

LIDDELL

GLENCORE

Environmental Management Strategy

Number: LIDOC-90533967-797
Owner: Environment & Community Officer

Status: Approved
Version: 13.0

Effective: 19/03/2021
Review: 19/03/2022

Uncontrolled unless viewed on the intranet

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1. Commitment and Policy

This Environmental Management Strategy (the Strategy) provides the strategic context for the environmental management of Liddell Coal Operations (LCO) and the framework from which the Environmental Management System is implemented. This Strategy forms part of the broader Health Safety, Environment and Community (HSEC) management system at LCO. This Strategy outlines how LCO manages environment and community aspects, impacts and performance. It provides a framework for the standards, plans and procedures implemented to ensure operations are managed in accordance with the Glencore Coal Assets Australia (GCAA) **GCAA-625378177-9978 11.0 Environment Standard**, and with particular focus on the general principles of **International Standard ISO:14001 (Environmental Management Systems)** and all relevant licences and approvals held by LCO. In adopting the ISO:14001 principles, LCO has also adopted the “Plan-Do-Check-Act” model as shown in Figure 1-1. This model has been applied to all the aspects of the EMS, to embed the continuous improvement process in all system documents.

The objectives of this EMS are:

- To provide an overall framework for environmental management at LCO utilising the principles of ISO14001;
- To integrate the requirements of the **GCAA-625378177-10524 HSEC Management System Framework** and **GCAA 11.0 Environment Standard** into a LCO specific environmental management document;
- To ensure compliance with the LCO development consent and other relevant licences and approvals;
- To detail the relationship and interactions between various operational and environmental components of LCO;
- To provide effective mechanisms for external communications, in particular maintaining a relationship with the local community; and
- To assist LCO personnel and contractors in administering their responsibilities regarding environmental management.

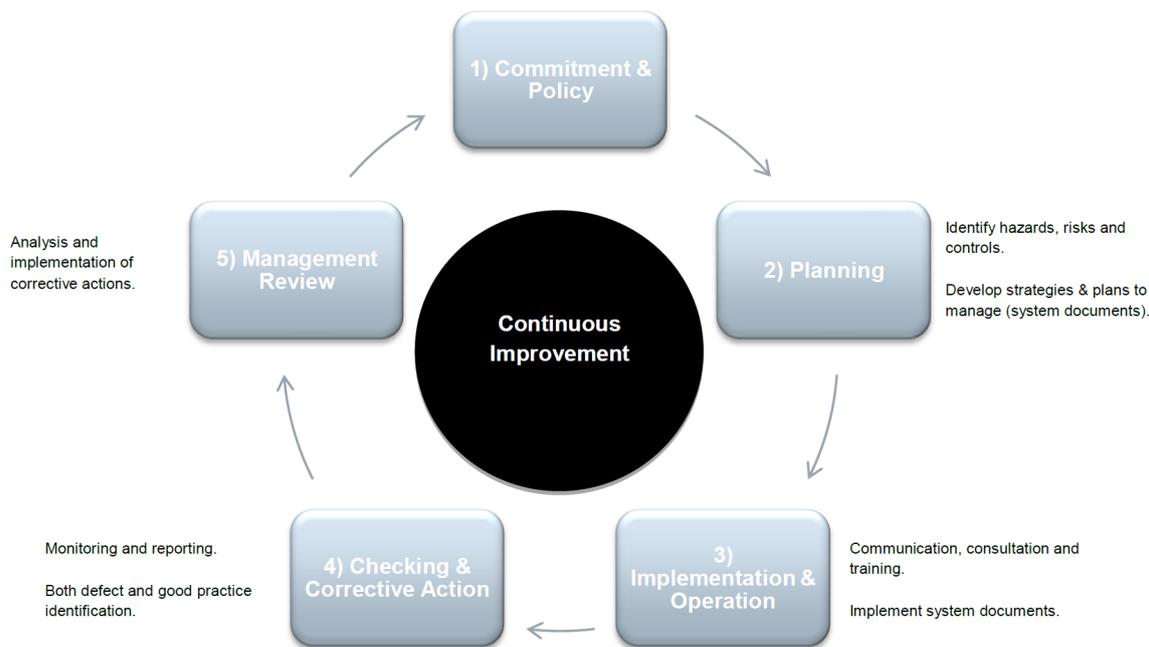


Figure 1-1 - Environmental Management System model adapted from ISO 14001:2004

2. Scope

LCO is an open cut coal mine located approximately 25 kilometres north-west of Singleton, NSW (Figure 2-1). LCO is operated by Liddell Coal Operations Pty Ltd on behalf of the Liddell Joint Venture between GCAA and Mitsui Matsushima Australia Pty Ltd (MMA). Mining operations at LCO are approved until December 2028, with production of up to 8 million tonnes per annum (Mtpa) run-of-mine (ROM) coal from its open cut operations. Mining at LCO has been in continuous operation since the 1950s, during which time a number of underground and open cut coal mining operations have been developed on and under the site, subject to a number of mining leases and development consents. LCO operates under NSW development consent (DA 305-11-01), Federal Environment Protection and Biodiversity Conservation Act 1999 approval (EPBC 2013/6908) and Environmental Protection Licence (EPL No. 2094) administered under the Protection of the Environment Operations Act 1997. Seven modifications have been granted to LCO development consent (DA 305-11-01) since its issue in 2002 with the most recent being in February 2019. Approximately 370 people are employed at LCO. The mine plays a significant role as a leading employer in the hunter coalfields, and endeavours to provide a safe work environment which incorporates best practice environmental management into a culture of continuous improvement and sustainable development. This EMS applies to all aspects associated with the mining operation at LCO including offset areas and buffer lands.

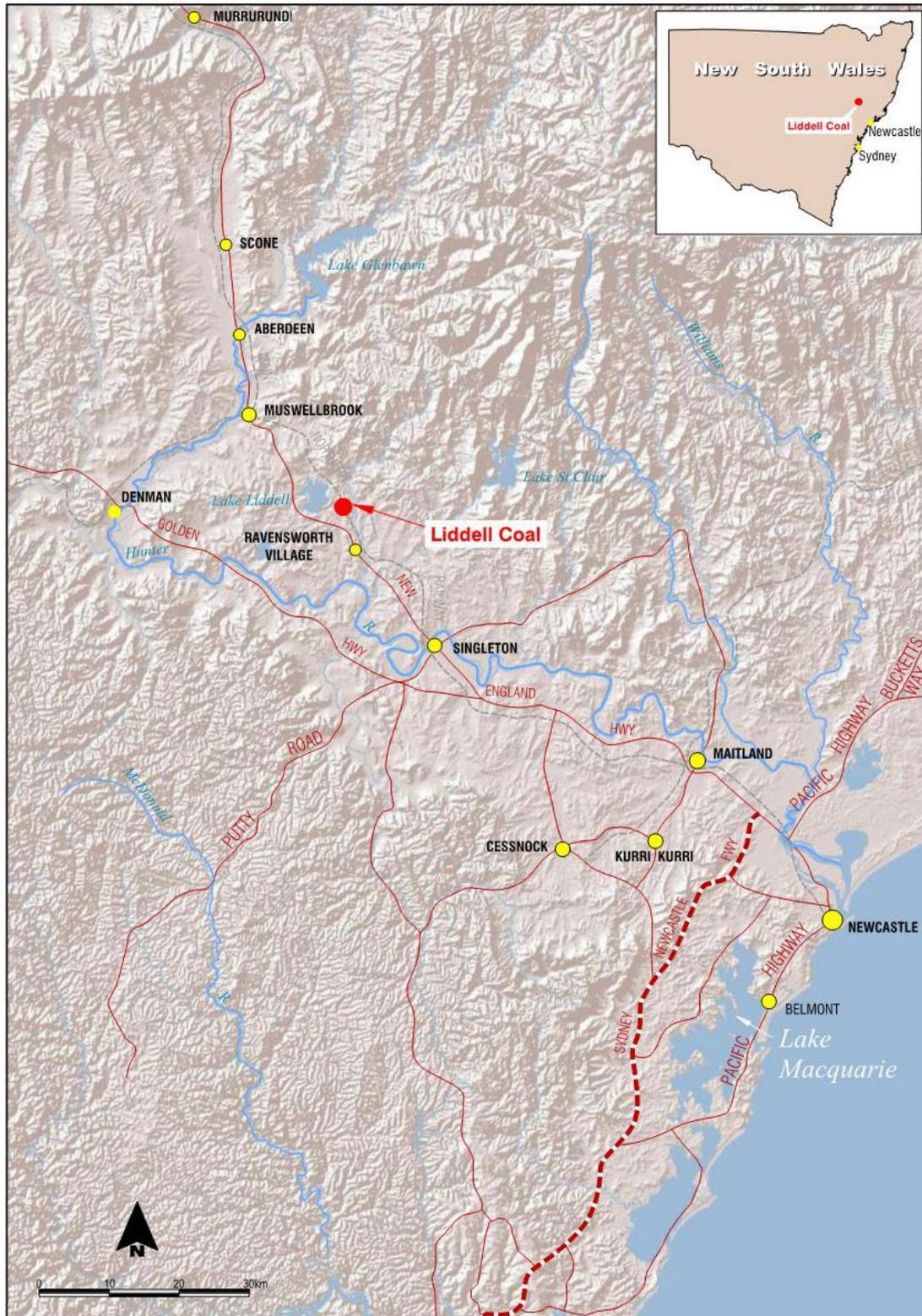


Figure 2-1 - Locality Plan

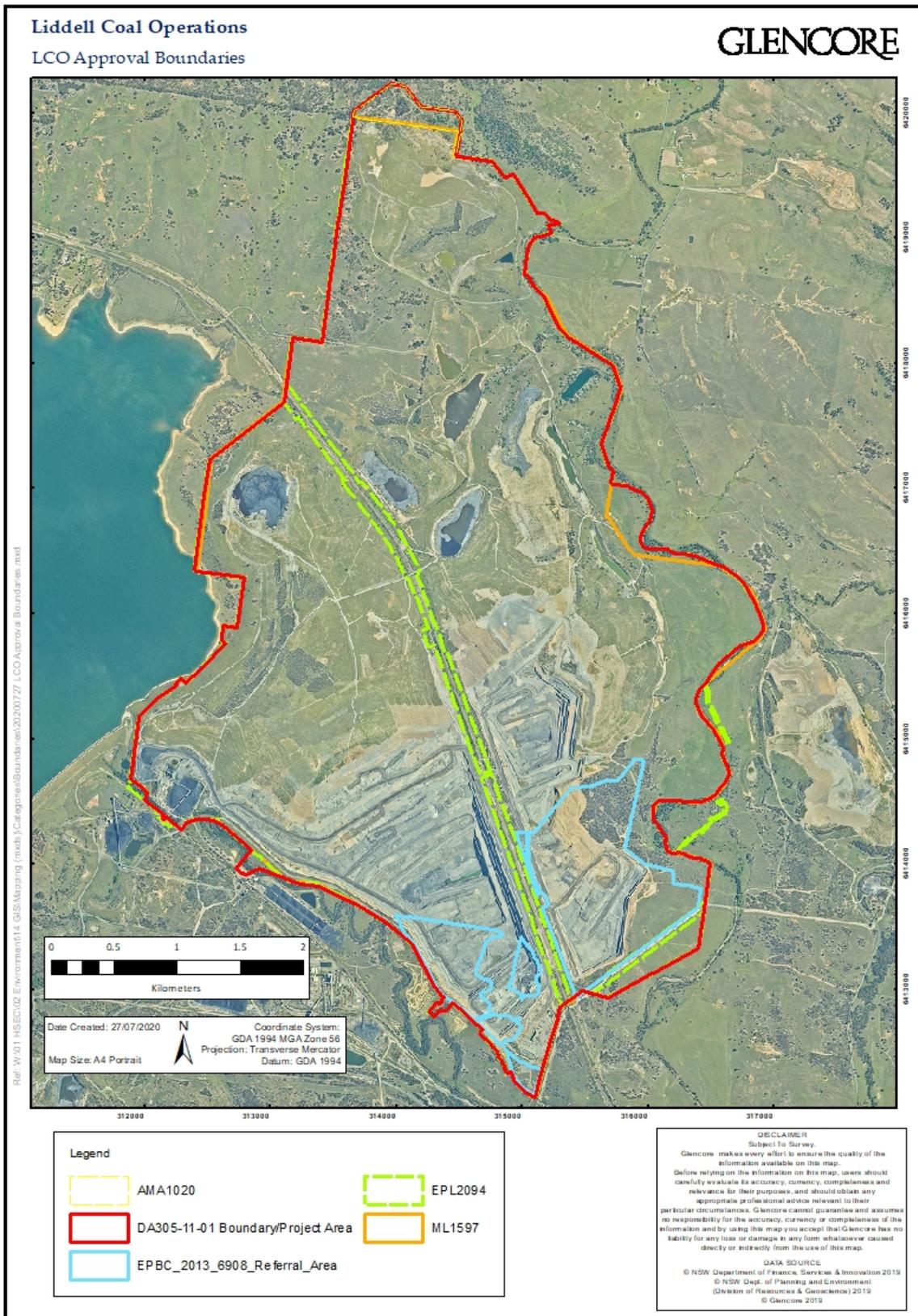


Figure 2-2 – Boundary Plan

3. Strategy and Planning

Annual planning is undertaken in accordance with *GCA-625378177-9987 2.0 Strategy and Planning*. The annual risk management planning and budgeting process implemented for LCO is summarised in Figure 3-1.

