



Environmental Management Strategy

MEMS-8000

Mandalong Mine

July 2021



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1. BACKGROUND

1.1. Introduction

This Environmental Management Strategy has been developed in accordance with Centennial Mandalong's Development Consent (SSD-5144) as issued by the Planning Assessment Commission (PAC) on 12 October 2015.

Centennial Mandalong operates under an Environmental Management Strategy (EMS) developed to adhere to Centennial Coal's Environmental Policy by promoting environmental awareness and commits to the strategy in the policy designed to minimise the impacts of the operation. Centennial Mandalong accepts and has adopted the Centennial Coal Environmental Policy endorsed by the company's executives. Centennial Mandalong staff recognise the objectives of the Centennial Environmental Policy and aim to achieve the environmental goals.

This EMS applies to all Centennial Mandalong employees and contractors associated with the operations at the Mandalong Mine Access Site (MMAS), Cooranbong Entry Site (CES), Mandalong South Surface Site (MSSS) and the Delta Entry Site (DES). Suppliers and services providers may operate under their own EMS.

1.2. Project Description

Mandalong Mine is owned and operated by Centennial Mandalong Pty Ltd (Centennial Mandalong), a subsidiary of Centennial Coal Company Limited ('Centennial'). Centennial completed the purchase of Powercoal including Mandalong in August 2002. Centennial was subsequently purchased by Banpu Public Company Limited ("Banpu") in October 2010.

The Mandalong Mine comprises the underground workings and surface infrastructure of:

- The Mandalong Mine underground workings including longwall panels, development units and surface infrastructure located near Morisset;
- The Cooranbong Entry Site, consisting of the Cooranbong Colliery underground workings and surface infrastructure located near Dora Creek;
- The surface facilities site including ventilation fans, referred to as the Mandalong South Surface Site located off Mandalong Road; and
- The Delta Entry Site, which encompasses an entry and coal delivery system, located near Wyee at the Vales Point Rail Unloader Facility.

1.3. Objectives

The purpose of the EMS is to provide an effective management framework to identify and control potential environmental impacts to achieve compliance with environmental legislation and regulatory requirements applicable to Centennial Mandalong under SSD-5144.

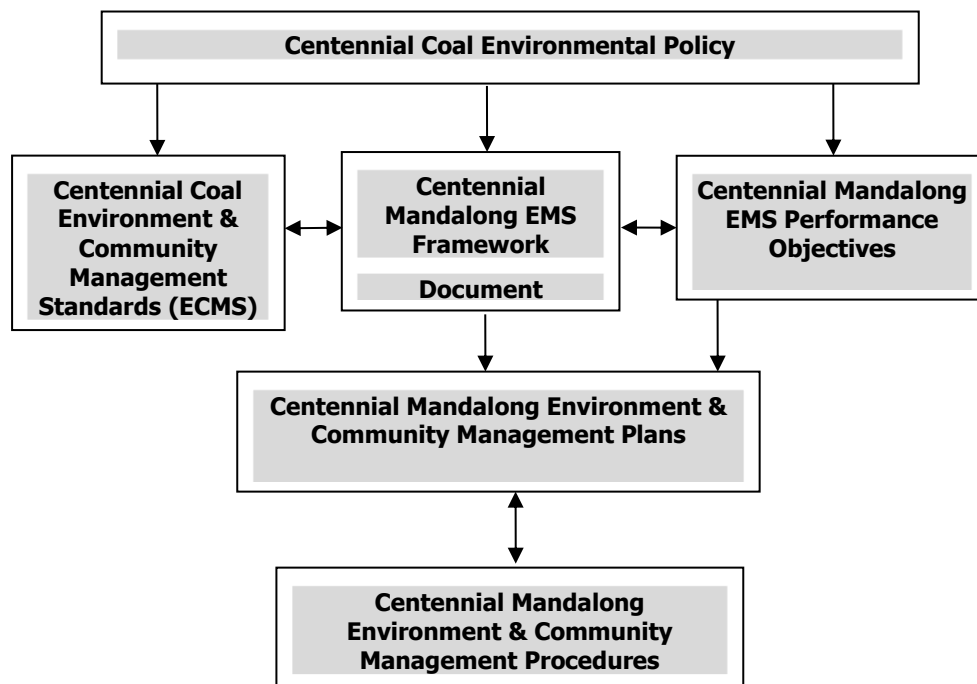
This EMS has been developed to fulfil the requirements of Condition 1 of Schedule 6 of the Centennial Mandalong Development Consent (SSD-5144).

1.4. Environmental Management Strategy Context

The Centennial Mandalong EMS incorporates four components (refer to **Figure 1**):

- Environmental Management Strategy Document;
- Environment and Community Management Standards;
- Environment and Community Management Plans; and
- Environmental Management Strategy Procedures.

Figure 1 - EMS Framework



1.4.1 Environment and Community Management Standards (ECMS)

Centennial Coal has developed and implemented environmental and community standards that are applicable to Centennial Mandalong's operations.

1.4.2 Environment and Community Management Plans

Centennial Mandalong has developed Environment and Community Management Plans to facilitate meeting the objectives set in this EMS and to comply with the development consent condition requirements. These programs are outlined in **Section 2.3**.

1.4.3 Environment Management Strategy Procedures

The EMS Procedures have been developed to ensure that effective environmental and community procedures are implemented and adhered to by personnel conducting activities at Centennial Mandalong.

1.5. Environmental Policy

Centennial Mandalong accepts and has adopted the Centennial Coal Environmental Policy which, sets out the Company aims and values applicable to all employees and contractors. The Policy underpins the Centennial Mandalong Environmental Management Plans.

The Environmental Policy has been endorsed by the Board of Directors and the Mine Manager and is a commitment from senior management to all Centennial Mandalong employees.

The Environmental Policy is displayed at the Mandalong Mine Access Site, the Cooranbong Services Site and at the Delta Entry Site. The Policy is also available to all Centennial employees through the intranet and available to the public via the Centennial internet site.

The Centennial Mandalong Mine Manager as well as all staff and personnel, accept and are committed to fulfilling the EMS to assist in meeting the Policy objectives.

1.6. Approvals and Licensing Requirements

Centennial Mandalong expects that activities at its operations are conducted in accordance with relevant legislation and requirements of statutory authorities. Legislative and regulatory requirements are generally recognised through the imposition of conditions on the development consent, licences or mining approvals.

Centennial Mandalong's operations will be conducted in accordance with applicable State and Commonwealth environmental, planning, and natural resource legislation. Centennial Coal maintains a register of relevant environmental legislative and regulatory requirements within the Controlled Documents System on Lotus Notes which will be reviewed and maintained.

Centennial Mandalong operates under a number of different approvals including:

- Development Consents and approvals issued by the Department of Planning & Environment (DPE) (refer to Section 0 for details);
- Environmental Protection Licence (EPL) 365 issued by the NSW Environment Protection Authority (EPA);
- A Mining Operations Plan (MOP) approved by the NSW Resources Regulator;
- Mining leases issued by the NSW Resources Regulator (refer to Table 2 for details) ; and
- Water Licences and approvals issued by the NSW Department of Primary Industry – Crown Lands & Water Division (CL&W).

1.6.1 Development Consents

Mandalong Mine, which is an extension of the old Cooranbong Colliery, was originally granted Development Consent DA 97/800 by the then Minister for Urban Affairs and Planning on 14 October 1998 under Part 4 of the EP&A Act following the submission of the Cooranbong Colliery Life Extension Project Environmental Impact Statement (Umwelt, 1997) and a Commission of Inquiry.

The Development Consent DA 97/800 will remain in force until surrendered by Centennial Mandalong. As per Condition 13 of Schedule 2 of SSD-5144, Centennial Mandalong shall surrender DA97/800 by 30 April 2022 as agreed by the Secretary of the Department of Planning & Environment in accordance with Section 104A of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

In summary the consents in force are:

1.6.1.1 Development Consent SSD-5144 for the Mandalong Southern Extension Project

Development application SSD-5144 was lodged with the DPE on 29 May 2013 and described in the Mandalong Southern Extension Project Environmental Impact Assessment (GSS Environmental, 2013), Response to Submissions report (Centennial Mandalong, 2014a) and the Response to RTS Submissions report (Centennial Mandalong, 2014b).

The primary components of the Project are:

- Continue the currently approved operations at the Mandalong Mine, with the exception of the surface infrastructure and operations at the Cooranbong Entry Site (i.e. the continued use of the coal delivery system, the ventilation shaft and the extent of workings at Cooranbong Entry Site for water management.) Note: The surface infrastructure and operations at the Cooranbong Entry Site are part of the Northern Coal Logistics Project SSD-5145, however continue to be managed by Centennial Mandalong;
- Extend the Mandalong Mine's underground mining operations into the area covered by EL 6317 (Southern Extension Area) using a combination of continuous miner and longwall mining methods;
- Extract up to 6.5 Mtpa of ROM coal from the West Wallarah and Wallarah-Great Northern Seams within the current mining lease areas and the area covered by EL 6317;
- Deliver ROM coal from the underground workings to the Cooranbong Entry Site at a rate of up to 6 Mtpa and to the Delta Entry Site at a rate of up to 6 Mtpa;
- Continue to utilise, and upgrade where required, the existing surface infrastructure of the Mandalong Mine Access Site and Delta Entry Site;
- Install and operate surface infrastructure at the proposed Mandalong South Surface Site to service the extended underground mining operation;
- Increase manning to 420 full-time employees and up to 50 contractors during longwall relocations;
- Undertake on-going exploration drilling activities within the bounds of Centennial Mandalong's mining leases and exploration licences;
- Increase the life of mine to 25 years from the granting of a mining lease(s) over EL 6317; and
- Continue to operate 24 hours per day, seven days per week.

