



Environmental Management Strategy Plan

In accordance with Condition 4, Schedule 5 of PA08_0184 this plan has been subject to updates and revisions submitted to the NSW Department of Planning, Industry and Environment (DPIE) (See Change Information Section 7.4). The Effective date of this document represents the latest acknowledgement from DPIE that this plan has been prepared to the satisfaction of the Director-General.

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1 Commitment and Policy

1.1 Introduction

The Ulan Mine Complex is situated in the central west of New South Wales. It is located in the Mid-Western Regional Council (MWRC) Local Government Area (LGA) near the village of Ulan; approximately 38 kilometres north-northeast of Mudgee and 19 kilometres northeast of Gulgong (**Figure 1.1**). Ulan Coal Mines Limited (UCMPL) operates the mine, which is managed by Glencore Coal Assets Australia (GCAA).

UCMPL owns or has long term leases over the majority of land within the project area that will be subject to mining activities and required for surface facilities. The area is primarily surrounded by rural landholdings, native bushland and primary industries including agriculture, forestry, mining (including other coal mining operations) and extractive industries. The UCMPL landholdings are located within the headwaters of the Goulburn and Talbragar River catchment areas.

Project Approval (PA 08_0184) was issued by NSW Planning, Industry and Environment (DPIE), on 15 November 2010 for continued operations. PA08_0184 authorises current and proposed mining of the Ulan Mine Complex until 2033, and production of up to 20 Mtpa (million tonnes per annum) of product coal. The approval provides for an open cut and Ulan West and Ulan Underground mines to operate twenty-four hours a day, 7 days per week. Infrastructure and supporting operations include the Bobadeen Irrigation Scheme (BIS) and Bobadeen Basalt Quarry (**Figure 1.2**). The approval was modified as follows:

- Environmental Assessment: Ulan Coal Continued Operations North 1 Underground Mining Area, Minor Modification to Ulan Underground & Ulan West Mine Plans & Proposed Concrete Batching Plant (Umwelt, 2011) - (MOD1) approved 7 December 2011
- Land and Environment Court final orders issued on the 5 April 2012
- Ulan West Mine Plan and Construction Blasting (Umwelt, 2012) – (MOD2) approved 29 May 2012
- Environmental Assessment: Ulan West Modification (southern extension) (Umwelt 2015) – (MOD 3) Approved 14 March 2016
- Ulan Continued Operations Project - Modification 4 Longwall Optimisation Project Environmental Assessment (Eco Logical 2018) – (MOD 4) Approved 17 July 2019
- Revision of Ulan West Operational Mine Plan – Modification 5 approved 7 August 2020

UCMPL are required to prepare and implement an Environmental Management Strategy (EMS) for the project.¹

¹ PA 08_0184 Schedule 5, condition 1..

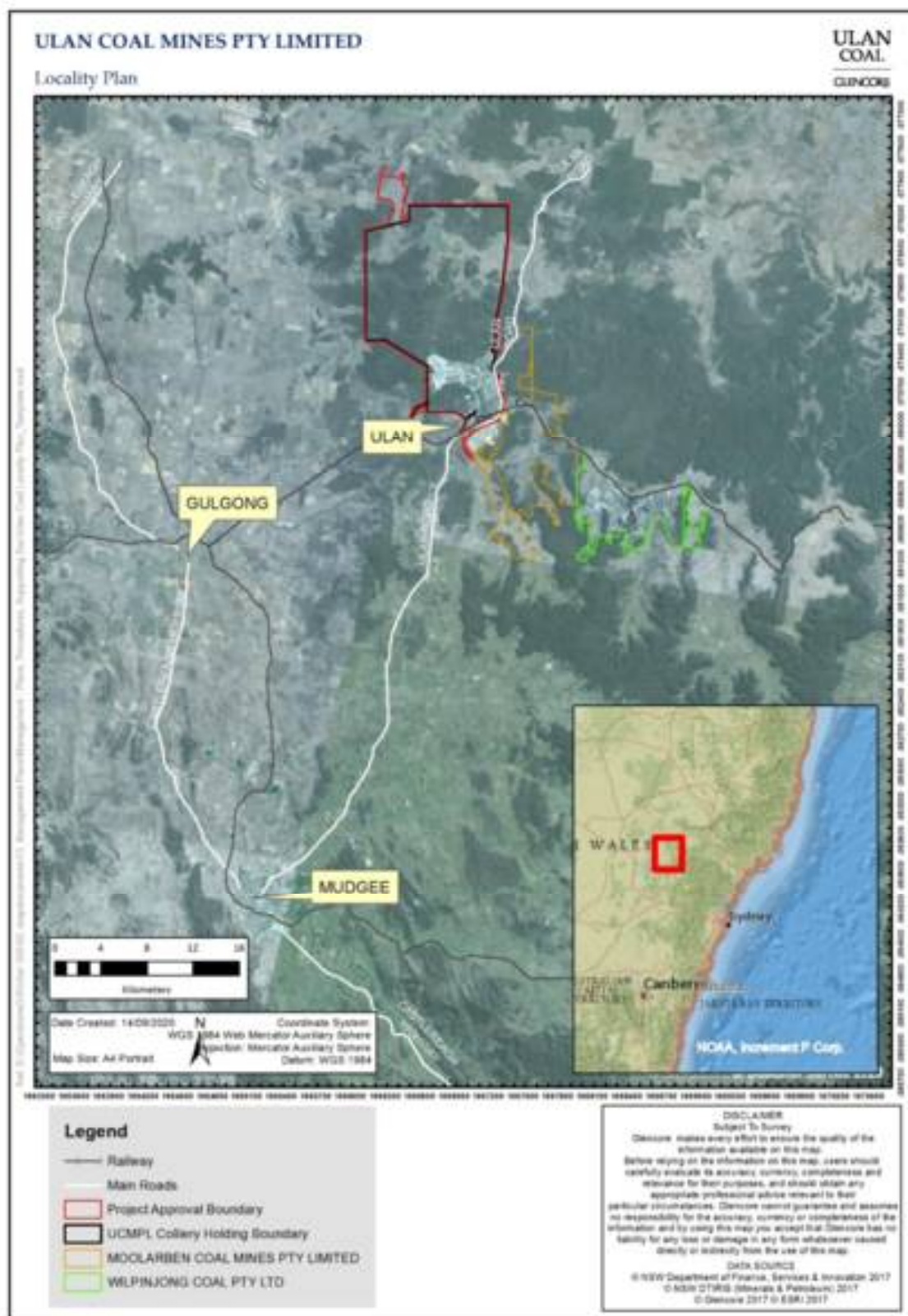


Figure 1.1 Location of the Ulan Mine Complex

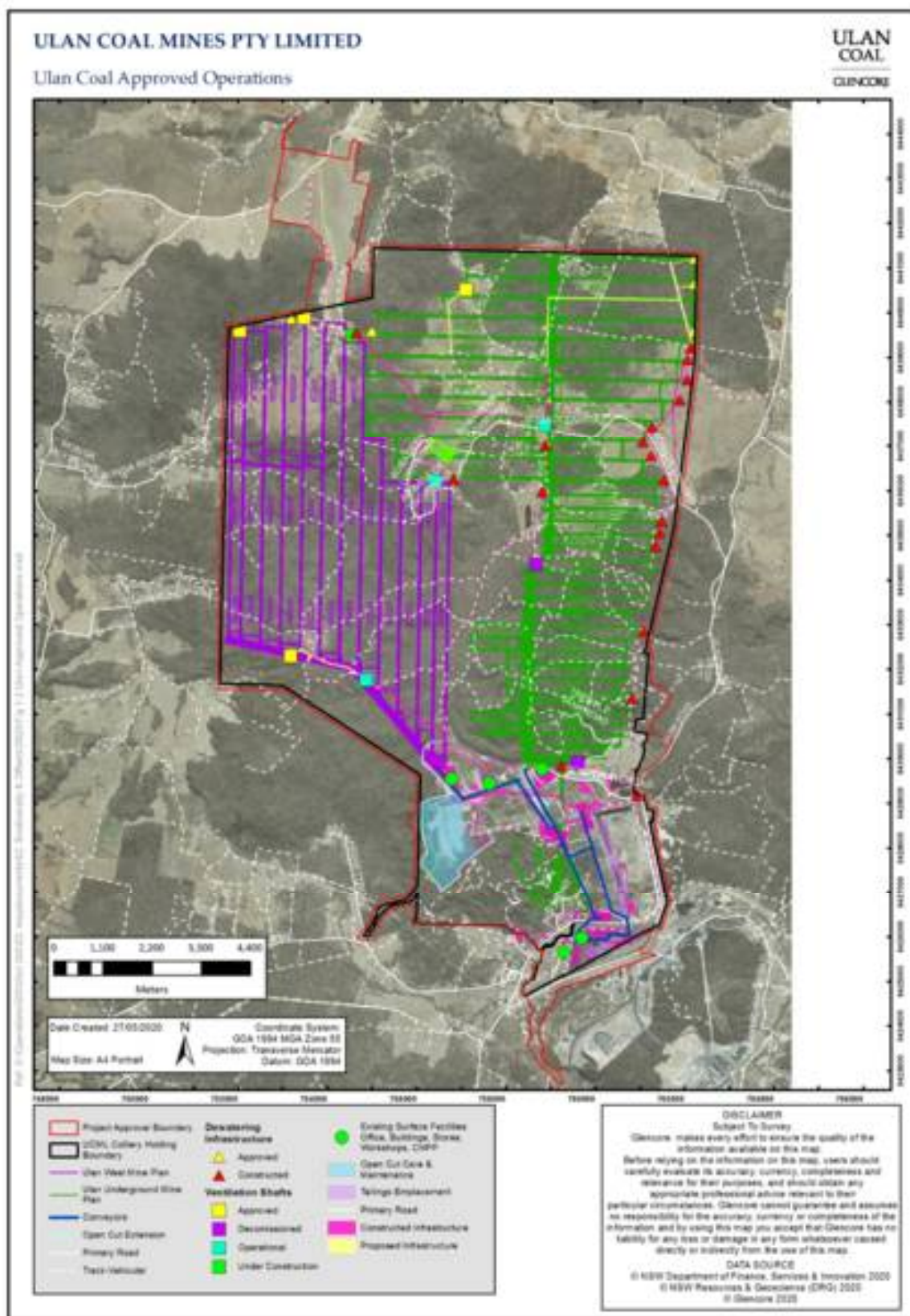


Figure 1.2 Ulan Coal Complex Operations Project Area

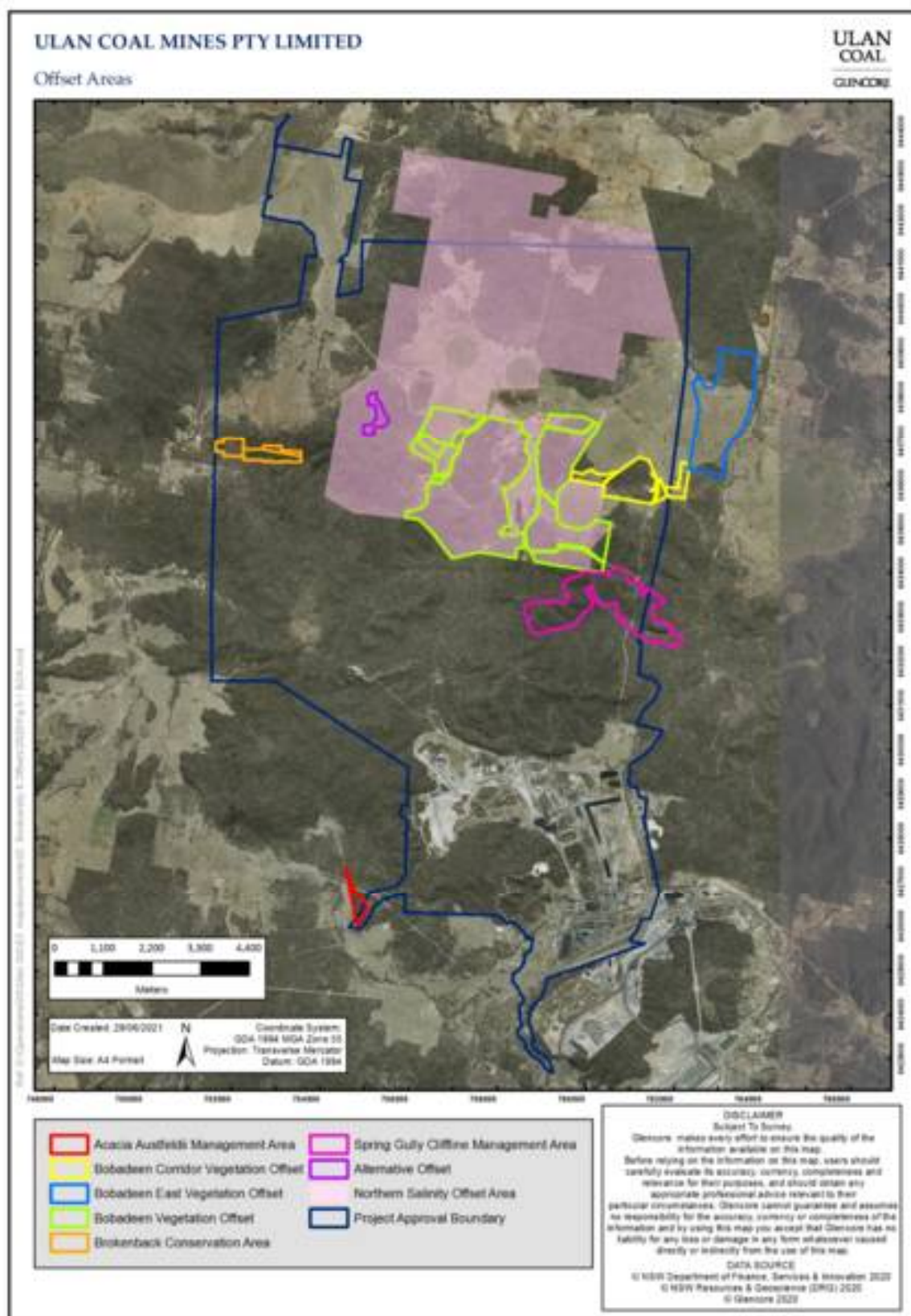


Figure 1.3 Biodiversity Offset Areas

1.2 Purpose and Scope

The purpose of this EMS is to:

- document and implement the systems and processes which provide the means to apply consistent environmental and community management across the Ulan Mine Complex;
- ensure adherence to statutory requirements, including regulatory approvals and licences;
- comply with applicable legislation, standards, codes and other external requirements;
- align UCMPL's operating philosophy with the GCAA Health, Safety, Environment and Community (HSEC) framework and the principles of ISO14001; and
- manage and minimise environmental impacts.

The EMS describes the process for planning, communication, documentation, monitoring, evaluation, review and feedback. UCMPL aims to maintain and improve environmental and community performance through regular monitoring, review and audits of the EMS and environmental performance.

The EMS applies to the existing and future operations within land owned or managed by UCMPL (**Figure 1.2 & Figure 1.3**). Environmental management is the responsibility of all employees and contractors and the EMS applies to UCMPL management, employees and contractors. UCMPL aims to provide sufficient strategic planning, resources, controls, and leadership to maintain a high standard of management, continually improving performance, ongoing compliance with relevant, legal and other external requirements, and improved efficiency with regard to management.

Environment and community responsibilities are defined, documented and communicated by establishing:

- Roles, responsibilities and accountabilities for specific risks and controls;
- Specific and measurable performance indicators; and
- Organisational structures and lines of reporting.

The EMS and management plans are available on the UCMPL website:

<http://www.ulancoal.com.au.2>

1.3 Glencore Corporate Practice

The Glencore Corporate Practice (GCP) framework, includes the Glencore Values, Code of Conduct and HSEC Policies.

² PA 08_0184 Schedule 5, Condition 10

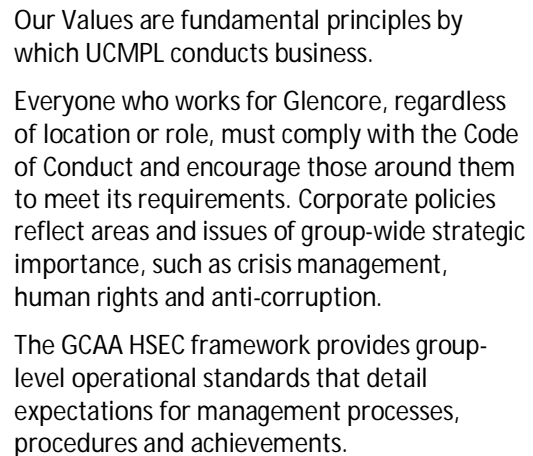


Figure 1.4 The GCP Framework

1.3.1 EMS Supporting Documents

This EMS is supported by specific documents, including management plans, procedures, forms, permits and approvals. These documents have been developed to:

- satisfy the relevant requirements of PA 08_0184;
- satisfy the relevant statement of commitments made as part of PA 08_0184;
- satisfy the relevant conditions of other approvals, licences and other legal requirements, including Extraction Plan (EP) Approvals, Mining Operations Plan (MOP), Water Licences and Environment Protection Licence (EPL) 394;
- identify the controls and mitigation measures that are in place to manage the potential impacts and risks associated with the operations;
- provide guidance in managing and mitigating community impacts associated with the operations; and
- incorporate the requirements of the GCP and applicable Standards, Guidelines and associated annexures, where appropriate.

This EMS has been developed in accordance with:

- PA 08_0184 and Statement of Commitments (Appendix 9);
- EP Approval for Ulan Underground LW30, W6-W8;
- EP Approval for Ulan West LW1 to 6;
- identified environmental aspects and impacts;
- identified objectives and targets;
- regulatory requirements that apply to UCMPL's operations;
- environmental management requirements; and
- internal corporate and operational requirements.

Figure 1.5 displays the structure of UCMPL's Environmental Management System, Identifying key management plans and monitoring programs. Table 1.1 details the relevant management plans and associated monitoring programs required by PA 08_0184. **Table 1.3** details other management plans

required by EP Approvals. **Table 1.4** details other supporting documents in the Environmental Management System.

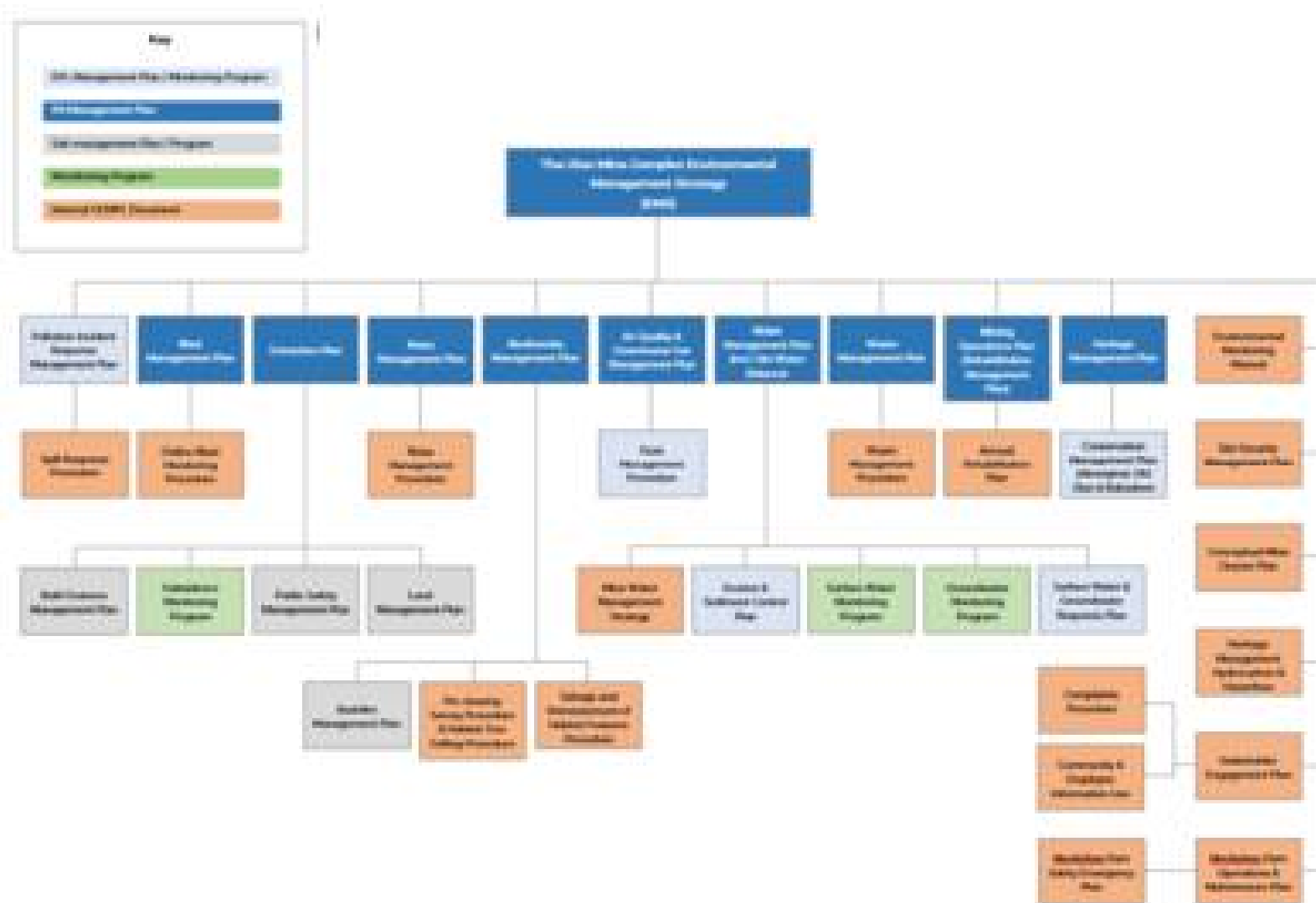


Figure 1.5 EMS and Supporting Documents Structure

Table 1-1 Management Plans & Monitoring Programs required by PA 08_0184

Condition	Requirement	Document Number
1, Schedule 5	Environmental Management Strategy	ULNCX- 111515275- 870
9, Schedule 3	Noise Management Plan	ULNCX- 111515275- 232
16, Schedule 3	Blast Management Plan	ULNCX-111515275-1953
22, Schedule 3	Air Quality & Greenhouse Gas Management Plan	ULNCX- 111515275- 1653
26, Schedule 3	Extraction Plans	Listed Below
34, Schedule 3	Water Management Plan	ULNCX-111515275-99
35, Schedule 3	Site Water Balance	Part of ULNCX-111515275-99
36, Schedule 3	Goulburn River Diversion Remediation Plan	ULNCX-111515275-1641
37, Schedule 3	Erosion & Sediment Control Plan	ULNCX- 111515275- 224
38, Schedule 3	Surface Water Monitoring Program	ULNCX- 111515275- 1642
39, Schedule 3	Groundwater Monitoring Program	ULNCX- 111515275- 1643
40, Schedule 3	Surface & Ground Water Response Plan	ULNCX- 111515275- 1644
41 - 44, Schedule 3	Biodiversity Management Plan	ULNCX- 111515275- 225
47, Schedule 3	Heritage Management Plan	ULNCX- 111515275- 95
47, Schedule 3	Aboriginal Conservation Management Plan	ULNCX- 111515275- 1785
47, Schedule 3	Old Ulan Conservation Management Plan	ULNCX-111515275-1787
47, Schedule 3	Bobadeen Homestead Conservation Management Plan	ULNCX-111515275-1786
53, Schedule 3	Waste Management Plan	ULNCX- 111515275- 98
57, Schedule 3	Ulan Coal Mines Ltd Mining Operations Plan 2017 to 2024	ULNCX- 111515275- 3548

