




2015 Annual Review

Wilpinjong Coal Mine

Table 1 Annual Review Title Block

| | |
|--|---|
| Name of operation | Wilpinjong Coal Mine |
| Name of operator | Wilpinjong Coal Pty Limited |
| Development consent/project approval # | PA 05-0021 |
| Name of holder of development consent/project approval | Wilpinjong Coal Pty Limited |
| Mining lease # | ML 1573 |
| Name of holder of mining lease | Wilpinjong Coal Pty Limited |
| Water licence # | WAL21499, 20BL173513, 20BL173514, 20BL173515, 20BL173516, 20BL173517, 20BL170147, 20BL170148, 20BL170149, 20BL170150, 20BL170151, 20BL170152, 20BL170153, 20BL170063, 20BL170062, 20BL170061, 20BL170059, 20BL170058. |
| Name of holder of water licence | Wilpinjong Coal Pty Limited |
| MOP start date | 26 November 2014 |
| MOP end date | 29 April 2019 |
| Annual review start date | 01 January 2015 |
| Annual review end date | 31 December 2015 |
| <p>I, Kieren Bennetts, certify that this audit report is a true and accurate record of the compliance status of the Wilpinjong Coal Mine for the period 01 January 2015 to 31 December 2015 and that I am authorised to make this statement on behalf of Wilpinjong Coal Pty Limited.</p> <p><i>Note.</i></p> <p><i>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.</i></p> <p><i>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).</i></p> | |
| Name of authorised reporting officer | Kieren Bennetts |
| Title of authorised reporting officer | Environment & Community Manager |
| Signature of authorised reporting officer |  |
| Date | 31 March 2016 |

This 2015 Annual Review (AR) (this Report) presents a summary of regulatory compliance, environmental performance and community engagement activities for the *review period* from 1 January 2015 to 31 December 2015. This AR has been prepared in accordance with Condition 3, Schedule 5 of Project Approval (05-0021), requiring the preparation of an Annual Review, and the *Annual Review Guideline (October 2015)* issued by the NSW Department of Planning and Environment (DP&E).

Copies of this Report will be provided to the following stakeholders:

- NSW Department of Planning and Environment (DP&E);
- NSW Trade and Investment – Division of Resources and Energy (DRE);
- NSW Environment Protection Authority (EPA);
- NSW Department of Primary Industries – Division of Water (DPI – Water);
- NSW Office of Environment and Heritage (OEH);
- Mid-Western Regional Council (MWRC); and
- the Mine’s Community Consultative Committee (CCC);

In addition, a copy will be made publicly available on the Peabody website:

<http://www.peabodyenergy.com/content/427/australia-mining/new-south-wales/wilpinjong-mine/approvals-plans-and-reports-wilpinjong-mine> in accordance with Condition 11(a), Schedule 5 of Project Approval (05-0021).

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Appendices**Appendix 1 Rail Haulage****Appendix 2 Exploration****Appendix 3 Environmental Performance**

Appendix 3A Meteorological

Appendix 3B Air Quality Monitoring

Appendix 3C Surface Water Monitoring

Appendix 3D Groundwater Monitoring

Appendix 3E Blast Monitoring

Appendix 3F Noise Monitoring

Appendix 4 Heritage**Appendix 5 Biodiversity****Appendix 6 Community****Appendix 7 Land Management****Appendix 8 Plans**

1.0 STATEMENT OF COMPLIANCE

Table 2 Statement of Compliance

| Were all conditions of the relevant approval(s) complied with? | Yes / No |
|--|----------|
| PA 05-0021 | No |
| ML 1573 | Yes |
| EL 6169 & 7091 | Yes |
| EPL 12455 | No |
| Water Licences | No |

Table 3 Non-Compliances

| Relevant Approval | Condition # | Condition Description | Compliance Status | Comment | Section in AR |
|-------------------|-------------|---|-------------------|---|-----------------------------|
| PA 05-0021, Sch 2 | Con. 8 | ...ensure that all new buildings and structures....and structures, are constructed in accordance with the relevant requirements of the BCA. | Non-compliance | Several buildings identified as lacking building and occupation certificates. | Section 11.0 |
| PA 05-0021, Sch 3 | Con. 24 | ... shall not discharge any water from the site or irrigate any waste water on site except as may be expressly provided by an EPL... | Non-compliance | Results caused by laboratory error or interference in the analysis method. | Section 7.1 Section 11.0 |
| PA 05-0021, Sch 3 | Con. 37 | By the end of December 2015, unless the DG agrees otherwise, make suitable arrangements to protect ECAS and BOA in perpetuity.... | Non-compliance | Delays in reaching an agreement with National Parks & Wildlife Service (NPWS) for the transfer of land. | Section 11 |
| PA 05-0021, Sch 3 | Con. 39 | By 31 December 2015, unless otherwise agreed by the DG, lodge a Conservation Bond for BOAs..... | Non-compliance | Conservation Bond for the BOA's is based on the commitments of the Biodiversity Management Plan (BMP).BMP yet to be approved. | Section 11.0 |
| PA 05-0021, Sch 3 | Con. 54 | The Proponent shall minimise the visual impacts of the project to the satisfaction of the Director- General. | Non-compliance | Failure to seek endorsement from DP&E Director General (i.e. Secretary). | Section 11.0 |
| EPL 12455 | M2.2 | Air Monitoring Requirements for EPL point 28 (TEOM 4) | Non-compliance | Power failure, general repairs and maintenance. | Section 11.0 |

| Relevant Approval | Condition # | Condition Description | Compliance Status | Comment | Section in AR |
|-------------------|-------------|---|-------------------|--|---------------|
| EPL 12455 | M2.2 | Air Monitoring Requirements for EPL point 13 (TEOM 3) | Non-compliance | Power failure, general repairs and maintenance. | Section 11.0 |
| EPL 12455 | M2.2 | Continuous monitoring for air temperature, wind speed/direction, lapse rate, rainfall and humidity did not occur. | Non-compliance | Calibration and maintenance. | Section 11.0 |
| EPL 12455 | M2.2 | Air Monitoring Requirements for EPL points (dust gauges) 3, 4, 6, 9, 10, 11, 12 & 26. | Non-compliance | Due to laboratory error. | Section 11.0 |
| EPL 12455 | R4.1 | Other Reporting Conditions | Non-compliance | Compliance assessment not submitted to the EPA by the due date. | Section 11.0 |
| EPL 12455 | M2.2 | Air Monitoring Requirements for EPL point 13 (HV1). | Non-compliance | Power failure. | Section 11.0 |
| EPL 12455 | M2.2 | Air Monitoring Requirements for EPL point 20 (HV4). | Non-compliance | HVAS failure and power outages. | Section 11.0 |
| EPL 12455 | M2.2 | Air Monitoring Requirements for EPL point 11 (DG13) | Non-compliance | Total insoluble matter not determined in accordance with AS3580.10.1 | Section 11.0 |
| EPL 12455 | L2.4 | Water and/or Land Concentration Limits for EPL point 24. | Non-compliance | Oil & grease (O&G) concentration above EPL limit (10 mg/L) | Section 11.0 |
| EPL 12455 | L1.1 | ..the licensee must comply with section 120 of the <i>Protection of the Environment Operations Act 1997</i> | Non-compliance | Water flow over light vehicle (LV) control bund into road culvert. | Section 11.0 |

Table 4 Compliance Status Key

| 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: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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 | Only to be applied where the non-compliance does not result in any risk of environmental harm (e.g. submitting a report to government later than required under approval conditions) |

2.0 INTRODUCTION

2.1 Mining Operations

The Wilpinjong Coal Mine (“the Mine”) is owned and operated by Wilpinjong Coal Pty Limited (WCPL), a wholly owned subsidiary of Peabody Energy Australia Pty Ltd (PEA).

The Mine is an existing open cut coal mining operation situated approximately 40 kilometres (km) north-east of Mudgee, near the Village of Wollar, within the Mid-Western Regional Local Government Area, in central New South Wales (NSW) (**Figure 1**). The Mine extracts run-of-mine (ROM) coal that is either processed on site at the Coal Handling and Preparation Plant (CHPP) or bypassed directly to product stockpiles. Product coal is transported by rail on the existing Sandy Hollow Gulgong Railway to local energy generators and to the Port of Newcastle for export.

Project Approval (05-0021) was granted by the Minister for Planning under Part 3A of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) on 1 February 2006, PA05-0021 was most recently modified in November 2014 (Modification 6). The current mining operations at the Wilpinjong Coal Mine are approved to produce 16 Mtpa of ROM coal and rail 12.5 Mtpa of product coal.

The approximate extent of the approved open cut and contained infrastructure area at Wilpinjong Coal Mine is shown on **Figure 2**. Major components include open cut pits, an elevated waste rock emplacement in Pit 2, ROM pads/coal stockpiles, water management infrastructure, CHPP, product coal stockpiles and rail and other associated infrastructure areas. Open cut mining targeting the Ulan Coal Seam and Moolarben Coal Member and the handling and processing of ROM coal at the CHPP is currently approved to operate 24 hours per day, seven days per week

2.2 Mine Contact Details

Contact details for key personnel responsible for environmental management at the Mine are in **Table 5**.

Table 5 Mine Contact Details

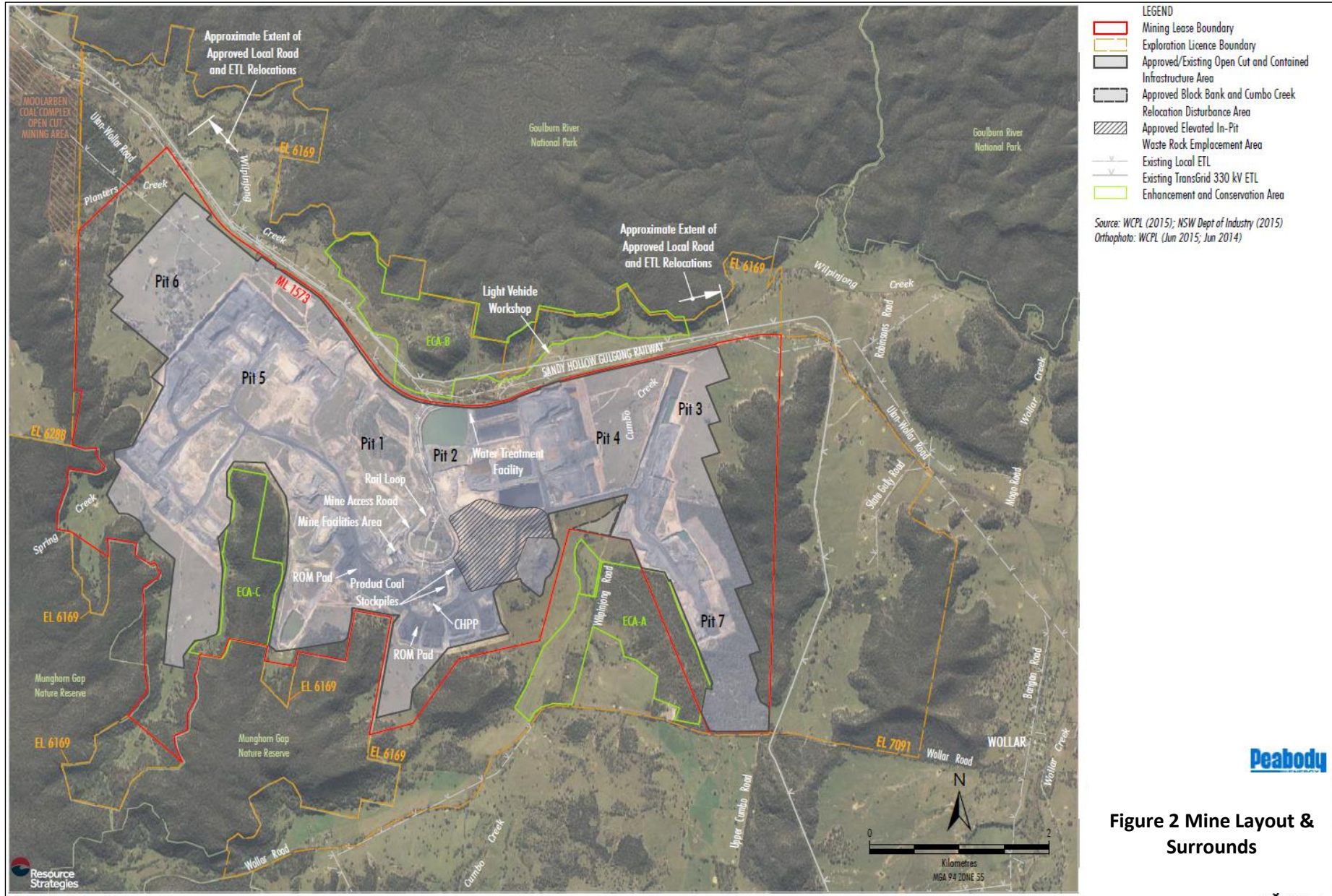
| Name | Position | Contact Details |
|-----------------|---------------------------------|---|
| Blair Jackson | General Manager | Email: bjackson@peabodyenergy.com |
| Kieren Bennetts | Environment & Community Manager | Email: kbennetts@peabodyenergy.com |
| Clark Potter | Senior Environmental Advisor | Email: cpotter@peabodyenergy.com |
| Karin Fogarty | Environmental Advisor | Email: kfogarty@peabodyenergy.com |

The street, postal address and contact telephone numbers for the Mine are as follows:

| Street Address | Postal Address | Phone Number |
|-----------------------|------------------|-------------------|
| 1434 Ulan-Wollar Road | Locked Bag 2005 | Ph: (02)6370 2500 |
| WOLLAR NSW 2850 | MUDGEES NSW 2850 | |



Figure 1 Locality Plan



3.0 APPROVALS

Table 5 presents the current approvals, leases and licences that the Mine operates under.

Table 6 Mine Approvals, Leases and Licences

| Relevant Authority | Instrument | Approval/Licence No. | Expiry Date |
|--------------------|---|--|---|
| DP&E | Project Approval | Project Approval (05-0021) <ul style="list-style-type: none"> (MOD1) Modified November 2007 (MOD 3) Modified August 2010 (MOD 4) Modified August 2012 (MOD 5) Modified February 2014 (MOD 6) Modified November 2014 | 21 years from commencement of Project Approval (i.e. 2027) |
| DRE-DTIRIS | Mining Lease | ML 1573 | February 2027 |
| | Exploration Licence | EL 6169 | 28/11/2017 |
| | | EL 7091 | Renewal submitted 24/2/2014 |
| | Mine within Wilpinjong B Notification Area | ML 1573 | Endorsed DSC 19 February 2013 Approved 24 January 2014 |
| | Mining Operations Plan (MOP) | Approved 11 June 2014 MOP Amendment A (21/10/2014) MOP Amendment B (26/11/ 2014) | 29 April 2019 |
| | Tailings Emplacement | Section 100 – TD1 and TD2 (approv. No. 07/1226) | February 2006 (facility decommissioned) |
| | Tailings Emplacement | Section 100 – TD3 and TD4 (approv. No. 08/9006) | December 2011 (facility decommissioned) |
| | Tailings Emplacement | Section 100 – TD5 (approv. No. 08/9006) | December 2013 (facility decommissioned) |
| | Tailings Emplacement | Section 100 – TD6 (approv. No. 08/9006) | 31 January 2016 |
| | Tailings Emplacement | Section 101 - Decommission TD2 (approv. No. 09/2396) | 29 April 2009 (facility decommissioned) |
| | Tailings Emplacement | Section 101 - Decommission TD1 (approv. No. 09/2396) | 28 October 2011 (facility decommissioned) |
| EPA | Environment Protection Licence (EPL) | EPL 12425 | Until the licence is surrendered, suspended or revoked. The licence is subject to review every 3 years. |
| | NSW Radiation Control Act 1990 Registration | Licence Number 5061384* | 02 January 2016^ |
| WorkCover NSW | Explosives Licence | NSW Explosives Act 2003 Part 3 Licence (Licence Number XSTR200024) | 24 March 2018 |
| DPI-Water | Water Licences | Refer to Table 18 in Section 7.1 | Refer to Table 18 in Section 7.1 |

Note: Copies of the Project Approval (05-0021), EPL 12425 and ML 1573 are available on the Peabody website

<http://www.peabodyenergy.com/content/427/australia-mining/new-south-wales/wilpinjong-mine/approvals-plans-and-reports-wilpinjong-mine>. * Licence number 5061384 consolidated several existing Radiation Registrations into a single licence during 2014. ^ Renewal application submitted.

3.1 Changes to Approvals

There were no modifications to PA05-0021 during the review period. There were no changes to EPL 12425 during the review period. There were no amendments to the Mining Operations Plan (MOP) during the review period. There were changes to water licensing in regards to consolidating the total water entitlements held by the five water licences (i.e. 20BL173513, 20BL173514, 20BL173515, 20BL173516 & 20BL173517) to a gross entitlement of 2021ML/annum (**Section 7.1**).

3.2 Wilpinjong Extension Project

The Mine submitted an Environmental Impact Statement (EIS) for the Wilpinjong Extension Project (WEP). The EIS has been prepared to accompany a Development Application made for the WEP, in accordance with Part 4 of the *NSW Environmental Planning and Assessment Act, 1979*.

The WEP would involve the continuation and extension of open cut mining operations at the Mine. The proposed life of the WEP is approximately 17 years and would extend the life of the approved Mine by approximately seven years (i.e. from approximately 2026 to 2033). Open cut mining activities and associated mobile equipment operations would continue to be undertaken 24 hours per day, seven days per week subject to compliance with real-time environmental management criteria.

3.3 Management Plans

WCPL operates an Environmental Management System to manage compliance and advance continual improvement across the Mine. During the review period all management plans were revised and updated accordingly and submitted for re-approval. A summary of the status of management plans required by PA05-0021 is presented in **Table 7**.

Table 7 Status of Environmental Management Plans

| Management Plan | Re-approval Status |
|---|--|
| Noise Management Plan | DP&E have no further comments awaiting approval |
| Blast Management Plan | DP&E comments recently addressed. Awaiting DP&E feedback |
| Air Quality Management Plan | DP&E comments recently addressed. Awaiting DP&E feedback |
| Site Water Management Plan | DP&E have no further comments awaiting approval |
| Site Water Balance | DP&E have no further comments awaiting approval |
| Erosion and Sediment Control Plan | DP&E have no further comments awaiting approval |
| Surface Water Management and Monitoring | DP&E have no further comments awaiting approval |
| Groundwater Monitoring | DP&E have no further comments awaiting approval |
| Surface and Groundwater Response Plan | DP&E have no further comments awaiting approval |
| Biodiversity Management Plan | DP&E comments recently addressed. Awaiting DP&E feedback |
| Aboriginal Cultural Heritage Management Plan | DP&E have no further comments awaiting approval |
| Waste Management Plan | Approved |
| Spontaneous Combustion Management Plan | DP&E have no further comments awaiting approval |
| Rehabilitation Management Plan (within the MOP) | Approved (MOP Amendment B) |
| Environmental Management Strategy | Awaiting approval of above Management Plans |

In accordance with Schedule 5, Condition 4 of PA05-0021, WCPL will review and if necessary revise the strategies, plans and programs required under the consent within three months of the submission of this Annual Review to relevant government regulators. In accordance with Schedule 5, Condition 11 of PA05-0021, relevant management plans have been made available to the public on the Peabody Energy website www.peabodyenergy.com

4.0 OPERATIONS SUMMARY

Table 8 displays the production summary for 2015, compared to the production for 2014 and the forecast production for 2016.

Table 8 Production Summary

| Material | Approved Limit | Previous Reporting Period (actual) | This Reporting Period (actual) | Next Reporting Period (forecast) |
|---------------------------------|----------------|------------------------------------|--------------------------------|----------------------------------|
| Waste Rock/Overburden | 34.1 Mbcm | 27.63Mbcm | 23.4Mbcm | 30.8Mbcm |
| ROM Coal | 16 Mtpa | 15.42Mt | 12.52Mt | 14.68Mt |
| Coarse Reject & Tailings (TFP)* | NA | 1.68Mt | 1.92Mt | 2.16Mt |
| Fine Tailings | NA | 0.508Mt | 0 | 0 |
| Product Coal | 12.5Mtpa | 12.43Mt | 12.07Mt | 12.43Mt |

Notes: *Tailings Filter Press, Million tonnes per annum = (Mtpa), Million bank cubic meters = (Mbcm)

4.1 Other Operational Conditions

At the end of the 2015 review period, open cut mining operations were located in Pit 3, Pit 4, Pit 5 and Pit 7 as identified in Plan 3B of the MOP (**Figure 2**).

