



ENVIRONMENTAL
MANAGEMENT STRATEGY
DENDROBIUM MINE



ENVIRONMENTAL MANAGEMENT STRATEGY



Document Sign off Sheet and Revision Log

Document Owner	Chris Schultz	7 March 2019
	<i>Name</i>	<i>Date</i>
Authorised by	Chris Schultz	7 March 2019
	<i>Name</i>	<i>Date</i>

Version History

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1.0	Original Document (ID: DENMP0039)	February 2005
2.0	Review Modified Development Consent	April 2009
3.0	Review and update Roles and Responsibilities	March 2012
4.0	The following changes have been made: <ul style="list-style-type: none"> - Updated Roles and Responsibilities - References to parent company - Addition of EMS overview figure - References to documents update 	April 2018
5.0	The following changes have been made: <ul style="list-style-type: none"> - Update to reflect changed conditions from MOD8 - Updated roles and responsibilities - Administrative changes 	March 2019

Persons Involved in the Review of this Document

Name	Title	Experience
Chris Schultz	Lead Environment	23 years
Gary Brassington	Superintendent Mining Approvals	25 years

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1. BACKGROUND

South32 Illawarra Metallurgical Coal owns and operates two underground longwall mines – Appin Mine and Dendrobium Mine. The mines operate in the Bulli and Wongawilli seams respectively at depths ranging from 180m to over 500m. The coal seams vary in thickness between 2m and 4m being extracted. Mined coal is transported to the surface via conveyor and then by road or rail to be washed and blended at either the West Cliff or Dendrobium Coal Preparation Plants (CPPs). Coal is transported to the Port Kembla Coal Terminal for export to overseas and domestic customers, or directly to BlueScope Steel, Port Kembla for steel production.

1.1. OVERVIEW OF THE DENDROBIUM OPERATIONS

Dendrobium Mine is an underground mine which commenced construction in January 2002 following approval from the Minister of the then Department of Urban Affairs and Planning on 20 November 2001. Longwall mining commenced at Dendrobium in April 2005. The mine is owned and operated by Dendrobium Coal Pty Ltd, a wholly owned subsidiary of South32 and is operated on a continuous basis, 24 hours a day and 7 days a week.

The mining operations are located immediately adjacent to Mt Kembla, approximately 8km west of Wollongong, NSW, on the Illawarra escarpment. Mt Kembla village, located within 500m of the Pit Top site, has close historical links with coal mining.

Dendrobium produces predominately coking coal from the No.3 Seam (i.e. Wongawilli Seam) and is approved to produce up to 5.2 million tonnes per annum. The Bluescope Port Kembla Steel Works and Liberty Primary Steel (Whyalla) are major customers. In addition to these Australian based customers, coal is exported via the Port Kembla Coal Terminal to international customers.

Three mining areas make up the approved mine plan for Dendrobium and are named Areas 1, 2, and 3. The Development Consent allows mining operations to take place in the mining area until 31 December 2030. Resources are available for mining to extend beyond this period and would be subject to further approvals.

1.2. SCOPE

The Dendrobium Operations consist of several sites which are covered by this Environmental Management Strategy (EMS). These sites include:

Dendrobium Pit Top - consists of an administration building, workshop, machinery and equipment storage areas, people and materials access to the underground workings via the Dendrobium Tunnel, sediment pond and water treatment facility.

Kemira Valley Coal Loading Facility – the Kemira Valley Coal Loading Facility (KVCLF) receives coal from underground via the Kemira Valley Tunnel. Run of Mine (ROM) coal is transported from underground to KVCLF via an extensive coal clearance system. The coal is then fed into a rill tower and deposited onto a 150,000 tonne stockpile from which it is loaded into trains via an enclosed rail-loading chute. Sediment ponds are in place.

Kemira Valley Rail Line – the Kemira Valley Rail Line (KVRL) is used to transport the coal from KVCLF to the Dendrobium CPP.

Ventilation Shaft Number 1 - The No.1 ventilation shaft, located within the Metropolitan Special Area administered by WaterNSW, operates as a downcast shaft (i.e. drawing fresh air into the underground workings). The No. 1 ventilation shaft is on land owned by South32.

Ventilation Shafts Number 2 and 3 – Also located within the Metropolitan Special Area and within Mining Lease ML1566. The No.2 shaft operates as an additional downcast shaft whilst the No.3 shaft operates as an upcast shaft.

Dendrobium Coal Preparation Plant – Located within the BlueScope Steelworks at Port Kembla, the Dendrobium CPP receives and washes ROM coal from the Dendrobium Underground Operations.

Dendrobium Underground Operations – Dendrobium Mine extracts coal from the No. 3 Seam (Wongawilli Seam) of the Southern Coalfield. The underground operations consist of a longwall shearer, development units, coal clearance conveyor network and associated infrastructure.