Table 1-2 Management Plans & Monitoring Programs required by EPL 394

Condition	Requirement	Document Number
POEO Act	Pollution Incident Response Management Plan	ULNCX-111515275-2432

Table 1-3 Other Management Plans & Monitoring Programs required by SMP/EP Approvals

Condition	Requirement	Document Number
Ulan Underground Mine		
26, Schedule 3	Extraction Plan for LW30 and LWW6 to W8	ULNCX-111515275-3575
26, Schedule 3	Water Management Plan for LW30 and LWW6 to W8	ULNCX-111515275-3362
26, Schedule 3	Land Management Plan for LW30 and LWW6 to W8	ULNCX-111515275-3363
26, Schedule 3	Biodiversity Management Plan for LW30 and LWW6 to W8	ULNCX-111515275-3364

Condition	Requirement	Document Number
26, Schedule 3	Built Features Management Plan for LW30 and LWW6 to W8	ULNCX-111515275-3365
26, Schedule 3	Heritage Management Plan for LW30 and LWW6 to W8	ULNCX-111515275-3366
26, Schedule 3	Public Safety Management Plan for LW30 and LWW6 to W8	ULNCX-111515275-3367
26, Schedule 3	Subsidence Monitoring Program for LW30 and LWW6 to W8	ULNCX-111515275-3368
26, Schedule 3	Rehabilitation Management Plan for LW30 and LWW6 to W8	ULNCX-111515275-3369
Ulan West Underground Mine		
26, Schedule 3	UW Underground Mine Extraction Plan Longwalls 1 to 6	ULNCX-111515275-2811
26, Schedule 3	Water Management Plan for LW1 - 6	ULNCX-111515275-2777
26, Schedule 3	Land Management Plan for LW1 – 6	ULNCX-111515275-2782
26, Schedule 3	Biodiversity Management Plan for LW1 - 6	ULNCX-111515275-2783
26, Schedule 3	Built Features Management Plan for LW1 - 6	ULNCX-111515275-2784
26, Schedule 3	Heritage Management Plan for LW1 – 6	ULNCX-111515275-2785
26, Schedule 3	Public Safety Management Plan for LW1 – 6	ULNCX-111515275-2786
26, Schedule 3	Subsidence Monitoring Program for LW1 – 6	ULNCX-111515275-2787
26, Schedule 3	Rehabilitation Management Plan for LW1 - 6	ULNCX-111515275-2789

Table 1-4 Other Internal EMS Supporting Documents

UCMPL Document	Document Number
Stakeholder Engagement Plan	ULNCX-111515275-3537
Site Security Management Plan	ULNCX-111515275-218
Conceptual Mine Closure Plan	ULNCX-111515275-1970
Moolarben Dam Operations & Maintenance Plan	ULNCX-111515275-1646
Moolarben Dam Safety Emergency Plan	ULNCX-111515275-857
Spill Response Procedure	ULNCX-111515275-1745
Water Infrastructure Management Plan - Part A – Introduction and Planning	ULNOC-1105874907-939
Water Infrastructure Management Plan – Part B	ULNOC-1105874907-1024
Water Infrastructure Management Plan – Part C – Monitoring and Inspection	ULNOC-1105874907-940
Water Infrastructure Management Plan – Part D – Review and Forecast	ULNOC-1105874907-941
Complaints Procedure	ULNCX-111515275-3376
Waste Management Procedure	ULNCX-111515275-1937
Annual Rehabilitation and Land Management Planning	GCAA-625378177-10337

UCMPL Document	Document Number
Community and Employee Information Line	ULNCX-111515275-1590
Hydrocarbon & Hazardous Chemicals Management	ULNCX-111515275-1977
Bushfire Management Plan	ULNCX-111515275-2049
Pre Clearing Survey and Tree Felling Procedure	ULNCX-111515275-1635
Salvage and Reinstatement of Habitat Features	ULNCX-111515275-1639
Noise Management Procedure	ULNCX-111515275-1938
Land Clearing and Topsoil Stripping Procedure	ULNCX-111515275-2953
Bobadeen Quarry Environmental Management Plan	ULNCX-111515275-3372

1.4 Consultation

Consultation undertaken during the preparation of the EA included project briefings, a Planning Focus Meeting and separate meetings with relevant government authorities to discuss specific issues.³ This EMS was first submitted to DPIE on 31 March 2011,⁴ it was approved, subsequent to review and comment, on 29 September 2011.

Revised EMS and other management plans as required by the PA08_0184 are provided to the relevant government agencies as required including the Environment Protection Authority (EPA), DPI - Water, DRE and MWRC for comment.

Section 7.4 of this EMS provides an historical summary of amendments. Copies of correspondence in relation to the development of this plan are available upon request.

³ Detail provided in Section 3 of the EA (Umwelt, 2009)

⁴ PA08_0184 Schedule 5, Condition 1(a)

2 Planning

2.1 Project Approvals

Development consents and project approvals under *Environmental Planning and Assessment Act 1979* (EP&A Act) applicable to UCMPL are provided in **Table 2.1**.

Table 2-1 Current Development Consents & Project Approvals

Approval	Description	Approval Authority	Approval Date
PA 08_0184	Ulan Coal –Continued Operations Project	DPIE	November 2010
PA 08_0184 MOD 1	Longwall extraction of the North 1 mining area Modify Ulan No. & Ulan West mine plans Concrete Batching Plant	DPIE	December 2011
PA 08_0184 Court Orders	Land & Environment Court Judgement	DPIE	April 2012
PA 08_0184 MOD 2	Modify Ulan West mine plan LW1-5 Remove restrictions on construction blasts Minor amendments to European and natural heritage sites where blasting measures are applicable	DPIE	May 2012
PA 08_0184 MOD 3	Modify Project Boundary and Area as well as Ulan West mine plan. Amendments to commitments regarding Aboriginal cultural heritage sites.	DPIE	March 2016
PA 08_0184 MOD 4	Extension of LW's 30- 33 and LW's W7&W8 at UUG. Extension of LW's 7&8 at UWO . Modified location and additional infrastructure in the Durridgere State conservation area	DPIE	July 2019
PA 08_0184 MOD 5	Modify Ulan West mine plan (LW06-08) – administrative change.	DPIE	August 2020

Tables 2.2 and 2.3 summarise the requirements of PA 08_0184 (as modified) relevant to this document, and the section of the EMS where the requirement has been addressed.

Table 2-2 Compliance Table for PA 08_0184

Condition	Requirement	Section
Schedule 3 Condition 52	<p>Visual Amenity and Lighting</p> <p>The Proponent shall:</p> <ul style="list-style-type: none"> a) minimise the visual impacts, and particularly the off-site lighting impacts, of the main infrastructure area and associated ancillary surface works; b) take all practicable measures to further mitigate off-site lighting impacts from the project; and c) ensure that all external lighting associated with the project complies with Australian Standard AS4282(INT)1995 – Control of Obtrusive Effects of Outdoor Lighting, to the satisfaction of the Secretary. 	Section 4.1.2
Schedule 5 Condition 1.	<p>The Proponent shall prepare and implement an Environmental Management Strategy for the project to the satisfaction of the Secretary. This strategy must:</p> <ul style="list-style-type: none"> (a) be submitted to the Secretary for approval within three months of the date of final Orders being made by the Land and Environment Court in proceedings No. 10998 of 2010; (b) provide the strategic framework for environmental management of the project; (c) identify the statutory approvals that apply to the project; (d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project; (e) describe the procedures that would be implemented to: <ul style="list-style-type: none"> • keep the local community and relevant agencies informed about the operation and environmental performance of the project • receive, handle, respond to, and record complaints; • resolve any disputes that may arise during the course of the project; • respond to any non-compliance; • respond to emergencies; and (f) include: <ul style="list-style-type: none"> • copies of any strategies, plans and programs approved under the conditions of this approval; and <p>a clear plan depicting all the monitoring required to be carried out under the conditions of this approval.</p>	<p>This document</p> <p>This document</p> <p>Section 2.1</p> <p>Section 6</p> <p>Section 3.4.2</p> <p>Section 3.4.7</p> <p>Section 3.4.8</p> <p>Section 4.7</p> <p>Section 3.9</p> <p>Section 1.3.1</p> <p>Section 4.1</p>
Schedule 5 Condition 6	<p>The Proponent shall notify the Secretary and any other relevant agencies of any incident associated with the project as soon as practicable after the Proponent becomes aware of the incident. Within 7 days of the date of the incident, the Proponent shall provide the Secretary and any relevant agencies with a detailed report on the incident.</p>	Section 3.4.10
Schedule 5 Condition 7	<p>The Proponent shall provide regular reporting on the environmental performance of the project on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this approval.</p>	Section 4.3
Schedule 5 Condition 10	<p>Within 1 month of the date of final Orders being made by the Land and Environment Court proceedings No. 10998 of 2010, the Proponent shall:</p> <ul style="list-style-type: none"> (a) make copies of the following publicly available on its website: <ul style="list-style-type: none"> • the documents referred to in Condition 2 of Schedule 2; • all current statutory approvals for the project; • all approved strategies, plans and programs required under the conditions of this approval; • the monitoring results of the project, reported in accordance with the specifications in any conditions of this approval, or any approved plans and programs; • a complaints register, updated on a monthly basis; • minutes of CCC meetings; • the annual reviews of the project; • any independent environmental audit of the project, and the Proponent's response to the recommendations in any audit; 	Section 4.3.6

Condition	Requirement	Section
	<ul style="list-style-type: none"> any other matter required by the Secretary; and (b) keep this information up-to-date, to the satisfaction of the Secretary. 	

Table 2-3 Commitments relating to Visual amenity and Lighting

Commitment	Section
<p>6.12.1 UCMPL will implement the following visual controls to screen or filter views of the project infrastructure from residential and public road locations:</p> <ul style="list-style-type: none"> maintaining vegetation screening along Ulan Road; ensuring that all lighting associated with the project complies with Australian Standard AS4282(INT)1995 – Control of Obtrusive Effects of Outdoor Lighting; all buildings and infrastructure potentially visible to the public to be coloured in suitable natural tones, where practicable; directing light towards work areas and not towards private residences; progressive rehabilitation of disturbed areas; and revegetation will be progressively undertaken of the Goulburn River Diversion, as described in the approved Goulburn River Diversion Remediation Plan (GRDRP). 	<p>BMP Section 4.1.2.1</p> <p>Section 4.1.2.2 Section 4.1.2.1</p> <p>BMP GRDRP</p>

2.1.1 Environment and Community Aspect and Impacts

An environmental aspect refers to an element of an organisation's activities, products or services which can have a beneficial or adverse impact on the environment and/or community. An environmental impact refers to the change which takes place in the environment as a result of the aspect. The identification of environmental and community aspects is an ongoing process that determines the past, current and potential impact of an organisation's activities on the environment⁵.

The *Environment and Community Risk Register* is detailed in **Appendix B**. This register outlines the relevant environment and community risks associated with the Ulan Mine Complex and represents a summary of key risks identified in risk assessment processes undertaken in accordance with the Risk Management process and as required through different legislative guidelines. The risk register is updated annually after completing the annual review of environment and community risks as described in **Section 2.1.2**.

2.1.2 Risk Assessment

The Environment and Community Manager (ECM) is responsible for maintaining the operation's aspects and impacts register through the risk assessment process, where personnel identify risks to the environment and community, prioritise them in order of risk, assess the suitability of controls and determine if any additional controls are required.

The typical inputs into the BBRA will include, but not be limited to the following:

- Baseline environmental studies;
- Review of environmental performance data;
- Review of any existing and/or proposed changes to the operations;
- Review of relevant legislation, standards, codes and additional external requirements;

⁵ AS/NZS ISO 14004:2004 Environmental Management Systems - General guidelines on principles, systems and supporting techniques.

- Industry experience; and
- Input from relevant stakeholders, particular needs, interests and local knowledge.

2.1.3 Catastrophic Hazards

Catastrophic hazards are the most significant hazards. Generally they have a very low likelihood but a high potential consequence, and present a particular set of risks that require additional attention, management and continuing vigilance. The Ulan Mine Complex's business risk register maintains the catastrophic hazard's and associated control measures. Impacts are reviewed at least annually or as required by legislative requirements. UCMPL management continually support and maintain catastrophic hazard management culture by:

- Endorsing relevant requirements;
- Maintaining knowledge and awareness of catastrophic hazards;
- Monitoring the status of nominated control measures;
- Reviewing and responding to recommendations and actions emanating from assurance activities; and
- Committing the organisation to the ongoing task of better anticipating, understanding and, where reasonably practicable, eliminating or controlling catastrophic hazards.

2.1.4 Risk and Change Management

Implications of changes operations and management are assessed against external and internal risk contexts and additional controls are identified and implemented where required. A decision, change or event is significant if it could potentially have a material impact on the achievement of objectives. The ECM is responsible for maintaining the changes concerning the environment and community in the compliance management tracking system.

2.2 Legal and Other Requirements

Federal and State environmental legislation, regulations, planning policies and project specific approvals are considered in developing plans, reviewing risk assessments, preparing Ground Disturbance Permits (GDPs) and training and awareness or proposing changes to the approved mine plan. Approvals and conditions are registered in the compliance database. The main approvals are:

- Development approval (PA 08_0184);
- Environmental Assessment (2009 EA and modifications);
- Mining leases and approvals (e.g. SMPs, Mining Operations Plan (MOP));
- Environment Protection Licence (EPL 394);
- Department of the Environment (DoE) approval (EPBC Ref: 2009/5252 and 2015/7511);
- Extraction Plans and Management Plans;
- Other licences and permits (e.g. Radiation, Dangerous Goods, Water Licences); and
- Native Title Agreement.

Mining and exploration authorisations, issued in accordance with the *Mining Act 1992*, by the DRE are listed below.

Table 2-4 Mining & Exploration Titles

Instrument	Authority	Date Grant	of	Duration Approval	of	Mine Area Applicability
Consolidation Coal Lease (CCL) 741	DRE	2/01/1990		15/05/2027		All operations
Mining Purpose Lease 315	DRE	3/08/1993		3/08/2035		Ulan Underground (Surface Lease)
Mining Lease 1341	DRE	25/01/1994		25/01/2036		Ulan Underground
Mining Lease 1365	DRE	9/03/1995		9/12/2032		Ulan Underground (Surface Lease)
Mining Lease 1366	DRE	9/03/1995		9/12/2032		Ulan Underground (Surface Lease)
Mining Lease 1467	DRE	17/04/2000		16/04/2021		Ulan Underground (Surface Lease)
Mining Lease 1468	DRE	16/05/2000		15/05/2021		Ulan Underground
Mining Lease 1511	DRE	24/04/2002		23/04/2023		Ulan Underground (Surface Lease)
Mining Lease 1554	DRE	1/09/2004		31/08/2025		Ulan Underground (Surface Lease)
Mining Lease 1656	DRE	03/03/2011		03/03/2032		Ulan Underground (Surface Lease)
Mining Lease 1697	DRE	22/05/2014		22/05/2035		Ulan Open Cut
Mining Lease 1754	DRE	30/06/2017		30/06/2038		Ulan Surface Operations
Mining Lease 1798	DRE	19/02/2020		19/02/2041		Ulan Open Cut
Mining Lease 1799	DRE	26/02/2020		26/02/2041		Ulan Surface Operations
Mining Lease Application (ML470)	DRE	Pending		TBA		Ulan Open Cut
Exploration Licence 5573	DRE	12/03/2013		28/04/2022		Ulan Underground
Exploration Licence 7542	DRE	6/05/2010		6 May 2020		Ulan West
Exploration Licence 8687	DRE	31/01/2018		31/01/2024		Ulan West
Exploration Licence Application 5922	DRE	Pending		TBA		Ulan West

Note: * Application submitted for renewal. ^Period of Lease renewal until.

2.2.1 Legal Compliance

The approval details including date of approval, renewal, reporting, conditions and current compliance status are recorded in a compliance database. Internal compliance audits on are undertaken on a regular basis and independent external audit are undertaken every 3 years commencing June 2013, unless the Secretary directs otherwise.⁶

A review of legal and other requirements is undertaken annually as part of the EMS review. This includes reviewing the legislative changes advice provided annually by GCAA and any agency notifications. The ECM advises the General Manager and Operations Managers of any changes in legislation, policy and guidelines that may have implications for the Ulan Mine Complex.

Awareness of ongoing changes to legislation, standards, codes and other external requirements is maintained through the receipt of regular updates from legal advisers, participation in industry groups such as the NSW

⁶ PA 08_0184, Schedule 5, Condition 8

Minerals Council and Hunter Coal Environment Group, notification from the General Manager Environment and Community (GMEC) and through access to legislation via the internet.

The ECM or delegate is responsible for ensuring that personnel and contractors are aware of their relevant legal and other requirements by reviewing and updating Induction Training packages as required.

2.2.2 Other requirements

The following codes, programs and standards are relevant in addition to legal requirements:

- Australian Minerals Industry – Enduring Value;
- Global Reporting Initiative (GRI);
- United Nations Global Compact;
- International Council for Mining and Minerals (ICMM); and
- The CEO Water Mandate.

2.2.3 Voluntary Planning Agreement

A Voluntary Planning Agreement (VPA) was agreed with MWRC (in consultation with DPIE) on 16 March 2011. Contributions assist the provision of local infrastructure and services and maintenance of Cope Road. Ongoing consultation is conducted with MWRC.

2.3 Objectives and Targets

Environment and community objectives and targets are developed in consideration of aspects and impacts identified through risk assessments, legal and other requirements, operational practices, industry standards and corporate objectives. They are established at the commencement of the year and reviewed as part of monthly reviews. Objectives are focussed on continual environment performance improvement and targets include year on year reductions in number of incidents and community complaints and targets for completion of rehabilitation and or implementation of community programs.

2.4 Mine Closure Planning

The continued development and review of ULNCX-111515275-1970 *Conceptual Mine Closure Plan* (CMCP) for the Ulan Mine Complex is undertaken annually.⁷ The Mine Closure Plan is conceptual as the operation has a Life of Mine (LOM) of greater than five years. As part of the conceptual planning for mine closure, the development of preliminary closure criteria will be ongoing to ensure the operation is progressing towards achieving relinquishment.

⁷ Integrated Mining Operations Plan (MOP) (2011-2017) (ULN SD PLN 0079)

3 Implementation and Operation

The ECM will be responsible to ensure the appropriate resources are identified annually during the budgeting process to implement the EMS.

3.1 Roles and Responsibilities

The management structure of the Ulan Mine Complex includes three separate operations.

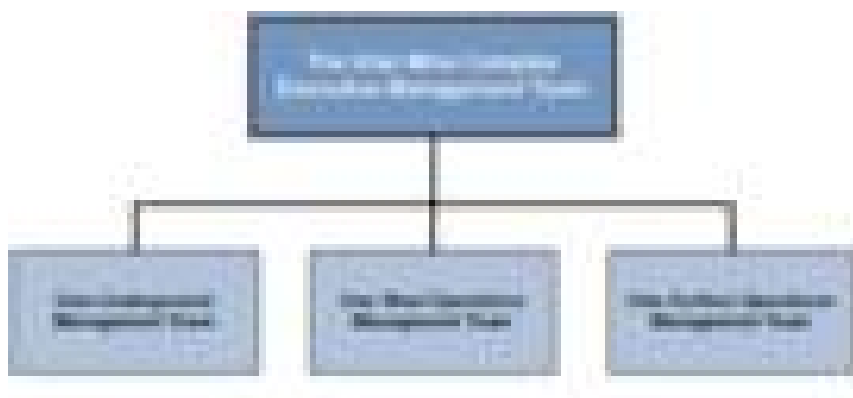


Figure 3.1 Ulan Mining Complex Management Structure

Achieving a high standard of environmental management and outcomes is the responsibility of managers, employees and contractors. Positional roles and responsibilities for maintaining and implementing the EMS are provided in section 6. Roles and accountabilities specific to aspects are detailed in the relevant management plan.

3.2 Training and Competency

Training and Competency Management Standards are maintained relevant to each operation i.e. Ulan Surface Operations, Ulan Underground and Ulan West Operations. Competencies are identified, assessed and recorded for each team member. The Environment and Community Training Needs Analysis (TNA) (**Appendix C**) is captured in the system and included in the training program.

An induction package, including an introduction to the EMS is provided to new employees and contractors prior to commencing work. Induction training packages are revised and updated as required.

Information from the TNA is reviewed during the preparation of the UCML Annual Plan, to identify training requirements necessary to ensure all employees and contractors have obtained the necessary skills and knowledge. All training is to be competency based.

