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MANNERING COLLIERY
Annual Review 2016
1 January 2016 – 31 December 2016

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Date:	28 April 2017

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Mannering Colliery – Annual Review (AEMR) 2016

Name of operation	Mannering Colliery
Name of operator	LakeCoal Pty Ltd
Project Approval #	PA06_0311
Name of Project Approval holder	Centennial Coal Pty Ltd
Titles/Mining Leases #	Consolidated Coal Lease No. 719 Consolidated Coal Lease No. 721
Name of holder of mining leases	LakeCoal Pty Ltd and FassiCoal Pty Ltd (via sublease)
Water License #	20BL172016
MOP Commencement Date	1 st January 2015
MOP Completion Date	31 st March 2018
Annual Review start date	1 January 2016
Annual Review end date	31 December 2016
<p>I, [INSERT AUTHORISED REPORTING OFFICER NAME], certify that this audit report is a true and accurate record of the compliance status of [INSERT OPERATION NAME] for the period [INSERT REPORTING PERIOD] and that I am authorised to make this statement on behalf of [INSERT OPERATOR NAME].</p> <p><i>Note.</i></p> <p>a) The Annual Review is an 'environmental audit' for the purposes of section 122B(2) of the Environmental Planning and Assessment Act 1979. Section 122E provides that a person must not include false or misleading information (or provide information for inclusion in) an audit report produced to the Minister in connection with an environmental audit if the person knows that the information is false or misleading in a material respect. The maximum penalty is, in the case of a corporation, \$1 million and for an individual, \$250,000.</p> <p>b) The Crimes Act 1900 contains other offences relating to false and misleading information: section 192G (Intention to defraud by false or misleading statement—maximum penalty 5 years imprisonment); sections 307A, 307B and 307C (False or misleading applications/information/documents—maximum penalty 2 years imprisonment or \$22,000, or both).</p>	
Reporting Officer	<p>Name: Wade Covey</p> <p>Title: Environment & Community Coordinator</p> <p>Date: 28 April 2017</p> <p>Signature: </p>

Executive Summary

During the 2016 reporting period Manning Colliery recommenced underground mining operations as part of the underground link road project approved under PA 06_0311 Mod 2. Manning Colliery produced approximately 93,972 tonnes of coal from its underground mining operations during the reporting period. All coal produced was transported to the adjacent Vales Point Power Station by overland conveyor.

There was one development consent modification to Manning's Project Approval (PA06_0311) during the reporting period. The modification was administrative in nature and was related to the re-commissioning of the sites rotary breaker in its coal clearance infrastructure.

A summary of the key environmental performance indicators and statement of compliance for the 2016 reporting period is provided below:

Key Performance Indicators for the reporting period:

<u>Indicator</u>	<u>Value</u>
Total Full Time Employees (at 31 December 2016)	66
Total ROM Coal produced from site (tonnes)	93,972
Total ROM Coal transferred to VPPS from site (tonnes)	93,972
Total ROM coal to domestic market (tonnes)	93,972
General Waste Produced (tonnes)	14.1
Total Waste Recycled (tonnes)	31.02
Waste Recycling % achieved	68%
Potable Water consumed (ML)	39
Total water discharged from the operation (ML)	276.8
Total number of Community Complaints received	0
Total number of environmental incidents for the period.	1
Number of Community Consultative Committee (CCC) Meetings undertaken	4
Total Greenhouse Gas Emissions (Co2 Eq t) (2015/2016 Financial period)	125,939

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Statement of Compliance (2016 reporting period):

Were all conditions of the relevant approval(s) complied with?	
Project Approval No. 06_0311	No
EPL191	Yes
CCL719	Yes
CCL721	Yes

Summary of Non-Compliances (2016 Reporting Period):

Relevant Approval	Condition #	Condition Description (summary)	Compliance Status	Comment	Section addressed
PA06_0311	Schedule 3, Condition 1	Noise Criteria	Non-Compliant	Refer to Section 3.10 and Section 7 for details.	Section 3.10 and Section 7

Compliance Status Categories

Risk Level	Colour Code	Description
High	Non-Compliant	Non-compliance with potential for significant environmental consequences, regardless of the likelihood of occurrence
Medium	Non-Compliant	Non-compliance with potential for serious environmental consequences, but is unlikely to occur; or potential for moderate environmental consequences, but is likely to occur
Low	Non-Compliant	Non-compliance with potential for moderate environmental consequences, but is unlikely to occur; or potential for low environmental consequences, but is likely to occur
Administrative non-compliance	Non-Compliant	Non-compliance which does not result in any risk of environmental harm

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1 Introduction

Mannering Colliery (MC) is an underground coal mine located on the southern side of Lake Macquarie approximately 60 km south of Newcastle (**Figure 1.1**). Development of Mannering Colliery began in 1960 in conjunction with the construction of Vales Point Power Station and at that time was named Wyee State Coal Mine.

Production commenced in 1961 with extensive mining (first workings and secondary extraction) in both the Great Northern and Fassifern Seams. While some resources remain within the Great Northern Seam, mining has not been undertaken in this seam since 1999, with all recent mining occurring in the Fassifern Seam.

On the 30th June 2002 mining operations ceased and the mine was placed on care and maintenance, at that time the mine was operated by Powercoal Pty Ltd. On August 7th 2002 Centennial Coal acquired the Colliery from Powercoal. The mine was reopened and renamed Mannering Colliery with production recommencing in January 2005, mining the Fassifern Seam. Due to unfavorable conditions the mine was again placed on care and maintenance, ceasing production on 27 November 2012.

LakeCoal, the operator of the adjacent Chain Valley Colliery, became the operator of Mannering Colliery as a result of a mining cooperation agreement that was reached between the owners of Chain Valley Colliery and Mannering Colliery. As a result, LakeCoal Pty Ltd became the operator of Mannering Colliery effective the 17th October 2013.

In December 2015, a business decision was made by LakeCoal to progress the “underground link road project” between Mannering Mine and Chain Valley Colliery. During the reporting period Mannering Colliery recommenced underground mining operations as part of the underground link road project approved under PA 06_0311 Mod 2. Mannering Colliery produced approximately 93,972 tonnes of coal from its underground mining operations during the reporting period. All coal produced was transported to the adjacent Vales Point Power Station by overland conveyor.

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Figure 1.1: Location of Manning Colliery

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1.1 Consent, Leases and Licences

1.1.1 Consent

Mannering Colliery was granted Project Approval on the 12 March 2008 under Section 75J of the Environmental Planning and Assessment Act, 1979 (EP&A Act). Four subsequent modifications of this approval have occurred, the first (MP06_0311 MOD 1) was granted on 25 October 2012, the second (MP06_0311 MOD 2) was granted on 27 November 2014, the third (MP06_0311 MOD 3) was granted on 16 December 2015, and the fourth (MP06_0311 MOD 4) was granted on 18 August 2016.

The most recent modification to Mannering's Project Approval (Mod 4) was an administrative modification and was related to the re-commissioning of the sites rotary breaker in its coal clearance infrastructure.

A copy of the consolidated Project Approval is attached as **Appendix 2**.

Condition 3 within Schedule 5 of the approval requires the submission of an Annual Review to the satisfaction of the Secretary. **Table 1.1** identifies the requirements of this condition and where each item has been addressed in this report.

Table 1.1: Annual Review Requirements

CONDITION REQUIREMENT	SECTION ADDRESSED
3. By the end of February 2013, and annually thereafter, the Proponent shall review the environmental performance of the project to the satisfaction of the Secretary. This review must:	This report
a) describe the development (including any rehabilitation) that was carried out in the past calendar year, and the development that is proposed to be carried out over the current financial year;	2, 3, 5 & 6
b) include a comprehensive review of the monitoring results and complaints records of the project over the past calendar year, which includes a comparison of these results against the: <ul style="list-style-type: none"> the relevant statutory requirements, limits or performance measures/criteria; requirements of any plan or program required under this approval; the monitoring results of previous years; and the relevant predictions in the documents listed in condition 2 of Schedule 2; 	2, 3 & 4
c) identify any non-compliance over the past year, and describe what actions were (or are being) taken to ensure compliance;	2, 3 & 6
d) identify any trends in the monitoring data over the life of the project;	2
e) identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and	2 & 3
f) describe what measures will be implemented over the current financial year to improve the environmental performance of the project.	2, 3 & 6

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1.1.2 Leases

The surface areas occupied by Mannering Colliery lie within the Wyong Shire local government area (LGA), however, the leases which comprise the Mannering Colliery holding straddle both the Wyong Shire and Lake Macquarie LGAs.

Significant changes occurred to the Colliery holding during the 2014 reporting period, which resulted in all active areas of the holding being transferred to the Chain Valley Colliery holding. The Chain Valley Colliery holding is shown on the **Mine Locality Plan (Appendix 1)** however the applicable mining tenements which are contained within the Mannering Project Approval boundary, and include the surface areas of the Mannering pit top are listed in Table 1.2.

Table 1.2: Relevant Leases

Title	Expiry
Consolidated Coal Lease 719	22/12/2020
Consolidated Coal Lease 721	29/07/2026

1.1.3 Surface Land

All Mannering Colliery surface operational areas are owned by Delta Electricity and are occupied under a compensation agreement.

1.1.4 Licences

Environment Protection Licence (EPL) No. 191 issued by the Environment Protection Authority under the *Protection of the Environment Operations Act, 1997* covers the Collieries activities and premises.

A copy of EPL191 is posted on the Colliery website, www.manneringmine.com.au or via the NSW EPA website, <http://www.environment.nsw.gov.au/licensing/> and is also provided as **Appendix 3**.

LakeCoal has held the EPL for Mannering Colliery throughout the reporting period.

Monitoring results obtained in accordance with the licence conditions are now also made available publicly on the Colliery website (updated monthly), under the environmental reporting page: <http://manneringmine.com.au/approvals-plans-reports/environmental-reporting/>

There were no non-compliances with EPL191 during the reporting period.

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1.2 Mine Contacts

The current Colliery contacts as at the end of the reporting period are:

Mine Manager: David Walker
 Telephone: 02 4358 0508
 Email: dwalker@lakecoal.com.au

Environment and Community Coordinator: Wade Covey
 Telephone: 02 4358 0800
 Email: WCovey@lakecoal.com.au

Postal Address: LakeCoal Pty Ltd
 P.O Box 7115
 Manning Park, NSW, 2259

1.3 Actions Required from Previous Annual Review Inspection

Table 1.3 - Actions required from last Annual Review inspection

Item	Issue / Observation	Relevant Agency	Action	Status
1	For the next reporting period, ensure the format of report reflects the requirements of the Annual Review Guidelines published by the NSW Government in October 2015.	DP&E	Format Annual Review to reflect the requirements of the Annual Review Guidelines published by the NSW Government in October 2015.	Noted and incorporated into the 2016 Annual Review (this document).
2	The Department notes from section 2.8.1 on page 16 and in Appendix 4, that, power to the site discharge point was lost which resulted in non-compliance as the data was unable to be obtained. Please provide more information regarding non-compliance under Schedule 3 Condition 12 (c) and Schedule 5 Condition 3 (c) for ground water monitoring requirements and quantifiable actions to ensure future compliance.	DP&E	Provide more information regarding non-compliance under Schedule 3 Condition 12 (c) and Schedule 5 Condition 3 (c) for ground water monitoring requirements and quantifiable actions to ensure future compliance.	<p>Complete – further information provided to DP&E. Occurrences were also reported to the EPA in accordance with the sites Environmental Protection Licence (EPL191) annual return.</p> <p>A new solar powered flow monitoring system was installed and commissioned on the 18th November 2016.</p> <p>There has been 100% data capture rate since the new unit was installed.</p>

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Item	Issue / Observation	Relevant Agency	Action	Status
3	Figure 2.2 on page 14 does not display the units of measurement, and the colours used in the key and graph do not correlate. Please ensure future reports contain clear legible and understandable figures.	DP&E	Ensure future reports contain clear legible and understandable figures.	Noted and incorporated into the 2016 Annual Review (this document).
4	As per Schedule 3 Condition 15 (a) and Schedule 5 Condition 10, please make available all plans on the company website as required by the approval.	DP&E	Make all plans available on company website as per the approval.	Noted. The Manning website has been updated to include the most recent plans.
5	Noted on Table 1.3 on page 7 – Actions required from the last Annual Review, item 2 – Website Reporting a copy of the Manning Mine Closure Plan cannot be located on the LakeCoal website.	DP & E	Upload the Manning Mine Closure Plan to company website.	The combined CVC and Manning MOP (which includes the requirements of the Mine Closure Plan) has been uploaded to the Manning Website.
6	As per Appendix 3, the Statement of Commitments in relation to subsidence monitoring of the existing subsidence monitoring marks will continue and additional subsidence monitoring marks will be installed above the proposed mining areas to measure the subsidence and verify that subsidence is within the predicted levels. Please provide the Department with current subsidence monitoring location and results by the 31 st July 2016.	DP & E	Provide the Department with current subsidence monitoring location and results by the 31 st July 2016.	Complete. Information provided on 5 August 2016 to the Department.

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Item	Issue / Observation	Relevant Agency	Action	Status
7	High presence of weeds including Bitou Bush, Pampus Grass, Lantana, Crofton Weed amongst others was observed. The Department requests that a Weed Action Plan is developed and implemented to ensure weed are sufficiently controlled / exterminated	DRE	Develop and Implement a Weed Action Plan during the next reporting period.	Noted. LakeCoal engaged Kleinfelder Australia during the 2016 reporting period to develop a weed action plan for LakeCoal sites. The weed surveys were completed during the reporting period and a weed action plan has been developed. LakeCoal will be progressing the actions and recommendations from the plan during the 2017 reporting period.

1.4 Mine Geology

The most recent mining operations at Mannering Colliery have been located within the Fassifern Seam, which is part of the Boolaroo Formation within the Newcastle Coal Measures (see **Figure 1.2**). Overlying the Fassifern Seam are the Great Northern, Wallarah and Vales Point Seams (and their associated conglomerates and tuffs), which are part of the Moon Island Beach Formation within the Newcastle Coal Measures. The Wallarah and Fassifern Seams have been mined at Myuna Colliery to the north-east, while the Wallarah, Fassifern and Great Northern seams have been mined at Chain Valley Colliery to the east.

The coal resource within the Fassifern and Great Northern seams has a low sulphur content, which makes it a preferable supply for power generation. Within the Colliery holding, the Fassifern Seam lies at around 150 to 205 metres deep and mining is based on a three metre section of coal (approximate) beneath the B ply, which comprises approximately 1.0 to 1.2 metres of inferior coal left on the roof (Seedsman, 2011). The depth of cover to the Great Northern Seam is between approximately 140 and 155 metres and the typical seam thickness is 2.5 metres (Seedsman, 2011).

Previous workings within both of these seams are extensive. These workings, in conjunction with various geophysical surveys in the area, provide a solid base of data regarding regional and local structural features. The area within the Colliery holding is dissected by a number of north-west striking faults and dyke zones at a regional spacing of up to two kilometres, with drilling and surface magnetometer surveys confirming the locality of these structural features (Hanson Bailey, 2007).

The stratigraphic sequence beneath the mine plan is comprised of three distinct units:

1. the upper Permian Newcastle Coal Measures, a sandstone/coal sequence with lesser siltstone;
2. the overlying Clifton Sub-group, which is the basal unit of the Triassic Narrabeen Group; and
3. quaternary to recent alluvial sediments.

The Great Northern Seam is separated from the Fassifern Seam within the Newcastle Coal Measure by approximately 25 to 30 metres. The strata directly below the Fassifern Seam are high strength sandstone formations, interbedded with thinner strata of other units such as shale, mudstone and coal (Hansen Bailey 2007). This interval between the Fassifern Seam and the Great Northern Seam is generally made up of two strata characterised in the lower section by the Awaba Tuff, which is the stone roof of the Fassifern Seam,

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and a conglomerate/coarse-grained sandstone unit in the upper section (Hansen Bailey, 2007). The roof of the Great Northern Seam is Teralba Conglomerate (Seedsman, 2011).

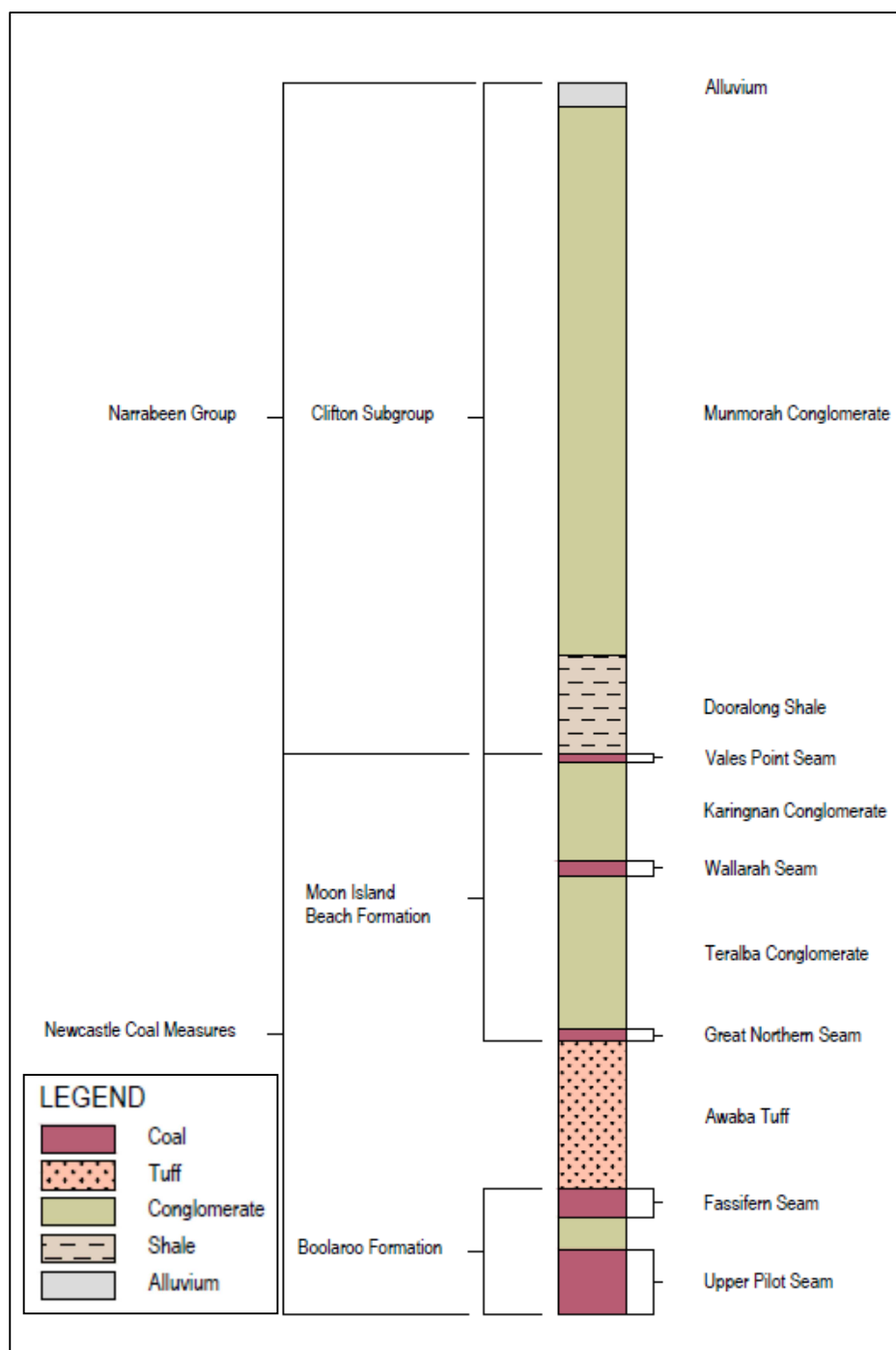


Figure 1.3: Typical Stratigraphy at Mannering Colliery

2 Operations

2.1 Exploration

There was no exploration undertaken at Mannering Colliery during the reporting period.

There is no exploration planned for the next reporting period.

2.2 Land Preparation

There was no land preparation undertaken during the reporting period and as a result the surface disturbance footprint remains unchanged.

2.3 Construction

As part of the transition from care and maintenance to recommencement of underground mining operations at Mannering Colliery LakeCoal undertook a review of existing infrastructure and implemented a refurbishment program in preparation for full scale mining operations once the two mines were joined. Construction works undertaken during the reporting period included:

- Installation of new conveyor infrastructure underground as part of the link road project
- Conversion of the existing product coal stockpile transfer shutes to incorporate a more efficient coal valve. The upgrades to the reclaim system will be commissioned in the next reporting period.

2.4 Mining

In December 2015, a business decision was made by LakeCoal to progress the “underground link road project” between Mannering Mine and Chain Valley Colliery.

During the reporting period Mannering Colliery recommenced underground mining operations (via first workings only) as part of the underground link road project approved under PA 06_0311 Mod 2. Mannering Colliery produced approximately 93,972 tonnes of coal from its underground mining operations during the reporting period. All coal produced was transported to the adjacent Vales Point Power Station by overland conveyor.

Existing workings in the Great Northern Seam are shown on the Great Northern Seam Workings Plan and existing workings within the Fassifern Seam are shown on Fassifern Seam Workings Plan (**Appendix 1**)

Figure 2.1 shows annual ROM production including the current reporting period. A production summary is provided in **Table 2.1**.

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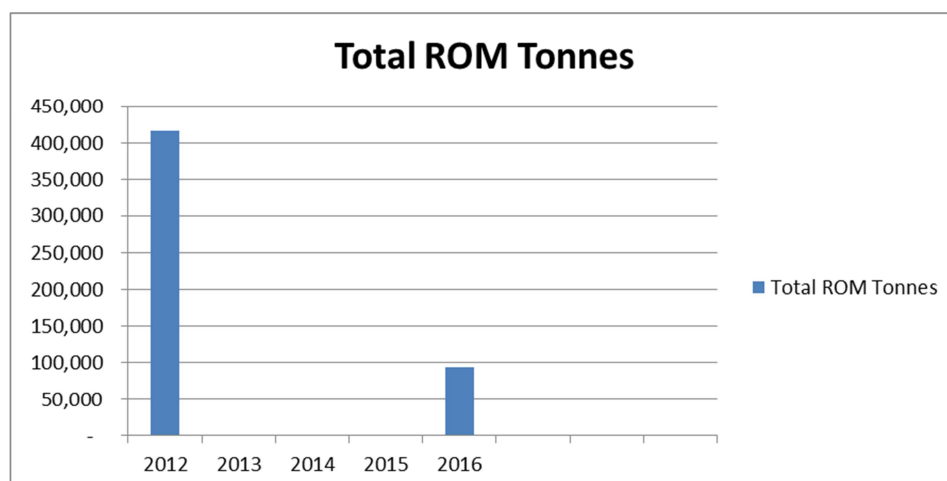


Figure 2.1: Annual ROM Production Levels

Table 2.1: Production Summary

Material	Approved Limit (Mt)	Previous Reporting Period (Actual)	This Reporting Period (Actual)	Next Reporting Period
Waste Rock / Overburden	n/a	n/a	n/a	n/a
ROM Coal Produced	1.1	0	0.093	0
ROM Coal Handled	1.3	0	0.093	1.3
Saleable Product (Same as ROM)	1.1	0	0.093	0
Coarse Reject	n/a	n/a	n/a	n/a
Fine Reject	n/a	n/a	n/a	n/a

As stated in the introduction, effective the 17th October 2013, LakeCoal became the operator of Manning Colliery as a result of a mining cooperation agreement that was reached between the owners of Chain Valley Colliery and Manning Colliery.

The same agreement also underpins the underground connection, which currently consists of two development headings (one belt road and one travel road), to enable coal from the Chain Valley Colliery to be transported via Manning Colliery to Vales Point Power Station.

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2.5 Mineral Processing

No mineral processing is undertaken onsite at Mannering Colliery. ROM coal is sized and transported directly to Vales Point Power Station via a dedicated existing overland conveyor system.

2.6 Waste Management

LakeCoal continued to implement a total waste management system for the site during the reporting period. The waste streams currently provided for include;

- General waste
- Paper and cardboard
- Oil rags
- Air/Oil filters
- Batteries
- Waste oil
- Timber

Management systems are in place at Mannering Colliery for the various non-production waste streams generated by the operation in accordance with the requirements of MP06_0311 and EPL 191. In summary:

General Waste and Recyclables

All general wastes and routine maintenance consumables are collected on a regular basis by an appropriately licensed contractor for off-site disposal within a waste facility approved to accept such waste. Recyclable material is also collected by a licensed contractor for recycling at an appropriate facility.

Collections of general waste and recyclables are coordinated by the waste management contractors, who also undertake weekly waste inspections at the site.

As shown in **Figure 2.2**, there was an increase in waste generated at the site during the reporting period which was attributable to the recommencement of underground operations.

Waste Oil and Grease

The generation of waste oils and grease is currently limited to the routine maintenance of plant and equipment. Waste oils and greases stored at the purpose built service bay area along with parts and packaging (for example, cartridges, filters and waste oil drums), are collected by a licensed waste contractor on an as needs basis for recycling and/or off-site disposal.

Oily water is contained within drive-in-sumps and treated by oil-water separators located on the mine surface. Licensed contractors regularly service and maintain the separators and remove all waste hydrocarbons from the site for recycling.

Sewage

Sewage generated by on-site staff amenities is pumped directly from Mannering Colliery to Mannering Park Waste Water Treatment Works via a dedicated pipeline under a Trade Waste Agreement with Wyong Shire Council.

The total waste management system also involves weekly site inspections by the waste management contractor to facilitate effective waste management and continual improvement along with monthly reporting, with some of the data from key waste streams presented on **Figure 2.2**.

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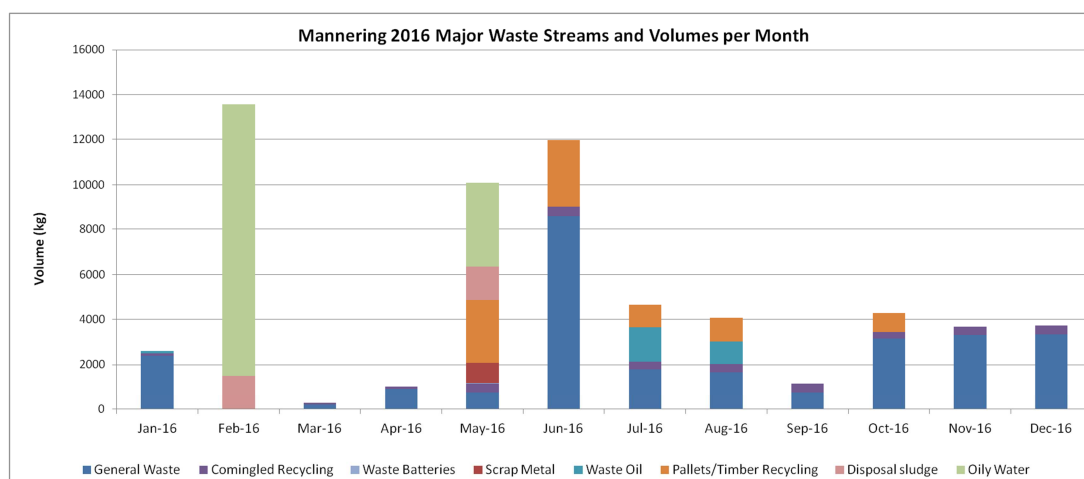


Figure 2.2: Major waste streams and volumes

2.7 Stockpiles

When operating, delivery of coal to Vales Point Power Station occurs via dedicated overland conveyor directly to the Power Station. Stockpiling of coal only occurs when Vales Point Power Station is unable to accept coal deliveries from the mine. The stockpile has a nominal capacity of approximately 25,000 tonnes.

During the reporting period LakeCoal undertook some preparation work on the existing coal stockpile to determine material quality. No other changes to the coal stockpile area occurred during the reporting period. The coal stockpiled remaining at approximately 4600 tonnes.

The existing coal stockpiled is intended to be reclaimed and sold following recommencement of full scale production / coal transport from Manning, however there is no specific commencement date currently determined. It is expected that this coal will be sold during the next reporting period.

Following the recommencement of full scale activities it is however expected that coal stockpiling and reclaim activities will increase as the colliery resumes coal production and handling operations.

2.8 Water Management

2.8.1 Water Volume / Quantity

Each week during the reporting period an average of approximately 5.97 megalitres (ML) of mine water was discharged into an unnamed creek via the licenced discharge point (LDP001) which is monitored in accordance with Environmental Protection Licence No.191. The water discharged from site at LDP001 comes primarily from the underground mine dewatering and surface runoff from rainfall events. The average discharge rate over the reporting period was approximately 1,189 kilolitres (kL) per day while discharging, however discharging only occurred over 261 days during the year (Refer to **Figure 2.3**).

The maximum daily discharge during the reporting period peaked at 4,214 kL on 6 January 2016 and was associated with a heavy regional rainfall event. **Figure 2.3** presents the daily discharge data during the reporting period, daily discharge volumes are also reported in the monthly reports on the Colliery website.

A real time solar powered volumetric discharge monitoring system was also installed and commissioned during the reporting period to improve data capture rates at the discharge point which the site had previously had issues with as a result of power outages from electrical storms and maintenance activities. The new unit has real time telemetry and is linked to a website repository where discharge information can be viewed wirelessly via smart phone technology. The new unit has achieved a 100% data capture rate since its installation in November 2016.

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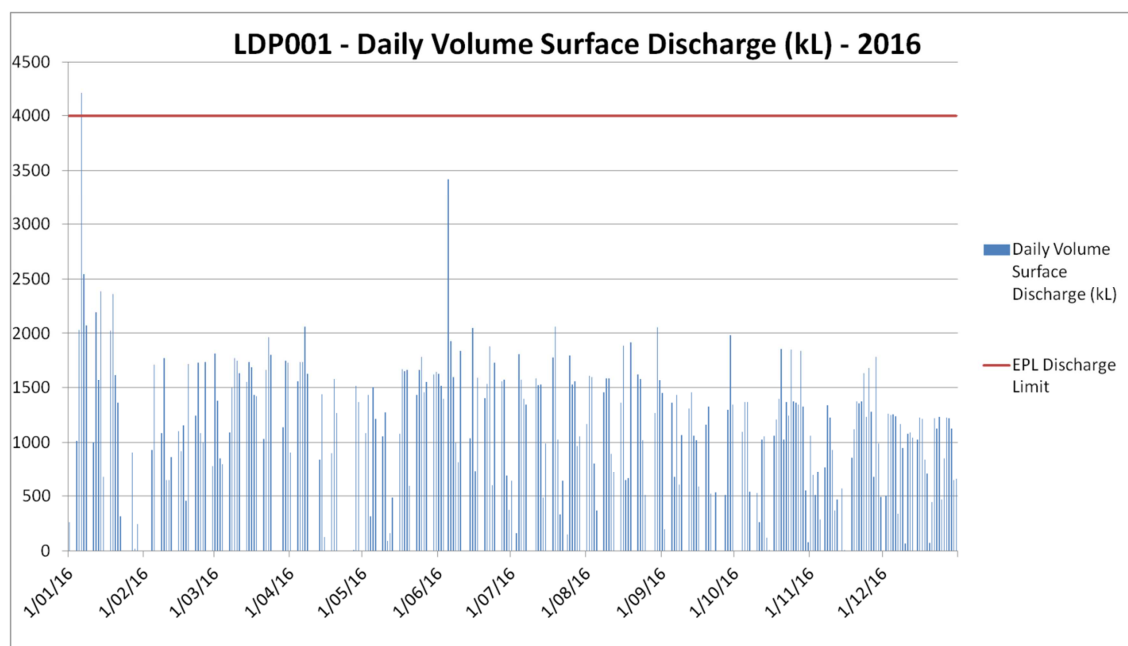


Figure 2.3: Surface discharge volumes during the reporting period

As evident in **Figure 2.3**, there was one day during the reporting period, 6th January 2016, when the daily discharge volume exceeded the licensed limit of 4000 kL/day with a total volume discharged 4,214 kL. This event was associated with an extensive rainfall event occurring over the 3rd to the 7th January 2016. In this instance, significant rainfall preceded the discharge with over 138mm being recorded over the three days from the 3rd to 5th January and another 74.8mm recorded on the 6th January alone. Rainfall data for the month of January as recorded by the onsite weather station is presented in **Figure 2.5**.