Development Consent SSD-5144 has been modified on nine occasions as follows –

- **MOD 1** (June 2016) – a modification to relocate a 60 metre wide and 2.4 kilometre long section of an existing TransGrid 330 kV transmission line (TL24).
- **MOD 2** (September 2016) – a minor modification for the extended development of first workings associated with the maingates for longwall panels 22 and 23.
- **MOD 3** (November 2016) – a further modification to increase the annual production limit for the Mandalong Mine from 6 million tonnes per annum to 6.5 million tonnes per annum of ROM coal.
- **MOD 4** (March 2017) – a modification to extend longwall panels 22 and 23 within the current SSD-5144 consent boundary.
- **MOD 5** (August 2017) – a modification to extend longwall panel 24 and for the addition of LW24A within the current SSD-5144 consent boundary.
- **MOD 6** (April 2019) – to allow for the controlled release of stored water from the Mandalong South Surface Site Sediment Dam following significant rainfall events into the unnamed creek that flows into the upper reaches of Morans Creek. This is to be a short-term arrangement until the ability to redirect water from the MSSS Sediment Dam to the underground mine workings can be implemented. Additionally, Centennial Mandalong sought the ability to transport the sediment and material collected at the Mandalong South Surface Site to the Cooranbong Entry Site. Once at the Cooranbong Entry Site, the material will be stockpiled on the 1,500 tonne coal stockpile and managed in accordance with the coal handling system approved by the Northern Coal Logistics Project (SSD-5145).
- **MOD 7** (July 2019) – a modification to allow for construction of a new 7.7 km, 33 kV power line from Mandalong Road to the MSSS was approved by the DPIE 25 July 2019. The Project Area comprises the proposed power line easement, access tracks, and a temporary site office at the MMAS, and covers an area of approximately 10.49 ha.
- **MOD 8** (January 2020) – a modification to allow for an increase in the number of full-time equivalent (FTE) personnel at the Mandalong Mine Access Site (MMAS) across all weekday and weekend shifts at the mine, from the currently approved 470 to 815 (an increase of 345 FTE personnel). As well as an upgrade to the existing electrical substation at the MMAS and to allow the clearing of vegetation to facilitate the upgrades to the existing substation and to allow for the expansion of existing car parking facilities at the MMAS.
- **MOD 9** (April 2021) – a modification to change Mandalong’s approved mine plan, including reorientating some of the approved longwall panels, removing longwalls that will not be developed and renumbering the longwalls accordingly.

The Development Consent (SSD-5144) conditions provide detail of the matters which should be included in this Environmental Management Strategy. These matters are set out in

Table 1 below, together with the notation of the section of this document in which each matter is addressed.

Table 1 – Development Consent Conditions SSD-5144

Development Consent Condition	Section Addressed
1. The Applicant must prepare and implement an Environmental Management Strategy for the development to the satisfaction of the Secretary	This document
(a) be submitted to the Secretary for approval prior to the commencement of construction of the MSSS, or by 31 March 2016, whichever is sooner;	Document Control
(b) provide the strategic framework for environmental management of the development;	Section 1.4
(c) identify the statutory approvals that apply to the development;	Section 1.6
(d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the development;	Section 4.1
(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 development; ▪ receive, handle, respond to, and record complaints; ▪ resolve any disputes that may arise during the course of the development; ▪ respond to any non-compliance; and ▪ respond to emergencies; and 	Section 4.2 Section 2.5.2.4 Section 2.5.2.5 Section 5.2 Section 3.2
(f) include: <ul style="list-style-type: none"> ▪ copies of any strategies, plans and programs approved under the conditions of this consent; and ▪ a clear plan depicting all the monitoring required to be carried out under the conditions of this consent. 	Table 3 Section 2.4
The Applicant must implement the approved strategy as approved from time to time by the Secretary.	

1.6.1.2 Development Consent DA 97/800 for Mandalong Mine

Development application DA 97/800 was lodged with LMCC on 27 November 1997 and described in the Cooranbong Colliery Life Extension Project Environmental Impact Assessment (Umwelt, 1997), including the Applicant's submissions to the Commission of Inquiry, and as modified on ten occasions as follows:

- **MOD 1** (August 2001) - minor changes to the conditions of consent relating to the preparation of subsidence management plans and notification of landholder requirements, as described in the modification application prepared by Powercoal, dated 29 March 2001.
- **MOD 2** (February 2005) - installation of methane drainage plant and the transport of 1,000 tonnes of mined coal by road, as described in Mandalong Mine Methane Drainage Plant and Coal Haulage, Statement of Environmental Effects, dated 28 October 2004 and prepared by Sinclair Knight Merz (2004).
- **MOD 3** (March 2006) - installation and operation of enclosed methane gas flare units for high purity methane drainage gas. This was undertaken in response to condition 60a(iii) imposed as part of MOD 2, which required Centennial Mandalong to submit a report on the progress towards implementing greenhouse gas abatement measures. This modification is as described in the Statement of Environmental Effects for the Installation and Operation of Enclosed Methane Gas Flare Units, dated February 2006 (Umwelt, 2006).
- **MOD 4** (July 2009) - installation and operation of gas engines (construction commenced in 2020) to produce up to 12 megawatts of electricity using high purity methane drainage gas, increase the coal production rate from 4 Mtpa to 6 Mtpa, relocate a ballast borehole and update subsidence conditions. This modification is as described in the Environmental Assessment entitled Mandalong Mine Modification to Development Consent Environmental Assessment, dated September 2008 (Hansen Bailey, 2008). This approval will remain in force under Condition 2(a) of Schedule 2 of SSD-5144.
- **MOD 5** (November 2009) - coal from Mandalong Mine (Cooranbong Services Site) permitted to be washed at Newstan Colliery and a temporary increase in the volume of coal transported by conveyor from the Cooranbong Services Site to the Eraring Power Station stockpiles for subsequent road haulage to Newstan Colliery (until construction of the Cooranbong Private Haul Road was complete). This modification is as described in the Statement of Environmental Effects entitled Washing of Mandalong Coal at Newstan Section 96(A) Application Statement of Environmental Effects, dated October 2009.
- **MOD 6** (November 2009) - changes to the locations and heights of approved (but not previously constructed) coal handling infrastructure at the Cooranbong Services Site. This modification is as described in the Statement of Environmental Effects entitled Relocation of Infrastructure within the Mandalong Services Site Section 96(1A) Application Statement of Environmental Effects, dated November 2009.
- **MOD 7** (October 2011) - installation and operation of a new technology known as a ventilation air methane regenerative after burner (VAM-RAB) as a trial unit to demonstrate the ability of the technology to capture and abate ventilation air methane from the underground mine. This modification is as described in the Environmental Assessment: Ventilation Air Methane Abatement Demonstration Project, Mandalong Mine – Section 75W Modification (GSS Environmental, 2011) and additional information provided in the document entitled Mandalong Mine Ventilation Air Methane

Abatement Demonstration Project – Response to Submissions dated September 2011.

- **MOD 8** (August 2012) - increase in the volume of coal permitted to be transported from the Cooranbong Services Site to both Newstan Colliery and Eraring Power Station from 2 Mtpa to up to 4 Mtpa and back haulage of middlings (middle quality coal product) from Newstan Colliery to Cooranbong Services Site for subsequent supply to the Eraring Power Station. This modification is as described in the Environmental Assessment: Mandalong Mine – Cooranbong Services Site – Cooranbong Distribution Project – Section 75W Modification to Development Consent DA 97/800 (GSS Environmental, 2012) and additional Noise Mitigation Assessment, dated 31 May 2012.
- **MOD 9** (February 2013) - administrative amendment to conditions 1A(c) and (d) to allow the coal delivery limits approved as part of MOD 8 (i.e. up to 4 Mtpa from Cooranbong Services Site to both Newstan Colliery and Eraring Power Station).
- **MOD 10** (November 2014) – a minor modification to conditions 1A (b) and 1A (c) for a small increase in the amount of coal allowed to be delivered from the underground workings to the Cooranbong Entry Site from 4Mtpa to 4.1Mtpa in 2014 only.

1.6.1.3 Development Consent DA 35-2-2004 for Delta Entry Site

The consent is required for the transportation of coal to the Delta Entry Site via the underground Mandalong Coal Delivery System, as approved by development consent DA 35-2-2004 and described in the Delta Link Project – Statement of Environmental Effects (Umwelt, 2004). This development consent is held by Centennial Mandalong and has been modified on one occasion as follows:

- **MOD 1** (October 2017) – a minor modification in order to increase the life of the Mandalong Coal Delivery System from 2021 to 2040.