The content of training packages will be dependent on the target audience, however environment and community training provided to UCML employees and contractors during the induction process will as a minimum include the following:

- the importance of conformance with the GCP and relevant standards;
- conformance with this EMS;
- relevant legal and other requirements;
- the potential environmental impacts and associated controls for general mining activities;

- their roles and responsibilities in achieving conformance;
- requirements of the EMS, including emergency preparedness and response requirements; and
- the potential consequences of non-compliance with environmental and community policies and EMS requirements.

Requirements for the education and awareness, instruction and communication relating to the environment, biodiversity and landscape functions are set out in the roles and accountabilities, and the competencies required for each position and role. Appropriate education and awareness regarding the environment, biodiversity and landscape function is provided to relevant personnel, using specialist advice as required.

Each Training Coordinator will be responsible for ensuring all environmental training records are maintained for their site in accordance with the EMS and *11.14 Environment & Community Training - GCAA-625378177-10240*.

3.3 Consultation and Communication

UCMPL recognises that implementing the EMS and improving its performance requires the co-operation of its entire workforce (including employees and contractors) and the effective communication between management and its workforce. UCMPL also recognises the knowledge and experience of its workforce is a valuable resource and it encourages its workforce to participate in the development, implementation and maintenance of its EMS. This is achieved through consultation and involvement in the development, communication, implementation and maintenance of the sites Annual Plan and the setting of objectives, goals and targets.

UCMPL have established a systematic consultative approach to decision making on issues that have Health Safety Environment and Community (HSEC) implications by ensuring:

- Hazards and issues are known, addressed and mitigated;
- Informed decisions are made; and
- People are motivated and encouraged to understand and accept efforts to improve performance.

The SEP outlines the management approach to external stakeholder engagement, community development and complaints management (**Section 3.5.4**).

3.3.1 Internal Communications

Communications between all levels of mine management, employees, contractors and other relevant stakeholders are undertaken in accordance with the GCAA Guideline *10.3 Internal Communications* (GCAA-625378177-10330). Internal communication at the Ulan Mine Complex includes (but is not limited to) the following:

- Induction Training;
- Pre-shift Talks (Tool Box Talks);
- Crew Talks;
- Core Hazard Review Meetings;
- Management Meetings;
- HSEC Committees;
- Project Control Group meetings;
- HSEC Safety Alerts;
- Tool Box Talks;
- Work Permits;

- Newsletters;
- Email;
- Workplace Interactions; and
- Planned Task Observations.

3.3.2 External Communications

Communications between UCMPL and external stakeholders are undertaken in accordance with the SEP (ULNCX-111515275-3537). Key external stakeholders identified in the SEP include:

- Government agencies;
- Local communities;
- The Community Consultative Committee (CCC);
- Registered Aboriginal Groups;
- Regional environmental groups; and
- Neighbouring mining operations.

The SEP identifies the social impacts, community concerns, needs and social risks regarding operations at the Ulan Mine Complex. Stakeholder consultation is undertaken at all phases of the project life cycle - including development, concept, operational and mine closure.

3.3.3 Stakeholder Engagement Plan (SEP)

The SEP, ULNCX-111515275-3537, has been aligned with the GCP and other relevant standards and guidelines and describes the processes to uphold and promote human rights and respect cultural considerations and heritage, considerations of community safety and environmental impacts, and social investment activities.

The SEP is aimed at enhancing the socio-economic capacity and well-being of the communities associated with our activities, avoiding dependency and contributing to the development of sustainable livelihoods. The SEP provides for a strategic framework to engage local communities that includes the following:

- Identifying social and community issues;
- Engaging with the community, as appropriate;
- Engaging with indigenous communities;
- Providing support to the communities through social investment activities;
- Developing a community strategy;
- Implementing and maintaining a stakeholder engagement strategy;
- Managing performance;
- Implementing and maintaining project specific consultation strategies;
- Implementing and maintaining a community inquiry/complaint system;
- Reporting to the community, as appropriate; and
- Managing media engagement.

3.3.4 Aboriginal Stakeholder Consultation

Consultation with UCMPL's registered Aboriginal Stakeholders is undertaken in accordance with the SEP and ULNCX- 111515275- 95 Heritage Management Plan (HMP). The HMP details the consultation strategies that UCMPL undertakes with the registered Aboriginal stakeholder groups.

3.3.5 Media

All media communications must be prepared in accordance with the SEP. Media statements are used at UCMPL on an as needs basis to address specific issues and in response to particular events of significance. Only the UCMPL General Manager and Operations Managers are authorised to liaise with the media and issue media statements.

3.3.6 Sharing of Information

UCMPL have developed mechanisms for sharing information and good practice with both internal and external stakeholders. These methods include:

- Reporting of monitoring and performance data to corporate, regulators and the community;
- Participation in internal forums such as Environment & Community meetings to discuss issues, challenges and good practice;
- Involvement in research programs such as ACARP8;
- Participation within industry forums such as the NSW Minerals Council Environment and Community conference;
- Providing Case Studies for the Annual Report; and
- External Reports and site websites.

To facilitate the development of an extensive environmental monitoring network in the vicinity of the Village of Ulan and other private residences adjacent to the Ulan Mine Complex, UCMPL have developed a Data Sharing Agreement with Moolarben and Wilpinjong coal mines to enable access to monitoring results across all operations.

3.3.7 Community Complaints

Community complaints management includes receipt of complaints, investigation, implementation of appropriate remedial action, and feedback to the complainant as well as communication to site management or personnel and notification to external bodies, such as the EPA, where necessary.

Community complaints received by the Ulan Mine Complex are managed in accordance with the SEP. UCMPL have developed *ULNCX-111515275-3376 Complaints Procedure* to assist in recording complaints, complaint investigation and follow up actions.

UCMPL maintain a 24 hour, 7 day a week community and employee information telephone line **1800 647 630** and email address ulancommunity@glencore.com.au to:

- manage complaints received by UCMPL that may be a result of mining and/or associated activities conducted within land owned or managed by UCMPL;
- provide access to open cut blasting information for interested stakeholders; and
- provide access and incident information to employees during emergency situations.

The ECM (or delegate) will:

⁸ Australia Coal Association Research Program (ACARP)

- contact the complainant within 24 hours of the complaint, to discuss the complaint and recommend corrective or preventative action where appropriate. Wherever practicable this will include meeting the complainant in person.
- Investigate the complaint and advise complainant of results within 48 hours of the complaint, where appropriate
- review of the effectiveness of the corrective or preventative action to be conducted within one month of the complaint and the relevant work procedures updated if required.
- Documentation of changes to work procedures is to be undertaken and the updated procedures communicated to relevant personnel.

Details of community complaints will be provided to GCAA as part of the monthly internal environmental reporting process (**Section 4.3**). The details of community complaints will be kept, in accordance with UCMPL's document control procedure, for at least four years (**Section 3.6**) and recorded in a database for tracking actions for historical purposes. Community complaints will be continually assessed to note any trends that may require the implementation of further mitigation measures.

Further community information, including UCMPL's contact details are provided on its website www.ulancoal.com.au⁹ for the purposes of external review and transparency.

3.3.8 Dispute Resolution

Disputes with internal stakeholders that may arise during operations at the Ulan Mine Complex will be managed in accordance with relevant GCAA guideline documentation and processes. UCMPL attempts to resolve disputes through consultation where possible. The PA08_0184 provides for independent review as described below. Members of the community who are dissatisfied with information are able to seek review through these processes.

3.3.9 Independent Review

In the event a landowner considers the Ulan Mine Complex to be exceeding the relevant project criteria¹⁰ they may request an independent review of the Secretary.¹¹ UCMPL will provide such review, as directed, within 2 months, consistent with the requirements specified in PA08_0184. In the event no exceedance is identified, the independent review will cease and if an exceedance is identified, UCMPL will be required to implement mitigation or instigate the acquisition process.

3.3.9.1 Additional Noise Mitigation Measures

Upon receiving a written request from the owner of any residence on the land listed in Tables 1 or 6 of PA 08_0184 and on privately-owned land where subsequent noise monitoring shows that the noise generated by the project is greater than or equal to LA eq (15 minute) 38 dB(A) on a systemic basis, UCMPL shall implement additional noise mitigation measures (such as double glazing, insulation, and/or air conditioning) at the residence in consultation with the owner. These measures must be reasonable and feasible.

If within 3 months of receiving this request from the owner, UCMPL and the owner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution.

3.3.9.2 Ulan Road Strategy

The Ulan Road Strategy provides for the upgrade and maintenance of Ulan Road between Mudgee and the entrance to the underground surface facilities at the Ulan mine over the next 21 years. Agreement on the Ulan Road Strategy, in conjunction with Moolarben Coal Mines (MCM), Wilpinjong Coal Mine (WCM) and MWRC, was achieved in 2013.

⁹ PA 08_0184, Schedule 5, Condition 10, of a

¹⁰ PA 08_0184, Schedule 3

¹¹ PA 08_0184, Schedule 4, Conditions 3-5

If there is any dispute between the various parties involved in the implementation of the strategy, then any of the parties may refer the matter to the Secretary for resolution.

3.3.9.3 Land Acquisition

Land owners with acquisition rights are entitled to request that UCMPL purchase their property at current market value in addition to reasonable costs for legal advice, relocation and disturbance.¹² The terms of purchase and dispute resolution processes are detailed in Condition 6 of Schedule 4 in PA08_0184.

3.3.9.4 Issues specific to Aboriginal Stakeholders

In accordance with the HMP, when previously unrecorded Aboriginal heritage evidence is identified within the Project Approval Boundary (see **Figure 2**) during the course of operations or further heritage investigations¹³, this evidence will be subject to temporary protection, recorded and appropriate management strategies implemented, in consultation with the registered Aboriginal stakeholders.

Management procedures are outlined in the HMP and these vary depending on the nature of the heritage evidence (site type), the level of significance of the evidence, and the type of proposed impacts.

Where previously unrecorded Aboriginal sites of moderate to high, or high significance will be subject to impacts, mitigation measures as determined by the consensus agreement of UCMPL and the registered Aboriginal stakeholders will be implemented. In the event that consensus agreement cannot be reached, the procedures for resolution are specified in the HMP.

However, in relation to Aboriginal skeletal remains (refer to the HMP) UCMPL will manage the remains in consultation with the registered Aboriginal stakeholders and DPIE. Where consensus agreement cannot be reached, the matter will be referred to the Secretary for resolution.

3.3.10 Environmental Incidents

An *incident* is defined as a set of circumstances that causes or threatens to cause material harm to the environment, and/or breaches or exceeds the limits or performance measures/criteria in PA 08_0184 and EPL 394.

Reportable incident notifications are detailed in the *Pollution Incident Response Management Plan (ULNCX-111515275-2432)*.¹⁴ The ECM (or delegate) must immediately contact the EPA and the DPIE¹⁵ after becoming aware of an incident in accordance with the PIRMP by telephoning the Environment Line service on **131 555** and the other relevant agencies.

Written details of the incident will be provided to the Secretary and the EPA within 7 days of the date on which the incident occurred. All reportable incidents are detailed in the Annual Review (AR) and the EPL Annual Return, if appropriate.

3.3.11 Incident Management Process

Personnel (UCMPL employees and contractors) must report environmental incidents to their immediate supervisor/site contact who will contact a member of the Environment and Community Department, immediately after becoming aware of the incident.

The details and final investigation results from all environmental incidents must be recorded in the compliance database. The UCMPL incident management process follows the key steps below, which includes:

¹² PA 08_0184, Schedule 4, Condition 6

¹³ Other than new evidence identified during heritage mitigation works in a location where evidence has previously been recorded (for example, new stone artefacts identified during the surface collection or excavation of a known site). Such evidence is dealt with under Section 3.8 of the HMP (ULN SD PLN 0013).

¹⁴ Required by *Protection of the Environment Operations Act 1997*

¹⁵ Condition 6, Schedule 5 of PA 08_0184

- **Secure the Scene:** Immediately after an environmental incident occurs or a hazard is identified, all attempts to be made to remove or isolate the risk or impact and secure the location.
- **Gather Information:** Once notified of the incident, the ECM (or delegate) will establish initial facts such as what exactly happened, names of all people involved (including witnesses), time and location and initial action taken. Take witness statements and gather any other evidence available.
- **Determine Investigation Level:** The ECM (or delegate) will determine the level of investigation regarding the category of the environmental incident (refer to **Table 9**), for example:
- **Category 3 and above:** Incident Cause Analysis Method (ICAM) or other comprehensive investigation process required, facilitated by a competent incident investigator;
- **Category 2:** Investigation required — conduct mini ICAM
- **Category 1:** Complete incident report and consider need for mini-ICAM
- **Commence ICAM:** The detail and quality of the investigation should be proportional to the risk or impact rating of the environmental incident and recorded Ulan Coal Incident Report & Investigation Form. The investigation should be conducted as soon as practical after the event.
- **Review and Classify Information and Determine Actions:** The ECM (or delegate) shall complete the investigation of the incident, in conjunction with the persons involved, and recommend actions to be taken. From the analysis of the causes, determine the appropriate action to prevent a recurrence of the incident.
- **Complete Actions:** Interim corrective actions, to address direct causes of incidents, will be lodged in the site HSEC incident/ action database. Generally, these actions will be completed within one month. Long term preventive actions will have a direct link to the root cause of the incident and target preventing a recurrence and reducing the risk or impact.
- **Trend Analysis and Reports:** The ECM will collate and analyse the incident and investigation data to identify trends in order to take actions to reduce the likelihood and severity of reoccurring incidents. The analysis will take place annually. Results will be used for continuous improvement and to provide feedback on the effectiveness and where necessary initiate appropriate responses.

3.3.12 Environmental Incident Categories

Table 9 provides the definitions to assist UCMPL to determine the appropriate environmental incident category, with typical examples of each category.

Table 3-1 Environmental Incident Category Matrix

Environmental Incident Category Matrix												
Category	Incident Description	Incident Type(s)	Environmental Objective	Issue	Short-Term Mitigation Strategy (7 days)	Short-Term	Short	Other	Substance	Land Clearing	Effluent/Discharge	Waste & Other
Cat 1a	Potential environmental incident, impact, risk due to actual incident resulting in no environmental harm	•Type of daily, minor effluent water or discharge that is a discharge that is a minor water environment resulting into minor or no remediation •Type of new or portable water contained on-site that is, the result of this is to require a new or replacement	•Integrate the management of chemicals or fuels •Apply to the ground other than in an open soil water body or in an open water body (if less than 100 L) •Type underground of less than 100 L •Type contained within a vessel, bounded only 1000 litres or less (if 1000 L or less)	•Release of any oil, chemicals that could lead to non-compliance •Environmental harm (minor damage not dependent on its proximity to the site) (if 100 L or less)	•Failure to follow condition specific and local procedures •Apply 1000 L (if 1000 L or less)	•Failure of any oil, chemicals that could lead to non-compliance •Environmental harm (minor damage not dependent on its proximity to the site) (if 100 L or less)	•Failure of any oil, chemicals that could lead to non-compliance •Environmental harm (minor damage not dependent on its proximity to the site) (if 100 L or less)	•Oil •Gas	•Oil •Gas	•Failure of any oil, chemicals that could lead to non-compliance •Environmental harm (minor damage not dependent on its proximity to the site) (if 100 L or less) •Cleaning in environmental harm	•On-site leakage Treatment Plant and storage not working after accident (minor damage not dependent on its proximity to the site) (if 100 L or less) •Leakage with on-site less than 100 L and storage in environmental harm	•Failure to follow or provide prompt waste management in a short time
Cat 1b	No having environmental damage or effect. Required minor or no remediation	•Only water: Minor environmental impact (minor damage not dependent on its proximity to the site) (if 100 L or less) •Type of daily, minor effluent water or discharge that is a discharge that is a minor water environment resulting into minor or no remediation •Type of new or portable water contained on-site that is, the result of this is to require a new or replacement	•Apply to the ground other than in an open soil water body or in an open water body (if less than 100 L) •Type underground of less than 100 L •Type contained within a vessel, bounded only 1000 litres or less (if 1000 L or less) •Type underground of less than 100 L •Type contained within a vessel, bounded only 1000 litres or less (if 1000 L or less)	•Release of any oil, chemicals that could lead to non-compliance •Environmental harm (minor damage not dependent on its proximity to the site) (if 100 L or less) •Release of any oil, chemicals that could lead to non-compliance •Environmental harm (minor damage not dependent on its proximity to the site) (if 100 L or less)	•Failure to follow condition specific and local procedures •Apply 1000 L (if 1000 L or less) •Apply 1000 L (if 1000 L or less) •Apply 1000 L (if 1000 L or less)	•Failure of any oil, chemicals that could lead to non-compliance •Environmental harm (minor damage not dependent on its proximity to the site) (if 100 L or less) •Failure of any oil, chemicals that could lead to non-compliance •Environmental harm (minor damage not dependent on its proximity to the site) (if 100 L or less)	•Failure of any oil, chemicals that could lead to non-compliance •Environmental harm (minor damage not dependent on its proximity to the site) (if 100 L or less) •Failure of any oil, chemicals that could lead to non-compliance •Environmental harm (minor damage not dependent on its proximity to the site) (if 100 L or less)	•Oil •Gas •Other (if 100 L or less) •Other (if 100 L or less)	•Oil •Gas •Other (if 100 L or less) •Other (if 100 L or less)	•Failure of any oil, chemicals that could lead to non-compliance •Environmental harm (minor damage not dependent on its proximity to the site) (if 100 L or less) •Cleaning in environmental harm	•On-site leakage Treatment Plant and storage not working after accident (minor damage not dependent on its proximity to the site) (if 100 L or less) •Leakage with on-site less than 100 L and storage in environmental harm (if 1000 L or less) •On-site leakage Treatment Plant and storage not working after accident (minor damage not dependent on its proximity to the site) (if 100 L or less) •Leakage with on-site less than 100 L and storage in environmental harm (if 1000 L or less)	•Failure to follow or provide prompt waste management in a short time
Cat 2	Short-term impact. Required minor remediation	•Minor discharge to release off-site (minor damage not dependent on its proximity to the site) (if 100 L or less) •Type of daily, minor effluent water or discharge that is a discharge that is a minor water environment resulting into minor or no remediation •Type of new or portable water contained on-site that is, the result of this is to require a new or replacement	•Apply to the ground other than in an open soil water body or in an open water body (if less than 100 L) •Type underground of less than 100 L •Type contained within a vessel, bounded only 1000 litres or less (if 1000 L or less) •Type underground of less than 100 L •Type contained within a vessel, bounded only 1000 litres or less (if 1000 L or less)	•Release of any oil, chemicals that could lead to non-compliance •Environmental harm (minor damage not dependent on its proximity to the site) (if 100 L or less) •Release of any oil, chemicals that could lead to non-compliance •Environmental harm (minor damage not dependent on its proximity to the site) (if 100 L or less)	•Failure to follow condition specific and local procedures •Apply 1000 L (if 1000 L or less) •Apply 1000 L (if 1000 L or less) •Apply 1000 L (if 1000 L or less)	•Failure of any oil, chemicals that could lead to non-compliance •Environmental harm (minor damage not dependent on its proximity to the site) (if 100 L or less) •Failure of any oil, chemicals that could lead to non-compliance •Environmental harm (minor damage not dependent on its proximity to the site) (if 100 L or less)	•Failure of any oil, chemicals that could lead to non-compliance •Environmental harm (minor damage not dependent on its proximity to the site) (if 100 L or less) •Failure of any oil, chemicals that could lead to non-compliance •Environmental harm (minor damage not dependent on its proximity to the site) (if 100 L or less)	•Oil •Gas •Other (if 100 L or less) •Other (if 100 L or less)	•Oil •Gas •Other (if 100 L or less) •Other (if 100 L or less)	•Failure of any oil, chemicals that could lead to non-compliance •Environmental harm (minor damage not dependent on its proximity to the site) (if 100 L or less) •Cleaning in environmental harm	•On-site leakage Treatment Plant and storage not working after accident (minor damage not dependent on its proximity to the site) (if 100 L or less) •Leakage with on-site less than 100 L and storage in environmental harm (if 1000 L or less) •On-site leakage Treatment Plant and storage not working after accident (minor damage not dependent on its proximity to the site) (if 100 L or less) •Leakage with on-site less than 100 L and storage in environmental harm (if 1000 L or less)	•Failure to follow or provide prompt waste management in a short time
Cat 3	Medium-term impact. Required minor remediation											
Cat 4	Long-term impact. Required significant remediation											
Cat 5	Environmental damage or effect. Required major remediation											

Note: If it is proven from the Matrix and Cat 1 to 5 that there are incident events to be classified from the operation (based on the impact of the incident against the Ulan Complex Cat 1 to 5 objectives).
The Ulan Complex can upgrade an incident category if there is a significant increase in the level of the incident (based on the impact of the incident against the Ulan Complex Cat 1 to 5 objectives).

3.4 Document Control and Records Management

UCMPL have developed a *Document Control procedure* (ULNUG-849165555-5689, ULNOC-1105874907-2299, ULWUG-729531900-128). This procedure details the processes implemented at UCMPL in relation to document control and records management including:

- The structure and application of the GCAA Health, Safety, Environment and Community Standards
- The management of control of documentation (internal and external) in the intranet document management system
- Document development or review, approval and implementation
- Consultation and authorisation processes associated with document development or review; and
- Records Management – physical and electronic data, records and samples (including retention periods)

Environmental documents, including correspondence and environmental monitoring data is kept on site for a minimum of four years or as required with relevant statutory requirements in a centrally maintained filing system.

In accordance with EPL 394 Schedule 05 Condition M1.3 the following records must be kept in respect of any samples required to be collected for the purposes EPL 394:

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

The UCMPL Intranet is the system used by the Ulan Mine Complex for the control of EMS and HSEC documents. The ECM or delegate will be responsible to ensure all versions of the EMS and related documents on UCMPL intranet are current and available to employees and contractors.