As stipulated in Condition L3.2 of EPL 191, exceedances of the volume limit for LDP001 are permitted only if the discharge from LDP001 occurs solely as a result of rainfall at the premises exceeding 10mm during the 24 hours immediately prior to the commencement of discharge. This was the case for the January discharge event in 2016 and accordingly, no further action was taken in respect to the discharge volumes.

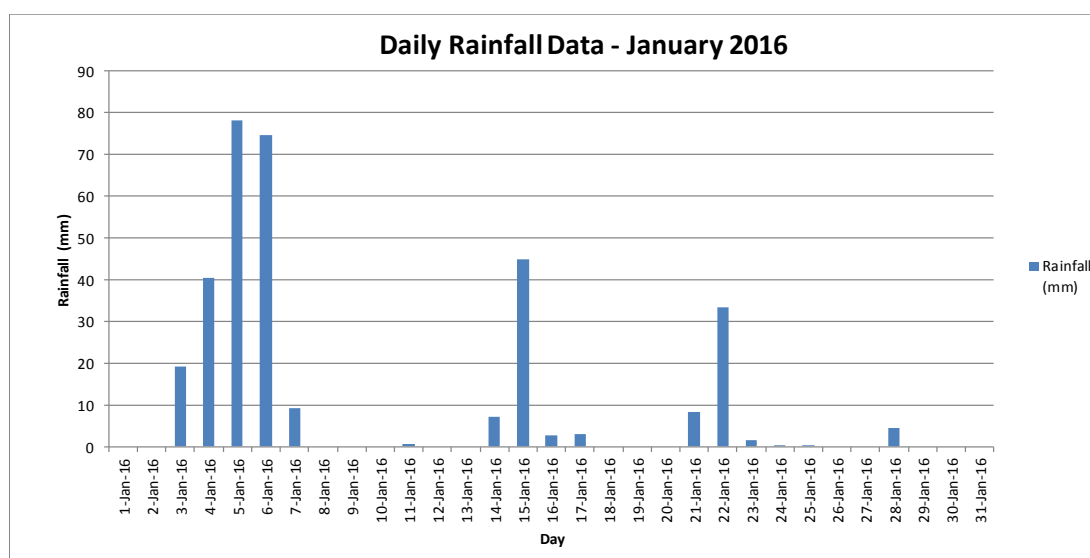


Figure 2.2: Daily rainfall data for January 2016

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During the reporting period a total of 276.81 ML of groundwater was extracted in accordance with 20BL172016, or approximately 61.5% of the 450 ML limit. An average of 1,112 kL was dewatered on a daily basis when pumping during the reporting period, with an average of pumped volume of 5.32 ML per week over the reporting period. The maximum daily mine dewatering rate during the reporting period reached 1,984 kL. Daily dewatering rates shown in **Figure 2.6**.

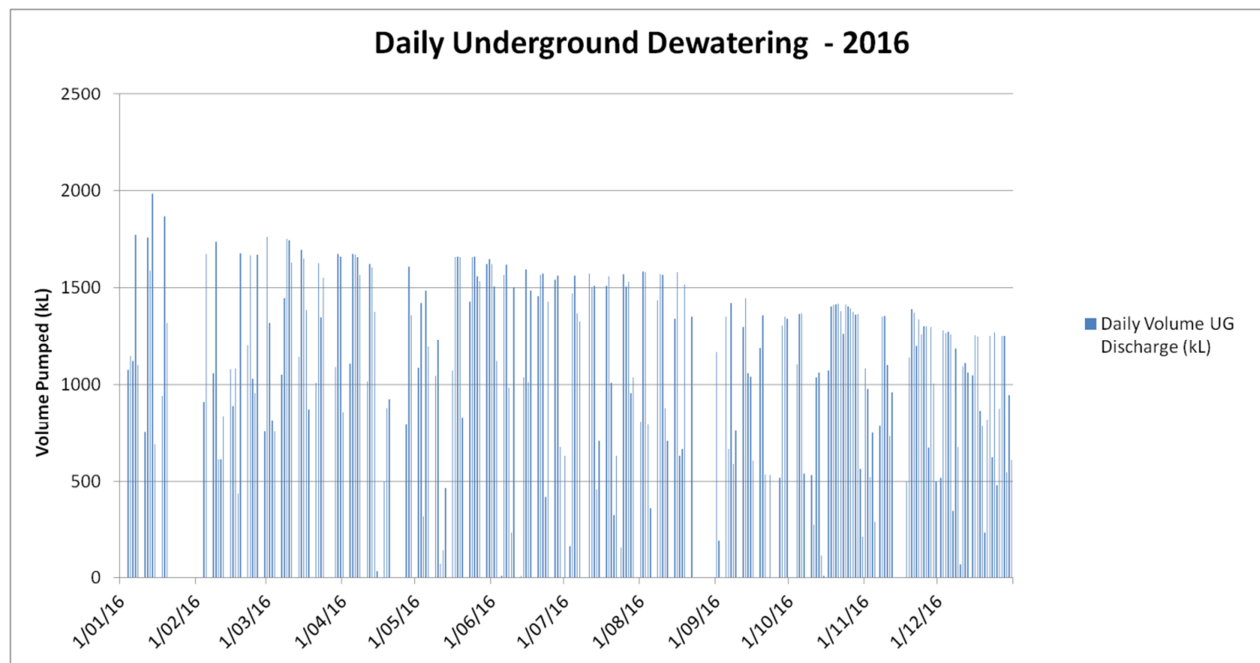


Figure 2.3: Underground discharge volumes during the reporting period

2.8.2 Water Quality

Weekly water quality monitoring results for pH, total suspended solids (TSS) and oil and grease along with associated limits at the licenced discharge point 1 (LDP001) are shown in **Figures 2.7, Figure 2.8 and Figure 2.9**. Refer to Environmental Management Plan (**Appendix 1**) for the location of LDP001.

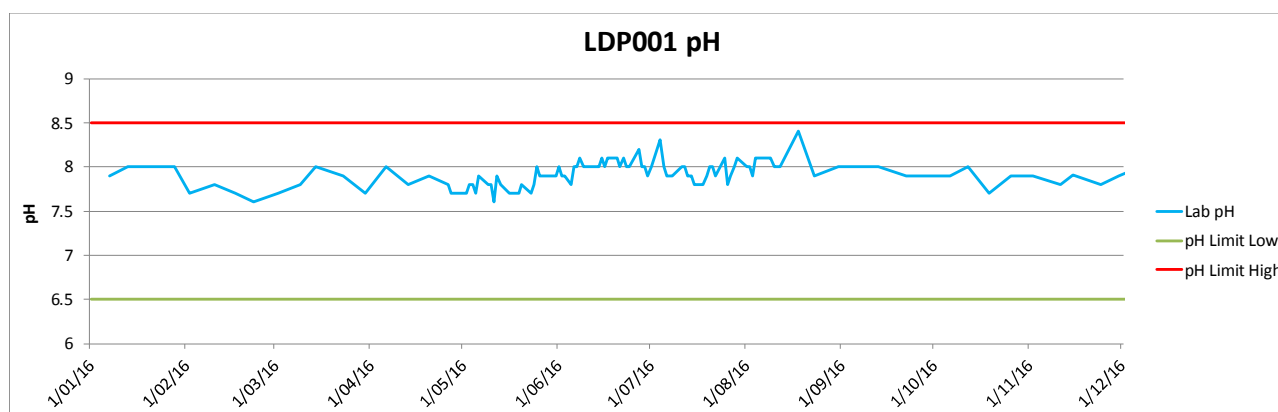


Figure 2.4: pH monitoring results at LDP001

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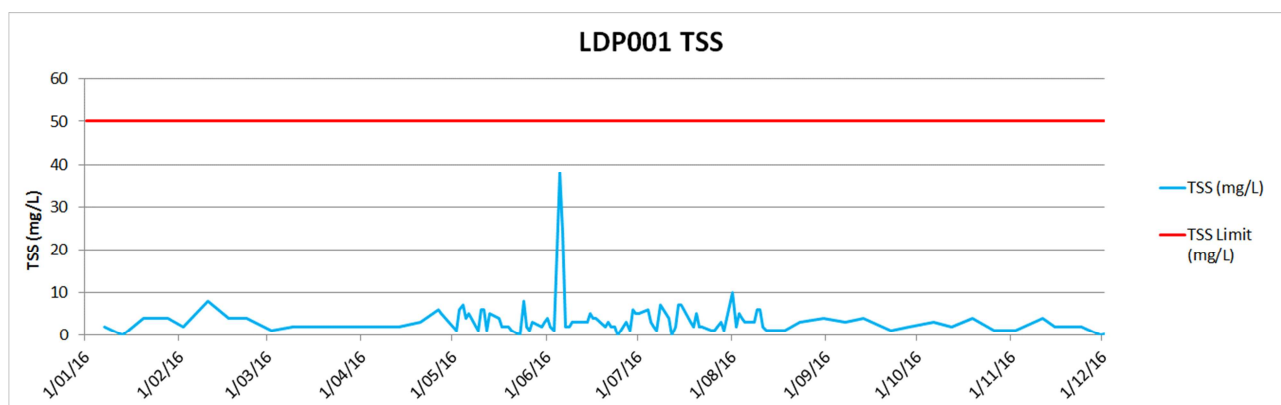


Figure 2.5: Total suspended solids monitoring results at LDP001

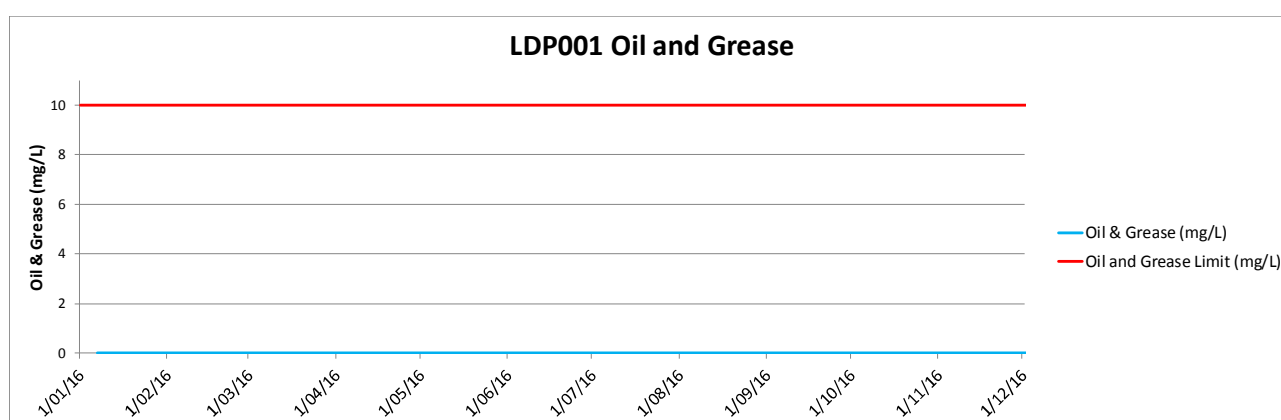


Figure 2.6: Oil and grease monitoring results at LDP001

Note that all oil and grease results less than the laboratory reporting limit (<5mg/L) is recorded as a zero result in **Figure 2.9**. There were no oil and grease results above the trigger value recorded during the reporting period.

During the reporting period there were no exceedances of the water quality criteria at the licenced discharge point for pH, Total Suspended Solids or Oil and Grease.

Details on additional measures taken to manage total suspended solids levels are detailed in **Section 3**.

In accordance with EPL191, water quality monitoring was conducted at a weekly interval, with the exception of a three month period during the year when daily monitoring (during discharge) was triggered as a result of the recommissioning of the coal handling and preparation plant. This monitoring was undertaken and was completed in compliance with Condition U1 of EPL191 "Coal Handling and Preparation Plant Commissioning Water Quality Monitoring Study". There were no exceedances of the water criteria throughout the 3 months monitoring campaign.

As previously shown in **Figure 2.7** to **Figure 2.9**, there was no exceedance of water quality criteria during the reporting period with results generally consistent to previous reporting periods.

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2.8.3 Potable Water Use

Potable water use during the reporting period (39 ML) was higher than the prior reporting period (8.9 ML) and consistent with values from 2011 and 2012 (Refer to **Figure 2.10**), however this was expected due to the recommencement of underground mining operations.

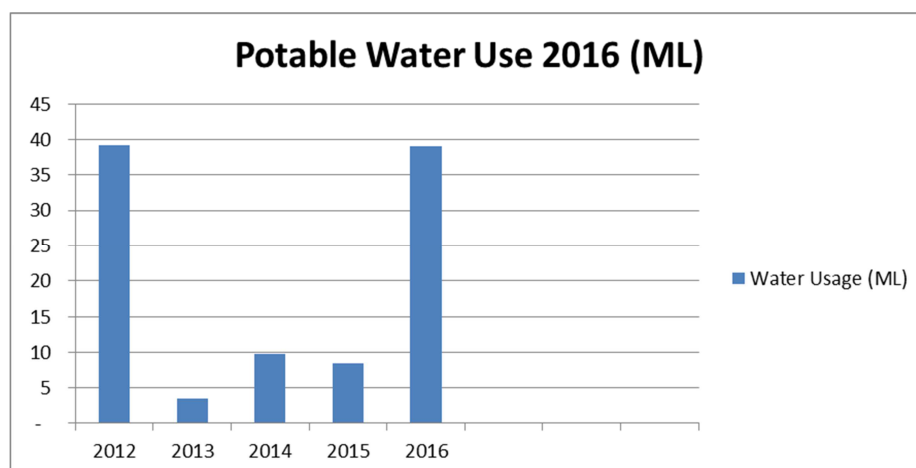


Figure 2.7: Potable water use

2.8.4 Surface Water Management

The site surface water management system comprises both clean and dirty water catchments. A number of water management diversions direct clean water around the site to avoid increased hydraulic load on the sedimentation dams that treat the site dirty water prior to discharge.

Clean water from areas unaffected by the operational activities and water that runs onto the site area due to the contours of the surrounding land, i.e. primarily areas to the south and east, are diverted through clean water management structures (such as diversion drains and culverts under roads), enabling the water to ultimately report to Pond 1. The clean water flow paths are shown on **Figure 2.11**.

The dirty water management system comprises a number of both surface and subsurface management structures to control the flow of water and ultimately direct the dirty water into the site sediment dams. **Figure 2.12** shows the dirty water flow paths.

The sediment dam system comprises a total of four main dams, labelled Pond 1, Pond 2, Pond 3 and Pond B, as shown on **Figure 2.11**. References to "Pond" and "Dam" are used interchangeably and refer to the same water management structures.

As shown on **Figure 2.12**, water from the dirty water catchments enters into Pond 1 or Pond 2, when both these dams are full water overflows into Pond 3. Once Pond 3 reaches capacity it subsequently over flows into Pond B. Finally, when Pond B reaches capacity it overflows out LDP001.

A series of interconnecting pipes and valves also allows Pond 2 to be drained into Pond 3, Pond 3 to be drained into Pond B and Pond B to be discharged via LDP001. These valves are generally kept shut to maximise storage capacity of the dams, but are opened after rainfall events, once water quality is suitable for discharge, to minimise water the volume of water stored and again increase storage capacity of the dams for the next rainfall event.

Water underground is derived from two sources: excess process water which is generated from mining operations and ground water which is released from the strata into underground mine workings. The collected water is pumped through an extensive goaf system that allows filtration and settlement.

The mine water discharge line consists of the main pump, flow meter, turbidity meter, valves and outlets. The mine water can be directed to pond 1, 3, B or LDP001. Under normal operation the mine water will be directed to LDP 1 to maintain capacity in the sediment dams for rainfall events.

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Management of the 4 interconnected ponds is undertaken via weekly inspections and management as required following rainfall events. The intent of this active management is to maintain dams at their lowest possible levels whilst adhering to water quality criteria at the discharge point (LDP001).

In the 2015 reporting period a flocculent system (refer Section 3.2 for system details) was installed to improve water quality (i.e. lower total suspended solids levels) within the water management system. This system remained in place during the 2016 reporting period and has assisted with controlling water quality.

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Figure 2.8: Clean Water Management Diagram

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Figure 2.9: Dirty Water Management

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2.9 Hazardous Materials Management

A hazardous chemicals and dangerous goods register is maintained onsite to assist in management of risks to health and the environment. This register utilises an online chemicals database 'ChemAlert' which provides for ease of access to detailed information pertaining to hazardous chemicals and dangerous goods used onsite via a web portal.

There have been no significant changes made to the management of hazardous materials during the reporting period. Refer to Environmental Management Plan (**Appendix 1**) for location of storage areas.

2.10 Other Infrastructure Management

No changes have been made to this process during the reporting period.

3 Environmental Management

LakeCoal is committed to operating Mannering Colliery in an environmentally responsible manner through the application of the workplace Environmental Management System (EMS). This commitment is confirmed in the company's *Environment and Community Policy* (D-10103).

An initial site risk assessment *Handover of Mannering Colliery on Care & Maintenance* (D-18224) includes the risk management of environmental aspects at Mannering Colliery.

During 2015 the Broad Brush Risk Assessment for Mannering Colliery was reviewed in accordance with AS/NZS ISO 31000 and MDG1010, was undertaken to identify hazards and assess the environmental and community related risk associated with the planned operation of Mannering Colliery.

The risk assessment included:

- surface and groundwater;
- ecology;
- heritage;
- visual amenity;
- noise;
- air quality and greenhouse gas;
- traffic;
- hydrocarbon storage;
- deliveries;
- waste;
- asbestos;
- data records and reporting; and
- social aspects.

All aspects with potential environmental impacts, following the implementation of controls, were considered to have a low risk.

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3.1 Air Pollution

During the reporting period monitoring in accordance with the approved Air Quality Management Plan and EPL 191 licence conditions continued. Monitoring results are shown in **Table 3.1** and **Figure 3.1**. The rolling annual averages for 2016 and longer term annual average results (from 2006 - 2016) are presented on **Figure 3.2** and **Figure 3.3** respectively.

With respect to the ensuing table and figures, any contaminated results would be shown within **Table 3.1**, however, these results would not be included within the annual averages and present as zero values in the monthly graphical results in **Figure 3.1**. No contamination was noted by the environmental monitoring consultant engaged to complete the sampling and supported by corresponding field and/or laboratory notes.

No complaints of dust or air pollution were received in the reporting period.

Table 3.1: Depositional dust results (2016)

Sampling point	DG1 (EPA ID # 3)	DG2 (EPA ID # 4)	DG3 (EPA ID # 5)	DG4 (EPA ID # 6)	DG5 (EPA ID # 7)
Month	Insoluble Solids	Insoluble Solids	Insoluble Solids	Insoluble Solids	Insoluble Solids
Jan-16	1.20	0.60	0.70	1.00	0.60
Feb-16	0.50	0.70	0.80	4.90	2.30
Mar-16	1.10	5.10	1.40	0.90	0.80
Apr-16	0.40	0.40	0.80	1.80	0.50
May-16	0.30	0.40	0.30	0.40	0.70
Jun-16	0.50	0.70	0.40	0.50	0.50
Jul-16	0.40	0.30	0.40	0.50	0.40
Aug-16	0.30	0.30	0.60	0.40	0.30
Sep-16	0.40	0.10	3.00	0.70	0.40
Oct-16	1.00	0.50	0.80	0.70	0.70
Nov-16	1.30	0.80	0.80	0.50	0.30
Dec-16	0.40	1.10	1.30	1.00	0.60
Annual Average	0.65	0.92	0.94	1.11	0.68

Notes: 1) For site locations refer Environmental Management Plan (**Appendix 1**).

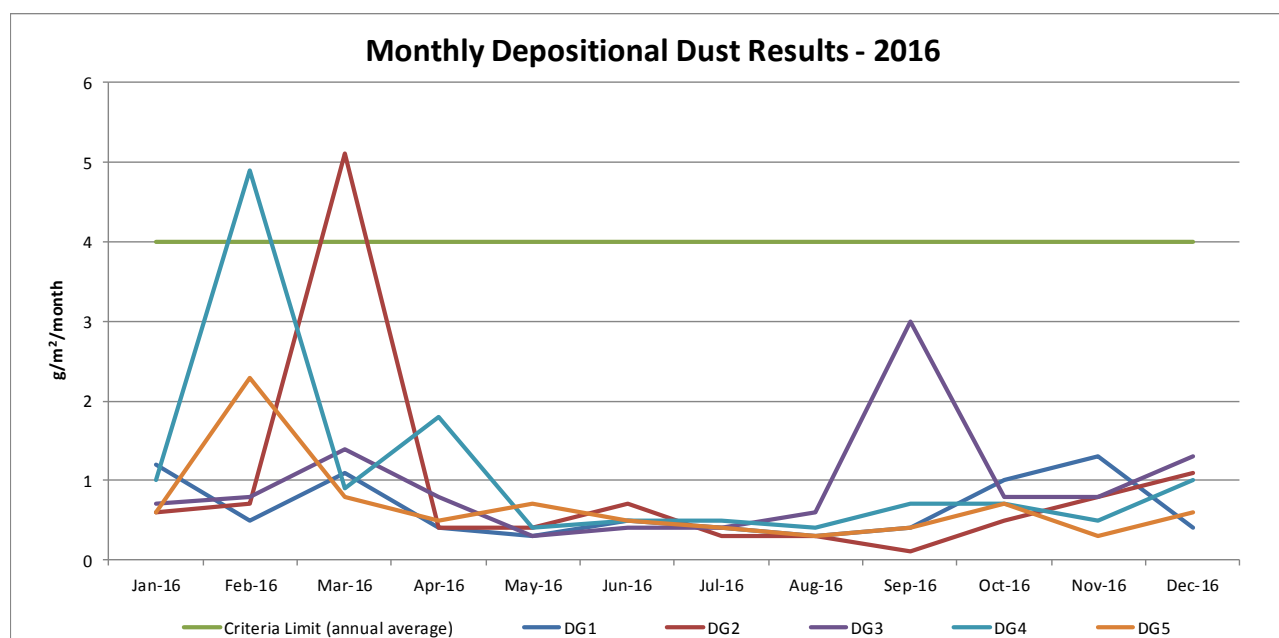


Figure 3.1: Monthly Depositional Dust Results in 2016

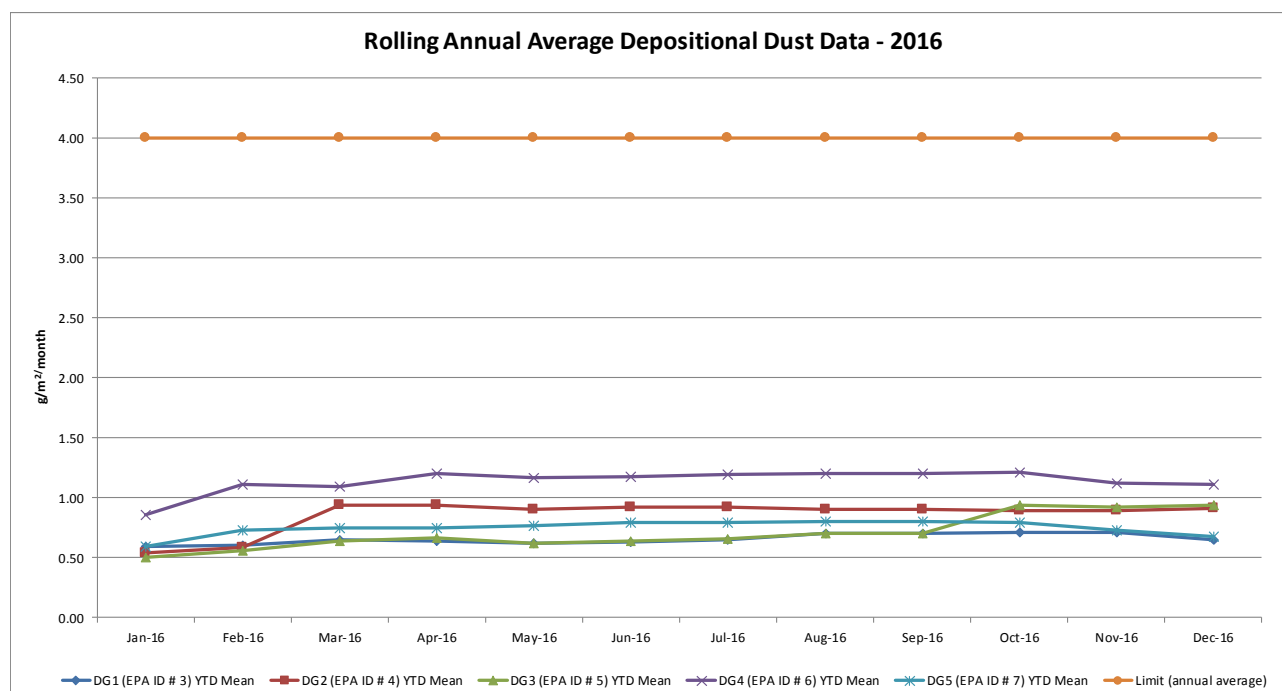


Figure 3.2: Rolling annual average depositional dust results (2016)

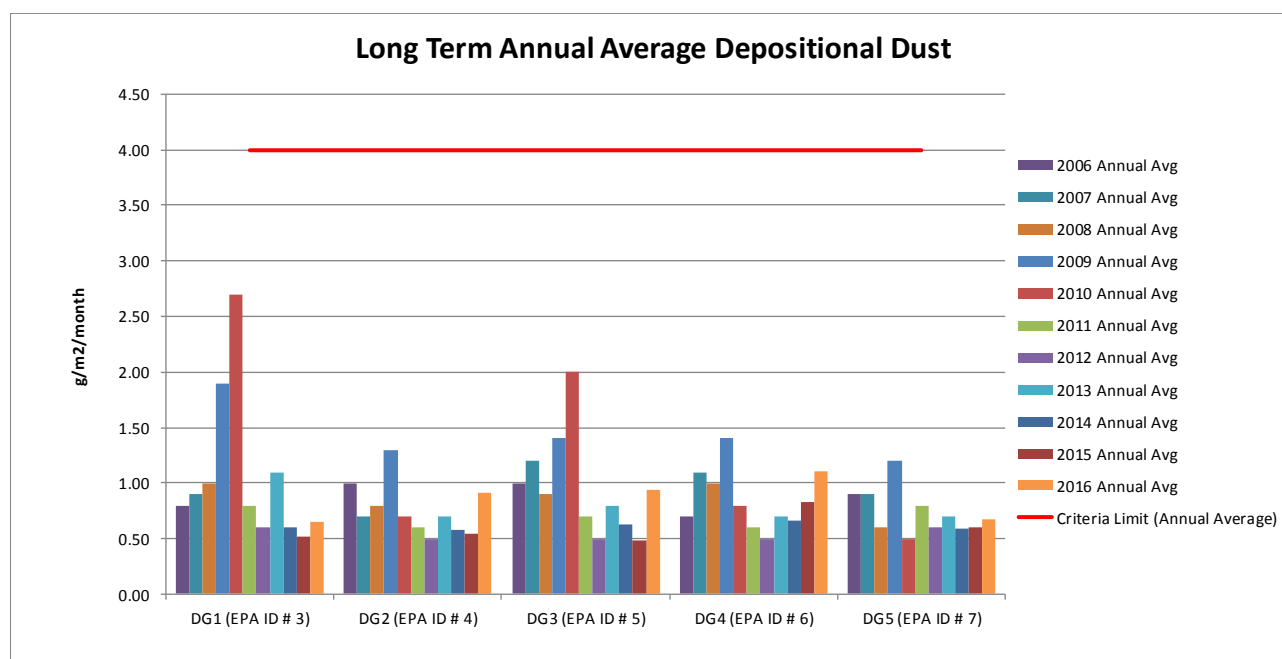


Figure 3.3: Long term annual average depositional dust results (2006 - 2016)

Air quality monitoring results in the 2016 reporting period show that air monitoring criteria has been met and the recorded levels do not exceed the prescribed maximum increase in deposited dust levels of $2\text{g/m}^2/\text{month}$ or maximum level of $4\text{mg/m}^2/\text{month}$, with all average annual results below $1.2\text{g/m}^2/\text{month}$.

A comparison of annual average results from 2016 compared with prior years is provided in **Figure 3.3**. Results have remained at low levels but have increased in comparison to the 2015 results, the most significant annual average changes (DG2, DG3 and DG4) do however appear to be influenced by a single higher result in one month of the year (as evident in **Figure 3.1**). While this may have been attributable to

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increased activity on site as part of the recommencement of operations the annual averages are still well below the regulatory criteria.

The air quality monitoring program, in accordance with the approved management plan, was ongoing at the end of the reporting period.

3.2 Erosion and Sediment

Mining operations and significant rainfall events have the potential to cause erosion and/or generate sediment and impact on the surrounding catchment areas. These were unchanged during the reporting period and consist of:

- The exposed areas of the laydown areas, workshop and internal access tracks
- Coal stockpiles and coal handling equipment areas; and
- Vehicle and equipment movements;

The site includes a series of 8 sedimentation based sumps. These are inspected weekly for functionality and maintenance purposes. Identified actions are provided to the relevant site personnel by the site Environment and Community Coordinator or his delegate for completion as required.

Water not managed by the clean water diversion structures enters the sediment ponds or enters the underground drainage system which feeds into Pond 1.

The water draining from the hardstand catchment area reports to the pollution control Pond 1. Pond 1 will if required overflow into Pond 2, which then flows into Pond 3 and then Pond B prior to being discharged from site via LDP001. Total suspended solids are monitored at this point of the final dam prior to release (refer to **Section 2.8** for results).

Runoff from the coal handling and stockpile area is contained by a sedimentation-based sump system that helps capture the coal fines prior to entering sediment Pond 1 below the stockpile. Runoff from this area can contain a significant amount of coal fines due to the nature of the activities. A sedimentation fence was installed on northern end of the stockpile area to minimise the loading on adjacent drive-in sumps. This Pond along with Ponds 2 and 3 also function as primary settling ponds before discharging into Pond B.

Improvements to the existing flocculent system at Mannering Colliery were completed in June 2015 following a field trial to determine the most effective flocculent product (based on site water quality conditions). The system implemented during the 2015 reporting period consists of solid flocculent blocks, situated at four locations leading into, or within, the sediment pond system. The flocculent blocks are situated at the following four locations:

- Pipeline entry of hardstand area catchment into Pond 1;
- Concrete drainage channel from the coal stockpile catchment into Pond 2 (**Photo 1**);
- Outlet of the subsurface drainage system leading into Pond 1; and
- At the outlet of the concrete pipe transferring water into the final dam (Pond B).

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Photo 1. Flocculent block located adjacent the coal stockpile area.