1.3. PURPOSE

The purpose of the EMS is to provide a framework to ensure the operation of Dendrobium Mine and associated facilities are conducted in an environmentally responsible manner and in accordance with the following requirements:

- The Dendrobium Development Consent (DA 60-03-2001), as modified, specifically Condition 1 of Schedule 8;
- ISO14001 Environmental Management Standard; and
- Legislative and other requirements (further outlined in Statutory Requirements below).

The EMS forms part of a hierarchy of systems and documents to enable Dendrobium Mine to establish and sustain a high level of environmental performance in all facets of its business.

1.4. EMS REQUIREMENTS

The requirements for the EMS as stated in Condition 1 of Schedule 8 of the Development Consent are provided in Table 1.

Table 1. EMS Requirements

Requirement	Section of EMS where covered
a) provide the strategic framework for environmental management of the development;	Section 2.1
b) identify the statutory requirements that apply to the development;	Section 1.5
c) describe in general how the environmental performance of the development would be monitored and managed for the: <ul style="list-style-type: none"> • mining area; • surface facilities; • other site components; and • extended site; 	Section 2
d) 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; 	Section 2.5.1, 2.5.2 and 2.7.2 Section 2.6

<ul style="list-style-type: none"> • resolve any disputes that may arise during the course of the development; • respond to any non-compliance; • manage cumulative impacts; and • respond to emergencies; 	Section 2.6.2 Section 2.7.1 Section 2.7.2 Section 2.8
e) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the development; and	Section 2.4
f) include: <ul style="list-style-type: none"> • reference to any strategies, plans and programs approved under the conditions of this consent; and • a clear plan depicting all of the monitoring to be carried out under the conditions of this consent. 	Section 3 Section 4

1.5. STATUTORY REQUIREMENTS

Environmental legislation and other statutory requirements apply to the Dendrobium Mining Area (current and proposed) and the Dendrobium Mine operational site (which is outlined in the scope of this document).

Adherence to statutory requirements has been required throughout Dendrobium's operations and will continue to be applied as required.

1.5.1. Statutory Process for Approvals

Under current legislation the major approvals required for Dendrobium mining operations (specifically Longwalls 9 to 18) include:

- Consolidated Coal Lease 768 and Mining Leases 1510 and 1566, granted by the Minister for Mineral Resources under the Mining Act 1992 (obtained);
- Development Consent DA 60-03-2001, as modified, for mining in the area (with the latest modification being Modification 8 dated 13 July 2018);
- Various approvals required under the mining lease associated with land use and environmental impacts. A Subsidence Management Plan (SMP) must be prepared and approved by the Department of Planning and Environment (DPE) and be to the satisfaction of the Secretary;
- Approval under the Environmental Protection and Biodiversity Conservation (EPBC) Act (obtained);
- Assets Protection Plan to the satisfaction of WaterNSW pursuant to Schedule 3 of Condition 7(d) of the Development Consent; and
- NSW Dams Safety Committee endorsement and approval by Resources Regulator for mining within the Cordeaux and Avon Dam Notification Areas pursuant to Condition 10 of the Dendrobium consolidated coal lease (CCL768).

In addition, Dendrobium Area 3B is within the WaterNSW Metropolitan Special Area and therefore the *Special Areas Strategic Plan of Management* and *Sydney Drinking Water Catchment State Environmental Planning Policy 2011* (SEPP 2011) are to be considered.

1.5.2. Other Relevant Legislation

A number of other Acts and Regulations are applicable to mining operations within the approved Dendrobium mining domains and the operations of Dendrobium Mine. These are listed below:

<ul style="list-style-type: none"> - <i>Work Health and Safety (Mines) Act, 2013</i> - <i>Environmental Planning and Assessment Act, 1979</i> - <i>Environmental Protection and Biodiversity Conservation Act, 1999</i> - <i>Dams Safety Act, 2015</i> - <i>Water NSW Act, 2014</i> - <i>Contaminated Land Management Act, 1997;</i> - <i>Occupational Health and Safety Amendment (Dangerous Goods) Act, 2003;</i> - <i>Heritage Act, 1977;</i> - <i>Coal Mine Subsidence Compensation Act, 2017;</i> - <i>Biosecurity Act, 2015;</i> - <i>Mining Act, 1992;</i> 	<ul style="list-style-type: none"> - <i>Rail Safety National Law (NSW) No. 82 and Rail Safety (Adoption of National Law) Act, 2012;</i> - <i>Roads Act, 1993;</i> - <i>Protection of the Environment Operations Act, 1997;</i> - <i>Biodiversity Conservation Act, 2016;</i> - <i>Crown Lands Act, 1989;</i> - <i>Energy and Utilities Administration Act, 1987;</i> - <i>Fisheries Management Act, 1994;</i> - <i>Water Act, 1912;</i> - <i>Water Management Act, 2000;</i> - <i>National Parks and Wildlife Act, 1974; and</i> - <i>Local Land Services Amendment Act, 2016.</i>
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1.5.3. South32 and Other Policies and Strategies

South32 operates in accordance with a variety of standards, policies and strategies which cover all operational aspects and activities within the business. The South32 Governance Framework is consistent with internationally recognised standards. It aims to set benchmarks for the Company's diverse range of businesses to develop and implement Health Safety Environment Community Security (HSECS) Management Systems, to provide auditable criteria for these systems and to provide a basis from which to drive continuous improvement.