UCMPL respects the privacy of its stakeholders, customers and visitors. Personal information collected by UCMPL is treated as confidential. Personal information is information relating to an individual whose identity is apparent, or can reasonably be ascertained, from the information or opinion provided. Personal information will not be released unless the law requires or permits it or permission is given.

3.5 Operational Control

Where activities are identified as having an environmental impact, operational controls and procedures must be implemented. To ensure that these activities are carried out in accordance with the objectives and targets, a range of operational controls, including (but not limited to) shall be utilised:

- Environmental Management Plans;
- Environmental Procedures;
- Glencore Coal Assets Australia HSEC standards;
- Works Authorisation (WA) Forms;

- Ground Disturbance Permits (GDP)
- Work Permits; and
- UCMPL's BBRA.

3.5.1 Environmental Management Plans and Procedures

Supporting the EMS are a number of Environmental Management Plans (EMPs). The EMPs have been developed to satisfy the requirements of PA 08_0184 and identify the controls and mitigation measures that are in place on site to manage the potential environmental impacts associated with UCMPL's operations. They are integral components of the EMS.

The plans identify and define legislative requirements, environmental and community aspects and impacts and the actions required in order to satisfy corporate requirements (**Section 4.6.3**).

EMPs have made reference to (and been developed in accordance with):

- identified environmental aspects and impacts;
- identified objectives and targets;
- internal corporate requirements; and
- regulatory requirements.

EMPs will be accessible via the UCMPL Intranet and relevant personnel will receive appropriate training in regards to the requirements of these plans. These personnel will have the authority to implement the plans and to stop work should there be any real or potential risk to the environment or community as a result of mining activities. These EMPs will be properly communicated to the work force via training programs identified in **Section 3.4**.

Where required, UCMPL will also make EMPs publically available on UCMPL's website www.ulancoal.com.au

3.5.2 Work Authorisation

A Work Authorisation Form must be completed prior to the commencement of:

- all tasks undertaken by contractors (excluding labour hire contractors); or
- work covered by a work permit (**Figure 7**).

The Work Authorisation Form, which incorporates a Safe Work Method Statement (SWMS), shall be maintained for the duration of the task at the job site. Upon completion of the task the completed authorisation form will be forwarded to the relevant Task Coordinator. The introduction of the Work Authorisation Form approval process has been established in order to:

- ensure compliance with UCMPL's statutory obligations;
- ensure appropriate environmental controls are identified and implemented for new projects/tasks; and
- ensure due consideration is given to potential environmental, community and heritage impacts identified for new projects/tasks.

Figure 3.2 UCMPL Specific Work Permits

SPECIFIC WORK PERMIT			
<p>A Work Permit is an authorization for work involving areas of inherent or potential danger where the application of stringent precautions is necessary. If your task involves work in any of the areas listed below then the corresponding work permits must also be completed and approved.</p> <p><i>Attach completed work permits to this Work Authorisation</i></p>			
POTENTIALLY HAZARDOUS WORK	WORK PERMIT NUMBER	POTENTIALLY HAZARDOUS WORK	WORK PERMIT NUMBER
HOT WORK SURFACE (UCMPL SO FORM E-4-002)		MOBILE GENERATOR SET (UCMPL SO FORM E-4-003)	
CONFINED SPACE EN- TRY (UCMPL SO FORM E-4-004)		WORK AT HEIGHT (UCMPL SO FORM E-4-005)	
GROUND DISTURBANCE (UCMPL SO FORM E-4-006)		EXCAVATION WORKS (UCMPL SO FORM E-4-007)	
BUILDING WORKS (including Reinforcement re- moving) (UCMPL SO FORM E-4-008)		HIGH VOLTAGE ACCESS (UCMPL SO FORM E-4-009)	
COMPLEX LIFTS (UCMPL SO FORM E-4-009)		GROUP ISOLATION (UCMPL SO FORM E-4-010)	
RADIATION (UCMPL SO FORM E-4-011)		CRITICAL SYSTEMS IMPAIRMENT (UCMPL SO FORM E-4-012)	
WORKING NEAR POWER SOURCES (UCMPL SO FORM E-4-013)		REMOTE ISOLATION (UCMPL SO FORM E-4-014)	
HOT WORK - LWD (UCMPL SO FORM E-4-015)		DRILLING (Refer To Task Coordinator)	

Additional planning instruments may be required prior to the introduction of a new project/task to site, relative to the scale of the project proposed. A copy of the Work Authorisation Form is maintained on the UCMPL's Intranet. The two main work permits relevant to environmental management at UCMPL are the Ground Disturbance Permit and the Excavation Works Permit.

3.5.3 Ground Disturbance Permit

The purpose of the Ground Disturbance Permit (GDP) is to ensure site clearing of vegetation and topsoil is planned and carried out in a manner to minimise environment and community impacts on aspects (eg. flora, fauna, water ways, heritage, private property).

The GDPs clarify relevant approval conditions, management plans and provide conditions to meet requirements. Ground disturbance includes drilling, clearing/grubbing, tree disturbance, trenching, access roads etc.

Until the ECM (or delegate) is satisfied that the proposed work activity complies with the site approval conditions, the proposed work cannot commence.

3.5.4 Excavation Works Permit

The Excavation Works Permit must be completed for any work involving the excavation or filling of trenches, drilling, placement of pegs into the ground, ditches, shafts, wells, tunnels and pier holes. Until the ECM (or delegate) is satisfied that the proposed work activity complies with the site approval conditions, the proposed exaction work cannot commence.

3.6 Contractor Management

All contractors and suppliers (including designers and manufacturers) are to uphold Glencore Corporate Practice, HSEC Standards and Guidelines. Systems and procedures shall be established, implemented and maintained to confirm that contractors and suppliers (including designers and manufacturers) have adequate resources, systems and processes to identify and comply with applicable legislation, standards, codes applicable to the products or services they are supplying or their relationship with site.

Contractors and suppliers (including designers and manufacturers) are managed and/or monitored through systems that include:

- Documentation of roles, accountabilities and lines of communication;
- Setting, monitoring and reporting on targets;
- Monitoring and reporting on compliance with contractual obligations;
- Feedback on performance throughout the duration of the contract;
- Consequences for HSEC non-compliance; and
- Post completion including formal handover, briefing of safe use of plant and/or equipment installed or modified, evaluation of performance and close out of documentation etc.

For the purposes of clarification, where there is inconsistency between a Contractor's Management System and this EMS, this EMS will prevail to the extent of that inconsistency.

3.7 Project Management

Project Management at the Ulan Complex will be undertaken in accordance with *Project Management System* (GCAA-625378177-1093), which is available on the intranet.

Identification of hazards and evaluation and control of risks and impacts of projects are required at each stage of the project/operation life cycle, including major projects such as new greenfield sites, through to the introduction of new plant, equipment and infrastructure to the site.

Key components of the project management system:

- The integration of performance and risk management systems into the project life cycle management system.
- Early development and regular review of mine closure plans (MCPs)
- Compliance with GCP HSEC Standards, Guidelines and relevant legislation, applicable Australian and International standards and codes;
- Assignment of responsibility for design and development activities to appropriately qualified personnel;
- Requirement to include design inputs and outputs and the evaluation of alternative designs to address identified hazards and assessed risks and impacts;
- A design control process that manages changes to the design;
- Management of technical interfaces between different disciplines;
- Capacity to apply experience from previous projects and current operations in the appropriate context to project development;
- Design and construction that complies with sound engineering and technical standards;

- Review, approval and monitoring processes that measure performance, progress and outcomes;
- Conduct of audits over the life of the project to monitor performance, progress, milestones and outcomes; and
- Commissioning plan that addresses operability requirements and employee competency, for example, supervision, training and emergency control.

3.8 Emergency Preparedness and Response

Each Operation within the Ulan Mine Complex has developed an emergency response plan maintained on UCMPL's Intranet. The plan covers potential environmental emergencies as well as other emergency situations that relate to the operations.

The plan includes emergency situations identified from risk assessments to identify foreseeable site emergencies, and assigns responsibilities and lists contacts in case of an emergency, as well as internal and external communication procedures. The plan includes, but is not limited to:

- A site plan of the operation;
- The roles and accountabilities associated with emergency response team;
- Training requirements;
- Information on emergency response personnel will gain access to and identify all service isolation points, emergency equipment;
- Procedures for:
 - Responding to specific likely scenarios;
 - Safe evacuation, both from underground and from surface buildings;
 - Initial and ongoing emergency notification to internal and external resources, including contact details for individuals and organisations required;
- Maintaining an events and communication log;
- Actions after the emergency has passed:
- Control of any remaining hazards; and
- Arrangements for cleaning up and restoring the site.

UCMPL undertakes simulated emergencies to physically test the emergency response system.

In the case of a site Emergency that threatens or potentially impacts on the environment (an environmental incident) the PIRMP would be activated.

3.9 Cumulative Impacts

The Ulan Coal Operations, Wilpinjong Coal Mine (WCM) and Moolarben Coal Mine (MCM) operate within an area of around 750km² in the Ulan region. Other projects in the vicinity of Ulan Mine Complex include existing clay and sandstone quarrying activities.

Table 3-2 Cumulative Impacts

Cumulative Impacts	Reference Plans and Where Addressed
Shift Changes	PA08_0184, Section 3, Condition 49(c)

Cumulative Impacts	Reference Plans and Where Addressed
Noise	PA08_0184, Section 3, Condition 9(d) and Noise Management Plan, Section 4.1.3
Air Quality	PA08_0184, Section 3, Condition 21(d) and Air Quality Management Plan, Section 3.1.2.3

In addition, the following agreements and protocols are used, including:

- Water Sharing Agreement with MCM;
- Blast Notification Protocol with both MCM and WCM;
- Data sharing agreement with MCM and WCM; and
- ? Noise Mitigation Strategy for Properties on Ulan Road.

The existing operational controls (Section 3.7) also apply to mitigating cumulative impacts. The project approval also requires the preparation and implementation of the Ulan Road Strategy in conjunction with MCM and WCM¹⁶. The road strategy was agreed with MWRC and DPIE in 2021 and has been implemented.

¹⁶ PA08_0184, Section 3, Condition 50

4 Measurement and Evaluation

4.1 Environmental Performance

Monitoring is conducted as specified by EPL licence requirements, requirements specified in each management plan and in accordance with EPs as approved by DPIE. Establishing and assessing the adequacy of the environmental monitoring network for the Ulan Mine Complex to ensure compliance with PA 08_0184 and EPL 394 requirements and the maintenance of the environmental monitoring network and routine data analysis is the responsibility of the ECM or delegate.

The measurement and evaluation component of the EMS covers compliance with the site's PA08_0184 and EPL requirements (**Section 4.6**) and performance against objectives and targets. The results are analysed and used to identify areas of success and areas requiring further attention for improvement.

Through the ongoing monitoring of performance and routine management reviews, the suitability, adequacy and effectiveness of strategies, plans, systems, programmes and processes are routinely assessed and actions are taken to improve performance across the organisation.

UCMPL are able to determine EMS non-compliances from the following:

- site inspections;
- internal and external audit results;
- incident and complaint records;
- environmental monitoring results;
- quarterly review of performance; and
- performance criteria.

4.1.1 Environmental Monitoring Programs

The ECM or delegate is responsible for ensuring environmental monitoring is undertaken in accordance with requirements. Suitably trained personnel are engaged to conduct environmental monitoring applying relevant standards and using standardised monitoring techniques with calibrated equipment.

Calibration of monitoring equipment is undertaken in accordance with the equipment manufacturer's recommendations and records of calibration are maintained by the ECM or delegate. Analysis of samples is conducted under quality control procedures. Monitoring requirements are outlined in each respective management plan associated with the aspect being examined. Figures detailing environmental monitoring programs are included in **Appendix D**.

4.1.2 Visual Amenity and Lighting

4.1.2.1 Lighting

UCMPL operate a twenty-four (24) hour operation. The facilities are lit at night; however, since operations in this area are limited to mine access and hygiene activities the level of lighting required and its impacts are minimal. UCMPL have significant buffer lands between the operations and adjacent

receptors which mitigate against lighting impacts. Lighting is directed away from the points along Ulan Road where the mine is visible.

On site rehabilitation and screen planting, along with the fact that mining activities in the open cut are typically under the pre-existing surface level of the ground, reduces the visual impact of lighting from open cut operations.

Australian Standard AS4282 (INT) 1997 – Control of the Obtrusive Effects of Outdoor Lighting was first introduced by Standards Australia in 1995. The current 1997 standard supersedes the earlier standard.

In November 2010 UCMPL engaged Multiskilled Resources Australia to undertake an audit of UCMPL's operations to determine compliance with *AS4282 (INT) 1997 – Control of Obtrusive Effects of Outdoor Lighting* (Multiskilled Resources Australia, 2010). The audit found that UCMPL generally complied with AS4282. Recommendations for improvement were made. Verification inspections are undertaken for new infrastructure to confirm compliance with AS4282.

4.1.2.2 Buildings and Infrastructure

Buildings and infrastructure potentially visible to the public will be coloured in suitable natural tones, where practicable¹⁷.

As mentioned in **Section 3.2.1** above, a native tree screen has been planted along Ulan Road to reduce the visual impact of the CHPP infrastructure area on users of the Ulan Road. These trees were planted in 2008 and, as they grow, will continue to reduce visual impacts of the mine on passing motorists.

4.2 Baseline Data

Management plans and studies are prepared with a detailed baseline data assessment to provide a comparison for assessing any potential impacts from the Ulan Mine Complex. The following additional baseline data assessments are required by PA08_0184:

Table 4-1 Baseline Data

Project Approval Commitment	Reference Plans and Where Addressed
If requested by a landholder within 2 km of the open cut, establish the baseline condition of the buildings and/or structures on the land or update the previous property inspection report	PA08_0184 Schedule 3, condition 13 Schedule 4, condition 1
As part of preparation of extraction plans, include a program to collect sufficient baseline data for future Extraction Plans	PA08_0184 Schedule 3, condition 26(h)
Include a program to augment the baseline data over the life of the project in the surface water monitoring program;	PA08_0184 Schedule 3, condition 38(b)
Include a program to augment the baseline data over the life of the project in the ground water monitoring program	PA08_0184 Schedule 3, condition 39(b)
Include in the Heritage Management Plan a program to establish baseline dilapidation surveys of heritage	PA08_0184 Schedule 3, condition 47(d)

¹⁷ PA08_0184 SOC 6.16.2

Project Approval Commitment	Reference Plans and Where Addressed
items potentially affected by subsidence and/or blasting	
Include detailed baseline data in management plans	PA08_0184 Schedule 5, condition 2(a)
Establish baseline ecological, hydrological and geomorphological conditions of the Talbragar River downstream of the discharge point	PA08_0184 Statement of Commitments, condition 6.5.5

4.3 Reporting Framework

4.3.1 External Reporting

External reporting is the responsibility of the ECM. A summary of UCMPL external reporting requirements are summarised below in **Table 4.1**.

Table 4-2 External Reporting Requirements

External Report	Frequency	Recipients	Regulatory Requirement
Incident Reporting	As Required (refer to Section 3.5.7 & Section 3.5.8)	EPA DPIE	EPL 394 PA08_0184
EPL Annual Return	Annually	EPA	EPL 394
14 day EPL Monitoring Reports	Every 14 days	UCMPL Internet	EPL 394
Annual Review	Annually	DPIE DRE EPA DPI - Water CCC MWRC	PA 08_0184 AEMR Guidelines for MOPs prepared to EDG03 requirements
National Pollution Inventory Report (NPI)	Annually	EPA	National Environmental Protection Measure
National Greenhouse and Reporting System (NGERS)	Annually	Clean Energy Regulator	National Greenhouse and Energy Reporting Act 2007
Community Complaints	Monthly	Internet	PA 08_0184
Quarterly Monitoring Results	Quarterly	Internet	PA 08_0184
Annual Report	On or before anniversary date of Approval	DoE	Approval (EPBC Ref: 2009/5252 and 2015/7511)
Annual Report (Subsidence)	Provided in the Annual Review	DPIE DRE OEI	EP Approval (Ulan West LW1-6) EP Approval (UUUG LW30 and W6-W8)

4.3.2 Annual Review

The ECM (or delegate) will prepare a review of the environmental performance of the Ulan Mine Complex to the satisfaction of the Secretary (the Annual Review), in accordance with the requirements of PA 08_0184 and the DPIE *Annual Review Guideline*, by the end of March each year. The review will:

- a) describe the development (including any rehabilitation) that was carried out in the past year, and the development that is proposed to be carried out over the next year;
- b) include a comprehensive review of the monitoring results and complaints records of the project over the past year, which includes a comparison of these results against the:
 - o relevant statutory requirements, limits or performance measures/criteria;
 - o the monitoring results of previous years; and
 - o the relevant predictions in the EA;
- c) identify any non-compliance over the past year, and describe what actions were (or are being) taken to ensure compliance;
- d) identify any trends in the monitoring data over the life of the project;
- e) identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and
- f) describe what measures will be implemented over the next year to improve the environmental performance of the project.

4.3.2.1 Extraction Plan Annual Report

The annual report of subsidence monitoring, included in the Annual Review (**Section 4.3.2**), consists of:

- a) include a summary of the subsidence and environmental monitoring results for the year;
- b) include an analysis of these monitoring results against the relevant;
- c) impact assessment criteria,
- d) monitoring results from previous panels, and
- e) predictions in the EP;
- f) identify any trends in the monitoring results over the life of the activity; and
- g) describe what actions were taken to ensure adequate management of any potential subsidence impacts due to longwall mining.

4.3.3 Incident Reporting

Refer section 4.7 below.

4.3.4 Internal Reporting

Several internal environmental reports are prepared on a monthly basis by the ECM or delegate, including;

- The Environment and Community Status Report to the Group Environmental Manager; and

- Environmental monitoring results, to regularly provide information on the environmental performance of the project on UCMPL's website.

The Environment and Community Status Report contains the following information:

- Non-compliance with legal and other requirements;
- Summary of environmental incidents;
- Summary of community complaints; and
- Details of any pending/upcoming approvals.
- review performance against objectives and targets (i.e. updates on the progress of the Annual Plan).

UCMPL communicates relevant environmental and community information to employees, contractors and visitors through newsletters, inductions and Tool Box Talks etc.

Data collected internally for corporate and regulatory Greenhouse Gas reporting is collected using the Glencore database and NGERS reporting platform. Review and verification of data is undertaken in accordance with GCAA Compliance Procedure and the NGERS Standard - Facilities Requirements.

4.3.5 Access to Information

Compliance information is accessible on the internet at www.ulancoal.com.au.¹⁸ as required by PA08_0184 and EPL 394 as follows:

- Environment Assessments;
- current statutory approvals for the project;
- approved strategies, plans and programs required under the conditions of PA 08_0184;
- the monitoring results of the project, reported in accordance with the specifications in any conditions of PA 08_0184, or any approved plans and programs;
- a complaints register, updated on a monthly basis;
- minutes of CCC meetings;
- the annual reviews of the project;
- any independent environmental audit of the project, and UCMPL's response to the recommendations in any audit; and
- any other matter required by the Secretary
- train movements¹⁹; and
- access to careers information²⁰.

4.4 Inspections

The ECM (or delegate) is responsible for undertaking and recording Environmental Inspections to ensure compliance with the EMS. A monthly Environmental Inspections roster with checklists for

¹⁸ PA 08_0184, Schedule 5, Condition 10

¹⁹ PA 08_0184 Schedule 3, Condition 48b

²⁰ PA 08_0184 SOC 6.16.2

inspection of the various areas of the site is maintained and completed monthly inspections are entered to the compliance database.

Operational personnel periodically participate in these reviews to increase awareness and ownership of environmental issues. These inspections assist in determining on-site compliance with the EMS. They are used in conjunction with environmental monitoring and incident/complaint reporting procedures.

Other inspections may be undertaken as required e.g. for new projects, as required by the GDP process. Typical inspections undertaken at the Ulan Mine Complex are listed in **Table 4.2**.

Non-conformances identified through the environmental inspection program are recorded and entered into the compliance database by the ECM, or delegate. Any potentially high risk non-conformances identified during inspections, are reported immediately to the ECM and responsible persons of the area for urgent action. The ECM, or delegate will recommend corrective and/or preventative action and the effectiveness of this action will be assessed at the next monthly site inspection.

Table 4-3 Environmental Inspections

Type of Inspection	Frequency
General Site Inspections	Monthly/Annually
Dam Inspections	Monthly/Annually
Moolarben Dam Inspections	Weekly/Annually
Pipeline Inspections	Fortnightly/Annually
Subsidence	Pre, during and post mining*

Note:* As required by each respective subsidence monitoring program (i.e. ULNCX-111515275-1804, ULNCX-111515275-2787 and ULNCX-111515275-3368)

4.5 Audits

Internal and external audits will be undertaken to assess whether the EMS has been properly implemented and maintained and conforms to the GCP Standards and Guidelines, PA08_0184 and EPL requirements, objectives and targets and other requirements. The results of these audits will be communicated to UCMPL management. Independent environmental audits are required tri-ennially, audit reports and response to the recommendations are available at www.ulancoal.com.au.²¹

The ECM is responsible for the co-ordination of the audit schedule, as listed in **Table 4.3**.

Table 4-4 Auditing Schedule

Type of Audit	Frequency	Description	Arranged by
Critical Control Monitoring Program	Monthly	Targets Critical Hazards. An audit of each critical hazard is undertaken either quarterly, six monthly or annually.	Group Environmental Manager

²¹ PA08_0184, Schedule 5, Condition 10,

Type of Audit	Frequency	Description	Arranged by
Compliance Review	Annual – as part of Annual Review preparation	Annual compliance review in accordance with PA 08_0814	ECM or delegate
GCAA Assurance	Separate schedule	Targeted assurance processes which may include assurance and verification self-assessments and audit carried out by appropriately trained external auditors	General Manager Environment and Community
External Independent Environmental Compliance Audit	Annual and then 3 Yearly thereafter	Conducted by external auditors. Compliance audit of statutory conditions applicable to Ulan Complex as per PA 08_0184 ²²	ECM or delegate
Other Environmental Audits	When new infrastructure installed	Targeted audits on focus areas: <ul style="list-style-type: none"> hydrocarbon and dangerous goods storage audits of compliance with AS1940 lighting audit of compliance with AS4282. 	ECM

4.6 Evaluation of Compliance

Specific monitoring programs have been developed to evaluate environmental performance in relation to noise, air quality, water quality, soil and pasture quality, subsidence, biodiversity status, rehabilitated performance as well as land owned and managed by the operation. Details of each of these monitoring programs are included in the relevant environmental management plans as detailed in **Appendix D**. Management plans will include as a minimum:

- documented procedures for the monitoring programs;
- relevant project specific criteria and EPL limits;
- clear allocation of responsibilities;
- recording of information such that performance may be tracked;
- detailed relevant operational controls;
- demonstrated conformance with environmental objectives and targets and compliance with relevant environmental legislation and regulations;
- requirements for recording of equipment calibration and maintenance; and
- processes for ongoing review of both monitoring results and the overall monitoring programs.