The flocculent locations are shown on the Environmental Management Plan (**Appendix 1**)

The intent of the revised flocculent system is to enable sediment laden water flows during rainfall events to dose the surface water running into the sediment ponds by dispersing small amounts of flocculent as the runoff flow passes across the solid (hydrophilic) flocculent blocks into the sediment dams immediately downstream. The system therefore only operates when sufficient rainfall has fallen to generate surface runoff, and continues to function while ever surface runoff into the sediment dam system continues. As a result the system is largely automated, when it rains it works, and simply requires the inspection and replacement of flocculent blocks as they are consumed. Inspections and maintenance of the flocculent system is completed weekly by environmental management personnel.

There have been no exceedances of the total suspended solids criteria since the implementation of the revised flocculent system.

Both volumetric flow and water quality results from the licenced discharge point continue to be reported on a monthly basis on the LakeCoal Manning website.

3.3 Surface Water Pollution

Monitoring of surface water discharged from LDP001 is undertaken by an external contracting company with sampling occurring monthly and weekly during discharges. **Section 2.8.2** contains monitoring results and discusses water quality, including the total oil and grease monitoring which occurs weekly during discharges.

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3.4 Ground Water Pollution

Water in underground workings is generated from ground water which is released from the strata into mine workings along with process water. The collected water is pumped through an extensive goaf system that allows filtration and settlement. The water is then pumped from the mine into the surface settlement pond systems prior to discharge via EPA licensed discharge point 1 (LDP-001).

No evidence of groundwater pollution and no known groundwater pollution has been identified at Mannering Colliery during the reporting period.

3.5 Contaminated Polluted Land

The Colliery has a number of primary diesel and oil storages, all of which are bunded. There were no significant spills during the reporting period or reports of polluted land.

A Phase One Environmental Site Assessment (ESA) has been completed which identified areas of potential contamination. Phase 2 investigations and assessment are likely to be carried out over these areas during the decommissioning stage at end of mine life. Potential areas of concern are the land surrounding the diesel storage and the surface workshop. The development of a Remedial Action Plan following the Phase 2 assessment would occur, if required, based on the results from the site assessment.

3.6 Threatened Flora

There was no known impacts to threatened flora during the reporting period as a result of the Colliery's operations.

3.7 Threatened Fauna

There was no known impacts to threatened fauna during the reporting period as a result of the Colliery's operations.

As discussed in **Section 2.3** there was no significant changes to the existing infrastructure. The "site footprint" remained unchanged during the reporting year, that is, no clearing works were undertaken that would have impacted threatened fauna species.

3.8 Weed Management

Weed management was ongoing throughout the reporting period.

Appropriately trained and qualified contractors were engaged to manage the weeds in the areas of the surface operations, primarily through herbicide application via vehicle mounted "quick spray" units.

LakeCoal engaged Kleinfelder Australia during the reporting period to develop a weed action plan for LakeCoal sites. A weed survey across the site was completed during the reporting period and a weed action plan has been developed for the next reporting period.

LakeCoal will be progressing the actions and recommendations from the plan during the 2017 reporting period and will report the results in the next Annual Review.

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3.9 Blasting

There was no surface blasting undertaken during the reporting period. Where required blasting was undertaken underground as part of the development of the link road project.

3.10 Operational Noise

Quarterly noise monitoring was conducted throughout the reporting period to March 2016, after which time the frequency of noise monitoring was increased to monthly in accordance with the requirements of PA06_0311 relating to the commencement of underground mining operations.

Noise monitoring locations are shown **Figure 3.4**, and results of the attended noise monitoring at these locations are presented in **Table 3.2** to **Table 3.19**.

There was one exceedance of the noise monitoring criteria at Mannering Colliery during the reporting period. On 12 August 2016 LakeCoal was advised by its independent noise monitoring consultant (Global Acoustics) that they had recorded a 3dB exceedance of the site's LAeq15 Minute noise criteria at receiver RA2 (Macquarie Shores Retirement Village) during the evening monitoring on 11 August 2016 for Mannering Colliery. During the monitoring Global Acoustics could not attribute the noise emissions to a particular source on the site and described the noise as a general continuum in their notification. A summary of the monitoring results and the exceedance value are provided below.

Table 1.1 : LAeq,15minute GENERATED BY MC AGAINST IMPACT ASSESSMENT CRITERIA

Location	Date and Time	Wind Speed (m/s)	VTG (deg/C per 100m) ¹	LAeq,15min Criterion dB	Criterion Applies? ^{2,3}	MC LAeq,15min dB ⁴	Exceedance
RA2	18:25 11/08/2016	0.9	3.0	39	Yes	42	3
RA2	22:23 11/08/2016	0.9	3.0	39	Yes	NM	Nil

Notes:

1. Sigma theta data used to calculate Vertical Temperature Gradient (VTG) in accordance with procedures detailed in the INP;
2. Noise emission limits do not apply for winds greater than 3 metres per second (at a height of 10 metres); or temperature inversion conditions greater than 4°C/100m;
3. These are results for Mannering Colliery (MC) in the absence of all other noise sources; and
4. Bolded results in red are those greater than the relevant criterion (if applicable).

It should be noted that there were no community complaints received as a result of the elevated noise level recorded.

Following the notification of the exceedance LakeCoal notified the NSW Department of Planning Environment (Compliance Division) and the Environmental Protection Authority of the exceedance via email on 12 August 2016. In accordance with the sites Noise Monitoring Program the following actions were also undertaken by LakeCoal as a result of noise exceedance:

- Follow up noise monitoring was undertaken at RA2 approximately 4 hours later at 10:23pm. The results from the night time monitoring undertaken at RA2 indicated that there was no sustained exceedance of the noise levels from the operation and that the results were within the noise criteria limits as specified within PA 06_0311.
- A review of the sites operational management system and consultation with operational personnel at Mannering Colliery was undertaken on the 12th and 15th of August 2016 to assist with determining the potential noise sources occurring at the time. The review concluded that the following activities were occurring around the time the exceedance was recorded:

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- ➔ coal transfer (conveyors), crushing and transport to VPPS via the Manning coal clearance system.
- ➔ general pit top activities

Following the investigation by LakeCoal in consultation with Global Acoustics, LakeCoal was unable to definitively identify a specific noise source that had contributed to the elevated result at RA2 during the evening period on 11 August 2016. Based on feedback provided by Global Acoustics acoustic technician at the time of the monitoring it was concluded that the noise was most likely attributable to general mine noise associated with Manning's coal clearance system as it was audible as a general continuum.

It was also noted that the noise levels were most likely elevated as a result of unfavourable weather conditions at the time of the monitoring which are characteristic of the winter period.



Figure 3.4: Noise Monitoring Locations

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Table 3.2: LAeq (15 min) Noise Monitoring Results – Quarter 1 2016

Location	Date And Time	Wind Speed (m/s)	VTG (°C per 100m) ¹	LAeq Criteria dB	Criteria Applies? ²	MC LAeq dB ^{3,4,5}	Exceedance ^{4,5}
Day							
RA1	24/03/2016 09:33	1.4	-2	44	Yes	IA	No
RA2	24/03/2016 11:37	1.6	-2	43	Yes	IA	No
RA3	24/03/2016 10:01	1.1	-2	40	Yes	IA	No
Evening							
RA1	29/03/2016 18:00	1.5	3	44	Yes	IA	No
RA2	28/03/2016 18:53	1.2	3	43	Yes	IA	No
RA3	29/03/2016 18:21	1.3	3	40	Yes	IA	No
Night							
RA1	30/03/2016 04:37	1.1	0.5	35	Yes	IA	No
RA2	29/03/2016 03:20	1.5	3	43	Yes	NM	No
RA3	30/03/2016 00:27	1.3	3	40	Yes	IA	No

Notes:

1. Sigma theta data used to calculate Vertical Temperature Gradient (VTG) in accordance with procedures detailed in the INP;
2. Noise emission limits do not apply for winds greater than 3 metres per second (at a height of 10 metres); or temperature inversion conditions greater than 4°C/100m;
3. These are results for MC in the absence of all other noise sources;
4. Bold results in red are those greater than the relevant criterion (if applicable); and
5. NA in exceedance column means atmospheric conditions outside conditions specified in project approval and so criterion is not applicable.

Table 3.3: LA1 (1 min) Noise Monitoring Results – Quarter 1 2016

Location	Date And Time	Wind Speed (m/s)	VTG (°C per 100m) ¹	LA1,1min Criteria dB	Criteria Applies? ²	MC LA1,1min dB ^{3,4,5}	Exceedance ⁵
Night							
RA1	30/03/2016 04:37	1.1	0.5	49	Yes	IA	No
RA2	29/03/2016 03:20	1.5	3	50	Yes	NM	No
RA3	30/03/2016 00:27	1.3	3	52	Yes	IA	No

Notes:

1. Sigma theta data used to calculate Vertical Temperature Gradient (VTG) in accordance with procedures detailed in the INP;
2. Noise emission limits do not apply for winds greater than 3 metres per second (at a height of 10 metres); or temperature inversion conditions greater than 4°C/100m;
3. These are results for MC in the absence of all other noise sources;
4. Bold results in red are those greater than the relevant criterion (if applicable); and
5. NA in exceedance column means atmospheric conditions outside conditions specified in project approval and so criterion is not applicable.

Table 3.4: LAeq (15 min) Noise Monitoring Results – May 2016

Location	Date And Time	Wind Speed (m/s)	VTG (°C per 100m) ¹	LAeq Criteria dB	Criteria Applies? ²	MC LAeq dB ^{3,4,5}	Exceedance ⁵
Day							
RA1	30/05/2016 11:34	2.2	-2	42	Yes	IA	Nil
RA2	30/05/2016 12:03	2.4	-2	39	Yes	IA	Nil
RA3	30/05/2016 12:32	2.6	-2	39	Yes	IA	Nil
Evening							
RA1	25/05/2016 19:06	0.2	3	42	Yes	IA	Nil
RA2	25/05/2016 19:36	0.7	3	39	Yes	IA	Nil
RA3	25/05/2016 20:00	0.3	3	39	Yes	IA	Nil
Night							
RA1	25/05/2016 22:02	0.4	3	41	Yes	IA	Nil
RA2	25/05/2016 22:22	0.5	0.5	39	Yes	IA	Nil
RA3	25/05/2016 22:41	0.4	3	39	Yes	IA	Nil

Notes:

1. Sigma theta data used to calculate Vertical Temperature Gradient (VTG) in accordance with procedures detailed in the INP;
2. Noise emission limits do not apply for winds greater than 3 metres per second (at a height of 10 metres); or temperature inversion conditions greater than 4°C/100m;
3. These are results for MC in the absence of all other noise sources;
4. Bold results in red are those greater than the relevant criterion (if applicable); and
5. NA in exceedance column means atmospheric conditions outside conditions specified in project approval and so criterion is not applicable.

Table 3.5: LA1 (1 min) Noise Monitoring Results – May 2016

Location	Date And Time	Wind Speed (m/s)	VTG (°C per 100m) ¹	LA1,1min Criteria dB	Criteria Applies? ²	MC LA1,1min dB ^{3,4,5}	Exceedance ⁵
Night							
RA1	25/05/2016 22:02	0.4	3	49	Yes	IA	Nil
RA2	25/05/2016 22:22	0.5	0.5	47	Yes	IA	Nil
RA3	25/05/2016 22:41	0.4	3	49	Yes	IA	Nil

Notes:

1. Sigma theta data used to calculate Vertical Temperature Gradient (VTG) in accordance with procedures detailed in the INP;
2. Noise emission limits do not apply for winds greater than 3 metres per second (at a height of 10 metres); or temperature inversion conditions greater than 4°C/100m;
3. These are results for MC in the absence of all other noise sources;
4. Bold results in red are those greater than the relevant criterion (if applicable); and
5. NA in exceedance column means atmospheric conditions outside conditions specified in project approval and so criterion is not applicable.

Table 3.6: LAeq (15 min) Noise Monitoring Results – June 2016

Location	Date And Time	Wind Speed (m/s)	VTG (°C per 100m) ¹	LAeq Criteria dB	Criteria Applies? ²	MC LAeq dB ^{3,4,5}	Exceedance ⁴ ⁵
Day							
RA1	29/06/2016 11:07	2.0	-1.8	42	Yes	IA	Nil
RA2	29/06/2016 11:43	1.9	-1.8	39	Yes	IA	Nil
RA3	29/06/2016 12:10	2.0	-1.8	39	Yes	IA	Nil
Evening							
RA1	28/06/2016 18:21	0.6	0.5	42	Yes	IA	Nil
RA2	28/06/2016 18:44	0.9	-1.0	39	Yes	IA	Nil
RA3	28/06/2016 19:03	0.9	-1.0	39	Yes	IA	Nil
Night							
RA1	29/06/2016 01:33	0.3	3.0	41	Yes	IA	Nil
RA2	29/06/2016 00:43	1.3	0.5	39	Yes	IA	Nil
RA3	29/06/2016 00:20	0.8	3.0	39	Yes	IA	Nil

Notes:

1. Sigma theta data used to calculate Vertical Temperature Gradient (VTG) in accordance with procedures detailed in the INP;
2. Noise emission limits do not apply for winds greater than 3 metres per second (at a height of 10 metres); or temperature inversion conditions greater than 4°C/100m;
3. These are results for MC in the absence of all other noise sources;
4. Bold results in red are those greater than the relevant criterion (if applicable); and
5. NA in exceedance column means atmospheric conditions outside conditions specified in project approval and so criterion is not applicable.

Table 3.7: LA1 (1 min) Noise Monitoring Results – June 2016

Location	Date And Time	Wind Speed (m/s)	VTG (°C per 100m) ¹	LA1,1min Criteria dB	Criteria Applies? ²	MC LA1,1min dB ^{3,4,5}	Exceedance ⁵
RA1	29/06/2016 01:33	0.3	3.0	49	Yes	IA	Nil
RA2	29/06/2016 00:43	1.3	0.5	47	Yes	IA	Nil
RA3	29/06/2016 00:20	0.8	3.0	49	Yes	IA	Nil

Notes:

1. Sigma theta data used to calculate Vertical Temperature Gradient (VTG) in accordance with procedures detailed in the INP;
2. Noise emission limits do not apply for winds greater than 3 metres per second (at a height of 10 metres); or temperature inversion conditions greater than 4°C/100m;
3. These are results for MC in the absence of all other noise sources;
4. Bold results in red are those greater than the relevant criterion (if applicable); and
5. NA in exceedance column means atmospheric conditions outside conditions specified in project approval and so criterion is not applicable.

Table 3.8: LAeq (15 min) Noise Monitoring Results – July 2016

Location	Date And Time	Wind Speed (m/s)	VTG (°C per 100m) ¹	LAeq Criteria dB	Criteria Applies? ²	MC LAeq dB ^{3,4,5}	Exceedance ⁴ ⁵
Day							
RA1	18/07/2016 13:59	2.2	-2.0	42	Yes	IA	Nil
RA2	18/07/2016 14:24	1.7	-2.0	39	Yes	IA	Nil
RA3	18/07/2016 14:51	1.9	-2.0	39	Yes	IA	Nil
Evening							
RA1	27/07/2016 20:50	1.2	3.0	42	Yes	IA	Nil
RA2	27/07/2016 21:14	0.7	3.0	39	Yes	IA	Nil
RA3	27/07/2016 21:37	0.4	3.0	39	Yes	IA	Nil
Night							
RA1	27/07/2016 22:02	0.3	3.0	41	Yes	IA	Nil
RA2	27/07/2016 22:22	0.2	3.0	39	Yes	IA	Nil
RA3	27/07/2016 22:41	1.2	0.5	39	Yes	IA	Nil

Notes:

1. Sigma theta data used to calculate Vertical Temperature Gradient (VTG) in accordance with procedures detailed in the INP;
2. Noise emission limits do not apply for winds greater than 3 metres per second (at a height of 10 metres); or temperature inversion conditions greater than 4°C/100m;
3. These are results for MC in the absence of all other noise sources;
4. Bold results in red are those greater than the relevant criterion (if applicable); and
5. NA in exceedance column means atmospheric conditions outside conditions specified in project approval and so criterion is not applicable.

Table 3.9: LA1 (1 min) Noise Monitoring Results – July 2016

Location	Date And Time	Wind Speed (m/s)	VTG (°C per 100m) ¹	LA1,1min Criteria dB	Criteria Applies? ²	MC LA1,1min dB ^{3,4,5}	Exceedance ⁵
RA1	27/07/2016 22:02	0.3	3.0	49	Yes	IA	Nil
RA2	27/07/2016 22:22	0.2	3.0	47	Yes	IA	Nil
RA3	27/07/2016 22:41	1.2	0.5	49	Yes	IA	Nil

Notes:

1. Sigma theta data used to calculate Vertical Temperature Gradient (VTG) in accordance with procedures detailed in the INP;
2. Noise emission limits do not apply for winds greater than 3 metres per second (at a height of 10 metres); or temperature inversion conditions greater than 4°C/100m;
3. These are results for MC in the absence of all other noise sources;
4. Bold results in red are those greater than the relevant criterion (if applicable); and
5. NA in exceedance column means atmospheric conditions outside conditions specified in project approval and so criterion is not applicable.

Table 3.10: LAeq (15 min) Noise Monitoring Results – August 2016

Location	Date And Time	Wind Speed (m/s)	VTG (°C per 100m) ¹	LAeq Criteria dB	Criteria Applies? ²	MC LAeq dB ^{3,4,5}	Exceedance ⁵
Day							
RA1	12/08/2016 10:24	1.5	-2.0	42	Yes	IA	Nil
RA2	12/08/2016 10:49	1.8	-2.0	39	Yes	NM	Nil
RA3	12/08/2016 11:16	1.1	-2.0	39	Yes	IA	Nil
Evening							
RA1	11/08/2016 18:00	1.0	0.5	42	Yes	IA	Nil
RA2	11/08/2016 18:25	0.9	3.0	39	Yes	42	3
RA3	11/08/2016 18:47	0.8	0.5	39	Yes	NM	Nil
Night							
RA1	11/08/2016 22:00	1.1	3.0	41	Yes	IA	Nil
RA2	11/08/2016 22:23	1.2	3.0	39	Yes	NM	Nil
RA3	11/08/2016 22:45	1.3	3.0	39	Yes	NM	Nil

Notes:

1. Sigma theta data used to calculate Vertical Temperature Gradient (VTG) in accordance with procedures detailed in the INP;
2. Noise emission limits do not apply for winds greater than 3 metres per second (at a height of 10 metres); or temperature inversion conditions greater than 4°C/100m;
3. These are results for MC in the absence of all other noise sources;
4. Bold results in red are those greater than the relevant criterion (if applicable); and
5. NA in exceedance column means atmospheric conditions outside conditions specified in project approval and so criterion is not applicable.

Table 3.11: LA1 (1 min) Noise Monitoring Results – August 2016

Location	Date And Time	Wind Speed (m/s)	VTG (°C per 100m) ¹	LA1,1min Criteria dB	Criteria Applies? ²	MC LA1,1min dB ^{3,4,5}	Exceedance ⁵
RA1	11/08/2016 22:00	1.1	3.0	49	Yes	IA	Nil
RA2	11/08/2016 22:23	1.2	3.0	47	Yes	NM	Nil
RA3	11/08/2016 22:45	1.3	3.0	49	Yes	NM	Nil

Notes:

1. Sigma theta data used to calculate Vertical Temperature Gradient (VTG) in accordance with procedures detailed in the INP;
2. Noise emission limits do not apply for winds greater than 3 metres per second (at a height of 10 metres); or temperature inversion conditions greater than 4°C/100m;
3. These are results for MC in the absence of all other noise sources;
4. Bold results in red are those greater than the relevant criterion (if applicable); and
5. NA in exceedance column means atmospheric conditions outside conditions specified in project approval and so criterion is not applicable.

Table 3.12: LAeq (15 min) Noise Monitoring Results – September 2016

Location	Start Date And Time	Wind Speed (m/s)	VTG (°C per 100m) ¹	LAeq Criteria dB	Criteria Applies? ²	MC LAeq dB ^{3,4,5}	Exceedance ^{4,5}
<i>Day</i>							
RA1	28/09/2016 12:53	3.0	-2.0	42	Yes	IA	Nil
RA2	28/09/2016 11:05	2.5	-2.0	39	Yes	IA	Nil
RA3	28/09/2016 11:26	3.0	-2.0	39	Yes	IA	Nil
<i>Evening</i>							
RA1	27/09/2016 18:23	2.6	3.0	42	No	IA	NA
RA2	27/09/2016 18:55	2.7	0.5	39	Yes	IA	Nil
RA3	27/09/2016 19:17	2.1	3.0	39	No	IA	NA
<i>Night</i>							
RA1	27/09/2016 23:58	0.4	3.0	41	Yes	IA	Nil
RA2	28/09/2016 00:21	0.3	3.0	39	Yes	IA	Nil
RA3	28/09/2016 00:45	0.7	3.0	39	Yes	IA	Nil

Notes:

1. Sigma theta data used to calculate Vertical Temperature Gradient (VTG) in accordance with procedures detailed in the INP;
2. In accordance with Appendix 4A of the Project Approval, noise emission limits do not apply for wind speeds greater than 3m/s at 10 metres above ground level; stability category F temperature inversion conditions and wind speeds greater than 2m/s at 10m above ground level; or stability category G temperature inversion conditions;
3. These are results for MC in the absence of all other noise sources;
4. Bold results in red are those greater than the relevant criterion (if applicable); and
5. NA in exceedance column means atmospheric conditions outside conditions specified in project approval and so criterion is not applicable.

Table 3.13: LA1 (1 min) Noise Monitoring Results – September 2016

Location	Start Date And Time	Wind Speed (m/s)	VTG (°C per 100m) ¹	LA1,1min Criteria dB	Criteria Applies? ²	MC LA1,1min dB ^{3,4,5}	Exceedance ⁵
RA1	27/09/2016 23:58	0.4	3.0	49	Yes	IA	Nil
RA2	28/09/2016 00:21	0.3	3.0	47	Yes	IA	Nil
RA3	28/09/2016 00:45	0.7	3.0	49	Yes	IA	Nil

Notes:

1. Sigma theta data used to calculate Vertical Temperature Gradient (VTG) in accordance with procedures detailed in the INP;
2. In accordance with Appendix 4A of the Project Approval, noise emission limits do not apply for wind speeds greater than 3m/s at 10 metres above ground level; stability category F temperature inversion conditions and wind speeds greater than 2m/s at 10m above ground level; or stability category G temperature inversion conditions;
3. These are results for MC in the absence of all other noise sources;
4. Bold results in red are those greater than the relevant criterion (if applicable); and
5. NA in exceedance column means atmospheric conditions outside conditions specified in project approval and so criterion is not applicable.

Table 3.14: LAeq (15 min) Noise Monitoring Results – October 2016

Location	Start Date And Time	Wind Speed (m/s)	VTG (°C per 100m) ¹	LAeq Criteria dB	Criteria Applies? ²	MC LAeq dB ^{3,4,5}	Exceedance ^{4,5}
<i>Day</i>							
RA1	24/10/2016 10:18	1.9	-2.0	42	Yes	IA	Nil
RA2	24/10/2016 10:42	2.4	-2.0	39	Yes	IA	Nil
RA3	24/10/2016 11:10	2.1	-2.0	39	Yes	IA	Nil
<i>Evening</i>							
RA1	20/10/2016 20:18	4.4	-1.0	42	No	IA	NA
RA2	20/10/2016 20:42	3.1	0.5	39	No	IA	NA
RA3	20/10/2016 21:06	3.5	-1.0	39	No	IA	NA
<i>Night</i>							
RA1	20/10/2016 22:00	3.0	-1.0	41	Yes	IA	Nil
RA2	20/10/2016 22:24	1.8	3.0	39	Yes	IA	Nil
RA3	20/10/2016 22:47	2.0	3.0	39	Yes	IA	Nil

Notes:

1. Sigma theta data used to calculate Vertical Temperature Gradient (VTG) in accordance with procedures detailed in the INP;
2. In accordance with Appendix 4A of the Project Approval, noise emission limits do not apply for wind speeds greater than 3m/s at 10 metres above ground level; stability category F temperature inversion conditions and wind speeds greater than 2m/s at 10m above ground level; or stability category G temperature inversion conditions;
3. These are results for MC in the absence of all other noise sources;
4. Bold results in red are those greater than the relevant criterion (if applicable); and
5. NA in exceedance column means atmospheric conditions outside conditions specified in project approval and so criterion is not applicable.

Table 3.15: LA1 (1 min) Noise Monitoring Results – October 2016

Location	Start Date And Time	Wind Speed (m/s)	VTG (°C per 100m) ¹	LA1,1min Criteria dB	Criteria Applies? ²	MC LA1,1min dB ^{3,4,5}	Exceedance ⁵
RA1	20/10/2016 22:00	3.0	-1.0	49	Yes	IA	Nil
RA2	20/10/2016 22:24	1.8	3.0	47	Yes	IA	Nil
RA3	20/10/2016 22:47	2.0	3.0	49	Yes	IA	Nil

Notes:

1. Sigma theta data used to calculate Vertical Temperature Gradient (VTG) in accordance with procedures detailed in the INP;
2. In accordance with Appendix 4A of the Project Approval, noise emission limits do not apply for wind speeds greater than 3m/s at 10 metres above ground level; stability category F temperature inversion conditions and wind speeds greater than 2m/s at 10m above ground level; or stability category G temperature inversion conditions;
3. These are results for MC in the absence of all other noise sources;
4. Bold results in red are those greater than the relevant criterion (if applicable); and
5. NA in exceedance column means atmospheric conditions outside conditions specified in project approval and so criterion is not applicable.

Table 3.16: LAeq (15 min) Noise Monitoring Results – November 2016

Location	Start Date And Time	Wind Speed (m/s)	VTG (°C per 100m) ¹	LAeq Criteria dB	Criteria Applies? ²	MC LAeq dB ^{3,4,5}	Exceedance ^{4,5}
<i>Day</i>							
RA1	25/11/2016 10:45	1.3	-2	42	Yes	IA	Nil
RA2	25/11/2016 11:08	1.5	-2	39	Yes	IA	Nil
RA3	25/11/2016 11:30	2.1	-2	39	Yes	IA	Nil
<i>Evening</i>							
RA1	24/11/2016 18:24	2.5	-2	42	Yes	IA	Nil
RA2	24/11/2016 19:07	1.5	3	39	Yes	IA	Nil
RA3	24/11/2016 19:27	1.3	3	39	Yes	IA	Nil
<i>Night</i>							
RA1	25/11/2016 01:37	0.6	-1	41	Yes	IA	Nil
RA2	24/11/2016 23:22	0.4	3	39	Yes	IA	Nil
RA3	24/11/2016 23:42	0.7	0.5	39	Yes	IA	Nil

Notes:

1. Sigma theta data used to calculate Vertical Temperature Gradient (VTG) in accordance with procedures detailed in the INP;
2. In accordance with Appendix 4A of the Project Approval, noise emission limits do not apply for wind speeds greater than 3m/s at 10 metres above ground level; stability category F temperature inversion conditions and wind speeds greater than 2m/s at 10m above ground level; or stability category G temperature inversion conditions;
3. These are results for MC in the absence of all other noise sources;
4. Bold results in red are those greater than the relevant criterion (if applicable); and
5. NA in exceedance column means atmospheric conditions outside conditions specified in project approval and so criterion is not applicable.

Table 3.17: LA1 (1 min) Noise Monitoring Results – November 2016

Location	Start Date And Time	Wind Speed (m/s)	VTG (°C per 100m) ¹	LA1,1min Criteria dB	Criteria Applies? ²	MC LA1,1min dB ^{3,4,5}	Exceedance ⁵
RA1	25/11/2016 01:37	0.6	-1	49	Yes	IA	Nil
RA2	24/11/2016 23:22	0.4	3	47	Yes	IA	Nil
RA3	24/11/2016 23:42	0.7	0.5	49	Yes	IA	Nil

Notes:

1. Sigma theta data used to calculate Vertical Temperature Gradient (VTG) in accordance with procedures detailed in the INP;
2. In accordance with Appendix 4A of the Project Approval, noise emission limits do not apply for wind speeds greater than 3m/s at 10 metres above ground level; stability category F temperature inversion conditions and wind speeds greater than 2m/s at 10m above ground level; or stability category G temperature inversion conditions;
3. These are results for MC in the absence of all other noise sources;
4. Bold results in red are those greater than the relevant criterion (if applicable); and
5. NA in exceedance column means atmospheric conditions outside conditions specified in project approval and so criterion is not applicable.

Table 3.18: LAeq (15 min) Noise Monitoring Results – December 2016

Location	Start Date And Time	Wind Speed (m/s)	VTG (°C per 100m) ¹	LAeq Criteria dB	Criteria Applies? ²	MC LAeq dB ^{3,4,5}	Exceedance ^{4,5}
<i>Day</i>							
RA1	20/12/2016 10:47	2.6	-2.0	42	Yes	IA	Nil
RA2	20/12/2016 11:10	2.9	-2.0	39	Yes	IA	Nil
RA3	20/12/2016 11:33	3.2	-1.8	39	No	IA	NA
<i>Evening</i>							
RA1	19/12/2016 20:18	3.7	-1.0	42	No	IA	NA
RA2	19/12/2016 20:43	3.2	0.5	39	No	IA	NA
RA3	19/12/2016 21:07	2.7	0.5	39	Yes	IA	Nil
<i>Night</i>							
RA1	19/12/2016 22:01	3.1	-1.0	41	No	IA	NA
RA2	19/12/2016 22:25	4.0	-1.0	39	No	IA	NA
RA3	19/12/2016 22:48	3.2	0.5	39	No	IA	NA

Notes:

1. Sigma theta data used to calculate Vertical Temperature Gradient (VTG) in accordance with procedures detailed in the INP;
2. In accordance with Appendix 4A of the Project Approval, noise emission limits do not apply for wind speeds greater than 3m/s at 10 metres above ground level; stability category F temperature inversion conditions and wind speeds greater than 2m/s at 10m above ground level; or stability category G temperature inversion conditions;
3. These are results for MC in the absence of all other noise sources;
4. Bold results in red are those greater than the relevant criterion (if applicable); and
5. NA in exceedance column means atmospheric conditions outside conditions specified in project approval and so criterion is not applicable.

Table 3.19: LA1 (1 min) Noise Monitoring Results – December 2016

Location	Start Date And Time	Wind Speed (m/s)	VTG (°C per 100m) ¹	LA1,1min Criteria dB	Criteria Applies? ²	MC LA1,1min dB ^{3,4,5}	Exceedance ⁵
RA1	19/12/2016 22:01	3.1	-1.0	49	No	IA	NA
RA2	19/12/2016 22:25	4.0	-1.0	47	No	IA	NA
RA3	19/12/2016 22:48	3.2	0.5	49	No	IA	NA

Notes:

1. Sigma theta data used to calculate Vertical Temperature Gradient (VTG) in accordance with procedures detailed in the INP;
2. In accordance with Appendix 4A of the Project Approval, noise emission limits do not apply for wind speeds greater than 3m/s at 10 metres above ground level; stability category F temperature inversion conditions and wind speeds greater than 2m/s at 10m above ground level; or stability category G temperature inversion conditions;
3. These are results for MC in the absence of all other noise sources;
4. Bold results in red are those greater than the relevant criterion (if applicable); and
5. NA in exceedance column means atmospheric conditions outside conditions specified in project approval and so criterion is not applicable.

3.11 Visual, Stray Light

Mannering Colliery undertook an external lighting audit during the reporting period following a recommendation from the independent environmental compliance audit in May 2016. The lighting audit concluded that all lighting at Mannering Colliery complies with the Australian Standard 4282 – Control of Obtrusive Lighting Effects of outdoor lighting.