1.6.1.4 Development Consent SSD-5145 for Northern Coal Services

Development Consent SSD-5145 for the Northern Coal Logistic Project was approved by the DPE on 29 September 2015. The approval consolidates the receipt, handling, processing and transport of run-of-mine coal from Centennial Coal's underground operations at Mandalong Mine, Newstan Colliery and Awaba Colliery.

On 25 January 2018, the Centennial Northern Coal Logistics modification (**MOD 1**) was approved by the Department of Planning & Environment. The modification allows Northern Coal Services to:

- Increase the number of full-time equivalent employees based at the CES from 14 to 60; and
- Amend the operational noise criteria specified by Condition 2 of Schedule 3 for the privately owned residences in the vicinity of the CES.
- Of note, at time of publishing this Environmental Management Strategy, Centennial Northern Coal Logistics modification (**MOD 2**) is currently up to the Response to Submissions of the lodgement process through the Department of Planning, Industry and Environment site

This EMS document applies to all Centennial Mandalong employees, contractors and operations at the Cooranbong Entry Site (CES). This document also covers the Cooranbong component of the requirements for an EMS under SSD-5145.

1.6.2 Other Approvals

The surface holdings at the Mandalong Mine, the Cooranbong Entry Site and the Delta Entry Site are licensed for the scheduled activity of coal mines under the *Protection of the Environment Operations Act* (POEO) (2005) in Environmental Protection Licence; EPL 365.

The EDL owned and operated Mandalong Power Station is currently being constructed adjacent to the Mandalong Mine ventilation fans. EDL holds an Environmental Protection Licence (EPL 21230) which authorises four 2 MW gas engines for a maximum annual generation capacity of 250 GWh. Access to the Power Station is via the Mandalong Mine site.

1.6.3 Authorisations and Exploration Licences

The Mandalong Mine holding comprises a number of licences and leases. **Table 2** sets out the licences and leases within the Mine's Holding Boundary.

Centennial Mandalong has a Mining Operations Plan (MOP Amendment D) (SLR, 2021) which was approved by the NSW Department of Planning and Environment – NSW Resources Regulator until 30 November 2023. The MOP was prepared to satisfy conditions of the various mining leases covered by the MOP and prepared with reference to the Mining Operations Plan (MOP) Guidelines September 2013 (DRE, 2013).

Table 2 - Centennial Mandalong Development Consent, Mining and Exploration Leases and Licences

Name	Description	Issued By	Expiry Date	Renewal Procedure
Consolidated Coal Lease 762	Title to Cooranbong Workings includes some surface land – some environmental conditions	Dept. Primary Industry (Mineral Resources)	13/10/2022	Manager Title and Property-North
Consolidated Coal Lease 746 (sublease)	Title for Cooranbong Workings includes some surface land – some environmental conditions	Dept. Primary Industry (Mineral Resources)	31/12/2028	Manager Title and Property-North
Mining Purposes Lease 191	Title to surface land for water tanks at Cooranbong – requires annual environmental management report on anniversary	Dept. Primary Industry (Mineral Resources)	24/2/2023	Manager Title and Property-North
Mining Lease 1443	Mandalong Project Mining Lease – includes some surface land	Dept. Primary Industry (Minerals Resources)	01/03/2020*	Group Manager Titles and Property- North
Mining Lease 1431	Title to surface land for proposed shaft at the back of Morisset	Dept. Primary Industry (Mineral Resources)	27/5/2019*	Group Manager Titles and Property- North
Mining Lease 1543	Mining Lease – Mandalong Mine Project	Dept. Primary Industry (Mineral Resources)	25/11/2024	Group Manager Titles and Property- North
Mining Lease 1553	Mining Lease Delta Link Project – includes surface land	Dept. Primary Industry (Mineral Resources)	07/09/2025	Group Manager Titles and Property- North

Name	Description	Issued By	Expiry Date	Renewal Procedure
Mining Lease 1722	Mining Lease – Mandalong Southern Extension Project	NSW Industry – Resources & Energy	12/12/2036	Group Manager Titles and Property - North
Mining Lease 1744	Mining lease associated with proposed mining operations in the Olney State Forest areas within the Southern Extension Area Assessment process Mining Lease – Mandalong Southern Extension Project	NSW Industry – Resources & Energy	06/10/2037	Manager Titles and Property – North
Exploration Licence 6317	Exploration Licence (renewed 2 nd Nov 2009)	Dept. Primary Industry (Mineral Resources)	08/08/2019*	Group Manager Titles and Property- North
Exploration Licence 4443	Exploration Licence	Dept. Primary Industry (Mineral Resources)	23/10/2017*	Group Manager Titles and Property- North
Exploration Licence 4969	Exploration Licence	Dept. Primary Industry (Mineral Resources)	31/07/2017*	Group Manager Titles and Property- North
Exploration Licence 5892	Exploration Licence	Dept. Primary Industry (Mineral Resources)	31/07/2017*	Group Manager Titles and Property- North
Authorisation 404	Exploration Licence	Dept. Primary Industry (Mineral Resources)	31/07/2017*	Group Manager Titles and Property- North

Name	Description	Issued By	Expiry Date	Renewal Procedure
Mine Operations Plan (MOP) Amendment D	Summary of Mining Activities – Mandalong	NSW Department of Planning, Industry & Environment – NSW Resources Regulator	30/11/2023	MOP Amendment D approved for the period 1 December 2016 to 30 November 2023.
Environmental Protection Licence 365	Permits scheduled activity “coal mining” and discharge of water from licensed discharge points.	Environment Protection Authority	Perpetual	Requires payment and Annual Return February each year
Mandalong Mine Development Consent No.97/800	Permits development and works to occur as described in the EIS.	NSW Department of Planning	October 2020	Requires new development consent after expiry date.
Mandalong Mine Development Consent No. DA 35-2-2004	Permits construction and operation of the Delta Coal Handling Facility	NSW Department of Planning & Environment	31/12/2040	Requires new development consent after expiry date.
Mandalong Mine Development Consent SSD-5144	Extension of underground operations into the Mandalong Southern Extension Area.	NSW Department of Planning & Environment	31/12/2040	Requires new development consent after expiry date.
Centennial Northern Coal Services Development Consent SSD-5145	Receipt, handling, processing and transport of run-of-mine coal from Centennial Coal’s underground operations at Mandalong Mine, Newstan Colliery and Awaba Colliery.	NSW Department of Planning & Environment	31/12/2045	Requires new development consent after expiry date.

* Renewal applications have been lodged and acknowledged for these titles however, no renewal offers have been received at the time of writing of this EMS.

2. IMPLEMENTATION

Centennial Mandalong will implement the Centennial Coal Environmental Policy and the EMS by providing effective and adequate resources (including human resources, technology and financial resources) along with adequate support mechanisms. To facilitate in the implementation of the EMS, position responsibilities as described in **Section 4.1** have been nominated for employees including the site management team, staff and workforce.

2.1. Consultation

Centennial Mandalong will consult with employees and contractors when a decision is to be made that may affect a person's health, safety or welfare and the environment. Examples of situations requiring consultation include, but are not limited to:

- Changes to work environments, work methods, work systems, equipment or substances;
- Undertaking, or reviewing risk assessments and implementing controls;
- Investigating incidents;
- Determining environmental training needs;
- Developing a scope of work; and
- Undertaking projects that require a designated project manager.

2.1.1 Information and Communication

This EMS will be made publicly available on the Centennial Coal website in accordance with Schedule 6 Condition 15(a) of the Development Consent SSD-5144.

2.1.2 Health Safety Environment and Community Committee

The Health and Safety, Environment and Community Committee (HSEC) meet on a monthly basis to oversee the safety and environmental performance of Centennial Mandalong. The HSEC committee members are encouraged to communicate environmental messages, issues, concerns and performance criteria to the employees at the operations.

2.1.3 Employees and Contractors

Shift and team briefings provide the opportunity for discussion with individuals on matters that may be of concern to them. They will be able to voice concerns regarding environmental matters during these briefings.

2.1.4 External Providers

External providers will receive relevant information which will have an influence on their organisation / personnel through their contact or supervisor at Centennial Mandalong. If further information is required to perform a task it can be attained on request. All relevant information regarding health, safety and environment should be provided prior to work commencement.

2.2. Risk Assessment

Centennial Mandalong has adopted the Stature Risk Assessment Program which was developed to ensure consistency in all risk assessments across the Centennial Coal operations. The Stature Risk Assessment Program sets out an environmental consequences table and risk ranking matrix for managing identified risks.

Centennial Mandalong will conduct an annual operational risk assessment to assess the environmental aspects and impacts of the operations and to meet the requirements of the Environmental Policy.

This assessment considers the operational activities of Centennial Mandalong, identifies the potential environmental hazards associated with the activity and assesses the potential risk posed by that hazard. As part of the Division of Resources & Energy requirements and Centennial Mandalong's due diligence, commitments are made for reducing unacceptable risks. The reporting process then allows for these commitments to be reviewed for action.