In accordance with Condition 50, Schedule 3 of PA05-0021, WCPL maintains records of the amount of coal transported from the site each year, and the number of coal haulage train movements generated by the Mine on a daily basis.

12.07 Mt of product coal was transported from the Mine via rail during the 2015 review period and involved an average of approximately four train movements per day to the end of the 2015 (**Appendix 1**).

Train loading is available on a continuous basis, 24 hours a day and 7 days per week, with a maximum of 10 laden coal trains leaving the site per 24 hour period and an average of six train movements per day when calculated over one calendar year (Condition 7, Schedule 2 of PA05-0021).

In 2015 the Belt Press Filter (BPF) commenced at the CHPP. The BPF and associated transfer conveyor allows for co-disposal of tailings with coarse reject/overburden and improved recovery of water from tailings.

No overburden material was supplied (or requested) to regional infrastructure projects in the vicinity of the Mine.

4.2 Next Reporting Period

The proposed mining sequence for the 2016 Review Period is Pit 1, Pit 2, Pit 3, Pit 4, Pit 5, Pit 6 and Pit 7.

Due to changes in the 2015 Mine Plan (MP), operations in Pit 1 were delayed. This area will now commence in early 2016. Extraction in Pit 2 East has been brought forward to commence in mid - 2016. Extraction in this area is being accelerated to allow for relocation of a new power line, which is required if the Wilpinjong Extension Project is approved (**Section 3.2**).

5.0 ACTIONS REQUIRED FROM PREVIOUS ANNUAL REVIEW

A number of actions and improvements were identified by the DP&E and the DRE from the 2014 Annual Review, for completion during the 2015 review period. These actions are summarised in **Table 9**.

Table 9 Actions Required From Previous Annual Review

| Action required from previous Annual Review | Requested by | Action taken by WCPL | Where addressed in this Annual Review |
|--|--------------|--|---|
| Include text in the report information confirming blasts occurred during approved hours (as detailed data was provided in the appendix). | DP&E | Table 15 provides a summary of blasting activities during the review period, and accordingly details when blasts occurred. | Section 6.0 Table 15 |
| A section outlining any consultation undertaken in relation to the incorporation of the Biodiversity Offset Areas into the adjoining National Park. | DP&E | Refer to table in Appendix 5 regarding consultation with OEH. | Appendix 5 |
| Complaints Register 2014 could not be identified within the website. Please ensure this document is uploaded to the Wilpinjong's website within a month of this letter. | DP&E | The 2014 complaints register was uploaded to the website as required by PA05-0021. | Section 9 Appendix 6 |
| The Department requests that Wilpinjong Coal provide records advising if and when the Department was notified of the following exceedences/incidents: <ul style="list-style-type: none"> • Notification of PM₁₀ exceedance of the 24hr criteria from TEOM 3 on 11,14,18 January and 15 November; • Notification of PM₁₀ exceedance of the 24hr criteria from TEOM 4 on 12,14,19 January; and; • Erosion and sediment control incident on 26 March 2014. | DP&E | WCPL confirmed via letter (4 th May 2015) to DP&E detailing WCPL's notifications of the previously listed events. | NA |
| Department notes that by the 31 December 2015, unless otherwise agreed by the Secretary, Wilpinjong Coal Mine shall lodge a Conservation Bond with the Department and ensure that the Biodiversity Offset Strategy is implemented in accordance with the performance and completion criteria contained in the Biodiversity Management Plan. | DP&E | Conservation Bond is based on the Biodiversity Offset Strategy, a component of WCPL's Biodiversity Management Plan. The BMP is yet to be approved by DP&E. As such the Biodiversity Offset Strategy is yet to be approved. Refer to Appendix 5 for table of ongoing consultation between WCPL and DP&E regarding the approval of the BMP. | Section 6.3 Section 8.0 Appendix 5 |
| Reporting requirements for rehabilitation progress as provided in the 2013 AEMR response letter. | DRE | Reporting requirements for rehabilitation progress for the 2015 review period is provided in Section 8 . | Section 8.0 |

6.0 ENVIRONMENTAL PERFORMANCE

Environmental management measures undertaken during the 2015 review period have been conducted as required by the MOP, relevant management plans and monitoring programs developed for the Mine in accordance with PA 05-0021 and EPL12425. The locations of environmental monitoring undertaken throughout the 2015 Review Period are provided in **Appendix 3**.

6.1 Air, Blast & Noise Monitoring

Air Quality Monitoring

Limits for airborne particulate matter (i.e. dust) are specified in conditions 17 & 18, Schedule 3 of PA05-0021. During the 2015 review period, the Mine carried out dust monitoring:

- At the locations shown in Figure 3 & Figure 4 (**Appendix 3B**); and
- At the frequency shown in **Table 10**.

Table 13 contains the air quality monitoring results, as well as a discussion of the results, for the review period. Further air quality monitoring results for 2015 review period are provided in **Appendix 3B**.

Table 10 Summary of Air Quality Monitoring Program

| Monitoring Parameter | Monitoring Locations [#] | Frequency |
|--------------------------|---|--|
| Dust Deposition | DG4, DG5, DG8, DG10 [^] , DG11 & DG15. | Monthly |
| | DG12, DG13 and DG14 (Aboriginal rock art sites) | Monthly (when mining < 1 km of the site) |
| High-Volume Air Sampling | HV1, HV4 & HV5 | Continuous six day cycle |
| TSP | HV3 [^] | Continuous six day cycle |
| TEOM (PM ₁₀) | TEOM 1 [^] , TEOM 3 & TEOM 4 | Continuous (24 hour average) |

Notes: [#] Refer to **Figures 6 & 7**. [^] Data from DG10, DG15, HV3 and TEOM1 is not for compliance but utilised for management purposes only.

Blast Monitoring

Blasting vibration, overpressure limits, the time and frequency of blasting are specified in Conditions 6, 9 and 10, Schedule 3 of PA05-0021 respectively. During the 2015 review period, the Mine monitored the vibration and overpressure (**Table 11**) of each blast at the sites shown in Figure 8 and Figure 9 (**Appendix 3E**). As shown in **Table 14**, the Mine complied with the conditions of PA05-0021 during the 2015 review period. Further blast monitoring results for 2015 review period are provided in **Appendix 3E**.

Table 11 Summary of the Blasting and Vibration Monitoring Program

| Monitoring Parameter | Monitoring Sites | Frequency |
|--|--|---------------------------------------|
| Ground vibration | V1, V2 and V3 (Aboriginal rock art sites). | Every blast within 1 km of sites. |
| | <ul style="list-style-type: none"> • Power poles. • Railway culverts. • Railway bridge. | Every blast within 350 m of sites. |
| Ground vibration and airblast overpressure | Private residences (Wollar School) | All blasts within 3 km of residences. |

Noise Monitoring

WCPL have prepared and implemented the Noise Management Plan (NMP) in accordance with Condition 7, Schedule 3 of PA05-0021. During the 2015 review period a combination of attended and unattended noise monitoring to assess the performance of the Mine against the Noise Criteria. Attended noise monitoring is used for determining compliance against the Noise Criteria whilst Unattended or Real-Time monitoring is primarily utilised as a proactive noise control system; providing noise alerts when predetermined noise levels are triggered so mining operations can be modified to lower the noise impacts on receptors. A summary of the noise monitoring program is presented in **Table 12**. A summary of noise monitoring results is provided in **Table 15**. Further noise monitoring results for 2015 review period, including figures with noise monitoring locations are provided in **Appendix 3F**.

Table 12 Summary Noise Monitoring Program

| Location | Site Monitoring Reference# | Parameter | Frequency |
|----------------------------|----------------------------|--------------------------|------------|
| St Laurence O'Toole Church | N6 | Attended Noise | Monthly |
| Coonaroo | N13 | Attended Noise | Monthly |
| Tichular | N14 | Attended Noise | Monthly |
| Wollar Village | N15 | Attended Noise | Monthly |
| Araluen Rd | N16 | Attended Noise | Monthly |
| Mogo Rd | N17 | Attended Noise | Monthly |
| Barrigan Valley | N18 | Attended Noise | Monthly |
| WCPL Rail Loop | - | Meteorology & Inversion | Continuous |
| Wollar Village | SentineX 33 | Real-Time Noise - Fixed | Continuous |
| Araluen Rd | SentineX 30 | Real-Time Noise - Fixed | Continuous |
| Wandoona | SentineX 31 | Real-Time Noise - Mobile | Continuous |

Table 13 Air Quality Monitoring Environmental Performance

| Aspect | Approved Criteria | EIS Prediction | Performance During the Reporting Period | Trend/Key Management Implications | Implemented/proposed Management Actions |
|-----------------------------|---|--|--|--|---|
| Deposited Dust ^c | 4 g/m ² /month ^{de} <i>(at residences on privately owned land)</i> | 1.2 - 1.3 g/m ² /month ^g | Annual average dust deposition results for the reporting period complied with the approved criteria of 4 g/m ² /month : <ul style="list-style-type: none"> DG5 (Ave: 0.9 g/m²/month) DG15 (Ave: 0.7 g/m²/month) Dust deposition results for the reporting period were generally in accordance with the MOD 6 EA predictions at relevant private residences: <ul style="list-style-type: none"> DG5 (Ave: 0.8 g/m²/month) DG15 (Ave: 0.7 g/m²/month) | <ul style="list-style-type: none"> Dust deposition results for 2015 period were below approved criteria. In comparison to 2014 Review Period the dust deposition results have trended slightly higher (Graph 2). TSP results for review period were below approved criteria. In comparison to 2014 period the TSP levels for the 2015 period trended negligibly higher (Graph 4). PM₁₀ results (HVAS and TEOMs) for the 2015 period were below approval criteria. In comparison to 2014 period PM10 dust levels (measured by HV and TEOM) trended slightly lower (Graphs 6 and 8). | <ul style="list-style-type: none"> In accordance with Condition 4, Schedule 5 of Project Approval (05-0021), WCPL will review, and if necessary revise, the AQMP within three months of the submission of this Annual Review. As discussed in Section 9.0, all dust related complaints were responded to in accordance with the Complaints Management Procedure. During the review period the following control measures were implemented in accordance with the MOP and AQMP. <ul style="list-style-type: none"> Mine managed in response to dust alarms from TEOMs; Metrological condition assessed prior to blasting; All active haul roads and traffic areas were watered on an appropriate basis using water carts. Water sprays were utilised on the ROM coal bins, and recently stripped areas. The Mine rehabilitated approximately 80ha of mine waste rock emplacement areas. WCPL propose to rehabilitate approximately 70ha of mine overburden areas during 2016. |
| TSP | 90 µg/m ³ ^{ade} | 24.0 – 24.9 µg/m ³ ^h | Maximum TSP results for the reporting period complied with the approved criteria of 90 µg/m ³ : <ul style="list-style-type: none"> HV3 (Max: 68.7 µg/m³) Annual average TSP results for the reporting period where below MOD 6 EA predictions at relevant private residences: <ul style="list-style-type: none"> HV3 (Ave: 22.61µg/m³) | | |
| PM ₁₀ | 50 µg/m ³ ^{adf} | - | Maximum 24hour average PM ₁₀ results for the reporting period complied with the approved criteria of 50 µg/m ³ : <ul style="list-style-type: none"> TEOM 3 (Max: 34.9 µg/m³) TEOM 4 (Max: 34.9 µg/m³) The maximum 24hour average PM ₁₀ was exceeded at TEOM 3 and TEOM 4 (Max: 78.5 µg/m ³ and 77.3 µg/m ³ respectively) on the 6 May 2015, however the results were excluded due to a regional dust event occurring. | | |
| PM ₁₀ | 30 µg/m ³ ^{ade} | 14.2 – 14.7 µg/m ³ ⁱ | Annual average PM10 results for the reporting period complied with the approved | | |

| Aspect | Approved Criteria | EIS Prediction | Performance During the Reporting Period | Trend/Key Management Implications | Implemented/proposed Management Actions |
|--|-------------------|----------------|--|-----------------------------------|---|
| | | | criteria of 30 µg/m ³ and where below MOD 6 EA predictions at relevant private residences: <ul style="list-style-type: none"> • TEOM 3 (Ave: 11.69µg/m³) • TEOM 4(Ave: 9.35µg/m³) • HV1(Ave: 9.79µg/m³) • HV4(Ave: 11.52µg/m³) • HV5(Ave: 11.68µg/m³) | | |
| <p>Notes: g/m²/month = grams per square metre per month. µg/m³ = micrograms per cubic metre. a) Total impact (i.e. incremental increase in concentrations due to the development plus background concentrations due to all other sources); b) Incremental impact (i.e. incremental increase in concentrations due to the development on its own); c) Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method; and d) Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fire incidents or any other activity agreed by the Director-General. e) Annual Averaging Period. f) 24 Hour Averaging Period. g) Year 10 Predicted Annual Average Dust Deposition (MOD6 Environmental Assessment) at relevant private residences. h) Year 10 Predicted Annual Average TSP (MOD6 Environmental Assessment) at relevant private residences. i) Year 10 Predicted Annual AveragePM₁₀ (MOD6 Environmental Assessment) at relevant private residences.</p> | | | | | |

Table 14 Blast Monitoring Environmental Performance

| Aspect | Approved Criteria | | | | Performance During the Reporting Period | Trend/Key Management Implications | Implemented/proposed Management Actions |
|-------------------|--|---|--------------------------------------|----------------------|---|--|---|
| | Location | Air last overpressure (dB(Lin Peak)) ¹ | Ground Vibration (mm/s) ² | Allowable Exceedence | | | |
| Open Cut Blasting | Residence on privately owned land ³ | 115 | 5 | 5% ⁶ | Blast monitoring results for the reporting period complied with the approved criteria of 115dB (<120dB) and 5mm/s (<10mm/s) at privately owned residences: <ul style="list-style-type: none"> • Wollar Public School <ul style="list-style-type: none"> - Max. 107.8dB - Max. 1.34mm/s Blast monitoring results for the reporting period complied with the approved criteria of 50mm/s at public infrastructure: <ul style="list-style-type: none"> • Main Rail Culvert <ul style="list-style-type: none"> - Max. 43.99mm/s • Cumbo Culvert | <ul style="list-style-type: none"> • There was an overall decrease of approximately 22% of blasting related community complaints in 2015 when compared to 2014. • In accordance with Condition 13(c), Schedule 3 of Project Approval (05-0021), WCPL co-ordinates the timing of blasting on-site with the timing of blasting at the adjoining Moolarben and Ulan Coal Mines to minimise the potential cumulative blasting impacts of the three mines. • All blasting events during the review | <ul style="list-style-type: none"> • In accordance with Condition 4, Schedule 5 of Project Approval (05-0021), WCPL will review, and if necessary revise, the relevant strategies, plans and programmes within three months of the submission of this Annual Review. • In accordance with the MOP, the BMP and Condition 13(a), Schedule 3 of Project Approval (05-0021), the following control strategies are implemented at the Mine in order to minimise the potential for exceedances |
| | | 120 | 10 | 0% | | | |

| Aspect | Approved Criteria | | | Performance During the Reporting Period | Trend/Key Management Implications | Implemented/proposed Management Actions |
|--|-------------------|--------------------------------------|----|---|---|--|
| All Public infrastructure ⁴ | - | 50 | 0% | - Max. 32.54mm/s Blast monitoring results for the reporting period complied with the approved criteria of 50mm/s at tailings dams: <ul style="list-style-type: none"> • Tailings Dam (TD6) <ul style="list-style-type: none"> - Max. 9.36mm/s | period occurred during the approved times of 9.00am to 5.00pm. <ul style="list-style-type: none"> • No blasting occurred on a Sunday or on a Public Holiday during the 2015 review period. | of the relevant blasting criteria. <ul style="list-style-type: none"> • As discussed in Section 9.0, all blasting complaints were responded to in accordance with the Complaints Management Procedure. |
| Tailings Dams ⁵ | - | 50 | - | Blast monitoring results for the reporting period complied with the approved criteria of 50mm/s at Aboriginal sites: <ul style="list-style-type: none"> • Site 152 <ul style="list-style-type: none"> - Max. 140.38mm/s • Site 153 <ul style="list-style-type: none"> - Max. 140.38mm/s | <ul style="list-style-type: none"> • There was no more than one blast per day (max. of 2 allowed) and an average of 2.71 blasts per week (max. of 5 per week allowed). | <ul style="list-style-type: none"> • WCPL has complied with the blasting requirements of PA05-0021 and on this basis will continue to review blasting performance in next review period. |
| Railway Line | - | 100 ⁷ 200 ⁸ | - | | | |
| Aboriginal Heritage Sites 72, 52 & 153 | - | 80 ⁹ 460 ¹⁰ | - | | | |

Notes: ¹ dB (Lin Peak) = decibel linear in peak. ² mm/s = millimetres per second. ³ These criteria do not apply if WCPL has a written agreement with the relevant owner to exceed these criteria, and has advised the DP&E in writing of the terms of this agreement. ⁴ The ground vibration criteria is 50 mm/s or a limit determined by the structural design methodology in AS2187.2-2006, or its latest version, or other alternative limit for public infrastructure, to the satisfaction of the Director-General). ⁵ The criterion applies at any point on the dams. A minimum requirement is that monitoring of blast vibration occurs on the crest of TD2N, TD2S, TD2SS and TD6. ⁶ 5% of the total number of blasts over a period of 12 months. ⁷ When blasting within 350m of railway culverts. ⁸ When blasting within 100m of railway lines. ⁹ No specific criteria. Adopted performance indicator when blasting within 1km. ¹⁰ No specific criteria. Potential for damage when blasting within 1km.