In accordance with the standard no lights are directed offsite or installed to shine above the horizontal. In addition the nearest residents to the site are approximately 800m from the site. No lighting or visual amenity complaints were received during the reporting period and no additional lighting was installed during the report period.

3.12 Aboriginal Heritage

As there have been changes to the operational areas on site during the reporting period and there are no identified Aboriginal sites within the pit top areas, there has been no potential for activities at Mannering Colliery to negatively impact on Aboriginal sites during the reporting period.

3.13 Natural Heritage

The Non-Indigenous Cultural Heritage Management Plan identifies that there are no items of cultural significance within the pit top area, and identifies the following items of heritage significance within the Project Approval area;

- Morisset Hospital Precinct (listed under the NSW Heritage Act and Lake Macquarie City Council LEP)
- Eaton's Bulk Store (listed under the Wyong Shire Council LEP)

There were no activities undertaken on site that had the potential for impact to either of these heritage features.

3.14 Spontaneous Combustion

Current stockpiling of coal is minimal, therefore reducing the risk of spontaneous combustion occurring within the pit top area.

Underground controls to mitigate risk of spontaneous combustion include:

- The mine has no known recorded spontaneous combustion events in its 50+ year history.
- Spontaneous combustion is considered at the mine design phase.
- The mine has developed Trigger Action Response Plans to identify and manage any deviation from normal operating conditions with respect to indicators of spontaneous combustion.
- The mine monitors gases using a multipoint tube bundle gas analysis system.
- The mine conducts regular underground inspections by Mining Officials.

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Following a request from the Department of Resources and Energy from the 2014 AEMR inspection Manning Colliery undertook a spontaneous combustion review of the small coal stockpiles located on the site ROM stockpile pad.

The review concluded that the risk potential for spontaneous combustion associated with the coal stockpiles was assessed to be low. This determination was based on the following:

- The coal on the stockpile is assumed to be Fassifern Seam coal, since this is the only coal mined at the colliery since the early 1980's. The Fassifern Seam has a medium intrinsic spontaneous combustion reactivity based on R70 self-heating rate testing from the neighbouring Chain Valley Mine (around 3km distance - UniQuest Project No: 00293 Report – August 2012, attached)
- The stockpiles have been insitu for at least 3 years with no known reports or signs of spontaneous combustion.
- The stockpile is and will continue to be regularly inspected.
- Temperature probing of the stockpile undertaken during the reporting period indicated a maximum temperature of less than 25 deg C. The stockpiled coal has a very high moisture content since most stockpiles are water saturated under the surface. These two factors, when combined, significantly reduce the likelihood of the coal self-heating to the point of thermal runaway.

There were no instances of spontaneous combustion during the reporting period.

3.15 Bushfire

There were no instances of bushfire in the vicinity of the site recorded in the reporting period.

LakeCoal has, and will continue to, implement appropriate controls to assist in the management of bushfires that threaten the Operation.

LakeCoal is planning to construct the approved APZ area's as provided in PA06_0311 MOD 3 in the next reporting period.

3.16 Mine Subsidence

Previous subsidence calculations by Centennial Coal using Bord and Pillar mining methods give a subsidence figure of <20mm of cumulative subsidence on the surface.

As a result of the commencement of mining operations associated with the link road project LakeCoal implemented a subsidence monitoring program during the reporting period. Monitoring points were installed around the Vales Point Power Station (VPPS) switchyard in early 2016 prior to commencement of the Link Road Project. Due to the sensitive nature of the infrastructure being undermined, subsidence monitoring was undertaken weekly within a 250m radius of the mining activity, with monthly surveys carried out on the remaining survey marks.

No discernible subsidence impact from the LRP workings was observed during the reporting period. Monthly subsidence surveys continue to be carried out, with the frequency of monitoring to be dropped back to an annual survey after confirming final subsidence results post-mining.

A summary of the survey data from the reporting period is provided in **Table 3.20** below.

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Table 3.20: Subsidence Monitoring Results for Mannerling Colliery

Location		Survey 21/06/2016		Survey 29/07/2016		Survey 5/08/2016		Survey 9/09/2016		Survey 20/12/2016	
Early Warning Line 1	Initial Survey	Survey	Subsidence	Survey	Subsidence	Survey	Subsidence	Survey	Subsidence	Survey	Subsidence
	Average										
BM - A	24.198	24.198	0.000	24.198	0.000	24.198	0.000			24.198	0.000
BM - B	24.812	24.812	-0.001	24.812	0.000	24.812	0.000			24.810	-0.002
VP100	25.811	25.810	-0.002	25.810	-0.001	25.810	-0.001			25.811	0.000
VP101	25.644	25.643	-0.001	25.644	0.000	25.643	-0.001			25.641	-0.003
VP102	24.950	24.950	0.000	24.950	0.000	24.950	0.000			24.948	-0.003
VP103	23.774	23.772	-0.002	23.773	-0.001	23.773	-0.001			23.773	-0.001
VP104	22.609	22.607	-0.002	22.606	-0.002	22.606	-0.002			22.608	-0.001
VP105	21.605	21.603	-0.003	21.603	-0.002	21.603	-0.002			21.605	0.000
VP106	20.819	20.816	-0.003	20.816	-0.003	20.816	-0.003			20.820	0.000
VP107	19.328	19.325	-0.003	19.325	-0.002	19.325	-0.002			19.328	0.000
VP108	18.272	18.271	-0.001	18.271	-0.002	18.270	-0.002			18.273	0.000

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VP109	17.791	17.788	-0.003	17.787	-0.004	17.787	-0.005			17.792	0.001
VP110	17.795	17.796	0.001	17.795	0.000	17.795	0.000			17.797	0.002
VP111	17.837	17.836	-0.001	17.835	-0.002	17.834	-0.003			17.840	0.002
VP112	17.343	17.339	-0.004	17.337	-0.006	17.336	-0.007			17.344	0.001
BM - C	17.486	17.483	-0.003	17.482	-0.004	17.481	-0.004			17.488	0.002
BM - D	17.546	17.546	0.000	17.546	0.000	17.546	0.000			17.546	0.000
Waste WaterTreatment Plant		Survey 21/06/2016		Survey 29/07/2016		Survey 5/08/2016		Survey 9/09/2016		Survey 20/12/2016	
	Initial Survey	Survey	Subsidence	Survey	Subsidence	Survey	Subsidence	Survey	Subsidence	Survey	Subsidence
	Average										
VP208	7.370										
VP209	7.076			7.073	-0.003	7.073	-0.003			7.076	0.000
TW01	10.598	10.598	0.000	10.596	-0.003	10.596	-0.003			10.599	0.001
TW02	9.334			9.332	-0.002	9.332	-0.002			9.335	0.001
TW03	8.004			8.002	-0.002	8.001	-0.003			8.004	0.000
TW04	7.512			7.511	-0.001	7.510	-0.002			7.514	0.002

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TW05	9.985			9.982	-0.002	9.982	-0.003			9.986	0.001
TW06	10.591			10.594	0.002	10.593	0.002			10.596	0.004
TW07	13.158	13.160	0.002	13.158	0.000	13.159	0.001			13.160	0.001
TW08	13.197	13.200	0.003	13.197	0.000	13.198	0.001			13.199	0.002
SP01	12.177	12.177	0.000	12.175	-0.002	12.175	-0.002			12.178	0.001
SP02	12.279	12.279	0.000	12.277	-0.002	12.278	-0.001			12.279	0.000
SP03	12.270	12.271	0.001	12.268	-0.002	12.268	-0.002			12.269	-0.001
SP04	12.186	12.186	0.000	12.184	-0.002	12.183	-0.003			12.187	0.001
Early Warning Line 2 / Road Monitoring Line		Survey 21/06/2016		Survey 29/07/2016		Survey 5/08/2016		Survey 9/09/2016		Survey 20/12/2016	
	Initial Survey	Survey	Subsidence	Survey	Subsidence	Survey	Subsidence	Survey	Subsidence	Survey	Subsidence
	Average										
BM - 'E'	18.588			18.588	0.000	18.588	0.000			18.588	0.000
BM - 'F'	15.618			15.618	0.000	15.618	0.000			15.618	0.000
VP200	13.524			13.525	0.001	13.525	0.002			13.525	0.001
VP201	12.783			12.780	-0.003	12.780	-0.003			12.782	-0.001

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VP202	11.757			11.755	-0.002	11.756	-0.001			11.757	0.000
VP203	10.773			10.771	-0.002	10.771	-0.002			10.769	-0.004
VP204	9.806			9.804	-0.002	9.805	-0.002			9.806	-0.001
VP205	9.181			9.179	-0.003	9.179	-0.002			9.181	0.000
VP206	8.439			8.436	-0.002	8.436	-0.002			8.438	0.000
VP207	7.568			7.565	-0.003	7.564	-0.004			7.568	0.000
VP208	7.370			7.366	-0.003	7.366	-0.004			7.370	0.000
VP209	7.076			7.073	-0.003	7.073	-0.003			7.076	-0.001
VP210	6.523			6.519	-0.004	6.518	-0.005			6.523	0.000
VP211	6.059			6.056	-0.003	6.055	-0.004			6.059	0.000
BM - 'G'	5.670			5.666	-0.004	5.665	-0.005			5.670	0.000
BM - 'H'	5.488			5.485	-0.003	5.485	-0.003			5.487	0.000
BM - 'H1'	4.530			4.530	0.000	4.530	0.000			4.530	0.000
Transgrid Fence Line		Survey 21/06/2016		Survey 29/07/2016		Survey 5/08/2016		Survey 9/09/2016		Survey 20/12/2016	

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	Initial Survey	Survey	Subsidence	Survey	Subsidence	Survey	Subsidence	Survey	Subsidence	Survey	Subsidence
	Average										
VP206	8.439			8.436	-0.003	8.436	-0.003	8.434	-0.005	Machinery movements close to TG-01 to TG-10	
C/P	3.216			3.212	-0.004	3.209	-0.007	3.209	-0.007	3.216	0.000
TG-01	3.217			3.213	-0.004	3.210	-0.008	3.211	-0.006	3.219	0.002
TG-02	3.202			3.199	-0.003	3.195	-0.007	3.197	-0.005	3.205	0.003
TG-03	3.162			3.159	-0.003	3.156	-0.006	3.156	-0.006	3.164	0.002
TG-04	3.166			3.167	0.000	3.163	-0.003	3.165	-0.001	3.166	0.000
TG-05	3.174			3.170	-0.004	3.167	-0.007	3.169	-0.005	3.176	0.002
TG-06	3.043			3.042	-0.001	3.041	-0.002	3.041	-0.002	3.048	0.005
TG-07	3.054			3.055	0.000	3.051	-0.003	3.053	-0.001	3.060	0.005
TG-08	3.925			3.924	-0.001	3.920	-0.004	3.922	-0.003	3.929	0.004
TG-09	4.072			4.070	-0.001	4.069	-0.003	4.068	-0.003	4.074	0.003
TG-10	4.108			4.106	-0.002	4.104	-0.004	4.105	-0.003	4.110	0.002

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TG-11	3.966			3.967	0.001	3.964	-0.003	3.966	0.000	3.969	0.003
TG-12	3.929			3.928	-0.001	3.923	-0.006	3.926	-0.003	3.932	0.002
TG-13	3.723			3.723	0.000	3.719	-0.004	3.720	-0.003	3.724	0.001
TG-14	3.478			3.477	-0.001	3.475	-0.002	3.475	-0.003	3.480	0.002
TG-15	3.347							3.351	0.004	3.355	0.008
TG-16	3.206							3.206	0.001	3.211	0.005
TG-17	3.077							3.082	0.004	3.082	0.005
TG-18	2.973							2.970	-0.003	2.975	0.002
TG-19	2.978							2.979	0.001	2.983	0.005
TG-20	2.970							2.972	0.002	2.975	0.005
TG-21	3.030							3.030	0.000	3.032	0.002
TG-22	2.878							2.875	-0.003	2.880	0.002
TGT-01	8.149					8.146	-0.003	8.146	-0.003	8.152	0.002
TGT-02	7.551					7.546	-0.005	7.547	-0.003	7.550	-0.001
TGT-03	6.518					6.514	-0.004	6.515	-0.003	6.520	0.002

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VPPS Foreshore Line		Survey 21/06/2016		Survey 29/07/2016		Survey 5/08/2016		Survey 9/09/2016		Survey 20/12/2016	
	Initial Survey	Survey	Subsidence	Survey	Subsidence	Survey	Subsidence	Survey	Subsidence	Survey	Subsidence
	Average										
TG-22	2.878							2.875	-0.003	2.880	0.002
VPPS-1	2.790							2.786	-0.004	2.792	0.002
VPPS-2	1.238							1.233	-0.004	1.240	0.002
VPPS-3	0.723							0.718	-0.005	0.725	0.002
VPPS-4	0.662							0.658	-0.004	0.666	0.004
VPPS-5	0.745							0.740	-0.005	0.749	0.004
VPPS-6	0.404							0.398	-0.006	0.408	0.004
VPPS-7	1.580							1.576	-0.004	1.583	0.003
VPPS-8	2.177							2.183	0.006	2.190	0.013
VPPS-9	2.024							2.022	-0.003	2.028	0.004
VPPS-10	1.716							1.713	-0.003	1.720	0.004
VPPS-11	1.596							1.595	0.000	1.602	0.006

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VPPS-12	1.413							1.417	0.004	1.423	0.009
VPPS-13	1.018							1.020	0.002	1.025	0.007
BM 'I'	1.542							1.542	0.000	1.542	0.000
WSS-01	2.154									2.148	-0.006
WSS-02	2.828									2.835	0.007

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An overview of the subsidence monitoring locations is provided in **Figure 3.5** below:

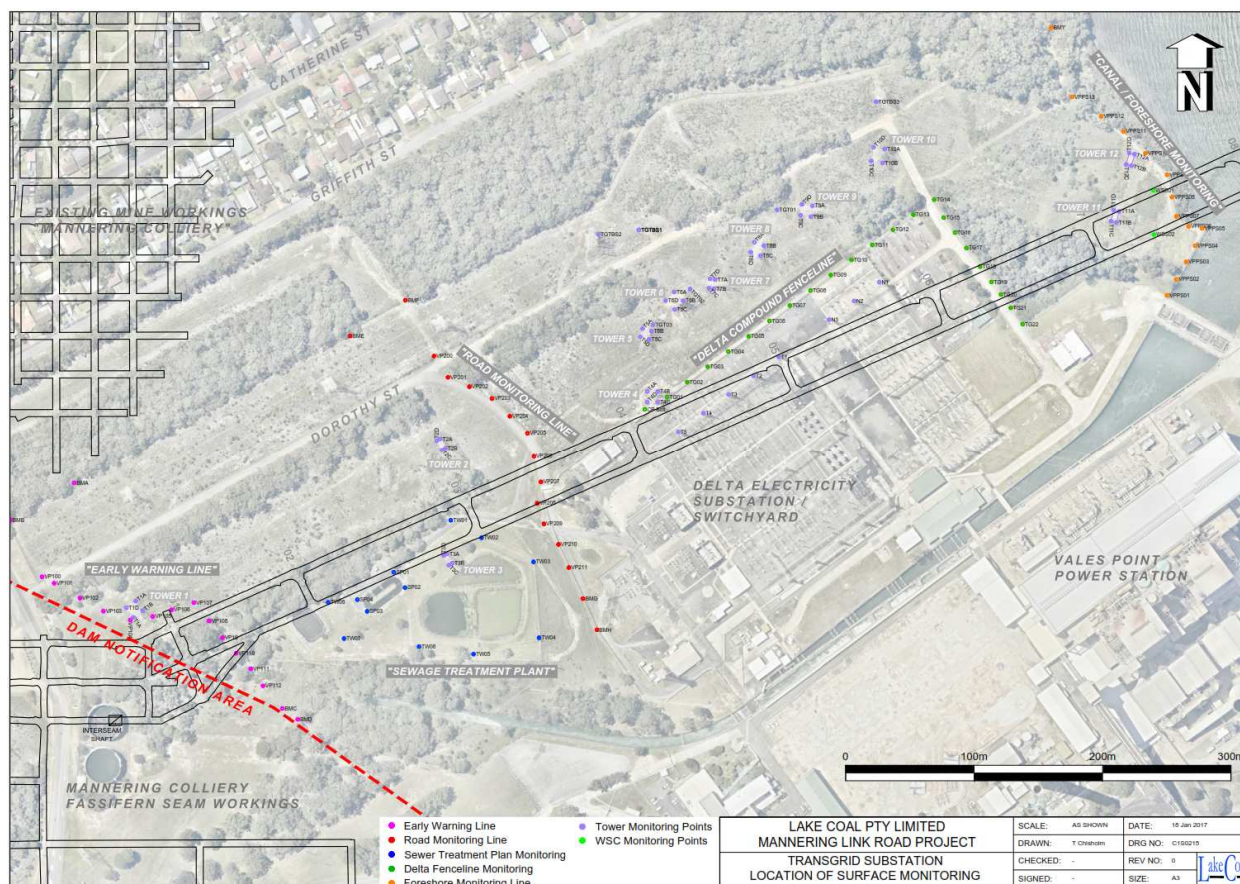


Figure 3.5 – Subsidence monitoring locations associated with the Manning Colliery link road project.

3.17 Hydrocarbon Contamination

All hydrocarbon materials are stored within a dedicated bunded store building, with emergency spill stations located adjacent to the area. Spill stations are checked weekly to ensure they remain adequately stocked and serviced as required by an external contractor.

Training for spill response is provided within the site induction program, which is a prerequisite before undertaking work at Manning Colliery. The Colliery also has a Pollution Incident Response Management Plan in place (through it's Duty Card system) to respond to pollution incidents. The Pollution Incident Response Management Plan was tested using a desktop scenario and relevant findings used to update the plan during the reporting period.

There were no incidents of hydrocarbon contamination, or significant spills, occurring during the reporting period.

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3.18 Methane Drainage

Methane levels in the Fassifern seam are a relatively low level content such that no pre or post methane drainage is required to maintain safe levels underground. All methane liberated in the mine enters the main ventilation air and is ventilated via the main fans.

The main fans continued to run during the reporting period, albeit at a lower flow than would usually be the case if production was occurring.

Monthly ventilation surveys, which document methane concentrations and mine ventilation flow also continued throughout the reporting period.

Methane emissions, and other greenhouse gas emissions, from the Colliery are reported annually to the Clean Energy Regulator in accordance with the *National Greenhouse and Energy Reporting Act 2007* (NGER Act). The emissions from the most recent reporting under the NGER Act are presented in **Table 3.21**. Note that the data from **Table 3.21** is presented in a financial year format as per NGER Act reporting requirements.

Table 3.21: Greenhouse Gas Emissions 2015-2016 Financial Year Period

Mannerling GHG Emissions	
Scope 1 (tCO ² -e)	121,176
Scope 2 (tCO ² -e)	4,763
Total	125,939

3.19 Public Safety

Mannerling Colliery pit top area is fenced with chain mesh and barbed wire security fencing, the Colliery gates are closed and locked where and when appropriate and the site is patrolled by security staff on a regular basis.

No issues concerning public safety arose during the reporting period.

No surface impacts from mining that could pose a risk to public safety occurred during the reporting period.

During 2016 a security presence and patrols were maintained while Mannerling Colliery was operating.

3.20 Other Issues and Risks

There were no other environmental issues or risks encountered during the reporting period.

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4 Community Relations

4.1 Community Complaints

There were no community complaints received during the reporting period.

4.2 Community Liaison

The Community Consultative Committee continued to operate during the reporting period in accordance with the *Guidelines for Establishing and Operating Community Consultative Committees for Mining Projects, 2016* (NSW Department of Planning).

Table 4.1 lists the current Community Consultative Committee members as at the end of the reporting period.

There were four CCC meetings held during the reporting period on the 2 February 2016, 10 May 2016, 2 August 2016 and the 16 November 2016. Following feedback from the members during the reporting period LakeCoal commenced the process of combining the Chain Valley and Mannering Colliery Community Consultative Committees. Approval was sought and subsequently obtained from Centennial for the merger. The Department of Planning and Environment approved the proposed merger of the committees on 25 July 2016. Both the August and December CCC meetings were combined.

Minutes for each of the committee meetings are available on LakeCoal's Mannering website (<http://manneringmine.com.au/community/consultative-committee-information/>).

Table 4.1: Community Consultative Committee Members

Stakeholder	Name
Chairperson	Margaret MacDonald-Hill
Community	Andrew Whitbourne
Community	John Oakes
Community	Neil Wynn
Community	Paul Maky
Community	Bob Brooks
Community	Ian Carr
LakeCoal	Wade Covey
Lake Macquarie City Council	Nick Jones
Central Coast Council	Tanya O'Brien
Central Coast Council	Julie Vaughan

In addition to the above the LakeCoal Mannering website is updated on a monthly basis with monitoring data, management plans, reports, audits and complaint details among other items.

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LakeCoal's community hotline number (1800 687 557) is displayed prominently and permanently on the Colliery website.

4.3 Community Support / Engagement

LakeCoal is committed to supporting and engaging with the local communities which surround its operations. While LakeCoal provides a monetary offsets associated with its Voluntary Planning Agreement under its operating approvals LakeCoal also supports the local community through a variety of additional avenues. This support is provided through in kind support, cash donations, staff time, and charitable donations.

During the reporting period LakeCoal was proud to assist with the following community support initiatives.

- Donation of two commercial tool boxes for the Manning Park Mens Shed (\$1,500)
- Donation to the Catherine Hill Bay Surf Club to assist with providing meals for volunteer surf life savers throughout the 2016/17 beach season (\$1,500)
- Sponsorship of the Manning Park annual school fete (\$500)
- Donation to Jenny's Place Women's Refuge Centre (\$1,000)
- Donation to the Chain Valley Bay Progress Association to assist with the construction of a fence around the children's play area at Joshua Porter Reserve (\$1,300)
- Annual sponsorship of an Environmental Award at Manning Park Public School (\$100)
- Annual sponsorship of the Swansea Carols by Candlelight (\$1,650)



Photo 1 – Donation to the Manning Park Men's Shed for the purchase of two commercial toolboxes.

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Photo 2 – New safety fence installed around Joshua Porter Reserve by the Chain Valley Bay Progress Association.

5 Rehabilitation

5.1 Buildings

Mannerling Colliery surface infrastructure comprises:

- Mine entry / exit for personnel and materials (1:3.5 Decline) including a winch house
- Coal conveyor drift
- Limited coal-handling facilities for breaking, crushing, sizing and storing product
- Coal stockpile and reclaiming system
- Overland conveyor systems
- Administration and bathroom facilities
- Workshop facilities
- Pollution control apparatus and structures
- Enclosed and bulk open material and equipment stores facilities
- Mine ventilation
- Air compressors
- Internal roads and car parking facilities.

The total area of effect of the colliery surface infrastructure is approximately 13.2 hectares.

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5.2 Rehabilitation of Disturbed Land

There was no significant rehabilitation works on disturbed lands during the reporting period, which relates the fixed nature of the surface infrastructure, upon recommencement of mining activities all existing infrastructure and lay down areas will again be required for use.

Table 5.1 – Summary of Rehabilitation at Mannering Colliery

Item	Area Treated (Ha)	
	This period (2016)	Next period (2017)
A. Total Mine Footprint (managed by LakeCoal)	Approximately 13.2	Approximately 13.2
B Total Active Disturbance	13.2	14.2
C. Land being prepared for rehabilitation	Nil	Nil
D Land Under Active Rehabilitation	Nil	Nil
E Completed Rehabilitation	Nil	Nil

Table 5.2 – Maintenance Activities on Rehabilitated Land at Mannering Colliery

NATURE OF TREATMENT	Area Treated (Ha)		Comment/Control Strategies/Treatment Detail
	This period (2016)	Next period (2017)	
Additional Erosion Control Works (drains re-contouring, rock protection)	0	1	Erosion and sediment control works will be undertaken (as required) with the construction of the new APZ's.
Re-covering (further topsoil, subsoil sealing etc)	0	0	n/a
Soil Treatment (fertiliser, lime, gypsum etc.)	0	0	n/a
Treatment/Management (grazing, cropping, slashing etc.)	0	0	n/a
Re-seeding/Replanting (species density, season etc.)	0	0	n/a

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NATURE OF TREATMENT	Area Treated (Ha)		Comment/Control Strategies/Treatment Detail
	This period (2016)	Next period (2017)	
Adversely Affected by Weeds (type and treatment)	1	13.2	Weed Management undertaken during the reporting period.
Feral Animal Control (additional fencing, trapping, baiting etc.)	0	0	No feral animal control undertaken during the reporting period or proposed to be undertaken during the next reporting period.

5.3 Other Infrastructure

There was no other rehabilitation works completed during the reporting period.

5.4 Rehabilitation Trials and Research

No rehabilitation trials or research was undertaken during the reporting period.

5.5 Further Development of the Final Rehabilitation Plan

Further development of the rehabilitation and closure criteria occurred during the development of a new MOP, consistent with the September 2013 MOP guidelines, which was approved by the Department on 27 March 2015. These criteria will be refined over time as the MOP is varied or updated.

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6 Independent Audit

Mannering Colliery was subject to an independent environmental compliance audit during the reporting period. The audit was undertaken on 30 and 31 May 2016 by Hansen Bailey consulting. The audit covered the period 10 April 2013 to 30 April 2016. A section from the executive summary of the 2016 audit report is provided below:

This Independent Environmental Audit has concluded that environmental management at Mannering Colliery is maintained to a generally high standard. During the audit period, a generally high level of compliance against conditions of Project Approval 06_0331 and other licences and approvals held for Mannering Colliery was also maintained. Document control and management in relation to environmental compliance issues was also noted to be of a high standard and effectively implemented across the site.

For the duration of the audit period the site has been on care and maintenance and as such there has only been very limited operations undertaken within the audit period (maintenance to existing plant and dewatering activities). The field inspection confirmed environmental performance improvements in a number of areas around the pit top area had been implemented during the audit period for the management of key environmental issues for the site, particularly in relation to water management.

As outlined in the report, the majority on non-compliances identified from the audit were ranked as either administrative or low. A copy of the audit report as well as LakeCoal's response to the audit findings is provided on the Mannering Colliery website. A status summary of the recommendations from the independent compliance audit is provided in **Appendix 4**.

7 Incidents and Non-compliances during the reporting period

All non-compliances and exceedances, and reportable incidents relating to the sites licences and approvals are summarised below. As outlined in **Section 6**, a status summary of the non-compliances associated with the independent compliance audit is provided in **Appendix 4**.

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Table 7.1 – Summary of reportable incidents/non-compliances for the reporting period.

Date	Description of Non-compliance	Approval/Condition/Clause	Actions taken to address Non-compliance
	3dB exceedance of the site's evening LAeq15 Minute noise criteria at receiver RA2 (Macquarie Shores Retirement Village) on 11 August 2016 for Mannering Colliery.	PA06_0311 - Schedule 3, Condition 1	<p>Following the notification of the exceedance LakeCoal notified the NSW Department of Planning Environment (Compliance Division) and the Environmental Protection Authority of the exceedance via email on 12 August 2016. In accordance with the sites Noise Monitoring Program the following actions were also undertaken by LakeCoal as a result of noise exceedance:</p> <ul style="list-style-type: none"> Follow up noise monitoring was undertaken at RA2 approximately 4 hours later at 10:23pm. The results from the night time monitoring undertaken at RA2 indicated that there was no sustained exceedance of the noise levels from the operation and that the results were within the noise criteria limits as specified within PA 06_0311. A review of the sites operational management system and consultation with operational personnel at Mannering Colliery was undertaken on the 12th and 15th of August 2016 to assist with determining the potential noise sources occurring at the time. The review concluded that the following activities were occurring around the time the exceedance was recorded: <ul style="list-style-type: none"> coal transfer (conveyors), crushing and transport to VPPS via the Mannering coal clearance system. general pit top activities <p>Following the investigation by LakeCoal in consultation with Global Acoustics, LakeCoal was unable to definitively identify a specific noise source that had contributed to the elevated result at RA2 during the evening period on 11 August 2016. Based on feedback provided by Global Acoustics acoustic technician at the time of the monitoring it was concluded that the noise was most likely attributable to general mine noise associated with Mannering's coal clearance system as it was audible as a general continuum.</p> <p>It was also noted that the noise levels were most likely elevated as a result of unfavourable weather conditions at the time of the monitoring which are characteristic of the winter period.</p> <p>There were no community complaints received as a result of the exceedance.</p>

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8 Activities proposed in the next Annual Review period

A summary of the activities (and their current status) that were proposed to be undertaken during the 2016 reporting period is provided in **Table 8.1** below.

Table 8.1 – Update on activities planned to be undertaken in the 2016 reporting period.

Activity Proposed	Status Update
Removal of the geofabric bags and associated materials pending recommencement of mining activities	Not completed. Geofabric bags still in place. Will be reassessed during the 2017 reporting period.
Review and update environmental management plans	Ongoing. Environmental management plans are being reviewed and updated as required. The Manning Noise Monitoring Program was submitted to the Department during the reporting period for approval.
Commence the water quality study required under EPL191 associated with the recommencement of coal operations.	Complete. Refer to Section 2.8.2 for details.
Undertake noise mitigation options assessment following the recommencement of coal operations.	LakeCoal commenced investigations into noise attenuation options for the pit top infrastructure during the reporting period. The primary focus of the investigations has been centred around the site rotary breaker which will be recommissioned in the next reporting period. The assessment is due to be completed by 30 May 2017. Recommendations from the assessment will be undertaken by LakeCoal in consultation with the EPA and DP&E
Construction of the site Asset Protection Zones (APZ's).	Construction of the APZ's is scheduled to be undertaken in the next reporting period.
Undertake an Independent Compliance Audit in accordance with Project Approval requirements.	Complete. Refer to Section 6 for further details.

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Activity Proposed	Status Update
Revision of site MOP to reflect current operations.	In progress. An updated MOP is planned to be submitted to the Department of Resources and Energy in Q1 2017 to reflect updates to LakeCoal's operations.
Complete an investigation into the feasibility of a solar powered discharge monitoring system at LDP001.	Complete. Investigation completed. New solar powered unit was purchased, installed and commissioned in November 2016.

A number of activities are proposed to be undertaken in the next reporting period, these include;

- Construction of the site Asset Protection Zones (APZ's).
- Completion and implementation of the Noise Mitigation Options Assessment/Recommendations required under PA 06_0311
- Undertake investigations into the use of an automated flocculation system for the water management system
- Improvements to rock protection at LDP001 outlet
- Trial of chemical dust suppressant around unsealed access roads to reduce windblown dust.
- Implementation of the 2017 Weed Action Plan

9 Definitions

AEMR

Annual Environmental Management Report, now known as the Annual Review.

Annual Review

The annual environmental report compiled for Mannering Colliery, the Annual Review also fulfills the requirement for an Annual Environmental Report or an Annual Environmental Management Report (AEMR) generally required by mining leases.

CCC

Community Consultative Committee

DRE

Division of Resources and Energy within the Department of Trade, Investment, Regional Infrastructure and Services.

EPA

Environment Protection Authority

EP&A Act

Environmental Planning and Assessment Act, 1979

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EPL

Environment Protection Licence

EMS

Environmental Management System

kL

Kilolitre

LDP 1

Licensed Discharge Point 1 (per EPL191)

OEH

NSW Office of Environment and Heritage

t CO₂-e

tonnes of carbon dioxide equivalence

The website

The website of LakeCoal - Mannering Colliery, which is, www.manneringmine.com.au

MP 06_0311

Project approval MP 06_0311, as modified, issued under Section 75J of the Environmental Planning and Assessment Act 1979 for the Mannering Colliery Extension of Mine Project.