Generally the significant environmental elements considered are:

- Land management;
- Water management;
- Groundwater management;
- Air quality management;
- Noise and vibration management;
- Cultural heritage management;
- Community impacts;
- Wetland management;
- Subsidence management; and
- Flora, fauna and biodiversity management.

All operational processes undertaken at the Centennial Mandalong operations are subject to the risk assessment process prior to implementation. Potential environmental impacts are considered as part of all risk assessments utilising the Stature Risk Assessment Program.

2.2.1 Risk Management / Hazard Identification

Environmental management at Centennial Mandalong's operations is regulated by the licences, leases and approvals as shown in **Section 1.6**. Additionally, this Centennial Mandalong Environmental Management Strategy provides a framework under which environmental issues are managed on site.

The EMS has been developed and implemented to ensure the effective management of environmental issues and compliance with all regulatory requirements while providing a means for continued improvement in the environmental performance of Centennial Mandalong. The EMS incorporates a number of environmental management plans that are designed to assist in meeting community and regulatory expectations. Centennial Mandalong has the following management plans as outlined in **Table 3** and illustrated in Appendix 1. These management plans can be found on the Centennial Mandalong website (<https://www.centennialcoal.com.au/Operations/OperationsList/Mandalong>).

Table 3 – EMS Management Plans

Management Plan	SSD-5144 Schedule-Condition
Noise Monitoring & Management Plan	S3-4
Air Quality & Greenhouse Gas Management Plan	S3-10
Mine Water Discharges Management Plan	S3-15
Water Management Plan	S3-17
Site Water Balance	
Surface Water Management Plan	
Erosion & Sediment Control Management Plan	
Land Management Strategy	S3-18
Biodiversity Management Plan	S3-19
Centennial Northern Holdings Aboriginal Cultural Heritage Management Plan	S3-22
Construction Traffic Management Plan	S3-27
Rehabilitation Management Plan	S3-33
Surface Infrastructure Management Plan	S3-35
Gas Drainage Management Plan	
Service Boreholes Management Plan	
PED Management Plan	
Exploration Activities Management Plan	S3- 36
Extraction Plan and associated management plans	S4-6
Construction Environmental Management Plan	EIS Statement of Commitments
Construction Flora & Fauna Management Plan	
Construction Noise & Vibration Management Plan	
Construction Erosion & Sediment Control Management Plan	
Construction Heritage Management Plan	
Construction Air Quality Management Plan	
Waste Management Plan	
Bushfire Management Plan	
Energy Savings Action Plan	
Stakeholder Engagement Strategy	
Emergency Management System	

2.3 Environmental Management Activities and Controls

2.3.1 Management of Cumulative Impacts

Cumulative impacts for groundwater, surface water, flora and fauna, air quality, noise, traffic, visual, economic and social were analysed in Section 10.20 of the Mandalong Southern Extension Project EIS (GSS Environmental, 2013). Mitigation measures for each environmental aspect are addressed in individual environmental management plans listed in **Table 3** of this document.

2.3.2 EMS Performance Objectives

Table 4 lists the overall objectives and performance outcomes during construction, mining and decommissioning of Centennial Mandalong operations and the management plans developed to manage these key environmental elements.

Table 4 - EMS Performance Objectives

Key Environmental Element	Objective	Performance Outcomes	Management Plan
Noise & Vibration	Ensure all relevant statutory requirements and standards are met. Manage and minimise the impact of noise and vibration from Centennial Mandalong's operations on nearby residences. Maintain an effective response mechanism to deal with issues and complaints.	Comply with the applicable noise and vibration criteria in the Development Consent & EPL 365. Nil noise and vibration complaints.	Noise Monitoring & Management Plan
Air Quality / Dust	Ensure all relevant statutory requirements and standards are met. Manage and minimise the impact of dust from mining operations on the environment and nearby residences. Maintain acceptable levels of amenity for surrounding residents. Maintain an effective response mechanism to deal with issues and complaints.	Comply with the applicable air quality criteria in the Development Consent & EPL 365. Nil air quality complaints.	Air Quality & Greenhouse Gas Management Plan

Key Environmental Element	Objective	Performance Outcomes	Management Plan
Surface Water	<p>Maximise the separation of clean and dirty water systems.</p> <p>Manage water discharge from site, in terms of volume and quality, to a level that is acceptable for environmental management and community expectations.</p> <p>Minimise water discharges from the premises by maximising, where practicable, opportunities for the reuse and recycling of water on site.</p> <p>Minimise discharges of dirty water from the premises.</p> <p>Manage discharge to natural waterways in accordance with the EPL 365 conditions or as agreed with the EPA.</p>	<p>Comply with the applicable water discharge criteria in the Development Consent & EPL 365.</p> <p>Nil water discharge complaints.</p>	<p>Mine Water Discharges Management Plan</p> <p>Water Management Plan</p> <p>Erosion & Sediment Control Plan</p>
Groundwater	<p>To monitor and manage groundwater quality and levels to detect potential impacts on surrounding groundwater users and to ensure that relevant legislative and policy requirements are met.</p>	<p>Comply with the applicable conditions relevant to groundwater monitoring, management and extraction in the Development Consent & DPI Water groundwater monitoring & extraction licences.</p>	<p>Groundwater Management Plan</p> <p>Environmental Management Plan (current SMP / Extraction Plan area).</p>

Key Environmental Element	Objective	Performance Outcomes	Management Plan
Biodiversity	Centennial will manage, protect and provide long-term security for the Land Management Strategy areas to compensate for the clearing of 15.6 hectares for the construction of the Mandalong South Surface Site.	<p>Centennial Mandalong will undertake the following land management activities:</p> <ol style="list-style-type: none"> 1. Management of weeds and feral animals. 2. Suitable fencing for the exclusion of stock from riparian areas. 3. Bushfire management. 4. A rehabilitation program for riparian areas where an assessment has determined that rehabilitation activities will improve water quality in the creek systems. 5. Provision of a nominal funding value towards research over the life of the mine into the habitat values of species likely to be impacted by the operation. 6. Provision of a nominal dollar amount for future maintenance of the land. 	Land Management Strategy

Key Environmental Element	Objective	Performance Outcomes	Management Plan
Land Management	<p>Centennial will where required appoint a professional Land Manager to implement "best practice" land management systems that aim to:</p> <ol style="list-style-type: none"> 1. Ensure the safety of tenants and the community. 2. Achieve sustainable management of the land. 3. Maintain and improve agricultural productivity where appropriate. 4. Maintain and enhance internal fences and external fences in consultation with neighbours. 5. Maintain biodiversity of the properties' agro-ecological system. 6. Maintain buildings and infrastructure on properties where relevant. 	<p>The land management system(s) adopted will include at least the following elements:</p> <ol style="list-style-type: none"> 1. Development and implementation of a Whole Farm Plan (WFP). 2. A commitment to meet all statutory requirements for feral animal and noxious weed control. 3. Development and implementation of a pollution control policy for fertiliser use, agricultural chemical use and chemical residues, and waste. 4. Development and implementation of a weeds policy which considers all weeds and their impact on agricultural production and native habitat. 5. Development and implementation of a wetland and waterways policy specific to the land owned by Centennial. 6. Comply with the applicable conditions relevant to land management in the Development Consent. 	<p>Land Management Plan</p> <p>Erosion & Sediment Control Plan</p> <p>Wetland Management Plan</p>

Key Environmental Element	Objective	Performance Outcomes	Management Plan
Flora & Fauna	<p>Minimise the impact of subsidence on all flora and fauna, including those species or habitats listed as endangered or threatened.</p> <p>Habitat areas and threatened flora and fauna across the mining area of impact are identified and monitoring is established prior to any disturbance where appropriate.</p> <p>Procedures are in place and appropriate training provided for personnel involved in subsidence repair works.</p>	<p>Comply with the applicable conditions relevant to flora and fauna in the Development Consent.</p> <p>Nil flora & fauna disturbance complaints</p>	<p>Biodiversity Management Plan</p> <p>Extraction Plan</p>
Wetlands	<p>To monitor and manage potential subsidence impacts from longwall mining on wetlands identified within the area subject to mining induced subsidence.</p>	<p>Comply with the applicable conditions relevant to wetland management in the Development Consent.</p> <p>Nil wetland impact complaints</p>	<p>Wetland Management Plan</p>
Cultural Heritage	<p>Identify and control potential impacts on culturally significant items associated with works completed by Centennial Mandalong.</p> <p>Comply with cultural heritage legislation and regulatory requirements applicable to Centennial Mandalong.</p>	<p>Comply with the applicable conditions relevant to cultural heritage in the Development Consent.</p> <p>Minimise impact to cultural heritage items of significance.</p>	<p>Centennial Northern Holdings Aboriginal Cultural Heritage Management Plan</p>

Key Environmental Element	Objective	Performance Outcomes	Management Plan
Subsidence	<p>To anticipate and monitor the effects of longwall extraction so as to prevent adverse impacts on surface improvements and natural features.</p> <p>Where potential unacceptable impacts are identified, provide measures to mitigate or remediate.</p>	Comply with the applicable conditions relevant to subsidence management in the Development Consent and Extraction Plan approvals.	<p>Built Features Management Plan.</p> <p>Property Subsidence Management Plans.</p> <p>Public Safety Management Plan</p> <p>Infrastructure Management Plans</p>

2.3.3 Water Catchment Objectives

2.3.3.1 Community

The water catchment objectives with respect to the community are:

- to maintain pre-mining availability of water to the community;
- to maintain or improve community interaction with water; and
- to manage and mitigate potential adverse effects from flooding.