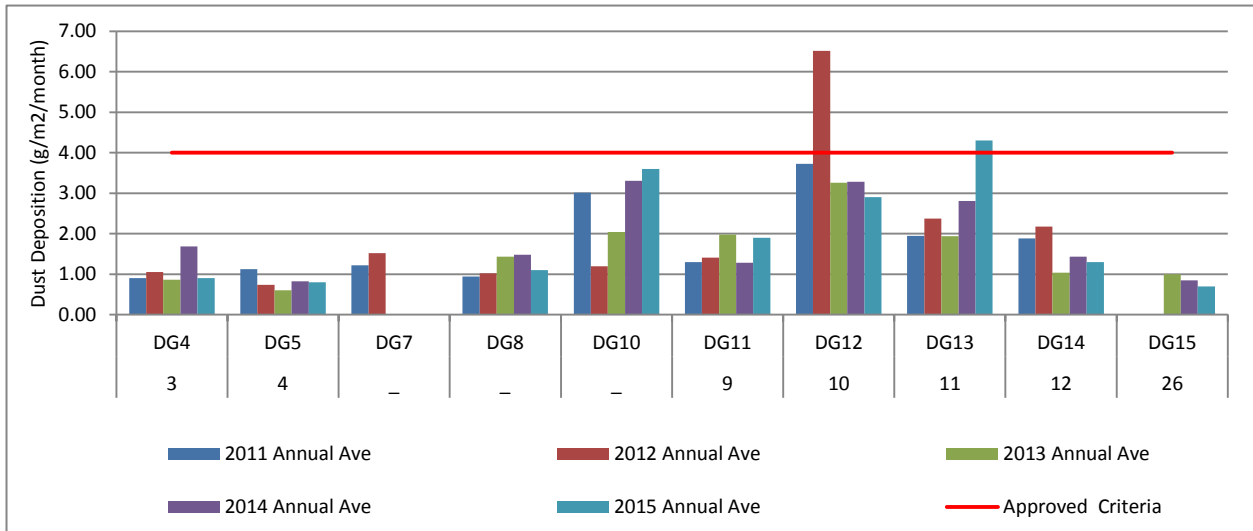
Table 15 Noise Monitoring Environmental Performance

| Aspect | Approved Criteria | | | | Performance During the Reporting Period | Trend/Key Management Implications | Implemented/proposed Management Actions |
|----------------------------------|-----------------------------------|---|---|--|---|--|---|
| | ¹ Monitoring Locations | Day ² L _{Aeq} 15 Minute | Evening ³ L _{Aeq} 15 Minute | Night ⁴ L _{Aeq} 15 Minute/ L _{A1} , minute | | | |
| Attended Noise Monitoring | N6 | 35 | 35 | 35/45 | <p>Attended noise monitoring was undertaken monthly during: 29th – 30th January 2015, 18th – 19th February 2015, 23rd – 24th March 2015, 17th – 18th April 2015, 13th – 14th May 2015, 14th – 15th June 2015, 14th – 15th July 2015, 6th -7th August 2015⁷, 9th -10th September 2015⁸, 6th -7th October 2015, 2nd – 3rd November 2015 and 5th – 6th December 2015.</p> <p>Attended monitoring noise levels from WCPL complied with Project Approval and EPL noise limits at all sites during attended noise monitoring undertaken in 2015 (full reports are provided in Appendix 3F).</p> <p>WCPL did not trigger modifying factor penalties for low frequency noise. None of the measurements occurred during which WCPL was measurable (not “inaudible”, “not measurable” or less than a maximum cut-off value of 30 dB), was within 5 dB of the relevant criterion and where meteorological conditions resulted in criteria applying (in accordance with the project approval). No further assessments of low frequency noise was undertaken.</p> | <ul style="list-style-type: none"> • The frequency of attended monitoring was increased to monthly (from every two months in 2014) during the 2015 review period. • Attended monitoring at these locations indicated that the mine complied with noise consent limits at all private monitoring locations during the 2015 review period, and accordingly did not exceed the noise land acquisition criteria. • It is noted that wind speed and/or estimated temperature inversion conditions result in Project Approval criteria not always being applicable. • In 2015 approximately 613 shutdown hours were accumulated for individual mobile equipment as opposed to 454 shutdown hours in 2014. • There was an overall increase of approximately 19% of noise related community complaints in 2015 when compared to 2014. | <ul style="list-style-type: none"> • In accordance with Condition 4, Schedule 5 of Project Approval (05-0021), WCPL will review, and if necessary revise, the relevant strategies, plans and programmes within three months of the submission of this Annual Review. • Continue to implement the Noise Management Plan (NMP) in accordance Condition 7, Schedule 3 of PA05-0021. • In 2015 approximately 613 shutdown hours were accumulated for individual mobile equipment in direct response to the implementation of the noise management strategy, including responses to noise investigation triggers. The majority of excavator shutdown hours for noise are accumulated during the cooler months, coinciding with the higher likelihood of temperature inversions. • As discussed in Section 9.0, all noise complaints were responded to in accordance with the Complaints Management Procedure. |
| | N13 | 36 | 36 | 36/45 | | | |
| | N14 | 35 | 35 | 35/45 | | | |
| | N15 | 35 | 35 | 35/45 | | | |
| | N16 | 37 | 37 | 37/45 | | | |
| | N17 | 35 | 35 | 35/45 | | | |
| | N18 | 35 | 35 | 35/45 | | | |

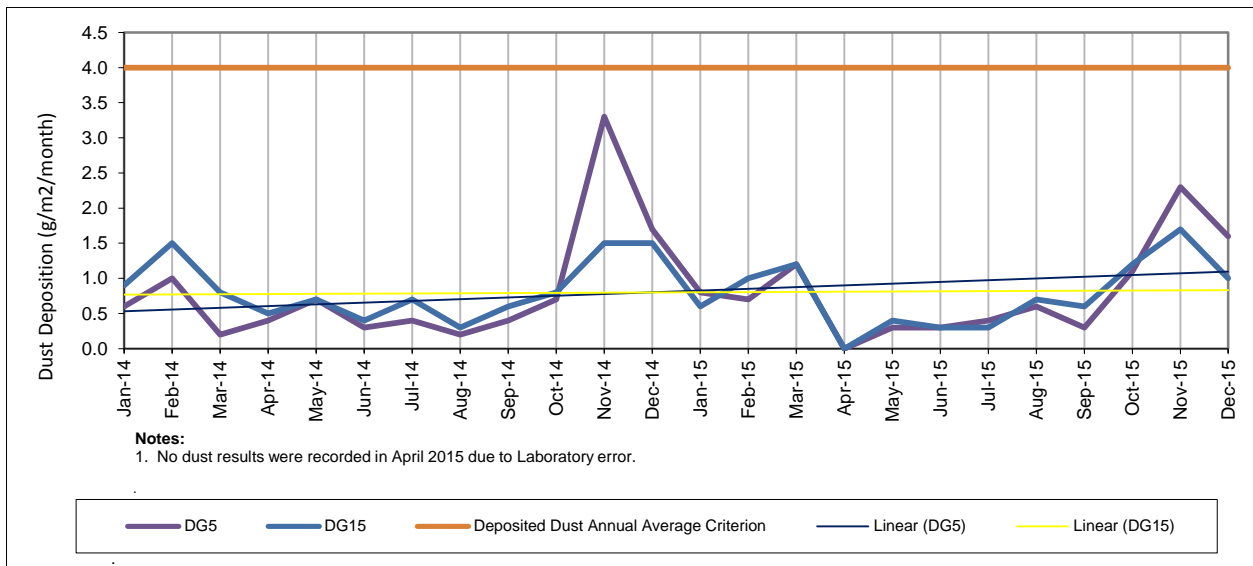
Notes:

¹To interpret the locations referred to in **Table 11**; refer to Figure in **Appendix 3G**. ² Day is defined as the period from 7 am to 6 pm Monday to Saturday and 8 am to 6 pm Sunday and Public Holidays. ³ Evening is defined as the period 6 pm to 10 pm. ⁴ Night is defined as the period from 10 pm to 7 am Monday to Saturday and 10 pm to 8 am Sunday and Public Holidays. ⁵ Noise levels to be assessed at the most affected point at the boundary of the Goulburn River National Park/ Munghorn Gap Nature Reserve. ⁶ EPL daytime limit is currently 35dBA(Leq). ⁷ During August 2015, WCP complied with the relevant limits using the INP and Broner methods of assessing low frequency noise at all monitoring locations with the exception of N17. At N17 the INP low frequency trigger level was exceeded. A 5 dB modifying factor correction was applied to the measured WCP LAeq. The resulting WCP LAeq noise level remained in compliance with project approval and EPL impact assessment criteria at this location. ⁸ During September 2015, WCP complied with the relevant limits using the INP and Broner methods of assessing low frequency noise at all monitoring locations with the exception of N13. At N13 the INP low frequency trigger level was exceeded. A 5 dB modifying factor correction was applied to the measured WCP LAeq. The resulting WCP LAeq noise level remained in compliance with project approval and EPL impact assessment criteria at this location.

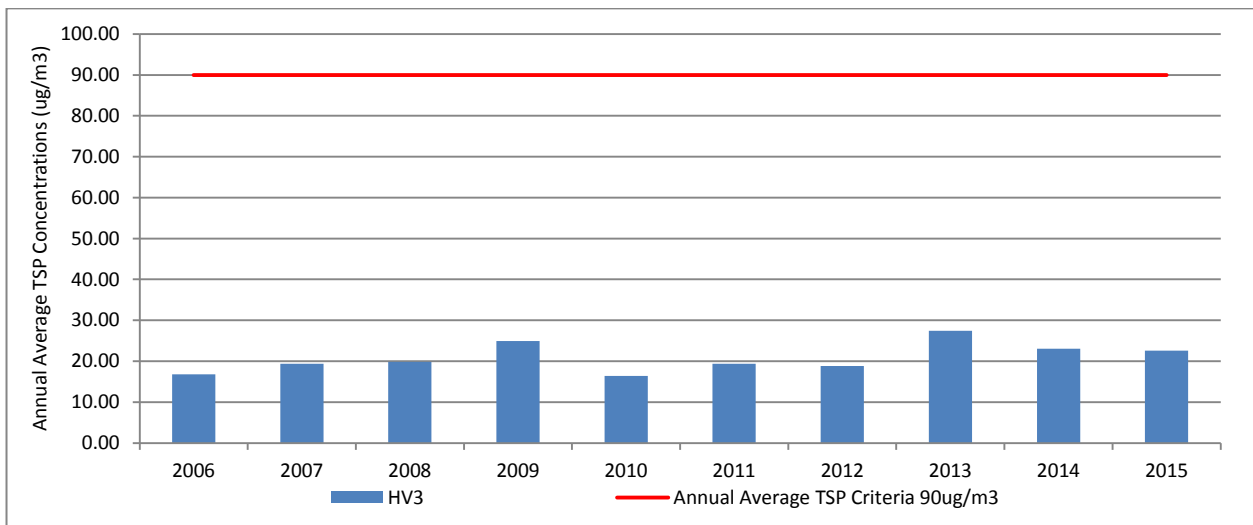
Graph 1 Annual Average Dust Deposition Results 2011-2015



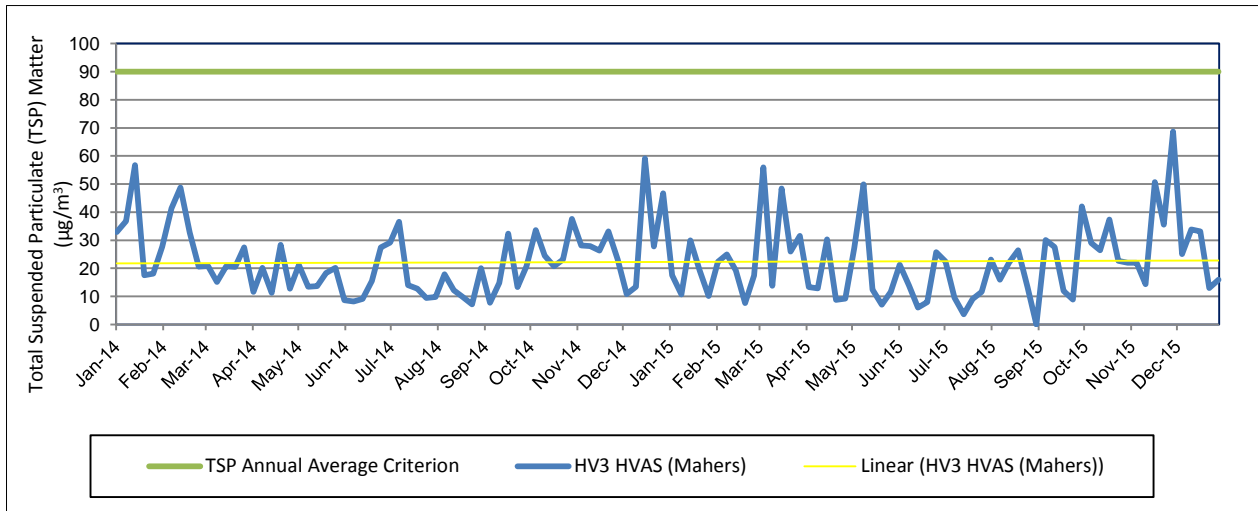
Graph 2 Dust Deposition Results for 2014 and 2015



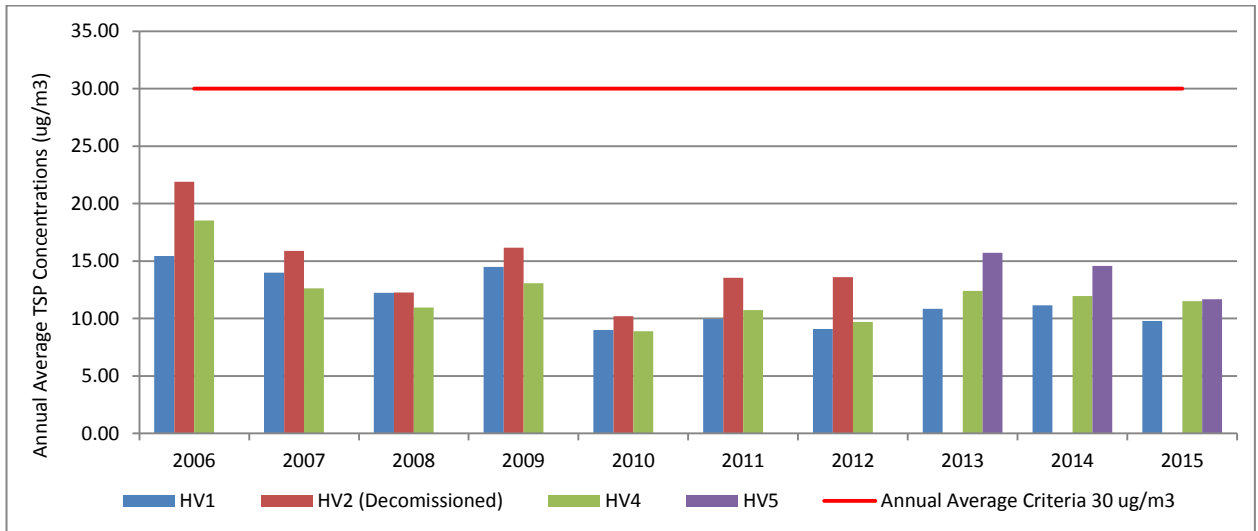
Graph 3 Annual Average TSP Results 2006-2015



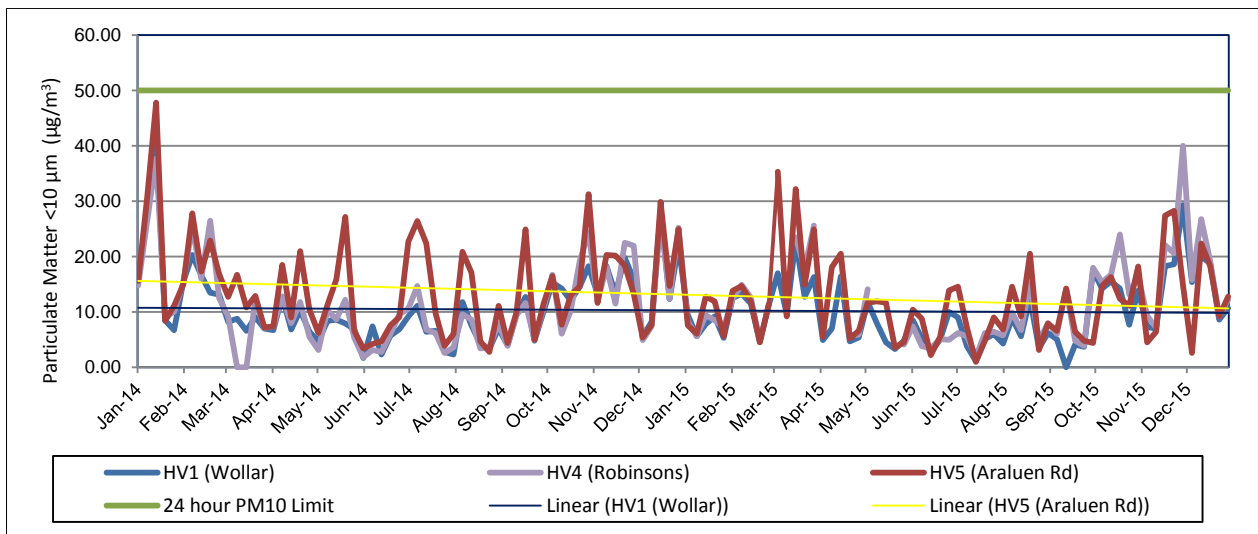
Graph 4 TSP Results for 2014 and 2015



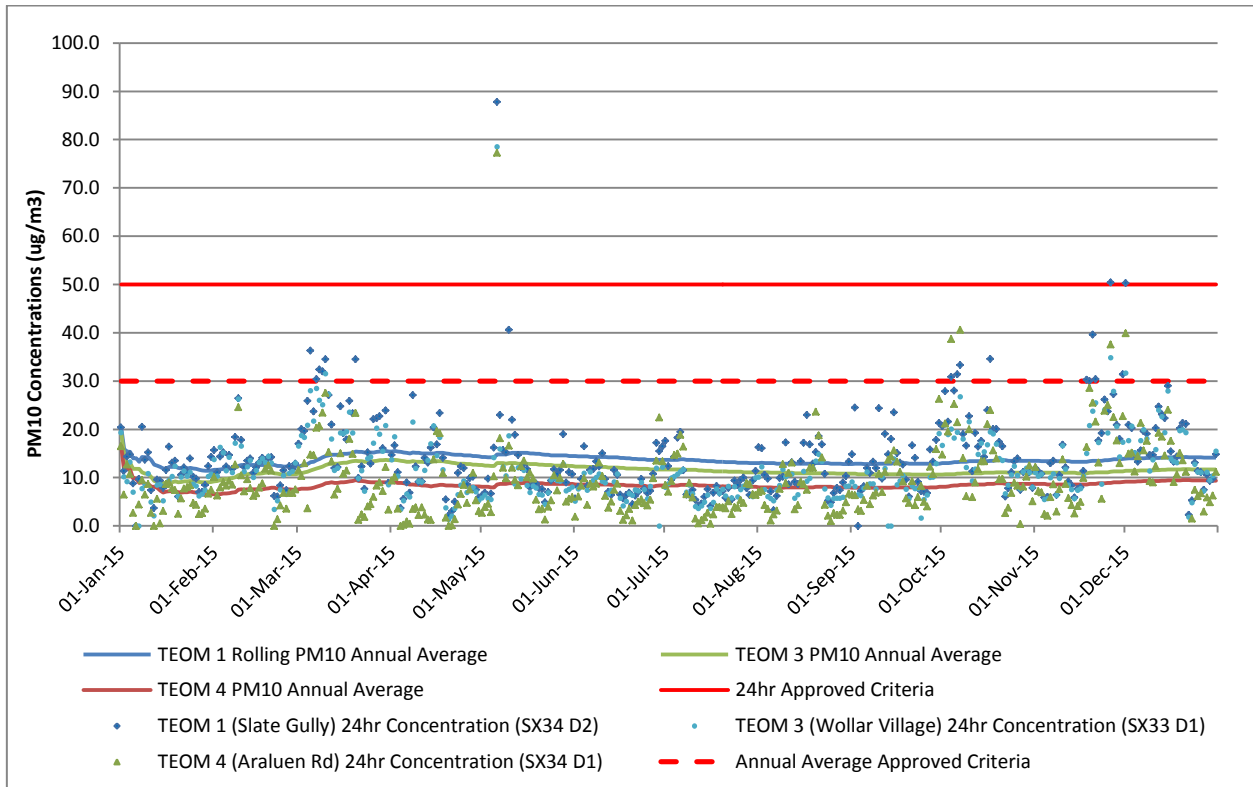
Graph 5 HVAS Annual Average PM_{10} Results 2006-2015



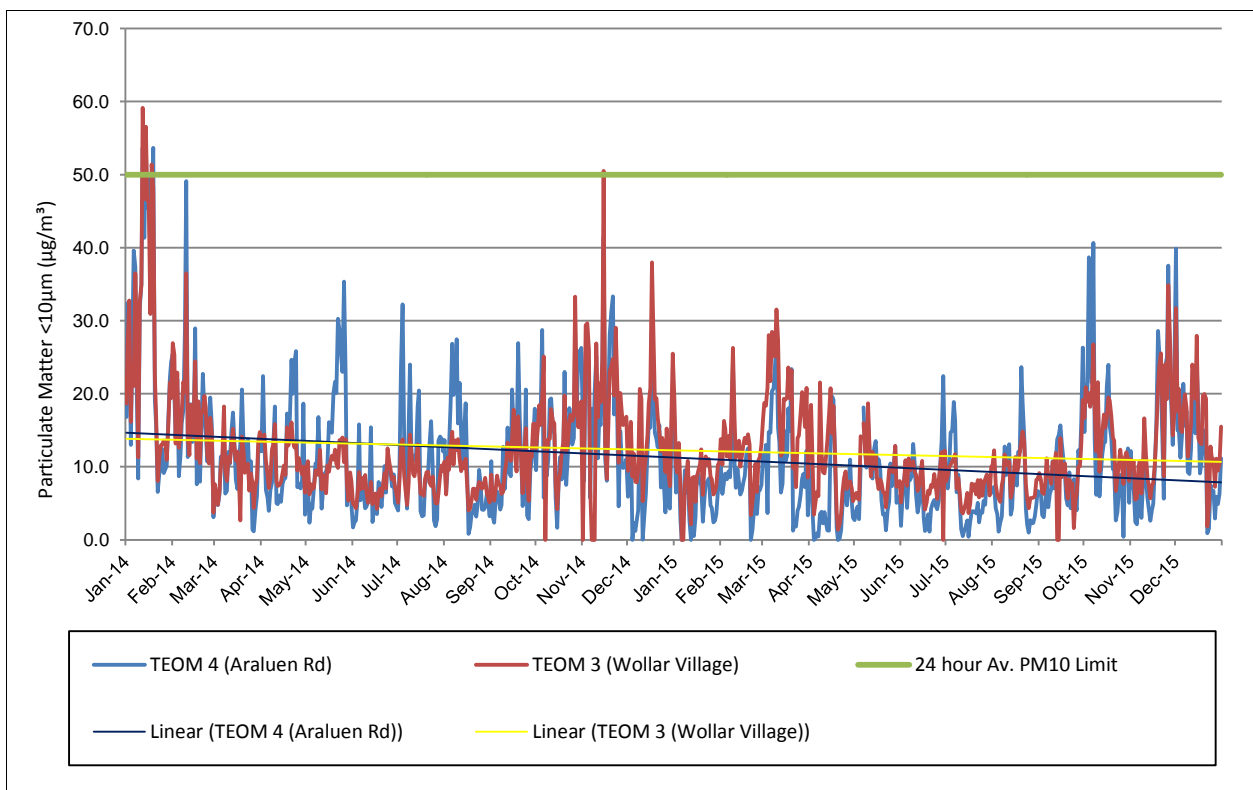
Graph 6 HVAS PM_{10} Results for 2014 and 2015



