. This includes baseline data and data collected since the project reporting commenced.
- details of any groundwater extractions undertaken for this approved project. This includes baseline data and data collected since the project reporting commenced.
- a log of all water trigger exceedances, and the associated investigation reports. All data collected since the project reporting commenced.

If you would further information regarding the above, please don't hesitate to contact the department at EPBCMonitoring@awe.gov.au.

Nathan O'Brien

Assistant Director | Environmental Audit Section (Compliance Monitoring)
02 6275 9682 | 0403 563 800
Environment Compliance Branch | Compliance Division
Department of Agriculture, Water and the Environment
7 London Circuit, Canberra City, Canberra ACT

Postal address: PO Box 858 Canberra City ACT 2601 Australia
awe.gov.au

awe.gov.au | <http://www.environment.gov.au/protection>



From: Michelmores, Kate <Kate.Michelmores@aecom.com>
Sent: Monday, 24 January 2022 11:47 AM
To: Post Approval <PostApproval@environment.gov.au>
Subject: FW: Liddell Coal Operations Pty Ltd Independent Environmental Audit - DAWE Agency Consultation Request

Independent Environmental Audit Liddell Coal Mine – REQUEST FOR FEEDBACK PRIOR TO **AUDIT SITE INSPECTION**
Regulatory Agency – Department Agriculture, Water and Environment

Good Morning Daniel,

AECOM Australia Pty Ltd (AECOM) has been endorsed by the Department of Planning, Industry and Environment (the Department) to conduct the 2022 Independent Environmental Audit (IEA) of **Liddell Coal Mine** (the Site) as required by Schedule 5, Condition 4 of the Site's development consent DA 305-11-01, as modified (the consent).

The IEA is to be conducted in accordance with the conditions of the consent, and the Department's *Independent Audit Guideline* ([October 2015](#)). As part of the IEA process we are required to contact each of the key agencies with a role in regulating the Site, to obtain feedback and identify any key issues the audit should focus on, within the audit scope.

To assist with preparation of the IEA site inspection I would appreciate if you could provide any feedback or key issues you may wish to identify which relate to the environmental performance and management of the Site. The IEA period will be from 7 February 2019 to 8 February 2022 and will assess compliance against the conditions from the Sites consent (DA 305-11-01), EPL 2094, Mining Leases and Water Licences. In addition the IEA will review and assess the adequacy of all strategies, programs and plans required under the Consent.

The audit team will be on site to conduct the audit site inspection between the 8 – 11 February 2022. As such, I would appreciate any feedback or information to please be provided prior to the commencement of the audit site inspection on **8 February 2022**.

Please note that a summary of any feedback received will be made public in the IEA report. In addition, copies of all correspondence from regulators will be provided to the Department with the submission of the IEA report.

If you wish to discuss this matter, please contact myself at kate.michelmores@aecom.com or on 0402 156 250.

Kind regards,

Kate Michelmores
Endorsed IEA Lead Auditor

Senior Environmental Scientist, ANZ NAC
M +61 402 156 250
kate.micheltmore@aecom.com

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Michelmore, Kate

From: Michelmore, Kate
Sent: Monday, 7 February 2022 3:14 PM
To: jlecky@ozemail.com.au
Subject: RE: [EXTERNAL] RE: Liddell Coal Operations Pty Ltd Independent Environmental Audit - CCC Consultation Request

Follow Up Flag: Follow up
Flag Status: Flagged

Good afternoon Jennifer,

Thank you for your response to my email sent on the 24th January 2022. Were there any areas of particular interest you would like to bring to my attention prior to the site inspection commencing tomorrow?

Thank you,

Kate Michelmore

Senior Environmental Scientist, ANZ NAC
M +61 402 156 250
kate.michelmore@aecom.com

Please note I do not work Fridays at this time.

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From: jlecky@ozemail.com.au <jlecky@ozemail.com.au>
Sent: Monday, 24 January 2022 2:21 PM
To: Michelmore, Kate <Kate.Michelmore@aecom.com>
Subject: [EXTERNAL] RE: Liddell Coal Operations Pty Ltd Independent Environmental Audit - CCC Consultation Request

Good afternoon, Kate

I am happy to spend some time over the audit with you. I have served more than 20 years on coal consultative committees and have to say I consider this team on of the most responsible rehab teams in the Hunter. Looking forward to meeting with you.