Evaluation is achieved through:

- environmental site inspections;

²² Must be consistent with 'Post Approvals Requirements for State Significant Projects: Independent Audit Guideline (DPIE, 2015)

- internal or external audits;
- environmental incident or community complaint;
- review of environmental monitoring results against project specific/EPL criteria; or
- comparison against the objectives and annual targets of the EMS.

The ECM is responsible for:

- recording all EMS non-compliances;
- investigating the cause of any non-compliance;
- identifying the correct reporting requirements;
- recommending corrective and/or preventative actions to prevent the non-compliance from occurring again; and
- communicating the non-compliance to:
 - Management team; and/or
 - Group Environmental Manager where applicable.

Independent Audit findings are reported and made publically available consistent with PA 08_0184 Schedule 4, Condition 10.

4.7 Non Conformity, Corrective Action and Preventative Action

The ECM is responsible for managing EMS non-compliances, as identified in **Section 4.6**. The key requirements are not limited to include:

- procedures for handling and investigating of non-conformances, including allocation of responsibility, external and internal reporting requirements, and initiating and completing corrective and preventative actions;
- preparing HSEC Alerts for Category 2 and 3 Incidents to the Group Environment and Community Manager, who will distribute.
- preparing Environmental Alerts for all Critical and High Potential Risk Incidents to the Group Safety or Environment and Community Manager, within:
 - 24 hrs for Critical Incidents;
 - 72 hours for High Potential Risk Incidents (HPRI).

The ECM (or delegate) will notify the Secretary and EPA of incidents causing or threatening material harm to the environment immediately on becoming aware of the incident.²³ Within 7 days of the date of the incident, UCMPL shall provide the Secretary and any relevant agencies with a detailed report on the incident. Communications and resultant actions are managed as described above.

Changes are managed as described in **Section 2.3.4**. The effectiveness of the corrective and/or preventative action will be assessed by the ECM for adequacy

²³ PA 08_0184, Schedule 5, Condition 6; EPL 394; and ULN SD PLN PRIMP)

5 Review and Continuous Improvement

The ECM (or delegate) will periodically review the EMS with senior management team. This review, as a minimum, will include:

- The Environment and Community BBRA;
- The Projects performance against Project Specific Criteria; and
- Setting the objectives and targets for the following year's Annual Plan.

Any changes made to the EMS or supporting documents as a result of the review will be made in consultation with the DPIE and MWRC. A copy of the revised documents will be supplied to the Secretary for approval.

On an annual basis and after submission of the Annual Review (i.e. AR) report, UCMPL shall review, and if necessary revise, the strategies, plans, and programs required under PA 08_0184 to the satisfaction of the Secretary within 3 months of:

- a) the submission of an annual review under Condition 3 (Schedule 5);
- b) the submission of an incident report under Condition 6 (Schedule 5);
- c) the submission of an audit report under Condition 8 (Schedule 5);
- d) any modification to the conditions of this approval, (unless the conditions require otherwise); and
- e) The revised EMS will be resubmitted to DPIE at least every three years, or earlier if required.

In addition, the performance of the EMS in achieving the objectives and targets shall be reviewed at least quarterly, which includes the environment & community component of the Annual Plan. This review shall enable the identification of non-conformances and the formulation corrective action where targets are not being met.

6 Accountabilities

EMS roles and accountabilities are clearly documented and for all employees, contractors and suppliers (including designers and manufacturers), as appropriate.

Performance against roles and accountabilities are assessed, including the specific and measurable goals, actions and targets as part of annual performance appraisals of employees.

Specific roles and accountabilities for implementation of the EMS are detailed in each relevant management plan. Details of the roles and responsibilities for management, employees and contractors specific to the maintenance and implementation of the EMS are listed below.

	Accountabilities for this document
General Manager	<ul style="list-style-type: none"> • Approve the strategy and plans, • Resources and management structure to ensure the effective implementation and maintenance of the UCMPL EMS. • Authorise reporting to GCAA and regulatory authorities for any environment and community incidents. • Monitor the effectiveness of the Risk/control management and treatment plans for accurate and effective reporting of risk issues and report to GCAA on key risk issues. • Monitor outcomes of legal compliance audits. • Verbally notify Chief Operating Officer of any critical environment and community incident. • Approve the E&C Annual Plan. • Issue media statements, if required.

	Accountabilities for this document
Operations Manager	<ul style="list-style-type: none"> • Support the implementation of the EMS through approval of adequate resources and budgets. • Ensure management systems are implemented and maintained to ensure compliance with legislative requirements as required by the EMS. • Facilitate mine operations under their control in accordance with the EMS, in particular, with the operational and environmental plans and procedures. • Ensure any potential or actual issue (environmental incident) is reported in accordance with legal requirements and the corporate standard. • Approve position descriptions for roles and positions identifying their responsibility in implementing the EMS. • Support the provision of resources and time for appropriate training to employees and contractors regarding their and legislative environmental responsibilities. • Provide input information to support preparation of the annual reviews (by the E&C team). • Ensure inclusion of the UCMPL ECM in the assessment of any proposed or new works associated with the operation that may have an impact on the operating approvals, environment and community. • Participation in checking and verifying EMS compliance. • Issue media statements, if required. • Participate in stakeholder engagement forums and activities. • Review community investment strategy with the management team. • Report significant community feedback and complaints, issues that may be identified through operations or concerns to the ECM. • Review progress of compliance with life of mine and mine closure plans. • Authorise annual review of life of mine and mine closure plans. • Oversee the implementation of site based product stewardship strategies, programs and plans, including the annual Energy Savings Actions Plan. • Review progress and report compliance with programs. • Report to the General Manager and ECM all Critical Environment and Community incidents (immediate verbal notification). • Submit alerts for critical and HPRI environment and community incidents within 24 hours to GCAA. • Implement and monitor completion of actions arising from checking environment and community verification processes. • Provide the necessary resources to prepare for and deal with environment and community emergencies. • Review the Emergency Response Plan periodically or following a relevant event.

	Accountabilities for this document
Environment and Community Manager	<ul style="list-style-type: none"> • Develop, implement and maintain the EMS and associated plans, which includes facilitating the commitments outlined in the annual plan with the assistance of the Operation Managers and other senior managers. • Oversee the implementation of the EMS through the development and identification of adequate resources and budgets. • Ensure management systems are implemented and maintained to ensure compliance with legislative requirements and GCAA Standards as required by the EMS, including document control systems. • Report to and assist the GCAA Group Environmental Manager in aspects of environment and community, including the strategy, planning and review processes. • Compile monthly reports to GCAA managers. • Coordinate the checking and verification processes for the EMS. • Monitor and review change management activities for consistency with the EMS. • Develop strategies and coordinate efforts as required to influence and comply with new regulatory requirements and stakeholder expectations. • Provide visible and proactive leadership in relation to implementation of the EMS. • Review and endorse all corrective actions arising from environmental incidents and community complaints. • Coordinate the implementation of the UCMPL Stakeholder Engagement Plan, including allocation of budget and resources for the Community Investment Plan. • Liaise with government and community stakeholders regarding environment and community matters associated with the Ulan Mine Complex. • Prepare statutory environmental reports to ensure compliance with the approvals associated with the Ulan Mine Complex. • Provide environmental advice for risk assessments and assist in the development of management protocols for proposed works associated with existing operations and any new or altered works. • Coordinate the review of this EMS. • Develop and implement the E&C annual plan. • Participate in management review meetings. • Report on performance of the E&C annual plan and E&C KPIs. • Facilitate the mine closure planning and review process. • Undertake roles as required by Operations ERPs and Complex incident management team

		Accountabilities for this document
Environment & Community Members	Team	<ul style="list-style-type: none"> • Maintain a working knowledge of this EMS and environmental legislative requirements associated with the Ulan Mine Complex. • Coordinate the development, communication, implementation and maintenance of management plans and environmental monitoring programs and regularly review environmental monitoring data for compliance with relevant criteria. • Oversee the collection, maintenance and reporting of environmental monitoring data and deal with any quality or technical data collection issues. • Coordinate the incident and complaint investigation process including associated reporting requirements. • Provide advice and support on environmental issues. • Support the development of monthly reports. • Provide visible and proactive leadership in relation to implementation of the EMS. • Undertake regular site inspections and audits to ensure compliance with the EMS.
Environment & Community Coordinator		<ul style="list-style-type: none"> • Ensure implementation of corrective actions arising from environmental incidents and audits. • Conduct training programs to ensure workforce awareness of the EMS (including associated management plans and procedures) and regulatory obligations. • Liaise with senior management personnel to promote awareness and delegate tasks associated with the management of environmental issues/commitments at the Ulan Mine Complex. • Coordinate the activities of specialist sub-consultants and project personnel for environmental assessment/baseline studies/monitoring/auditing responsibilities. • Provide environmental assistance and advice on legislative and approval requirements for any proposed works. • Assess and approve the environmental and community aspects for GDPs • Participate in the review of the EMS and associated plans. • Consistently implement environment and community systems including document control. • Prepare internal and external reports of environmental data.

Accountabilities for this document	
Supervisors, Employees Contractors	and <ul style="list-style-type: none"> Familiarise themselves with this EMS and environmental legislative requirements and community responsibilities associated with their areas of responsibility. Allocate appropriate resources within delegated authority to ensure compliance with the EMS. Use appropriate risk management tools to identify environment and community (control) impacts. Participate in checking and verification processes including conduct regular reviews/inspections of project/operation to check for compliance with environment and community requirements; report deviations from the plans and take corrective and preventative action where appropriate. Respond to environment and community incidents and secure the scene, report to supervisor and E&C team, conduct incident investigations, take corrective and preventative actions. Seek support of the E&C team to manage environment and community aspects in design, implementation, operation and decommissioning.

7 Document Information

7.1 Definitions

Definitions, listed in **Table 7-1** below, are directly related to or referenced within this document.

Table 7-1 Definitions

Term	Definition
Auditor	Person with the competence to conduct an audit (ISO 9000:2000)
Continual improvement	Recurring process of enhancing the environmental management system in order to achieve improvements in overall environmental performance consistent with the organisations environmental policy (ISO 14001)
Environment	Surroundings in which an organisation operates, including air, water, land, natural resources, flora, fauna, humans and their interaction (ISO 14001)
Environmental aspect	Element of an organisations activities or products or services that can interact with the environment (ISO 14001)
Environmental impact	Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisations environmental aspects (ISO 14001)
Environmental management system	Part of an organisations management system used to develop and implement its environmental policy and manage its interaction with the environment (ISO 14001)
Environmental management system audit	Systematic, independent and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which the environmental management system audit criteria set by the organisation are fulfilled (ISO 14001)
Environmental objective	Overall environmental goal, consistent with the environmental policy, that an organisation sets itself to achieve (ISO 14001)
Environmental performance	Measurable results of an organisations management of its environmental aspects (ISO 14001)
Environmental policy	Overall intentions and direction of an organisation related to its environmental performance as formally expressed by top management (ISO 14001)
Environmental target	Detailed performance requirement, applicable to the organisation or parts thereof, that arises from the environmental objectives and that needs to be set and met in order to achieve those objectives (ISO 14001)
Intranet	UCMPL's internal internet
Procedure	Specified way to carry out an activity or a process

7.2 Abbreviations

Abbreviations, listed in **Table 7-2** below, are directly related to or referenced within this document.

Table 7-2 Abbreviations

Acronym	Title
ACARP	Australian Coal Association Research Program
AR	Annual Review
AFE	Application For Expenditure
AS	Australian Standards
AS/NZS	Australian Standard / New Zealand Standard
BBRA	Broad Brush Risk Assessment
BIS	Bobadeen Irrigation Scheme
BMP	Biodiversity Management Plan
CCC	Community Consultative Committee
CHPP	Coal Handling and Preparation Plant
CMCP	Conceptual Mine Closure Plan
dB(A)	A-weighted Decibels
DPIE	NSW Department of Planning, Industry and Environment
DAWE	Department of Agriculture, Water and the Environment
EA	Environmental Assessment
ECM	Environment and Community Manager
EMS	Environmental Management Strategy
EP&A Act	Environmental Planning and Assessment Act 1997
EPA	Environmental Protection Authority
EPBC	Environmental Protection and Biodiversity Conservation Act 1999
EPL	Environment Protection Licence (394)
GCAA	(Glencore) Coal Assets Australia
GCP	Glencore Corporate Practice
GDP	Ground Disturbance Permit
GEM	Group Environmental Manager
GMEC	General Manager Environment and Community
GRDRP	Goulburn River Diversion Remediation Plan

Acronym	Title
GRI	Global Reporting Initiative
HMP	Heritage Management Plan
HPRI	High Potential Risk Incidents
HSEC	Health, Safety, Environment and Community
ICAM	Incident Cause Analysis Method
ICMM	International Council on Mining and Metals
ISO	International Organisation for Standardisation
KPI	Key Performance Indicator
LA _{eq}	Equivalent Continuous Noise Level
LGA	Local Government Area
LOM	Life of Mine
LW	Longwall
MCA	Minerals Council of Australia
MCM	Moolarben Coal Mine
ML	Mining Lease
MOP	Mining Operations Plan
MWRC	Mid-Western Regional Council
NPI	National Pollutant Inventory
PA	Project Approval (08_0184)
POEO	Protection of the Environment Operations Act 1997
SEP	Stakeholder Engagement Plan
SWMS	Safe Work Method Statement
TNA	Training Needs Analysis
VPA	Voluntary Planning Agreement
UCMPL	Ulan Coal Mines Pty Limited
WA	Work Authorisation
WCM	Wilpinjong Coal Mine

7.3 Reference Information

Reference information, listed in **Table 7-3** below, is information that is directly related to the development of this document or referenced from within this document.

Table 7-3 Reference information

Reference	Title
Legislation	<p><i>Mining Act 1992</i> The <i>Mining Act 1992</i> as administered by DRE on behalf of the Minister for Mineral Resources and Energy, amongst other legislative instruments, places controls on methods of exploration and mining, the disposal of mining waste, land rehabilitation and environmental management activities. The principal means of regulation is the requirement for nearly all exploration and mining to be conducted under a title, such as an exploration licence or a mining lease. It also addresses the environmental responsibilities of explorers and miners, royalties and compensation</p>
	<p><i>Water Management Act 2000</i> The <i>Water Management Act 2000</i> (WMA) provides for the sustainable and integrated management of the State's water and is administered by the Department of Primary Industries (DPI) - Water. The WMA governs the issue of new water licences, the trade of water licences and allocations for those water sources (rivers, lakes and groundwater) in NSW where water sharing plans have commenced. Under the WMA, water access licences entitle a licence holder to a share of the water in a listed water source that can be sustainably extracted. Licences must also be obtained for new groundwater monitoring bores where water sharing plans have commenced.</p>
	<p><i>Environment Protection and Biodiversity Conservation Act 1999</i> The <i>Commonwealth Environmental Protection and Biodiversity Conservation Act 1999</i> (EPBC Act) has established a national assessment framework based on the principles of ecologically sustainable development. Proposed actions, including projects, developments, activities and alterations that are considered likely to have a significant impact on matters protected by and listed under the EPBC Act need approval from the Minister for Sustainability, Environment, Water, Population and Communities.</p>
	<p><i>Commonwealth Native Title Act 1993</i> The <i>Commonwealth Native Title Act 1993</i> (NT Act) is a set of rights and interests in relation to land or waters that have qualities identified and administered by the National Native Title Tribunal. The Tribunal is responsible for maintaining a National Native Title Register (NNTR) of native title claimants and bodies to whom native title rights have been granted. These native title holders and claimants must be consulted prior to the granting of a mining lease over land to which the native title claim or right applies. The NT Act prescribes that native title can be extinguished under certain circumstances, including the granting of freehold land.</p>
	<p><i>Heritage Act 1977</i> The <i>Heritage Act 1977</i> provides for the conservation and management of the State's built, marine, moveable and natural heritage. The Act provides for the constitution of the Heritage Council of NSW by which authority it is administered through the NSW Heritage Office. The Heritage Council maintains the State Heritage Register and the State Heritage Inventory, which list respectively heritage items of State significance and of local significance. The Heritage Council may also request local councils to prepare environmental planning instruments to protect items of local significance.</p>
	<p><i>National Parks and Wildlife Act 1974</i> The <i>National Parks and Wildlife Act 1974</i> (NP&W Act) provides for the protection of native flora and fauna and the protection, preservation and management of all Aboriginal relics throughout NSW, irrespective of land tenure. The Act is administered by the Office of Environment and Heritage (OEH).</p>
	<p><i>Native Vegetation Act 2003</i> The <i>Native Vegetation Act 2003</i> (NV Act) is administered by OEH and provides for the management, protection and rehabilitation of native vegetation in accordance with the principles of ecologically sustainable development. The NV Act provides that clearing undertaken as part of an approved designated development, for bushfire management plans, authorised by the Mining Act 1992, for the purposes of survey, or for routine agricultural practices is exempt from the provisions of the NV Act. Activities which are not exempt or permissible under the Act will comply with the requirements of the NV Act.</p>
	<p><i>Biodiversity Conservation Act 2016</i></p>

Reference	Title
	The Biodiversity Conservation Act 1995 (BC Act) is administered by OEH and provides protection for threatened plants and animals native to NSW (excluding fish and marine vegetation, which are protected under the <i>Fisheries Management Act 1994</i>) and integrates the conservation of threatened species into the development approval processes under the EP&A Act.
CAA Environment and Community Standards and Protocols	3.00 Documents and Records - GCAA-625378177-9989
	6.00 Incident - GCAA-625378177-9992
	10.00 Community - GCAA-625378177-9977
	11.00 Environment - GCAA-625378177-9978
	12.00 Change - GCAA-625378177-9979
	10.01 Stakeholder Engagement - GCAA-625378177-10294
	10.02 Community Development and Investment - GCAA-625378177-9977
	10.03 Internal Communications - GCAA-625378177-10330
	10.04 Media and Public Relations - GCAA-625378177-10331
	10.05 Community Complaints Management - GCAA-625378177-10296
	11.01 Environmental Compliance Management - GCAA-625378177-10301
	11.01 Environmental Data Collection and Reporting - GCAA-625378177-10274
	11.02 Pipeline Management - GCAA-625378177-10248
	11.03 Water Management - GCAA-625378177-10320
	11.05 Dams and Diversions - GCAA-625378177-10322
	11.06 Erosion and Sediment Control - GCAA-625378177-10323
	11.07 Hydrocarbon Management - GCAA-625378177-10243
	11.08 Waste - CAA HSEC PCL 0011
	11.09 Exploration and Drilling - GCAA-625378177-10237
	11.10 Air Quality Management - GCAA-625378177-10324
	11.11 Noise Management - GCAA-625378177-10238
	11.12 Blast - GCAA-625378177-9975
	11.13 Carbon Management - CAA HSEC PCL 0001
	11.14 Environment & Community Training - GCAA-625378177-10240
	11.15 Land and Property Management - GCAA-625378177-10242
	11.16 Rehabilitation Management - GCAA-625378177-10241
	11.16 Environmental Data Collection and Reporting GCAA-625378177-10274
	11.18 Biodiversity Offset Management - CAA HSEC PCL 0028
	11.19 GIS Spatial Data Management - GCAA-625378177-10499
	11.20 Statutory Approval Management - GCAA-625378177-13514
	11.20 Statutory Approvals NSW - GCAA-625378177-10328
	11.21 Aboriginal Cultural Heritage NSW - GCAA-625378177-10266
	11.24 Mining Tenement Management - GCAA-625378177-10470
	11.25 Native Title Process for Exploration and Mining Leases - GCAA-625378177-10281
	12.0 Change- GCAA-625378177-9979
UCMPL Plans (and Annexures to Plans)	ULNUG-849165555-9622 – Emergency Management Control Plan – Ulan No3 Underground
	ULNUG-849165555-85 – Emergency Preparedness – Ulan No3 Underground
	ULWUG-729531900-133 – Emergency Management Plan – Ulan West Underground