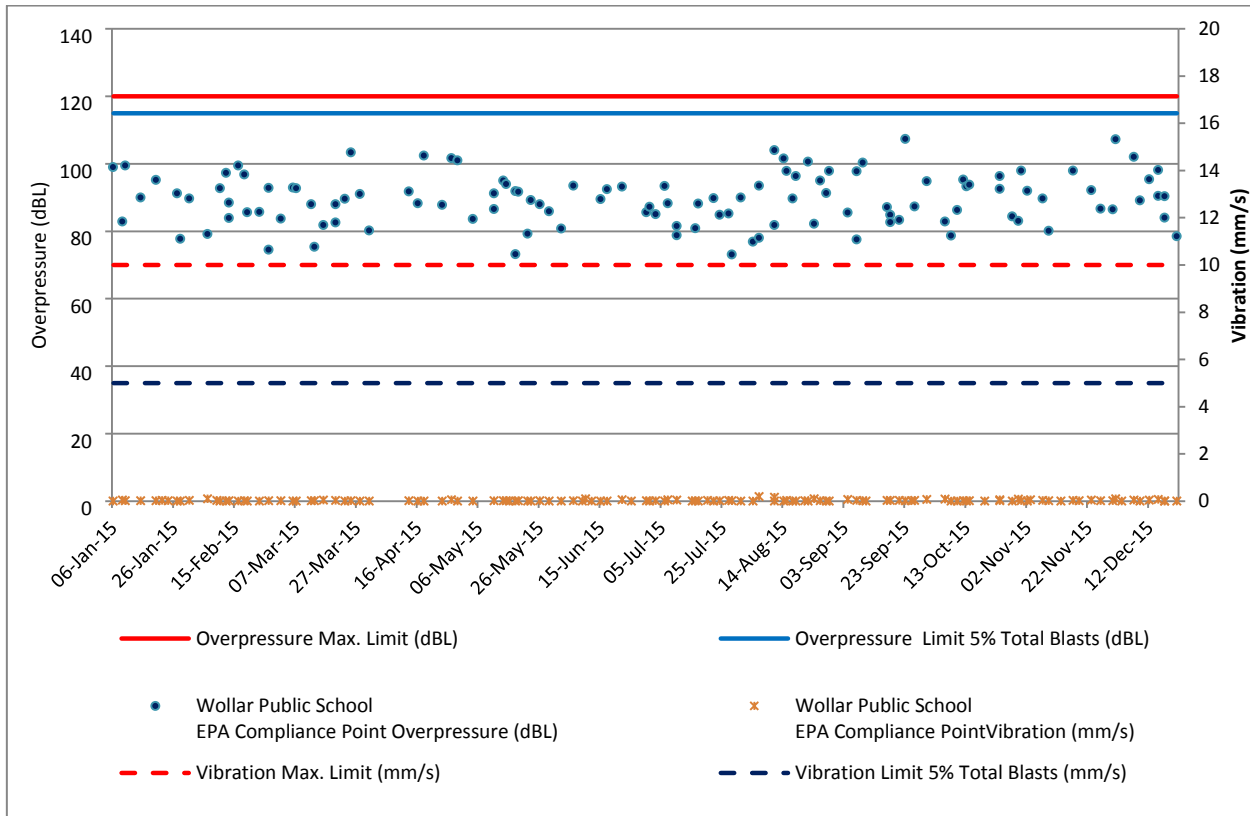
Graph 7 TEOM 24hr & Annual Average PM₁₀ Results 2015



Graph 8 TEOM 24hr PM10 Results for 2014 and 2015



Graph 9 Blasting Monitoring Results for 2015



6.2 Heritage

An Aboriginal Cultural Heritage Management Plan (ACHMP) has been prepared in accordance with the relevant conditions of the PA05-0021.

Four Cultural Heritage meetings were undertaken in 2015 on 11th March, 10th June, 16th September and 9th December. Key heritage and environmental issues that were raised during consultation included summary of mining operations, management of Aboriginal heritage including rock shelters and salvage of scarred trees.

Three Aboriginal Rock Art sites (i.e. WCP72, WCP152 and WCP153) are located with ML1573. The maximum adopted ground vibration level of 460mm/s for blasting activities conducted within 1 km of these rock art sites was not triggered during 2015. Ongoing monitoring of the rock art sites has determined no significant changes to rock art panels or rock shelters other than caused by natural and pre-existing processes (**Appendix 4**). During the 2015 review period, a number of archaeological surveys and surface salvage works were carried out within the Project Approval area. For further details of Aboriginal heritage activities undertaken during 2015 refer to **Appendix 4**.

6.3 Biodiversity

A Biodiversity Management Plan (BMP) has been prepared in accordance with the relevant conditions of PA05-0021. The BMP outlines strategies for the management of flora and fauna, threatened species, rehabilitated areas, regeneration areas, biodiversity offset areas and the Enhancement and Conservation Areas (ECA’s). The monitoring component of the BMP assess the performance of WCPL management measures and outlines methodologies and ecological management strategies to minimise the Mine’s

impact on remnant vegetation and native fauna. The BMP facilitates implementation of threatened species management strategies to minimise potential impacts on threatened flora and fauna species.

A summary of the 2015 biodiversity monitoring results is provided in **Section 8.2** and below. For the complete 2015 biodiversity monitoring report, prepared by Ecological Australia (ELA), refer to **Appendix 5**. The spring 2015 biodiversity monitoring program was undertaken in accordance with the methods and survey techniques prescribed in the BMP and included:

- Vegetation (floristic) monitoring using BioMetric¹ assessment (**Section 8.2**);
- Landscape Stability using Landscape Function Analysis² (**Section 8.2**); and
- Fauna (i.e. birds, ground fauna and micro-bats).

The BMP outlines Interim Performance Targets which will be used to determine progression towards the Completion Criteria and overall mine closure objectives.

Review of BMP Interim Performance Targets

- *Vegetation:* All sites across the management domains are performing well in comparison to Interim Performance Targets. Sites where these targets are not being achieved can largely be attributed to high coverage of exotic species and historical clearing within these locations.
- *LFA:* Slope Stability is above completion criteria for all sites. Soil Infiltration and Nutrient Cycling scores are much more variable and well below completion criteria for the majority of sites.
- *Fauna:* A broad variety of species were recorded in monitoring sites across the various Management Domains. These results demonstrated that the condition of landforms and vegetation structure at the monitoring sites, including the surrounding environment, was a key factor in determining species numbers and diversity.

Fauna Monitoring

Whilst survey effort varied across management domains, both fauna species diversity and abundance correlated positively with habitat condition and complexity (structural diversity, presence of hollows, presence of fallen logs). This was demonstrated through the high species counts and diversity recorded within BOA and ECA monitoring sites. Regeneration and rehabilitation areas did not have such complexity and were often isolated from larger tracts of native vegetation. The occurrence of introduced fauna species was negatively correlated with habitat quality, with disturbed sites in ECA, regeneration and rehabilitation areas recording the highest numbers and diversity of introduced species.

Proximity to relatively intact remnants and patch size is likely to have influenced monitoring results, although this was not specifically measured. Several survey sites within ECA and regeneration areas which contained relatively low habitat features but were close to Munghorn Gap National Park or Goulburn River National Park, recorded high bird observations. In contrast, isolated monitoring sites within Rehabilitation Areas (R6 and R9) which are surrounded by active mine operations, had low bird observations. Fauna monitoring took place during a period of extreme heat, which is likely to have had some impact on the results. Diurnal bird surveys were restricted to mornings only limiting observations of species that may be more active during the late afternoon/dusk. Fauna traps were also closed during

¹ BioMetric (Gibbons et al 2009) is the model for determining meaningful, quantitative, biodiversity focused Completion Criteria and Interim Performance Targets. BioMetric, a NSW Government endorsed biodiversity assessment method.

² Landscape Function Analysis (LFA) is a rapid and reliable technique used for managing and monitoring of landscape rehabilitation (Tongway & Hindley 2004). The method assesses how biological and physical resources are stored, transported, cycled and lost from a landscape.

4 of 5 days of the first week of monitoring for animal welfare reasons, limiting ‘captures’ of ground-dwelling fauna. Being the first year of monitoring under the BMP, the impacts of these limitations on baseline data is unknown.

Translocation of *Cymbidium canaliculatum*

During tree clearing of the Pit 7 extension area (29 July 2015), an individual orchid was removed, with the base and approximately 1.0 metre above the orchid cut from the tree. The orchid clump plus tree base was lifted onto a light vehicle and transported to the translocation site, located within a Conservation area to the immediate west of Pit 7. The total distance from the removal site to the translocation site is about 1,400 metres. The orchid will be monitored annual for the following 3 years to ensure the success of the translocation trial. Complete report of the translocation in **Appendix 5**.

6.4 Waste Management

The Mine has developed and implemented a Waste Management Plan (WMP) as required by PA05-0021, to ensure that waste at the Mine is minimised and effectively managed. The WMP was developed, but not limited to, address the relevant requirements of the PA05-0021 and EPL 12455, identify waste streams, waste monitoring and tracking procedures and ensure the generation of waste is minimised and recycling of waste is maximised where practicable. As required by Condition 56, Schedule 3 of PA05-0021, WCPL are required to report on waste management and minimisation (**Table 16**) in the AR to the satisfaction of the Secretary. During the reporting period approximately 82.1% of the total waste generated by the Mine was either reused or recycled. The percentage of waste recycled in 2015 was consistent with the previous review period where approximately 84.3% of the waste generated was recycled or reused.

Table 16 Monthly Waste Statistics for 2015

| Wilpinjong | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | YTD |
|-------------------------------|--------|--------|---------|--------|---------|--------|--------|---------|--------|---------|--------|---------|-----------|
| Oily Rags | 58 | 56 | | 170 | | 191 | 99 | 135 | 502 | 529 | | 330 | 2,070 |
| Hazardous Off-site Disposal | 58 | 56 | 0 | 170 | 0 | 191 | 99 | 135 | 502 | 529 | 0 | 330 | 2,070 |
| Hydraulic Hose | | 2,013 | 840 | 1,934 | | 1,057 | 973 | 3,073 | 866 | 939 | | 886 | 12,581 |
| General Waste | 4,979 | 15,131 | 18,529 | 15,051 | 18,801 | 14,836 | 16,944 | 38,457 | 13,255 | 21,930 | 12,356 | 13,236 | 203,505 |
| Non-Hazardous Disposal | 4,979 | 17,144 | 19,369 | 16,985 | 18,801 | 15,893 | 17,917 | 41,530 | 14,121 | 22,869 | 12,356 | 14,122 | 216,086 |
| Total Disposal | 5,037 | 17,200 | 19,369 | 17,155 | 18,801 | 16,084 | 18,016 | 41,665 | 14,623 | 23,398 | 12,356 | 14,452 | 218,156 |
| % | 6.7% | 19.2% | 17.1% | 19.1% | 18.2% | 17.7% | 21.4% | 29.3% | 17.4% | 19.4% | 15.9% | 13.5% | |
| Oil Filters | 3,419 | 2,015 | 2,824 | 1,742 | 2,885 | 2,720 | 3,220 | 1,804 | 2,555 | 1,830 | | 2,354 | 27,368 |
| Oily Water | | | | 600 | | 0 | | | 2,000 | 2,000 | | 6,500 | 11,100 |
| Empty Oil Drums | 159 | | 23 | 503 | 145 | 172 | 104 | 104 | 95 | 368 | | 35 | 1,708 |
| Recycle Waste Coolant | | | | | | 6,000 | | | | | | | 0 |
| Hazardous Chemicals | | | | | 213 | | | | | | | | 0 |
| Pallecons | | | | | | | | | 145 | | | | 0 |
| Contaminated grease | 1,258 | | | 1,223 | 572 | 46 | | 657 | 419 | | | 496 | 4,671 |
| Hazardous Recycle / Reuse | 4,836 | 2,015 | 2,847 | 4,068 | 3,815 | 8,938 | 3,324 | 2,565 | 5,214 | 4,198 | 0 | 9,385 | 51,205 |
| Effluent | 24,500 | 19,000 | 22,500 | 14,000 | 19,000 | 11,000 | 15,500 | 15,500 | 17,000 | 21,500 | 25,500 | 25,000 | 230,000 |
| Comingled Recycling | 833 | 2,999 | 5,159 | 2,564 | 1,768 | 3,129 | 4,834 | 4,799 | 20,615 | 4,253 | 2,415 | 3,809 | 57,177 |
| Confidential Documents | | 192 | | | | | | | | | | | 192 |
| Non-Hazardous Recycle / Reuse | 25,333 | 22,191 | 27,659 | 16,564 | 20,768 | 14,129 | 20,334 | 20,299 | 37,615 | 25,753 | 27,915 | 28,809 | 287,369 |
| Waste Batteries | 768 | 127 | | | 1,684 | | 464 | | 826 | 977 | | 452 | 5,298 |
| E-Recycle | | | | | | | | | 123 | | | 0 | 123 |
| Pallets/Timber Recycling | | | | 1,460 | | | | | | | | 0 | 1,460 |
| Scrap Metal | 12,500 | 13,780 | 29,120 | 7,440 | 16,380 | 18,520 | 8,920 | 18,220 | 12,300 | 1,800 | 14,840 | 15,640 | 169,460 |
| Waste Oil | 27,000 | 34,500 | 34,000 | 43,000 | 41,500 | 33,000 | 33,000 | 59,500 | 13,500 | 64,300 | 22,500 | 38,200 | 444,000 |
| Other Recycle / Reuse | 40,268 | 48,407 | 63,120 | 51,900 | 59,564 | 51,520 | 42,384 | 77,720 | 26,749 | 67,077 | 37,340 | 54,292 | 620,341 |
| Total Recycle / Reuse | 70,437 | 72,613 | 93,626 | 72,532 | 84,147 | 74,587 | 66,042 | 100,584 | 69,578 | 97,028 | 65,255 | 92,486 | 958,915 |
| % | 93.3% | 80.6% | 82.9% | 80.9% | 81.7% | 82.5% | 78.6% | 70.7% | 82.6% | 80.6% | 84.1% | 86.5% | 82.1% |
| Total Volume | 75,474 | 89,813 | 112,995 | 89,687 | 102,948 | 90,671 | 84,058 | 142,249 | 84,201 | 120,426 | 77,611 | 106,938 | 1,177,071 |

6.5 Greenhouse Gas

Greenhouse gas management measures were carried out in as required by the AQMP, in accordance with Condition 21, Schedule 3 of Project Approval (05-0021). Diesel and electricity usage was recorded during the 2015 review period, which allows for the calculation of carbon dioxide (CO₂) equivalent emissions. The primary source (approximately 80%) of greenhouse gas emissions at the Mine is due to the release of carbon dioxide (CO₂) and methane (CH₄) during the combustion of diesel fuel during mining operations. Fugitive emissions of CH₄ and CO₂ from the coal seam as the coal is mined and CO₂ released during the use of explosives make up approximately 20% of greenhouse gas emissions at the Mine. Greenhouse gas emission (i.e. Scope 1 & Scope 2) estimates for the 2015 review period is presented in **Table 17**.

Table 17 Estimated Wilpinjong Coal Mine Greenhouse Gas Emissions

| Year | ROM Coal (Mt) | Electricity Consumed (kWh) | Diesel Consumed (kL) | CO ₂ -e Electricity Usage (t) | CO ₂ -e Diesel Usage (t) | CO ₂ -e Fugitive Emissions (t) | Total CO ₂ -e Emissions (t) | Total CO ₂ -e Emissions (t) Predicted (MOD3)/(MOD5) |
|------|---------------|----------------------------|----------------------|--|-------------------------------------|---|--|--|
| 2012 | 14.48 | 26,328,000 | 30,202 | 23,432 | 80,673 | 651,633* | 755,738 | 120,978 |
| 2013 | 14.9 | 32,730,368 | 39,444.3 | 29,130 | 105,360 | 6702.3** | 141,193 | 120,978 |
| 2014 | 15.4 | 31,580,001 | 33,194 | 27,318 | 89,049 | 10,747 | 127,114 | 154,395^ |
| 2015 | 12.6 | 31,713,000 | 28,325 | 26,639 | 75,990 | 10,046 | 112,675 | 148,628^ |

Note: kWh = kilowatt hours and kL = kilolitre. * A NSW default factor was used to calculate these values. ** The change in tonnes CO₂e estimated for 2013 at Wilpinjong results from moving to Open Cut Emissions Method 2/3 (a measurement of seam gas contents, followed by model development and then emission calculation) in line with ACARP Methodology C20005, from NGER Open Cut Emissions Method 1 (default measurement factors for NSW * ROM tonnes). ^ MOD5 predictions.

Greenhouse gas emissions at the Mine are minimised through the efficient use of diesel by the mobile fleet. Diesel use is minimised by:

- Optimising the design and maintenance of haul roads to minimise the distance travelled between the pit and the CHPP;
- Minimising the re-handling of material (i.e. coal, overburden and topsoil); and
- Maintaining the fleet in good operating order.

Greenhouse gas emissions from the Wilpinjong Coal Mine would continue to be monitored and reported annually in accordance with Peabody Energy's obligations under the *Commonwealth Government National Greenhouse and Energy Reporting System*. Peabody Energy and WCPL will also comply with any obligations under the *Commonwealth Clean Energy Act, 2011*.

6.6 Ambient Air Quality Monitoring

Condition 16, Schedule 3 of PA05-0021 requires WCPL to ensure that no offensive odours are emitted from the site, as defined under the *Protection of the Environment Operations Act, 1997*. The 2015 ambient air monitoring program, monitors for the following pollutants that can be released during spontaneous combustion events, including Oxides of Nitrogen (NO_x), Sulfur Dioxide (SO₂), Hydrogen Sulfide (H₂S), Benzene, Toluene and *p*-Xylene. The air quality monitoring station is situated in the Village of Wollar. The results of the 2015 ambient air monitoring program indicate no validated trigger of the above mentioned pollutants. **Appendix 3B** has the monthly ambient air monitoring program reports for 2015.

7.0 WATER MANAGEMENT

WCPL have prepared and implemented a Site Water Management Plan (WMP) in accordance Condition 28, Schedule 3 of PA05-0021. Several key component plans and programs that support the WMP include the Surface Water Monitoring Program (SWMP), the Groundwater Monitoring Program (GWMP) and Surface Water and Groundwater Response Plan (SGWRP).

7.1 Water Licences

Table 18 lists the water licences held by WCPL and provides a summary of performance for the ‘water year’ from 01 July 2014 to 30 June 2015.