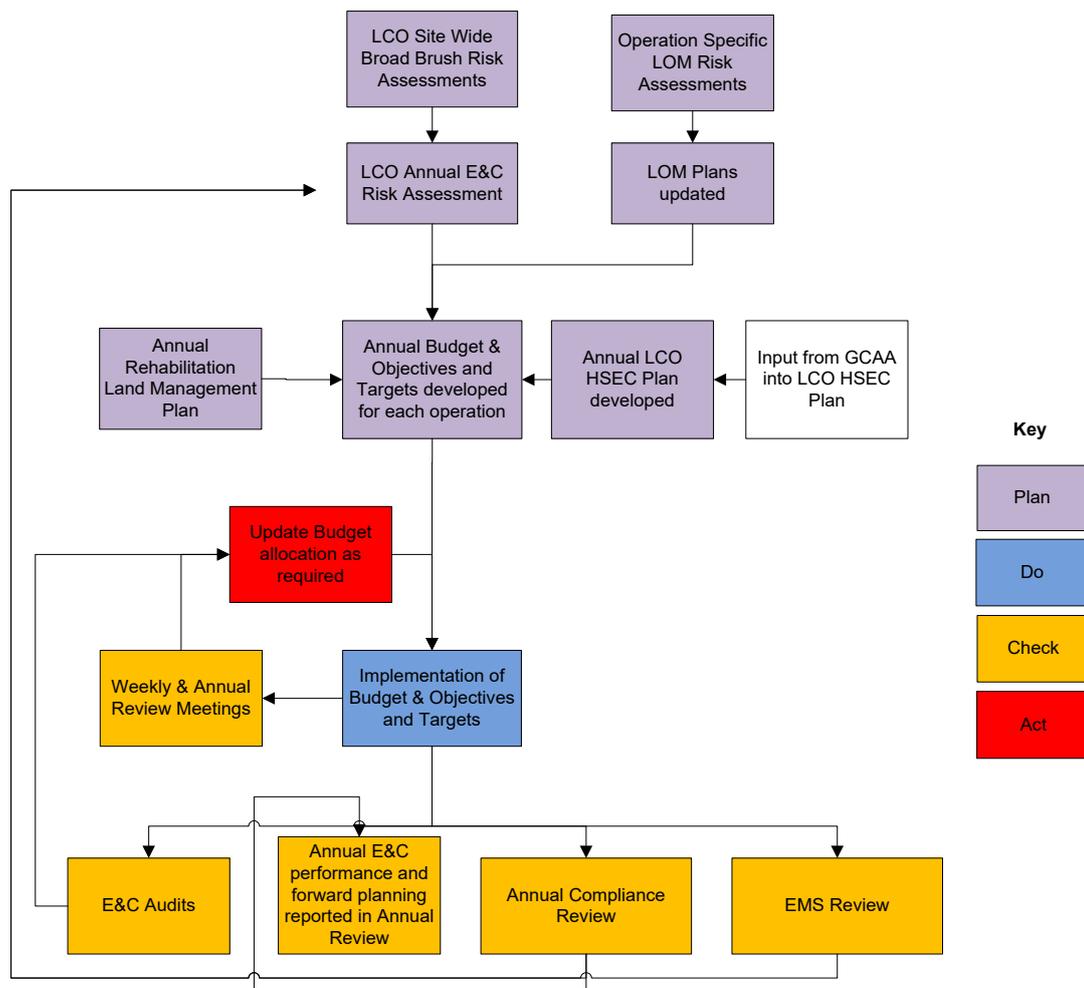


Figure 3-1 - Annual E&C Planning Process

Annual HSEC Plan objectives are incorporated into the site annual budget. Objectives and targets are specific, measurable and achievement of targets will generally demonstrate continuous improvement in environment and community management. Targets and specific improvement projects are often linked to an LCO employees individual performance review process as component of GCAA’s performance appraisal and development system (XPAD). The LCO Annual EC Plan also incorporates the objectives and targets set by the GCAA Annual HSEC Plan.

The annual management review of environment and community issues and performance provides the operation with a detailed understanding of key environmental aspects and impacts prior to participating in the LCO Annual E&C Risk Assessment. The annual management review meeting considers the following factors:

- Outcomes from monitoring and review activities;

- internal and external environmental inspections, assessments and audit reports addressing: operational, specialist, functional, management system, legal compliance and stakeholder requirements; or other external commitments;
- HSEC incident reports and investigation findings;
- performance data, trends and reports including the extent to which targets and objectives have been met;
- inputs and views of external stakeholders, including complaints;
- status of corrective and preventative actions;
- outcomes from previous management reviews; and
- Government policies and regulation, socio-economic or political developments and new scientific findings and technological developments.

Following the annual management review HSEC strategies, plans, process, objectives and targets are to be updated as part of the annual planning process. Actions and minutes from the meeting are recorded in LCO's compliance management database CMO and progress is reviewed throughout the year.

A more detailed review of each operation's objectives and targets and compliance status is undertaken on a weekly basis at HSEC meetings. These meetings provide a more comprehensive assessment of the status of projects, actions, objectives and targets listed for environment and community work schedule. The meeting is held with the LCO HSEC management team (or representatives).

3.1 Baseline Environmental Studies

Several baseline environmental studies have been conducted at LCO during application for development consent or for modifications to the existing consent. The major studies completed are listed below:

Study	Year
Liddell Colliery Continued Operations Environmental Impact Statement	2001
Environmental Assessment for Liddell Colliery Modifications to Development Consent	2006
Statement of Environmental Effects for Liddell Colliery Modification to Development Consent	2008
Liddell Coal Operations – Modification to DA 305-11-01 Environmental Assessment	2013
Greater Ravensworth Area Tailings Pipeline Modification Environmental Assessment	2015
Liddell Coal Operations – Environmental Assessment Modification 7 to DA305-11-01t	2018

Table 3-1 – Baseline environmental studies

Numerous minor studies are conducted for developing management plans, as required under licence conditions, depending on whether the aspects have been adequately addressed by the initial assessments.

These baseline studies together with the conditions of licences form the core of LCO's environmental compliance management.

3.2 Rehabilitation Planning

LCO undertake Annual Rehabilitation Planning in accordance with the LCO Rehabilitation Management Plan (commonly known as the Mining Operations Plan) and in accordance with **GCAA-625378117-10241 11.16 Rehabilitation Management**. LCO prepares an Annual Rehabilitation and Closure Plan (ARCP) for the following year which commences as part of the annual budget cycle. Budget information is then incorporated into the ARCP, which is approved by GCAA.

The ARCP will be consistent with the objectives as documented in the Mining Operations Plan (MOP) and Life of Mine Plan (LOM) targets and address any requirements of LCO specific approvals.

3.3 Project Management

All projects are managed to consider HSEC requirements generally in accordance **GCAA-625378177-13514 Statutory Approval Management**, in conjunction **LIDOC-90533967-1805: Life Cycle Management - Projects & Operations** and **LIDOC-90533967-1084: Change Management Standard**. Environmental impacts of projects are assessed during the planning phases to consider environmental criteria, legislative requirements and stakeholder views.

3.4 Risk and Change Management

Aspects and impacts at LCO are considered for operational activities, legislative requirements and internal and external stakeholder views. Key aspects and impacts are identified during the annual review of the LCO Annual Environment and Community Risk Assessment (Annual E&C Risk Assessment) and the Life of Mine (LOM) Risk Assessment. The Annual E&C Risk Assessment is undertaken in accordance with **GCAA-625378177-10317 Annual Environment and Community Risk Assessment**.

The purpose of the Annual E&C Risk Assessment is to identify significant environment and community aspects and impacts across the complex, the risk they pose to operations and the controls necessary to effectively manage them. These aspect and impacts identified at LCO will also consider any relevant GCAA targets. Management of impacts is prioritised according to the level of risk each aspect is assigned. Once all identified aspects, impacts, risks and management controls have been identified, within the Annual E&C Risk Assessment, any changes are documented and managed in accordance with **LIDOC-90533967-1084: Change Management Standard**.

The LOM Risk Assessment considers aspects and impacts of business activities at a strategic level. These risk assessments cover the life of mine risks associated with each operation. The need for any new (or modifications to existing) approvals is also identified during this process. The outcomes of the LOM Risk Assessment are used in conjunction with the LCO Annual E&C Risk Assessment to develop each operation's annual budget and work schedule.

LCO implements a site specific risk management procedure that has been developed to comply with **GCAA-625378177-10524 - HSEC Management System Framework** as well as **GCAA-625378177-2844- Risk Management**.

The site specific risk assessments are undertaken in accordance with **LIDOC-90533967-1083: Risk Management Standard**.

3.5 Catastrophic Hazards

The systematic identification, assessment and management of foreseeable catastrophic (core) hazards is undertaken utilising **GCAA-625378177-2844 - Risk Management Standard**.

This process includes:

- Identifying foreseeable hazards associated with operations at LCO;
- Assessing HSEC risks using recognised analysis and evaluation methodologies; and
- Implementing controls necessary to eliminate or reduce identified catastrophic (core) risks in accordance with the established hierarchy of controls for environmental management.

LCO maintains a *Catastrophic Hazard Register*. The register includes nominated control measures to manage foreseeable catastrophic (core) hazards and is reviewed annually as part of the Site BBRA process. The Catastrophic Hazard Register includes hazards that could result in:

- Multiple fatalities;
- Irreversible, severe environmental damage; or
- A health or community issue that causes significant long-term harm.