2.3.3.2 Ecological

The water catchment objectives with respect to ecological aspects are:

- to protect the water quality of Stockton Creek and Moran's Creek their tributaries which may be affected by the operations;
- to limit any net impact on the water quality and quantity of the catchment affected by the operations; and
- to maintain net ecological viability of wetlands and waterbodies in the mining area.

2.3.3.3 Restoration Strategy

The strategy for restoration and management of the catchment includes:

- conducting pre-mining, during mining and post-mining catchment monitoring; and
- consultation to develop and implement relevant catchment restoration management plans where required.

2.3.4 Economic Productivity Objectives

2.3.4.1 Agriculture

The objectives for maintaining economic productivity of agriculture within the area of impact of the mining operations via the Property Subsidence Management Plan (PSMP) process are:

- to adequately detail the nature and extent of existing agricultural businesses prior to mining;
- to maintain the pre-mining land-use capacity to the satisfaction of the landowner, where agreed; and
- to develop remedial management plans as required to the satisfaction of the landowner.

2.3.4.2 Other Businesses

The objectives for maintaining economic productivity of businesses other than agriculture within the area of impact of the mining operations via the PSMP process are:

- to adequately define existing businesses;
- to maintain the pre-mining business activity as required to the satisfaction of the landowner, where agreed; and
- to develop remedial management plans as required to the satisfaction of the landowner.

Notification, acquisition and compensation obligations are outlined in Development Consent Schedule 5 Conditions 1 to 4.

2.4 Environmental Monitoring Plans

A summary of all the environmental monitoring required by SSD-5144 and detailed plans of environmental monitoring locations for the Mandalong Mine Access Site, Mandalong South Surface Site, Cooranbong Entry Site and the Delta Entry Site are included in **Appendix 4**.

2.5 Communication

2.5.1 Internal Communication

Key avenues for internal communication on environment and community issues are mainly through meetings. Additionally, Centennial Mandalong has the following methods of communication with the workforce and employees.

2.5.1.1 Display

Displays at Centennial Mandalong include noticeboards, work orders, electronic communication, report books and daily diaries.

2.5.1.2 Toolbox Talks

Any major environmental incidents and information can be communicated to the whole workforce via toolbox talks. Environmental toolbox talks are also scheduled in the Centennial Mandalong Business Management Framework document.

2.5.1.3 Intranet

Environmental incidents can be communicated via the Centennial intranet system in the form of a HSEC alert. Other information which can be communicated on Lotus Notes includes good news stories, newsletters and articles in newspapers.

2.5.1.4 Briefings

Contractors are given information on health, safety and environmental issues as part of the Centennial Mandalong site induction process which must be completed prior to works commencing onsite. All contractors are managed in accordance with the Centennial Mandalong Contractor Management Plan including renewals for required inductions and medicals. Further information can be given to the contractor prior to work commencement to ensure that they are properly informed of the issues regarding the task they are to perform.

2.5.1.5 Signage

Where it is deemed necessary, relevant signage may be used as a form of communication to the workforce and community. This may be used in instances such as environment and safety notices and for the location of equipment and for providing directions in the event of an environmental emergency.

2.5.2 External Communication

2.5.2.1 Media

External communication with the media will be conducted in accordance with the Centennial Coal "Management Standard 14 – Stakeholder Engagement". In the event of a media enquiry all contact will be forwarded to the Group Manager – External Affairs, who is authorised to speak on behalf of the company to the Media.

2.5.2.2 Stakeholder Engagement Strategy

Centennial Mandalong will communicate to relevant stakeholders on the relevant environmental and community aspects of the operations in accordance with the "Centennial Mandalong Stakeholder Engagement Strategy". This strategy is designed to maintain communication with external stakeholders on Centennial Mandalong's operations and progress with environmental and community programs through identified forums and via nominated communication mechanisms. Details of any engagement with external stakeholders will be recorded in the Environment & Community Database (ECD) forming part of the Stakeholder Register. Centennial Mandalong will also consult with the community as required in the Stakeholder Engagement Strategy by providing information to community members through various communication mechanisms.

Centennial Mandalong will distribute a newsletter to the Mandalong local community on an annual basis. The newsletter will include information on mining operations and progress with environmental and community programs also including project updates.

2.5.2.3 Community Consultative Committee (CCC)

The Centennial Mandalong Community Consultative Committee (CCC) has been established in accordance with the development consent conditions to formalise consultation with the community and to build effective relationships with nominated committee and community members. The Centennial Mandalong CCC has been established generally in accordance with the Centennial Coal guideline *E&CG-01 Community Consultative Committee Guideline* and the NSW Department of Planning, *Guidelines for Establishing and Operating Community Consultative Committees for Mining Projects* (NSW Planning, 2007).

The CCC provides a forum for community members to discuss environmental and community aspects of the operations by having these on the agenda and for Centennial Mandalong to provide information or updates to the community on these aspects. Regular meetings of the Centennial Mandalong CCC are typically held with additional meetings available at the discretion of the Chairperson. Agenda items generally consist of, but are not limited to, confirmation of previous meeting minutes, an update on Centennial Mandalong operations, subsidence and environmental monitoring results, mine planning approvals, community consultation and general business.

2.5.2.4 Community Complaints and Enquiries

Centennial Mandalong will advertise the community information line (1800 730 919) in the local phone directory, through local media or within newsletters. For the regional community and stakeholders an e-mail feedback link (mandalongmine@centennialcoal.com.au) is available on Centennial's web page for the community or stakeholders to register concerns or comments.

Centennial Mandalong will respond to any registered community enquiries or complaints received as described in the work procedure Community Complaints and Enquiries Procedure (WP-1371). A copy of the Community Complaints and Enquiries Procedure is included in **Appendix 2**. It is the responsibility of the Environment & Community Coordinator to record any community complaints / enquiries received and to investigate the nature of the complaint / enquiry.

Complaints will be followed up by the supervisor or Environment & Community Coordinator as soon as the outcomes of the investigation have been completed.

2.5.2.5 Dispute Resolution

The Development Consent Conditions allow for independent resolution of conflicts in relation to the environmental management of Centennial Mandalong's operations and future project construction. These conditions include independent monitoring of subsidence, dust, noise and vibration; the establishment of a Community Consultative Committee and general disputes resolution.

If a community member is not satisfied with the actions undertaken as a result of a complaint as described above, then disputes will be resolved in accordance with the Condition 2 of

Schedule 5 of SSD-5144 and in accordance with the Disputes Resolution Procedure (**Appendix 3**).

2.5.2.6 Media Releases

Environmental matters that are of significance may be published in the local newspaper.

3. MONITORING & RESPONSE

The implementation of the EMS requirements will be monitored in Environment & Community Database (ECD) and reported on a monthly basis. ECD allows for these requirements to be recorded, tracked (i.e. targets achieved, inspections completed, non-conformance or corrective actions completed) and to be reported to the Group Environment Manager and Mine Manager in monthly environmental and operations reports.

3.1. Environmental Monitoring

Environmental monitoring at Centennial Mandalong will be conducted in accordance with the Environmental Protection Licence (EPL 365), the Development Consent, SMP approval conditions, Groundwater Monitoring & Extraction Licence conditions and Environmental Management Plans (EMPs) required by Centennial Mandalong's Development Consent Conditions.

Compliance against the Environmental Protection Licence and Development Consent will be assessed on a monthly basis and non-compliances entered into ECD to document these in the monthly environmental and operations report.

A summary of monitoring results required by the EPL and the Development Consent will also be made available on the Centennial Coal website in accordance with the Development Consent and the requirements under the *Protection of the Environment Operations Act 1997* (POEO Act 1997).

Centennial Mandalong will monitor the social impacts of its operations by recording and trending complaints over time by entering these in ECD and reviewing the nature of complaints monthly. This will assist in determining any additional controls or management strategies required to limit any social or environmental impacts

3.1.1 Inspections

Environmental inspections will be undertaken and will include inspections of the surface areas. Any non-conformances identified shall be investigated and reported in ECD.

3.1.2 Compliance Monitoring

Centennial Mandalong has developed a Compliance Database which is used as the primary tool for tracking compliance with the Development Consent conditions, Licences, Leases and mining approvals. The Compliance Database lists the Conditions of Consent, EPL conditions, Exploration Licence conditions, Mining Lease conditions, Consolidated Coal Lease conditions, SMP conditions and Groundwater Monitoring & Extraction Licence conditions.