Table 18 Water Take

| Licence Number | Description | Valid to | Entitlement (ML/annum) | Passive Take (ML/annum) | Active Pumping (ML/annum) | TOTAL (ML/annum) |
|---|---------------------------|-------------------------------|------------------------|-------------------------|---------------------------|------------------|
| Licences under the Water Management Act, 2000 (Alluvial Aquifer) | | | | | | |
| WAL 21499 ¹ | Alluvial Aquifer Licence | Current | 474 units ² | - | Nil | - |
| Licences under the Water Act, 1912 (Porous Rock Aquifer) | | | | | | |
| 20BL173517 | Pit 1 Licence | 10 June 2020 | 2021 | 13 | - | 1376 |
| 20BL173516 | Pit 2 Licence | 10 June 2020 | | 9 | - | |
| 20BL173514 | Pit 3 Licence | 10 June 2020 | | 433 | - | |
| 20BL173515 | Pit 4 Licence | 10 June 2020 | | 207 | - | |
| 20BL173513 | Pit 5 Licence | 10 June 2020 | | 714 | - | |
| 20BL170147 | Dewatering | 30 March 2016 ³ | 110 | - | Nil ⁵ | - |
| 20BL170148 | Dewatering | 30 March 2016 ³ | 110 | - | Nil ⁵ | - |
| 20BL170149 | Dewatering | 30 March 2016 ³ | 110 | - | Nil ⁵ | - |
| 20BL170150 | Dewatering | 30 March 2016 ³ | 110 | - | Nil ⁵ | - |
| 20BL170151 | Dewatering | 30 March 2016 ³ | 110 | - | Nil ⁵ | - |
| 20BL170152 | Dewatering | 30 March 2016 ³ | 110 | - | Nil ⁵ | - |
| 20BL170153 | Dewatering | 30 March 2016 ³ | 110 | - | Nil ⁵ | - |
| 20BL170063 | Water Supply Bore (GWs10) | 18 December 2016 | 110 | - | Nil ⁵ | - |
| 20BL170062 | Water Supply Bore (GWs11) | 18 December 2011 ⁴ | 110 | - | Nil ⁵ | - |
| 20BL170061 | Water Supply Bore (GWs12) | 18 December 2011 ⁴ | 110 | - | Nil ⁵ | - |
| 20BL170059 | Water Supply Bore (GWs14) | 18 December 2016 | 110 | - | Nil ⁵ | - |
| 20BL170058 | Water Supply Bore (GWs15) | 18 December 2011 | 110 | - | Nil ⁵ | - |

Source: HydroSimulations (2015)

Notes: ¹ Assigned to the Wollar Creek Water Source. ² One unit is currently equivalent to 1.0 ML as per the *Available Water Determination Order for Various NSW Unregulated and Alluvial Water Sources (No. 1) 2013*. ³ Renewal Application lodged with DPI-Water. process commenced with DPI-Water, at this stage they are not considered an WCPL entitlement.. ⁵ Active pumping was not required as the mine was in water surplus during the review period (refer to Water Balance in **Section 7.7**).

7.2 Estimated Groundwater Take

A predictive water balance model for the 2015/2016 water year was completed by WRM Water & Environmental Pty Ltd (WRM) in November 2015. Using OPSIM water balance model, WRM modeled an estimated groundwater inflow of 980ML/year. The model also estimated the Mine will be in water surplus of 643ML for the 2015/2016 water year.

7.3 Review of Groundwater Take

A review of the groundwater take for ‘water year’ from 01 July 2014 to 30 June 2015, was completed by HydroSimulations during the review period (**Appendix 3D**). The review compared the five water licences (i.e. 20BL173513, 20BL173514, 20BL173515, 20BL173516 & 20BL173517) issued to Pit 1, Pit 2, Pit 3, Pit 4 and Pit 5 respectively, the relevant entitlement volumes and the estimated inflow or ‘passive take’ for the water year. The review of groundwater take for the 2014/2015 water year determined the combined volume was 1376ML/a when compared to the total entitlement volume of 2021ML/a (**Table 18**) i.e. gross groundwater take from all five Open Cut Pits is compliant. However, the passive take estimated for Pit 1 was calculated at 6-13ML which was over the Pit 1 entitlement of 1ML/a. In the context of the total licence and site-wide inflow, this estimate is immaterial in terms of the groundwater resource. In 2015, the Mine consolidated the total water entitlements held by the five water licences at 2021 ML/a. A comparison of the open cut mining area at the end of 2015 and the inferred alluvium is provided in **Appendix 3D**.

7.4 Water Management System

Water management activities were undertaken during the 2015 review period in accordance with the Mine’s water management system outlined in the MOP and the WMP. In summary, water management for the Mine is based on the containment and re-use of mine water as well as the control of sediment laden water that may be potentially carried with runoff from disturbed areas. The mine water management system is shown in schematic form on **Appendix 3C**. The key components of the Mine’s water management system are:

- Separation of undisturbed and disturbed area runoff using upslope diversions;
- Collection and re-use of surface runoff from disturbed areas;
- Capture and on-site containment of mine water, comprising groundwater inflows and incident rainfall-runoff to operational areas;
- Re-use of contained mine water for dust suppression over active surfaces (e.g. haul roads).
- Recycling of mine water associated with the CHPP and tailings disposal areas;
- Consumption of contained waters in the Mine water supply system;
- Management of treated sewage effluent in accordance with the OEH’s *Environmental Guidelines for the Utilisation of Treated Effluent*;
- Discharge of treated water via a water treatment facility to Wilpinjong Creek in accordance with EPL 12425.

7.5 Erosion and Sediment Control

An Erosion and Sediment Control Plan (ESCP) has been developed in accordance with the requirements of PA005-0021. During the 2015 review period a number of water management structures i.e. clean water diversion drains, were constructed to divert potentially sediment laden water from topsoil stripping areas in North Pit 3 back into the Mine’s water management system. Other activities included routine removal of sediment from sumps, drains and sediment dams located in the Mining Infrastructure Area (MIA) and CHPP. There was one reportable incident in relation to sediment laden water flowing over a bund during the reporting period. The details of the incident are provided in **Section 11.1**.

7.6 Surface Water

A summary of the surface water monitoring programme is presented in **Table 19**. A summary of the surface water monitoring results is provided in **Table 20**. Further water monitoring results for 2015 review period, including figures with surface water quality monitoring locations are provided in **Appendix 3C**.

Table 19 Surface Water Monitoring Program

| Monitoring Locations | | Frequency | Parameters ¹ |
|--|--|---|---|
| Wilpinjong Creek | Licenced Discharge Point No. 24 | Continuous (during discharge) | Volume of water discharged ⁶ , EC and pH |
| | | Weekly (during discharge) | Oil & Grease and TSS ⁷ |
| | WIL-U, WIL-U2, WIL-PC, WIL-NC, WIL-D and WIL-D2 ² | Monthly | Field pH and EC, turbidity ³ , and SO ₄ |
| | | Quarterly | Copper, Zinc, Iron, Aluminium, Nickel, Manganese, Barium, Strontium, Lead, Arsenic and Selenium |
| | WILGSU and WILGSD (gauging stations) ² | Continuous | Flow rate, pH, EC and temperature |
| | | Monthly | Field pH and EC, turbidity ³ , and SO ₄ |
| | | Following significant rainfall events ⁴ | pH, EC, TDS, TSS and sulphate |
| WC1, WC2, WC3, WC4, WC5, WC6, WC7, WC8 ⁵ | Annually | Stream health monitoring | |
| Forty-nine survey points along Wilpinjong Creek ⁵ | Annually | Channel stability monitoring (photo-points, description, stability) | |
| Cumbo Creek | CC1, CC2 and CC3 ² | Monthly | Field pH and EC, turbidity ³ , and SO ₄ |
| | | Quarterly | Copper, Zinc, Iron, Aluminium, Nickel, Manganese, Barium, Strontium, Lead, Arsenic and Selenium |
| | CC3 ² | Following significant rainfall events ⁴ | pH, EC, TDS, TSS and sulphate |
| | CCGSU and CCGSD (gauging station) ² | Continuous | Flow rate, pH, EC and temperature |
| | | monthly | Field pH and EC, turbidity ³ , and SO ₄ |
| | | Following significant rainfall events ³ | pH, EC, TDS, TSS and sulphate |
| CC1, CC2 ⁵ | Annually | Stream health monitoring | |
| Nine survey points along Cumbo Creek ⁵ | Annually | Channel stability monitoring | |
| Wollar Creek | WOL 1 and WOL 2 ² | Monthly | Field pH and EC, turbidity, and SO ₄ |
| | | Quarterly | Copper, Zinc, Iron, Aluminium, Nickel, Manganese, Barium, Strontium, Lead, Arsenic and Selenium |
| | WO1, WO2, WO3 ⁵ | Annually | Stream health monitoring |
| Slate Gully Creek | SGC_1 ² | Monthly | Field pH and EC, turbidity, and SO ₄ |
| | | Quarterly | Copper, Zinc, Iron, Aluminium, Nickel, Manganese, Barium, Strontium, Lead, Arsenic and Selenium |

Notes: 1) Parameters will be analysed provided water samples can be collected. 2) Monitoring locations are illustrated on Figure 1.

3) Turbidity indicates the potential downstream water quality effects caused by suspended solids. 4) Greater than 20 millimetres (mm) in 24 hours. 5) Monitoring locations are illustrated on Figure 21. 6) Volume to monitored using flow meter and continuous logger. 7) Grab samples.

Table 20 Surface Water Performance

| Location | Approved Criteria | | Performance During the Reporting Period | Trend/Key Management Implications | Implemented/proposed Management Actions |
|--|-------------------|---|---|---|--|
| Surface Water Quality Monitoring | | | | | |
| <p>Wilpinjong Creek (Downstream)</p> <p>Sites: WIL_NC, WIL_D2, WIL_D, WIL_2</p> | EC (µS/cm) | If recorded value at the monitoring site is greater than 5,166 µS/cm for 3 consecutive readings | No sites recorded EC values < 5,166 µS/cm for 3 consecutive readings. WIL_NC: (Max 3960 µS/cm) (Ave 1987.1 µS/cm) WIL_D2: (Max 6520 µS/cm) (Ave 2457.5 µS/cm) WIL_D: (Max 5880 µS/cm) (Ave 2713 µS/cm) | <p>A review of surface water data recorded from January 2012 to July 2015 at gauging stations WILGSU and WILGSD in the Wilpinjong Creek was completed by Hydro Simulations during the reporting period. The review included creek flow, electrical conductivity (EC), pH and rainfall trends.</p> <p>A summary of the HydroSimulations 2015 review is provided below with the complete report provided in Appendix 3C.</p> | <p>WCPL will continue to investigate the potential for improvements to the surface water management system over the 2016 review period.</p> <p>In accordance with Condition 4, Schedule 5 of Project Approval (05-0021), WCPL will review and, if necessary, revise the SWMMP³ and SGWRP within three months of the submission of this Annual Review .</p> <p>Implementation of the revised SWMP and other associated water management plans once approved.</p> |
| | Turbidity (NTU) | If recorded value at the monitoring site is greater than 24 NTU for 3 consecutive readings | No sites recorded NTU values > 24NTU for 3 consecutive readings. WIL_NC: (Max 1440 NTU) (Ave 284.5 NTU) WIL_D2: (Max 557 NTU) (Ave 113.2) WIL_D: (Max 363 NTU) (Ave 63.1 NTU) | | |
| | pH (lower) | If recorded value at the monitoring site is less than 6.9 pH for 3 consecutive readings | No sites recorded pH values <6.9 pH for 3 consecutive readings. WIL_NC: (Min 6.6 pH) (Ave 7.31 pH) WIL_D2: (Min 7.5 pH) (Ave 7.73 pH) WIL_D: (Min 7.1 pH) (Ave 7.67 pH) | | |
| | pH (upper) | If recorded value at the monitoring site is greater than 7.7 pH for 3 consecutive readings | No sites recorded pH values > 7.7 pH for 3 consecutive readings. WIL_NC: (Max 7.8 pH) (Ave 7.31 pH) WIL_D2: (Max 8.2 pH) (Ave 7.73 pH) WIL_D: (Max 8.1 pH) (Ave 7.67 pH) | | |
| <p>Cumbo Creek (Downstream)</p> <p>Site: CC1</p> | EC (µS/cm) | If recorded value at the monitoring site is greater than 7,510 µS/cm for 3 consecutive readings | CC1 did not recorded EC values > 7,510 µS/cm for 3 consecutive readings. CC1: (Max 4380 µS/cm) (Ave 2316.3 µS/cm) | | |
| | Turbidity (NTU) | If recorded value at the monitoring site is greater than 77 NTU for 3 consecutive readings | CC1 recorded NTU values > 77NTU for 3 consecutive readings in April, May, June and Oct, November and December. CC1: (Max 13,000 NTU) (Ave 3415.4 NTU) | | |

³ As a result of MOD5, the SWMMP, SGWRP and GWMP were reviewed and submitted for approval in 2014.

| Location | Approved Criteria | | Performance During the Reporting Period | Trend/Key Management Implications | Implemented/proposed Management Actions |
|---|-------------------|--|--|-----------------------------------|---|
| | pH (lower) | If recorded value at the monitoring site is less than 7.5 pH for 3 consecutive readings | CC1 did not recorded pH values <7.5 pH for 3 consecutive readings. CC1: (Min 6.6 pH) (Ave 7.31 pH) | | |
| | pH (upper) | If recorded value at the monitoring site is greater than 8.2 pH for 3 consecutive readings | CC1 did not recorded pH values > 8.2 pH for 3 consecutive readings. CC1: (Max 7.8 pH) (Ave 7.31 pH) | | |
| Notes: <ul style="list-style-type: none"> Location CC1 turbidity readings affected by water runoff from unsealed section of Ulan-Wollar Road. | | | | | |

Table 21 Summary of Surface Water Monitoring Result 2015

| SW Monitoring Point | EC (µS/cm) | | | pH | | | SO4 (mg/L) | | | Turbidity (NTU) | | |
|---------------------|------------|--------|--------|------|------|------|------------|--------|--------|-----------------|---------|--------|
| | Min | Max | Ave | Min | Max | Ave | Min | Max | Ave | Min | Max | Ave |
| CC1 | 120.0 | 4380.0 | 2316.3 | 6.60 | 7.80 | 7.31 | 13.0 | 1660.0 | 237.7 | 3.3 | 13000.0 | 3415.4 |
| CC2 | 350.0 | 5970.0 | 3591.4 | 7.30 | 7.90 | 7.67 | 1400.0 | 2290.0 | 1977.8 | 0.4 | 20.8 | 4.7 |
| CC3 | 150.0 | 5130.0 | 2220.0 | 7.00 | 8.40 | 7.93 | 17.0 | 2100.0 | 946.0 | 1.2 | 359.0 | 93.7 |
| WIL (U) | 1650.0 | 7550.0 | 4306.7 | 4.80 | 6.80 | 5.93 | 38.0 | 146.0 | 99.0 | 7.4 | 263.0 | 77.0 |
| WIL (U2) | 790.0 | 5580.0 | 3353.8 | 5.60 | 7.40 | 6.71 | 22.0 | 118.0 | 41.9 | 1.5 | 158.0 | 41.9 |
| WIL (PC) | 1170.0 | 6100.0 | 3256.3 | 6.80 | 7.90 | 7.23 | 3.0 | 42.0 | 16.0 | 1.8 | 222.0 | 90.4 |
| WIL (NC) | 410.0 | 3960.0 | 1987.1 | 6.60 | 7.80 | 7.31 | 4.0 | 106.0 | 43.0 | 1.2 | 1440.0 | 284.5 |
| WIL (D) | 340.0 | 5880.0 | 2713.0 | 7.10 | 8.10 | 7.67 | 29.0 | 607.0 | 253.2 | 2.6 | 363.0 | 63.1 |
| WIL (D2) | 500.0 | 6520.0 | 2457.5 | 7.50 | 8.20 | 7.73 | 16.0 | 693.0 | 148.4 | 7.5 | 557.0 | 113.2 |
| WOL1 | 160.0 | 5540.0 | 2223.0 | 7.50 | 8.20 | 7.96 | 208.0 | 956.0 | 445.8 | 1.1 | 61.8 | 13.3 |
| WOL2 | 400.0 | 5550.0 | 1830.0 | 7.30 | 7.80 | 7.54 | 262.0 | 822.0 | 532.8 | 0.6 | 486.0 | 53.9 |
| SGC_1* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Notes: * Dry

7.7 Surface Water Monitoring Review

A review of surface water data for the water year 2014-15 as well as historical surface water data was undertaken by HydroSimulations. The review included creek flow, electrical conductivity (EC), pH and rainfall trends. A summary of the Hydro Simulations 2015 review is provided below, with the complete report provided in **Appendix 3C**.

Analysis of continuous surface water flow data shows that recent rainfall trends are playing a significant role in governing flows in Wilpinjong Creek, both upstream and downstream of the Mine. During much of 2013-14 it seems that discharge from the Mine may have been preserving flow downstream of the mine during periods when the upstream gauge had been showing zero flow. Through late 2014 and throughout early 2015, flow has increased both upstream and downstream of the Mine in line with average rainfall conditions.

Electrical conductivity (EC), which is a measure of water salinity, is generally well correlated with flow in Wilpinjong Creek. Dry conditions led to an increase in salinity in the creek, with salinities reaching 5,000-7,000 $\mu\text{S}/\text{cm}$ at the downstream location of Wilpinjong Creek for much of March 2014. However in-stream salinity has now decreased to $<2,000\mu\text{S}/\text{cm}$. Prior to the operation of the water treatment facility (WTF), the differential in EC between the upstream and downstream gauging sites was likely due to a combination of a greater proportion of stream flow being sourced from discharge from saline groundwater, and inflow from potentially more saline tributaries (e.g. Cumbo Creek). The recent decline in salinity at the downstream gauging station is likely related to the operation of the WTF and discharge of relatively fresh water from that. Salinities recorded in recent years are consistent with those from both early in the life of the Mine and from pre-mining monitoring. Accordingly, the Mine has had no discernible negative effect on in-stream salinity.

Unlike EC, pH seems relatively unaffected by the long-term (climatic) trends, and generally holds to a steady baseline level at each site on Wilpinjong Creek. However, natural cease-to flow conditions in Wilpinjong Creek have led to short periods of slightly reduced pH, particularly upstream of the mine. There is no discernible impact of the Mine on in-stream pH.

7.8 Site Water Balance

In accordance with Condition 23, Schedule 3 of Project Approval (PA05-0021) and with the Site Water Balance (prepared in accordance with Condition 30, Schedule 3 of Project Approval [05-0021]), sufficient water was available for the Mine during the 2015 review period (i.e. no external water supply sources were required). A review of the site water balance was undertaken by WRM for the 2014/2015 water year (**Table 22**).

Table 22 Water Balance 2014/2015

| Water Balance Summary 2014/2015 | |
|---|-----------------|
| Inflow: Groundwater into pits | 571 ML |
| Rainfall and runoff captured | 1517 ML |
| Sub Total | 2033.7ML |
| Outflow: Evaporation | 426ML |
| Seepage | - |
| Discharge for WTF | 147ML |
| Dust suppression on haul roads | 417ML |
| CHPP | 987ML |
| Sub Total | 1976.7 |
| Change in Volume (Increase in Inventory) | +57ML |

7.9 Water Treatment Facility

Construction of the Water Treatment Facility (WTF) was completed in June 2012, and approved water releases commenced on 16 June 2012 in accordance with EPL 12455. Under EPL 12455, WCPL are approved to discharge treated water from Licensed Discharge Point 24 (LDP24). The maximum volume of water discharge shall not exceed 5ML/day. Water quality concentration limits (i.e. 100 percentile concentration limit) for LDP24 include:

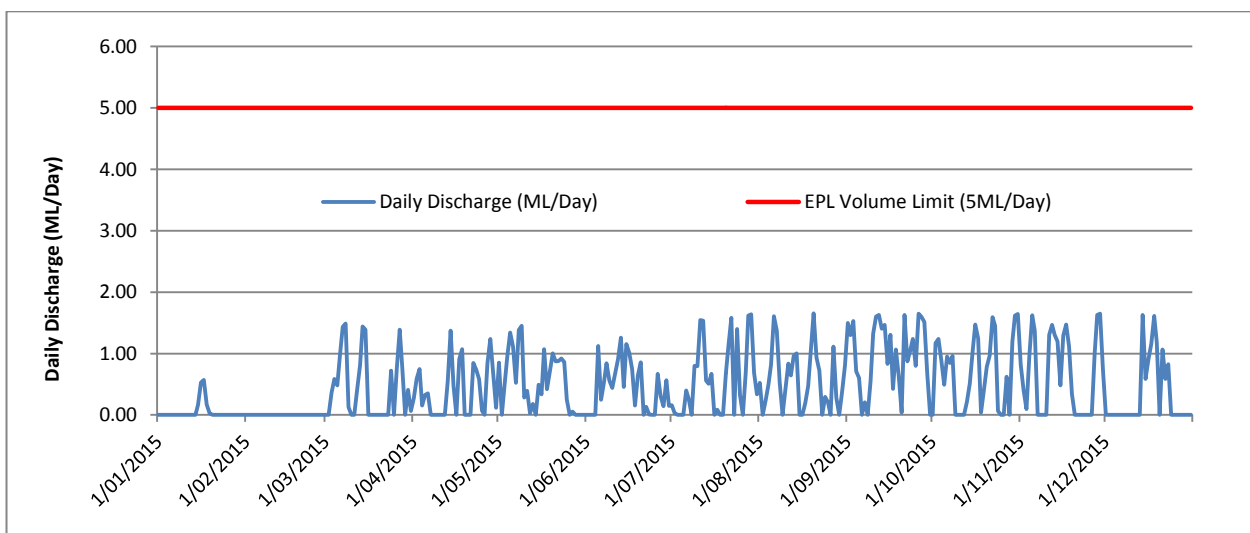
- Electrical conductivity (EC) not to exceed 500 $\mu\text{S}/\text{cm}$ (continuous monitoring);
- Oil and grease (O&G) not to exceed 10mg/L (grab sample weekly during any discharge);
- pH range of 6.5 to 8.5 (continuous monitoring); and
- Total suspended solids (TSS) not to exceed 50mg/L (grab sample weekly during any discharge).