The adopted HSEC catastrophic hazard risk management process is summarised in the following process diagram:

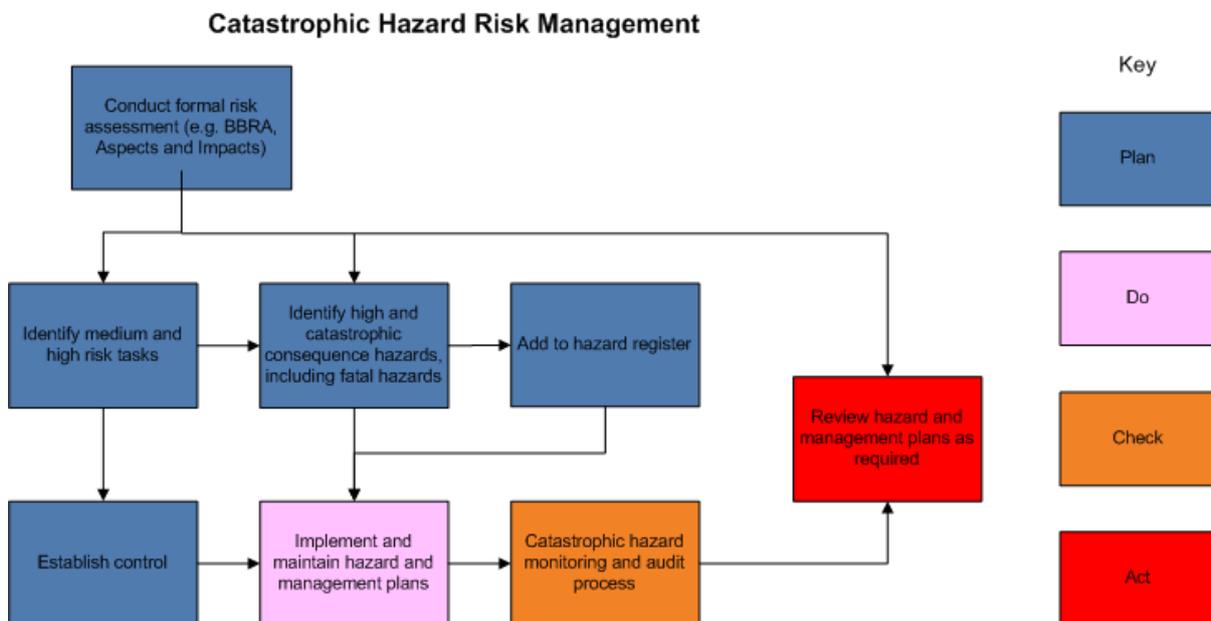


Figure 3-2 – Catastrophic Hazard Risk Management

3.6 Exploration and Drilling

Exploration and drilling activities at LCO is undertaken in accordance with **GCAA-625378177-10237 11.09 Exploration and Drilling**. As specified by this annexure, each operation develops procedures specific to individual drilling programs to manage health, safety, environment and community issues.

To assist with planning for these drilling programs, LCO Environment and Community personnel undertake inspections prior to, during and post drilling, to ensure works are undertaken in a safe manner and adequate controls are in place to minimise impacts on the environment and the community. LCO adopts the following GCAA drilling inspections and permits:

- **CAA HSEC PER 0015 - Surface Drilling Permit;**
- **GCAA-625378177-10184 - During Exploration Drilling Inspection;**
- **GCAA-625378177 - Post Exploration Drilling Inspection.**

Drilling inspections are held by the person responsible for undertaking the drilling program and returned to the Environment and Community Department upon completion of the program (including rehabilitation of drill sites).

3.7 Mine Closure

The LCO Conceptual Mine Closure Plan has been developed in accordance with **GCAA-625378177-10325 Mine Closure Planning**. The objectives of the Plan are to align with GCAA's HSEC objectives, meet statutory requirements, provide a sustainable post-mining land use and achieve successful relinquishment of security bonds.

There are a number of statutory requirements under both State and Federal legislation which apply to the operations of the Project. LCO will apply to the relevant regulators for all required approvals and licences. Key required approvals and licences are provided below:

3.8 Legislation & Regulatory Requirements

Compliance management at LCO is undertaken in accordance with **CAA HSEC PCL 0020 Environmental Compliance Management** and **GCAA-625378177-9980 Assurance** and **GCAA-625378177-9989 Documents and Records**. LCO maintains awareness to changes to standards, codes or legislation in the following ways:

- a) Receipt of regular updates from legal advisers;
- b) Participation in industry groups, such as the NSW Minerals Council and Minerals Council Australia;
- c) Notification from the GCAA General Manager Environment & Community and support team;
- d) Access to legislation via the internet;

The requirement to provide training to personnel and contractors is assessed on an as required basis, following the Environment and Community Department becoming aware of a change. Training is further discussed in Section 4.11.

LCO follows a specific approvals and compliance process to ensure that all approvals required for the continuity of the operations are obtained within the required time frame and the compliance with these approvals is maintained. LCO has adopted the CMO Compliance Management database system to store and maintain compliance with development consents, leases, licences, and other approvals. CMO is updated regularly as triggered by actions or the addition of new or modified approvals.

In the event that LCO required a new major approval, the approval is obtained in accordance with **GCAA-625378177-13514 Statutory Approval Management**. The requirement to modify or obtain additional government approvals is identified during the annual planning and risk assessment process. The following diagram summarises the compliance management process followed at LCO.

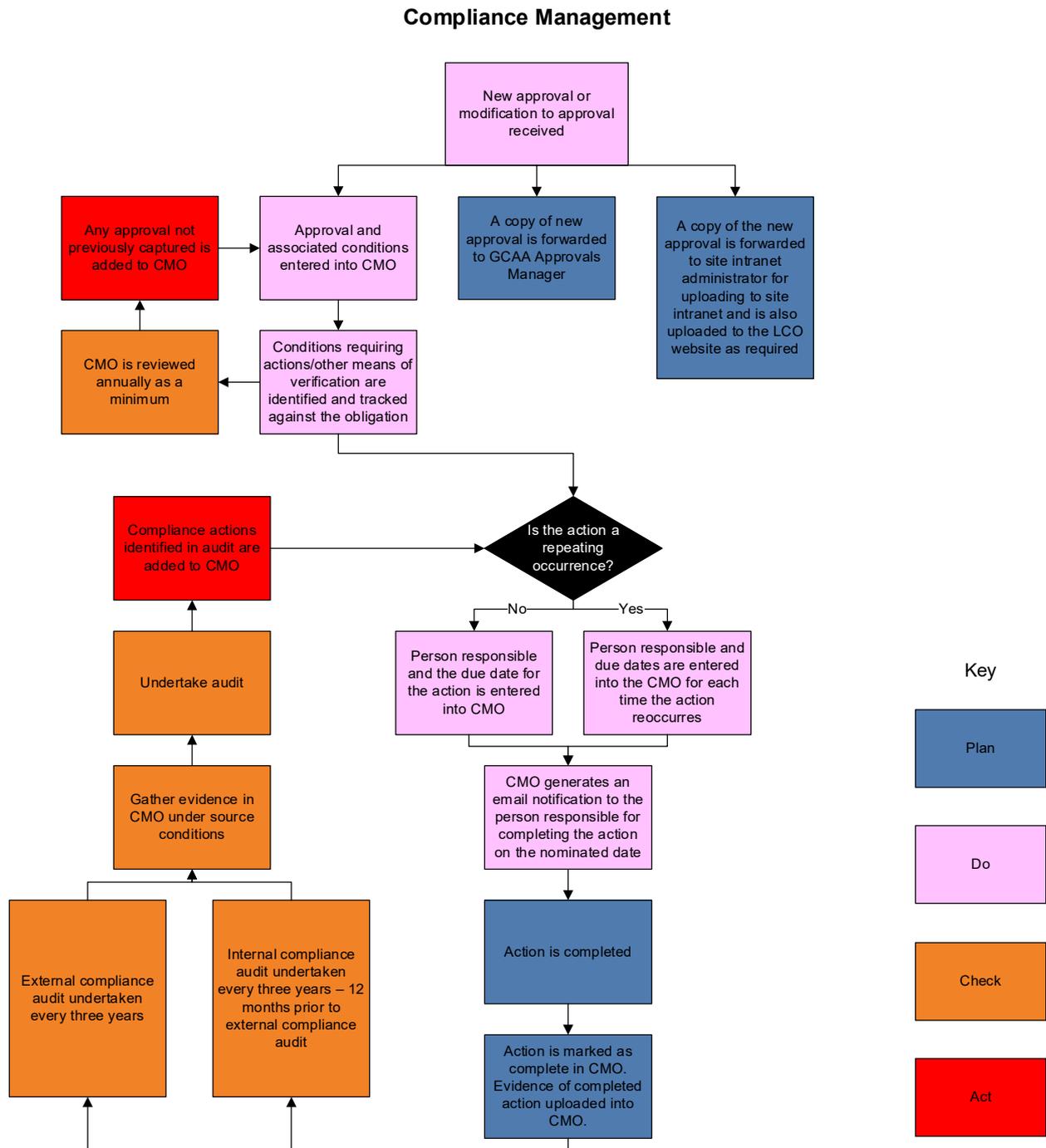


Figure 3-3 – Compliance Management

The development and implementation of this strategy is required by Schedule 5, Condition 1 of the LCO Development Consent DA 305-11-01 (as modified). Details of development consent conditions specifically relating to the strategy and where they are addressed within the document are provided in Table 3-2.

Development Consent Condition – DA305-11-01 Schedule 5	Relevant Section
<p>Environmental Management Strategy</p> <p>The Applicant must prepare an Environmental Management Strategy for the development to the satisfaction of the Secretary. This strategy must:</p>	Entire Document
Provide the strategic context for environmental management of the development;	Section 3
Identify the statutory requirements that apply to the development;	Section 3.8 and 3.9
Describe in general how the environmental performance of the development would be monitored and managed;	Section 3.1 and 5
<p>Describe the procedures that would be implemented to:</p> <p>Keep the local community and relevant agencies informed about the operation and environmental performance of the development;</p> <p>Receive, handle, respond to, and record complaints;</p> <p>Resolve any disputes that may arise during the course of the development;</p> <p>Respond to any non-compliance;</p> <p>Manage cumulative impacts; and</p> <p>Respond to emergencies.</p>	<p>Section 4.7</p> <p>Section 4.9</p> <p>Section 4.10</p> <p>Section 5</p> <p>Section 4.5</p> <p>Section 4.12</p>
Describe the role, responsibility, authority and accountability of the key personnel involved in the environmental management of the development.	Section 7
<p>Include:</p> <p>Copies of various strategies, plans, programs that are required under the conditions of this consent once they have been approved; and</p> <p>A clear plan depicting all the monitoring to be carried out in relation to the development.</p>	Website links provided in Appendices A-H

Table 3-2 – Development Consent Conditions relating to the Strategy

All development consents, leases, licences and other approvals held by LCO are stored in the CMO Compliance Management database, which is administered by both site and GCAA. A summary of the statutory approvals held by LCO is provided in Tables 3-3 – 3-5.