Reference	Title
	ULWUG-729531900-472 – Emergency Response Procedure – Ulan West Underground
	ULNOC-1105874907-2285 – Emergency Response Control Plan – Ulan Open Cut
	ULNOC-1105874907-3102 - Emergency Preparedness Plan – Ulan Open Cut
	ULNCX-111515275-2432 - Pollution Incident Response Management Plan
	ULNCX- 111515275- 95- Heritage Management Plan
	ULNCX-111515275-3537 – Stakeholder Engagement Plan
	ULNCX- 111515275- 98- Waste Management Plan
	ULNCX-111515275-99 - Water Management Plan
	ULNCX-111515275-218- Site Security Management Plan
	ULNCX-111515275-223 - Extraction Plan
	ULNCX- 111515275- 224- Erosion and Sediment Control Plan
	ULNCX- 111515275- 225- Biodiversity Management Plan
	ULNCX-111515275-2049 - Bushfire Management Plan
	ULNCX-111515275-228 - Built Features Management Plan
	ULNCX-111515275-229 - Public Safety Management Plan
	ULNCX- 111515275- 232- Noise Management Plan
	ULNCX-111515275-1641 - Goulburn River Diversion Remediation Plan
	ULNCX- 111515275- 1642- Surface Water Monitoring Program
	ULNCX- 111515275- 1643- Groundwater Monitoring Program
	ULNCX- 111515275- 1644- Surface Water and Groundwater Response Plan
	ULNCX-111515275-1646 - Moolarben Dam Operations and Maintenance Plan
	ULNCX- 111515275- 1653- Air Quality and Greenhouse Gas Management Plan
	ULNCX- 111515275- 1785- Aboriginal Conservation Management Plan
	ULNCX- 111515275- 3548– Ulan Coal Mines Ltd Mining Operations Plan 2017 to 2024
	ULNCX-111515275-1953 - Blast Management Plan
	ULNCX-111515275-1970- Conceptual Mine Closure Plan
	ULNCX-111515275-1786 - Bobadeen Homestead Conservation Management Plan
	ULNCX-111515275-1787 - Old Ulan Conservation Management Plan
	ULNUG-849165555-5762 - Training and Competency Management System
	ULWUG-729531900-105 - Training and Competency Management System
	ULNOC-1105874907-1747 - Training and Competency Management Plan
	ULNOC-1105874907-855 Radiation Safety Management Plan
UCMPL Procedures, Standards and Forms	ULNCX-111515275-3376 - Complaints Procedure
	ULNCX-111515275-1940 – Dust Management Procedure
	ULNUG-849165555-10446 – Incident and Hazard Management
	ULWUG-729531900-93 - Hazard and Incident Management
	ULNOC-1105874907-2656 – Incident Management Procedure
	ULNUG-849165555-5689 – Document Control and Records Management
	ULNOC-1105874907-2299 – Document Control Procedure
	ULWUG-729531900-128 – Document Control Procedure
	ULNUG-849165555-9889 - Legal Compliance Procedure
	ULNOC-1105874907-2298 – Legal Compliance Procedure

Reference	Title
	ULNCX-11515275-1938 – Noise Management Procedure
	ULNCX-111515275-1635 – Pre Clearing Survey and Tree Felling Procedure
	ULNOC-1105874907-939 - Water Infrastructure Management Plan – Part A
	ULNOC-1105874907-1024 – Water Infrastructure Management Plan – Part B
	ULNOC-1105874907-940 - Water Infrastructure Management Plan – Part C
	ULNOC-1105874907-941 - Water Infrastructure Management Plan – Part D
	ULNCX-111515275-1745 - Spill Response
	ULNUG-849165555-9528 - Incident Investigation Checklist
	ULNUG-849165555-5669 – Health Assessment Procedure
	ULWUG-729531900-5684 – Induction and Medical Requirements Matrix
Approvals	Project Approval 08_0184 (as modified) including Statement of Commitments
	Land and Environment Court Judgement and Final Orders (April 2012)
	Environment Protection Licence (EPL) 394
	Extraction Plan Approval UUG Lw30 and Lww6-W8
	Extraction Plan Approval UWO LW1 to 6
External	ANZECC/ARMCANZ, 2000. National Water Quality Management Strategy: Australian Guidelines for Fresh and Marine Water Quality.
	Department of Environment and Conservation (DEC), 2004. Approved Methods for the Sampling and Analysis of Water Pollutants in NSW.
	Mackie Environmental Research (MER), 2010. Ulan Coal – Continued Operations Groundwater Assessment. Prepared for Ulan Coal Mines Limited.
	Umwelt (Australia) Pty Ltd, 2009. Ulan Coal – Continued Operations Environmental Assessment. Prepared for Ulan Coal Mines Limited.
	Umwelt (2011) Ulan Coal Continued Operations North 1 Underground Mining Area, Minor Modification to Ulan Underground & Ulan West Mine Plans & Proposed Concrete Batching Plant
	Umwelt (May 2012) Environmental Assessment Modification to Ulan Coal Continued Operations, Ulan West Mine Plan (Approved Panels 1 – 4) and Construction Blasting
	Umwelt (2015) Environmental Assessment Modification to Ulan Coal Continued Operations, Ulan West Mine Plan Extension
	ELA MOD4 EA
	Draft Guidelines for Groundwater Monitoring (Department of Water and Energy).
	Standards Australia (1998) AS 5667.11-1998: Guidance on sampling Groundwaters.
	Department of Natural Resources (1999) A Guide for Establishing a Groundwater Monitoring Program for Mine Sites within the Hunter Region.
	DII Guidelines to the Mining, Rehabilitation and Environmental Management Process.

7.4 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 7-4** below.

Table 7-4 Change information

Version	Date	Review Team (Consultation)	Change Summary
1	31 Dec 2010	XCN IT	Transfer document into new Intranet platform
2	31 March 2011	Jamie Lees, Dan Clifford, Rod Reinhard, Michael Map, Brian Pease, Cheryl Henriques, Ian Flood, Dave O'Brien (XCN), Phil English (Minespex)	EMS revised (Version 1) in accordance with Project Approval 08_0184. Revised EMS incorporates XCN revised Sustainable Development Management System.
3	1 April 2011	Cheryl Henriques	Formatting – no change to content
4	26 July 2011	Jamie Lees, Stephen Bragg, Cheryl Henriques	EMS revision based on comments received from DPIE on the 16 May 2011. Amendments provide more details on Roles & Accountabilities and increased detail on the relevant SD guidelines.
5	20 April 2012	Jamie Lees, Rachel Murray, Stephen Bragg	EMS revision based on compliance with SD guidelines, changes to Project Approval 08_0184, update of documentation and training systems.
5.1	20 June 2012	Robyn Stoney, Ian Flood, Rachel Murray	Annual Review & updated based on MOD 2 & EPL 394 variation
6	7 June 2013	Tara Stokes, Robyn Stoney	AER 2012 Management Plan Review
7	30 June 2015	Robyn Stoney, Stephen Bragg	Updated into Glencore template
8	11 November 2015	Robyn Stoney	Annual Review
8.1	30 January 2016	Angela van der Kroft	Updated TNA
8.2	13 May 2016	Robyn Stoney	Commenced update to reflect MOD 3
8.3	20 May 2016	Robyn Stoney	Commenced update to reflect MOD 3
8.4	27 May 2016	Robyn Stoney	Further update to reflect MOD 3
8.5	3 June 2016	Robyn Stoney	Further update to reflect MOD 3
8.6	10 June 2016	Bianca Connop	Updated Figures 2, 3 and those in Appendix D.
8.7	14 June 2016	Angela van der Kroft	Updated Figures 5 and 6. Added Visual Amenity and Lighting commitments.
9.0	4 November 2016	Tara Stokes	Updated effective date to 28/10/2016 when version approved by DPIE

Version	Date	Review Team (Consultation)	Change Summary
9.4	30 June 2017	Tara Stokes	Minor update to Figures 1.1 and 1.2, updated Mining Lease Table, and removed E&C risk register from Appendix B, created External document as the E&C Risk Register is required to be updated Annually.
10.0	June 2018	Robyn Stoney	Administrative changes as identified post Annual Review. Removal of DA113-12-98, which was surrendered in accordance with PA08_0184,S2, c9 on 20/10/2017.
10.1	1 February 2019	Kellie Smith	Updated Appendix C to include new Skill Codes for competencies, specific TNA for USO OCEs, and frequency adjusted to 3 years to be consistent with Fatal Hazard Protocol management plan training.
11.0	April 2019	Robyn Stoney, Robbie Mills	Addressed feedback from DPIE, plan approved 15/05/2019.
11.1	October 2019	Robyn Stoney	Inclusion of Mod 4, updated plan of operations, inclusion of Extraction Plan for Ulan Underground LW30 and LWW6 to W8 and sub plans, legislation updates
11.2	April 2020	Kellie Smith	Removed the requirement for 3 yearly audits on lighting and hydrocarbon storage infrastructure. Updated the requirement to audit any new lighting or hydrocarbon storage infrastructure.
11.3	August 2020	Jake Hawkins	Updated Ulan Coal Mines Pty Limited (UCML) to Ulan Coal Mines Pty Limited (UCMPL) – in text and figures, and Department of Planning and Environment (DP&E) to Department of Planning, Industry and Environment (DPIE) as advised by the EPA (5 August 2020).
11.4	September 2020	Jake Hawkins	MOD 5 administrative changes, inclusion of MOD5 approval and updated operations plan layout.
12	November 2020	Robbie Mills	Approved plan. Formatting only; copy document into new template, no change to content.
12.1	December 2020	Robyn Stoney	Administrative review. Updates to remove duplication of the surrendered approvals DA113-12-98 and references to subsidence management plans that are not applicable to current operations. S4..2.2 updated to be consistent with project approval (paint colour “River Gum Green” no longer produced). S4.3.6 Access to Information includes train movements and careers

Version	Date	Review Team (Consultation)	Change Summary
			<p>information consistent with PA08_0184 S3, C48b and SOC6.16.2 respectively.</p> <p>Unnecessary audit methodology removed from S4.5, added reference to DPIE Independent Audit guideline.</p> <p>S5 Remove review of EMS in consultation with DPIE and MWRC – not a requirement.</p> <p>Removed motherhood statements from document.</p> <p>Updated S6 Accountabilities – only accountabilities relevant to the EMS. Removed numerous general responsibilities. Made accountabilities better reflect what is actually done by each role, in respect of the EMS.</p> <p>Update tables in S7.</p> <p>Update Appendix A to current Glencore Values.</p> <p>Update Figure 1.3 – incorrectly depicts salinity offset.</p> <p>Update Figure 1.5 – incorrectly depicts current management plan structure.</p> <p>Removed reference to CMO – now just compliance database.</p> <p>Changed quarterly review of plan performance to Monthly Status Reports.</p>
13.0	13/09/2021	DPIE and Robyn Stoney	Versioning and effective dates corrected

Appendix A - Glencore Values



OUR VALUES

Our values reflect our Purpose
to responsibly source the commodities
that advance everyday life.

	<p>Safety</p> <p>We make continuous investing and work to ensure protected and improved safety of our people.</p>		<p>Integrity</p> <p>We have the courage to do what's right, even when it's hard. We do what we say and treat each other fairly and with respect.</p>
	<p>Responsibility</p> <p>We take responsibility for our actions. We seek and listen to others to understand what they expect from us. We work to improve our commercial, social and environmental performance.</p>		<p>Openness</p> <p>We're honest and straightforward when we communicate. We push ourselves to improve by sharing information and encouraging dialogue and feedback.</p>
	<p>Simplicity</p> <p>We make efficiency and focus on what's important. We build consensus, simplify and look for simple, pragmatic solutions.</p>		<p>Entrepreneurialism</p> <p>We encourage new ideas and quickly adapt to change. We're always looking for new opportunities to make, sell and find better and safer ways of working.</p>

For further information, visit www.glencore.com

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Appendix B - Environment and Community Risk Register

	Element	Aspect	Unwanted Event / Impact	Environment	Financial Impact	Image and Reputation / Community	Legal Compliance	Overall PMC	Controls - Documents	Controls - Processes	Risk Control Effectiveness	Expected Consequence Category	Expected Risk Consequence	Risk Likelihood	Current Risk Rating
1	Approvals	Planning	Environmental approvals delayed , impacting mining operations.	N/A	3	2	N/A	3	approvals tracker includes the Bungaba Extension	GCAA project approval gate LOM	Satisfactory	Financial Impact	3 Moderate	C - Possible	13 (M)
2	Approvals	Planning	Environmental approvals refused and mining operations are impacted. (financial impact assumes cost of exploration and other)	N/A	3	3	N/A	3	approvals tracker includes the Bungaba Extension	GCAA project approval gate LOM	Requires Improvement	Financial Impact	3 Moderate	C - Possible	13 (M)
3	Approvals	Planning	Community complaints/mistrust due to site preparation or drilling occurring without the required approvals in place	N/A	N/A	N/A	3	3	Ground Disturbance and drilling Permit process and overarching work authorisation process, including a Review of environmental Factors for drilling conducted in GDP review Drilling Permit GCAA exploration and drilling protocol Environmental training and awareness program within the site familiarisation induction process. Survey equipment calibrated as per survey control plan.		Satisfactory	Legal Compliance	3 Moderate	D - Unlikely	9 (M)
4	Approvals	Biodiversity	Non-compliance with Project Approval conditions and/or Environmental Impact to Threatened Species outside of EA predictions	2	N/A	N/A	N/A	2	Ecological Impact Assessment EA; EPBC Approvals; Cliff Line Offset Management Areas Spring Gully and Brokenback; Biodiversity Management Plan; Biodiversity Monitoring Program including targeted microbat monitoring; Subsidence Area cliffline habitat monitoring in subsidence areas; Offset Management Program;	GDP assessment for clearing- Experienced ecologist conducting pre clearing inspections road warning signs	Satisfactory	Environmental	2 Minor	D - Unlikely	5 (L)

	Element	Aspect	Unwanted Event / Impact	Environment	Financial Impact	Image and Reputation / Community	Legal Compliance	Overall PMC	Controls - Documents	Controls - Processes	Risk Control Effectiveness	Expected Consequence Category	Expected Risk Consequence	Risk Likelihood	Current Risk Rating
5	Reporting	Operations	Administrative - Non Compliance with reporting, licencing or related timeline	N/A	N/A	N/A	3	3	Environmental Management System (EMS) Accountabilities in specific job roles CMO approval and management plan commitment actions Progressive CMO correspondence commitment entry Legal advice register Incident reporting Glencore updates on NSW legislation updates/changes and likely impact emailed to Environmental Personnel.		Satisfactory	Legal Compliance	2 Minor	C - Possible	8 (M)
6	EIS	Baseline Assessment	Stakeholder refuses access to for baseline assessment	1	3	2	1	3	Grievance action plans GCAA Stakholder Relations Manager Stakholder Engagement Plan Community Consultation Stragety UCMPL Exploration Standard Access agreement template	Escalation of negotiation to manager Able to offer services rather than monetary compensation Community BBQs	Satisfactory	Financial Impact	3 Moderate	D - Unlikely	9 (M)
7	EIS	Baseline Assessment	EIS Baseline assessment identifies previously unknown environmental value	1	3	2	N/A	3	Existing EIS for Project Approval in adjacent area	UCMPL Exploration program could identify potenitals in advance	Satisfactory	Financial Impact	3 Moderate	D - Unlikely	9 (M)
8	Approvals	EIS Community perception	Community members who are most impacted by the operations receive no benefit from community investment strategies	N/A	4	N/A	N/A	4	Stakeholder Engagement Plan and matrix CCC meetings Newsletter Website	Stakeholder Engagement process Review Community Development Program in light of survey results	Satisfactory	Financial Impact	4 Major	D - Unlikely	14 (M)
9	Approvals	Social impact assessment	Shortage of housing in local community due to increase in demand caused by mine operations	N/A	N/A	2	N/A	2	Social & Economic Impact Assessment Voluntary Planning Agreement Social Engagement Planning	Gulgong Subdivision Company owned housing in local area	Satisfactory	Image and Reputation / Community	2 Minor	D - Unlikely	5 (L)
10	Approvals/ Exploration Operations	Community complaints/mistrust	Glencore reputational damage due to human rights accusation/complaint	N/A	N/A	4	N/A	4	Appropriate human resources and GCAA policy and stakeholder engagement. SEP, AHCMP, NT agreement. Site security plan Alternative Water Supply agreements for water loss Base flow offset mechanism and strategy in Project Approval GWMP & SWMP, GWSWRP.	E-learning Code of Conduct, Anti-Discrimination and harassment Water Access Licences and water allocations Security- Boundary of operations and operations controls to avoid impacts; Property acquisitions (inclusive of resettlement terms) controlled through GCAA process	Requires Improvement	Image and Reputation / Community	3 Moderate	C - Possible	13 (M)

	Element	Aspect	Unwanted Event / Impact	Environment	Financial Impact	Image and Reputation / Community	Legal Compliance	Overall PMC	Controls - Documents	Controls - Processes	Risk Control Effectiveness	Expected Consequence Category	Expected Risk Consequence	Risk Likelihood	Current Risk Rating
11	Exploration	Clearing tracks and pads/drilling	Land is cleared without appropriate approvals in place. Flora or fauna impacted without approval requiring remediation.	2	N/A	2	2	2	Ground Disturbance and drilling Permit process and overarching work authorisation process, including a Review of environmental Factors for drilling conducted in GDP review Drilling Permit GCAA exploration and drilling protocol Environmental training and awareness program within the site familiarisation induction process. Survey equipment calibrated as per survey control plan.	GDP Process- will not be signed off for any installation or clearing until all approvals have been received.	Satisfactory	Legal Compliance	2 Minor	D - Unlikely	5 (L)
12	Exploration	Clearing tracks and pads/drilling	Impacts on near neighbours: Increased traffic, dust, noise, perception of increased bushfire hazard	2	1	3	1	3	GCAA standard for drilling and tracks Drilling management plan Bushfire management plan	GDP requires notification to stakeholders within 2km potentially impacted	Requires Improvement	Image and Reputation / Community	3 Moderate	C - Possible	13 (M)
13	Exploration	Air quality and Noise	Drilling operations generate unacceptable dust that leaves mine owned land and impacts sensitive receptors. Dust, noise, runoff and erosion, security stock and crops, impact on fences and gates, privacy, loss of veg (excess clearing), weeds transferred between drill sites/ properties, hydrocarbons, waste and litter on private land, bushfire, public safety/security	2	1	3	1	3	GCAA standard for drilling and tracks Drilling management plan Bushfire management plan	GDP process Fencing of drill sites where stock/ children are present, or where a security risk exists if agreed with land owner Geologist inspection of the rig during drilling Intro to site Pre-starts and daily inspections	Requires Improvement	Image and Reputation / Community	3 Moderate	C - Possible	13 (M)
14	Exploration	Groundwater	Impact to groundwater	1	1	3	1	3	GW monitoring and modelling plan (approved by DPI water and DRE)	Installation of monitoring piezos on some private properties	Requires Improvement	Image and Reputation / Community	3 Moderate	D - Unlikely	9 (M)
15	Exploration	Land access	Delays to negotiate and agree access	N/A	1	3	1	3	Consultation strategy Access agreement template Proposed drill strategy which identifies properties impacted	Escalation of negotiation to manager Able to offer services rather than monetary compensation Community BBQs	Requires Improvement	Image and Reputation / Community	3 Moderate	C - Possible	13 (M)

	Element	Aspect	Unwanted Event / Impact	Environment	Financial Impact	Image and Reputation / Community	Legal Compliance	Overall PMC	Controls - Documents	Controls - Processes	Risk Control Effectiveness	Expected Consequence Category	Expected Risk Consequence	Risk Likelihood	Current Risk Rating
16	Exploration	Planning	Unknown stakeholders, people in the area unknown to landholders, extra trucks, rigs, general increase in presence of mine vehicles, access to hole location	N/A	1	3	1	3	Stakeholder register - (75% known stakeholders) Community consultation strategy (document all attempts made to contact people) Consultation manager database	Community ESF process BBQs	Requires Improvement	Image and Reputation / Community	3 Moderate	C - Possible	13 (M)
17	Exploration	Surveys - Cultural heritage/ Ecology/ agricultural impact statement	Identifies unwanted cultural heritage or threatened species on private land	N/A	2	3	N/A	3			Requires Improvement	Image and Reputation / Community	3 Moderate	C - Possible	13 (M)
									Drill sites planned to avoid new disturbance GDP process avoids assessment of existing disturbed areas, and uses due diligence process to assess the necessity of cultural heritage surveys						
18	Exploration	Cultural Heritage	Unknown cultural heritage sites impacted.	2	N/A	2	2	2	Ground Disturbance and drilling Permit process and overarching work authorisation process, including a Review of environmental Factors for drilling conducted in GDP review Drilling Permit GCAA exploration and drilling protocol Environmental training and awareness program within the site familiarisation induction process. Survey equipment calibrated as per survey control plan.	GDP - inspection of area required by E&C prior to GDP issue. Conditions within GDP to immendetely report to E&C and stop works if any potential heritage items discovered.	Satisfactory	Legal Compliance	2 Minor	D - Unlikely	5 (L)

	Element	Aspect	Unwanted Event / Impact	Environment	Financial Impact	Image and Reputation / Community	Legal Compliance	Overall PMC	Controls - Documents	Controls - Processes	Risk Control Effectiveness	Expected Consequence Category	Expected Risk Consequence	Risk Likelihood	Current Risk Rating
19	Exploration	Cultural Heritage	Known cultural heritage sites impacted without approval.	2	N/A	2	2	2	Ground Disturbance and drilling Permit process and overarching work authorisation process, including a Review of environmental Factors for drilling conducted in GDP review Drilling Permit GCAA exploration and drilling protocol Environmental training and awareness program within the site familiarisation induction process. Survey equipment calibrated as per survey control plan.	GDP Process- will not be signed off for any clearing until any protection of existing sites identified through AHIMS or inspection is in place.	Satisfactory	Legal Compliance	2 Minor	D - Unlikely	5 (L)
20	Exploration	Vehicle movements	Transporting water/concrete onto site and waste off site - spills	1	1	3	2	3	PIRMP Waste Mangement Plan and Procedures Drilling Management Plan Contractor work authorisation and SWMS	Introduction to Site, Inductions, inspections, licenced operator	Satisfactory	Image and Reputation / Community	3 Moderate	D - Unlikely	9 (M)
21	Exploration	Rehabilitation	Failure of drill site rehabilitation, landholder dissatisfied with rehabilitation	2	1	3	2	3	DRE exploration rehabilitation code of practice Drilling management plan ESF2 landholder agreement for completed rehabilitation	Access agreement GDP process Rehabilitation risk assessment conducted under ESF4 form requirements	Requires Improvement	Image and Reputation / Community	3 Moderate	D - Unlikely	9 (M)
22	Exploration	Rehabilitation	Failure of drill site rehabilitation - Inrush event or impact of ventilation to underground workings	N/A	N/A	N/A	2	2	Drilling and Exploration Management Plan, which includes rehabilitation requirements; GDP conditions require rehabilitation; Biodiversity Management plan; MOP; Inrush Management Plan (New) - doesn't cover historic activities	GDP process for close out after rehabilitation works completed; Post-drilling and ongoing environmental inspections;	Requires Improvement	Legal Compliance	2 Minor	C - Possible	8 (M)
23	Air Quality	Blasting (Fume / Dust)	Blasting operations generate a significant fume/dust event onsite that leaves the operational boundary Scheduled blast event exceeds EPL and PA criteria or Fume travels offsite	N/A	N/A	N/A	2	2	Blast Management Plan, includes blast monitoring program; Blast engineer and blast modelling; Blasting checklist to be signed by operations manager or delegate prior to blasting. Blast Notification Protocol developed; EPL 394 approval. Quarry specific RA includes blast management controls	Large buffer areas; Met conditions checked prior to all blasts;	Satisfactory	Legal Compliance	2 Minor	E - Rare	3 (L)