Graph 10 presents the daily discharge (in ML/day) from the WTF during the 2015 review period. The total water discharged over the 2015 review period was approximately 172.7ML. The WTF did not discharge water during the month of February. WCPL did not exceed the daily volume criteria of 5ML/day.

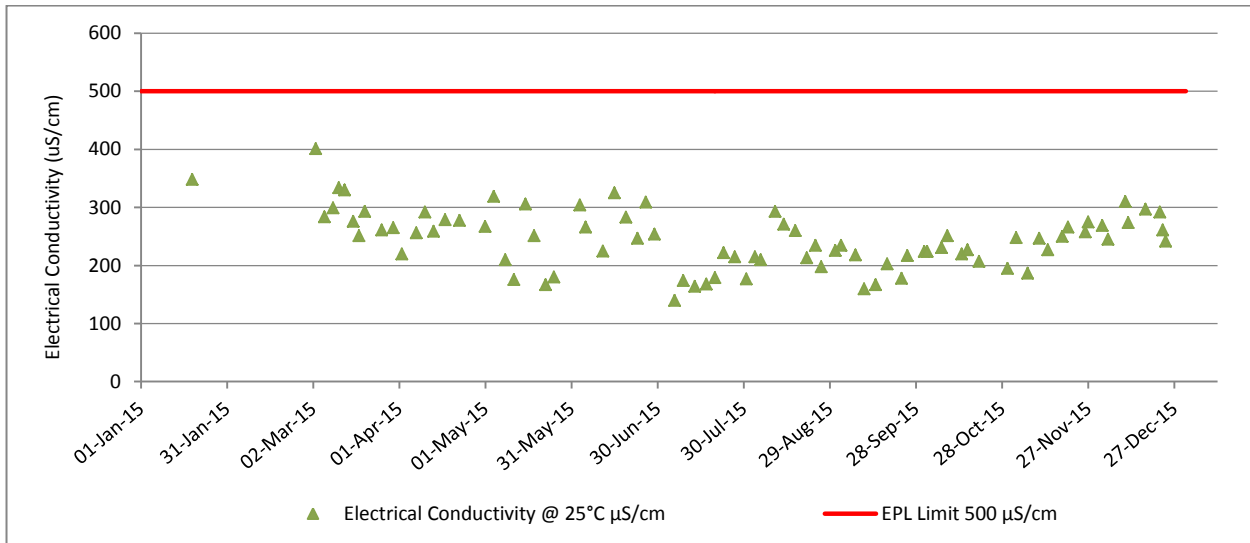
Graph 11 presents the EC results of the treated water discharged from the WTF during the 2015 review period. WCPL did not exceed the maximum criteria of 500 $\mu\text{S}/\text{cm}$ for EC.

Graph 12 presents the pH, TSS and O&G results of the treated water discharged from the WTF during the 2015 review period. WCPL did not exceed the pH maximum or minimum criteria (i.e. 6.5 - 8.5pH). WCPL achieved the water quality criteria for TSS and O&G (i.e. 50mg/L and 10mg/L respectively), with the exception of one O&G result recorded on the 17 July 2015. The O&G result for the 17 July 2015 was 20mg/L, however after further investigation this elevated result was most likely due to laboratory error as oil (and larger species) would be rejected at the RO plant membrane surface and not pass through the water treatment plant. For further details about this O&G result, refer to **Section 11**.

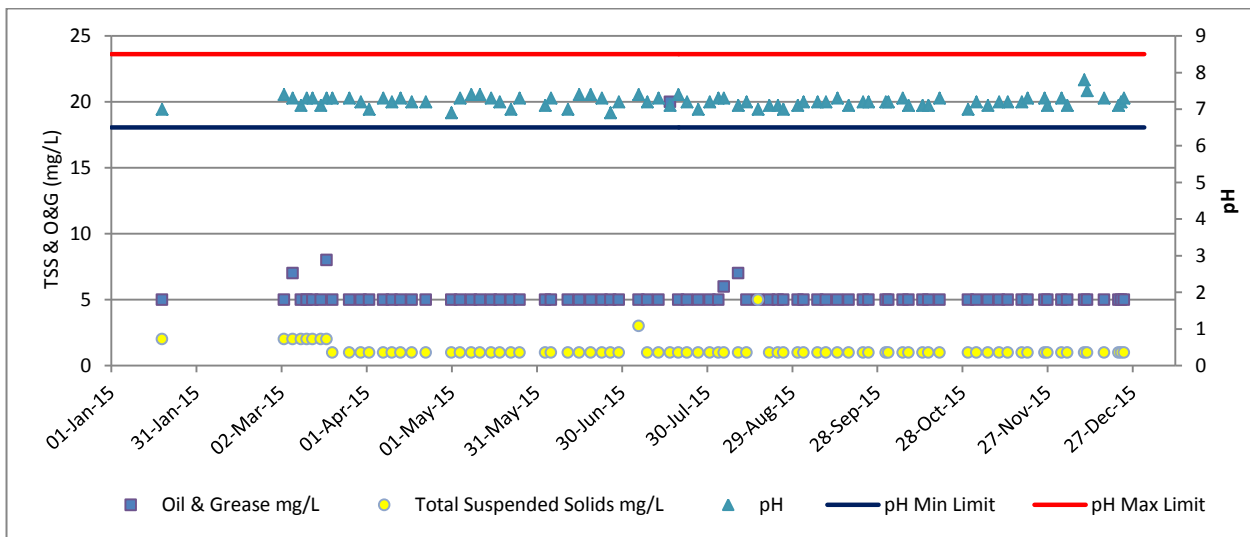
Graph 10 Treated Water Discharged During 2015



Graph 11 Results for EC Discharged During 2015



Graph 12 Results for pH, TSS & Oil/Grease Discharged During 2015



7.10 Stream Health & Channel Stability Monitoring

In accordance with the SWMMP, channel stability monitoring is undertaken along Wilpinjong and Cumbo Creeks on an annual basis. In 2015, Creek bank stability monitoring program identified areas continuing to improve along much of the Wilpinjong Creek. Destocking along much of the creek as well as fencing out riparian areas continues to allow for natural regeneration to occur. However there still remain areas of visual erosion along the creek, although ground cover was noted as improving. Creek bank stability along Cumbo Creek remains stable for the length of the creek surveyed. No sites were assessed as being within unstable classification. A copy of the 2015 channel stability monitoring report is provided in **Appendix 3C**.

7.11 Groundwater

A summary of the groundwater monitoring programme is presented in **Table 23**. A summary of the groundwater monitoring results is provided in **Table 24**. Further groundwater monitoring results for 2015 review period, including figures with groundwater monitoring locations are provided in **Appendix 3D**.

Table 23 Groundwater Monitoring Program

| Monitoring Locations | | Frequency | Parameters ^{1,2} |
|---|---|-----------------------------|--|
| Open Cut Operations | • Main pit sump(s) | Monthly | • Volume of water extracted. |
| | | Quarterly | • pH, EC, TDS, Na, K, Mg, Ca, Cl, HCO ₃ , CaCO ₃ , SO ₄ and Metals (Cu, Zn, Fe, Al, Ni, Mn, Ba, Sr, Pb, As and Se). |
| Water Supply Bores ³ | • GWs10, GwS11, GWs12, GWs14, GWs15 | Monthly (During Extraction) | • Water level, field pH and EC. • Volume of water extracted. |
| Alluvial Bores | • GWa10, GWa11, GWa12, GWa14, GWa15, GWa16, GWa22, GWa32 | 12 Hr (logger) | • Water level, Pressure, Temperature |
| | • GWa1, GWa2, GWa3, GWa4, GWa5, GWa6, GWa7 ⁵ , GWa8 ⁵ , GWa9, GWa10, GWa11, GWa12, GWa14, GWa15, GWa16, GWa22, GWa32, GWa33 ⁵ | Monthly | • Water level, temperature field pH and EC. |
| | | Quarterly | • TDS, Na, K, Mg, Ca, Cl, HCO ₃ , CaCO ₃ , SO ₄ and Metals (Cu, Zn, Fe, Al, Ni, Mn, Ba, Sr, Pb, As and Se). |
| Coal Measures Bores | • GWc10, GWc11, GWc12, GWc14, GWc15, GWc16, GWc17, GWc18, GWc22, GWc23, GWc24, GWc25, GWc26, GWc27, GWc28, GWc29, GWc30, GWc31, GWc32 ⁵ | Daily (logger) | • Water level, Pressure, Temperature |
| | | Monthly | • Water level, temperature, field pH and EC. |
| | • GWc1, GWc2, GWc3, GWc4 ⁵ , GWc5 ⁵ , GWc10, GWc11, GWc12, GWc14, GWc15, GWc16, GWc17, GWc18, GWc19, GWc20, GWc22, GWc23, GWc24, GWc25, GWc26, GWc27, GWc28, GWc29, GWc30, GWc31, GWc33, GWc32 ⁵ , GWc345, GWc35 | Quarterly | • TDS, Na, K, Mg, Ca, Cl, HCO ₃ , CaCO ₃ , SO ₄ and Metals (Cu, Zn, Fe, Al, Ni, Mn, Ba, Sr, Pb, As and Se). |
| Landholder bores, wells and waterholes ⁴ | | As required | • To be determined |

Notes: 1) Parameters will be analysed provided sufficient volumes of water can be collected.

2) Na = Sodium, Ca = Calcium, HCO₃ = Bicarbonate, SO₄ = Sulphate, K = Potassium, Mg = Magnesium, Cl = Chloride and Total Fe = Total Iron.

3) Water supply bores not currently in operation

4) Monitoring may be undertaken, as required, in consultation with individual landholders. Parameters to be monitored will be determined following consideration of the landholder's concerns.

5) Regional bore – not expected to be affected by mining.

7.12 Groundwater Monitoring Review

A review of groundwater data for the water year 2014-15, as well as historical groundwater data, was undertaken by HydroSimulations during the review period. The groundwater data review included groundwater levels, groundwater quality, comparison of predicted and observed drawdowns, groundwater take and groundwater dependent ecosystems. A summary of the HydroSimulations 2015 review is provided below, with the complete report provided in **Appendix 3D**.

Groundwater model predictions of inflows to WCM for the period 2014-15 are higher than the inflow calculated as part of the site water balance (WRM, 2015). Based on both the site water balance and recent groundwater modelling (HS, 2015), it is assessed that the total current licensed groundwater entitlement at WCM (2021 ML/a) is sufficient to cover estimated 2014- 15 inflows (678-1397 ML/a) and the projected future groundwater take at the mine.

Table 24 Groundwater Performance

| Location | | Approved Criteria | | | Performance During the Reporting Period | | | Trend/Key Management Implications | Implemented/proposed Management Actions |
|--|----------------------------------|-------------------------|-----------------|---|---|----------|--|--|---|
| Groundwater Monitoring (Alluvium) | | | | | | | | | |
| | Water Levels (mAHD) ⁴ | EC (µS/cm) ⁵ | pH ⁶ | Water Level (mAHD) | EC (µS/cm) | pH | <ul style="list-style-type: none"> A review of groundwater data for the water year 2014-15 as well as historical groundwater data was undertaken by HydroSimulations. The review included groundwater level, groundwater quality, comparison of predicted and observed drawdowns, groundwater take and groundwater dependent ecosystems. A summary of the Hydro Simulations 2015 review is provided below, with the complete report provided in Appendix 3D. | <ul style="list-style-type: none"> WCPL will continue to monitor and evaluate the groundwater system over the 2016 review period. In accordance with Condition 4, Schedule 5 of Project Approval (05-0021), WCPL will review and, if necessary, revise the GWMP and SGWRP within three months of the submission of this Annual Review . Implementation of the revised GWMP and other associated water management plans once approved. | |
| GWa1 | 383.9 | 12,272 | 7.2 | Max: 383.56 | Dry | Dry | | | |
| GWa2 | 370.6 | 2,280 | 7.0 | Max: 372.42 | Max: 1510 | Max: 6.9 | | | |
| GWa3 | 360.3 | 1,970 | 7.3 | Max: 358.52 | Max: 2640 | Max: 7.2 | | | |
| GWa4 | 353.8 | 2,596 | 7.1 | Max: 353.3 | Max: 5260 | Max: 7.2 | | | |
| GWa5 | 372.7 | 13,926 | 7.1 | Max: 371.16 | Max: 11070 | Max: 7.5 | | | |
| GWa6 | 357.8 | 6,720 | 7.6 | Max: 358.13 | Max: 8830 | Max: 7.6 | | | |
| GWa7 | 343.2 | 10,126 | 7.0 | Max: 343.04 | Max: 15270 | Max: 7.3 | | | |
| GWa8 ³ | 353.1 | 2,898 | 7.4 | Max: 354.68 | Max: 2290 | Max: 7.1 | | | |
| Groundwater Monitoring (Coal) | | | | | | | | | |
| GWc1 | - | 2,844 | 7.2 | - | Max: 3322 | Max: 7.1 | | | |
| GWc2 | - | 1,290 | 7.7 | - | Max: 1300 | Max: 7.3 | | | |
| GWc3 | - | 3,304 | 7.3 | - | Max: 4630 | Max: 6.8 | | | |
| GWc4 | - | 2,412 | 7.1 | - | Max: 2480 | Max: 6.7 | | | |
| GWc5 | - | 4,798 | 7.0 | - | Max: 5770 | Max: 6.7 | | | |
| Groundwater Production Bores | | | | | | | | | |
| GWs10 | 351.5 | - | - | As reported in Section 7.8 , the Mine was in water surplus for the 2014/2015 period. No water was extracted from the groundwater production bores during the 2015 review period. | | | | | |
| GWs11 | 353 | - | - | | | | | | |
| GWs12 | 338 | - | - | | | | | | |
| GWs14 | 328 | - | - | | | | | | |
| GWs15 | 324 | - | - | | | | | | |
| Notes: | | | | | | | | | |

⁴ Three consecutive monthly exceedences or two consecutive quarterly monitoring events to trigger and investigation.

⁵ 80th percentile value must be triggered three consecutive monthly monitoring events or two consecutive quarterly monitoring events to trigger and investigation.

⁶ 80th percentile value must be triggered three consecutive monthly monitoring events or two consecutive quarterly monitoring events to trigger and investigation.

Groundwater Monitoring Review cont.

While the available data from site is unable to allow accurate determination of the actual inflow to each of the pits, correlation of the groundwater model predictions and WRM's sitewide inflow estimates indicates compliance across each of the individual pit licences, with the exception of Pit 1, where the nominal 1 ML/a licence is exceeded by the relatively small estimated inflow volumes of 6-13 ML/a. In the context of the total licence and site-wide inflow, this apparent breach is inconsequential and administrative in nature, i.e. it is immaterial in terms of the groundwater resource. Gross groundwater extraction across the site is compliant.

Drawdowns in the order of 10 m or more have been observed at coal monitoring bores GWc2, GWc11, GWc12, GWc14 and GWc15. At the alluvial monitoring bores, there are possible mining effects at three bores (GWA3, GWA14, GWA6) along Wilpinjong Creek in the order of 1m or less; however, small drawdowns of this magnitude are often difficult to separate from climatic effects. The 1m (or less) drawdown associated with mining at these sites is less than the 2 m drawdown specified in the Minimal Impact Considerations in the NSW Aquifer Interference Policy (NSW DPI, 2012)⁷. There is a definite mining effect at alluvial bore GWA5 located between Pit 2 and Pit 3, adjacent to Cumbo Creek upstream. The drawdown there was in the order of 3m from 2013 to 2015. The observed drawdown at this bore cannot be compared to predictions in the previous model, because this local area was not included in the active model domain; however, it is noted that WCPL is approved to relocate and excavate the lower reaches of Cumbo Creek⁸, which is adjacent to where GWA5 is located. There are no obvious mining effects at any other bores.

The relevant groundwater model (HS, 2013) predicts minimal drawdown (in the order of 0.1 m at most) at alluvial bores along Wilpinjong Creek. This is consistent with most observed drawdowns, although three sites on Wilpinjong Creek could have experienced up to 1 m drawdown.

The drawdowns predicted by the groundwater model at coal monitoring bores along Wilpinjong Creek are in reasonable agreement with what has been observed by mid-2015, although the model has overestimated the drawdown in half the cases.

Although groundwater level changes alone are not definitive, the alluvial and coal monitoring bore drawdowns observed do not suggest any gross change in the groundwater contributions to the open cuts. The increased rates of pit pumping are therefore considered to be due to increasing contributions of other water sources (e.g. significant levels of recirculation within the mine water management system) and the current reliance on inferred pumping data (i.e. recorded pump hours and estimated pump duty).

Based on the available data, the impacts of the mine extractions on aquifers, groundwater dependant ecosystems and streams, appear generally consistent with previous predictions.

It should be noted that HydroSimulations have completed a major re-build and recalibration of the Wilpinjong groundwater model in line with the WEP.

⁷ This threshold is specified in the Aquifer Interference Policy as applying to drawdown at nearby water supply works (bores), and has been used here for comparative purposes.

⁸ Subject to approval of WCPL's *Cumbo Creek Relocation Plan*.

8.0 REHABILITATION

The submission and approval of the Mining Operations Plan (2014-2019) satisfies the Condition 61, Schedule 3 of Project Approval (05-0021) for the preparation and implementation of a Rehabilitation Management Plan (RMP). The MOP provides details on the rehabilitation processes, monitoring and elevation to ensure progression towards successful rehabilitation outcomes. **Table 25** provides a summary of the Mine’s rehabilitation status against the forecasts provided in the MOP.

Table 25 Rehabilitation Status

| Mine Area Type | Previous Reporting Period (Actual) | This Reporting Period (Actual) | Next Reporting Period (Forecast) |
|--|---------------------------------------|-----------------------------------|-------------------------------------|
| | 2014 (ha) | 2015 (ha) | 2016 (ha) |
| A. Total mine footprint | 2857.34 | 2857.34 | 2857.34 |
| B. Total active disturbance | 1060.6 | 1123.6 | 1148.6 |
| C. Land being prepared for rehabilitation | 40 | 43 | 70 |
| D. Land under active rehabilitation | 221 | 304 | 374 |
| E. Completed rehabilitation | 0 | 0 | 0 |

8.1 Rehabilitation Activities

To minimise the area of disturbance at any one time, rehabilitation occurs progressively at the Mine as ancillary disturbance areas and final mine landforms become available for revegetation. The mine waste rock emplacements behind the advancing open cut are constructed to approximate the pre-mining topography or the final landform approved by PA 05-0021.

Revegetation of completed landforms has been progressively undertaken since 2008 and has included establishing both woodland and mixed woodland/grazing, consistent with the Mine’s rehabilitation objectives and post-mining land use contained within the MOP.

Disturbance activities associated with land preparation for mining operations took place across 96.8ha during the review period, totalling 1123.6ha disturbed by WCPL to date.

During 2015, approximately 82ha of mine rock emplacement was seeded as shown in **Figure 3**. This included seeding 40ha which was topsoiled in 2014. Of the 82ha rehabilitated, approximately 76.6ha was seeded in a green manure crop trial as outlined in **Section 8.3**.

At the end of December 2015, approximately 304.55ha of completed landforms have been rehabilitated against the proposed MOP cumulative rehabilitation commitments of 300ha. The performance of the rehabilitation undertaken by the Mine is summarised in **Section 8.2 Stage 5: Ecosystem Development**.

For the next 2016 review period, the Mine is planning to rehabilitate approximately 70ha of mine waste rock.

During 2015 a new security fence was installed on the northern boundary of the current mine workings. The construction includes the installation of 6ft fence with barbed wire and ring lock.



Figure 3 Mine Rehabilitation: Areas Seeded in 2015

8.2 Rehabilitation Phases

The MOP provides details on the process for rehabilitation strategies implemented on site including monitoring and managing progression towards successful rehabilitation outcomes. In relevance with the rehabilitation phases identified with the MOP, comment on the activities undertaken during 2015 is discussed below.