Approval	Purpose	Date Granted	Expiry Date
EPBC 2013/6908	Approval for controlled action under the EPBC Act in accordance with Modification 5 (DA 305-11-01)	24/12/2014	31/12/2044
DA 305-11-01	Continued open cut coal mining at the Liddell Colliery and associated surface facilities and infrastructure	Current Modification 7 granted 12 February 2019	31/12/2028

Table 3-3 – Development Approvals

Approval	Purpose	Date Granted	Expiry Date
CCL 708 (Act 1973)	Mining Entitlement	05/12/2007	05/11/2028
ML 1313 (Act 1992)	Mining Entitlement	16/02/2009	13/10/2023
ML 1597 (Act 1992)	Mining Entitlement	5/11/2007	5/11/2028
ML 1552 (Act 1992)	Mining Entitlement	20/09/2011	10/03/2025

Table 3-4 – Mining Tenements

Approval	Purpose	Date Granted	Expiry Date
Mining Operations Plan 2018 – 2022	Mining operations at LCO	Nov 2017	1 December 2020
Environment Protection Licence 2094	Premise and Scheduled Activity (Coal Mining/Washery)	June 2015	No expiry
20WA200742 (WAL7815)	Industrial	1st July 2004	21 January 2029
20CA210976 (WAL18320)	Irrigation	1 st August 2009	31 July 2022
20WA210983 (WAL18306)	Industrial (coal mining).	1 st August 2009	31 July 2022

Approval	Purpose	Date Granted	Expiry Date
20CA210974 (WAL18304)	Irrigation	1 st August 2009	31 July 2022
20CA210989 (WAL18318)	Irrigation	1 st August 2009	31 July 2022
20WA120940	Water Supply Works - Bore	1 st August 2009	31 July 2029
20CA210955 (WAL18302)	Irrigation	1 st August 2009	31 July 2029
20BL168065	Monitoring	28/5/2002	In perpetuity
20BL168060 (WAL39760)	Industrial	14 December 2016	Continuing
20BL168061 (WAL41497)	Industrial	19 March 2018	Continuing
20BL168062 (WAL41498)	Industrial	18 April 2018	Continuing
20BL168063 (WAL41499)	Industrial	18 April 2018	Continuing
20BL168064	Monitoring	27/5/2002	In perpetuity
20BL168053	Monitoring	23/3/2001	In perpetuity
20BL168209 (WAL41493)	Dewatering	19 March 2018	Continuing
20BL172293 (linked to 20BL168209 & WAL41493)	Dewatering	19 March 2018	Continuing
20BL172588 (linked to 20BL168062 & WAL41498)	Dewatering	18 April 2019	Continuing
OSM 3916 2008	Permit to Operate Aerated Wastewater Treatment System (MIA)	01/07/2020	30/06/2021

Approval	Purpose	Date Granted	Expiry Date
WTA 2 2006	Permit to Operate Aerated Wastewater Treatment System (CHPP)	16/05/2014	23/04/2021

Table 3-5 – Licences and other Approvals

There are a number of statutory requirements under both State and Federal legislation which apply to the operations of the Project. LCO will apply to the relevant regulators for all required approvals and licences. Key required approvals and licences are provided below:

3.8.1 Environmental Planning and Assessment Act 1979

The Project Approval DA305-11-01 was granted with conditions by the Minister for Planning in 2002 under the Environmental Planning and Assessment Act 1979. Seven modifications to this consent have since been granted, with the most recent (Modification 7) approved in February 2019.

The Project Approval is the determination of the development application pursuant to section 76(A) 9 and 80 and lists the conditions associated with the development. Conditions include environmental management and monitoring requirements for the project. The EMS is a condition of the Project Approval and specific requirements of the EMS are detailed in Section 3.14 of this plan.

3.8.2 Mining Act 1992

The Mining Act 1992 prohibits the carrying out of prospecting or mining activities in NSW with the necessary authority. There are several types of authorities granted under this Act namely the Exploration Licence (EL), the Assessment Lease (AL), Mining Purposes Lease (MPL) and Mining Lease (ML). The ML for an open cut coal mining operation is generally granted with conditions for 21 years and allows the holder to carry out operations in accordance with the site MOP. The preparation and submission of an Annual Environmental Management Report (AEMR) is a condition of the ML.

LCO's mining tenements are managed in accordance with **GCAA-625378177-10470 11.24 Mining Tenement Management**. This Protocol document provides guidance on corporate governance processes required to be undertaken when applying for a tenement, the appropriate storage of tenements, the renewal of tenements and the relinquishment of tenements.

Guidance is also provided in **GCAA-625378177-1028111.25 Native Title Process for Exploration and Mining Leases** with information for Native Title requirements and process best applicable to the various mine development phases for exploration through to mining activities.

3.8.3 Protection of the Environment Operations Act 1997

The primary purpose of the Protection of the Environment Operations Act (POEO Act) is pollution prevention, waste management and minimisation, licencing of premises and activities with environmental risks and enforcement provisions following environmental offences.

The POEO Act provides a licencing regime where the site is licenced by an Environment Pollution Licence (EPL) issued by the EPA. LCO holds EPL2094, which contains conditions for the environmental management of the operation.

3.8.4 Environmental Planning and Assessment Regulation 2000

The Environmental Planning and Assessment Regulation 2000 provides further detail on the procedures for lodging and advertising project applications (Part 3A) and development applications, requirements for Local Environment Plan (LEPs) and DCPs, determination of development contributions to be paid by the proponent of a development, preparation of an Environment Impact Study (EIS), timeframes for the completion of Development Application (DA) and major project application assessments, public participation in the planning and approval process and certification requirements for construction and occupation of new developments.

3.8.5 Heritage Act 1977

The Heritage Act specifies how items of State or Local Heritage significance (Heritage Agreement Part 3B) are managed. An application for approval to carry out work on items listed under S57 (S58) is required and permits are required before disturbance of heritage items (S139).

3.8.6 National Parks and Wildlife Act 1974

The National Parks and Wildlife Act specifies that mining is not allowed in National Parks and the NSW Minister's consent is required to mine in a State Conservation Area. A permit to disturb aboriginal objects (S87) is a requirement of this Act. Under the Act, a Section 120 licence is required to harm protected fauna. A person must not destroy an aboriginal object or place (Schedule 3 (2)).

3.8.7 Threatened Species Conservation Act 1995

A licence is required to harm or pick threatened species, populations or ecological communities or damage habitat (Part 6). This may require the submission of a species impact statement (S95). A Biodiversity Offset Strategy may also be required to mitigate the possible impacts on threatened species.

3.8.8 Water Management Act 2000

Water licences are a requirement of this Act (Chapter 2 Part 2) for surface and groundwater use and groundwater interception.

3.8.9 Environment Protection and Biodiversity Conservation Act 1999

Under the EPBC Act, approval of the Commonwealth Minister for the Environment Heritage Water and the Arts is required for any action that may have a significant impact on matters of national environmental significance. The relevant provision of this legislation related to potential impacts on migratory species, threatened species, or ecological communities and water resources/triggers listed in the EPBC Act.

Concurrent with the DA Modification 5 approval, LCO also received EPBC Approval 2013/6908 on the 24 December 2014, subject to conditions.

3.8.10 Road Act 1993

The Road Act contains requirements for upgrade works on local roads including the requirement to obtain permission from the local Council and Roads & Maritime Services.

3.9 Statutory Authorities

The Statutory authorities relevant to operations at LCO include, but are not limited to:

- Department of Agriculture Water and the Environment (DAWE)
- NSW Department of Planning, Infrastructure and Environment (DPIE);
- NSW Department of Planning and Environment – Resources Regulator (RR);
- NSW Department of Planning and Environment – Division of Resources and Geoscience (DRG);
- NSW DPIE Biodiversity and Conservation Division (BCD);
- NSW Environment Protection Authority (EPA);
- NSW Department of Industry – Water (DPI-Water);
- NSW Department of Industry – Natural Resources Access Regulator (NRAR);
- NSW Department of Premier and Cabinet – Heritage NSW;
- Dams Safety NSW;
- Singleton Council;
- Muswellbrook Shire Council
- WorkCover New South Wales; and
- Australian Rail Track Corporation (ARTC).

4. Implementation

4.1 Roles & Responsibilities

Environment and community management is regarded as part of the responsibilities of all employees and contractors at LCO. Specific information pertaining to the role, responsibility, authority and accountability of key personnel involved in environmental management at LCO is provided in Section 7 – Accountabilities. Other specific roles and responsibilities are outlined in the environmental management plans, procedures and standards referred to in Section 4.2 – EMS Documentation.

4.2 EMS Documentation

Environmental impacts at LCO are managed through a combination of environmental procedures, forms and other documents. All environmental management plans have been developed generally in accordance with GCAA Standards and to satisfy legislative and stakeholder requirements. They have been developed to identify, analyse, evaluate and manage all significant potential and actual risks and impacts of activities and operations on the environment and the community.

A directory list of these documents is provided in Table 4-1.

Document Reference	Title
Level 1 – Framework	
LIDOC-90533967-797	Environmental Management Strategy
Level 2 – Management Plans	
LIDOC-90533967-3607	Aboriginal Cultural Heritage Management Plan
LIDOC-90533967-2800	Air Quality Management and Monitoring Plan
LIDOC-90533967-3687	Biodiversity Management Plan
LIDOC-90533967-3755	Biodiversity Offset Management Plan
LIDOC-90533967-1114	Noise Monitoring Program
LIDOC-90533967-2264	Waste Management Plan
LIDOC-90533967-2881	Rehabilitation Management Plan (Mining Operations Plan)
LIDOC-90533967-166	Stakeholder Engagement Strategy
LIDOC-90533967-2175	Pollution Incident Response Management Plan
LIDOC-90533967-3694	Water Management Plan
LIDOC-90533967-1083	Risk Management Standard
LIDOC-90533967-3636	Blast Management Strategy – Chain of Ponds Inn
LIDOC-90533967-3742	Blast Management Plan
LIDOC-90533967-3741	Blast Management Strategy – Newdell Zone Substation
LIDOC-90533967-3776	Indirect Offset Management Plan
Level 3 - Procedures	
LIDOC-90533967-3570	Waste Management Bioremediation Area
LIDOC-90533967-798	Community Complaint & Enquiry Management Procedure
LIDOC-90533967-550	Pipeline Management Procedure
LIDOC-90533967-3960	Water Transfer Offsite
LIDOC-90533967-802	Lighting Management
LIDOC-90533967-4238	Bushfire Management Procedure
LIDOC-90533967-746	Noise Management Procedure

Document Reference	Title
LIDOC-90533967-2387	Dust Management Trigger Action Response Plan
LIDOC-90533967-791	Legal Compliance Procedure
LIDOC-90533967-799	Communication and Engagement Procedure
LIDOC-90533967-4033	Environmental Reporting Procedure
LIDOC-90533967-506	Land Clearing and Topsoil Stripping
LIDOC-90533967-1811	Monthly Environmental Inspection Procedure
LIDOC-90533967-2877	Meteorological Assessment, Blast Monitoring and Reporting
LIDOC-90533967-103	Communication of Blasting Including Sensitive Areas

Table 4-1 – LCO Environmental Management System Document Directory

4.3 Energy and Carbon

LCO manages energy consumption and greenhouse gas emissions in accordance with **GCAA-625378177-13661 11.13 Emissions and Energy**. This framework outlines the energy and greenhouse gas management and reporting requirements of GCAA and accordingly LCOs requirements.

4.4 Work Permit System

LCO implements a work permit system in accordance with **GCAA-625378177-10532 Work Authorisation and Permit Management**. This system requires that all tasks undertaken by contractors are only permitted following the completion of a Work Authorisation (**GCAA-625378117-10040 Work Authorisation**). A Work Authorisation Permit incorporates a checklist of environmental hazards to be checked and controlled and a checklist of potentially hazardous work which prompts the contractor to complete any specific work permits associated with the potentially hazardous work. It is an LCO requirement that any employee undertaking or overseeing potentially hazardous work also complete the relevant work permit.

In the event that ground disturbance (potentially hazardous work) is identified during the Work Authorisation process a Ground Disturbance Permit (**CAA HSEC PER 0004 Ground Disturbance**) is required to be completed in accordance with **GCAA-625378177-10075 Ground Disturbance Permit Procedure** and **LIDOC-90533967-506 Land Clearing & Topsoil Stripping Procedure**. The Ground Disturbance Permit is a risk management tool designed to ensure the proposed works have the required environmental approval and that the person(s) undertaking the works have appropriately managed risks to minimise impacts on the environment and community. The Ground Disturbance Permit provides a checklist of environmental aspects that must be completed and approved by the E&C Department prior to the commencement of any work. Figure 4-1 on the following page provides a summary of the work permit system involving environment and community risk management for LCO.