	Element	Aspect	Unwanted Event / Impact	Environment	Financial Impact	Image and Reputation / Community	Legal Compliance	Overall PMC	Controls - Documents	Controls - Processes	Risk Control Effectiveness	Expected Consequence Category	Expected Risk Consequence	Risk Likelihood	Current Risk Rating
24	Air Quality	Mining Operations	Loading, Dumping or hauling operations generate unacceptable dust levels that exceed compliance criteria Dust from operations leaving site (particularly stockpiles / rehab areas, Rail loop TSF in proximity to Ulan village), non-compliance with licence conditions.	N/A	N/A	N/A	2	2	Site speed restrictions Environmental monitoring network - alarm on TEOM; Air Quality Management Plan; Controls and TARP within Dust Procedure. Statutory inspections; Dust TARP training;	Dust suppression - water carts, sprays etc.; Large buffer area surrounding open cut and Bobadeen quarry; Progressive rehabilitation; Dust suppression sprays around product stockpiles Dust suppression on Trains.	Requires Improvement	Legal Compliance	2 Minor	D - Unlikely	5 (L)
25	Air Quality	Operations	Fugitive dust emission from rail operations	N/A	N/A	2	N/A	2	USO Loading Procedure	Sprays post loading of wagons Loading profile controls	Satisfactory	Image and Reputation / Community	2 Minor	E - Rare	3 (L)
26	Air Quality	Operations	Operations generate unacceptable spontaneous combustion that leaves mine owned land and impacts on sensitive receptors.	N/A	N/A	2	N/A	2	Spon Com Management Plan; Inspections and remediation Conceptual mine closure plan. Stockpile management control	Walkover inspections shiftily inspections by OCEs	Satisfactory	Image and Reputation / Community	2 Minor	D - Unlikely	5 (L)
27	Noise	Mining Operations	Mining Operations activities impact nearby sensitive receptors.	N/A	N/A	2	N/A	2	Mechanical compliance inspections; During drilling inspection includes noise; Quarry management plan addresses haulage of rock; Noise Management Plan; Noise procedure TARPs; Attended noise monitoring also monitoring cumulative impact; Planned maintenance inspections Noise modelling; Planned maintenance plant;	Workplace observations; Environmental monitoring network with alerts; Response to visual and alarm TARPs	Requires Improvement	Image and Reputation / Community	2 Minor	B - Likely	12 (M)
28	Noise	Mining Operations	Mining operations generate unacceptable noise levels that exceed compliance criteria. Exceedance of noise limits (PA & EPL)	N/A	N/A	N/A	2	2	Mechanical compliance inspections; During drilling inspection includes noise; Quarry management plan addresses haulage of rock; Noise Management Plan; Noise procedure TARPs; Attended noise monitoring also monitoring cumulative impact; Planned maintenance inspections Noise modelling; Planned maintenance plant;	Workplace observations; Environmental monitoring network with alerts; Response to visual and alarm TARPs; Regulated operational hours; Large buffer areas between operations and private residences; Engineering noise mitigation measures (Conveyor covers etc.);	Satisfactory	Legal Compliance	2 Minor	D - Unlikely	5 (L)

	Element	Aspect	Unwanted Event / Impact	Environment	Financial Impact	Image and Reputation / Community	Legal Compliance	Overall PMC	Controls - Documents	Controls - Processes	Risk Control Effectiveness	Expected Consequence Category	Expected Risk Consequence	Risk Likelihood	Current Risk Rating
29	Cultural Heritage	Community complaints/mistrust	Cultural / European Heritage - area impacted	N/A	N/A	N/A	2	2	Aboriginal Conservation area offset; Heritage Management Plan; Ground Disturbance Permits; Cultural awareness heritage training;	Cultural heritage management meetings; Cultural Heritage survey over the Mine lease area; Rock shelter salvage program/salvage program. GDP condition: stop work process upon identification of a potential heritage item by the work party.	Requires Improvement	Legal Compliance	2 Minor	C - Possible	8 (M)
30	Cultural Heritage	Community complaints/mistrust	Deterioration of Bobadeen Homestead/Old Ulan	N/A	N/A	2	N/A	2	DPIE approved Revised Bobadeen Homestead Management Plan and Old Ulan MP CMO obligations entered	Yearly monitoring an maintenance program	Satisfactory	Image and Reputation / Community	2 Minor	D - Unlikely	5 (L)
31	Surface water	Mining Operations	Reduction in base flow in Goulburn and Talbragar Rivers (and tributary streams) due to reduction in hard rock base flows greater than predicted in the EA.	3	N/A	2	2	3	Holding of Water Licenses within the Goulburn and Talbragar Systems and in excess of predicted base flow loss Subsidence Assessment Ground water modelling & assessment (and regular calibration); Near goaf and far field GW Monitoring studies; Surface & Groundwater Monitoring Program; Water Management Plan; Upstream Gauging System Monitors Flow. Annual Baseflow loss assessment.	Water discharged to Goulburn system in excess of baseflow loss estimate	Requires Improvement	Environmental	3 Moderate	C - Possible	13 (M)
32	Surface water	Operations	Tailings Dam wall failure in East Pit.	N/A	4	N/A	N/A	4	Inspection regime - including daily, weekly and annual (geotech). Training in dam maintenance Cat Hazard MP - Critical control verification Tailing Management Plan TARP	Designed engineered built to design (including earthquakes)	Satisfactory	Financial Impact	4 Major	D - Unlikely	14 (M)
33	Surface water	Operations	Dam wall failure or integrity of dams allows water to be discharged in an uncontrolled event.	3	N/A	2	3	3	Water Management Plan; Annual/quarterly inspections performed by engineer; Monthly environmental inspections in accordance with the EMS Annual GCA Dams Audit Maintenance of Dam walls.	Clean Water System for West Pit rehabilitation area to achieve final landform and discharge clean water uncontrolled offsite Dams maintained a low level with high level alarms per WMP	Satisfactory	Environmental	3 Moderate	C - Possible	13 (M)

	Element	Aspect	Unwanted Event / Impact	Environment	Financial Impact	Image and Reputation / Community	Legal Compliance	Overall PMC	Controls - Documents	Controls - Processes	Risk Control Effectiveness	Expected Consequence Category	Expected Risk Consequence	Risk Likelihood	Current Risk Rating
34	Surface water	Operations	Mining operations cause an incident that creates environmental harm to surface water. Uncontrolled release (failure / overflow) - sediment laden or mine water outside contained catchment, going offsite due to LTA controls (all water infrastructure including pipelines and sediment dams/controls).	2	N/A	N/A	2	2	Ground Disturbance Permit process. Environmental and statutory inspections. Erosion and sediment control training for personnel as specified in TNA. Erosion and Sediment Control Plan. Final landform design. Water infrastructure MP. FMEA of pipelines	The need for specific erosion and sediment control plans for works are considered in development of GDPs. Maintenance of Dam walls. Maintaining dams at low levels and alarm. Inspections of dam sediment load and desilting. Pipeline Inspections and burst pipeline alarms (auto shutdown); Dirty water management system. Progressive rehabilitation. Engineering and design of erosion and sediment control structures	Requires Improvement	Legal Compliance	2 Minor	C - Possible	8 (M)
35	Surface water	Operations	Excess volume in water storage (East Pit)- exceed high-level storage target (seepage to UGG increasing salt load to East Pit)	2	2	N/A	N/A	2	Volume monitoring. Water sampling. Surface and Groundwater modelling. Goldsim (Water Balance)	Water treatment facility. Salt Management Meetings. Water sharing MCO. Capacity of East Pit. Reuse on site. Bobadeen Irrigation water plant facility. Site discharge. Design criteria for 1 in 1000 rain event the Goulburn River will not spill into East Pit	Requires Improvement	Financial Impact	2 Minor	C - Possible	8 (M)
36	Surface water	Operations	Change in surface water chemistry- trend of salinity (EC) increase or pH or trace metals change in surface water storage (Contaminant load associated with Water Storage) (Geochemical risks are not well understood by the Operation, not managed adequately and create or increase the associated mine closure liability.)	2	N/A	N/A	N/A	2	Regular dam inspections and water sampling. Surface water Hydrological model. Groundwater Hydrological model. Complex water monitoring network. Salt strategy projects - ongoing. Water Management (and sub plans) MP	Water treatment plant pre-filter removes some trace metals- sludge not returned to storage facility; Re-use infrastructure; Bobadeen irrigation scheme. Dams constructed to engineered design. Storage capacity in East Pit. Reused water is set to <3500EC. Dirty water system incorporates smaller feed dams reporting to and impacted by East Pit salinity. Soil sampling. Inspections. Citect Monitoring	Requires Improvement	Environmental	2 Minor	C - Possible	8 (M)

	Element	Aspect	Unwanted Event / Impact	Environment	Financial Impact	Image and Reputation / Community	Legal Compliance	Overall PMC	Controls - Documents	Controls - Processes	Risk Control Effectiveness	Expected Consequence Category	Expected Risk Consequence	Risk Likelihood	Current Risk Rating
37	Surface water	Operations	Mining operations surface water impacts exceed compliance criteria (i.e. discharge exceeds EPL criteria).	2	N/A	N/A	2	2	Monthly calibration and maintenance. Maintenance and inspection of water infrastructure.	Real time citect monitoring including alarms and auto shut down. Auto shutdown for elevated water quality. Operate discharge below limit to ensure compliance with criteria.	Satisfactory	Legal Compliance	2 Minor	C - Possible	8 (M)
38	Surface water	Operations	Water (surface) - Excess volume in sewage treatment systems, offsite discharge (water and/or soil contamination)	2	N/A	N/A	2	2	Monthly Environmental Inspections Systems to provide for design capacity of operations Sewerage treatment plants have maintenance work orders; Licensed maintenance contractor to remove sewage wastes;	UUG and UW within dirty water system Pond level USO ponds monitored via citect and pumped out as required; Automatic switch off taps and pump out height indicators on waste tanks for portable facilities used at project sites Water level monitoring and high level alarm; Pump out on request Sampling of treatment plants.	Satisfactory	Environmental	2 Minor	E - Rare	3 (L)
39	Surface water	Operations	Clean Water System does not meet criteria for uncontrolled discharge	2	N/A	N/A	N/A	2	EPL PRP	Rehabilitation progressing well as demonstrated by monitoring; Repair of gullies undertaken as required; Sink holes providing drainage for higher levels in the peanut dam. Peanut Dam - Discharge isolation dam (interim)	Requires Improvement	Legal Compliance	2 Minor	E - Rare	3 (L)
40	Surface water	Operations	Excess volume - exceed high-level storage target resulting in failure of dam wall at Moolarben Dam	N/A	3	2	N/A	3	Regular monitoring, including engineering inspections and assessments; Dam emergency response plan; Flood studies; Water Infrastructure MP.	Constructed to engineered design	Satisfactory	Financial Impact	3 Moderate	E - Rare	6 (L)
41	Water supply	Mining Operations	Insufficient water supply causes environmental risk controls to be compromised.	2	N/A	N/A	N/A	2	Water TARP with low level triggers. Goldsim and GW model Salinity meeting discussing Water stores on site. Water MP.	Ulan has water surplus Not requirement to discharge	Satisfactory	Environmental	2 Minor	E - Rare	3 (L)

	Element	Aspect	Unwanted Event / Impact	Environment	Financial Impact	Image and Reputation / Community	Legal Compliance	Overall PMC	Controls - Documents	Controls - Processes	Risk Control Effectiveness	Expected Consequence Category	Expected Risk Consequence	Risk Likelihood	Current Risk Rating
42	Ground water	Community complaints/mistrust	Community perceives Ulan Coal as responsible for negative impacts to The Drip	N/A	N/A	2	N/A	2	EA Near goaf and far field GW monitoring provided in public Annual Review CCC update to relevant stakeholders Hydro-geochemistry assessment of drip water provided in public annual review Community Newsletters- modifications	Drip Piezometer installed and logger data Feasibility of flow monitoring for The Drip completed- not feasible	Requires Improvement	Image and Reputation / Community	2 Minor	C - Possible	8 (M)
43	Ground water	Mining Operations	Mining operations cause an incident that creates environmental harm to groundwater. Ulan Coal mining cause impact to The Drip	2	N/A	N/A	2	2	EA Near goaf and far field GW monitoring studies Hydro-geochemistry assessment of drip water	Drip Piezometer installed and logger data Feasibility of flow monitoring for The Drip completed- not feasible	Requires Improvement	Image and Reputation / Community	2 Minor	C - Possible	8 (M)
44	Surface Water	Mining Operations	Changes in surface hydrology due to subsidence impacts (reduced surface water flow via cracking or ponding)	2	N/A	N/A	N/A	2	Subsidence Assessment Groundwater Model & assessment EA and re-assessment for Extraction Plan; Surface water Assessment EA & Part 3A Project Approval; Visual inspections and monitoring; Monitoring study of Ulan Creek & Bobadeen creek from previous underground mining (LW W2-W3 & 26); Experience from previous mining areas; Water Management Plan; Surface Water Monitoring Program; Discharge strategy; Installation of monitoring stations on nominated water courses as per Water	Pre and post subsidence monitoring inspections creek lines/flow lines Annual Ulan Creek survey Mitigation works where required to fix cracks and regrade drainage channels in accordance with the Extraction Plan;	Satisfactory	Environmental	2 Minor	D - Unlikely	5 (L)
45	Ground water	Mining Operations	Mining operations groundwater impacts exceed criteria (groundwater model). Water - reduced access to ground water (seeps and bores- impact beyond prediction)	2	N/A	2	N/A	2	Annual Private Bore Survey Groundwater Model and recalibrations Quarterly assessment of GW levels and comparison to predictions for piezos GW Management Plan and SWGWRP Water management plan- compensation/alternative water supply agreement process (bores & Dams)	Annual Private Bore Survey- wider than predicted impact area	Satisfactory	Environmental	2 Minor	C - Possible	8 (M)
46	Land Management	Access	Infrastructure or property damage due to Unauthorised access to Ulan property	N/A	1	2	N/A	2	CCTV Random surveillance patrols by site security contractors; Monthly Environmental Inspections buffer lands areas; Land access agreements; Site Security Management Plan implemented	Remote access gates are padlocked Ulan Surface Operations gates closed after hours, Bobadeen gate locked afterhours, Ulan West gates controlled access to underground. Buildings are closed after hours	Satisfactory	Image and Reputation / Community	2 Minor	C - Possible	8 (M)

	Element	Aspect	Unwanted Event / Impact	Environment	Financial Impact	Image and Reputation / Community	Legal Compliance	Overall PMC	Controls - Documents	Controls - Processes	Risk Control Effectiveness	Expected Consequence Category	Expected Risk Consequence	Risk Likelihood	Current Risk Rating
47	Land Management	Biodiversity	Greater than 69 hectares of EEC/CEEC cleared within the Project Area under EPBC Area original EA area or greater than 0 ha within the EPBC Area for Ulan West South-west Extension (Project Approval conditions and EPBC Approval conditions) causing damage/impact to protected vegetation and/or ecosystem.	2	N/A	2	2	2	GDP Process Vegetation Community Mapping used for GDP assessment; Review of Environmental factors for GDP; Clearing register updated for each GDP Land Clearing procedure; EA has calculated max proposed disturbance- buffer not all infrastructure likely to be constructed;	Preclearing assessments verify EEC/CEEC presence; Experienced ecologist conducting pre clearing inspections	Requires Improvement	Legal Compliance	3 Moderate	D - Unlikely	9 (M)
48	Land Management	Biodiversity	Bushfire caused by mine operations causing damage/impacts to protected vegetation/ecosystem/waters	2	N/A	2	N/A	2	Non-smoking site; Hot works permits; Bushfire management plan including Maintenance of APZ's; Bushfire Training; Bushfire TARP's; Site Emergency Management Response Plan;	Real time notification for total fire ban days; Co-operation with local RFS;; Energy Network Maintenance Management system; Vehicles fitted with extinguishers	Satisfactory	Environmental	2 Minor	D - Unlikely	5 (L)
49	Land Management	Biodiversity	Weeds and Pests are not managed to regulatory/community expectations and adjacent property owners are impacted. Increase in priority weeds by >10% or spread of priority weeds offsite	2	N/A	2	N/A	2	Drilling and Exploration Management Plan; Annual Weed Program developed based on monitoring and inspection results; Monthly environmental inspections include weed and pest assessment; Implementation Annual Land & Rehab MP. Annual reporting by EcoLogical includes weed/pest report	Weed spraying, baiting, Wild Dog meetings	Satisfactory	Environmental	2 Minor	E - Rare	3 (L)
50	Land Management	Visual amenity	Reduced visual amenity at surrounding residences and Ulan Road	N/A	N/A	1	N/A	1	Environmental Management Strategy; Design of infrastructure to minimise visual impact; Audit of site lighting to ensure compliance with AS4282.	Tree screening Ulan Road; Large buffer areas surrounding most of the operations;	Satisfactory	Image and Reputation / Community	1 Negligible	D - Unlikely	2 (L)
51	Chemical storage	Operations	Chemicals (including hydrocarbons) are not stored and managed to regulatory expectations.	2	N/A	N/A	2	2	Chemical/Hydrocarbon management procedures (introductions to site) New facilities built to GCAA guidelines GDP conditions for remote work areas Hydrocarbon/chemical storage audits to Australian standards EMS and spill response training PIRMP Work orders for maintenance of wash bay oil separators/oil storage areas	Monthly Environmental Pit top inspections & GDP area inspections Weekly waste contractor inspections pit top areas	Satisfactory	Environmental	2 Minor	C - Possible	8 (M)

	Element	Aspect	Unwanted Event / Impact	Environment	Financial Impact	Image and Reputation / Community	Legal Compliance	Overall PMC	Controls - Documents	Controls - Processes	Risk Control Effectiveness	Expected Consequence Category	Expected Risk Consequence	Risk Likelihood	Current Risk Rating
52	Operations	Reporting	Failure to notify disturbance to permanent control mark/trig station - Non compliance with external regulatory condition	N/A	N/A	N/A	2	2	Extraction Plan- Built Features Management Plan	Sites to be impacted documented in approved subsidence monitoring programs for Ulan Underground and Ulan West Operations Extraction Plans	Satisfactory	Legal Compliance	2 Minor	D - Unlikely	5 (L)
53	Subsidence	Biodiversity	Impact on surface vegetation from subsidence greater than predicted in the EA.	2	N/A	N/A	2	2	Floristic Based Subsidence Monitoring study, comparison of veg condition 1, 5, 10 and 20 years post subsidence demonstrates no evidence of change in veg condition compared with veg remote from mined area. Extraction Plan including Biodiversity Management Plan and Subsidence Monitoring Program; Biodiversity Management Plan and monitoring program;	Floristic based subsidence monitoring plots monitored at locations across the longwall panel including areas of EEC, monitoring of these plots in Autumn and Winter prior, during and 2 years post mining	Satisfactory	Legal Compliance	2 Minor	E - Rare	3 (L)
54	Subsidence	Infrastructure	Unsafe, unserviceable or unrepairable in externally owned infrastructure including residences, dams, agricultural infrastructure, power lines or telephone cables unless otherwise agreed in writing by the asset owner	N/A	N/A	2	1	2	SMP / Extraction plan approval and built feature management plan; Subsidence Monitoring Program and visual inspections subsidence areas; ATM process; Private Property Subsidence Management Plans; Alternative Water Supply Agreements for impacts to private bores and springs; Essential Energy Management Plan for SWER line; Baseline surveys and conditional assessments of private property prior to undermining; Notifications to landowners/managers immediately prior to undermining;	Subsidence Warning signage in subsidence areas including private property; Boundary Fencing and locked gates UCMPL owned land; Consultation with stakeholders/land landowners subsidence areas; Labour and machinery available to complete repairs; Mine Subsidence Board process for compensation;	Satisfactory	Image and Reputation / Community	2 Minor	D - Unlikely	5 (L)
55	Subsidence	Subsidence	Subsidence levels are greater than predicted and exceed compliance criteria. (Visible rock falls on cliff line greater than predicted in the EA i.e. >20% of undermined length subject to cliff line impacts)	2	N/A	2	2	2	Approved Extraction Plan including Land and Biodiversity Management Plans; Cliff Line Inspections & Monitoring Program in accordance with Subsidence Monitoring Program; Targeted microbat monitoring;	Studies completed for reassess predictions for the development of each Extraction Plan using up to date monitoring data.	Satisfactory	Legal Compliance	2 Minor	C - Possible	8 (M)