VPPS

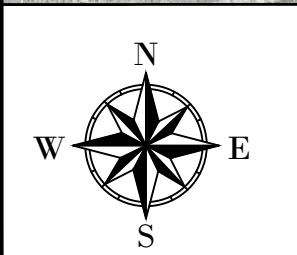
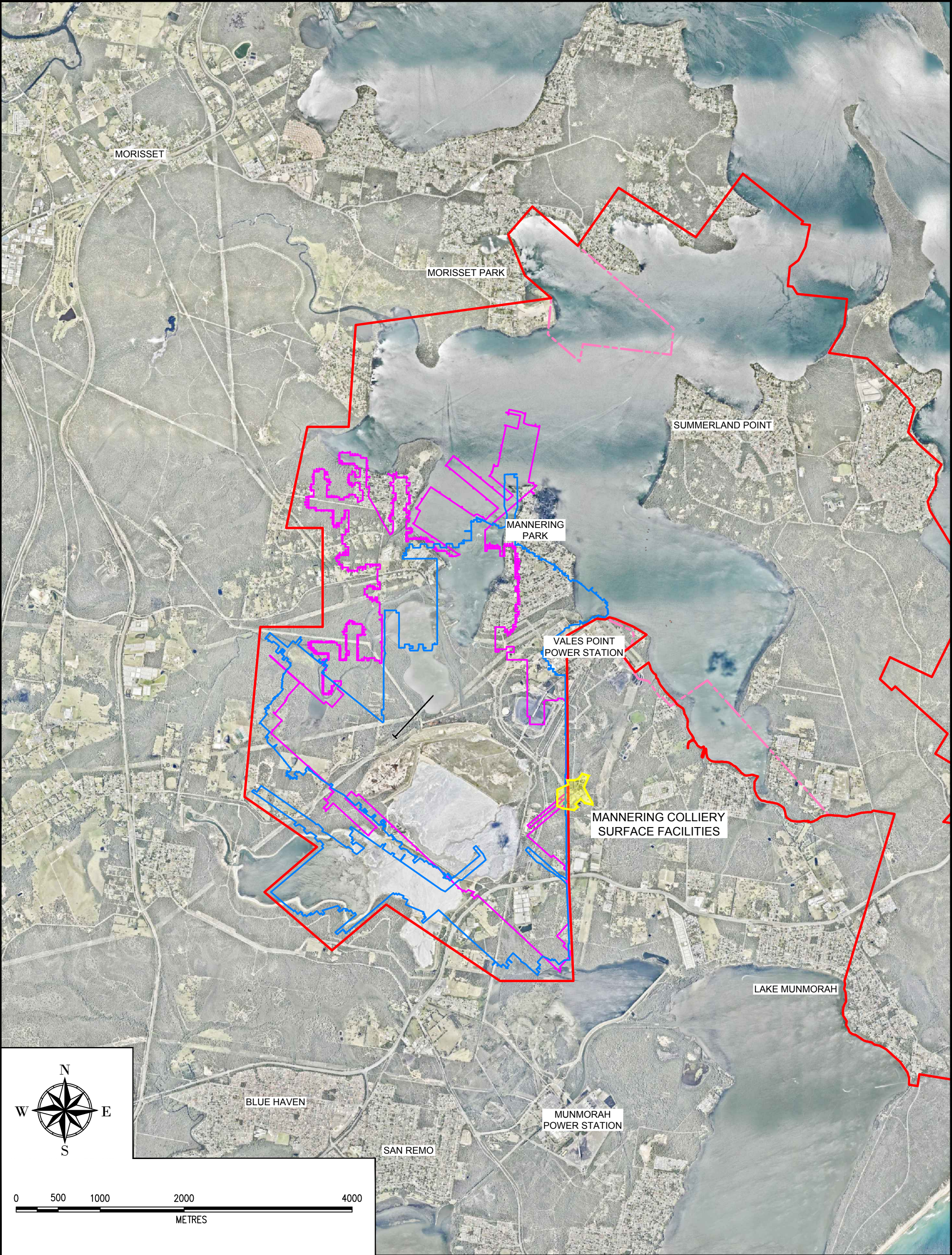
Vales Point Power Station

10 Appendices

Appendix 1: Plans
Appendix 2: Consolidated Project Approval (MP06_0311 MOD 4)
Appendix 3: Environment Protection Licence 191
Appendix 4: Independent Audit Action Plan – Status Update

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Appendix 1: Plans



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METRES

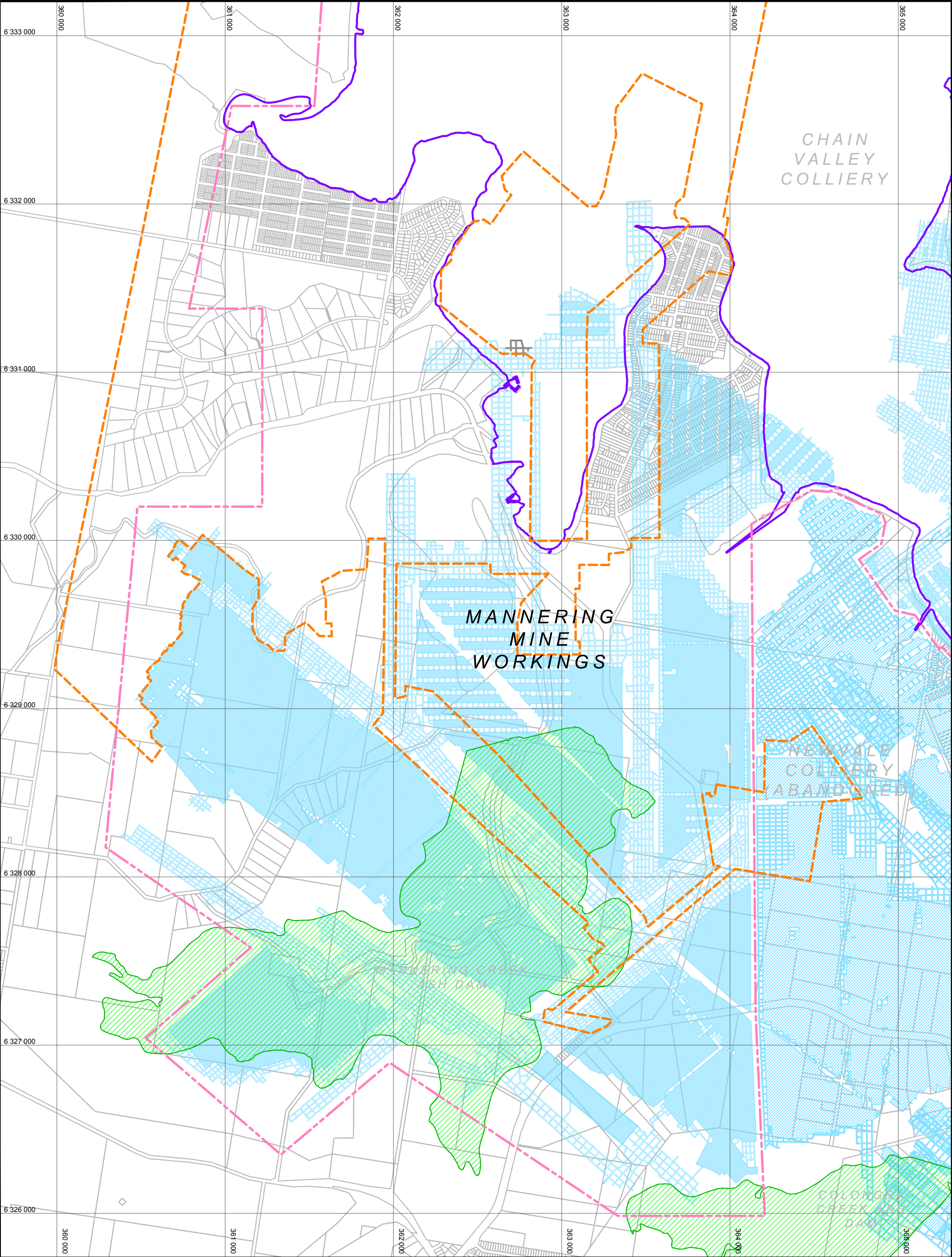
- Fassifern Seam - Existing Workings
- Great Northern Seam - Existing Workings
- Colliery Holding Boundary (Fassifern Seam)
- - - Colliery Holding Boundary (Great Northern Seam)

LAKE COAL PTY LIMITED
MANNERING MINE

MINE LOCALITY PLAN
ANNUAL REVIEW - 2016

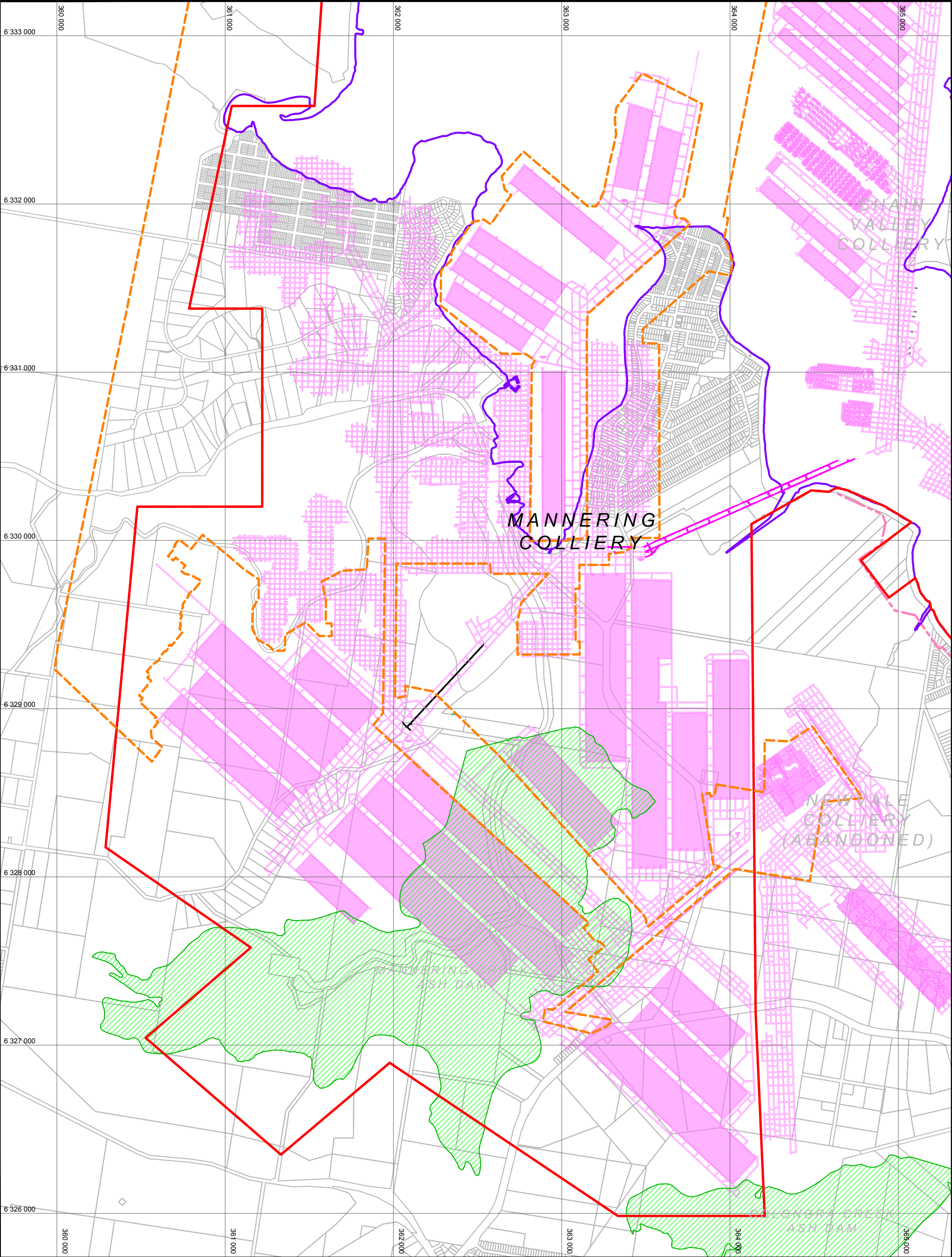
SCALE:	1:40 000	DATE:	24 April 2017
DRAWN:	T Chisholm	DRG NO:	A1S0005_1
CHECKED:	-	REV NO:	2016
SIGNED:	-	SIZE:	A3





<div><div></div>Great Northern Seam - Existing Workings</div> <div><div></div>Lake Macquarie</div> <div><div></div>Colliery Holding Boundary</div> <div><div></div>MP 06_311 Approval Boundary</div> <div><div></div>Ash Dam(s)</div>	LAKE COAL PTY LIMITED		SCALE: 1:20 000	DATE: 24 April 2017
	MANNERLING MINE		DRAWN: T Chisholm	DRG NO: A1S0005_2
	GREAT NORTHERN SEAM WORKINGS		CHECKED: -	REV NO: 2016
	ANNUAL REVIEW - 2016		SIGNED: -	SIZE: A3

LakeCoal



<div><div>Fassifern Seam - Existing Workings</div><div>Lake Macquarie</div><div>Colliery Holding Boundary</div><div>MP 06_311 Approval Boundary</div><div>Ash Dam(s)</div></div>	LAKE COAL PTY LIMITED		SCALE:	1:20 000	DATE:	24 April 2017
	MANNERLING COLLIERY		DRAWN:	T Chisholm	DRG NO:	A1S0005_3
	FASSIFERN SEAM WORKINGS		CHECKED:	-	REV NO:	2016
	ANNUAL REVIEW - 2016		SIGNED:	-	SIZE:	A3

Lake Coal

**Appendix 2: Consolidated Project Approval
(MP06_0311 MOD 4)**

Project Approval

Section 75J of the *Environmental Planning and Assessment Act 1979*

I approve the project application referred to in Schedule 1, subject to the conditions in Schedules 2 to 5.

These conditions are required to:

- prevent, minimise, and/or offset adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the project.

Project Approval signed by Frank Sartor on 12 March 2008

Frank Sartor MP
Minister for Planning

Sydney

2008

SCHEDULE 1

Application No:

06_0311

Proponent:

Centennial Coal Company Limited

Approval Authority:

Minister for Planning

Land:

See Appendix 1

Project:

Mannering Colliery – Continuation of Mining Project

Red text represents Modification 1 of October 2012 (06_0311 MOD 1)

Blue text represents Modification 2 of November 2014 (06_0311 MOD 2)

Green text represents Modification 3 of December 2015 (06_0311 MOD 3)

Orange text represents Modification 4 of August 2016 (06_0311 MOD 4)

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DEFINITIONS

Annual review	The review required by Condition 3 of Schedule 5
Affected councils	Central Coast Council and Lake Macquarie City Council
APZs	The asset protection zones shown in Figure 4 in Appendix 2
Built features	Includes any building or work erected or constructed on land, and includes dwellings and infrastructure such as any formed road, street, path, walk, or driveway; and any pipeline, water, sewer, telephone, gas or other service main
BCA	Building Code of Australia
CCC	Community Consultative Committee
Conditions of this approval	Conditions contained in Schedules 2 to 5 inclusive
Day	The period from 7am to 6pm on Monday to Saturday, and 8am to 6pm on Sundays and Public Holidays
Department	Department of Planning & Environment
DPI Water	Department of Primary Industries-Water
DRE	Division of Resources and Energy of the Department of Industry
EA	Environmental Assessment titled <i>Mannering Colliery Environmental Assessment</i> , dated March 2007, including the response to submissions, dated 27 July 2007
EA (Mod 1)	Environmental Assessment titled <i>Mannering Colliery – Extension of Mine Project Section 75W Modification to Project Approval 06_0311</i> , as modified by the associated response to submissions dated 4 September 2012
EA (Mod 2)	Environmental Assessment titled <i>'Mannering Colliery – Modification 2, Environmental Assessment, Section 75W Modification to MP 06_0311'</i> dated April 2014, as modified by the associated response to submissions dated 15 September 2014
EA (Mod 3)	Environmental Assessment titled <i>'Mannering Colliery – Modification 3 Environmental Assessment, Section 75W Modification to MP 06_0311'</i> dated June 2015, including the associated Response to Submissions dated September 2015
EA (Mod 4)	Environmental Assessment titled <i>'Administrative modification to MP06_0311 – Environmental Assessment'</i> dated 25 July 2016
EPA	Environment Protection Authority
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000</i>
EPL	Environment Protection Licence issued under the <i>Protection of the Environment Operations Act 1997</i>
Evening	The period from 6pm to 10pm
Feasible	Feasible relates to engineering considerations and what is practical to build
First workings	Extraction of coal by bord and pillar workings and the like
Incident	A set of circumstances that: <ul style="list-style-type: none"> causes or threatens to cause material harm to the environment; and/or breaches or exceeds the limits or performance measures/criteria in this approval
Land	As defined in the EP&A Act, except for where the term is used in the noise and air quality conditions in Schedules 3 and 4 of this approval where it is defined to mean the whole of a lot, or contiguous lots, owned by the same landowner, in a current plan registered at the Land Titles Office at the date of this approval
Mining operations	Includes all extraction, processing, handling, storage and transportation of coal carried out on the site
Minister	Minister for Planning, or delegate
Minor	Not very large, important or serious
Negligible	Small and unimportant, such as to be not worth considering
Night	The period from 10pm to 7am on Monday to Saturday, and 10pm to 8am on Sundays and Public Holidays
OEH	Office of Environment and Heritage
Privately-owned land	Land that is not owned by a public agency, Vales Point Power Station or a mining company (or its subsidiary)
Proponent	Centennial Coal Company Limited or any other person or company (including LakeCoal Pty Limited) who rely on this approval to carry out the project that is subject to this approval

Reasonable	Reasonable relates to the application of judgement in arriving at a decision, taking into account: mitigation benefits, cost of mitigation versus benefits provided, community views and the nature and extent of potential improvements
ROM	Run-of-mine
RMS	Roads and Maritime Services
Second workings	Extraction of coal by pillar extraction methods
Secretary	Secretary of the Department, or nominee
Site	Land referred to in Appendix 1
SMP	Subsidence Management Plan
Statement of Commitments	The Statement of Commitments in Appendix 3
Subsidence	Subsidence of the land surface caused by underground coal mining

SCHEDULE 2 ADMINISTRATIVE CONDITIONS

Obligation to Minimise Harm to the Environment

1. The Proponent **must** implement all practicable measures to prevent and/or minimise any harm to the environment that may result from the construction, operation or rehabilitation of the project.

Terms of Approval

2. The Proponent **must** carry out the project generally in accordance with the:
 - (a) EA;
 - (b) EA (Mod 1);
 - (c) EA (Mod 2);
 - (d) EA (Mod 3);
 - (e) EA (Mod 4); and
 - (f) Project Layout Plans.

Note:

- The Project Layout Plans are shown in Appendix 2.

- 2A. The Proponent **must** carry out the development in accordance with the
 - (a) Statement of Commitments; and
 - (b) conditions of this approval.
3. If there is any inconsistency between the documents in condition 2, the most recent document shall prevail to the extent of the inconsistency. The conditions of this approval shall prevail over the documents in conditions 2 and 2A(a) to the extent of any inconsistency.
4. The Proponent **must** comply with any reasonable requirement/s of the Secretary arising from the Department's assessment of:
 - (a) any reports, plans, programs or correspondence that are submitted in accordance with the conditions of this approval; and
 - (b) the implementation of any actions or measures contained in these reports, plans, programs or correspondence.

Limits on Approval

5. Mining operations may take place until 30 June 2022.

Note: Under this approval, the Proponent is required to rehabilitate the site to the satisfaction of the Secretary and DRE. Consequently this approval will continue to apply in all other respects other than the right to conduct mining operations until the site has been rehabilitated to a satisfactory standard.

6. The Proponent **must** not extract more than 1.1 million tonnes of ROM coal a year from the site.
- 6A. The Proponent **must** not transport more than 1.3 million tonnes of ROM coal a year from the site.
7. The Proponent **must** ensure all coal produced and/or received on the site is transported by overland conveyor to Vales Point Power Station.

Updating and Staging Strategies, Plans or Programs

8. The Proponent must regularly review the strategies, plans and programs required under this approval and ensure that these documents are updated to incorporate measures to improve the environmental performance of the development and reflect current best practice in the mining industry. To facilitate these updates, the Proponent may at any time submit revised strategies, plans or programs for the approval of the Secretary. With the agreement of the Secretary, the Proponent may also submit any strategy, plan or program required by this approval on a staged basis.

With the agreement of the Secretary, the Proponent may prepare a revision or stage of any strategy, plan or program required under this approval without undertaking consultation with all parties nominated under the applicable condition in this approval.

Notes:

- *While any strategy, plan or program may be submitted on a staged basis, the Proponent must ensure that the existing operations on site are covered by suitable strategies, plans or programs at all times.*
- *If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program must clearly describe the specific stage to which the strategy, plan or program applies, the relationship of this stage to any future stages, and the trigger for updating the strategy, plan or program.*

Structural Adequacy

9. The Proponent **must** ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA.

Notes:

- *Under Part 4A of the EP&A Act, the Proponent is required to obtain construction and occupation certificates for the proposed building works.*
- *Part 8 of the EP&A Regulation sets out the requirements for the certification of the project.*

Demolition

10. The Proponent **must** ensure that all demolition work is carried out in accordance with *Australian Standard AS 2601-2001: The Demolition of Structures*, or its latest version.

Operation of Plant and Equipment

11. The Proponent **must** ensure that all plant and equipment used on site is:
- (a) maintained in a proper and efficient condition; and
 - (b) operated in a proper and efficient manner.

Community Enhancement Program

12. The Proponent **must** pay the affected councils \$0.02 for each tonne of ROM coal produced by the project for the purpose of improving water quality in the Lake Macquarie catchment. This payment **must** be:
- (a) shared equally by the affected councils;
 - (b) made by the end of March 2009, and at yearly intervals thereafter;
 - (c) calculated on the ROM coal produced in the previous calendar year; and
 - (d) subject to indexation by the Implicit Price Deflator, as published by the Australian Bureau of Statistics.

SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS

NOISE

Noise Impact Criteria

- The Proponent **must** ensure that the noise generated by the project does not exceed the noise impact assessment criteria in Table 1 at any residence on privately owned land.

Table 1: Noise limits dB(A)

Day <i>L_{Aeq}(15 min)</i>	Evening <i>L_{Aeq}(15 min)</i>	Night		Location (as listed in Appendix 4)
		<i>L_{Aeq}(15 min)</i>	<i>L_{A1}(1 min)</i>	
49	49	35	49	4 – di Rocco
47	47	35	49	5 – Keighran
44	44	35	49	6 – Swan
43	43	43	50	7 – Druitt
46	46	46	50	8 – May
45	45	45	52	9 – Jeans
40	40	40	52	11 – Jeans
43	43	43	52	18 – Jeans
44	44	44	52	20 – Knight and all other Chain Valley Bay residences

Note: The location of the land referred to in Table 1 is shown on the figure in Appendix 4.

Noise generated by the project is to be measured in accordance with the relevant requirements of the *NSW Industrial Noise Policy* (as may be updated from time-to-time). Appendix 4A sets out the meteorological conditions under which these criteria apply, and the requirements for evaluating compliance with these criteria.

However, these criteria do not apply if the Proponent has an agreement with the owner/s of the relevant residence or land to generate higher noise levels, and the Proponent has advised the Department in writing of the terms of this agreement.

This condition only has effect prior to recommencement of underground coal extraction at Mannering Colliery. At all other times, conditions 1 to 4 of Appendix 4B have effect in its place.

Noise Mitigation

- The Proponent **must** prepare a report on potential noise mitigation measures for noisy equipment and activities undertaken on the site to the satisfaction of the **Secretary**. This report must be:
 - prepared by a suitably qualified acoustic expert;
 - submitted to the **Secretary** by the end of September 2008; and
 - accompanied by an action plan for the implementation of any reasonable and feasible recommendations of the report.

Noise Monitoring

- The Proponent **must** prepare a Noise Monitoring Program for the project to the satisfaction of the **Secretary**. This program must:
 - be submitted to the **Secretary** by the end of September 2008;
 - be revised in consultation with the EPA and be submitted to the Secretary by the end of April 2016; and**
 - include the use of **continuous and** attended noise monitoring measures to monitor the performance of the project.

The Proponent **must** implement the approved Noise Monitoring Program as approved from time to time by the **Secretary**.

SUBSIDENCE

- The Proponent **must** limit its coal extraction methods on the site to first workings only, and **must not** undertake second workings.

5. Deleted.

SOIL AND WATER

Discharge

6. The Proponent **must** only discharge water from the site as expressly provided for by its EPL.
7. The Proponent **must** investigate, assess and report on the ecological interactions of minewater discharged from the site with the aquatic ecology of the unnamed creek and wetlands (and associated vegetation) between the minewater discharge point/s and Lake Macquarie. This report must:
 - (a) be prepared in consultation with EPA by suitably qualified expert/s whose appointment/s have been approved by the Secretary;
 - (b) be submitted to the Secretary by the end of March 2009; and
 - (c) assess the probable alterations in the local ecology attributable to previous and proposed minewater discharges and any future cessation of minewater discharge flows.

Water Management Plan

8. The Proponent **must** prepare a Water Management Plan for the project to the satisfaction of the Secretary. This plan must:
 - (a) be prepared in consultation with DPI Water by suitably qualified expert/s whose appointment/s have been approved by the Secretary;
 - (b) be submitted to the Secretary by the end of March 2009; and
 - (c) include a:
 - Site Water Balance;
 - Erosion and Sediment Control Plan;
 - Surface Water Monitoring Plan; and
 - Groundwater Monitoring Program.

The Proponent **must** implement the approved management plan as approved from time to time by the Secretary.

Site Water Balance

9. The Site Water Balance must:
 - (a) include details of:
 - sources and security of water supply;
 - water use on site;
 - water management on site; and
 - (b) investigate, assess and report on measures to minimise water use by the project, particularly potable water from the Wyong Shire town water supply.

Erosion and Sediment Control

10. The Erosion and Sediment Control Plan must:
 - (a) be consistent with the requirements of *Managing Urban Stormwater: Soils and Construction* (Landcom 2004, or its latest version);
 - (b) identify activities that could cause soil erosion and generate sediment;
 - (c) describe measures to minimise soil erosion and the potential for transport of sediment from the site;
 - (d) describe the location, function, and capacity of erosion and sediment control structures; and
 - (e) describe what measures would be implemented to monitor and maintain the structures over time.

Surface Water Monitoring Program

11. The Surface Water Monitoring Plan must include:
 - (a) detailed baseline data on surface water flows and quality in creeks and other waterbodies that could be affected by the project;
 - (b) surface water impact assessment criteria;
 - (c) a program to monitor the impact of the project on surface water flows and quality; and
 - (d) procedures for reporting the results of this monitoring.

Groundwater Monitoring Program

12. The Groundwater Monitoring Program must include:
- detailed baseline data to benchmark the natural variation in groundwater levels, yield and quality;
 - groundwater impact assessment criteria;
 - a program to monitor the impact of the project on groundwater levels, yield and quality; and
 - procedures for reporting the results of this monitoring.

REHABILITATION

13. The Proponent **must** rehabilitate the site to the satisfaction of the Secretary and DRE. Rehabilitation must be substantially consistent with the Rehabilitation Objectives described in the EA, the Statement of Commitments and the following objectives in Table 2 below.

Table 2: Rehabilitation Objectives

Feature	Objective
Mine site (as a whole of the disturbed land and water)	Safe, stable and non-polluting, fit for the purpose of the intended post-mining land use(s).
Rehabilitation materials	<ul style="list-style-type: none"> Materials (including topsoils, substrates and seeds of the disturbed area) are recovered, appropriately managed and used effectively as resources in the rehabilitation.
Surface Infrastructure	To be decommissioned and removed, unless the DRE agrees otherwise.
Portals and ventilation shafts	To be decommissioned and made safe and stable.
Other land affected by the development	Restore ecosystem function, including maintaining or establishing self-sustaining ecosystems comprised of: <ul style="list-style-type: none"> local native plant species (unless the DRE agrees otherwise); and a landform consistent with the surrounding environment.
Built features damaged by mining operations	Repair to pre-mining condition or equivalent unless: <ul style="list-style-type: none"> the owner agrees otherwise; or the damage is fully restored, repaired or compensated under the <i>Mine Subsidence Compensation Act 1961</i>.
Community	Ensure public safety.

- 13A. The Proponent **must** carry out all surface disturbing activities in a manner that, as far as practicable, minimises potential for dust emissions and **must** carry out rehabilitation of disturbed areas progressively, as soon as reasonably practicable, to the satisfaction of the Secretary and DRE.

Land Management Plan

14. The Proponent **must** prepare a detailed Land Management Plan for the site to the satisfaction of the Secretary and DRE. This plan must:
- be submitted to the Secretary by the end of September 2008;
 - be prepared by suitably qualified expert/s whose appointment/s have been endorsed by the Secretary;
 - be prepared in consultation with DRE, OEH and affected councils; and
 - include measures to:
 - minimise visual impacts;
 - control weeds, feral pests and access; and
 - manage bushfires; and
 - provide details of who is responsible for monitoring, reviewing and implementing the plan.

Prior to the end of April 2016, the Proponent **must** revise the Land Management Plan to incorporate the measures required to implement its commitments described in new row 2 of the Terrestrial Ecology section of its Statement of Commitments, and submit it to the Secretary for approval.

The Proponent **must** implement the approved management plan as approved from time to time by the Secretary.

- 14A. The Proponent **must** implement its preferred option of the three options set out in new row 2 of the Terrestrial Ecology section of its Statement of Commitments by 1 December 2016, following consultation with OEH and to the satisfaction of the Secretary.

Rehabilitation Plan

15. The Proponent **must** prepare a Rehabilitation Plan for the site to the satisfaction of the DRE. This plan must:
- (a) be submitted within 3 months of approval of Mod 2 for approval by DRE prior to carrying out any disturbing activities of the development, unless otherwise agreed by the Secretary;
 - (b) be prepared in accordance with DRE guidelines and in consultation with the Department, OEH, EPA, DPI Water, affected councils and the mine's CCC;
 - (c) incorporate and be consistent with the rehabilitation objectives in the EA, Statement of Commitments and Table 2 above;
 - (d) integrate and build on, to the maximum extent practicable, the other management plans required under this approval; and
 - (e) address all aspects of mine closure and rehabilitation, including post-mining land use domains, rehabilitation objectives, completion criteria and rehabilitation monitoring and management.

The Proponent **must** implement the approved management plan as approved from time to time by the Secretary.

Note: The approved Mining Operations Plan (which will become the REMP once the Mining Act Amendments have commenced) required as a condition of the Mining Lease(s) issued in relation to this project, will satisfy the requirements of this condition for a Rehabilitation Plan.

AIR QUALITY

Impact Assessment Criteria

16. The Proponent **must** ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the development do not cause exceedances of the criteria listed in Table 3 at any residence on privately-owned land.

Table 3: Long term impact assessment criteria for deposited dust

Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level
Deposited dust	Annual	2 g/m ² /month	4 g/m ² /month

Note: Deposited dust is assessed as insoluble solids as defined by Standards Australia, 1991, AS/NZS 3580.10.1-2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulates - Deposited Matter - Gravimetric Method.