Regards
Jennifer Lecky

From: Michelmores, Kate <Kate.Michelmores@aecom.com>

Sent: 24 January 2022 11:59 AM

To: jlecky@ozemail.com.au

Subject: RE: Liddell Coal Operations Pty Ltd Independent Environmental Audit - CCC Consultation Request

Independent Environmental Audit Liddell Coal Mine – REQUEST FOR FEEDBACK PRIOR TO AUDIT SITE INSPECTION

Good Morning Jennifer,

AECOM Australia Pty Ltd (AECOM) has been endorsed by the Department of Planning, Industry and Environment (the Department) to conduct the 2022 Independent Environmental Audit (IEA) of **Liddell Coal Mine** (the Site) as required by Schedule 5, Condition 4 of the Site's development consent DA 305-11-01, as modified (the consent).

The IEA is to be conducted in accordance with the conditions of the consent, and the Department's *Independent Audit Guideline* ([October 2015](#)). As part of the IEA process we are required to consult with the chair of the mines community consultative committee (CCC), to obtain feedback and identify any key issues the audit should focus on, within the audit scope.

To assist with preparation of the IEA site inspection I would appreciate if you could provide any feedback or key issues you may wish to identify which relate to the environmental performance and management of the Site. The IEA period will be from 7 February 2019 to 8 February 2022 and will assess compliance against the conditions from the Sites consent (DA 305-11-01), EPL 2094, Mining Leases and Water Licences. In addition the IEA will review and assess the adequacy of all strategies, programs and plans required under the Consent.

The audit team will be on site to conduct the audit site inspection between the 8 – 11 February 2022. As such, I would appreciate any feedback or information to please be provided prior to the commencement of the audit site inspection on **8 February 2022**.

Please note that a summary of any feedback received will be made public in the IEA report. In addition, copies of all correspondence from regulators will be provided to the Department with the submission of the IEA report.

If you wish to discuss this matter, please contact myself at kate.michelmores@aecom.com or on 0402 156 250.

Kind regards,

Kate Michelmores

Endorsed IEA Lead Auditor

Senior Environmental Scientist, ANZ NAC

M +61 402 156 250

kate.michelmores@aecom.com

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Appendix E Audit Plan

Title	AECOM Audit Plan – Independent Environmental Audit
Client Details	Ben de Somer Mobile: +61 427 936 734 Email: ben.desomer@glencore.com.au
AECOM Project Manager and Lead Auditor	Kate Michelmores Mobile: +61 402 156 250 Email: kate.michelmores@aecom.com
Auditee	Liddell Coal Operations Pty Ltd
Site Inspection Location	Old New England Highway, Ravensworth, NSW 2330
Audit Inspection Date	8 – 11 February 2022
Enclosures	Audit Site Inspection Schedule

Audit Information

Objective:

Conduct an independent environmental audit (IEA) of the Liddell Coal Operations in accordance with Schedule 5 Conditions 4 and 5 of DA 305-11-01.

Scope

The IEA will be conducted in accordance with Schedule 5, Conditions 4 and 5 of DA 305-11-01, Australia/New Zealand ISO 19011:2014 Guidelines for auditing management systems and the DPIE's Independent Audit Guideline (October 2015).

The IEA will include a focus on assessing the environmental performance of the project, and its effects on the surrounding environment (Schedule 5, Condition 4(c) of DA 305-11-01), the adequacy of plans (including management plans) (Schedule 5, Condition 4(e) of DA 305-11-01), and will recommend measures or actions to improve the environmental performance of the project or any plan (Schedule 5, Condition 4(f) of DA 305-11-01).

The IEA will include subject matter specialists in the following areas:

- Noise management
- Water (groundwater and surface water) management; and
- Mine rehabilitation and closure

Audit Key Milestones:

- Site Inspection: **8-11 February 2022**
- Draft Audit Report: **11 March 2022** (4 weeks after completion of the audit site inspection)
- Final Audit Report: **25 March 2022** (assuming 1 week of review time by Liddell)

Safety:

Additional safety measures are required for site work due to COVID-19 (note – changes to these measures may occur and will be communicated to the audit team as required). This includes the following:

- Audit Team to sign a health declaration at entry to site
- Density limits in meeting rooms and social distancing of 1.5m to be adhered to.
- Masks to be worn in indoor areas in line with NSW Health requirements
- When driving, no more than 2 persons permitted in a vehicle where the trip is >15 minutes long in duration. No more than 4 persons per vehicle when the trip is <15 minutes long in duration.