	Element	Aspect	Unwanted Event / Impact	Environment	Financial Impact	Image and Reputation / Community	Legal Compliance	Overall PMC	Controls - Documents	Controls - Processes	Risk Control Effectiveness	Expected Consequence Category	Expected Risk Consequence	Risk Likelihood	Current Risk Rating
56	Subsidence	Subsidence	Community complaints/mistrust due to subsidence impact to cultural heritage site greater than predicted in SMP/Extraction Plan.	N/A	N/A	2	N/A	2	Heritage Management Plan including subsidence predictions and management actions for sites; Subsidence Monitoring Program and inspections of subsidence areas; Rockshelter salvage program Heritage Mitigations - Brokenback Conservation Area & Cockabutta	Subsidence Engineer revised subsidence predictions for Approved Extraction plan including Heritage Management Plan;	Satisfactory	Image and Reputation / Community	2 Minor	C - Possible	8 (M)
57	Traffic	Operations	Traffic impacts are greater than predicted and impact nearby sensitive receptors.	N/A	N/A	2	N/A	2	Ulan Road Strategy- noise mitigations	Encourage car pooling Contracts for construction activities have incorporated busing to site Curfew process school bus times and staggered shift times with neighbouring mines Notification to nearby landholders for special activities (e.g. Bobadeen Quarry trucking to GR)	Satisfactory	Image and Reputation / Community	2 Minor	C - Possible	8 (M)
58	Waste	Mining Operations	Mineral waste is not managed to regulatory expectations and increases the associated mine closure liability (fail to comply with tailings remediation strategy)	N/A	3	N/A	N/A	3	Mine Closure Plan- RCE GCAA tailings emplacement closure strategy	Walls of tailings dam designed to be free draining to the East Pit; Will be in MOP in future when capping is due	Satisfactory	Image and Reputation / Community	3 Moderate	C - Possible	13 (M)
59	Waste	Operations	Non-mineral waste (hazardous & non-hazardous) is not managed to regulatory expectations. Contamination of general waste with hazardous wastes or contamination of recycling with other waste streams	N/A	1	2	2	2	Licensed waste management contractor; Waste Management Plan and site procedures Waste Awareness training part of induction and EMS Additional human resources to manage pit top waste disposal Redesign of the waste management areas	Waste bins available for all waste streams Waste contractor weekly inspections Signage on bins i.e. what can be placed in bin;	Satisfactory	Image and Reputation / Community	2 Minor	B - Likely	12 (M)
60	Waste	Operations	Contaminated soil is not managed to regulatory expectations. Soil and water contamination- Creation of Contaminated Site	2	N/A	N/A	N/A	2	Onsite Bioremediation Pad	Sampling of material for level of contamination prior to moving to onsite or offsite facility	Satisfactory	Environmental	2 Minor	D - Unlikely	5 (L)

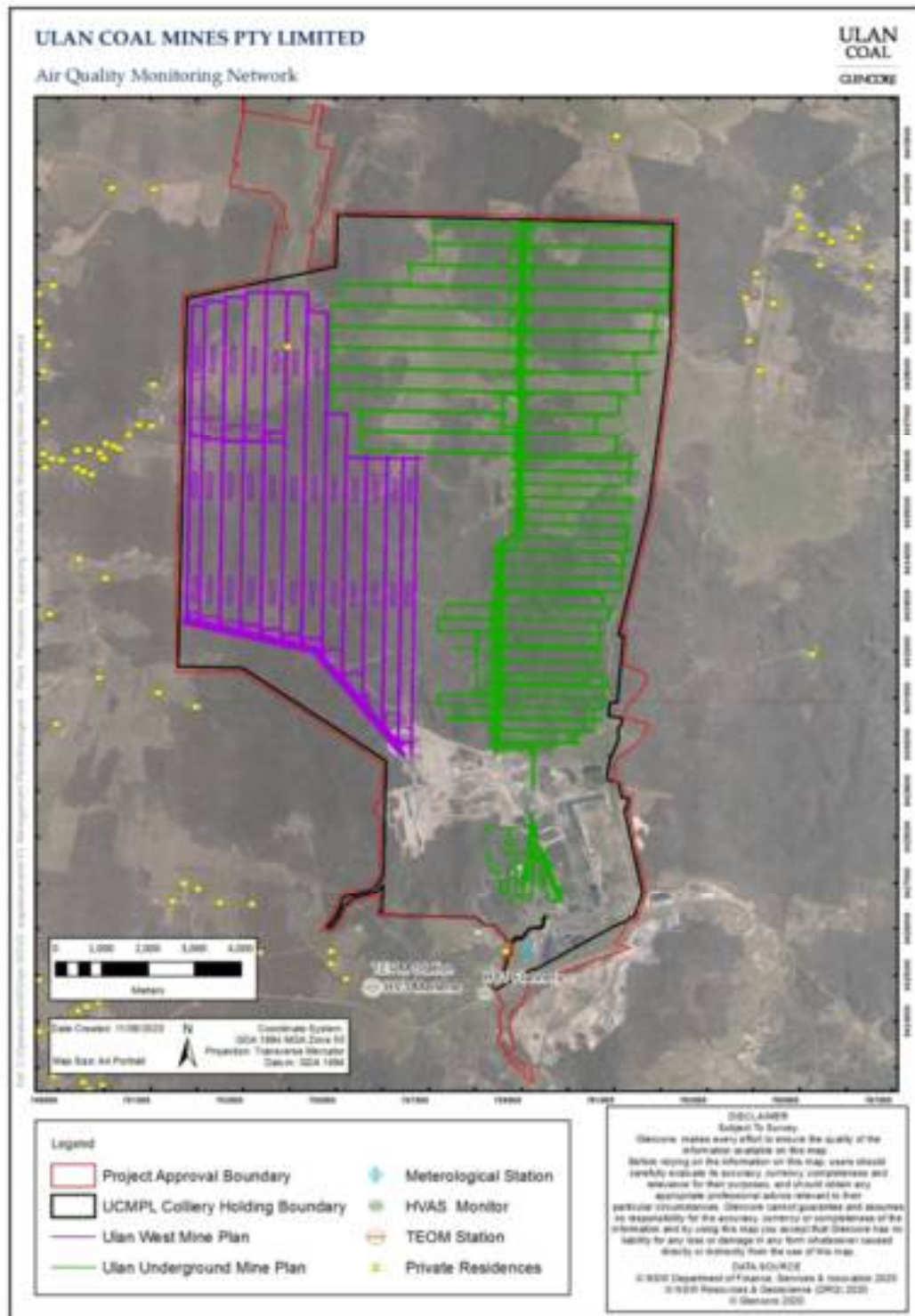
	Element	Aspect	Unwanted Event / Impact	Environment	Financial Impact	Image and Reputation / Community	Legal Compliance	Overall PMC	Controls - Documents	Controls - Processes	Risk Control Effectiveness	Expected Consequence Category	Expected Risk Consequence	Risk Likelihood	Current Risk Rating
61	Rehabilitation	Biodiversity	Rehabilitation quantity does not meet regulatory expectations. Non compliance with PA requirements for establishment/security of Biodiversity Offset areas	N/A	2	2	2	2	Revised Offset Management Strategy implemented; Annual monitoring Offset revegetation and regeneration plots; Annual land management walkover inspection; Provision to complete further revegetation works or increase areas of offset if required; Security of offsets project managed by GCAA, applied to DPIE and DoE for additional time to implement; Project underway final VCA's submitted to OEH- Bobadeen, Brokenback 1 and highetts signed & submitted to OEH.	Alternative Offset assessment in process	Requires Improvement	Legal Compliance	2 Minor	C - Possible	8 (M)
62	Rehabilitation	Mine Closure	Rehabilitation of infrastructure or legacies inadequate to meet regulator signoff on rehabilitation and approval requirements at Mine Closure	N/A	3	2	N/A	3	CMCP and closure cost estimates LOM includes review of CMCP MOP Goulburn River Diversion Management Plan implementation	Rehabilitation monitoring	Satisfactory	Financial Impact	3 Moderate	D - Unlikely	9 (M)
63	Rehabilitation	Mine Closure	Final landform inconsistent with regulatory requirement for final land use (final voids);	N/A	3	N/A	N/A	3	LOM reject emplacement strategy; Final landform design; Conceptual Mine Closure Plan;	Use existing voids for reject emplacement;	Requires Improvement	Financial Impact	3 Moderate	D - Unlikely	9 (M)
64	Rehabilitation	Mine Closure	Rehabilitation quality is not to external expectations (regulatory and/or community). Rehabilitation or regeneration does not meet closure criteria (including open cut and offset areas)	2	N/A	N/A	2	2	MOP closure criteria; Biodiversity Management Plan criteria and TARPS; Conceptual mine closure planning; Environmental monitoring and inspections - long term; Annual Review Rehabilitation Reporting; Annual review of mine closure costs;	Progressive rehabilitation; AR regulator inspection; Regulator consultation;	Requires Improvement	Environmental	2 Minor	D - Unlikely	5 (L)
65	Mine Closure	Closure - AMD / Saline Drainage	Water Legacy ongoing water make and requirement to discharge post mine closure	4	N/A	2	N/A	4	Water management planning final mine groundwater model ACARP Projects	Salinity management through water sharing, BIS and offset area, coal moisture (transport offsite) to prevent legacy issue	Satisfactory	Environmental	4 Major	C - Possible	18 (H)
66	Mine Closure	Operations	Mine closure financial provision is inadequate to close the operation to the regulatory and community expectations.	N/A	3	2	N/A	3	Mine Closure Plan and provisional estimate Triennial third part review of the provisional estimate Annual Review of RCE		Satisfactory	Financial Impact	3 Moderate	D - Unlikely	9 (M)

Appendix C - Environmental and Community Training Needs Analysis

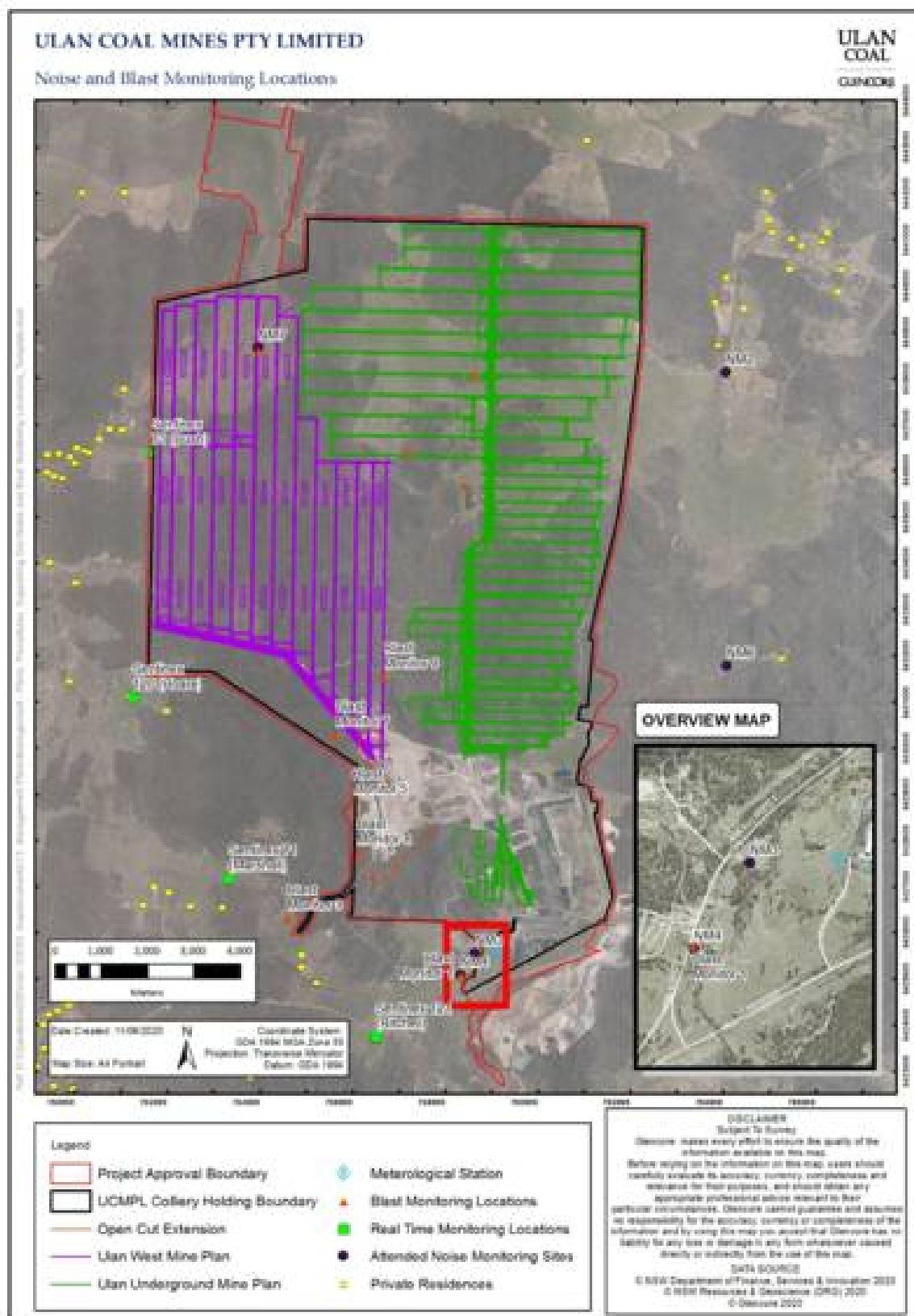
Skill Code	Training Description	Scenario Description	Responsibility to supply training	Method of Providing Training	Frequency training required	Surface Operations Personnel	Underground Personnel	Long-term contractors	Short-term or Irregular Contractors	All Staff	All Supervisors & Managers/ underground operations	All Supervisors & Managers/ surface operations	Major projects/Contract Engineering /Construction	Environmental Personnel	Surface Operations Open Cut Examiners
	Environmental Overview Induction Training	Ulan Complex or USO site familiarisation.	Human Resources	Site Familiarisation	3 yearly	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
10522	Environmental Management System Training	HSMS, Mgmt. Plan, environmental system.	Training Department	Run at training days all staff and crews once per year	3 yearly	✓	✓	✓		✓	✓	✓	✓	✓	✓
10523	Pollution Incident Response Training	Training, enviro & comm, spill prevention & control.	Training Department	Run at training days all staff and crews once per year	3 yearly	✓	✓	✓		✓	✓	✓	✓	✓	✓
10524	Cultural Heritage Awareness Training	Training, enviro & comm, cultural heritage awareness.	Training Department	Run at training days all staff and crews once per year	3 yearly	✓	✓	✓		✓	✓	✓	✓	✓	✓
10525	Erosion and Sediment Control Training	Training, enviro & comm, erosion & sediment control.	E&C. Officer	2 sessions/year External Provider onsite	3 yearly							✓	✓	✓	✓
3804	legislation Approvals Overview &	Training, enviro & comm, legislation.	E&C Manager	Run at SLTs and weekly approvals pipeline meeting	2 yearly						✓	✓	✓	✓	✓
2772	Environmental Auditing	Training, enviro & comm, environmental audit.	E&C Manager	External Provider Offsite	Once off									✓	
4328	Community	Community and stakeholder engagement training.	GCAA	External Provider Offsite	Once off									✓	

7830	Noise and Dust Alarms	Training, Management of Noise & Dust – Response to Alarms	E&C Officer	Run face to face with each year required	3 yearly											✓
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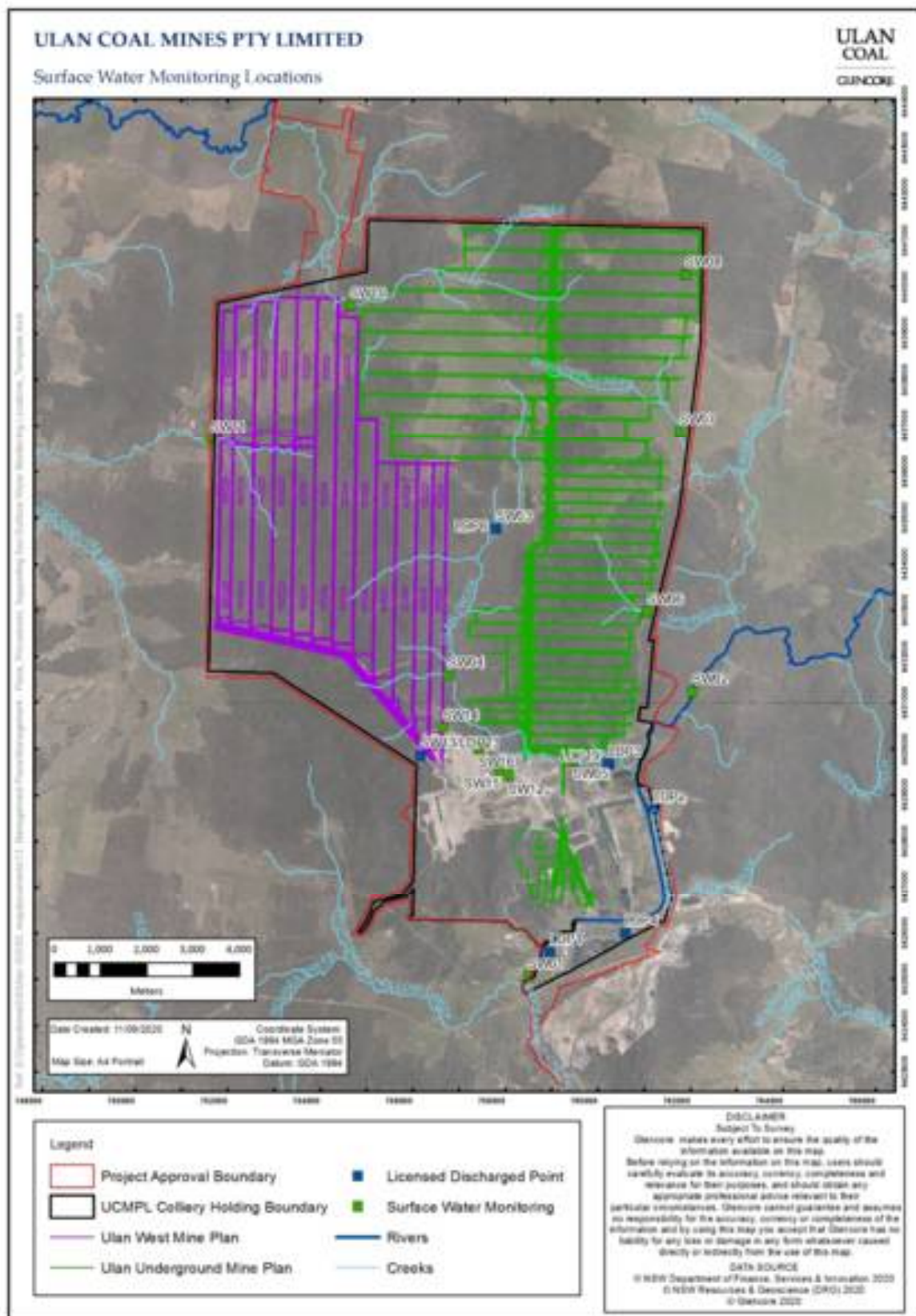
Appendix D - Environmental Monitoring Locations



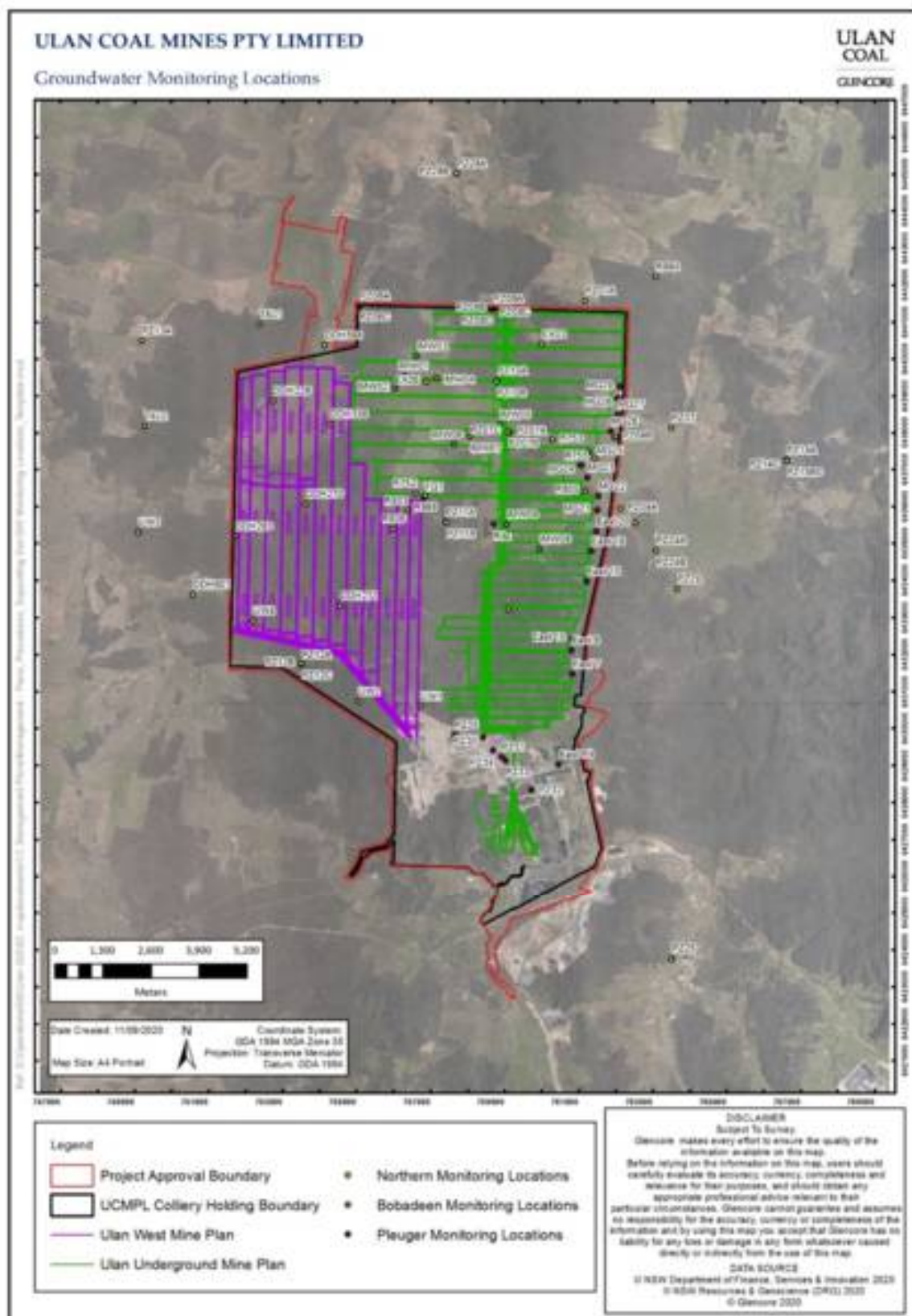
Air Quality Monitoring Network



Noise and Blast Monitoring Network



Surface Water Monitoring Network



Groundwater North Monitoring Network