Monitoring

17. The Proponent **must** prepare an Air Quality Monitoring Program for the project to the satisfaction of the Secretary. This program must:
- (a) be submitted to the Secretary by the end of September 2008; and
 - (b) use dust deposition gauges to monitor the performance of the project.

The Proponent **must** implement the approved monitoring program as approved from time to time by the Secretary.

HERITAGE

Heritage Management Plan

18. The Proponent **must** prepare a Heritage Management Plan for the project to the satisfaction of the Secretary. This Plan must:
- (a) be prepared in consultation with any relevant Aboriginal stakeholders;
 - (b) be submitted, prior to 31 March 2013, for approval to the Secretary;
 - (c) include consideration of the Aboriginal and non-Aboriginal cultural context and significance of the site;
 - (d) detail the responsibilities of all stakeholders; and

- (e) include programs/procedures and management measures for:
- dealing with previously unidentified Aboriginal objects (excluding human remains), including any need to halt works in the vicinity, assessment of significance, determination of appropriate mitigation measures (by a qualified archaeologist in consultation with Aboriginal stakeholders), re-commencement of works, notifying OEH, and registering the new site(s) in the OEH AHIMS register;
 - dealing with any human remains which may be discovered, including halting of works in the vicinity; notifying NSW Police, OEH, the Department and Aboriginal stakeholders; and not re-commencing any works in the vicinity unless authorised;
 - heritage induction for construction personnel (including procedures for keeping records of inductions);
 - ongoing Aboriginal consultation and involvement (including procedures for keeping records of this);
 - appropriate identification, management, conservation and protection of both Aboriginal and non-Aboriginal heritage items identified on the site; and
 - dealing with previously unidentified non-Aboriginal heritage items which may be discovered during the project.

The Proponent **must** implement the approved management plan as approved from time to time by the Secretary.

VISUAL

19. The Proponent **must**:
- ensure no outdoor lights shine above the horizontal;
 - ensure that all external lighting associated with the project complies with *Australian Standard AS4282 (INT) 1995 – Control of Obtrusive Effects of Outdoor Lighting*;
 - take all practicable measures to mitigate off-site lighting impacts from the project; and
 - minimise the visual impacts of the project, to the satisfaction of the Secretary.

TRANSPORT

Monitoring of Coal Transport

20. The Proponent **must** keep records of the amount of coal transported from the site each year, and include these records in the **Annual Review**.

Ruttleys Road Intersection

21. The Proponent **must**:
- complete a road safety audit of the intersection of Ruttleys Road and Mannering Colliery Access Road by the end of March 2009;
 - provide copies of this audit to RMS, Central Coast Council and the Secretary within one month of its completion; and
 - within 3 months of approval of Mod 2, install additional sections of guardrail (safety barrier) on the eastern side of Ruttleys Road between the Mannering Colliery access road and existing sections of guardrail further to the north;
 - be responsible for the maintenance and upkeep of the pavement of the Ruttleys Road/Mannering Colliery access road intersection whilst the site is used for mining purposes or until the intersection is upgraded to a Type CHR intersection treatment; and
 - prior to the number of workers (direct employees and contractors) at Mannering Colliery exceeding 70, the Proponent **must** upgrade the Ruttleys Road/Mannering Colliery access road intersection to a Type CHR treatment in accordance with Construction Certificate SCC/69/2011 issued by Central Coast Council, or later updated versions of this Construction Certificate; to the satisfaction of the Secretary.

GREENHOUSE AND ENERGY EFFICIENCY

22. The Proponent **must** prepare a Greenhouse and Energy Efficiency Plan for the project to the satisfaction of the Secretary. This plan must:
- be prepared in consultation with EPA and generally in accordance with the *Guidelines for Energy Savings Action Plans* (DEUS 2005, or its latest version);

- (b) be submitted to the [Secretary](#) for approval by the end of September 2008;
- (c) include a program to monitor greenhouse gas emissions and energy use generated by the project;
- (d) include a framework for investigating and implementing measures to reduce greenhouse gas emissions and energy use at the site; and
- (e) describe how the performance of these measures would be monitored over time.

The Proponent **must** implement the approved management plan as approved from time to time by the [Secretary](#).

WASTE

23. The Proponent **must**:

- (a) monitor the amount of waste generated by the project;
- (b) investigate ways to minimise waste generated by the project;
- (c) implement reasonable and feasible measures to minimise waste generated by the project; and
- (d) report on waste management and minimisation in the [Annual Review](#),
to the satisfaction of the [Secretary](#).

SCHEDULE 4 ADDITIONAL PROCEDURES

INDEPENDENT REVIEW

1. If a landowner considers the project to be exceeding the impact assessment criteria in schedule 3, then he/she may ask the [Secretary](#) in writing for an independent review of the impacts of the project on his/her land.

If the [Secretary](#) is satisfied that an independent review is warranted, the Proponent **must** within 2 months of the [Secretary](#)'s decision:

- (a) consult with the landowner to determine his/her concerns;
- (b) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the [Secretary](#), to conduct monitoring on the land, to:
 - determine whether the project is complying with the relevant impact assessment criteria in schedule 3; and
 - identify the source(s) and scale of any impact on the land, and the project's contribution to this impact; and
 - give the [Secretary](#) and landowner a copy of the independent review.

2. If the independent review determines that the project is complying with the relevant impact assessment criteria in schedule 3, then the Proponent may discontinue the independent review with the approval of the [Secretary](#).
3. If the independent review determines that the project is not complying with the relevant impact assessment criteria in schedule 3, and that the project is primarily responsible for this non-compliance, then the Proponent **must**:
 - (a) take all reasonable and feasible measures, in consultation with the landowner, to ensure that the project complies with the relevant criteria; and
 - (b) conduct further monitoring to determine whether these measures ensure compliance.

If the additional monitoring referred to above subsequently determines that the project is complying with the relevant criteria in schedule 3, or the Proponent and landowner enter into a negotiated agreement to allow these exceedances, then the Proponent may discontinue the independent review with the approval of the [Secretary](#).

4. If the independent review determines that the relevant criteria in schedule 3 are being exceeded, but that more than one project is responsible for this non-compliance, then the Proponent **must**, together with the relevant project/s:
 - (a) take all reasonable and feasible measures, in consultation with the landowner, to ensure that the relevant criteria are complied with; and
 - (b) conduct further monitoring to determine whether these measures ensure compliance; or
 - (c) secure a written agreement with the landowner and other relevant projects to allow exceedances of the criteria in schedule 3,to the satisfaction of the [Secretary](#).

If the additional monitoring referred to above subsequently determines that the projects are complying with the relevant criteria in schedule 3, then the Proponent may discontinue the independent review with the approval of the [Secretary](#).

5. If the landowner disputes the results of the independent review, either the Proponent or the landowner may refer the matter to the [Secretary](#) for resolution.

If the matter cannot be resolved within 21 days, the [Secretary](#) shall refer the matter to an Independent Dispute Resolution Process.

SCHEDULE 5

ENVIRONMENTAL MANAGEMENT, MONITORING, AUDITING AND REPORTING

ENVIRONMENTAL MANAGEMENT

Environmental Management Strategy

1. The Proponent **must** revise an Environmental Management Strategy for the project. This strategy must:
 - (a) be submitted for approval to the **Secretary** prior to 30 June 2013;
 - (b) provide the strategic framework for the environmental management of the project;
 - (c) identify the statutory approvals that apply to the project;
 - (d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project;
 - (e) describe the procedures that would be implemented to:
 - keep the local community and relevant agencies informed about the operation and environmental performance of the project;
 - receive, handle, respond to, and record complaints;
 - resolve any disputes that may arise during the course of the project;
 - respond to any non-compliance; and
 - respond to emergencies; and
 - (f) include:
 - copies of any strategies, plans and programs approved under the conditions of this approval; and
 - a clear plan depicting all the monitoring required to be carried out under the conditions of this approval.

The Proponent **must** implement the approved management strategy as approved from time to time by the **Secretary**.

Management Plan Requirements

2. The Proponent **must** ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines, and include:
 - (a) detailed baseline data;
 - (b) a description of:
 - the relevant statutory requirements (including any relevant approval, licence or lease conditions);
 - any relevant limits or performance measures/criteria;
 - the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project or any management measures;
 - (c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;
 - (d) a program to monitor and report on the:
 - impacts and environmental performance of the project;
 - effectiveness of any management measures (see (c) above);
 - (e) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;
 - (f) a protocol for managing and reporting any:
 - incidents;
 - complaints;
 - non-compliances with statutory requirements; and
 - exceedances of the impact assessment criteria and/or performance criteria; and
 - (g) a protocol for periodic review of the plan.

*Note: The **Secretary** may waive some of these requirements if they are unnecessary for particular management plans.*

Annual Review

3. By the end of **March** each year, or other timing as may be agreed by the **Secretary**, the Proponent **must** submit a report to the **Department** reviewing the environmental performance of the project to the satisfaction of the **Secretary**. This review must:

- (a) describe the development (including any rehabilitation) that was carried out in the past calendar year, and the development that is proposed to be carried out over the current financial year;
- (b) include a comprehensive review of the monitoring results and complaints records of the project over the past calendar year, which includes a comparison of these results against the:
 - the relevant statutory requirements, limits or performance measures/criteria;
 - requirements of any plan or program required under this approval;
 - the monitoring results of previous years; and
 - the relevant predictions in the documents listed in condition 2 of Schedule 2;
- (c) identify any non-compliance over the past year, and describe what actions were (or are being) taken to ensure compliance;
- (d) identify any trends in the monitoring data over the life of the project;
- (e) identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and
- (f) describe what measures will be implemented over the current financial year to improve the environmental performance of the project.

Revision of Strategies, Plans and Programs

- 4. Within 3 months of:
 - (a) the submission of an annual review under Condition 3 above;
 - (b) the submission of an incident report under Condition 6 below;
 - (c) the submission of an audit under Condition 8 below; or
 - (d) any modification to the conditions of this approval (unless the conditions require otherwise), the Proponent **must** review, and if necessary revise, the strategies, plans, and programs required under this approval to the satisfaction of the **Secretary**.

Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the project.

Community Consultative Committee

- 5. The Proponent **must** continue to operate a Community Consultative Committee (CCC) for the project in accordance with the *Guidelines for Establishing and Operating Community Consultative Committees for Mining Projects* (Department of Planning, 2007, or its latest version), and to the satisfaction of the **Secretary**.

Notes:

- The CCC is an advisory committee. The Department and other relevant agencies are responsible for ensuring that the Proponent complies with this approval; and
- In accordance with the guideline, the Committee should be comprised of an independent chair and appropriate representation from the Proponent, Councils and the local community.

REPORTING

Incident Reporting

- 6. The Proponent **must** notify, at the earliest opportunity, the **Secretary** and any other relevant agencies of any incident that has caused, or threatens to cause, material harm to the environment. For any other incidents associated with the project, the Proponent **must** notify the **Secretary** and any other relevant agencies as soon as practicable after the Proponent becomes aware of the incident. Within 7 days of the date of the incident, the Proponent **must** provide the **Secretary** and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.

Regular Reporting

- 7. The Proponent **must** provide regular reporting on the environmental performance of the project on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this approval.

INDEPENDENT ENVIRONMENTAL AUDIT

- 8. By the end of March 2013 and every three years thereafter, unless the **Secretary** directs otherwise, the Proponent **must** commission and pay the full cost of an Independent Environmental Audit of the project. This audit must:

- (a) be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the [Secretary](#);
- (b) include consultation with the relevant agencies;
- (c) assess the environmental performance of the project and assess whether it is complying with the requirements in this approval and any relevant EPL or Mining Lease (including any assessment, plan or program required under these approvals);
- (d) review the adequacy of any approved strategy/plan/program required under this approval: and, if necessary;
- (e) recommend appropriate measures or actions to improve the environmental performance of the project, and/or any assessment, strategy/plan/program required under the abovementioned approvals; and
- (f) be conducted and reported to the satisfaction of the [Secretary](#).

Note: This audit team must be led by a suitably qualified auditor and include experts in any field specified by the [Secretary](#).

- 9. Within 12 weeks of commissioning this audit, or as otherwise agreed by the [Secretary](#), the Proponent must submit a copy of the audit report to the [Secretary](#), together with its response to any recommendations contained in the audit report.

ACCESS TO INFORMATION

- 10. The Proponent must:

- (a) make copies of the following publicly available on its website:
 - the documents referred to in condition 2 of Schedule 2;
 - all relevant statutory approvals for the project;
 - all approved strategies, plans and programs required under the conditions of this approval;
 - a comprehensive summary of the monitoring results of the project, reported in accordance with the specifications in any approved plans or programs required under the conditions of this or any other approval;
 - a complaints register, which is to be updated on a monthly basis;
 - minutes of CCC meetings;
 - the annual reviews required under this approval;
 - any independent environmental audit of the project, and the Proponent's response to the recommendations in any audit; and
 - any other matter required by the [Secretary](#); and
- (b) keep this information up-to-date, to the satisfaction of the [Secretary](#).

APPENDIX 1: PROJECT LAND

Manning Colliery – Land to which the Project Approval applies
(shown edged in solid and dashed red lines)



APPENDIX 2: PROJECT MAPS

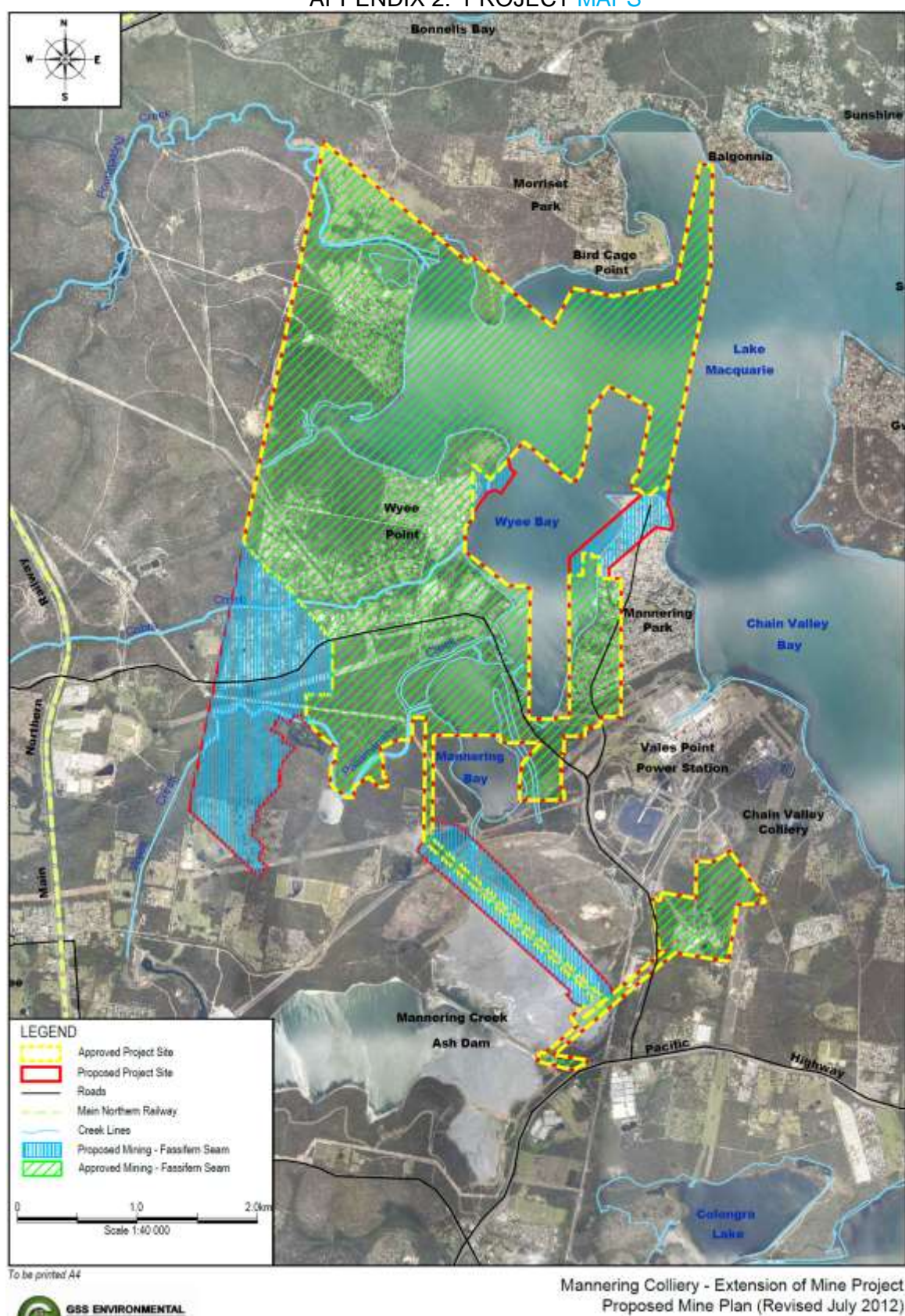


Figure 1: Revised Mine Plan for Fassifern Seam

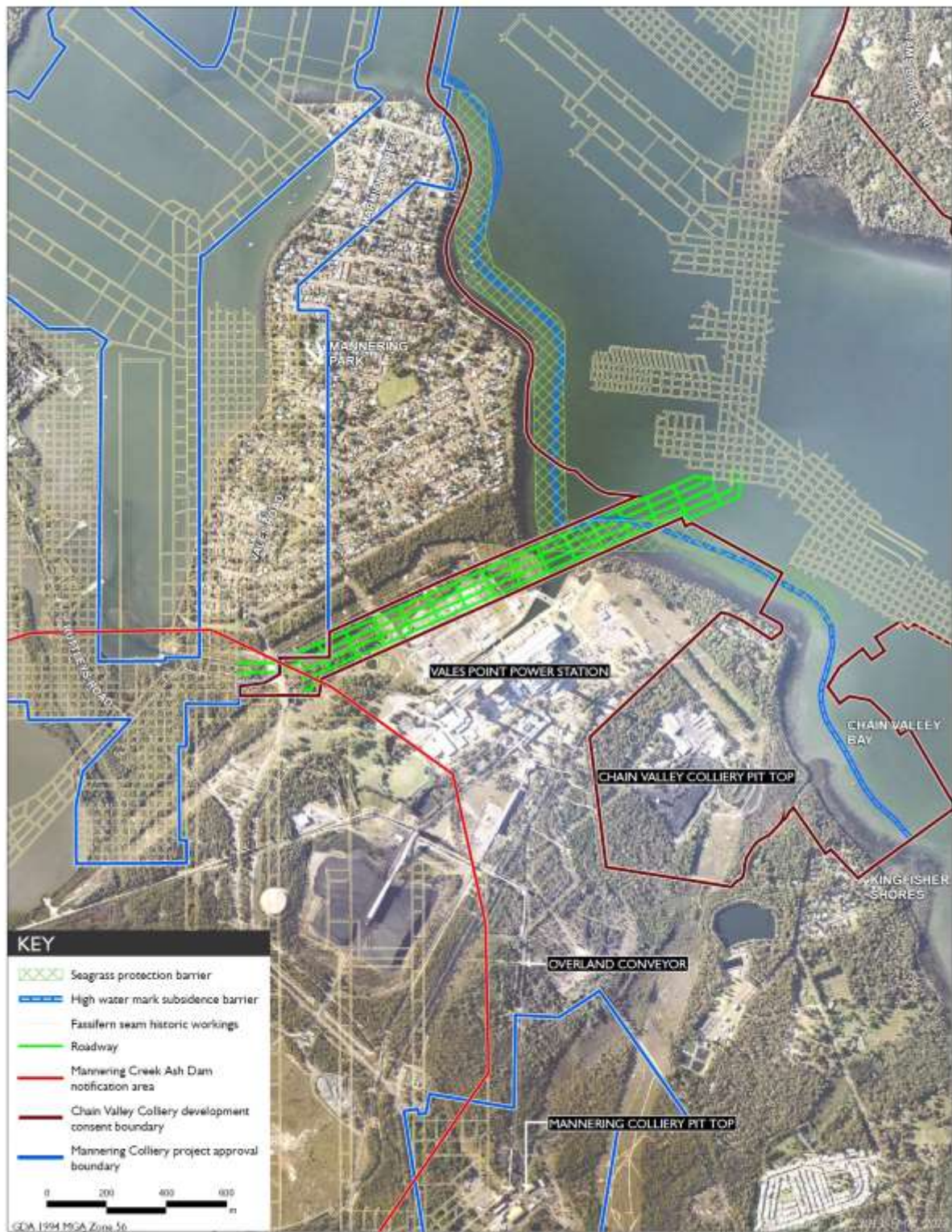


Figure 2: Location of the underground linkage to Chain Valley Colliery

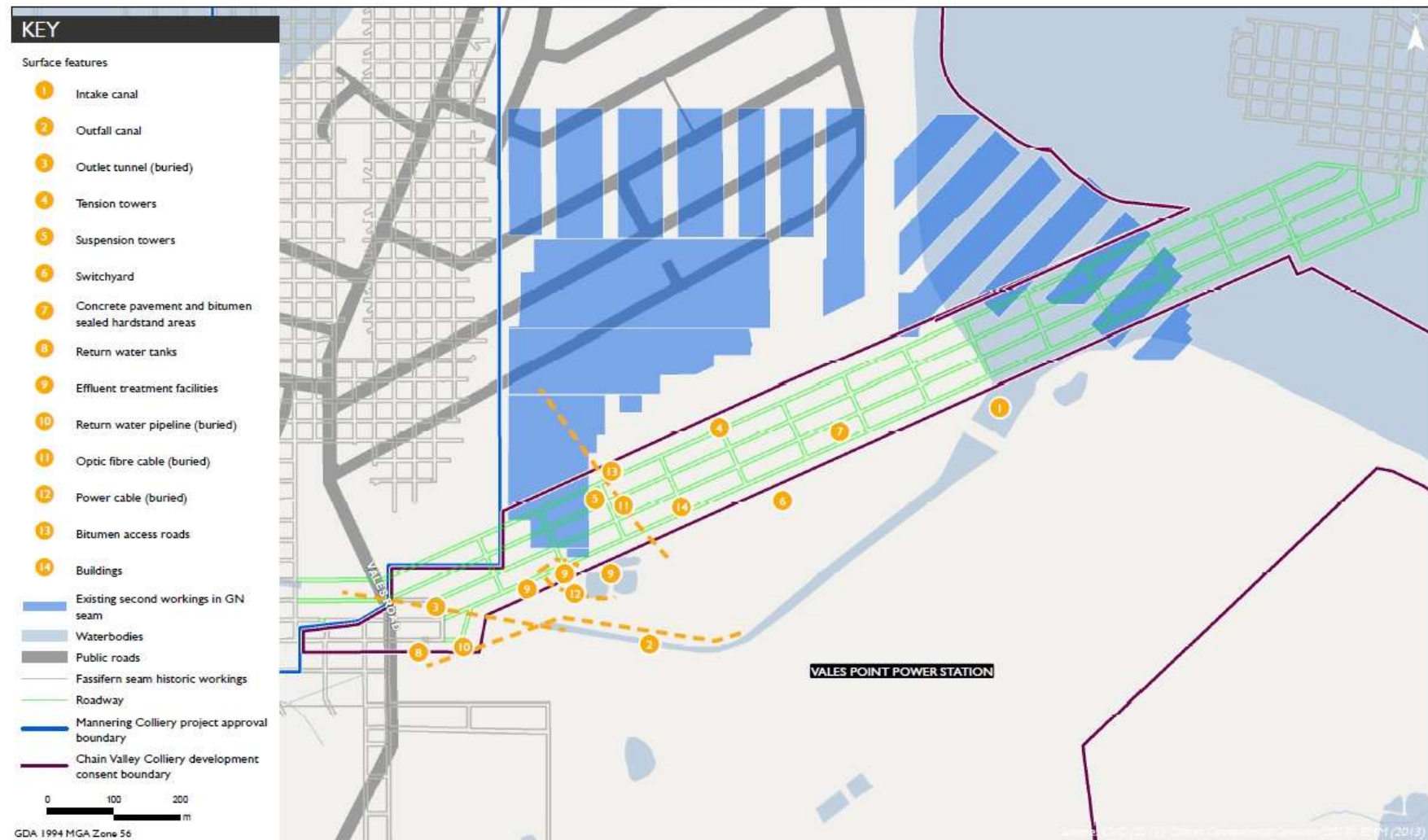


Figure 3: Location of the underground link and surface infrastructure



Figure 4. Location of asset protection zones

APPENDIX 3: STATEMENT OF COMMITMENTS

Revised Statement of Commitments (December 2015)

Revised Statement of Commitments

Subsidence
Mining to be limited to the approved bord-and-pillar method where coal recovery is limited to first workings only.
Monitoring of the existing subsidence monitoring marks will continue and additional subsidence monitoring marks will be installed above the proposed mining areas to measure the subsidence and verify that subsidence is within the predicted levels.
If it is identified that subsidence levels are greater than the predicted maximum of 20 millimetres, the DTIRIS Minerals Division will be consulted to determine appropriate management and mitigation actions.
Water Management
LakeCoal will undertake a review of the existing site water management system in consultation with the EPA.
The water level within the sediment pond system will be monitored and kept at a relatively low operating level, such that the ponds can provide a detention function in a significant rainfall event.
A visual assessment of the unnamed creek will be undertaken every 6 months to monitor stability and erosion.
Where practicable, underground water levels will be recorded to monitor changes in the level of water stored in underground depressions and to verify that the rate of extraction is sufficient.
The extraction of underground water from the mine workings will be undertaken in accordance with the Bore License (20BL172016) issued under the Water Act 1912.
To enable on-going assessment of the quality of water discharged, the existing monitoring program will be maintained for the life of the Project with the following enhancements: <ul style="list-style-type: none"> • An assessment of the surrounding catchments summarising land uses and other background information to characterise an appropriate water quality; and • Annual monitoring of heavy metals at the monitoring location identified as 'Downstream'.
Terrestrial Ecology
The following measures to manage the impacts of vegetation clearing/disturbance associated with the APZ requirements will be ongoing: <ul style="list-style-type: none"> • weed management; • large trees will be retained as a priority where possible; • felled trees will be relocated adjacent to the APZs to create additional fauna habitat; • any injured fauna will be taken to the nearest veterinary hospital for treatment before release; and • an ecologist will complete a pre-disturbance survey to determine important components of the Swamp Oak Floodplain Forest EEC for retention in the APZs.

<p>LakeCoal will investigate the following options for biodiversity offsets:</p> <ul style="list-style-type: none"> • provide \$10,000 of funding, which is equivalent to the biodiversity being lost (ie 5 credits x \$2,000 per credit) to existing environmental programs at the site which benefits the Swamp Oak Floodplain Forest EEC; or • consult with OEH to identify a suitable conservation program and provide \$10,000 of funding; or • purchase and retire 5 credits on the Biobanking register. <p>These options will be considered by the proponent in consultation with OEH and will reflect OEH's 'Approved BioBanking Assessment Methodology 2014'. The option that achieves the greatest benefit to the biodiversity impacted by the proposed modification will be selected.</p>
<p>If monitoring indicates that mine-induced subsidence levels exceed 20 millimetres, a review will be undertaken to identify any potential impacts to terrestrial ecology.</p>
<p>Aquatic Ecology</p>
<p>If monitoring indicates that mine-induced subsidence levels exceed 20 millimetres, a review will be undertaken to identify any potential impacts to aquatic ecology.</p>
<p>Aboriginal Heritage</p>
<p>Activities will continue to be managed in accordance with the Colliery's Aboriginal Cultural Heritage Management plan (ACHMP). Given the Colliery's current ACHMP is integrated with other Centennial sites, a separate ACHMP will be developed.</p>
<p>If monitoring indicates that mine-induced subsidence levels exceed 20 millimetres, a review will be undertaken to identify any potential impacts to cultural heritage in consultation with OEH.</p>
<p>All relevant Centennial Mannerling staff and contractors will be made aware of their statutory obligations for Aboriginal cultural heritage under the NP&W Act as part of the existing mine induction process.</p>
<p>An Aboriginal Cultural Heritage Management Plan (ACHMP) will be developed and implemented for the identified Aboriginal heritage items within the Project Site in consultation with the relevant Aboriginal stakeholders. If additional sites are identified they will be assessed for cultural significance and be incorporated into the ACHMP.</p>
<p>In the unlikely event that skeletal remains are identified, the NSW Police Coroner will be contacted to determine if the material is of Aboriginal origin. If determined to be Aboriginal, contact will be made with the OEH, a suitably qualified archaeologist and representatives of the relevant Aboriginal stakeholder groups to determine an action plan for the management of the skeletal remains and formulate management recommendations if required.</p>
<p>European Heritage</p>
<p>If monitoring indicates that mine-induced subsidence levels exceed 20 millimetres, a review will be undertaken to identify any potential impacts to non-indigenous heritage.</p>
<p>All relevant Centennial Mannerling staff and contractors will be made aware of their statutory obligations for European cultural heritage under the Heritage Act 1977 as part of the existing mine induction process.</p>
<p>If, during the course of development works, significant non-indigenous cultural heritage material is uncovered within the Project Site, the Heritage Branch of OEH will be notified and any required monitoring or management strategies instigated.</p>

Air Quality
A review of dust management strategies and mitigation measures will be undertaken against the best practice dust mitigation measures identified in the NSW Coal Mining Benchmarking Study: International Best Practice Measures to Prevent and/or Minimise Emissions of Particulate Matter from Coal Mining (Katestone Environmental Pty Ltd 2011), which was prepared for OEH. The review will identify any additional dust management practices that are reasonable and feasible for implementation at Mannering Colliery and will be undertaken generally in accordance with any requirements of a pollution reduction program that may be imposed by the OEH on the Mannering Colliery EPL in the future.
Traffic
Centennial Mannering will upgrade the Rutleys Road - Mannering Colliery Access Road intersection to improve safety and operational efficiency.
Socio-Economic
Centennial Mannering is committed to on-going community consultation and will continue to engage the community for the purposes of providing information relating to on-going operations and the Extension of Mine Project.
Rehabilitation
Rehabilitation will be undertaken in accordance with the Colliery's mining operations plan, which will be updated to include any changes as a result of the proposed modification.
The Mining Operations Plan will be amended to reflect the proposed modification and will include integrated rehabilitation and environmental management.
Monitoring
The Environmental Monitoring Program will be reviewed and updated, as required, to incorporate the commitments made in the Environmental Assessment and any additional consent conditions.