The Compliance Database also identifies responsible personnel, to whom tasks are allocated to ensure compliance with the conditions, including dates for actions to be completed. Information including evidence of compliance can be indicated alongside each requirement and reminders are set to notify the responsible person of actions that require completion. The Database is updated on an as needs basis (for example: when new approvals are received). Actions are tracked on a weekly basis, with a review completed at the Weekly Management Meeting.

3.1.3 Compliance with Consent Conditions

The Development Consent Conditions for Centennial Mandalong provide methods for monitoring compliance. These include:

- Annual Review (Schedule 6 Condition 12); and
- Independent Environmental Audit (Schedule 6 Condition 13).

The Annual Review and the Independent Environmental Audit will be made available on the Centennial Coal website once completed as required by Schedule 6 Condition 15 of the Development Consent SSD-5144 (as modified) (DPIE 2020).

3.2. Emergency Contacts and Response

3.2.1 External Incident Reporting

External incident reporting will be completed as per the Pollution Incident Response Plan (PIRP). The specific requirements for a PIRP are set out in Part 5.7A of the POEO Act and the Protection of the Environment Operations (General) Regulation 2009 (POEO (G) Regulation). This plan is a public document and is available on the Centennial Coal website (<https://www.centennialcoal.com.au/Operations/OperationsList/Mandalong#Pollution-Incident-Response-Management-Plan>).

External reporting of pollution incidents or other relevant emergencies is to be undertaken in accordance with the Centennial Coal Management Standard-012 External Environmental Reporting or with the requirements of the Centennial Mandalong Emergency System or relevant management plan (for example Bushfire Management Plan).

After becoming aware of a pollution incident which causes or threatens to cause material harm to the environment, the pollution incident **must be verbally reported immediately** in accordance with the POEO Act. Written notification of a pollution incident must be provided within 7 days of the incident as per licence and consent conditions.

This external reporting must be undertaken by the Mine Manager or the Environment & Community Coordinator.

The following authorities are to be notified:

- Environment Protection Authority, by telephoning the Environment Line on 131 555;
- Ministry of Health – (02) 4924 6477 (business hours) or (02) 4921 3000 (after hours): ask for the Environmental Health Officer
- WorkCover on 13 10 50
- Lake Macquarie City Council – (02) 4921 0333
- Fire and Rescue NSW on 1300 729 579
- The Department of Planning and Environment – (02) 6575 3400
- NSW Resources Regulator – 1300 736 122.

The following agencies may also be notified depending on the circumstances of the pollution incident:

- Crown Lands & Water Division – (02) 4904 2500.

Communication with the local community will also be undertaken depending on the circumstances of the pollution incident or emergency. Centennial Mandalong would consider the following options for providing information to the community on pollution incidents or emergencies:

- Direct phone contact with any local residents impacted by the pollution incident or emergency;
- Letter box drops to any local residents impacted by the pollution incident or emergency;
- The inclusion of information in local newspapers or within the Mandalong Mine newsletter on an as required basis; and
- Providing information and updates to the Mandalong Mine Community Consultative Committee (MMCCC).

4. ENVIRONMENTAL MANAGEMENT

4.1. Structure and Responsibility

As required by ISO14001, The **Group Environmental Manager** has the responsibility and appropriate authority to:

- a) ensure that environmental management system requirements are established, implemented and maintained generally in accordance with ISO14001;
- b) report on the performance of the EMS to senior management for review and as a basis for improvement of the system; and
- c) update personnel on changes in environmental legislation, policy and guidelines and to notify Centennial Mandalong management and other relevant staff of changes that may significantly affect the operations.

4.1.1 Position Responsibilities

Each employee and contactor is responsible for adhering to the Centennial Coal Environmental Policy. Whilst the obligation of complying with the Environmental Policy lies with the entire workforce, further environmental management responsibilities that are considered as a part of the normal functioning of some positions relevant to the EMS are described as follows:

Mine Manager

Authorisation of the EMS;

- Responsible for approving environmental and community objectives and targets set in the Centennial Mandalong Annual Strategic Plan;
- Reporting of significant environmental incidents to external stakeholders as required;
- Promoting compliance with the Environmental Policy and fulfilling relevant requirements of the EMS;
- Compliance with the conditions of EPL 365 and Development Consents;
- Delegation of resources to ensure environmental risk mitigation strategies are implemented; and
- Delegation of duties during the absence of the Environment & Community Coordinator.

Mine Superintendents

The Centennial Mandalong Superintendents or their delegates are responsible for:

- Maintaining the highest possible environmental standards within their designated areas of responsibility;
- Make use of all resources available to prevent or reduce environmental risks; and
- Immediately reporting environmental incidents and non-compliances to the Environment & Community Coordinator.

Environment & Community Coordinator

- Compliance with the Centennial Environmental Policy;
- Reporting of environmental incidents as required to external stakeholders (including notifying EDL of any environmental incidents which may affect the EDL Mandalong Power Station site);

- Development and implementation of environmental strategies, plans, and procedures;
- Regulatory and community consultation;
- Registration of community complaints and regulatory liaison in the Environment & Community Database (ECD);
- Development and implementation of environmental work procedures;
- Development and implementation of environmental training and inductions;
- Auditing the effectiveness of the EMS; and
- Compliance with all licences and approvals for environmental management of the site.

Mining Approvals Coordinator

- Manage subsidence impacts in accordance with the EMS, Management Plans and Procedures; and
- Maintain the Centennial Mandalong Compliance Database.

Employees and Contractors

- Compliance with the Centennial Environmental Policy, standards and procedures;
- Immediately reporting of environmental incidents and community complaints or enquiries to the Environment & Community Coordinator;
- Conducting operations in compliance with the Centennial environmental management plans and procedures; and
- Identifying and implementing appropriate controls for environmental risks from any risk assessments and job safety analysis and communicating these with responsible staff.

Health, Safety, Environment & Community Committee

- Promoting environmental awareness within the workforce and contractors; and
- Raising environmental issues and programs that will improve compliance with the Environmental Policy, standards and procedures at committee meetings for appropriate staff to consider.

Delegation of roles or responsibilities may be determined by the Mine Manager at any time.

4.1.2 Performance Appraisals

The assessment of measurable environment and community performance indicators and programs may be considered by the Mine Manager as part of Staff Performance and Development Review targets for staff at Centennial Mandalong.

4.2. Reporting

4.2.1 Annual Review

The Annual Review required under Schedule 6 Condition 12 of the Development Consent (SSD-5144) will be completed in accordance with the *Annual Review Guideline* (DPE, 2015).

The Annual Review will include information on the monitoring conducted during the reporting year, any non-conformances and complaints received. This report is made available on the Centennial Coal website.

4.2.2 Annual Return

An annual return stating the sites compliance with the conditions of EPL 365 is completed and submitted to the EPA on an annual basis. This is done in compliance with the EPL conditions and by the due date as stated in the EPL.

4.2.3 Monthly Website Environmental Monitoring Report

A monitoring report is published on the website to satisfy the requirements under the Protection of the Environment Legislation Amendment Act 2011 (POELA Act) to publish or make pollution monitoring data available to members of the public. The monthly publishing of this document also satisfies Schedule 6 Condition 11 of Development Consent SSD-5144.

4.2.4 Community Consultative Committee

The Community Consultative Committee (CCC) meets on a quarterly basis. Some of the information reported at the CCC includes:

- Progress at the mine — operational issues;
- Monitoring and environmental performance; and
- Community complaints and the response to complaints.

4.3. Environmental Training

Centennial Mandalong will progress implementation of the EMS and the Environmental Policy by training employees and contractors in relevant areas on the EMS. Environmental and community training may include, but need not be limited to:

- Induction training;
- Environmental and community awareness training;
- Toolbox training; and
- Other specific training as required (for example environment spill control and management).

4.3.1 Induction Training

All Centennial Mandalong employees and contractors will be inducted prior to commencing work on site. The environmental component of the new employees' induction shall include:

- The importance of Centennial's Environmental Policy;
- Regulatory requirements;
- Overview of framework of Centennial's EMS;
- Roles and responsibilities;
- Significant environmental aspects, impacts and consequences; and
- Environmental procedures.

Additionally, site specific issues are incorporated into the new employee and contractor site inductions and the competency of inducted personnel assessed.

Visitors to Centennial Mandalong operations will undertake a brief visitor induction, with an awareness section on key environment components.

4.3.2 Environment and Community Awareness Training

Environment and community awareness training will provide relevant knowledge and skills to manage environment and community issues within an individual's area of responsibility including the following:

- Describing the Environmental Policy and environmental expectations of Centennial Mandalong;
- Eliminate practices that may result in poor environmental performance by building the environmental capacity of employees;
- Improve application of existing procedures to improve environmental performance;
- Highlight individual/job role responsibility;
- Improve environmental decision making and problem solving skills; and
- Reduce environmental risk.

Centennial Mandalong will undertake regular environmental awareness training. Site activities and performance will influence the frequency of training, but as a minimum, refresher training for key personnel including Senior and Line Management will be undertaken every two years. This training will be competency based and consider the following:

- Centennial Mandalong's environment and community context;
- Overview of role and framework of Centennial's EMS;
- Relevant legislation;
- Significant environment and community risks associated with Centennial Mandalong's operations; and
- Community relations.