Work Authorisations & Ground Disturbance Permits

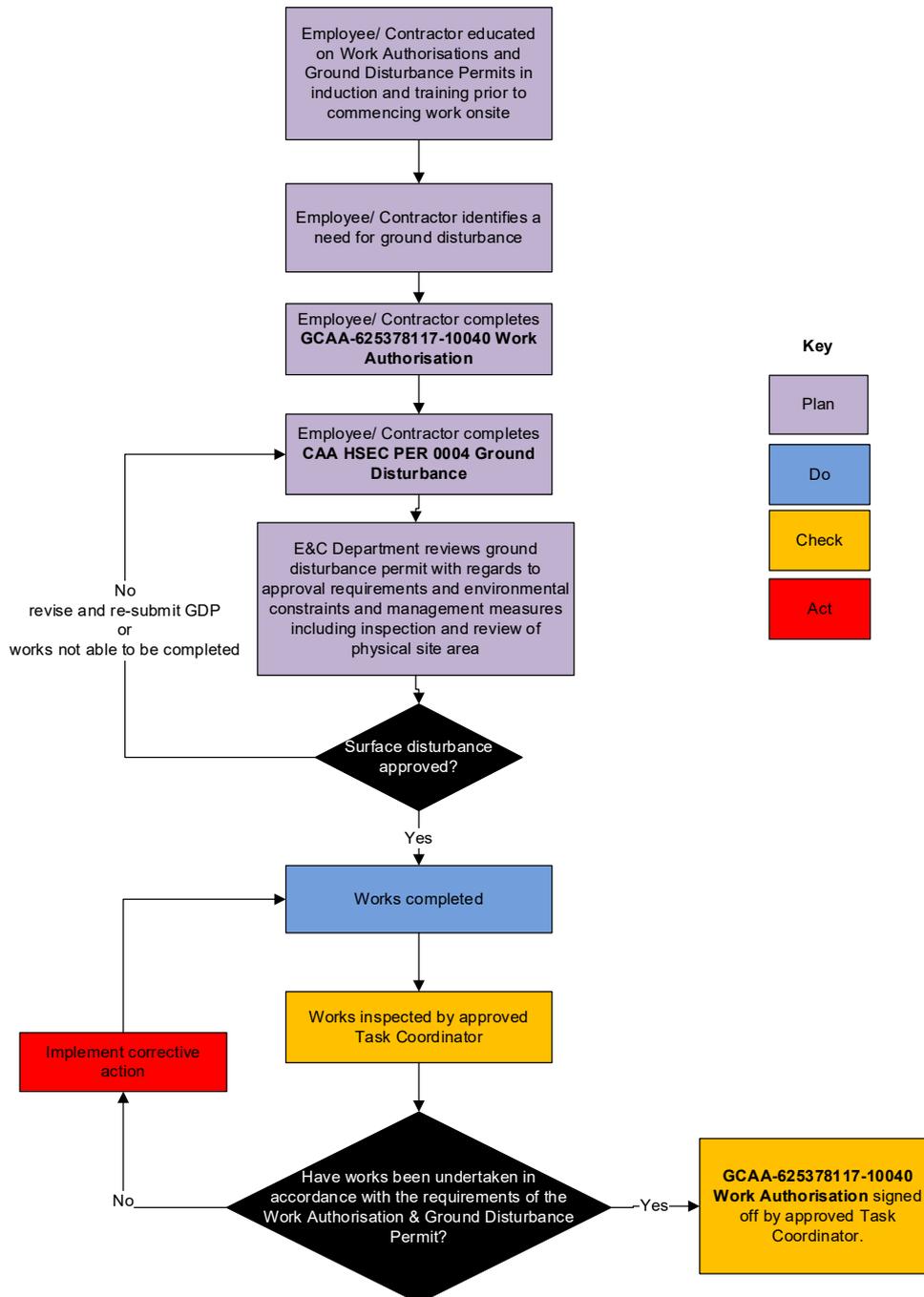


Figure 4-1 – Work Authorisations and Ground Disturbance Permits

4.5 Managing Cumulative Impacts

There is a requirement in the LCO development consent (DA 305-11-01) to consider cumulative impacts of the operation and develop management controls to minimise these impacts. Strategies for the management of cumulative impacts at LCO include:

- Liaising with neighbouring mining operations with regards to environmental management and social issues;

- Sharing environmental monitoring data with neighbouring operations (Mt Owen and Ravensworth Complex's) and reporting shared monitoring data in the LCO Annual Review;
- Engaging in a stakeholder consultation program that identifies community concerns about cumulative impacts from local mining operations.

LCO considers the concerns raised by community stakeholders during the annual planning process (refer to Section 3) to develop annual objectives and targets that consider the management of cumulative impacts accordingly.

4.6 Internal Stakeholder Communication

Internal stakeholders include employees, contractors and visitors of LCO. Internal stakeholder communication is undertaken in accordance with *GCAA-625378177-10330 10.03 Internal Communications*. This protocol has been used as a basis for developing an internal communication procedure for the operation as follows:

- *LIDOC-90533967-799: Communication and Engagement Procedure*

This procedure specifies the processes implemented for communication between employees, contractors and visitors, and cover the following:

- Methods of communication between internal stakeholders;
- Types of Information that is communicated between internal stakeholders;
- Responsibilities for communication of information to internal stakeholders;
- Review of communication methods, including the consideration of feedback from internal stakeholders.

4.7 External Stakeholder Communication

External stakeholder communication is undertaken in accordance with *GCAA-625378177-9977 10.0 Community and Stakeholder Engagement* and *GCAA-62537877-10294 10.01 Stakeholder Engagement*. These documents are used as a basis for developing the *LIDOC-90533967-166 - Stakeholder Engagement Strategy*. The Stakeholder Engagement Strategy outlines the approach and scheduling for LCO's stakeholder communication.

LCO promotes early engagement of stakeholders in order to facilitate open and honest communication with all community groups and individuals who have the potential to be affected by the operation. Stakeholder engagement is implemented throughout the project's lifecycle – from concept through to closure – so as to promote sustainable development and minimise social impacts.

The LCO Stakeholder Engagement Strategy involves the following 4 steps:

- Identification of stakeholders;
- Identification of stakeholders information requirements and timing;
- Assigning responsibility for undertaking the engagement; and
- Recording stakeholder communication in Consultation Manager.

LCO identifies stakeholders through formal and informal engagement processes including:

- EIS consultation;
- consultation strategy workshop;

- face to face consultation;
- stakeholder and consultation surveys;
- community enquiries and complaints;
- newsletter feedback; and
- Broad Brush Risk Assessments.

Key stakeholders and communication and feedback consideration methods are listed in the both the LCO Stakeholder Engagement Strategy. In addition to regulatory authorities listed in Section 3.9, other external stakeholders that have an interest in the operations of LCO include:

- Surrounding residents and/or landowners;
- Aboriginal stakeholder groups;
- Downstream water users of Bowmans and Bayswater Creeks;
- Neighbouring mining and coal transportation operations;
- Neighbouring infrastructure and services operators such as Ausgrid, ARTC and Telstra;
- Neighbouring power stations, including Liddell Power Station and Bayswater Power Station;
- Coal handling and transportation industry, including Port Waratah Coal Receiving Facility, and shipping lines;
- Suppliers; and
- Customers.

Any agreements or commitments made between LCO and external stakeholders will be recorded in Consultation Manager with actions being assigned in CMO. Actions will be reviewed weekly at weekly HSEC meetings and updated following any changes to legal or other requirements.

4.8 Contractor Management

Contractor management at LCO is undertaken in accordance with **GCAA-625378177-9991 5.0 Contractors and Suppliers**. LCO has developed a site specific contractor management procedure to systematically manage contractors, suppliers and partners to uphold GCAA requirements and other external requirements. The site specific contractor management procedure for LCO is **LIDOC-90533967-1120 - Contractor and Suppliers Management Plan**.

This management procedure describes the requirements and processes implemented at each operation for:

- Contractor pre-qualification;
- Contract preparation;
- Procurement of contractors;
- Management of contractors;
- Evaluation of contractors and contracts;
- Training and communication with contractors.

4.9 Complaint Management

Community Complaints at LCO are managed in accordance with *GCAA-625378177-10296 10.05 Community Complaint Management* and *LIDOC-90533967-798 - Community Complaint & Enquiry Management Procedure*.

LCO implements a community complaints and blasting information hotline (1800 037 317) for handling the conflict resolution process. The conflict resolution process includes:

- Acknowledging all complaints, responding to the complainant within 24 hours, where practicable;
- Registering all complaints in CMO;
- Investigating complaints impartially giving proper consideration to the facts and the circumstances prevailing at the time;
- Implementing corrective actions if required;
- Reporting to relevant stakeholders of investigation outcomes and corrective actions taken.

The following diagram provides a summary of the community complaints response procedure followed at LCO:

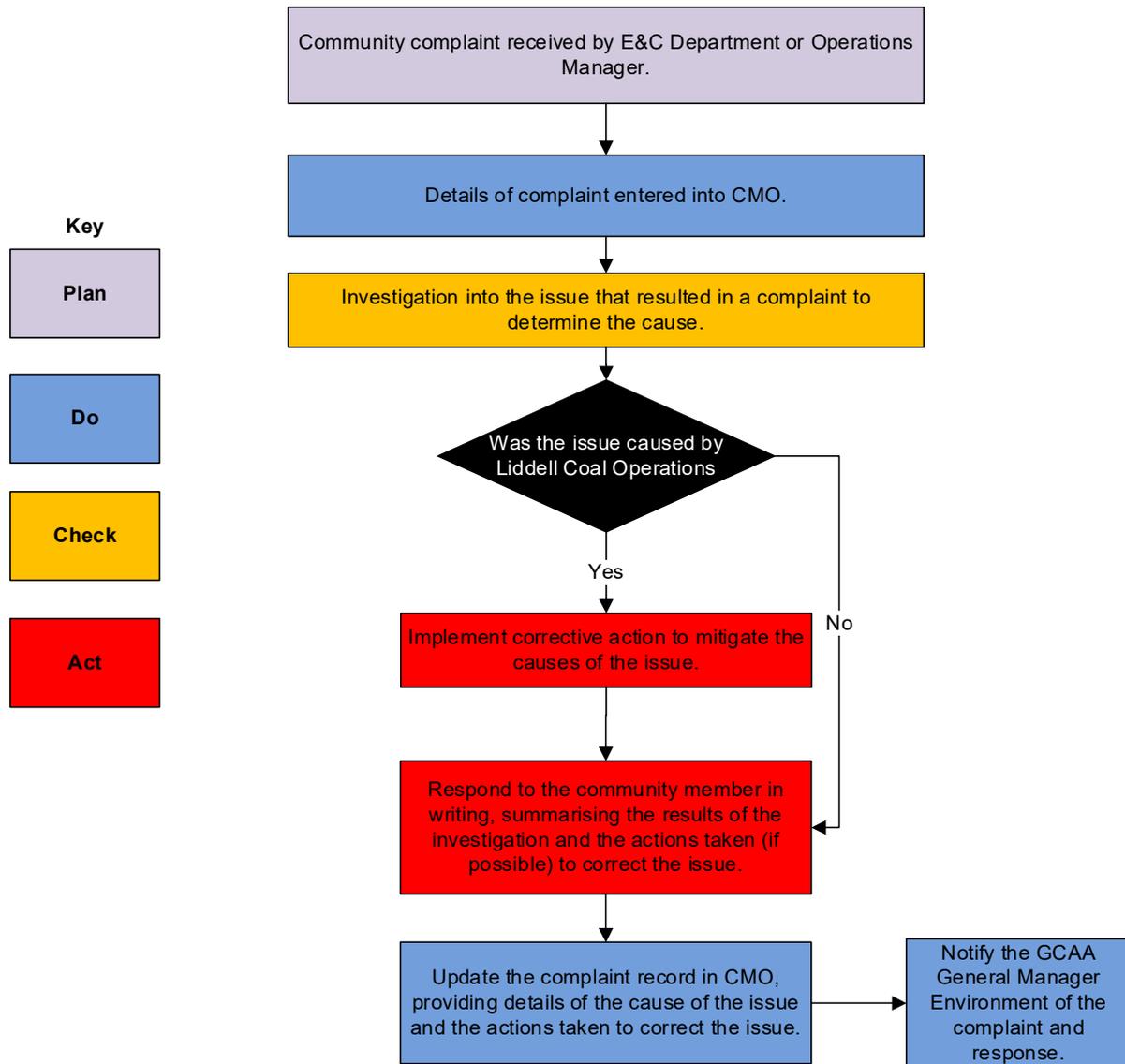


Figure 4-2 – Community Complaints Response

It is the responsibility of the Environment and Community Manager to ensure all complaints are investigated, actioned (if required) and reported.