APPENDIX 4: NOISE ASSESSMENT LOCATIONS

Private Property Surrounding Mannering
(Location of ID numbers are shown on following figure)

ID	Owner	ID	Owner	ID	Owner
1	Energy Australia	27	H Gleeson	53	H & J Beukers
2	Alcevski Investments	28	C Stead & M Garner	54	A Taylor-Stewart
3	Eaton & Sons Pty Ltd	29	A O'Keefe	55	G Kettles
4	O & J di Rocco	30	P Groen	56	R & E Brokenshire
5	A & M Keighran	31	M Parkin	57	B & S Fowler
6	Swan HydroPonics Pty Ltd	32	I Maclaren	58	B Sneddon
7	R Druitt	33	P Kranz	59	J & P Hanson
8	D & M May	34	T & V Wilding	60	L Crook & L Kelly
9	L F Jeans	35	G Williams	61	P & G Becker
10	L & J Jeans	36	P & C Byrnes	62	B Clover & R Alaban
11	L & J Jeans	37	G Holmes	63	T & O Becker
12	L & J Jeans	38	R & B Croucher	64	R Harris & D Kingsford
13	L & J Jeans	39	R & C Calvert	65	N Singleton
14	L & J Jeans	40	T & D Stolz	66	M Smith
15	L & J Jeans	41	A & S Whitbread	67	D & B Johnston
16	L & J Jeans	42	B Kelly	68	R & B Amos
17	L & J Jeans	43	L Preston	69	H & C Strand
18	L & J Jeans	44	G Bain	70	PhystonPty Ltd
19	L & J Jeans	45	C Clarke	71	R Howland
20	E & K Knight	46	W Carpenter	72	R & D Shannon
21	Jonita Homes Pty Ltd	47	S Mackay	73	P & B Williams
22	W & D Buchmasser	48	R Allen	74	P Batten
23	P McKee	49	S Jopp	75	G & A Dyer
24	J Farrell	50	P & M Davie	76	S Harrison & N Robertson
25	P Kretchmer & E Castle	51	D Olsen		
26	A Mearns	52	D Poulson & K Toope		

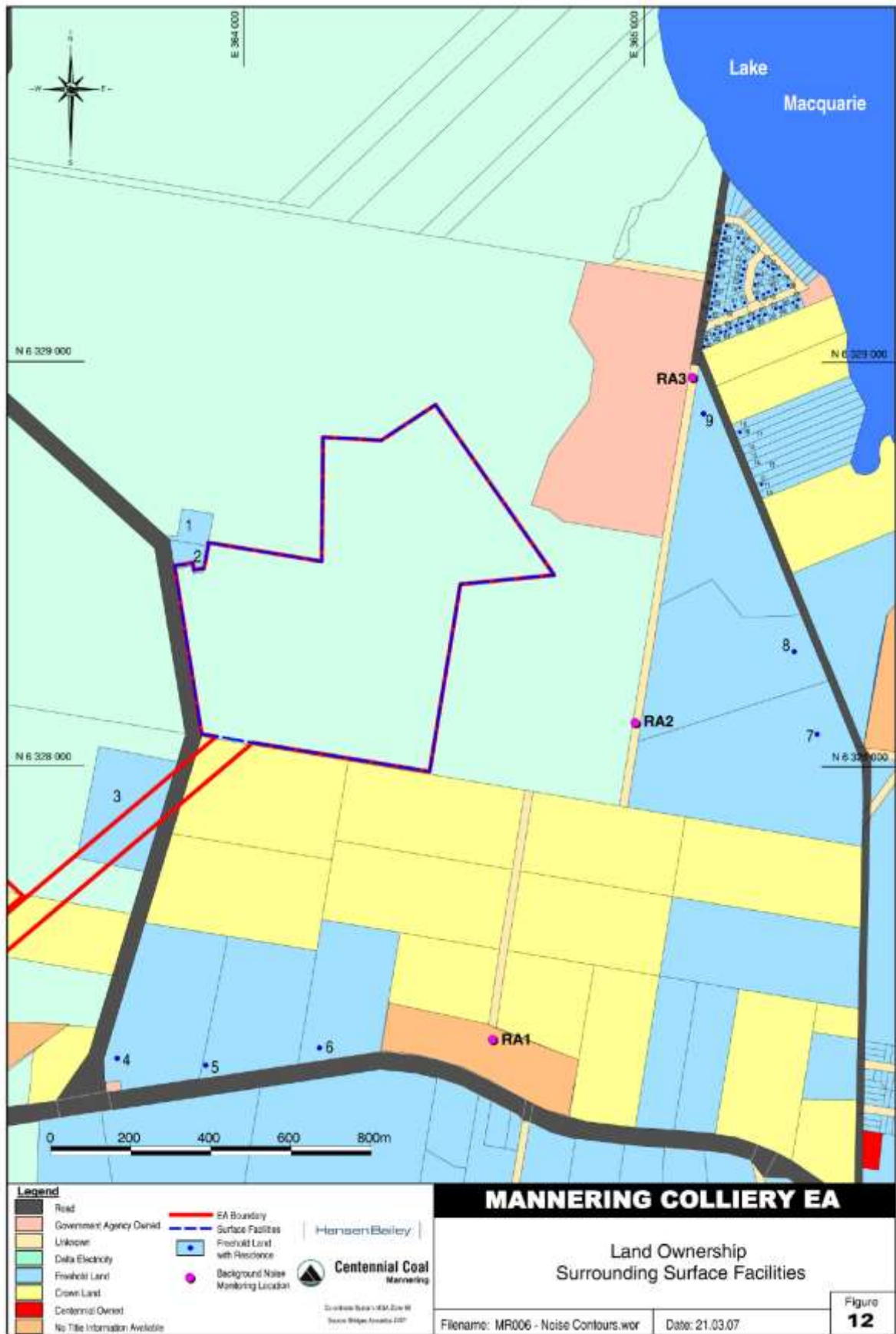


Figure 3: Land Ownership (noise assessment locations)

APPENDIX 4A: NOISE COMPLIANCE ASSESSMENT

Applicable Meteorological Conditions

1. The noise criteria in Tables 1 and 2 in Appendix 4B are to apply under all meteorological conditions except the following:
 - (a) wind speeds greater than 3m/s at 10 metres above ground level;
 - (b) stability category F temperature inversion conditions and wind speeds greater than 2 m/s at 10 m above ground level; or
 - (c) stability category G temperature inversion conditions.

Determination of Meteorological Conditions

2. Except for wind speed at microphone height, the data to be used for determining meteorological conditions **must** be that recorded by the meteorological station located on the site.

Compliance Monitoring

3. Attended monitoring is to be used to evaluate compliance with the relevant conditions of this approval.
4. This monitoring must be carried out at least once a month (at least two weeks apart) for the first 12 months following recommencement of underground coal extraction, and then quarterly thereafter, unless the Secretary directs otherwise.

Note: The Secretary may direct that the frequency of attended monitoring increase or decrease at any time during the life of the project.

5. Unless the Secretary agrees otherwise, this monitoring is to be carried out in accordance with the relevant requirements for reviewing performance set out in the *NSW Industrial Noise Policy* (as amended from time to time), in particular the requirements relating to:
 - (a) monitoring locations for the collection of representative noise data;
 - (b) meteorological conditions during which collection of noise data is not appropriate;
 - (c) equipment used to collect noise data, and conformity with Australian Standards relevant to such equipment; and
 - (d) modifications to noise data collected, including for the exclusion of extraneous noise and/or penalties for modifying factors apart from adjustments for duration.

APPENDIX 4B: ALTERNATE NOISE CONDITIONS

1. From the recommencement of underground coal extraction at Mannering Colliery until 18 months thereafter, the Proponent **must** ensure that the noise generated by the project does not exceed the noise impact assessment criteria in Table 1 at any residence on privately-owned land.

Table 1: Noise limits dB(A)

Day <i>L_{Aeq}(15 min)</i>	Evening <i>L_{Aeq}(15 min)</i>	Night		Location
		<i>L_{Aeq}(15 min)</i>	<i>L_{A1}(1 min)</i>	
40	40	40	49	4 – di Rocco
43	43	41	49	5 – Keighran
42	42	41	49	6 – Swan
39	39	39	47	7 – Druitt
46	46	46	47	8 – May
41	41	41	51	9 – Jeans
39	39	39	49	11 – Jeans
39	39	39	51	18 – Jeans
40	40	40	51	20 – Knight and all other Chain Valley Bay residences

Note: The location of the land referred to in Table 1 is shown on the figure in Appendix 4.

Noise generated by the project is to be measured in accordance with the relevant requirements of the *NSW Industrial Noise Policy* (as may be updated from time-to-time). Appendix 4A sets out the meteorological conditions under which these criteria apply, and the requirements for evaluating compliance with these criteria.

However, these criteria do not apply if the Proponent has an agreement with the owner/s of the relevant residence or land to generate higher noise levels, and the Proponent has advised the Department in writing of the terms of this agreement.

2. Following the expiry of the 18 month period referred to in condition 1 above, the Proponent **must** ensure that the noise generated by the project does not exceed the noise impact assessment criteria in Table 2 at any residence on privately-owned land.

Table 2: Noise limits dB(A)

Day <i>L_{Aeq}(15 min)</i>	Evening <i>L_{Aeq}(15 min)</i>	Night		Location
		<i>L_{Aeq}(15 min)</i>	<i>L_{A1}(1 min)</i>	
40	40	40	49	4 – di Rocco
41	41	41	49	5 – Keighran
41	41	41	49	6 – Swan
39	39	39	47	7 – Druitt
45	45	43	47	8 – May
41	41	41	51	9 – Jeans
39	39	39	49	11 – Jeans
39	39	39	51	18 – Jeans
40	40	40	51	20 – Knight and all other Chain Valley Bay residences

Note: The location of the land referred to in Table 2 is shown on the figure in Appendix 4.

Noise generated by the project is to be measured in accordance with the relevant requirements of the *NSW Industrial Noise Policy* (as may be updated from time-to-time). Appendix 4A sets out

the meteorological conditions under which these criteria apply, and the requirements for evaluating compliance with these criteria.

However, these criteria do not apply if the Proponent has an agreement with the owner/s of the relevant residence or land to generate higher noise levels, and the Proponent has advised the Department in writing of the terms of this agreement.

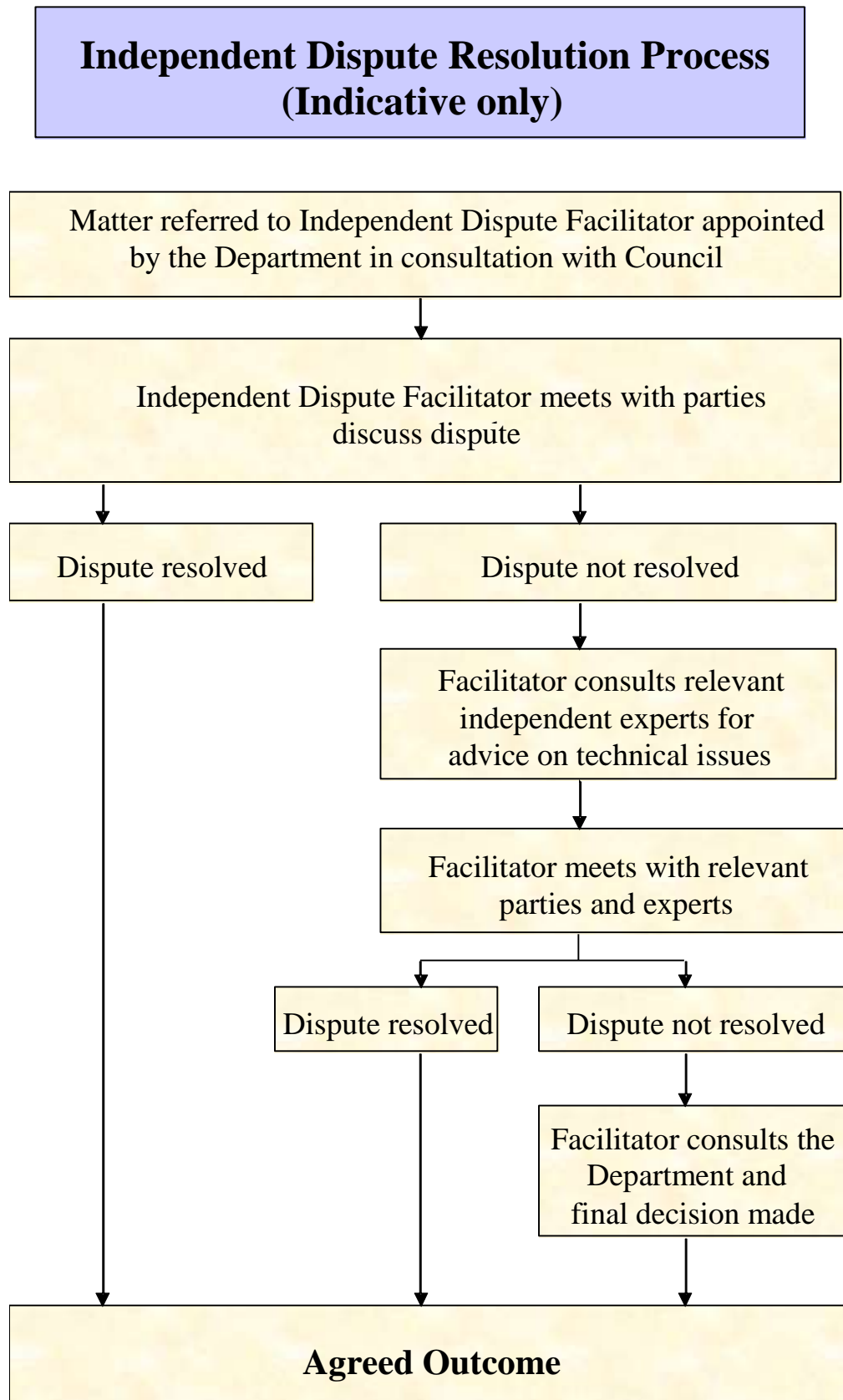
3. The Proponent **must** prepare a report on all noise mitigation measures required to achieve the noise limits in Table 2 to the satisfaction of the Secretary. This report must:
 - (a) be prepared by a suitably qualified and experienced acoustic consultant whose appointment has been approved by the Secretary;
 - (b) be prepared in consultation with EPA, and submitted to the Department for approval within 6 months after recommencement of underground coal extraction; and
 - (c) include an action plan for the implementation of any reasonable and feasible recommendations of the report.

The Proponent **must** implement the noise mitigation measures prior to the expiry of the 18 month period referred to in condition 1 above.

4. The Proponent **must** prepare a Noise Compliance Report for the project to the satisfaction of the Secretary. The report must:
 - (a) be prepared by a suitably qualified acoustic consultant, whose appointment has been approved by the Secretary;
 - (b) be prepared in consultation with EPA, and be submitted for approval within 6 months of the expiry of the 18 month period referred to in condition 1 above; and
 - (c) investigate and evaluate the effectiveness of the noise mitigation measures required under condition 3 and compliance with the noise limits in Table 2.

APPENDIX 5:

INDEPENDENT DISPUTE RESOLUTION



Appendix 3: Environment Protection Licence 191

Environment Protection Licence



Licence - 191

Licence Details	
Number:	191
Anniversary Date:	01-January

Licensee
LAKECOAL PTY LTD
PO BOX 7115
MANNERING PARK NSW 2259

Premises
MANNERING COLLIERY
RUTLEYS ROAD
DOYALSON NSW 2262

Scheduled Activity
Coal Works
Mining for Coal

Fee Based Activity	Scale
Coal works	0-2000000 T handled
Mining for coal	> 500000-2000000 T produced

Region
North - Hunter
Ground Floor, NSW Govt Offices, 117 Bull Street
NEWCASTLE WEST NSW 2302
Phone: (02) 4908 6800
Fax: (02) 4908 6810
PO Box 488G NEWCASTLE
NSW 2300

Environment Protection Licence



Licence - 191

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Environment Protection Licence

Licence - 191



Information about this licence

Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act);
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

Environment Protection Licence

Licence - 191



The EPA publication “A Guide to Licensing” contains information about how to calculate your licence fees. The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

This licence is issued to:

LAKECOAL PTY LTD
PO BOX 7115
MANNERING PARK NSW 2259

subject to the conditions which follow.

Environment Protection Licence

Licence - 191



1 Administrative Conditions

A1 What the licence authorises and regulates

- A1.1 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity	Fee Based Activity	Scale
Coal Works	Coal works	0 - 2000000 T handled
Mining for Coal	Mining for coal	> 500000 - 2000000 T produced

- A1.2 The licensee must not:
- (a) Produce by mining activities more than 1.1 million tonnes of coal within any 12 month period.
 - (b) Undertake coal works handling more than 1.1 million tonnes within any 12 month period, where ROM coal handled on the premises may be made up of coal produced by mining activities from both the Mannering premises as defined in this licence or Chain Valley premises as defined in Environment Protection Licence number 1770.

Note: These limits on the scale of the fee based activities are based on project Approval 06_0311 granted under the *Environmental Planning and Assessment Act 1979* which limits extraction to 1.1 million tonnes of run of mine (ROM) coal per year and its modifications, the most recent of which is dated 27 November 2014.

A2 Premises or plant to which this licence applies

- A2.1 The licence applies to the following premises:

Premises Details
MANNERING COLLIERY
RUTLEYS ROAD
DOYALSON
NSW 2262
SURFACE PREMISES DESCRIBED BY PLAN OF PREMISES TITLED "MANNERING COLLIERY EPL PREMISES PLAN FIGURE 2 SURFACE EXTENTS, COMPLIANCE AND MONITORING LOCATIONS" DATED 21 JANUARY 2015 DOC14/370090-03 AND MINING FOR COAL IN THE FASSIFERN AND GREAT NORTHERN COAL SEAMS DESCRIBED BY THE PLAN OF THE PREMISES TITLED "MANNERING COLLIERY EPL PREMISES PLAN FIGURE 1 PROJECT EXTENTS" DATED 21 JANUARY 2015 DOC14/370090-03.

Environment Protection Licence

Licence - 191



A3 Information supplied to the EPA

- A3.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:

- a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
- b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

2 Discharges to Air and Water and Applications to Land

P1 Location of monitoring/discharge points and areas

- P1.1 The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the air from the point.

<i>Air</i>			
EPA identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
3	Dust monitoring		Dust deposition gauge identified as point 3 on plan titled "Mannering Colliery EPL Premises Plan - Figure 2 Surface Extents, Compliance and Monitoring Locations" dated 21 January 2015 DOC14/370090-03
4	Dust monitoring		Dust deposition gauge identified as point 4 on plan titled "Mannering Colliery EPL Premises Plan - Figure 2 Surface Extents, Compliance and Monitoring Locations" dated 21 January 2015 DOC14/370090-03
5	Dust monitoring		Dust deposition gauge identified as point 5 on plan titled "Mannering Colliery EPL Premises Plan - Figure 2 Surface Extents, Compliance and Monitoring Locations" dated 21 January 2015 DOC14/370090-03
6	Dust monitoring		Dust deposition gauge identified as point 6 on plan titled "Mannering Colliery EPL Premises Plan - Figure 2 Surface Extents, Compliance and Monitoring Locations" dated 21 January 2015 DOC14/370090-03
7	Dust monitoring		Dust deposition gauge identified as point 3 on plan titled "Mannering Colliery EPL Premises Plan - Figure 2 Surface Extents, Compliance and Monitoring Locations" dated 21 January 2015 DOC14/370090-03

- P1.2 The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.

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P1.3 The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.

Water and land

EPA Identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
1	Discharge to waters Discharge quality monitoring	Discharge to waters Discharge quality monitoring	Discharge from Final Treatment Pond (surface and groundwater) identified as point 1 on plan titled "Mannering Colliery EPL Premises Plan - Figure 2 Surface Extents, Compliance and Monitoring Locations" dated 21 January 2015 DOC14/370090-03

3 Limit Conditions

L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

L2 Concentration limits

L2.1 For each monitoring/discharge point or utilisation area specified in the table\ below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.

L2.2 Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.

L2.3 To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table\.

L2.4 Water and/or Land Concentration Limits

POINT 1

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
Oil and Grease	milligrams per litre				10

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pH	pH	6.5-8.5
Total suspended solids	milligrams per litre	50

L3 Volume and mass limits

- L3.1 For each discharge point or utilisation area specified below (by a point number), the volume/mass of:
- liquids discharged to water; or;
 - solids or liquids applied to the area;
- must not exceed the volume/mass limit specified for that discharge point or area.

Point	Unit of Measure	Volume/Mass Limit
1	kilolitres per day	4000

- L3.2 Exceedance of the volume limit for Point 1 is permitted only if the discharge from Point 1 occurs solely as a result of rainfall at the premises exceeding 10mm during the 24 hours immediately prior to the commencement of discharge

L4 Waste

- L4.1 The licensee must not cause, permit or allow any waste to be received at the premises, except the wastes expressly referred to in the column titled "Waste" and meeting the definition, if any, in the column titled "Description" in the table below.

Any waste received at the premises must only be used for the activities referred to in relation to that waste in the column titled "Activity" in the table below.

Any waste received at the premises is subject to those limits or conditions, if any, referred to in relation to that waste contained in the column titled "Other Limits" in the table below.

This condition does not limit any other conditions in this licence.

Code	Waste	Description	Activity	Other Limits
NA	Waste	Any other waste received on the premises for storage, treatment, processing, sorting or disposal and which receipt is not a scheduled activity under Schedule 1 of the POEO Act, as in force from time to time.		
NA	General or Specific exempted waste	Waste that meets all the conditions of a resource	As specified in each particular resource	N/A

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recovery exemption
under Clause 51A of the
Protection of the
Environment Operations
(Waste) Regulation
2014

- L4.2 The licensee must not cause, permit or allow any waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing or disposal or any waste generated at the premises to be disposed of at the premises, except as expressly permitted by the licence.
- L4.3 This condition only applies to the storage, treatment, processing, reprocessing or disposal of waste at the premises if it requires an environment protection licence.

L5 Noise limits

Note: Noise limits are not specified as a condition of this licence. Noise limits are prescribed with the conditions of Project Approval 06_0311 granted under the *Environmental Planning and Assessment Act 1979*. Under the *Environmental Planning and Assessment Act 1979* the Department of Planning is the appropriate authority in respect of the administration and regulation of the Project Approval.

4 Operating Conditions

O1 Activities must be carried out in a competent manner

- O1.1 Licensed activities must be carried out in a competent manner.
This includes:
- a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
 - b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

O2 Maintenance of plant and equipment

- O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:
- a) must be maintained in a proper and efficient condition; and
 - b) must be operated in a proper and efficient manner.

O3 Dust

- O3.1 The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.
- O3.2 Activities occurring in or on the premises must be carried out in a manner that will minimise the generation, or emission from the premises, of wind-blown or traffic generated dust.

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- O3.3 All trafficable areas, coal storage areas and vehicle manoeuvring areas in or on the premises must be maintained, at all times, in a condition that will minimise the generation, or emission from the premises, of wind-blown or traffic generated dust.
- O3.4 Trucks transporting coal from the premises must be covered immediately after loading to prevent wind blown emissions and spillage. The covering must be maintained until immediately before unloading the trucks.
- O3.5 The tailgates of all haulage trucks leaving the premises must be securely fixed prior to loading or immediately after unloading to prevent loss of materials.
- O3.6 Coal stockpiles must be maintained in a condition that will minimise the generation and emission of dust on the premises.

O4 Emergency response

- O4.1 The licensee must maintain, and implement as necessary, a current emergency response plan for the premises. The licensee must keep the emergency response plan on the premises at all times. The emergency response plan must document systems and procedures to deal with all types of incidents (e.g. spills, explosions or fire) that may occur at the premises or that may be associated with activities that occur at the premises and which are likely to cause harm to the environment. If a current emergency response plan does not exist at the date on which this condition is attached to the licence, the licensee must develop an emergency response plan within three months of that date.

O5 Other operating conditions

- O5.1 All above-ground tanks containing material that is likely to cause environmental harm must be bunded or have an alternative spill containment system in place.
- O5.2 The licensee must ensure that activities are conducted in an environmentally satisfactory manner. So as to minimise and prevent the pollution of air and water the licensee must:
 - (a) Ensure that vehicles or containers prior to leaving the premises are clean and sealed in a manner that will not cause materials or wastes used in conducting the activities at the premises to be tracked, thrown from, blown, fall, or cast from any vehicle or container onto a public road.
 - (b) The licensee must have in place and implement procedures to ensure that vehicles and containers exiting the premises are in a condition to ensure that materials are not tracked, thrown, blown, fall or cast onto a public road.

5 Monitoring and Recording Conditions

M1 Monitoring records

- M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.

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M1.2 All records required to be kept by this licence must be:

- a) in a legible form, or in a form that can readily be reduced to a legible form;
- b) kept for at least 4 years after the monitoring or event to which they relate took place; and
- c) produced in a legible form to any authorised officer of the EPA who asks to see them.

M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:

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

M2 Requirement to monitor concentration of pollutants discharged

M2.1 For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:

M2.2 Air Monitoring Requirements

POINT 3,4,5,6,7

Pollutant	Units of measure	Frequency	Sampling Method
Particulates - Deposited Matter	grams per square metre per month	Monthly	AM-19

M2.3 Water and/ or Land Monitoring Requirements

POINT 1

Pollutant	Units of measure	Frequency	Sampling Method
Aluminium (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Aluminium (total)	micrograms per litre	Monthly during discharge	Grab sample
Antimony	micrograms per litre	Monthly during discharge	Grab sample
Arsenic (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Arsenic (total)	micrograms per litre	Monthly during discharge	Grab sample
Barium	micrograms per litre	Monthly during discharge	Grab sample

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Beryllium (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Beryllium (total)	micrograms per litre	Monthly during discharge	Grab sample
Boron	micrograms per litre	Monthly during discharge	Grab sample
Cadmium (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Cadmium (total)	micrograms per litre	Monthly during discharge	Grab sample
Calcium	micrograms per litre	Monthly during discharge	Grab sample
Chromium (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Chromium (total)	micrograms per litre	Monthly during discharge	Grab sample
Cobalt (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Cobalt (total)	micrograms per litre	Monthly during discharge	Grab sample
Conductivity	microsiemens per centimetre	Weekly during any discharge	Grab sample
Copper (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Copper (total)	micrograms per litre	Monthly during discharge	Grab sample
Iron	micrograms per litre	Monthly during discharge	Grab sample
Lead (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Lead (total)	micrograms per litre	Monthly during discharge	Grab sample
Lithium	micrograms per litre	Monthly during discharge	Grab sample
Magnesium	micrograms per litre	Monthly during discharge	Grab sample
Manganese (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Mercury (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Mercury (total)	micrograms per litre	Monthly during discharge	Grab sample
Molybdenum (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Molybdenum (total)	micrograms per litre	Monthly during discharge	Grab sample
Nickel (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Nickel (total)	micrograms per litre	Monthly during discharge	Grab sample
Nitrogen (ammonia)	micrograms per litre	Monthly during discharge	Grab sample
Oil and Grease	milligrams per litre	Weekly during any discharge	Grab sample

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pH	pH	Weekly during any discharge	Grab sample
Phosphorus	micrograms per litre	Monthly during discharge	Grab sample
Potassium	micrograms per litre	Monthly during discharge	Grab sample
Selenium (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Selenium (total)	micrograms per litre	Monthly during discharge	Grab sample
Silica	micrograms per litre	Monthly during discharge	Grab sample
Silver (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Silver (total)	micrograms per litre	Monthly during discharge	Grab sample
Sulfur	micrograms per litre	Monthly during discharge	Grab sample
Tin	micrograms per litre	Monthly during discharge	Grab sample
Titanium	micrograms per litre	Monthly during discharge	Grab sample
Total suspended solids	milligrams per litre	Weekly during any discharge	Grab sample
Vanadium (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Vanadium (total)	micrograms per litre	Monthly during discharge	Grab sample
Zinc (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Zinc (total)	micrograms per litre	Monthly during discharge	Grab sample

M3 Testing methods - concentration limits

M3.1 Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with:

- any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or
- if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or
- if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.

Note: The *Protection of the Environment Operations (Clean Air) Regulation 2010* requires testing for certain purposes to be conducted in accordance with test methods contained in the publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".

M3.2 Subject to any express provision to the contrary in this licence, monitoring for the concentration of a

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pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.

M4 Weather monitoring

- M4.1 For each monitoring point specified in the table below, the licensee must monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1. The licensee must use the sampling method, units of measure, averaging period and sample at the frequency, specified opposite in the other columns. **Point W1**

Parameter	Units of Measure	Frequency	Averaging Period	Sampling Method
Rainfall	mm	Continuous	24 hour	AM-4
Wind direction	degrees	Continuous	1 hour	AM-2 and AM-4

- M4.2 For the purpose of condition M4.1, Point W1 refers to a meteorological station established on the premises.
- M4.3 The licensee may use the meteorological station established at Eraring Power Station provided the licensee has authority from Eraring Energy to access data from the Eraring Power Station at all times. However, if this station is not available at any time then condition M4.2 applies.
- M4.4 The licensee must fully comply with condition M4 by 30 April 2011.

M5 Recording of pollution complaints

- M5.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.
- M5.2 The record must include details of the following:
- a) the date and time of the complaint;
 - b) the method by which the complaint was made;
 - c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
 - d) the nature of the complaint;
 - e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
 - f) if no action was taken by the licensee, the reasons why no action was taken.
- M5.3 The record of a complaint must be kept for at least 4 years after the complaint was made.
- M5.4 The record must be produced to any authorised officer of the EPA who asks to see them.

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M6 Telephone complaints line

- M6.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.
- M6.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.
- M6.3 The preceding two conditions do not apply until 3 months after: the date of the issue of this licence.
- M6.4 The licensee must nominate a representative of the company that is available all all times and is capable of providing immediate assistance or response during emergencies or any other incidents at the premises. The name of the nominated representative and their contact details, including a telephone number, must be current at all times.
Note: This condition does not apply until two (2) weeks after the date of issue of this licence.

M7 Requirement to monitor volume or mass

- M7.1 For each discharge point or utilisation area specified below, the licensee must monitor:
- the volume of liquids discharged to water or applied to the area;
 - the mass of solids applied to the area;
 - the mass of pollutants emitted to the air;
- at the frequency and using the method and units of measure, specified below.

POINT 1

Frequency	Unit of Measure	Sampling Method
Continuous during discharge	kilolitres per day	In line instrumentation

6 Reporting Conditions

R1 Annual return documents

- R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:
- a Statement of Compliance; and
 - a Monitoring and Complaints Summary.
- At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

- R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

- R1.3 Where this licence is transferred from the licensee to a new licensee:
- the transferring licensee must prepare an Annual Return for the period commencing on the first day of

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the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and

b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:

a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or

b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

R1.5 The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

R1.6 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

R1.7 Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:

a) the licence holder; or

b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

R2 Notification of environmental harm

Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.

R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

R3 Written report

R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:

a) where this licence applies to premises, an event has occurred at the premises; or

b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence,

and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

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- R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.
- R3.3 The request may require a report which includes any or all of the following information:
- a) the cause, time and duration of the event;
 - b) the type, volume and concentration of every pollutant discharged as a result of the event;
 - c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;
 - d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
 - e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
 - f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and
 - g) any other relevant matters.
- R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

R4 Other reporting conditions

Receival of ROM Coal

- R4.1 The licensee must notify the Manager Hunter Region hunter.region@epa.nsw.gov.au within 24 hours of the receival of ROM Coal at the Coal Handling and Preparation Plant that the plant has been re-commissioned.

7 General Conditions

G1 Copy of licence kept at the premises or plant

- G1.1 A copy of this licence must be kept at the premises to which the licence applies.
- G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.
- G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

G2 Other general conditions

- G2.1 Completed Pollution Studies and Reduction Programs (PRPs)

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PRP	Description	Completed Date
PRP 1 - Assessment of Potential Impacts of Metals	The licensee must conduct an assessment of metals detected in wastewater discharges from the mine in accordance with the ANZECC water quality guidelines.. To obtain a greater understanding of the type and concentration of metals discharged in mine water and entering the receiving waters. To limit the concentration of metals discharged in mine water within ANZECC guidelines.(@)	26-June-2013
Coal Mine Particulate Matter Control Best Practice	Requires licensee to conduct a site specific Best Management Practice (BMP) determination to identify ways to reduce particle emissions.	19-September-2012

8 Pollution Studies and Reduction Programs

U1 Coal Handling and Preparation Plant Commissioning Water Quality Monitoring Study

U1.1 The licensee must undertake a Coal Handling and Preparation Plant water quality monitoring commissioning study for 3 months upon re-commissioning of receipt of ROM Coal on the premises and normal coal handling procedures. The water quality monitoring study:

- a) must be carried out by an appropriately qualified and experienced person;
- b) include daily monitoring during discharge from monitoring point 1 of turbidity (NTU), total suspended solids (mg/L), electrical conductivity (us/cm), pH and oil and grease (mg/L); and
- c) be carried out in accordance with the EPA's Approved Methods.