In addition the audit is to be conducted in accordance with the controls listed in the AECOM Project Specific SWMS.

Site Inspection Team:

- Kate Michelmores (Lead Auditor)
- Shani Walton (Auditor)
- Amanda Kerr (Surface Water)
- Patrick Martinez (Noise)
- Helen Vickers (Mine Rehabilitation and Closure) – via video link
- Sian Cox (Groundwater)

Resources Required:

- Meeting Room with power outlets
- Basic workplace facilities (tea/coffee making facilities, water, bathrooms etc.)
- Access to relevant staff for interviews/guidance during the site inspection.

Audit Site inspection Schedule

Time	Action	AECOM Personnel		
DAY 1: Tuesday 8 February 2022				
8:00am	Auditors travelling to site	Kate Michelmore Shani Walton		
8:30am				
9:00am				
9:30am				
10:00am	Audit Team Arrive on site (sign in / induction / COVID-19 declaration)			
10:30am	Audit Opening Meeting	Kate Michelmore Shani Walton Audit Team Specialists (via video link)		
11:00am	Review of 2019 IEA Recommendations	Kate Michelmore Shani Walton		
11:30am	Development Consent Review – Schedule 2 Administrative Conditions	Kate Michelmore Shani Walton		
12:00pm				
12:30pm	Lunch Break			
1:00pm	Site Inspection – Biodiversity and Rehabilitation areas	Kate Michelmore Shani Walton		
1:30pm				
2:00pm				
2:30pm	1. Targeted topic Review – Rehabilitation, mine closure & MOP	2. Development Consent Review – Schedule 4 Additional Procedures & Schedule 5 Environmental Management, Auditing & Reporting	1. Kate Michelmore Helen Vickers (via video link)	2. Shani Walton
3:00pm				
3:30pm				
4:00pm				
4:30pm	Daily close out meeting and summary of outstanding RFIs	Kate Michelmore Shani Walton		
5:00pm	Auditors depart site			
DAY 2: Wednesday 9 February 2022				
8:00am	Audit Team Arrive on site	Kate Michelmore Shani Walton Amanda Kerr Sian Cox		
8:30am	Overview of surface and groundwater management on site (Discuss surface and groundwater trigger exceedance reporting)	Kate Michelmore Shani Walton Amanda Kerr Sian Cox		
9:00am	1. Site Inspection – Surface and Groundwater applicable locations	2. Targeted topic review – Air Quality / Met	1. Amanda Kerr Sian Cox Shani Walton (if permitted)	2. Kate Michelmore
9:30am				
10:00am				
10:30am				
11:00am	1. Targeted topic Review – Water Management	2. Targeted topic review – Traffic / Visual Impact / Waste / Bushfire Mgmt	1. Amanda Kerr Sian Cox Shani Walton	2. Kate Michelmore
11:30am				


Audit Site inspection Schedule			
Time	Action		AECOM Personnel
12:00pm	Lunch Break		
12:30pm	1. Targeted topic Review – Water Management Continued.	2. Targeted topic review – Biodiversity & Heritage	1. Amanda Kerr Sian Cox Shani Walton (if permitted)
1:00pm			
1:30pm			
2:30pm			
3:00pm			
3:30pm			
4:30pm	Daily close out meeting and summary of outstanding RFIs – Auditors Depart Site 2:15pm		Amanda Kerr Sian Cox
5:00pm	Auditors depart site		Shani Walton Kate Michelmores
DAY 3: Thursday 10 February 2022			
8:00am	Auditors arrive onsite		Kate Michelmores Shani Walton
8:30am	Review of Mining Lease Conditions		
9:00am			
9:30am	Review of EA Commitments		
10:00am			
10:30am	Noise Specialist arrives on site – Induction and COVID-19 declaration		Patrick Martinez
11:00am	Targeted topic Review – Noise		Kate Michelmores
11:30am			Shani Walton
12:00pm			Patrick Martinez
12:30pm	Lunch Break		
1:00pm	Site Inspection – Noise monitoring locations	Review remaining EPL Conditions	Patrick Martinez Kate Michelmores
1:30pm			
2:00pm			
2:30pm	Audit close out for noise specialist then noise specialist departs site by 3pm.		Patrick Martinez
3:00pm	Review Effluent Treatment Licences and Water Licence conditions		Kate Michelmores Shani Walton
3:30pm			
4:00pm			
4:30pm	Daily close out meeting and summary of outstanding RFIs		
5:00pm	Auditors depart site		
DAY 4: Friday 11 February 2022			
8:00am	Auditors arrive onsite		
8:30am	Auditors conduct review of collected information		Kate Michelmores Shani Walton
9:00am			
9:30am			
10:00am			
10:30am			