The South32 *Environment Standard* prescribes the mandatory requirements for management of land, biodiversity, water, air, greenhouse gases, hydrocarbons and waste to ensure environmental responsibilities aim to minimise impacts while contributing to enduring benefits to biodiversity, ecosystems and other environmental resources.

2. ENVIRONMENTAL MANAGEMENT

2.1. STRATEGIC FRAMEWORK

An overview of the Dendrobium EMS is shown in Figure 1.

Dendrobium Mine environmental management strategies, plans and programs have been developed to comply with legislative, corporate and ISO14001 certification standards. These strategies, plans and programs are subject to regular auditing and review and are used to provide site personnel and management with specific environmental management guidelines relative to the operation with which they are involved. Relevant aspects

of the EMS are reviewed at the Lead Team meetings and Subsidence Review Meetings (relevant to the mining area).

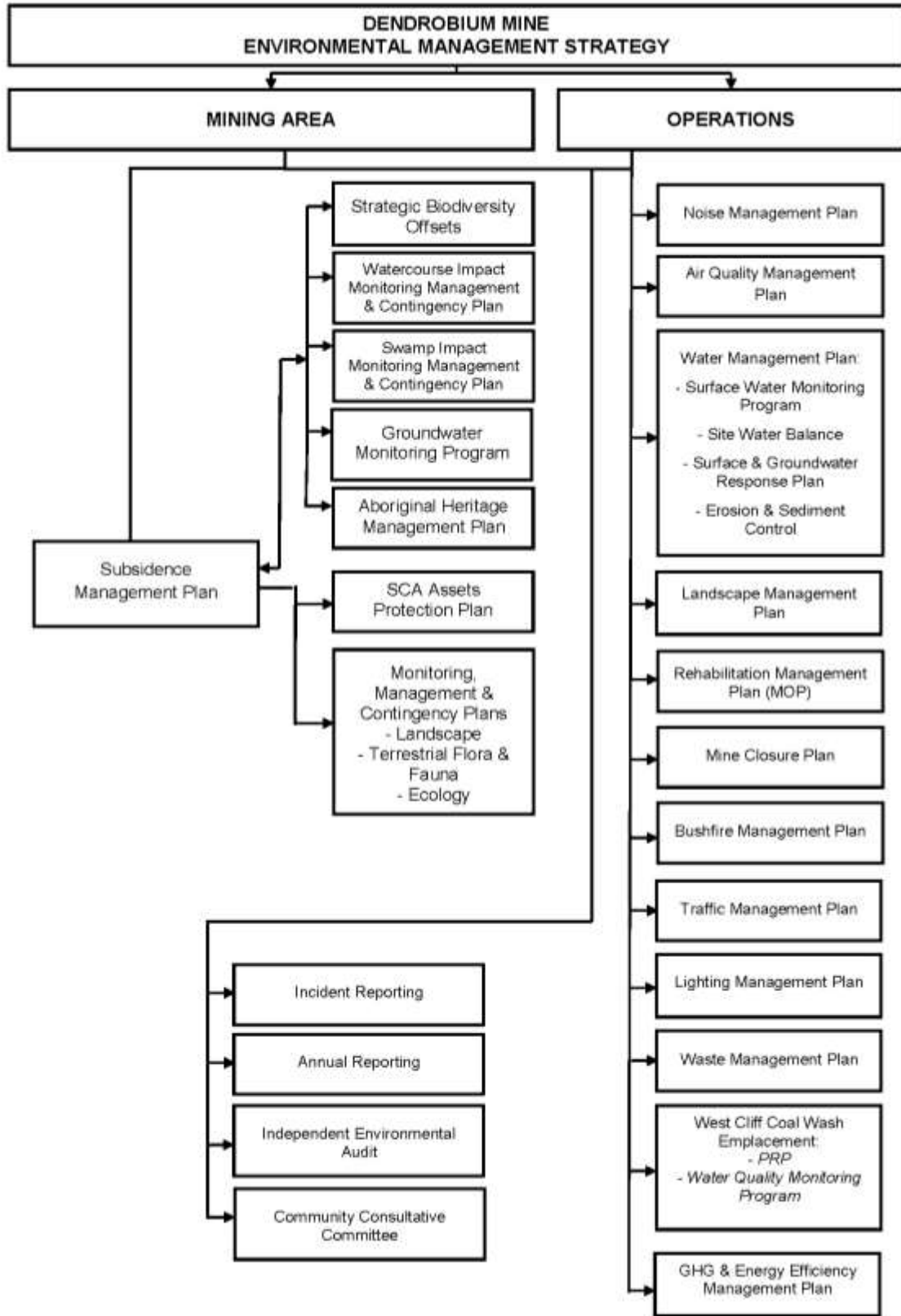


Figure 1: Dendrobium EMS Overview

Plans and monitoring programs identified in Figure 1 outline the environmental monitoring and management practices for the mining areas, surface facilities and extended site and other components. Copies of the approved Environmental Management Plans / Monitoring Programs are available on the South32 regulatory website, accessible via the following link: <https://www.south32.net/our-operations/australia/illawarra-coal/regulatory-document>. Cumulative impacts will be addressed where required under the relevant management plan.