A report must be prepared by an appropriately qualified and experienced person and include:

- d) comparison of results against limits in condition L2.4;
- e) include a table in the appendix of the report of all the data;
- f) include an analysis of the monthly results from metals monitoring as required in condition M2.3 and include mean daily discharge results as required in Condition M7.1.

The report must be sent to the Manager Hunter Region hunter.region@epa.nsw.gov.au within two months of completion of the monitoring.

Should the outcomes of this report identify that water management on the premises is not sufficient such that limits are met, the EPA may consider a pollution reduction program to investigate upgrade of the water management system.

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Dictionary

General Dictionary

3DGM [in relation to a concentration limit]	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
AM	Together with a number, means an ambient air monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
AMG	Australian Map Grid
anniversary date	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
BOD	Means biochemical oxygen demand
CEM	Together with a number, means a continuous emission monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
COD	Means chemical oxygen demand
composite sample	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
cond.	Means conductivity
environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.
fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 2009.
general solid waste (non-putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997

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flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
general solid waste (putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder described at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 months. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
restricted solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
special waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TM	Together with a number, means a test method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .

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TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste type	Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non - putrescible), special waste or hazardous waste

Ms Debbie Maddison

Environment Protection Authority

(By Delegation)

Date of this edition: 06-April-2000

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End Notes

- 1 Licence varied by notice V/M upgrade, issued on 10-Jul-2000, which came into effect on 10-Jul-2000.
- 2 Licence varied by notice 1005801, issued on 13-Aug-2001, which came into effect on 07-Sep-2001.
- 3 Licence varied by Change of contact details, issued on 16-Apr-2002, which came into effect on 16-Apr-2002.
- 4 Licence transferred through application 141582, approved on 21-Nov-2002, which came into effect on 07-Aug-2002.
- 5 Licence varied by notice 1024680, issued on 04-Feb-2003, which came into effect on 06-Feb-2003.
- 6 Licence varied by notice 1043601, issued on 14-Jan-2005, which came into effect on 08-Feb-2005.
- 7 Licence varied by notice 1055208, issued on 01-Mar-2006, which came into effect on 26-Mar-2006.
- 8 Condition A1.3 Not applicable varied by notice issued on <issue date> which came into effect on <effective date>
- 9 Licence varied by notice 1105215, issued on 23-Feb-2011, which came into effect on 23-Feb-2011.
- 10 Licence varied by notice 1502466 issued on 21-Dec-2011
- 11 Licence transferred through application 1517779 approved on 29-Oct-2013 , which came into effect on 17-Oct-2013
- 12 Licence varied by notice 1527523 issued on 13-May-2015

Appendix 4: Independent Audit Action Plan Update

Mannering Colliery IEA – Response to Audit Recommendations

Reference Item	Condition Description	Audit Finding/Audit Recommendation	Action Status Update	Target Date for Completion
1. Schedule 2, Condition 2A	The Proponent shall carry out the development in accordance with the (a) Statement of Commitments; and (b) conditions of this approval.	A number of non-compliances with the conditions of PA 06_0311 and one with regard to the statement of commitments have been identified by the IEA. See recommendations below.	n/a	n/a
2. Schedule 2, Condition 8	The Proponent must regularly review the strategies, plans and programs required under this approval and ensure that these documents are updated to incorporate measures to improve the environmental performance of the development and reflect current best practice in the mining industry. To facilitate these updates, the Proponent may at any time submit revised strategies, plans or programs for the approval of the Secretary. With the agreement of the Secretary, the Proponent may also submit any strategy, plan or program required by this approval on a staged basis. With the agreement of the Secretary, the Proponent may prepare a revision or stage of any strategy, plan or program required under this approval without undertaking consultation with all parties nominated under the applicable condition in this approval. <i>Notes:</i> <ul style="list-style-type: none"> While any strategy, plan or program may be submitted on a staged basis, the Proponent must ensure that the existing operations on site are covered by suitable strategies, plans or programs at all times. If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program must clearly describe the specific stage to which the strategy, plan or program applies, the relationship of this stage to any future stages, and the trigger for updating the strategy, plan or program. 	Management plans have not been subject to regular review or revision. In most cases documents have been revised but not resubmitted to DP&E for approval. All relevant management plans should be reviewed, updated and submitted to DP&E in consultation with the relevant regulators for review and approval.	LakeCoal undertook a detailed review of Mannering Colliery's environmental management plans following the submission of its 2015 Annual Review during the reporting period. The Department was notified of the outcomes of this review via a letter dated 28 July 2016. LakeCoal is still progressing with updates to the site management plans which are due to be completed and submitted to the Department in the next reporting period. A revised Noise Monitoring Program was submitted to the Department during the reporting period in accordance with the management plan review schedule.	Various.
3. Schedule 2, Condition 12	The Proponent shall pay the affected councils \$0.02 for each tonne of ROM coal produced by the project for the purpose of improving water quality in the Lake Macquarie catchment. This payment shall be: (a) shared equally by the affected councils; (b) made by the end of March 2009, and at yearly intervals thereafter; (c) calculated on the ROM coal produced in the previous calendar year; and (d) subject to indexation by the Implicit Price Deflator, as published by the Australian Bureau of Statistics.	Duplication of condition requirements. This condition should be updated as part of the next modification to make reference to the fact that Chain Valley Colliery coal coming to Mannering via the Link Road will not be subject to this condition as it is subject to a similar condition under SSD-5465.	LakeCoal will seek to have this condition amended at the next modification to the conditions of PA 06_0311.	At next Modification
4. Schedule 3, Condition 1	The Proponent shall ensure that the noise generated by the project does not exceed the noise impact assessment criteria in Table 1 at any residence on privately owned land.	The Q3 2013 Noise monitoring reports were not available at the time of the audit. The Q3 2013 noise monitoring records should be obtained from Centennial to confirm that there were no noise exceedances during this period. These should also be made publicly available either on the Centennial or LC website for Mannering Colliery.	As at the end of the reporting period LakeCoal had not received the previous monitoring reports from Centennial. Further consultation with Centennial is planned for the next reporting period to obtain this information and address this matter.	30 June 2017
5. Schedule 3, Condition 6	The Proponent shall only discharge water from the site as expressly provided for by its EPL.	There have been seven discharge related non-compliances reported against EPL 191 relating to water quality during the audit period. Further investigations should be undertaken with	The water management system at Mannering Colliery was upgraded in 2013 to improve the operations ability to handle rainfall events. There were no exceedances of the sites water quality criteria during the 2016 reporting period. LakeCoal is now utilising flocculent blocks in designated drainage locations on site to assist with water quality control	Complete.

Reference Item	Condition Description	Audit Finding/Audit Recommendation	Action Status Update	Target Date for Completion
		regard to improving the automation of the flocculent system on the water management system in order to prevent future water quality exceedances.	which is proving to be effective. Where required (after rain events) manual flocking of site sedimentation dams is also undertaken to improve water quality. LakeCoal will continue to monitor the water quality within the site water management system in accordance with the sites water monitoring program. Monitoring results will be reported in the sites Annual Review.	
6. Schedule 3, Condition 9	The Site Water Balance must: (a) include details of: • sources and security of water supply; • water use on site; • water management on site; and (b) investigate, assess and report on measures to minimise water use by the project, particularly potable water from the Wyong Shire town water supply.	As per recommendation The GHD reports referenced in the EA (January, 2013) for Mannering Colliery should be considered in the 2016 review of the WMP.	LakeCoal will include the GHD reports for reference in the next review of the Mannering Colliery WMP which is scheduled for the next reporting period.	30 June 2017
7. Schedule 3, Condition 10	The Erosion and Sediment Control Plan must: (a) be consistent with the requirements of <i>Managing Urban Stormwater: Soils and Construction</i> (Landcom 2004, or its latest version); (b) identify activities that could cause soil erosion and generate sediment; (c) describe measures to minimise soil erosion and the potential for transport of sediment from the site; (d) describe the location, function, and capacity of erosion and sediment control structures; and (e) describe what measures would be implemented to monitor and maintain the structures over time.	As per recommendation The recommendations from the 2013 independent compliance audit remain valid and should be considered in the 2016 review of the WMP.	LakeCoal will review and include (where relevant) the recommendations from the 2013 Independent Compliance Audit in the next review of the Mannering Colliery WMP.	30 June 2017
8. Schedule 3, Condition 12	The Groundwater Monitoring Program must include: (a) detailed baseline data to benchmark the natural variation in groundwater levels, yield and quality; (b) groundwater impact assessment criteria; (c) a program to monitor the impact of the project on groundwater levels, yield and quality; and (d) procedures for reporting the results of this monitoring.	No evidence available at the time of audit to confirm DP&E approval of the groundwater monitoring program under the current WMP Follow up with DP&E to gain confirmation over the adequacy of current groundwater monitoring arrangements.	LakeCoal will consult with DP&E and DPI-Water during the process of updating the WMP to confirm the adequacy of the current groundwater monitoring program at Mannering Colliery.	30 June 2017
9. Schedule 3, Condition 18	The Proponent shall prepare a Heritage Management Plan for the project to the satisfaction of the Secretary. This Plan must: (a) be prepared in consultation with any relevant Aboriginal stakeholders; (b) be submitted, prior to 31 March 2013, for approval to the Secretary; (c) include consideration of the Aboriginal and non-Aboriginal cultural context and significance of the site; (d) detail the responsibilities of all stakeholders; and (e) include programs/procedures and management measures for: • dealing with previously unidentified Aboriginal objects (excluding human remains), including any need to halt works in the vicinity, assessment of significance, determination of appropriate mitigation measures (by a qualified archaeologist in consultation with Aboriginal stakeholders), re-commencement of works, notifying OEH, and registering the new site(s) in the OEH AHIMS register;	As per recommendation The ACHMP and NIHMP should be updated to a LakeCoal document and address the management of heritage items at Mannering Colliery.	See response to Reference Item 2	30 September 2017

Reference Item	Condition Description	Audit Finding/Audit Recommendation	Action Status Update	Target Date for Completion
	<ul style="list-style-type: none"> dealing with any human remains which may be discovered, including halting of works in the vicinity; notifying NSW Police, OEH, the Department and Aboriginal stakeholders; and not re-commencing any works in the vicinity unless authorised; heritage induction for construction personnel (including procedures for keeping records of inductions); ongoing Aboriginal consultation and involvement (including procedures for keeping records of this); appropriate identification, management, conservation and protection of both Aboriginal and non-Aboriginal heritage items identified on the site; and dealing with previously unidentified non-Aboriginal heritage items which may be discovered during the project. <p>The Proponent shall implement the approved management plan as approved from time to time by the Secretary.</p>			
10. Schedule 3, Condition 22	<p>The Proponent shall prepare a Greenhouse and Energy Efficiency Plan for the project to the satisfaction of the Secretary. This plan must:</p> <p>(a) be prepared in consultation with EPA and generally in accordance with the <i>Guidelines for Energy Savings Action Plans</i> (DEUS 2005, or its latest version);</p> <p>(b) be submitted to the Secretary for approval by the end of September 2008;</p> <p>(c) include a program to monitor greenhouse gas emissions and energy use generated by the project;</p> <p>(d) include a framework for investigating and implementing measures to reduce greenhouse gas emissions and energy use at the site; and</p> <p>(e) describe how the performance of these measures would be monitored over time.</p> <p>The Proponent shall implement the approved management plan as approved from time to time by the Secretary.</p>	<p>As per recommendation</p> <p>Consultation should be undertaken with EPA and DP&E regarding the proposal to include the GGEEP required under this condition as a component of the revised AQMP.</p>	<p>Consultation with DP&E and the EPA will be undertaken in the next reporting period regarding the relevance of the Energy Savings Action for Mannering Colliery and whether it requires updating or incorporation into the sites Air Quality Management Plan.</p>	30 June 2017
11. Schedule 5, Condition 1	<p>The Proponent shall revise an Environmental Management Strategy for the project. This strategy must:</p> <p>(a) be submitted for approval to the Secretary prior to 30 June 2013;</p> <p>(b) provide the strategic framework for the environmental management of the project;</p> <p>(c) identify the statutory approvals that apply to the project;</p> <p>(d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project;</p> <p>(e) describe the procedures that would be implemented to:</p> <ul style="list-style-type: none"> keep the local community and relevant agencies informed about the operation and environmental performance of the project; receive, handle, respond to, and record complaints; resolve any disputes that may arise during the course of the project; respond to any non-compliance; and respond to emergencies; and <p>(f) include:</p> <ul style="list-style-type: none"> copies of any strategies, plans and programs approved under the conditions of this approval; and a clear plan depicting all the monitoring required to be carried out under the conditions of this approval. 	<p>As per recommendation</p> <p>The EMS should be reviewed and updated by LC to reflect the current status of operations at Mannering.</p>	<p>LakeCoal has commenced the review of the Mannering EMS to reflect the current status of operations on site during the reporting period. The document is expected to be submitted for approval in the next reporting period.</p>	30 June 2017

Reference Item	Condition Description	Audit Finding/Audit Recommendation	Action Status Update	Target Date for Completion
	The Proponent shall implement the approved management strategy as approved from time to time by the Secretary.			
12. Schedule 5, Condition 2	<p>The Proponent shall ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines, and include:</p> <ul style="list-style-type: none"> (a) detailed baseline data; (b) a description of: <ul style="list-style-type: none"> • the relevant statutory requirements (including any relevant approval, licence or lease conditions); • any relevant limits or performance measures/criteria; • the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project or any management measures; (c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria; (d) a program to monitor and report on the: <ul style="list-style-type: none"> • impacts and environmental performance of the project; • effectiveness of any management measures (see (c) above); (e) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible; (f) a protocol for managing and reporting any: <ul style="list-style-type: none"> • incidents; • complaints; • non-compliances with statutory requirements; and • exceedances of the impact assessment criteria and/or performance criteria; and (g) a protocol for periodic review of the plan. <p><i>Note: The Secretary may waive some of these requirements if they are unnecessary for particular management plans.</i></p>	<p>Updates are required for a number of Mannering management plans to ensure that they reflect current status of operations and the requirements of contemporary statutory requirements, regulatory guidelines and management measures on site.</p> <p>Expedite the revision of all site management plans to reflect the current status of operations following MOD 3 and the recommencement of mining activities at Mannering.</p>	See response to Reference Item 2	Ongoing
13. Schedule 5, Condition 3	<p>By the end of February 2013, and annually thereafter, the Proponent shall review the environmental performance of the project to the satisfaction of the Secretary. This review must:</p> <ul style="list-style-type: none"> (a) describe the development (including any rehabilitation) that was carried out in the past calendar year, and the development that is proposed to be carried out over the current financial year; (b) include a comprehensive review of the monitoring results and complaints records of the project over the past calendar year, which includes a comparison of these results against the: <ul style="list-style-type: none"> • the relevant statutory requirements, limits or performance measures/criteria; • requirements of any plan or program required under this approval; • the monitoring results of previous years; and • the relevant predictions in the documents listed in condition 2 of Schedule 2; (c) identify any non-compliance over the past year, and describe what actions were (or are being) taken to ensure compliance; (d) identify any trends in the monitoring data over the life of the project; (e) identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and 	<p>The 2013 Annual Review was not submitted by the required due date.</p> <p>No further action required.</p>	No action required.	Ongoing.

Reference Item	Condition Description	Audit Finding/Audit Recommendation	Action Status Update	Target Date for Completion
	(f) describe what measures will be implemented over the current financial year to improve the environmental performance of the project.			
14. Schedule 5, Condition 4	<p>Within 3 months of:</p> <p>(a) the submission of an annual review under Condition 3 above;</p> <p>(b) the submission of an incident report under Condition 6 below;</p> <p>(c) the submission of an audit under Condition 8 below; or</p> <p>(d) any modification to the conditions of this approval (unless the conditions require otherwise),</p> <p>the Proponent shall review, and if necessary revise, the strategies, plans, and programs required under this approval to the satisfaction of the Secretary.</p> <p>Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the project.</p>	<p>No evidence available of the required management plan reviews being undertaken in accordance with this condition (i.e. following incident reports, Modifications, etc).</p> <p>Develop and implement a protocol to ensure that all strategies, plans and programs are regularly reviewed as required under this condition and provided to DP&E for approval after each revision.</p>	<p>Complete. LakeCoal has developed and implemented a systematic process which triggers the requirement for the reviews required under Schedule 5, Condition 4.</p> <p>LakeCoal completed the first of these formal reviews in a letter to DP&E dated 28 July 2016 which provided the outcomes from the management plan reviews and an indicative review timetable for Mannering Colliery. A revised schedule will provided to the Department within 3 months of the submission of the 2016 Annual Review.</p>	30 June 2017
15. Schedule 5, Condition 6	The Proponent shall notify, at the earliest opportunity, the Secretary and any other relevant agencies of any incident that has caused, or threatens to cause, material harm to the environment. For any other incidents associated with the project, the Proponent shall notify the Secretary and any other relevant agencies as soon as practicable after the Proponent becomes aware of the incident. Within 7 days of the date of the incident, the Proponent shall provide the Secretary and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.	<p>No evidence available at the time of audit to confirm that the reportable incidents under the EPL were reported to DP&E within 7 days from the date they occurred.</p> <p>Develop a procedure that outlines the respective regulatory agencies and (if relevant) landholders to be notified in the event of environmental incidents on site.</p>	LakeCoal reviewed and updated its incident management system during the reporting period. The new incident reporting system contains a checklist that triggers reportable incident notifications for environmental incidents.	Complete.
16. Schedule 5, Condition 7	The Proponent shall provide regular reporting on the environmental performance of the project on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this approval.	<p>The monthly environmental monitoring reports and complaints registers are only available from October 2013 (which aligns with period LakeCoal took over as operator for Mannering Colliery).</p> <p>CCC meeting minutes are only available from August 2013. No records are maintained on the Mannering website (which is administered by LakeCoal) for the site for the period prior to October 2013.</p> <p>All monitoring records and reports for the period prior to LakeCoal's operation of Mannering Colliery should be obtained from Centennial and made publicly available either on the Centennial or LC website.</p>	As at the end of the reporting period LakeCoal had not received the previous monitoring reports and registers from Centennial. Further consultation with Centennial is planned for the next reporting period to address this matter.	30 June 2017
17. Schedule 5, Condition 8	<p>By the end of March 2013 and every three years thereafter, unless the Secretary directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the project. This audit must:</p> <p>(a) be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary;</p> <p>(b) include consultation with the relevant agencies;</p> <p>(c) assess the environmental performance of the project and assess whether it is complying with the requirements in this approval and any relevant EPL or Mining Lease (including any assessment, plan or program required under these approvals); and</p> <p>(d) recommend appropriate measures or actions to improve the environmental performance of the project, and/or any assessment, plan or program required under the abovementioned approvals.</p>	<p>The audit was completed in accordance with this condition however it was not completed by 31 March 2016 date as requested in the DP&E correspondence dated 28/01/16.</p> <p>No action required.</p>	Noted. No further action required.	n/a

Reference Item	Condition Description	Audit Finding/Audit Recommendation	Action Status Update	Target Date for Completion
	Note: This audit team must be led by a suitably qualified auditor and include experts in any field specified by the Secretary.			
18. Schedule 5, Condition 9	Within 6 weeks of the completion of this audit, or as otherwise agreed by the Secretary, the Proponent shall submit a copy of the audit report to the Secretary, together with its response to any recommendations contained in the audit report.	The 2013 audit report was not submitted within the required timeframe. No action required.	No further action required.	n/a
19. Schedule 5, Condition 10	The Proponent shall: (a) make copies of the following publicly available on its website: <ul style="list-style-type: none"> the documents referred to in condition 2 of Schedule 2; all relevant statutory approvals for the project; all approved strategies, plans and programs required under the conditions of this approval; a comprehensive summary of the monitoring results of the project, reported in accordance with the specifications in any approved plans or programs required under the conditions of this or any other approval; a complaints register, which is to be updated on a monthly basis; minutes of CCC meetings; the annual reviews required under this approval; any independent environmental audit of the project, and the Proponent's response to the recommendations in any audit; and any other matter required by the Secretary; and (b) keep this information up-to-date, to the satisfaction of the Secretary.	The monthly environmental monitoring reports and complaints registers are only available from October 2013. CCC meeting minutes are only available from August 2013. No records are maintained on the LC website for the site for the period prior to these dates. All documentation required under this condition for the period prior to LC's operation of Manning should be obtained from Centennial and made publicly available either on the Centennial or LC website.	See response to Reference Item 4	30 June 2017
20. Water Management	The water level within the sediment pond system will be monitored and kept at a relatively low operating level, such that the ponds can provide a detention function in a significant rainfall event.	A number of non-compliances were reported under EPL 191 during the audit period associated with discharges from LDP001. No action required	Refer to response for Reference Item 5	n/a
21. Condition A1.2	The licensee must not: (a) Produce by mining activities more than 1.1 million tonnes of coal within any 12 month period. (b) Undertake coal works handling more than 1.1 million tonnes within any 12 month period, where ROM coal handled on the premises may be made up of coal produced by mining activities from both the Manning premises as defined in this licence or Chain Valley premises as defined in Environment Protection Licence number 1770. Note: These limits on the scale of the fee based activities are based on project Approval 06_0311 granted under the <i>Environmental Planning and Assessment Act 1979</i> which limits extraction to 1.1 million tonnes of run of mine (ROM) coal per year and its modifications, the most recent of which is dated 27 November 2014.	There was an inconsistency identified between PA 06_0311 and EPL191 regarding coal handling volumes approved. Update the approved coal handling volume described in EPL191 at the next variation of the licence for consistency with PA 06_0311.	There were no variations to the Manning Colliery EPL required during the reporting period. The next review of the licence is scheduled for Q2 2017. The licence will be updated to reflect the new limits approved under Manning Colliery's Project Approval.	Prior to coal handling increasing above 1.1 Mt. Next Reporting Period.
22. Condition L2.4	Water and/or Land Concentration Limits	The following exceedances were identified against this condition: <ul style="list-style-type: none"> Exceedance of TSS limits occurred at LDP001 on 30 June and 1 July 2013. Results of 77 mg/L and 88 mg/L were recorded against a limit of 50 mg/L. Exceedance of TSS limits occurred at LDP001 on the 17/11/13 – 18/11/13. Results of 112 mg/L and 	See response to Reference Item 5	n/a

Reference Item	Condition Description	Audit Finding/Audit Recommendation	Action Status Update	Target Date for Completion
		<p>105 mg/ recorded against limit of 50 mg/L;</p> <ul style="list-style-type: none"> Exceedance of pH limit (8.5) at LDP001 (EPL ID#1) occurred on the 13/10/ 2014. Result of pH 8.6; and Exceedance of TSS criteria occurred at LDP001 (EPL ID#1) from the 28/2/14 – 1/3/14. <p>Further investigations should be undertaken with regard to improving the automation of the flocculent system on the water management system in order to prevent future water quality exceedances.</p>		
23. Condition L2.1	For each monitoring/discharge point or utilisation area specified in the table/s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.	<p>The following exceedances were identified against this condition:</p> <ul style="list-style-type: none"> Exceedance of oil and grease limit at LDP001 on 30/3/15 (recorded result of 11mg/L against limit of 10mg/L) TSS exceedance at LDP001 on 5/4/15 (recorded result of 56mg/L against limit of 50 mg/L). Exceedance of TSS limit for Monitoring Point 1 on 20/4/15 and 21/4/15 (recorded result of 58 mg/L against limit of 50 mg/L). <p>No further action required.</p>	See response to Reference Item 5.	n/a
24. Condition M7.1	For each discharge point or utilisation area specified below, the licensee must monitor: a) the volume of liquids discharged to water or applied to the area; b) the mass of solids applied to the area; c) the mass of pollutants emitted to the air; at the frequency and using the method and units of measure, specified below.	During the audit period there were multiple occasions where data wasn't captured due to power outages on site.	Complete - LakeCoal installed and commissioned a solar powered monitoring system at Manning's licenced discharge point to improve the data capture rates during the reporting period. The unit has provided a 100% data capture rate since its installation in November 2016.	Complete.
25. Condition O3	All trafficable areas, coal storage areas and vehicle manoeuvring areas in or on the premises must be maintained, at all times, in a condition that will minimise the generation, or emission from the premises, of wind-blown or traffic generated dust... Trucks transporting coal from the premises must be covered immediately after loading to prevent wind blown emissions and spillage. The covering must be maintained until immediately before unloading the trucks... The tailgates of all haulage trucks leaving the premises must be securely fixed prior to loading or immediately after unloading to prevent loss of materials.	Update condition O3 describing measures to minimise dust emissions from haul trucks described in EPL 191 at the next variation of EPL191 for consistency with PA 06_0311.	LakeCoal agrees that the condition is no longer relevant to current operations as the site does not have approval to haul coal from the premises. LakeCoal will seek to correct this condition in the next variation to EPL191 variation which is scheduled for Q2 2017.	At next EPL variation
26. Condition R1.5	The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').	<p>Annual return for the 17 October 2013 – 31 December 2013 reporting period was submitted to the EPA via email on 10/03/14, outside of the 60 day timeframe required under the condition.</p> <p>No action required.</p>	n/a	n/a
27. Condition R2.2	The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.	The notification to the EPA for the TSS exceedance on 5/04/15 was provided to the EPA by LC via the EPA hotline on 10/04/15, with the incident report provided on 17/04/15. This was outside of the 7 day period from the occurrence of the incident required	LakeCoal provided an incident report to the EPA within 7 days of becoming aware that an incident had occurred on 05/04/2015 (ie receipt of a laboratory report indicating an exceedance had occurred). LakeCoal will continue to report incidents to the relevant authorities as soon as practical.	n/a

Reference Item	Condition Description	Audit Finding/Audit Recommendation	Action Status Update	Target Date for Completion
		under the condition. No action required.	n/a	
28. Condition M7.1	For each discharge point or utilisation area specified below, the licensee must monitor: a) the volume of liquids discharged to water or applied to the area; b) the mass of solids applied to the area; c) the mass of pollutants emitted to the air; at the frequency and using the method and units of measure, specified below.	Failure to monitor flow volume (continuously) at LDP001 on multiple occasions in 2015 as a result of loss of power to the discharge point, flow meter and data logger. Install a solar powered discharge monitoring system at Manning to reduce potential for missed data capture as a result of power outages.	See response to Reference Item 24.	n/a
29. Condition 5	(a) The lease holder must notify the Department of all: (i) breaches of the conditions of this mining lease or breaches of the Act causing or threatening material harm to the environment; and (ii) breaches of environmental protection legislation causing or threatening material harm to the environment (as defined in the <i>Protection of the Environment Operations Act 1997</i>), arising in connection with significant surface disturbing activities, including mining operations, mining purposes and prospecting operations, under this mining lease. The notification must be given immediately after the lease holder becomes aware of the breach. Note. Refer to www.resources.nsw.gov.au/environment for notification contact details. (b) The lease holder must submit an Environmental Incident Report to the Department within seven (7) days of all breaches referred to in condition 5(a)(i) and (ii). The Environmental Incident Report must include: (i) the details of the mining lease; (ii) contact details for the lease holder; (iii) a map identifying the location of the incident and where material harm to the environment has or is likely to occur; (iv) a description of the nature of the incident or breach, likely causes and consequences; (v) a timetable showing actions taken or planned to address the incident and to prevent future incidents or breaches referred to in 5(a). (vi) a summary of all previous incidents or breaches which have occurred in the previous 12 months relating to significant surface disturbing activities, including mining operations, mining purposes and prospecting operations under this mining lease. Note. The lease holder should have regard to any relevant Director General's guidelines in the preparation of an Environmental Incident Report. Refer to www.resources.nsw.gov.au/environment for further details. (c) In addition to the requirements set out in conditions 5(a) and (b), the lease holder must immediately advise the Department of any notification made under section 148 of the <i>Protection of the Environment Operations Act 1997</i> arising in connection with significant surface disturbing activities including mining operations, mining purposes and prospecting operations, under this mining lease.	Notification and subsequent incident reports were not provided for breaches of the <i>Protection of the Environment Operations Act 1997</i> that occurred during the audit period to the Department of Resources and Energy Refer to Reference Item 15	Complete - LakeCoal reviewed and updated its incident management system during the reporting period. The new incident reporting system contains a checklist that triggers reportable incident notifications for environmental incidents.	n/a
30. Condition 12	The licence holder must install to the satisfaction of the Department an appliance(s) to measure the quantity of water extracted from the works.	Evidence not available at the time of audit to confirm DPI-Water is satisfied with the arrangements put in place by LC to monitor the quantity of water extracted from the underground workings	See response to Reference Item 8. LakeCoal will consult with DPI Water to confirm that the current U/G monitoring devices associated with measuring dewatering volumes are to	30 June 2017

Reference Item	Condition Description	Audit Finding/Audit Recommendation	Action Status Update	Target Date for Completion
		The current monitoring arrangements should be approved by DPI-Water and described in the revised WMP document.	their satisfaction and will include details relating to these devices in the next revision of the WMP.	
31. General Observation	-	Relevant conditions of the water licence should be considered and included in the revision of the WMP.	LakeCoal will include a review of the water licence monitoring and reporting conditions in the next revision of the Mannering WMP.	30 June 2017
32. General Observation - Noise	-	Ensure that all required noise mitigation options are investigated and reported in accordance with the requirements of PA 06_0311 Appendices 4A and 4B. Additional noise mitigation controls for coal processing infrastructure should be implemented as required from the review.	LakeCoal has commenced the noise mitigation options assessment in accordance with PA06_0311. Based on the findings from this assessment LakeCoal will implement any required noise mitigation measures at the operation to achieve the required noise performance criteria.	Ongoing.
33. General Observation - Air Quality	-	Prior to recommencement of full scale coaling activities at Mannering review all required air quality monitoring and mitigation measures and ensure that these are accurately captured within the revision of the Air Quality Management Plan and implemented as required.	Complete. LakeCoal has commenced a review of the sites air quality monitoring management plan to reflect the current and future operations at Mannering Colliery. The revised management plan is planned to be submitted to the Department in the next reporting period.	30 June 2016
34. General Observation - Water Management	-	Further works should be undertaken to improve the rock lining at LDP 001 discharge outlet.	LakeCoal sought quotes for this work to be undertaken during the reporting period. An allowance for the works was incorporated into the 2017 budget which was subsequently approved. Works are planned to be completed in the next reporting period.	30 September 2017
35. General Observation - Water Management	-	Review Mannering's harvestable rights against the sites catchment area.	LakeCoal commenced this review during the reporting period. LakeCoal will consult with DPI Water once the review has been completed. This will be completed in the next reporting period.	30 June 2017
36. General Observation - Land Management	-	The regular Environmental Inspection process should include weed management as an inspection item. Areas where weeds have been identified such as the coal stockpile area should be treated to reduce the spread of weeds into surrounding areas.	Complete. LakeCoal has revised its internal Environmental Inspection checklist to include consideration/identification of invasive weeds. In addition, LakeCoal has engaged a weed management consultant to undertake a detailed weed survey of the operation and develop a weed action plan during the reporting period. The recommendations from the WAP will be implemented during the next reporting period.	Complete.