Details of complaints received by LCO are reported to stakeholders at each Community Consultative Committee meeting and via the Annual Review. A monthly Community Complaint Register is also uploaded to the LCO website.

4.10 Dispute Resolution

In the event of a disagreement between LCO personnel and a member of the community, the LCO E&C Manager will undertake the necessary liaison and communication to reach a resolution, which may include a meeting with the complainant to discuss the issue. Where relevant, negotiations will be initiated in accordance with the development consent conditions for LCO.

Further guidance regarding disputes or conflict resolution is provided in *LIDOC-90533967-798 - Community Complaint & Enquiry Management Procedure*.

4.11 Training

Environmental management training at LCO is undertaken in accordance with **GCAA-625378177-9990 4.0 Training**.

LCO has developed a site specific training and competency management plan that outlines the process for determining training needs and the delivery of training across the operation as follows **LIDOC-90533967-4419: Training and Competency Management**.

Schedule 2 Condition 16 of DA305-11-01 requires that:

16. 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 the activities they carry out in respect of the development.

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.

The induction course provides employees and contractors with an overview of the following environmental management considerations:

- Environmental policy;
- Site approvals and legislative requirements;
- An overview of the Environmental Management System;
- Incident response procedures and contacts;
- Key environmental management considerations for relevant work areas.

In addition to induction environmental awareness training, the Environment and Community Department delivers targeted training packages for specific environmental management issues to selected employees and contractors relevant to their work activity. Copies of all environmental training packages are stored on LCO's 'Sharepoint' document control system.

The frequency of employee and contractor environment and community training requirements is documented in **LIDOC-90533967-5392 Environment and Community Training Needs Analysis Procedure** and managed using site's training database.

4.12 Emergency Response and Preparedness

An emergency management plan has been developed for the operation: **LIDOC-90533967-1052 - Emergency Management Plan**.

The management plan documents the roles and accountabilities of key personnel in the event of an emergency and the contact details for appropriate emergency services. The plans also provide designated evacuation points and procedures in the event of an emergency. Any changes to emergency procedures are documented and communicated to all personnel. These procedures have been developed to align with the requirements of **GCAA -625378177-9993 7.0 Emergency**.

The **Emergency Management Plan** includes the requirements of **LIDOC-90533967-2175 Pollution Incident Response Management Plan (PIRMP)**. This document details the procedures to be initiated in the event of an environmental emergency. The plan also details the responsibilities of key personnel in the event of an environmental emergency as well as the procedures for notification of pollution incidents resulting in or having the potential to cause material harm to the environment.

LCO maintains a dedicated emergency response team who undergo regular training and operational drills.

All employees and contractors are made aware of the Pollution Incident Response Management Plan in their site familiarisation

5. Measurement and Evaluation

5.1 Environmental Monitoring

The purpose of the monitoring programs is to measure the performance of the operation, which can be compared against objectives, targets and performance criteria specified in various LCO approval and licence conditions.

The key environmental monitoring programs for the operation include:

- Air quality monitoring;
- Noise Monitoring;
- Blast monitoring;
- Surface water monitoring;
- Ground water monitoring; and
- Ecological monitoring including rehabilitation.

Trained personnel undertake all monitoring using industry accepted monitoring techniques with equipment calibrated to relevant Australian Standards. Analysis of all samples is completed in NATA approved laboratories.

Specific authority, roles and accountabilities for environmental monitoring are clearly defined within each applicable management plan or strategy.

Monitoring results are stored on the LCO Environmental Monitoring Database (EMD) in accordance with *GCAA-625378177-10274 Environmental Data Collection and Reporting*. The EMD is a web-based database that provides automatic email notification to Environment and Community personnel when a monitoring point is approaching, or has exceeded a nominated trigger level for non-compliance.

In accordance with DA-305-11-01, a clear plan depicting all monitoring required to be carried out under the conditions of consent for LCO is provided in **Appendix A** with hyperlinks to copies of strategies, plans and programs approved under the conditions of consent for LCO are also provided in Appendix B.

Environmental performance at LCO is evaluated through a variety of review mechanisms. A summary of these mechanisms are provided below in Table 5-1.

Type of Monitoring Review/Report	Frequency	Description	Arranged by
Monthly HSEC Review Meeting	As per LIDOC-90533967-799 Communication and Engagement Standard	Monthly management review of the Operation including environment and community performance.	Operations Manager
Monthly Environmental Monitoring Report	Monthly as per LIDOC-90533967-4033 Environmental Reporting Procedure	A summary and review of monthly monitoring results at the LCO for: Air Quality; Surface Water; Groundwater; Blasting; Meteorological Conditions. Two reports are uploaded to the site website to maintain compliance with development consent and environmental protection licence conditions.	Environment and Community Manager
Monthly Noise Monitoring Report	Monthly	A summary and review of attended noise monitoring results completed quarterly in accordance with both operations' development consents.	Environment and Community Manager
EPL No.2094 Annual Return	Annually	A requirement of LCO EPL No.2094. The annual return summarises all pollution monitoring and complaints for the previous 12 months. Also includes the annual Hunter River Salinity Trading Scheme discharge report.	Environment and Community Manager
Annual Review	Annually	A statutory reporting requirement of both operations that provides a summary and review of <u>all</u> statutory monitoring results and environment and community performance across the site for the previous calendar year.	Environment and Community Manager

Table 5-1 – Environmental Review Mechanisms

5.2 Audits

Auditing at LCO is undertaken in accordance with the **GCAA-625378177-9980 13.0 Assurance**. Further guidance regarding LCO specific processes is provided in **LIDOC-90533967-96: Internal & External Audits Standard**.

These documents specify a formal auditing process to:

- Determine compliance with legislation;
- Determine compliance with GCAA, site approvals and applicable external standards;
- Evaluate the effectiveness of the site's environmental management system; and
- Identify system deficiencies and opportunities to correct and continuously improve performance.

Type of audit	Frequency	Description	Arranged by
Internal Compliance Audit	Every three years six months prior to the Independent Environmental Compliance Audit	Internal compliance audit against environmental legislation and DA305-11-01 conditions and associated approvals	GCAA and Environment & Community Manager
Independent Environmental Compliance Audit	Each site every three years	Compliance audit against Environmental legislation and DA305-11-01 conditions and associated approvals	Environment & Community Manager
Other Environmental audits	As determined by GCAA Executive HSEC Committee	Targeted audits on focus areas e.g. waste management, etc.	GCAA Group Environment & Community Manager
Other Internal audits	As determined by operation's level of risk	Operations and projects should conduct their own HSEC inspections and audits as appropriate to their level of HSEC risk	Environment and Community or Operations Manager

Table 5-2 – GCAA/External Audits

Following completion of an audit, an action plan summarising the recommendations, planned actions, accountabilities and due-by dates is completed. The action plan is then added to CMO to manage the identified actions. A record of all audit documentation is kept on site in accordance with **GCAA-62538177-9989 3.0 Documents and Records**.

5.3 Monthly Inspections

Monthly environmental inspections are undertaken by the E&C Department. The objectives of the monthly environmental inspections are 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.

Inspection results are completed as per **LIDOC-90533967-1811: Monthly Environmental Inspection Procedure** and recorded as per **LIDOC-90533967-1810: Monthly Environmental Inspection Checklist** or filled out in the pre-populated form in CMO.

Any non-conformances are identified are entered in CMO for action tracking.

5.4 Incidents and Corrective Action

An incident or non-conformance is defined 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.

The incident or non-conformance may be from routine inspections, audits or monitoring, or it can be from an external complaint or an internal incident.

LCO has developed site specific incident reporting procedure, **LIDOC-90533967-656: Hazard & Incident Management**.

Environmental incidents are documented in CMO and including the appropriate corrective or preventative action using the Incident Cause Analysis Method (ICAM) where required. Incident reporting and corrective or preventative action is undertaken in accordance with **GCAA-625378177-9992 6.0 Incident**.

5.5 Environmental Reporting

The LCO Environment and Community Manager facilitates the environmental reporting requirements outlined in Table 5-3 below. Details of reporting requirements are also contained in **LIDOC-90533967-4033 Environmental Reporting Procedure**.

Report	Recipient	Requirement
EPL Annual Return and Statement of Compliance	GCAA Group Environment and Community Manager EPA	Environment Protection Licence No.2094
Hunter River Salinity Trading Scheme (HRSTS) Annual Return	EPA	Hunter River Salinity Trading Scheme
Annual Review	NSW Resources Regulator Community Consultative Committee NSW Department of Planning Infrastructure and Environment NSW Department of Primary Industries – Water including Natural Resources Access Regulator Singleton Shire Council Muswellbrook Shire Council NSW Biodiversity and Conservation Heritage NSW,	Mining Lease ML 1597 Liddell Coal Operations Development Consent DA 305-011-01
EPBC Annual Report	Department of Environment	EPBC 2013/6908
National Pollutant Inventory Report (NPI)	Department of Agriculture Water and Environment	National Environment Protection Measure (NEPM)
National Greenhouse and Energy Reporting (NGERS)	Department of Agriculture Water and Environment	<i>National Greenhouse and Energy Report Act 2007</i>
Monthly Environmental Monitoring Report	Published on Liddell Coal Operations Website	Liddell Coal Operations Development Consent DA 305-011-01 and EPL 2094.
GCAA Monthly Environmental Report	GCAA Group Environment and Community Manager	This EMS GCAA Framework
Monthly Joint Venture Reporting	LCO Operations Manager / MMA	This EMS GCAA Framework
Various Glencore Sustainability Reporting Metrics	GCAA Group Environment and Community Manager	GCAA Framework

Table 5-3 – Summary of Environmental Reporting

5.6 EMS Review and Continuous Improvement

The review and revision of the EMS is to be undertaken by the Environment and Community department at LCO in accordance with *LIDOC-90533967-1028: Document Control Standard*.

Regular management review of the EMS allows opportunities for improvement to be identified and implemented, achieving the overall aim of continual improvement in environmental management performance.

The management review of the EMS will be undertaken during the annual planning cycle to ensure adequate resources can be allocated to provide for continual improvements of the EMS. The management review will include:

- Review of audit findings;
- Achievement of objectives and targets;
- Relevance of objectives and targets to current and future operations;
- Information and concerns of stakeholders; and
- Review of aspects and impacts.

The outcomes of the review will be documented and incorporated into the EMS.

6. Definitions

Term	Definition
Audit	A systematic examination against defined criteria to determine whether activities and related results conform to planned arrangements and commitments. In addition, whether these arrangements and commitments are implemented effectively and are suitably achieved in accordance with the organisation's policy
Environmental Aspect	An element of an organisation's activities, products or services which can interact with the environment
Environmental Impact	Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's activities, products or services.
Environmental Objective	An overall environmental goal, arising from the environmental policy, that an organisation sets itself to achieve. Environmental objectives are quantified where practicable.
Environmental performance	Measurable results of the environmental management system, related to an organisation's control of its environmental aspects. Environmental performance indicators are based on the mine's environmental policy, objectives and targets.