Plans depicting all of the monitoring to be carried out under the conditions of the Development Consent for the Dendrobium Surface and Area 3B are provided in Section 4 of this document.

2.2. DOCUMENT REVISION

In accordance with Condition 2A of Schedule 8 of the Dendrobium Development Consent, South32 shall review (and if necessary) revise the strategies/plans/programs required under this consent within 3 months of the:

- (a) submission of an incident report under Condition 4 of Schedule 8;
- (b) submission of an Annual Review under Condition 5 of Schedule 8;
- (c) submission of an Independent Environmental Audit under Condition 6 of Schedule 8; or
- (d) approval of any modification of the conditions of the Development Consent.

If necessary, to either improve the environmental performance of the development or cater for a modification, the strategies, plans and programs required under the Development Consent must be revised, to the satisfaction of the Secretary, and submitted to the Secretary for approval within six weeks of the review.

2.3. AUDIT PROCESS

Condition 6 of Schedule 8 of the Dendrobium Development Consent requires an Independent Environmental Audit of the Dendrobium development, by 31 December 2011 and every 3 years thereafter (unless the Secretary advises otherwise). This audit must:

- (a) be conducted by suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary;
- (b) include consultation with the relevant agencies and the Community Consultative Committee (CCC);
- (c) assess the environmental performance of the development and assess whether it is complying with the relevant requirements of the Development Consent and any relevant Environment Protection Licence (EPL) or mining lease (including any strategy, plan or program required under these approvals);
- (d) review the adequacy of strategies, plans or programs required under these approvals;
- (e) recommend measures or actions to improve the environmental performance of the development, and/or any strategy, plan or program required under these approvals; and
- (f) be conducted and reported to the satisfaction of the Secretary.

Within 3 months of commencing this audit, or within another timeframe agreed by the Secretary, South32 shall submit a copy of the audit report to the Secretary and any other NSW agency that requests it, together with its response to any recommendations contained in the audit report, and a timetable for the implementation of the recommendations.

A system of HSEC auditing is undertaken across Illawarra Coal operations and includes the use of competent internal and accredited external auditors. In addition, regular audits are undertaken to maintain certification under the ISO14001 standard. The audit program is implemented in accordance with the schedule outlined in Table 2.

Table 2. Audit Program – Dendrobium Environmental Management

Audit Type	Frequency
Internal (Environmental) – Management Plan Governance Checks	Minimum 3 yearly. Risk based approach in accordance with the Aspects and Impacts Register or Non-Compliance issues.
Internal (Environmental)- EPL Monitoring data trend and compliance check	Monthly
External (Environmental) – ISO14001 Surveillance	Every 12 months
External (Environmental) – ISO14001 Recertification	Every 3 years
External (Environmental) – Development Consent Audit	Every 3 years

2.4. ROLES AND RESPONSIBILITIES

The roles and responsibilities for the Dendrobium EMS are outlined below in Table 3.

Table 3. Roles and Responsibilities - Dendrobium Environmental Management

Role	Responsibilities & Accountabilities	Authorities
Vice President ICH (top management)/ Operations Managers	<ul style="list-style-type: none"> - Ensure adequate operational resources are available to assist Environmental representatives to allow the EMS to be implemented effectively and maintained 	<ul style="list-style-type: none"> - Make changes to the plant, stop or suspend operations as required to meet environmental obligations
Lead Environment	<ul style="list-style-type: none"> - Ensure environmental management strategies, plans, programs and associated procedures are implemented in accordance with the requirements of this EMS and other external requirements - Provide leadership and support to the South32 Illawarra Metallurgical Coal Environment Team to ensure that the EMS is implemented effectively and maintained 	<ul style="list-style-type: none"> - Make recommendations to suspend operations as required to meet environmental obligations - Liaise with Government authorities regarding environmental issues on behalf of the operations - Implement any additional environmental controls as necessary to meet environmental obligations
Specialist Environment	<ul style="list-style-type: none"> - Ensure environmental management strategies, plans, programs and associated procedures are implemented - Collect and review monitoring data 	<ul style="list-style-type: none"> - Liaise with operations personnel to implement corrective actions - Implement any additional environmental controls as necessary to meet environmental obligations
Superintendent Mining Approvals	<ul style="list-style-type: none"> - Ensure approval outcomes in mining and surface areas are managed with appropriate systems at a high standard that is consistent with company and government expectations and reasonable expectations of the broader community 	<ul style="list-style-type: none"> - Undertake Environmental Assessments and monitoring for mining areas, surface facilities and infrastructure (until hand over to operations) - Submission of approval applications for mining - Liaison with Government on the progress of approvals - Reporting mining impacts and management to Government
Specialist Community, Lead Community and Manager Corporate Affairs	<ul style="list-style-type: none"> - Develop pro-active strategies and consistent approaches to address 	<ul style="list-style-type: none"> - To facilitate and implement consultation and communication strategies for all