Stage 1: Decommissioning

There were no decommissioning activities undertaken at the Mine in 2015. However, demolition activities along Mogo Road of two vacated properties owned by Peabody Pastoral occurred during 2015.



Plate 1 Mogo Road properties demolition material (awaiting in-pit disposal)

These properties form part of the Biodiversity Offset Strategy in accordance with Modification 5. These properties are to be gifted to the NSW Parks and Wildlife Service and as such demolition activities

include the removal of existing buildings and internal stock fences not required by NPWS. Asbestos removal was undertaken prior to demolition by licensed contractors. Demolition works commenced in November 2015 with approximately 1000 tonne of inert building material only being brought to the Mine (**Plate 1**) for in-pit disposal. This inert building material is awaiting in-pit disposal within Pit 3, schedule for early 2016.

Additionally, a house and associated shedding known as ‘Hillview’ located at the Mine in Pit 5 north was placed in-pit disposal in Pit 5 during August 2015, following asbestos removal and demolition in 2013 (**Plate 2**). All demolition activities have been undertaken in compliance with the approved Waste Management Plan (WMP) (Version 2). During 2016, it is expected further demolition material from Peabody Pastoral owned properties will be disposed in-pit as required, in accordance with the WMP.



Plate 2 Inert material from ‘Hillview’ before and following in-pit disposal

Stage 2: Landform Establishment

All 2015 rehabilitation landforms were designed in accordance with Wilpinjong’s Final Technical Standards. All rehabilitation areas were developed with carbonaceous material being progressively placed back in-pit once the coal has been mined before a minimum of 2m of encapsulation using inert material. Mine waste dumps were constructed using existing mine equipment including truck dumped material before being shaped using the Mine dozer fleet using APS technology to design. Overburden and interburden material was progressively placed back into mined out voids. This included reject material from the CHPP being hauled back into the mine and deposited below the natural surface in the mined-out voids as close to the pit floor as practically possible. Reject material is dispersed throughout the overburden within the mine waste rock emplacements to manage its geochemical characteristics.

Capping of Tailings Dam 4 (TD4) commenced in 2015 and is scheduled for completion in February 2016 (**Plate 4**). The capping and landform development will continue during 2016, with the aim of final rehabilitation completed by the end of the 2016 review period. During 2015, the Mine completed geochemical analysis of former tailings emplacement areas TD3 and TD4 (**Plate 4**) to consider the results for the capping of these facilities. The objectives of the geochemical assessment included:

- Characterise the salinity and acid forming potential of the materials;
- Identify risk from soil or water contamination that could impact revegetation & water quality; and
- Identify changes required to capping design to limit geochemical risk potential from the facilities.

Conclusions of the geotechnical report for TD3 and TD4 generally support the acid mine drainage (AMD) predictions made in the 2015 Life of Mine (LOM) Tailings Management Strategy (TMS) (i.e. low acid forming potential). The capping design outlined in both the LOM TMS and the MOP 'Tailings dam capped with a minimum of 2m of inert material' continues to be applied.

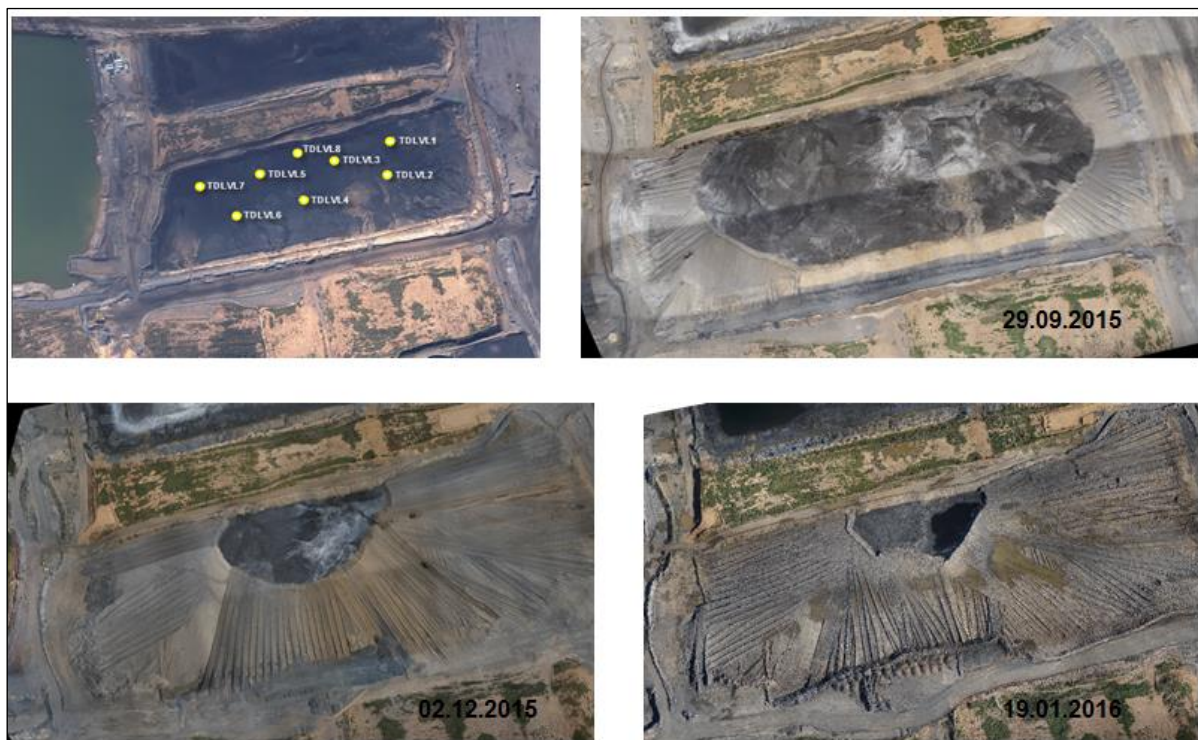


Plate 3 Progressing capping of TD4

Keylah Dump removal continued during 2015 with the removal of the top five benches measuring approximately 18m in height. The removal was undertaken in accordance with the Keylah Dump Management Plan (KDMP). The KDMP provides guidance to ensure that the material is disposed in such a manner that prevents future heating and mitigate future risks to final landform and rehabilitation works as a result of spontaneous combustion. When identified, hot material was placed in selected voids in Pit P5 and P1, in layers of approximately 2.5m (average). These layers were then capped with approximately 3m of inert material and track rolled compacted prior to the next layer of hot material for placement. This process will continue to be monitored by surveyor pickups and the Mine's Open Cut Examiner (OCE) (or delegate), during inspections until the material reaches 5m below the final surface level. At the end of 2015 capacity in receiving voids in Pit 5 and Pit 1 had not reached final landform level, with both locations recorded in the *Spontaneous Combustion Management Plan* for future reference. Keylah dump removal is scheduled to continue during 2016.



Plate 4 Progressive removal of Keylah Dump

The Mine completed a review of spontaneous combustion propensity characteristics throughout the coal seam (including partings). This included undertaking R70 testing and analysis of 58 samples from Pits 3, 4, 7 and 5 to understand the intrinsic coal reactivity to coal at the Mine. The program first commenced in August 2014 with samples progressing with the mine sequencing. Results indicate 6.8% of samples are classed as having a low propensity rating, 50% low-medium and 43.2% medium. The G and E coal in Pit 3 and Pit 7 recorded the highest results.

All rehabilitated slopes constructed during the reporting period were shaped to no greater than 1:6 (10 degrees or 17%) across areas. The surface of mine waste rock emplacements were constructed to approximate (where practicable) the existing topographic form of the shallow valleys which drain the Mine area. Mine waste rock emplacement surfaces are ripped to a depth of approximately 150mm to ensure the topsoil was bound with the underlying inert material and allow infiltration of water into the constructed landform. During 2015, approximately 39ha of final landform establishment was completed in preparation of topsoil placement, ripping and seeding.

Stage 3: Growth Medium Development

Topsoil placement involved dozers to spread to the desired depth, as well as direct placement by scrapers. Topsoil is replaced on the surface of the final landform to act as germination medium for vegetation and as a seed source from the natural seed bank present at the time of topsoil stripping. Topsoil placement only proceeds once the final landform and major drainage works (i.e. graded banks, drainage channels and rock waterways if required) have been completed.

During 2015, approximately 39.16ha of topsoil was placed on final landforms at a nominal depth of approximately 150mm. All topsoil was sourced from the Mine's existing topsoil stockpiles, previously stripped to allow open cut mining activities to proceed.

In consideration for soil ameliorates required for rehabilitation areas, a specialist agronomist was engaged by the Mine. Representative topsoil sampling was undertaken across all proposed rehabilitation areas. Results indicate a deficiency in P, K, CA, B, Cu, Zn, Cl and organic matter with the requirement for amelioration in all areas. The following ameliorates were applied including the application of lime, organic matter and fertiliser.

During 2015, the Mine completed applying surplus Organic Growth Medium (OGM) to approximately 6.8ha (**Figure 3**). The surplus OGM remained after applying this product in rehabilitation areas during 2014. The Mine also commenced a trial to investigate the effect of feedlot cow manure as a soil ameliorant, as it had not previously been applied. The primary aim of the trial was to add organics to the existing poor soils present and see if pasture establishment could be improved through the assistance of providing additional organic carbon levels, nutrient improvement and water retention. Further information on the trial undertaken is discussed in **Section 8.3**. In 2015, the Mine invested in purchasing specific equipment used in rehabilitation activities and allocating appropriate permanent resources known as the Operational Support Team. The responsibilities of this team include rehabilitation works i.e. topsoil spreading, ripping, drainage works, adding ameliorates and seeding.

Stage 4: Ecosystem Establishment

Flora species for reestablishment in the rehabilitated landforms will be a mixture of native and introduced locally successful tree, grass and legume species selected to enhance seed banks stocks contained within topsoil resources. The Mine has implemented a native seed collection and propagation program, to ensure that the genetic integrity, structure and composition of local vegetation types are maintained throughout the broader landscape. The collection and propagation of locally native seed was carried out by a suitably qualified, licensed provider, who is trained in plant identification, seed collection, data recording, seed storage techniques and propagation. The seed collection provider followed best practice principles for seed collection. During 2015, local seeds were collected from Peabody owned lands surrounding the mining lease. Current species collected and stored within the seed bank are *Allocasuarina verticillata*, *Angophora floribunda*, *Callitris endlicheri*, *Cassinia arcuata*, *E. albens*, *E. blakelyi*, *E. crebra*, *E. melliodora*, *E. punctat*, *Gahnia aspera*, *Themeda triandra*.

During 2015, a total of 6.89ha was seeded with pasture species with details displayed in **Table 26** and **Figure 3**. The remaining 74.9ha was planted in a trial of green manure as a trial technique. Further details on the trial are outlined in **Section 8.3**.

Table 26 : Pasture Species and Application Rates

| Species | Rate | Species | Rate |
|-------------------|----------|---------------|----------|
| Couch | 3kg/ha | Phalaris | 2kg/ha |
| Consol Love Grass | 1kg/ha | Prairie Grass | 3.5kg/ha |
| Tall Wheatgrass | 3kg/ha | Weeping grass | 0.5kg/ha |
| Prairie Grass | 3.5kg/ha | Jap Millet | 5kg/ha |
| Premier digit | 3kg/ha | | |

Stage 5: Ecosystem Development

Monitoring and maintenance activities are ongoing with the results assessed and used to refine rehabilitation techniques. The Mine has developed measurable, quantitative Completion Criteria that will support the agreed final land use for the Mine. Interim Performance Targets have been developed to ensure that the Mine is progressing towards the Completion Criteria and overall mine closure objectives and are outlined in the BMP.

Progress towards the Interim Performance Targets is measured using Landscape Function Analysis (LFA) (Tongway & Hindley 2004) and the BioMetric methodology (WCPL 2014). During 2015, Wilpinjong undertook monitoring in accordance with the BMP. Results are summarised below and attached as **Appendix 5**. Spring 2015 floristic monitoring formed the baseline survey. Floristic monitoring plots were identified using the BioMetric methodology and established for the first time. Twenty-five floristic monitoring sites were established, with six sites located in mine rehabilitation areas, seven sites within regeneration and conservation areas and twelve sites as reference sites. LFA was undertaken in December 2015. LFA assessment was undertaken along a 50m transect that either corresponded with the BioMetric plots established during spring 2015 monitoring, or proposed BioMetric plot locations to be established during autumn 2016.

2015 LFA Monitoring Results

All LFA sites have exceeded the Completion Criteria established in the BMP (minimum score of 50) for Slope Stability, with scores also comparable to scores from the reference sites monitored. With the exception of two Rehabilitation sites (R11 and R13), LOI scores were high and correspond well with scores from reference sites. High LOI scores indicate a stable, functioning landform covered by patches. LOI should be considered as only an indicator with correlation of these scores against vegetation data important in determining the species composition and structure, and to gain a more detailed understanding of the overall function of the site. Scores for Soil Infiltration and Nutrient Cycling were much more variable and overall quite low compared to both Completion Criteria and reference site scores. Low Soil Infiltration and Nutrient Cycling scores are likely the result of historical clearing and livestock usage throughout the BOA, ECA and Regeneration sites. Low scores recorded within Rehabilitation sites are due to the compacted artificial soils in which the Rehabilitation areas are located.

2015 Assessment against Interim Performance Target

Table 27 displays BioMetric site attribute results for all sites across the BOAs, ECAs, Regeneration and Rehabilitation management domains and their ranking against Interim Performance Targets for Year 0 (Baseline). The overall performance of the monitoring sites against the Interim Performance Targets for Year 0 is good, with the majority of sites either exceeding or on par with the Interim Performance Targets. Native Overstorey Cover targets for Year 0 are relatively low, therefore, sites that have a canopy or regenerating canopy (specifically within the BOAs and ECAs) illustrate a higher current cover percentage than that established for the Year 0 Interim Performance Target. **Table 28** displays BioMetric site attribute results for all sites across BOAs, ECAs, Regeneration and Rehabilitation management domains and their ranking against benchmark targets (or overall Completion Criteria). As monitoring within the management domains continues over time and management actions are undertaken, this ranking against the overall targeted benchmark scores (**Table 28**) should become similar to **Table 27**.

Sites across all management domains generally scored higher than the Interim Performance Targets. All sites met targets in a minimum of 7 (out of 10) site attribute scores, with 5 sites achieving targets in all 10 (**Table 27**). Site attributes that often did not meet Interim Performance Targets were exotic ground cover, native ground cover grasses and overstorey regeneration. This was particularly evident at disturbed sites across all management domains. Low scores for native midstorey and shrub ground cover reflects the widespread clearing that has occurred across monitoring sites, as well as the naturally low occurrence of midstorey and shrub species in certain vegetation communities (grassy woodland). The site attribute scores for reference sites are within the relative Interim Performance Target ranges outlined for High Condition vegetation in the BMP and thus, provide good benchmarks to guide management.

Table 27 Assessment against Interim Performance Targets (Year 0 (Baseline))

| Site | Site Attributes (% cover) | | | | | | | | | | |
|--------|---------------------------|------|------|------|------|------|------|-----|-----|------|--------|
| | Vegetation condition | NSR | NOC | NMS | NGCG | NGCS | NGCO | EC | NTH | OR | FL (M) |
| D100 | MOD-GOOD | 27 | 7 | 20.5 | 6 | 16 | 20 | 0 | 0 | 1 | 27 |
| D102 | MOD-GOOD | 60 | 12 | 0 | 38 | 0 | 50 | 6 | 0 | 0 | 12 |
| E101 | MOD | 57 | 4 | 10.5 | 68 | 6 | 28 | 10 | 0 | 1 | 6 |
| E102 | LOW | 28 | 0 | 0 | 34 | 0 | 14 | 88 | 0 | 0 | 0 |
| E104 | MOD-GOOD | 35 | 21 | 0 | 44 | 0 | 28 | 22 | 1 | 1 | 14 |
| A100 | LOW | 4 | 0 | 0 | 0 | 0 | 4 | 100 | 0 | 0 | 0 |
| A104 | MOD-GOOD | 38 | 15.5 | 6 | 20 | 0 | 4 | 0 | 0 | 1 | 138 |
| B100 | GOOD | 24.5 | 6.1 | 18 | 4 | 2 | 0 | 0 | 0 | 0.75 | 15 |
| B101 | MOD-GOOD | 36 | 0 | 0 | 34 | 0 | 18 | 20 | 0 | 0 | 0 |
| B105 | LOW | 8 | 0 | 0 | 6 | 0 | 8 | 90 | 0 | 0 | 0 |
| C100 | GOOD | 24 | 26 | 9.7 | 2 | 8 | 8 | 0 | 1 | 0.75 | 33 |
| C102 | MOD-GOOD | 48 | 13 | 2.5 | 8 | 4 | 6 | 0 | 0 | 0.75 | 84 |
| R1_101 | LOW | 32 | 0 | 0 | 16 | 0 | 16 | 48 | 0 | 0 | 0 |
| R1_C | LOW | 16 | 12 | 1.1 | 0 | 0 | 0 | 85 | 0 | 0.75 | 0 |
| R2_101 | LOW | 12 | 0 | 0 | 40 | 0 | 12 | 74 | 0 | 0 | 0 |
| R4_100 | LOW | 7 | 0 | 0 | 0 | 0 | 8 | 68 | 0 | 0 | 0 |
| R5_101 | LOW | 25 | 0 | 0 | 72 | 0 | 8 | 26 | 0 | 0 | 0 |
| R7_101 | MODERATE | 33 | 0 | 0 | 50 | 2 | 20 | 24 | 0 | 0.75 | 5 |
| R9_100 | MOD-GOOD | 59 | 0 | 15 | 58 | 12 | 8 | 0 | 0 | 0 | 0 |
| R5_C | LOW | 3 | 0 | 0 | 0 | 0 | 2 | 60 | 0 | 0 | 0 |
| R8 | LOW | 11 | 0 | 0 | 2 | 0 | 14 | 94 | 0 | 0 | 0 |
| R10 | LOW | 18 | 0 | 0 | 12 | 0 | 4 | 48 | 0 | 0 | 12 |
| R11 | LOW | 20 | 0 | 0 | 6 | 0 | 20 | 86 | 0 | 0 | 2.2 |
| R2_C | LOW | 15 | 0.6 | 4.5 | 0 | 0 | 0 | 74 | 0 | 1 | 0 |
| R3_C | LOW | 16 | 0 | 0 | 6 | 0 | 14 | 76 | 0 | 0 | 0 |

NSR = Native Plant Species Richness, NOC = Native Over-storey Cover, NMC = Native Mid-storey Cover, NGCG = Native Ground Stratum Cover (grasses), NGCS = Native Ground Stratum Cover (shrubs), NGCO = Native Ground Stratum Cover (other), EC = Exotic Plant Cover, NTH = Number Of Trees With Hollows, OR = Over-storey Regeneration and FL = Total Length of Fallen Logs. Grey shaded cells = rehabilitation sites

Table 28 Assessment against Benchmark Targets

| Site | Site attributes (% cover) | | | | | | | | | | |
|--------|---------------------------|------|------|------|------|------|------|-----|-----|------|--------|
| | Vegetation condition | NSR | NOC | NMS | NGCG | NGCS | NGCO | EC | NTH | OR | FL (M) |
| D100 | MOD-GOOD | 27 | 7 | 20.5 | 6 | 16 | 20 | 0 | 0 | 1 | 27 |
| D102 | MOD-GOOD | 60 | 12 | 0 | 38 | 0 | 50 | 6 | 0 | 0 | 12 |
| E101 | MOD | 57 | 4 | 10.5 | 68 | 6 | 28 | 10 | 0 | 1 | 6 |
| E102 | LOW | 28 | 0 | 0 | 34 | 0 | 14 | 88 | 0 | 0 | 0 |
| E104 | MOD-GOOD | 35 | 21 | 0 | 44 | 0 | 28 | 22 | 1 | 1 | 14 |
| A100 | LOW | 4 | 0 | 0 | 0 | 0 | 4 | 100 | 0 | 0 | 0 |
| A104 | MOD-GOOD | 38 | 15.5 | 6 | 20 | 0 | 4 | 0 | 0 | 1 | 138 |
| B100 | GOOD | 24.5 | 6.1 | 18 | 4 | 2 | 0 | 0 | 0 | 0.75 | 15 |
| B101 | MOD-GOOD | 36 | 0 | 0 | 34 | 0 | 18 | 20 | 0 | 0 | 0 |
| B105 | LOW | 8 | 0 | 0 | 6 | 0 | 8 | 90 | 0 | 0 | 0 |
| C100 | GOOD | 24 | 26 | 9.7 | 2 | 8 | 8 | 0 | 1 | 0.75 | 33 |
| C102 | MOD-GOOD | 48 | 13 | 2.5 | 8 | 4 | 6 | 0 | 0 | 0.75 | 84 |
| R1_101 | LOW | 32 | 0 | 0 | 16 | 0 | 16 | 48 | 0 | 0 | 0 |
| R1_C | LOW | 16 | 12 | 1.1 | 0 | 0 | 0 | 85 | 0 | 0.75 | 0 |
| R2_101 | LOW | 12 | 0 | 0 | 40 | 0 | 12 | 74 | 0 | 0 | 0 |
| R4_100 | LOW | 7 | 0 | 0 | 0 | 0 | 8 | 68 | 0 | 0 | 0 |
| R5_101 | LOW | 25 | 0 | 0 | 72 | 0 | 8 | 26 | 0 | 0 | 0 |
| R7_101 | MODERATE | 33 | 0 | 0 | 50 | 2 | 20 | 24 | 0 | 0.75 | 5 |
| R9_100 | MOD-GOOD | 59 | 0 | 15 | 58 | 12 | 8 | 0 | 0 | 0 | 0 |
| R5_C | LOW | 3 | 0 | 0 | 0 | 0 | 2 | 60 | 0 | 0 | 0 |
| R8 | LOW | 11 | 0 | 0 | 2 | 0 | 14 | 94 | 0 | 0 | 0 |
| R10 | LOW | 18 | 0 | 0 | 12 | 0 | 4 | 48 | 0 | 0 | 12 |
| R11 | LOW | 20 | 0 | 0 | 6 | 0 | 20 | 86 | 0 | 0 | 2.2 |
| R2_C | LOW | 15 | 0.6 | 4.5 | 0 | 0 | 0 | 74 | 0 | 1 | 0 |
| R3_C | LOW | 16 | 0 | 0 | 6 | 0 | 14 | 76 | 0 | 0 | 0 |

8.3 Other Rehabilitation Activities

Exploration

Following the completion of exploration drilling, rehabilitation of exploration sites are carried out in accordance with *WI-EXP-PRO-0031 Wilpinjong Exploration Site Rehabilitation Procedure*. Inspections of drill sites are undertaken every 6 months (or as required) until the site has reached a stable state. Inspections include assessment of the following, but no limited to return of surrounding vegetation, any evidence of weed or pest invasion and evidence of active erosion issues or slumping. During 2015, 64 drill sites were inspected for rehabilitation progress. **Plate 5** provides a comparison of a drill site just after the completion of drilling and again in 6 months after completing rehabilitation works.