Term	Definition
Environmental Policy	A statement by an organisation of its commitments, intentions and principles in relation to its overall environmental performance which provides a framework for action and for the setting of its environmental objectives and targets.
Environmental Target	A detailed performance requirement, quantified where practicable, applicable to the organisation or parts thereof.
Legal Requirement	Requirements of law including applicable legislation, development consent conditions, licences etc.
Other Requirement	A non-legal requirement that LCO must abide by such as corporate (GCAA) requirements, codes of practice or voluntary standards (e.g. ISO 14001).

7. Accountabilities

Role	Accountabilities under this document
Operations Manager	Provide adequate environmental personnel/resources for implementation of this plan and associated LCO plans.
Environment & Community Manager	<p>Facilitate a process of managing overall compliance with regulatory requirements and undertake external reporting for legislative non-compliances as required;</p> <p>Determine adequate resources and funds are available to ensure the effectiveness of this procedure; and certify compliance and adherence to the EMS;</p> <p>Develop, implement and maintain the EMS;</p> <p>Liaise with relevant government authorities in relation to regulatory conditions and compliance issues; and</p> <p>Liaise with the community as required and as per the Stakeholder Engagement Strategy, including facilitation of Community Consultative Committee meetings.</p>
Environment & Community Officer	<p>Assist with statutory reporting requirements as required by the ECM;</p> <p>Review all environmental monitoring data to confirm compliance with the relevant criteria;</p> <p>Assist with the development and delivery of environmental training packages;</p> <p>Undertake monitoring as per LCO environmental management plans, programs and strategies;</p> <p>Conduct environmental inspections as per the LCO EMS;</p> <p>Provide ongoing environmental advice as required;</p>

Role	Accountabilities under this document
	<p>Compile monitoring reports for the Liddell Coal Operations website for review by the ECM;</p> <p>Assist in the maintenance and implementation of Stakeholder Engagement Strategy and other relevant community relations procedures;</p> <p>Assist in coordinating the resolution of community complaints;</p> <p>Assist in the coordination of training and education programs associated community relations management where required; and</p> <p>Assist in facilitation of the LCO Community Consultative Committee meetings.</p>
All Managers	<p>Activities under their control are to be undertaken in accordance with this EMS and associated management plans and site procedures;</p> <p>Manage environmental controls within their jurisdiction are operated and maintained in a proper and efficient manner; and</p> <p>Report all environmental incidents and complaints in a timely manner.</p>
All Superintendents	<p>Activities under their control are to be undertaken in accordance with this EMS and associated management plans and site procedures;</p> <p>Manage environmental controls within their jurisdiction are operated and maintained in a proper and efficient manner; and</p> <p>Report all environmental incidents and complaints in a timely manner.</p>
All Supervisors	<p>Activities under their control are to be undertaken in accordance with this EMS and associated management plans and site procedures;</p> <p>Manage environmental controls within their jurisdiction are operated and maintained in a proper and efficient manner; and</p> <p>Report all environmental incidents and complaints in a timely manner.</p>
All Persons	<p>Conduct all activities in accordance with this EMS, and associated management plans and procedures, in an environmentally responsible manner;</p> <p>Report all environmental incidents and community complaints to their immediate supervisor; and</p> <p>Participate in the required environmental training.</p>

8. Document Information

8.1 Related Documents

Related documents, listed in *Table 8-1* below, are *documents* directly related to or referenced from within this document.

Number	Title
LIDOC-90533967-790	Environmental Approvals Register
LIDOC-90533967-96	Audits Internal and External
LIDOC-90533967-4419	Training and Competency
LIDOC-90533967-1052	Emergency Management Plan
LIDOC-90533967-2175	Pollution Incident Response Management
LIDOC-90533967-1120	Contractor and Suppliers Management Plan
LIDOC-90533967-166	Stakeholder Engagement Strategy
LIDOC-90533967-1028	Document Control Procedure
LIDOC-90533967-656	Hazard and Incident Management
LIDOC-90533967-791	Legal Compliance Procedure
LIDOC-90533967-798	Complaints Complaint & Enquiry Management
LIDOC-90533967-799	Communication and Engagement
LIDOC-90533967-1083	Risk Management Standard
LIDOC-90533967-1084	Change Management Standard
LIDOC-90533967-1805	Life Cycle Management – Projects & Operations
LIDOC-90533967-1811	Monthly Environmental Inspection Procedure
LIDOC-90533967-1810	Monthly Environmental Inspection Checklist
LIDOC-90533967-4033	Environmental Reporting Procedure

Table 8-1 – Related documents

8.2 Reference Information

Reference information, listed in **Table 8-2** below, is *information* that is directly referred to for the development of this document.

Reference	Title
Legislation	Environmental Planning and Assessment Act 1979
	Mining Act 1992
	Protection of the Environment Operations Act 1997
	Environment Protection and Biodiversity Conservation Act 1999
	Water Management Act 2000
	National Parks and Wildlife Act 1974
	Work Health and Safety (Mines and Petroleum Sites) Act 2013
	Work Health and Safety (Mines and Petroleum Sites) Regulation 2014
	NSW Work Health and Safety Act 2011
	NSW Work Health and Safety Regulation 2011
Standards and Guidelines	ISO14001:2004 - Environmental management systems Requirements with guidance for use
	ISO31000:2009 - Risk Management – Principles and Guidelines
	AS/NZS 4801:2001 - Occupational health and safety management systems— Specification with guidance for use
Glencore Coal Assets Australia	HSEC POL 0007 HSEC Management Framework
	G HSEC POL 0005 Health and Safety Policy
	G HSEC POL 0006 HSEC Assurance Policy
	G HSEC POL 0004 Environmental Policy
	G HSEC POL 0008 Human Rights Policy
	G HSEC POL 0003 Emergency Response and Crisis Management Policy
	CA HSEC FWK 0006 Glencore Corporate Risk Management Framework
	GCAA-625378177-10524 HSEC Management System Framework
	GCAA-625378177-2844 Risk Management
	CAA HSEC PCL 0020 11.01 Environmental Compliance Management

Reference	Title
	GCAA-625378177-10248 11.02 Pipeline Management
	GCAA-625378177-10320 11.03 Water Management
	GCAA-625378177-819 11.04 Tailings Management
	GCAA-625378177-10322 11.05 Dams and Diversions
	GCAA-625378177-10892 11.06 Erosion and Sediment Control
	GCAA-625378177-10243 11.07 Hydrocarbon Management
	CAA HSEC PCL 0011 11.08 Waste Management
	GCAA-625378177-10237 11.09 Exploration and Drilling
	GCAA-625378177-10324 11.10 Air Quality Management
	GCAA-625378177-10238 11.11 Noise Management
	GCAA-625378177-9975 11.12 Blast Management
	GCAA-625378177-13661 11.13 Emissions and Energy
	GCAA-625378177-10240 11.14 Environment and Community Training
	GCAA-625378177-10242 11.15 Land and Property Management
	GCAA-625378177-10241 11.16 Rehabilitation Management
	GCAA-625378177-10325 11.17 Mine Closure Planning
	CAA HSEC PCL 0028 11.18 Biodiversity Offset Management
	GCAA-625378177-10327 11.19 GIS Spatial Data Management
	GCAA-625378177-10328 11.20 Statutory Approval Management - NSW
	GCAA-625378177-10470 11.24 Mining Tenement Management
	GCAA-625378177-9976 1.0 Leadership, Culture and Accountability
	GCAA-625378177-9987 2.0 Strategy and Planning
	GCAA-625378177-9989 3.0 Documents and Records
	GCAA-625378177-9990 4.0 Training
	GCAA-625378177-9991 5.0 Contractors and Suppliers
	GCAA-625378177-9992 6.0 Incident

Reference	Title
	GCAA-625378177-9993 7.0 Emergency
	GCAA-625378177-9994 8.0 Health and Hygiene
	GCAA-625378177-9995 9.0 Human Rights and Our People
	GCAA-625378177-9977 10.0 Community and Stakeholder Engagement
	GCAA-625378177-9978 11.0 Environment
	GCAA-625378177-9979 12.0 Change
	GCAA-625378177-9980 13.0 Assurance
	GCAA-625378177-10266 11.21 Aboriginal Cultural Heritage NSW
	GCAA-625378177-10281 11.25 National Native Title Exploration and Mining Leases
	CAA HSEC REG 0001 HSEC Definitions and Terms.
	GCAA-325378177-10274 11.01 Environmental Data Collection and Reporting

Table 8-2 – Reference information

8.3 Change Information

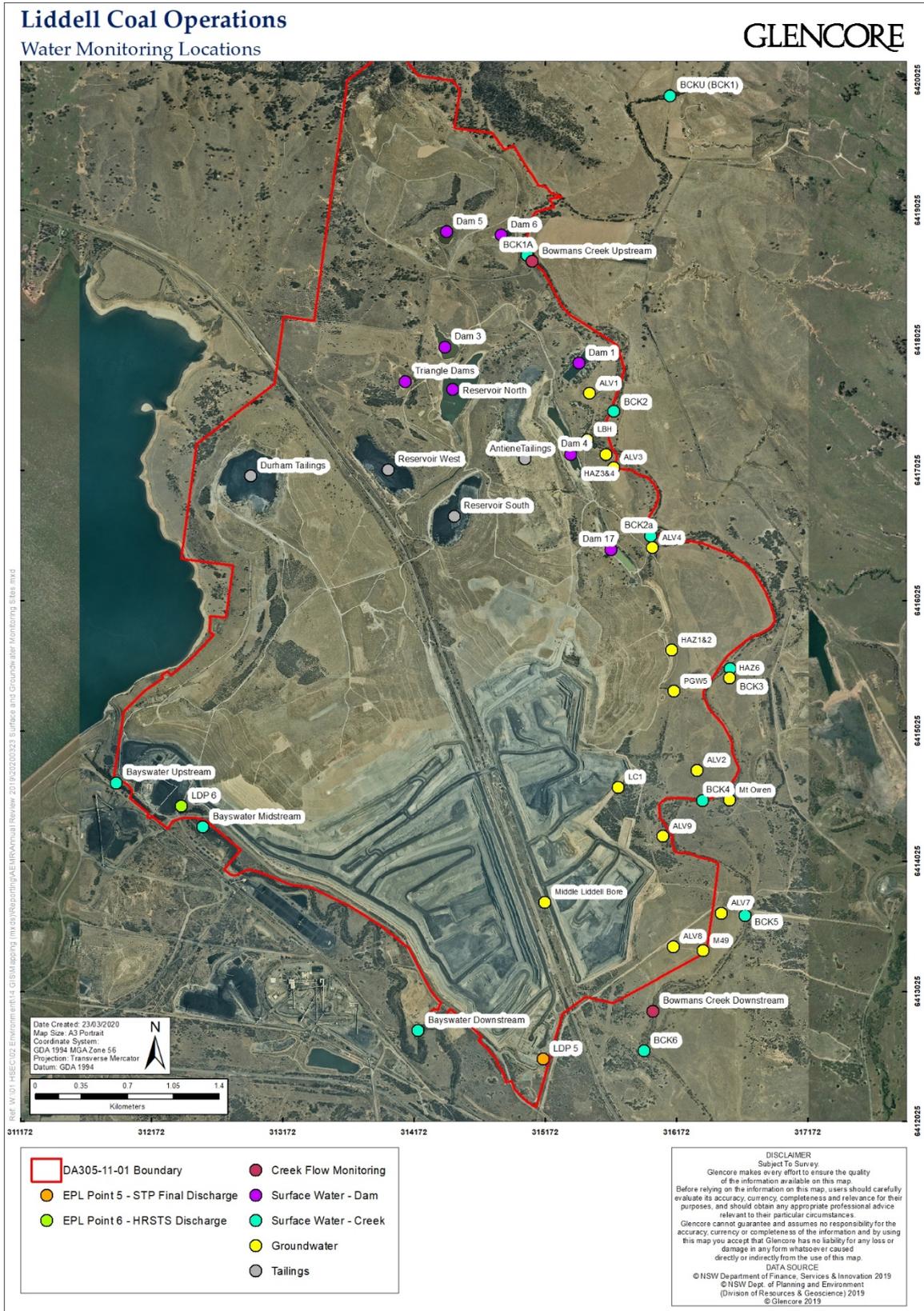
Full details of the document history are recorded in the document control register, by version. A summary of the current change is provided in **Table 8-3** below.