	<p>community consultation and media issues.</p> <ul style="list-style-type: none"> - Ensure that the Illawarra Coal Stakeholder Engagement Management Plan is fully implemented. - Ensure access to information is available as required in the Development Consent. - Manage South32 Illawarra Metallurgical Coal complaints and management process 	<p>stakeholders including community, and employees.</p> <ul style="list-style-type: none"> - Liaise with operations personnel to implement corrective actions in response to complaints
Principal Infrastructure Protection and Legacy Sites	<ul style="list-style-type: none"> - Ensure approval outcomes for infrastructure are managed with appropriate systems at a high standard that is consistent with company and government expectations and reasonable expectations of the broader community 	<ul style="list-style-type: none"> - Undertake assessments and monitoring for infrastructure for mining areas - Reporting infrastructure impacts and management to Government

2.5. COMMUNICATIONS

2.5.1. External Communications

South32 Illawarra Metallurgical Coal's community consultation and communication is guided by the Illawarra Coal *Stakeholder Engagement Management Plan* (SEMP). The SEMP details the strategies used by South32 with regard to social and community management and stakeholder engagement in the areas in which we operate. South32 acknowledges that commitment to a systematic approach is required to achieve sound social performance and best practice community relations. Such a system provides order and consistency so that stakeholder engagement is addressed through the allocation of appropriate resources, assignment of responsibilities and ongoing evaluation of practices, procedures and processes.

To ensure that these mechanisms are working effectively and that stakeholder engagement strategies are meeting both the company and stakeholder requirements, evaluation methods are also employed. Such evaluation is informed primarily by community and stakeholder surveys, but also community enquiries / feedback / complaints, community committees, information forums or other similar communications and engagement mechanisms.

2.5.2. Dendrobium Community Consultative Committee

In accordance with Condition 9 or Schedule 8 of the Dendrobium Development Consent, the Dendrobium Community Consultative Committee (CCC) provides a forum to share information and identify community concerns relating to Dendrobium Mine, which includes both surface and underground activity in Mount Kembla, Cordeaux Heights, Kembla Heights and the Metropolitan Special Area. The scope of the discussion is to encompass, as a minimum, operational matters, environmental matters and community relations.

The CCC operates under a Terms of Reference, which is guided by the NSW Department of Planning and Environment's *Community Consultative Committee Guidelines: State Significant Projects* (2016).

This CCC an advisory committee for South32 and is comprised of an independent chair and appropriate representation from South32, local Councils, and the local community including environmental groups.

Proceedings and outcomes from each meeting are minuted and circulated to the membership and placed on the South32 website.

The CCC meets every two months and operates under a Terms of Reference. In addition to regular meetings, site visits are also offered to members as a means to increase field knowledge on particular areas of interest. Extraordinary meetings can be convened if required.

2.5.3. Internal Communications

Internal communications are performed in accordance with the SEMP. This procedure describes the methodology used by Dendrobium Mine to disseminate essential information to all employees and contractors engaged at the mine.

2.5.4. Access to Information

In accordance with Condition 11 of Schedule 8 of the Dendrobium Development Consent, South32 will make the following information and documents (as they are obtained, approved or otherwise stipulated within the conditions of the Development Consent) publicly available and up to date on the South32 website:

- (i) the documents referred to in Condition 2 of Schedule 2 of the Development Consent;
- (ii) the current statutory approvals for the development;
- (iii) all approved strategies, plans and programs required under the conditions of the Development Consent;
- (iv) minutes of CCC meetings;
- (v) regular reporting on the environmental performance of the development in accordance with the reporting requirements in any plans or programs approved under the conditions of the Development Consent;
- (vi) a comprehensive summary of the monitoring results of the development, reported in accordance with any specifications in any conditions of the Development Consent, or any approved plans and programs;
- (vii) a summary of the current stage and progress of the development;
- (viii) contact details to enquire about the development or to make a complaint;
- (ix) a complaints register, updated monthly;
- (x) the Annual Reviews of the development;
- (xi) audit reports prepared as part of any Independent Environmental Audit of the development and South32's response to the recommendations in the audit report; and
- (xii) any other matter required by the Secretary.

The information above can be accessed via the following links:

- <https://www.south32.net/what-we-do/places-we-work/illawarra-metallurgical-coal>
- <https://www.south32.net/what-we-do/places-we-work/illawarra-metallurgical-coal/documents>

2.5.5. Reporting and Review

Operational and environmental performance of Dendrobium operations is reported through the Dendrobium Annual Review, required under Condition 5 of Schedule 8 of the Development Consent and the Annual Return, required under Condition R1 Environment Protection Licence 3241.