4.3.3 Targeted Environmental Training

Targeted environmental training of key staff, workforce and contractors in environmental procedures and programs will also be conducted as specified but not limited to the Centennial Mandalong business plan. Specific environmental training may be delivered in the form of toolbox talks, training and assessment packages and accredited training programs to update personnel on the Centennial Mandalong procedures and environmental programs.

4.3.4 Environmental Training Competence

The Centennial Mandalong induction and environmental awareness training incorporates a section to assess the competency of employees and contractors against environmental requirements.

4.4. EMS Integration

This EMS framework document and the accompanying Management Plans and Procedures are part of the Centennial Mandalong management system. Compliance with the system's requirements is an expectation of all employees of Centennial Mandalong.

4.5. Continual Improvement

Continual improvement shall be achieved through monitoring, internal and external communication with stakeholders, implementation of corrective and preventative actions and through monitoring progress against the objectives included in the environmental management plans.

5. REVIEW

5.1. Environmental Auditing

Audits can provide an assessment of the implementation of the EMS, compliance with ISO 14001, the Environmental Policy and the EMS objectives. They also allow for continual improvement and resource allocation.

The objectives of an audit are to:

- Identify compliance with the statutory requirements; and
- To identify opportunities for improvement in the strategy.

External audits of the implementation of and compliance with the strategy will be conducted in accordance with Development Consent Schedule 6 Condition 13.

5.2. Corrective Action

Non-compliances may become evident as a result of inspections, monitoring, through audit findings or complaints. Non-compliances identified shall be investigated and consider:

- (i) The cause of the non-conformance;
- (ii) A review of existing controls to identify modifications required to avoid repetition of the non-conformance; and
- (iii) Identification of the appropriate corrective or preventative action.

The implementation of corrective actions shall be monitored and documented using ECD and reported in the monthly environmental performance report.

A non-compliance will be reported internally and externally to the relevant authorities as per the *Centennial Coal Management Standard 012 External Environmental Reporting* and in accordance with the Pollution Incident Response Management Plan. A record of all non-compliance reporting is to be maintained in the Environment and Community Database as well as reported in the Annual Review.

A non-compliance will be investigated as per the Accident / Incident Investigation procedure in the Centennial Mandalong Health and Safety Management System (HSMS). A record of all non-compliance investigations will be maintained in the ECD.

5.3. EMS Review

Revisions of the EMS are to be coordinated by the site Environment & Community Coordinator or as directed by the Mine Manager and approved by the Mine Manager. The revision status is contained in the controlled document within Lotus Notes and updated as per the *Centennial Mandalong Change Management System*.

The outcomes of a review will be documented by updating sections of these documents where required and revisions incorporated into the EMS for approval by the Mine Manager.

Revised documents will be approved by the Mine Manager before placing on the intranet as required by the *Centennial Mandalong Change Management System*.

5.3.1 Event Based

Events which may trigger a review of this strategy or its associated documents include:

- Modifications / improvements to the system;
- Changes in the operation;
- New approvals, guidelines or codes of practice that require a review of the strategy; and
- Or as otherwise directed by the Director-General.

5.3.2 Time Based

The Strategy is to be revised / updated every 3 years or as otherwise directed by the Director-General in consultation with the relevant government agencies.

6. BIBLIOGRAPHY

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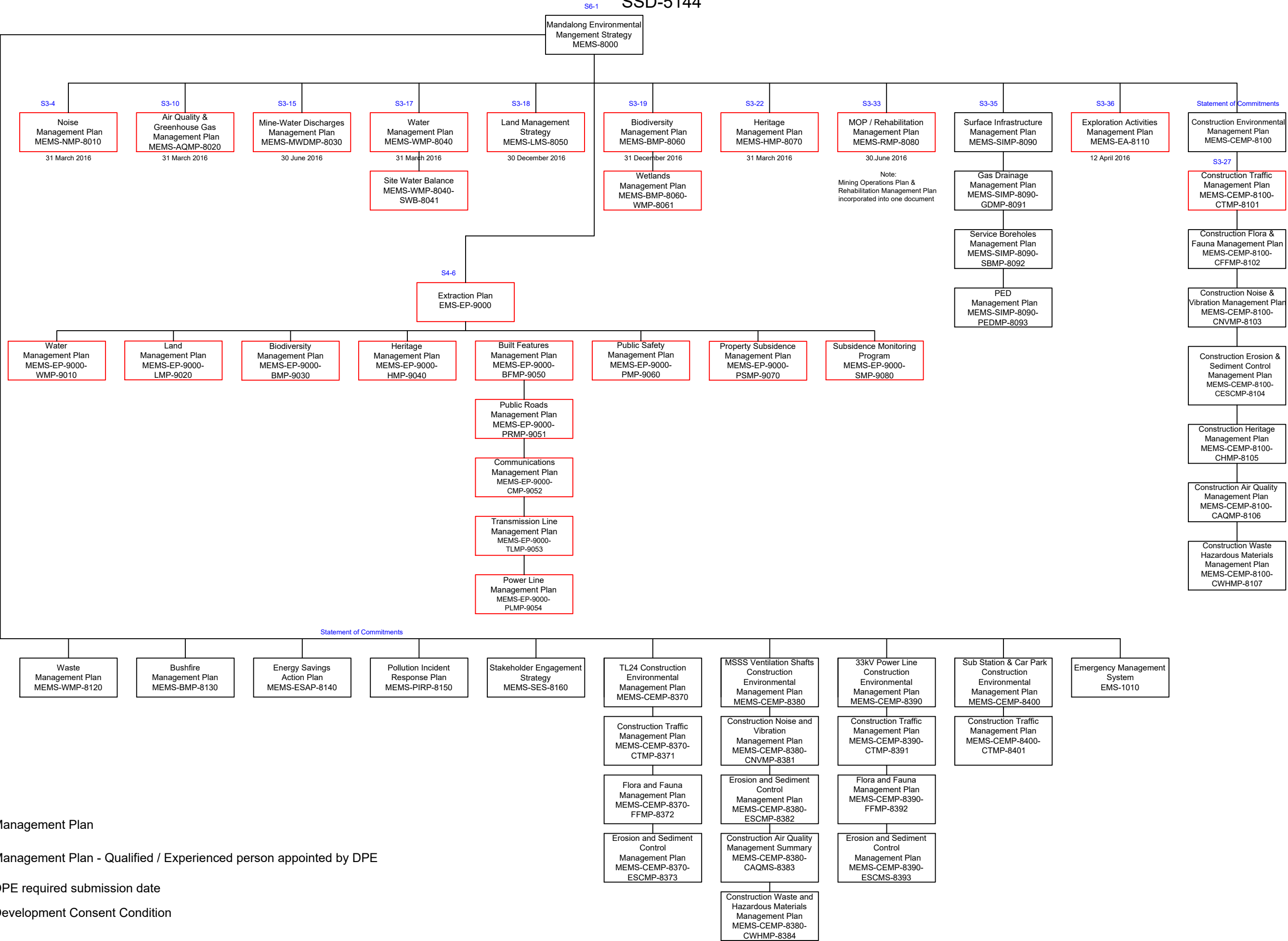
APPENDICES

Appendix 1

EMS Structure

Mandalong Mine Environmental Management Strategy Structure

SSD-5144



Appendix 2

Community Complaints & Enquiries Procedure

DEALING WITH A COMMUNITY COMPLAINT OR ENQUIRY

PURPOSE

To document a procedure to ensure a complaint or an enquiry from the public is handled in a professional manner and that all information required by the EPA is correctly documented.
Should you have any concern with the method of work within this procedure, notify your Supervisor and complete the improvement opportunity on the last page.

SCOPE

This procedure applies to all Mine Personnel/Contractors who are suitably trained in this task.

This task Applies to all staff and contractors at the Mine site.

BACKGROUND: The environmental considerations for completing this task:

- It is a requirement of the Mandalong Mine Environment Protection Licence that all community complaints have detailed information recorded and are kept on file for a period of 4 years.
 - The Mine's Community Complaints/Enquiries Line – 1800 730 919 is manned by the Control Room operators responsible for recording the details of the community contact.
 - The Mine Manager and Environment & Community Coordinator are responsible for investigating any community complaints/enquiries and responding to the contact.
-

RESPONSIBILITIES

Control Room Operator	<ul style="list-style-type: none">▪ The individual answering the complaint/enquiry establishes whether the contact is a complaint or an enquiry▪ The operator records relevant details from the person initiating the contact and refers to relevant person for action
Senior Mine Official	<ul style="list-style-type: none">▪ Responsible for immediately investigating any complaint and resolving the issue if possible using proforma to record process▪ Responsible for informing the Environment & Community Coordinator or Mine Manager of any complaint
Environment & Community Coordinator	<ul style="list-style-type: none">▪ To ensure complaints are investigated with the Senior Mine Official▪ Provide a response to the person initiating the complaint or enquiry within the nominated period▪ Reporting all community complaints to Regulatory Authorities as per Management Standard 012 External Environmental Reporting.