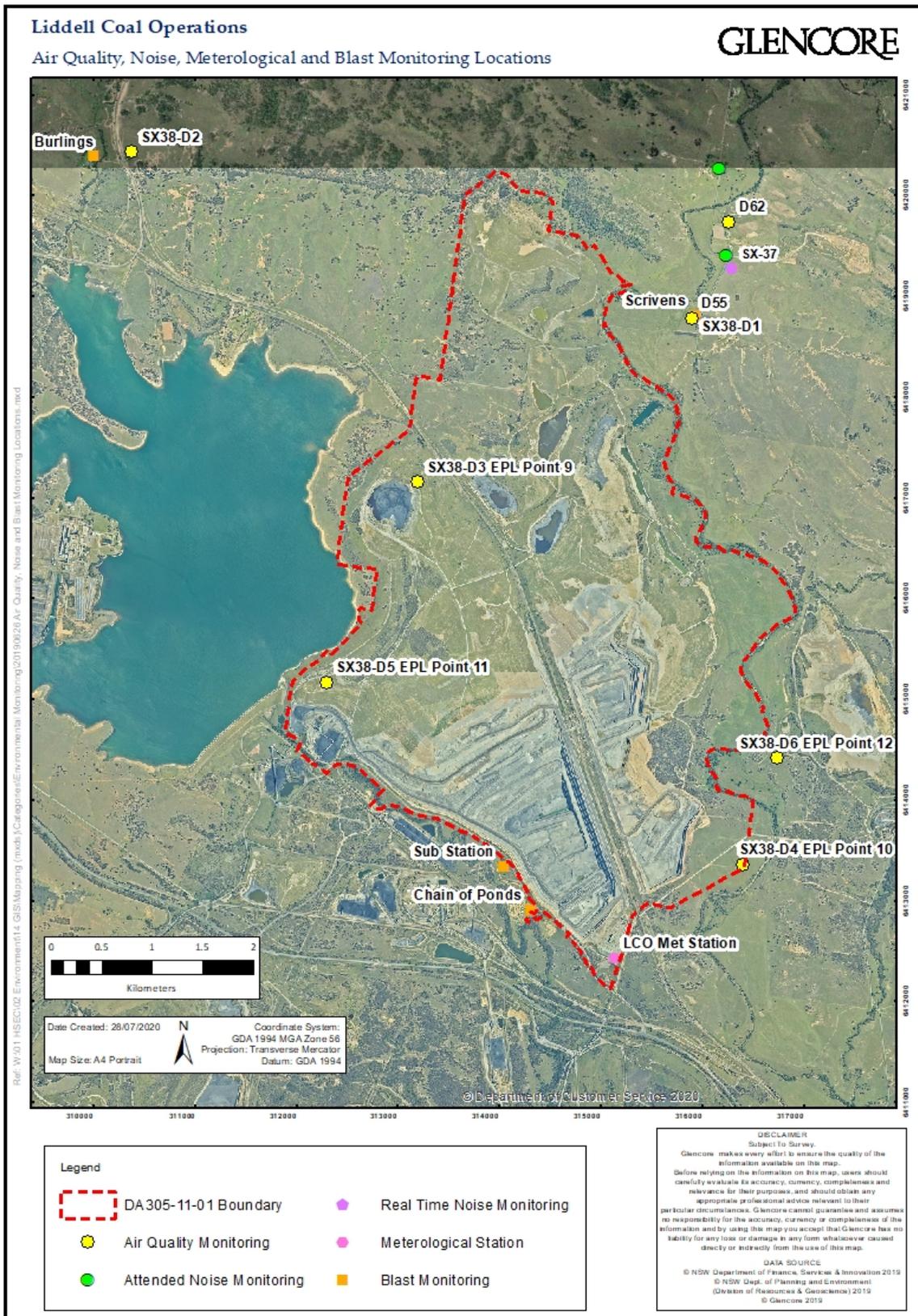
Version	Date	Review Team	Change Details
	Jan 2008	LCO E&C Dept and Umwelt	Document developed as per requirements of DA305-11-01. Approved by Dept of Planning 4/2/09 – External document – LCO SD EXT 0072
	17/08/10	M. Hawthorne M. Howes	Updated to new document format and to reflect change to owner operated – LCO SD FWK 0001 – EMS
1.0	20/01/2011	M Hawthorne, J Cameron, T Hancock	New document to meet the requirements of XCN SD GDL 0010. This document supersedes LCO SD EXT 0072 EMS
2.0	23/07/12	B de Somer	Updated to be generally in accordance with ISO 14001 and XC/XCN requirements.
3.0	12/11/2012	B de Somer / H Simms	Removed links to Tables 5 & 6 in Sections 6.3 and Table 7 in Section 6.6 due to formatting error

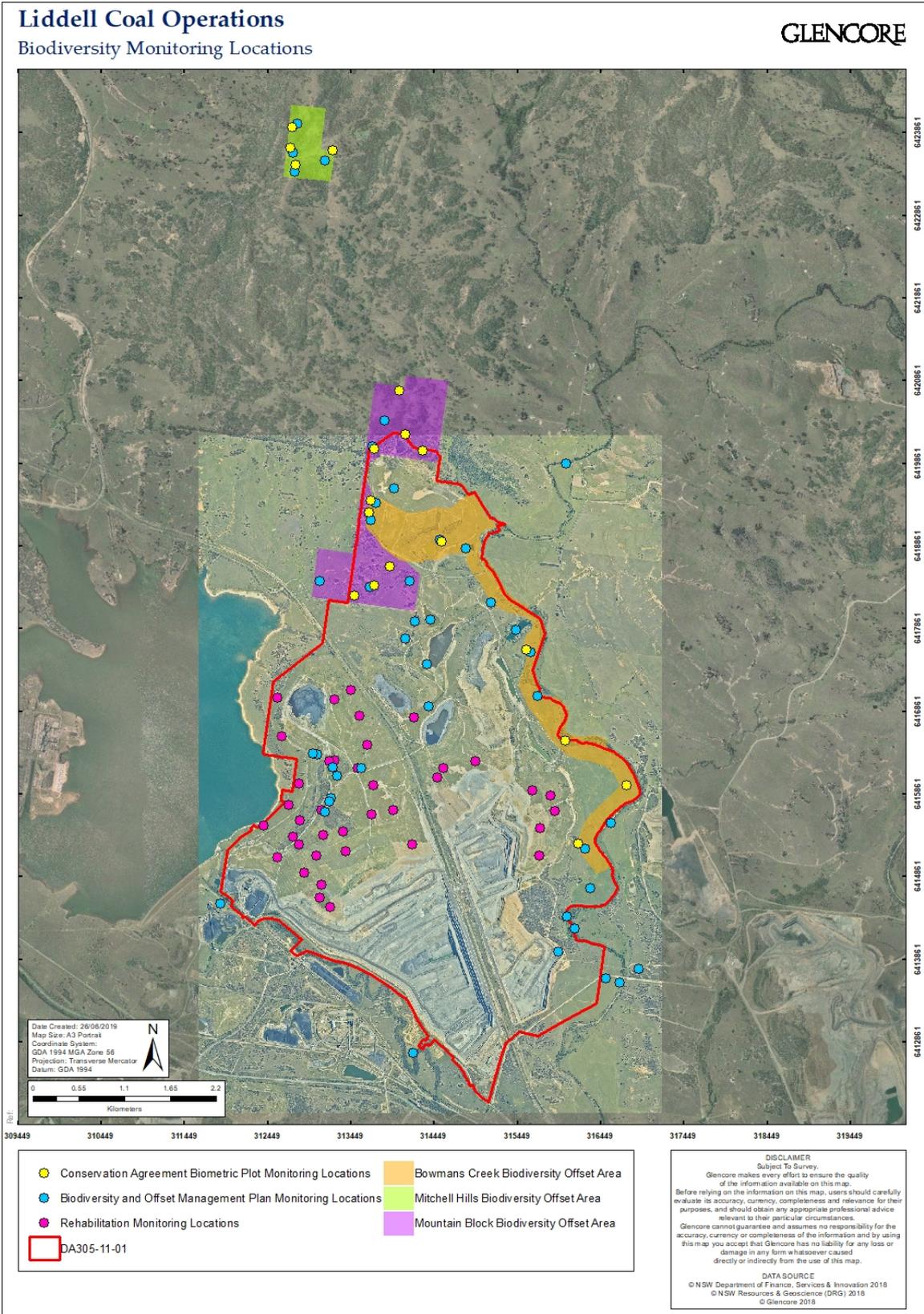
Version	Date	Review Team	Change Details
4.0	11/3/2013	B de Somer / C Davies	Updated Section 4.12 Legal and Other Requirements as per the DP&I review. Updated Section 5.8 Contractor Management to reflect current document from LCO SD PRO 0039 to LCO SD PLN 0027. This reference also added to Section 8.5
5.0	30/04/2013	B de Somer, H Simms, J Callister	Update Table 4 and 7 to reference noise reporting requirements and JV reporting respectively.
6.0	14/08/2015	L Barben, B de Somer	Update document in accordance with DA-305-11-01 (Mod 5). Update in accordance with 2015 E&C Document Gap Analysis, GCAA template & internal compliance audit.
7.0	17/11/2015	B de Somer, H Simms	Updated front page formatting
8.0	14/12/2015	L Barben, H Simms	Added approval letter from DPE to Appendix C
9.0	October 2016		Document migration to new Sharepoint.
10.0	11/08/2017	M Henderson, B de Somer	Updated document references, updated monitoring plans in appendix A, added approval letter from DPE to Appendix C. Updated document IDs – H Simms.
11.0	19/03/2018	M Henderson, B de Somer	Updated document to include baseline environmental studies and reference to GCAA targets. Added approval letter from DPE to Appendix C. Doc owner to E&C Officer. H Simms – transferred to current template.
12.0	09/08/2019	M Henderson, B de Somer	Updates throughout document to reflect DA305-11-01 Mod 7 Updated document to include reference to LIDOC-90533967-4033 Environmental Reporting Procedure. Update Appendix A Monitoring Plans. DPIE approval letter added in Appendix C.
13.0	19/03/2021	B de Somer, M Henderson	Update approval expiry dates in Table 3-5; Minor updates to Section 3.8.2 regarding Tenement and Native Title Management; update statutory authority information in Section 3.9 and Table 5-3; minor updates to monitoring plans in Appendix A.

Table 8-3 – Change information

Appendix A - Monitoring Plans







Appendix B - Management Plans and Programs

Publication of Liddell Coal Operations Management Plans, Strategies and Programs can be found at:

<https://www.glencore.com.au/operations-and-projects/coal/current-operations/liddell-coal-operations/management-plans>

Links to Management Plans and Programs
<u>Noise Monitoring Program</u>
<u>Air Quality Monitoring and Management</u>
<u>Water Management Plan</u>
<u>Biodiversity Management Plan</u>
<u>Biodiversity Offset Management Plan</u>
<u>Mining Operations Plan (Rehabilitation Management Plan)</u>
<u>Blast Management Plan</u>
<u>Blast Management Strategy – Newdell Zone Substation</u>
<u>Blast Management Strategy – Chain of Ponds Inn</u>
<u>Aboriginal Cultural Heritage Management Plan</u>
<u>Pollution Incident Response Management Plan</u>
<u>Indirect Offset Management Plan</u>