2.6. COMPLAINTS/ENQUIRIES MANAGEMENT

Managing community enquiries and complaints is a form of community consultation where the company invites, receives and addresses community enquiries and complaints. One of the main mechanisms for dealing with enquiries/complaints is the use of a community call line.

2.6.1. Community Call Line

To record stakeholder enquiries/complaints in relation to Illawarra Coal's mining operations, a community call line has been established. The number is 1800 102 210.

The procedure for dealing with community concerns and enquiries is detailed in *the Handling Community Complaints, Enquiries & Disputes Procedure* (ICHP0112). The Community Call Line is staffed 24 hours per day, seven days per week. The calls received are referred to a South32 representative who contacts the caller within 24 hours of the call being lodged to discuss details of the call. The caller is then informed of any results of ongoing investigations undertaken as a result of the complaint, including the results of any applicable environmental monitoring.

All legitimate complaints and associated actions are recorded and reported in accordance with South32 requirements. Interactions with persons including responses to concerns, enquiry/complaint outcomes, agreements and commitments are documented and maintained in the South32 document management system and the Stakeholder Database.

The availability of the community information line is promoted locally through community newsletters.

2.6.2. Dispute Resolution Process

In the event that an issue cannot be resolved between the South32 representative and complainant, the issue is escalated within South32. The escalation of the issue is aligned with the risk associated with the nature of the complaint.

In the event that the matter remains unresolved, it may be appropriate that the matter be taken to third-party mediation (e.g. Subsidence Advisory NSW, DPE, EPA or other relevant agencies) in order to achieve an outcome.

2.7. NON-COMPLIANCE MANAGEMENT

2.7.1. Non-Compliance, Corrective Action and Preventative Action

Non-compliance, corrective actions and preventative actions are managed in accordance with the *Event Management Procedure* (ICHP0098), *Event Reporting and Investigation Trigger Action Response Plan* (ICHTARP0002) and *Corrective Action and Effectiveness Review Procedure* (ICHP0107). These documents, which relate to all South32 Illawarra Metallurgical Coal operations, detail the processes utilised with respect to event reporting and identification of non-conformances/non-compliances, the application of appropriate corrective action(s) to address non-conformances/non-compliances and the establishment of preventative actions to avoid non-conformances/non-compliances. The key elements of the process include:

- Identification of non-conformances and/or non-compliances:
- Recording of non-conformances and/or non-compliances;
- Evaluation of the non-conformance and/or non-compliance to determine specific corrective and preventative actions;
- Assigning of corrective and preventative actions to the responsible person; and
- Review of corrective actions to confirm the status and effectiveness of the actions.

Corrective and preventative actions address the cumulative impacts of the mining operations. Subsidence modelling at Dendrobium Mine uses the Incremental Profile Method. This method uses a database of past movements/measurements to calibrate the subsidence model. The model predicts subsidence movements for each longwall (incremental) as well as all other longwalls and other influences on subsidence movements, including any adjacent, overlying or underlying workings (cumulative). Ground and surface water modelling takes into account all other mining operations and other activities which impact water resources. Integrated

mine planning considers these cumulative impacts by adopting mine design and subsidence monitoring and management programs to ensure conditions of consent and performance measures are met.

2.7.2. Notification of Environmental Incidents to Government Authorities

In accordance with Condition 3 of Schedule 8 of the Development Consent and Condition R2 of EPL 3241, South32 Illawarra Metallurgical Coal is to notify the DPE, EPA and other relevant agencies of any incident that causes (or may cause) material harm to the environment. The EPA is to be notified immediately following detection by telephoning 131 555 and the DPE by emailing compliance@planning.nsw.gov.au within 24 hours of detection. Within 7 days of these notifications, a written report is to be provided to DPE and other relevant agencies (in accordance with Condition 4 of Schedule 8 of the Development Consent) and the EPA (in accordance with Condition R2.2 of the EPL).

2.8. EMERGENCY RESPONSE

The *Dendrobium Mine Emergency Response Control Plan* (DENMP0088) details the actions required during an emergency and, in particular, in the early stages of an emergency. It also defines the organisational structure during an emergency and the duties to be carried out by members of the Incident Management and Incident Support Teams. From an environmental perspective, the key emergency response document for the mine is the EPL3241 *Pollution Incident Response Management Plan* (PIRMP).

The PIRMP has been developed in accordance with the requirements of the *Protection of the Environment Operations (General) Amendment (Pollution Incident Response Management Plans) Regulation 2012*.

The objectives of the PIRMP are to:

- ensure comprehensive and timely communication about a pollution incident to staff at the premises, EPA, other relevant authorities and community members who may be affected by the impacts of the pollution incident;
- minimise and control the risk of a pollution incident at the facility by requiring identification of risks and the development of planned actions to minimise and manage those risks; and
- ensure that the plan is properly implemented by trained staff, identifying persons responsible for implementing it, and ensuring that the plan is regularly tested for accuracy, currency and suitability.

The PIRMP is tested at least once every 12 months to ensure that the information contained within the plan is accurate and up to date, and that the plan is capable of being implemented in a workable and effective manner.