Audit Site inspection Schedule

Time	Action	AECOM Personnel
11:00am	Site Inspection – Maintenance Area / Workshop / Wash Down Bay / Oil Water Separator / Water Treatment Area	
11:30am	Final evidence collection with Liddell E&C Team	
12:00pm	Lunch	
12:30pm	Review of outstanding RFIs	
1:00pm	Preparation for audit closing meeting	Kate Michelmore Shani Walton
1:30pm		
2:00pm		
2:30pm	Audit Closing Meeting	
3:00pm	Auditors depart site	
3:30pm	Auditors travel back to Sydney	
4:00pm		
4:30pm		
5:00pm		

Appendix F Independent Audit Declaration Form

Independent Audit Certification Form

Independent Audit Certification Form	
Development Name	Liddell Coal Mine
Development Consent No.	DA 305-11-01
Description of Development	Continued open cut mining at Liddell Colliery and associated surface facilities and infrastructure
Development Address	Old Highway, Liddell NSW 2333
Operator	Liddell Coal Operations Pty Ltd, a wholly owned subsidiary of Glencore Coal Assets Australia
Operator Address	Level 44, Gateway, 1 Macquarie Place, Sydney NSW 2000
Independent Audit	
Title of Audit	Liddell IEA 2022
<p><i>I certify that I have undertaken the independent audit and prepared the contents of the attached independent audit report and to the best of my knowledge:</i></p> <ul style="list-style-type: none"> <i>The audit has been undertaken in accordance with relevant approval condition(s) and in accordance with the auditing standard AS/NZS ISO 19011:2014 and Post Approval Guidelines – Independent Audits</i> <i>The findings of the audit are reported truthfully, accurately and completely;</i> <i>I have exercised due diligence and professional judgement in conducting the audit;</i> <i>I have acted professionally, in an unbiased manner and did not allow undue influence to limit or over-ride objectivity in conducting the audit;</i> <i>I am not related to any owner or operator of the development as an employer, business partner, employee, sharing a common employer, having a contractual arrangement outside the audit, spouse, partner, sibling, parent, or child;</i> <i>I do not have any pecuniary interest in the audited development, including where there is a reasonable likelihood or expectation of financial gain or loss to me or to a person to whom I am closely related (i.e. immediate family);</i> <i>Neither I nor my employer have provided consultancy services for the audited development that were subject to this audit except as otherwise declared to the lead regulator prior to the audit; and</i> <i>I have not accepted, nor intend to accept any inducement, commission, gift or any other benefit (apart from fair payment) from any owner or operator of the development, their employees or any interested party. I have not knowingly allowed, nor intend to allow my colleagues to do so.</i> <p>Note.</p> <p>a) <i>The Independent Audit is an 'environmental audit' for the purposes of section 122B(2) of the Environmental Planning and Assessment Act 1979. Section 122E provides that a person must not include false or misleading information (or provide information for inclusion in) an audit report produced to the Minister in connection with an environmental audit if the person knows that the information is false or misleading in a material respect. The maximum penalty is, in the case of a corporation, \$1 million and for an individual, \$250,000.</i></p> <p>b) <i>The Crimes Act 1900 contains other offences relating to false and misleading information: section 192G (Intention to defraud by false or misleading statement—maximum penalty 5 years imprisonment); sections 307A, 307B and 307C (False or misleading applications/information/documents—maximum penalty 2 years imprisonment or \$22,000, or both).</i></p>	
Signature	
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Auditor Certification (if relevant)	Exemplar Global Certifications; Principal Auditor – Environment, Lead Auditor – OHS
Date	20 April 2022

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