STEPS TO COMPLETE TASK

Initial	
Procedure	
1. In responding to community contacts remember to be polite. Please remember that our neighbours are important stakeholders in our business and their rights are to be respected.	
2. All community contacts are to be recorded in full in the Community Initiated Contact Information Sheet (attached below) and immediately passed onto the Senior Mine Official and Environment & Community Coordinator.	
3. You will need to make a decision and nominate on the Community Initiated Contact Information Sheet whether the community contact is a complaint or enquiry using the below definitions: <ul style="list-style-type: none"> ○ “Enquiry” – is where a question is asked about any aspect of the Mine’s operations and may come from the community or a regulatory authority. ○ “Complaint” – is recorded where there is a direct and adverse impact on a member of the community from activities of the Mine’s operation that are specified in the consent conditions from the community or a regulatory authority 	
4. Give the person your name and then record the following details on the Community Initiated Contact Information Sheet (attached below): <ul style="list-style-type: none"> ➤ Name and contact details of person ➤ Method by which contact was made ➤ The nature of their issue ➤ Time and date ➤ Complaint or enquiry 	
5. If the community contact is a complaint explain that the complaint will be investigated and follow up contact will be made within 24 hours. The matter will be investigated and further contact made as required.	
6. For enquires explain that follow up contact will be made following an investigation into the enquiry	
7. In the event of a complaint the Senior Mine Official / Environment & Community Coordinator are to immediately investigate the complaint and resolve the issue if possible. All actions and follow up actions are to be recorded on the Community Initiated Contact Information Sheet .	
8. If the issue cannot be resolved or technical advice is required contact the Environment & Community Coordinator ext 947 or 0448 490 023.	
9. If the complaint is regarding a pollution incident occurring at the time of the complaint, notify the Environment & Community Coordinator ext 947 or 0448 490 023	
10. A copy of the completed Community Initiated Contact Record Sheet is to be forward to the Environment & Community Coordinator for review. Complaints and enquiries will be filled in ECD as required by the Mine’s Environmental Management Strategy (EMS).	
11. Reporting of the complaint will be conducted as per the Centennial Coal Management Standard 006 “Incident Reporting’ and Centennial Coal Management Standard 012 “External Environmental Reporting”.	



REVIEW

This procedure is to be reviewed 12 monthly with respect to **P-1028** – Audit and Review Procedure.

REFERENCES

P-1028 – Audit and Review procedure

WP-5704 – Mandalong Pollution Incident Response Plan

Attached Record Sheet

TRAINING REQUIREMENTS

- Undermanager
- Control Room Operators

PROCEDURE IMPROVEMENT OPPORTUNITIES

(To be completed by the person doing the work)

This procedure could be improved by ...

Procedure Completed By:

Date:

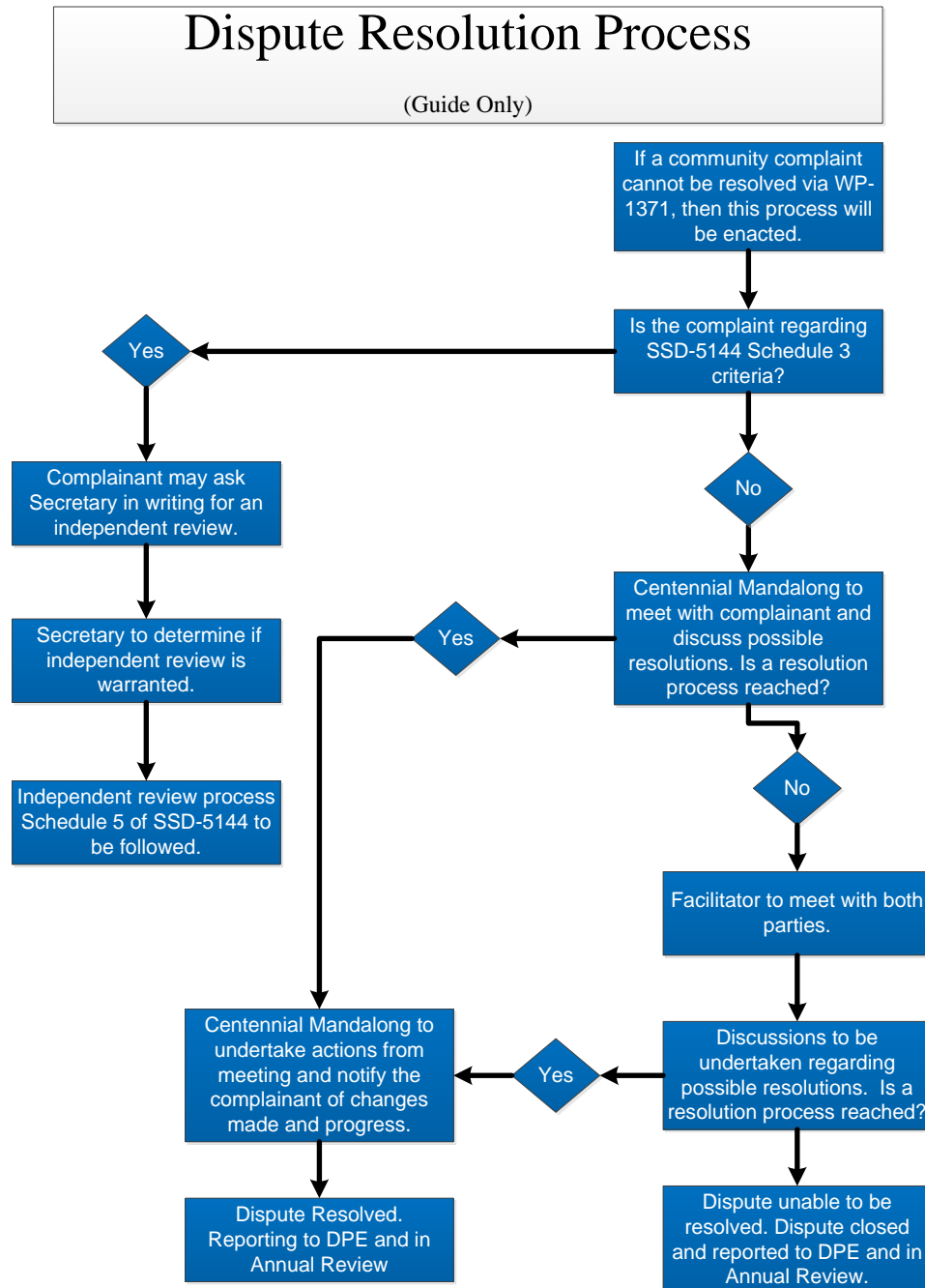


MANDALONG MINE COMMUNITY INITIATED CONTACT RECORD SHEET					
DATE :		TIME:		RECEIVED BY:	
METHOD COMPLAINT/ENQUIRY LOGGED:		(circle)		Telephone	In Written Other
PERSONAL DETAILS OF COMPLAINANT/ENQUIRY		Given		Not Given	
Name:					
Address:					
Contact Phone No. Home:					
Work:					
NATURE OF COMPLAINT/ENQUIRY FOR INFORMATION					
Inspected By:		Date:		Time:	
ACTION TAKEN					
RECORD OF ACTION TAKEN		Date		By	
Report received by Environment & Community Coordinator:					
Mine Manager Informed:					
Remedial Action Completed:					
RECORD OF ANY FOLLOW UP ACTION				Date:	

Note: To be forwarded ASAP to the Environment & Community Coordinator
Sheet to be kept on file for a minimum of 4 years

Appendix 3

Dispute Resolution Procedure



Appendix 4

Environmental Monitoring Plans

Table 5 - Summary of all monitoring required under SSD-5144.

SSD-5144 Condition	Area	Monitoring Type	Frequency	Number of Locations
Schedule 3, Condition 1 & 2	Noise Monitoring	Attended	Quarterly	7
Schedule 3, Condition 8	Air Quality	Dust Deposition	Monthly	6
		High Volume Air Sampling	Every 6 th Day	1 PM ₁₀ 1 PM _{2.5}
Schedule 3, Condition 11	Weather	Meteorological	Continuous	1
Schedule 3, Condition 17	Surface Water	Grab Samples	Quarterly	18
Schedule 4, Condition 6	Groundwater	Water Level and Field Sampling	Monthly	60

Further details of monitoring conducted are contained in the relevant Management Plans.

Table 6 - Summary of all monitoring required under SSD-5145 (Cooranbong Entry Site only)

SSD-5145 Condition	Area	Monitoring Type	Frequency	Number of Locations
Schedule 3, Condition 2	Noise Monitoring	Attended	Annual	1
		Real Time	Continuous	1
Schedule 3, Condition 7	Air Quality	Dust Deposition	Monthly	1
		TEOM	Continuous	1 PM ₁₀ 1 TSP
Schedule 3, Condition 17	Surface Water	Grab Samples	Daily during discharge Monthly	2 7
		Flow monitoring	Continuous	1

Further details of monitoring conducted are contained in the relevant Management Plan.