All incidents relating to the environment are reported through an incident management system.

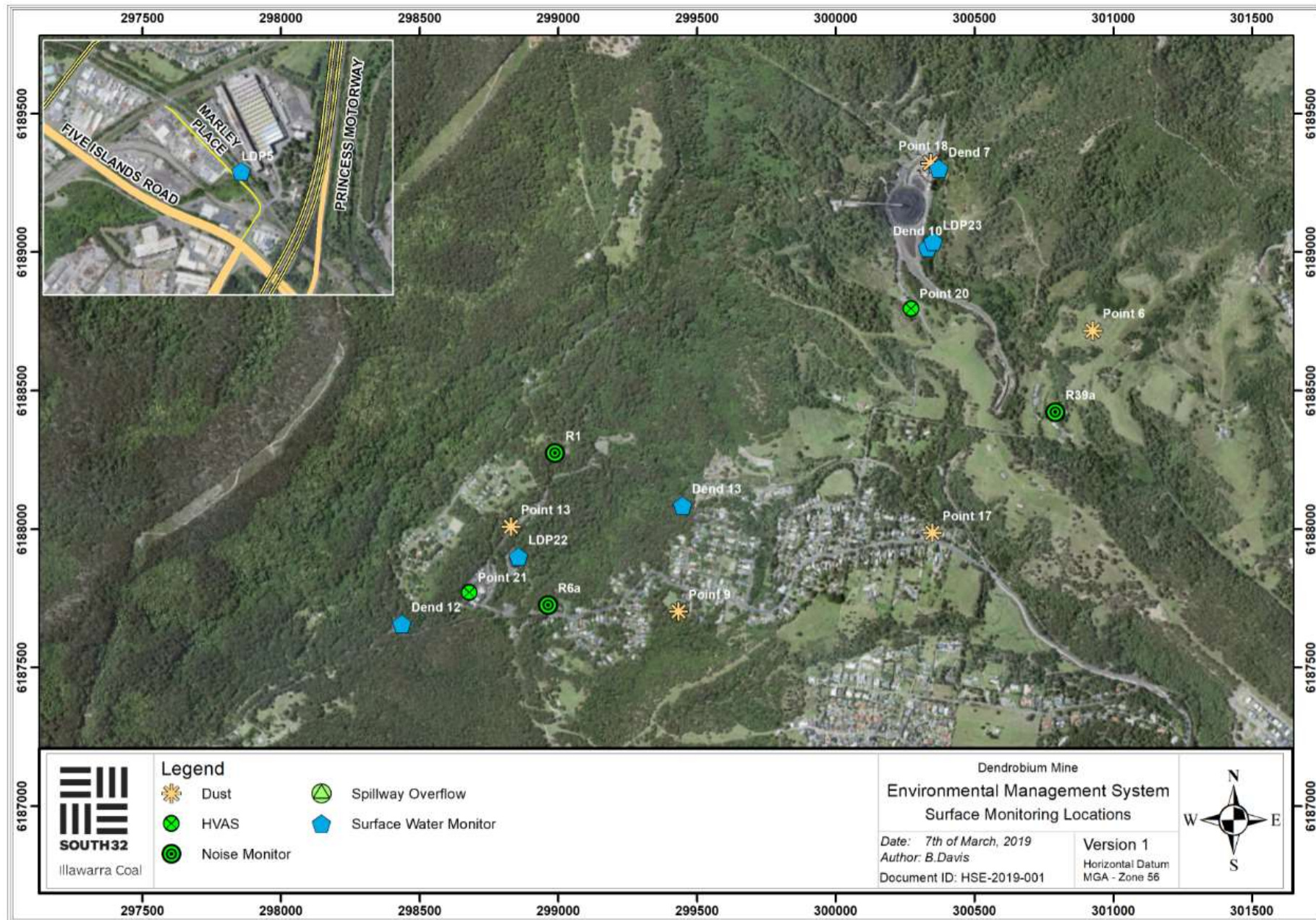
3. REFERENCES

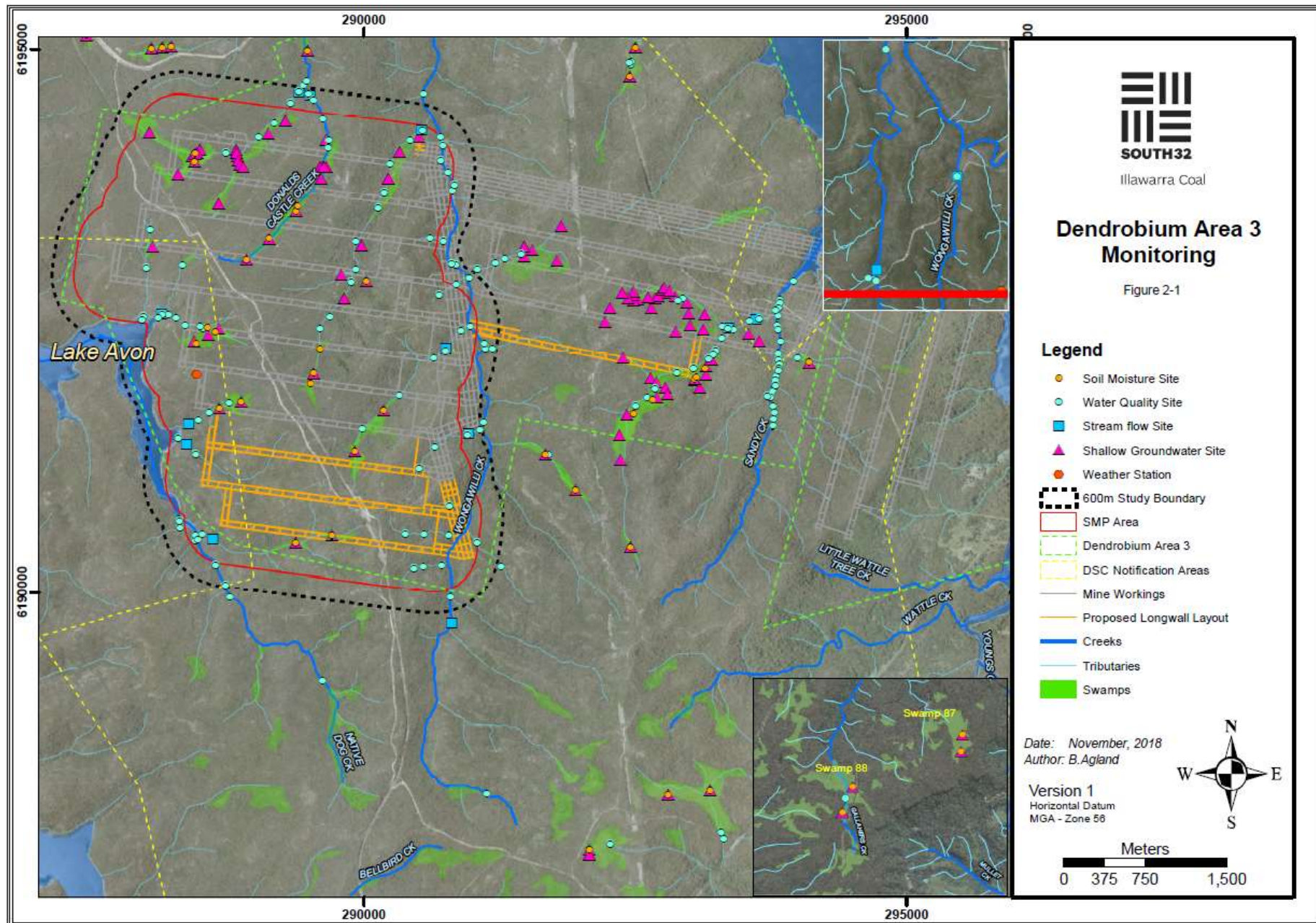
- Dendrobium Mine Emergency Response Control Plan (DENMP0088)
- Dendrobium Mine Noise Management Plan (DENMP0041)
- Dendrobium Mine Air Quality Management Plan (DENMP0037)
- Dendrobium Mine Water Management Plan (DENMP0038)
- Dendrobium Mine Landscape Management Plan (DENMP0045)
- Dendrobium Mine Bushfire Management Plan (DENMP0034)
- Dendrobium Mine Traffic Management Plan (DENMP0043)
- Dendrobium Mine Lighting Management Plan (DENMP0035)
- Dendrobium Mine Waste Management Plan (DENMP0018)
- Dendrobium Mine Greenhouse Gas and Energy Efficiency Management Plan (DENMP0068)
- Department of Planning and Environment, Dendrobium Development Consent (latest modification being MOD 8 dated 13 July 2018)
- Environment Protection Licence 3241
- South32 Environment Standard
- South32 Illawarra Coal Stakeholder Engagement Management Plan
- South32 Illawarra Coal Corrective Action and Effectiveness Review Procedure (IHP0107)
- South32 Illawarra Coal Event Management Procedure (IHP0098)
- South32 Illawarra Coal Trigger Action Response Plan for Event Reporting and Investigation (ICTARP0002)

4. MONITORING PLANS

The following plans are provided depicting the monitoring to be carried out under the conditions of the Dendrobium Development Consent:

- Dendrobium Surface Monitoring Locations
- Dendrobium Area 3 Monitoring Locations





Illawarra Coal

Dendrobium Area 3 Monitoring

Figure 2-1

Legend

- Soil Moisture Site
- Water Quality Site
- Stream flow Site
- ▲ Shallow Groundwater Site
- Weather Station
- 600m Study Boundary
- SMP Area
- Dendrobium Area 3
- DSC Notification Areas
- Mine Workings
- Proposed Longwall Layout
- Creeks
- Tributaries
- Swamps

Date: November, 2018
 Author: B.Aglard

Version 1
 Horizontal Datum
 MGA - Zone 56