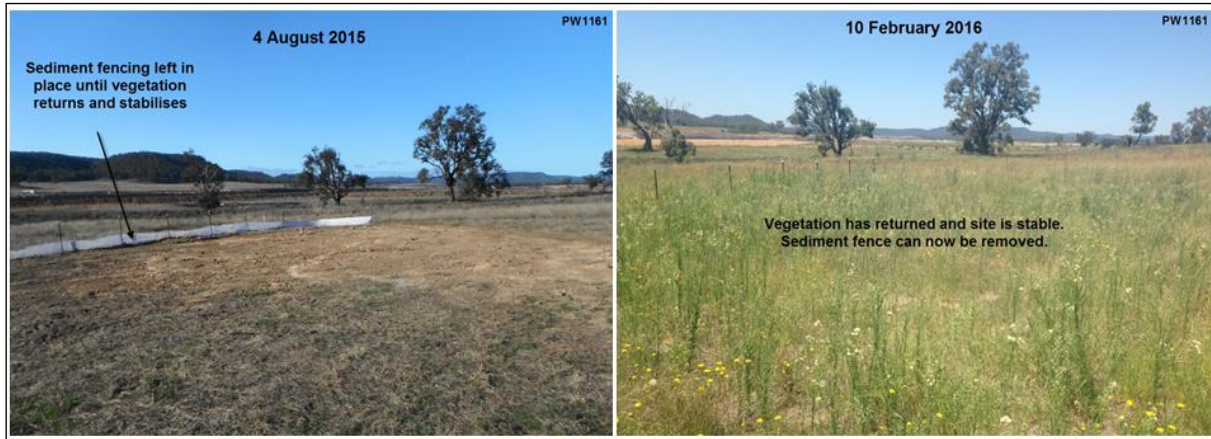


Plate 5 Rehabilitation progress Exploration Site

Cattle Trial

The aim was to investigate if grazing exerts a positive effect on some ecological aspects of the rehabilitation condition. It is expected that controlled grazing may provide benefit to species control and assist with improved vegetation structure and diversity. The outcomes of this trial will assist in understanding if cattle can be used a management tool to assist Wilpinjong achieve rehabilitation ecological objectives. As shown in **Figure 4**, the cattle trial area consists of approximately 80ha.

The area includes a cattle exclusion zone of approximately 5ha which encapsulates both the Mine’s oldest rehabilitation completed in 2008 as well as the most recent sown in 2014. Four monitoring sites have been established and are described in **Table 29** and shown in **Figure 4**. The cattle exclusion zone is protected by an electric fence whilst the boundary of the trial is fully fenced. Sixty five steers were introduced to the trial area on the 21 November 2015, provided by a local landholder. Monitoring commenced in Spring 2015 prior to the cattle being introduced to the area. Monitoring of the sites will occur after the cattle have been removed and again in Autumn 2016 as part of Mine’s monitoring program. Results will be included in the BMP.

Table 29 Monitoring Sites – Cattle in Rehabilitation Areas

| Site | Rehabilitation Date | Cattle Trial Area | Monitoring |
|------|---------------------|-----------------------|----------------|
| 1 | 2008 | Cattle Area | Biometric |
| 2 | 2008 | Cattle Exclusion Area | Biometric |
| 3 | 2014 | Cattle Exclusion Area | Biometric |
| 4 | 2014 | Cattle Area | Biometric, LFA |



Figure 4 Cattle Trial Area



Plate 6 Cattle within Trial Area

Green Manure

Basic idea of a green manure that a crop is grown before being plowed into the soil when the plant is still 'green'. At the Mine the green crop includes a combination of legumes and either sorghum or millet. The use of the 'green manure' will provide the following benefits; Increased organic matter and soil nutrients, nitrogen fixation, soil cover (erosion, dust etc), improved soil moisture, low cost (reduction in agrochemicals, transportation, labour etc) and weed control.

Cow Manure

The trial consists of applying 70t/ha on the western face of the Pit 5 Centre rehab area whilst the eastern face has had 30t/ha applied. A control site has also been established where no manure has been applied. A green manure crop has been sown over all areas. The aim of the trial is again to determine if cow manure can be applied on site to provide much needed organics into the soil profile.

Monitoring and evaluation of the results will be undertaken to determine if there is benefit to using either the Green and Cow manure in rehabilitation methodology at the Mine.

9.0 COMMUNITY

A protocol for the management and reporting of community complaints has been developed as a component of the Mine’s EMS. In accordance with Condition M6.1 of EPL 12425, a dedicated telephone number (ph: **1300 606 625**) for the provision of comments or complaints is maintained by WCPL. In addition, a separate hotline for blasting information is also maintained by WCPL (ph: **1800 649 783**).

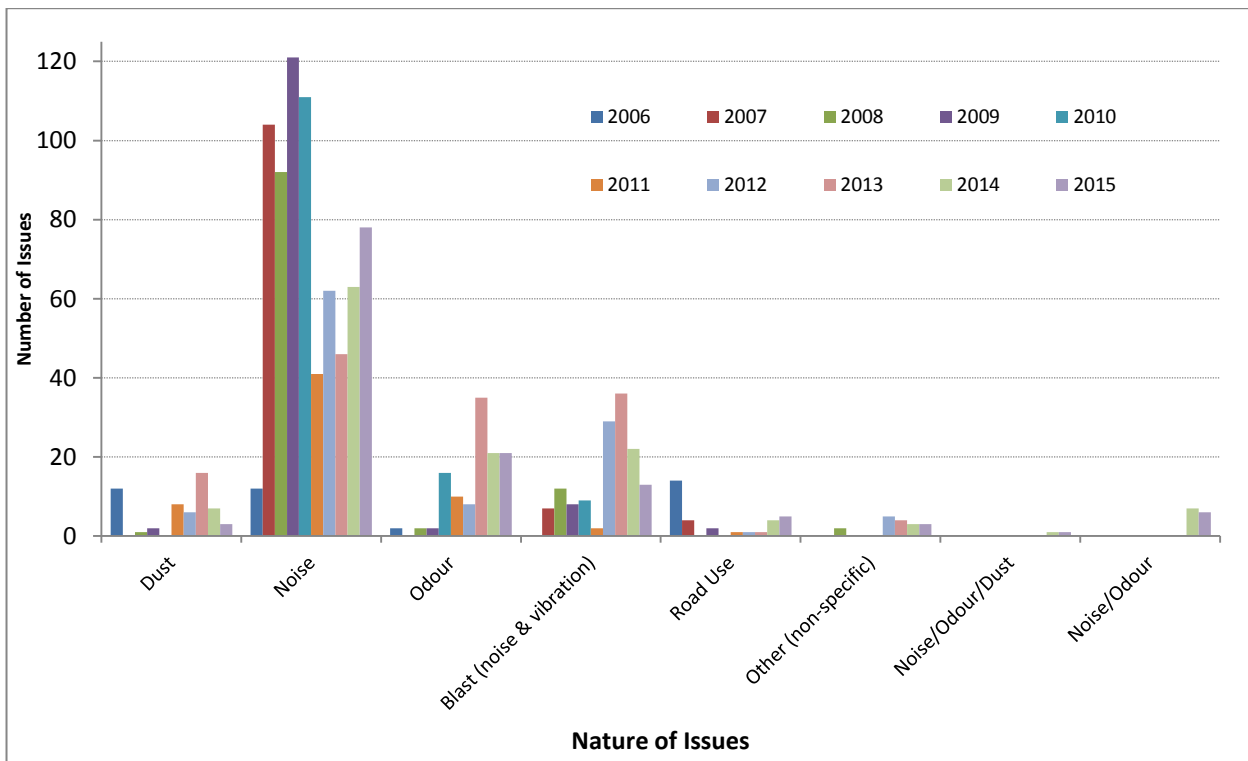
In accordance with Condition M6.2 of EPL 12425, these telephone lines are advertised in local newspapers quarterly, via the Wilpinjong Community Newsletter and on the Peabody website: <http://www.peabodyenergy.com/content/405/australia-mining/new-south-wales/wilpinjong-mine>

WCPL records and responds to all complaints and maintains a complaints register on its website. The complaints are managed in accordance with the WCPL Complaints Management Procedure. The Complaints Management Procedure outlines WCPL reporting requirements as follows:

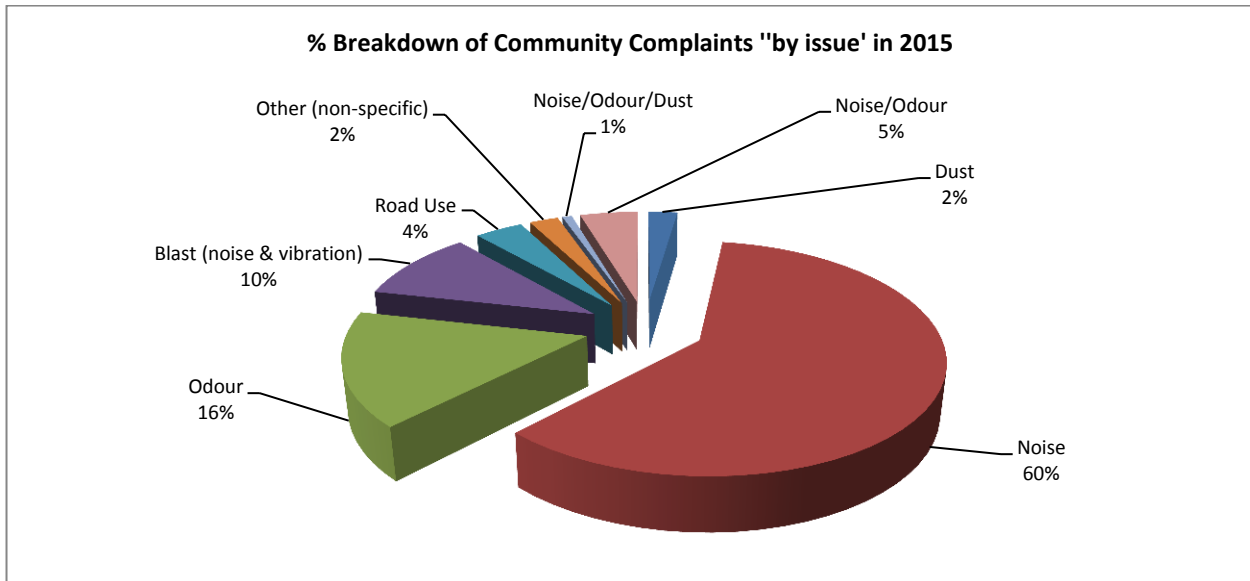
- A summary of complaints received is reported monthly on the Peabody website;
- A summary of complaints received and actions taken is presented to the WCPL CCC as part of the operational performance review;
- A summary of complaints received and actions taken is included in the Annual Review and Environmental Management Report and the Annual Return to the EPA.

During the 2015 review period, 130 environmental-related complaints were received by WCPL (**Appendix 6**). This was a slight increase by 2 environmental-related complaints recorded by WCPL in the previous 2014 reporting period. **Graph 13** presents a comparison of the environmental complaints received by WCPL over the period 2006 to 2015. WCPL received fewer blasting related complaints during the 2015 review period than in 2014, however noise related complaints did increased when compared to 2014.

Graph 13 Summary of Community Complaints and Issues Raised by Complainants 2006 – 2015



Graph 14 Percentage Breakdown of Community Complaints in 2015



Community Consultative Committee

In accordance with Condition 5, Schedule 5 of Project Approval (05-0021) the Community Consultative Committee (CCC) (**Table 30**) continued to meet during the 2015 review period. The CCC for the Mine is operated in general accordance with the *Guidelines for Establishing and Operating Community Consultative Committees for Mining Projects* (Department of Planning, 2007). Consistent with the requirements of the CCC Guidelines, the committee is comprised of one independent chairperson, and representatives of the MWRC, WCPL and members of the general community.

Consultation regarding the WEP was undertaken at the Community Consultative Committee meetings in March, June, September and December 2015. WCPL has undertaken individual consultation with private landholders and lessees that reside in the vicinity of the mine to discuss the ongoing development of the Wilpinjong Coal Mine and the WEP. During 2015, WCPL completed four CCC meetings. **Table 31** provides a summary of the CCC meetings held during the 2015 review period.

Table 30 CCC Members for the 2015

| Name | Organisation |
|----------------------|---|
| John Webb/Max Walker | Mid Western Regional Council (Councillor) |
| Lisa Andrews | CCC Independent Chair Person |
| Colin Bailey | Community Representative |
| Scott Lillis | Community Representative |
| Brian McDermott | Community Representative |
| Bev Smiles | Community Representative and Mudgee District Environmental Group Representative |
| Bruce Hughes | Community Representative |
| Kim Peach | Community Representative |
| David Crust | NSW National Parks and Wildlife Service Representative |

Table 31 Summary of CCC Meetings in 2015

| CCC Date | Key Outcomes |
|--------------|--|
| 16 March | Environmental monitoring results, Environmental update and Extension Project, reviewed complaints since last CCC, discussed incidents, discussed MOP submission and management plans, odour and dust issues. |
| 15 June | Environmental monitoring results, Environmental update and Extension Project, reviewed complaints since last CCC, discussed incidents, management plans, odour and dust issues. |
| 28 September | Meeting solely dedicated to the Wilpinjong Extension Project (WEP). |
| 7 December | Environmental monitoring results, Environmental update and Extension Project, Keylah Dump removal, reviewed complaints since last CCC, discussed incidents, discussed management plans, odour and dust issues. |

Community Support Program

During the 2015 reporting period, WCPL continued its support of local community groups and sporting associations, schools and charitable organisations (total amount in 2015 was approximately \$115,287.68), including local schools, Community Groups, Charities and sporting groups. More information regarding WCPL's community support program is provided in **Appendix 6**.

Newsletters

WCPL disturbed two community newsletters (or Factsheets) to provide information regarding the WEP in May and September 2015. Copies of the Factsheets are provided in **Appendix 6** and on the Peabody website.

Have a Chat Meeting

WCPL also provided information newsletter regarding upcoming 'have a chat' sessions, held at the Wollar Store 1st Thursday of the month from 1:30pm to 4:30pm. The initiative aims at providing the community a casual setting to ask questions or raise concerns relation to the Mine's operations.

Access to Information

Condition 11, Schedule 5 of PA 05-0021 details the requirements for access to information applicable to the Mine, and outlines the documents required by the Project Approval to be made publicly available on the Peabody website www.peabodyenergy.com

Employment Status

At the end of the 2015 reporting period there were 511 full time equivalent employees at WCPL (i.e. 392 employees and 119 contractors). An increase of 13 full time equivalent employees when compared to the end of the 2014 reporting period.

10.0 INDEPENDENT AUDIT

10.1 Water Licence Audit

Five water licenses under the *Water Act 1912* were issued to WCPL for five open cut pits in June 2013, including; 20BL173513 (Open Cut Pit 5), 20BL173515 (Open Cut Pit 4), 20BL173514 (Open Cut Pit 3), 20BL173516 (Open Cut Pit 2) and 20BL173517 (Open Cut Pit 1). WCPL were required to undertake an Independent Environmental Water Compliance Audit (the audit) each ‘water year’, in accordance with Condition 7 of the above mentioned water licences. Hansen Bailey was commissioned by WCPL to conduct the audit against the conditions of five licences for the ‘water year’ from 30 June 2014 to 1 July 2015 (2015 water year). The audit was conducted generally consistent with *ISO 14010 - Guidelines and General Principles for Environmental Auditing*, and *ISO 14011 - Procedures for Environmental Auditing*.

Expert advice was provided on behalf of WCPL by HydroSimulations (**Appendix 3D**). This advice detailed impacts experienced to the groundwater aquifers resulting from the extraction of groundwater by WCPL and compared this to predicted impacts to the regional hydrological regime. This advice included significant detail on quality and quantity for total groundwater take and observations on the site water balance.

The audit (**Appendix 3D**) identified a good level of compliance with the conditions of water licences, however the audit also identified several non-compliances against conditions of water licences, with some actions requiring progress by WCPL for the next audit period. The recommended actions for WCPL to address included:

- Develop and implement a methodology to estimate the annual volume of alluvial water inflow (water budget), approved by NOW;
- Future groundwater annual assessments to include a section on alluvial volumes derived from the piezometer network, observations and other applicable methods;
- Update the groundwater contingency plan; and
- Seek confirmation from NOW that WCPL flow meters are to a type and standard which is acceptable to NOW.

WCPL are currently working through each of recommendations as a result of the audit. An update on the progress of these actions will be provided in the 2016 Annual Review.

10.2 Independent Environmental Audit

On the 15 December 2014, an Independent Environmental Audit (IEA) was undertaken in accordance with Condition 9, Schedule 5 of Project Approval (05-0021). The IEA was carried out by AECOM Australia and included a team of specialist to review the Mine’s performance. The non-compliances identified and responses provided by WCPL were provided in the 2014 Annual Review. The next scheduled IEA for the Mine is late 2017.

11.0 INCIDENTS & NON-COMPLIANCES

11.1 Reportable Incidents

There were two reportable incidents during the 2015 Annual Review period, including:

Dust Exceedence

The DP&E and EPA were notified on the 7 May 2015, that PM₁₀ levels had exceeded the 24hr average criterion of 50ug/m³ at TEOM3 and TEOM4, with recorded dust levels of 78.5ug/m³ and 77.3ug/m³ respectively. The cause of these readings was a dust storm event that blew across much of NSW during that 24 hour period.

Bund Overflow

The DP&E and EPA were notified on the 22nd December 2015 that water had flowed over a light vehicle control bund located at Pit 5 North West, during a rainfall event of approximately 93.6mm. The bund was constructed as part of the Pit 5 North West light vehicle road. The overtopping water was observed to not have exited Wilpinjong Coal (or the premises) as defined by the Wilpinjong Environment Protection Licence 12425 and had not entered any natural waterway. Following the observation of water overtopping the bund, the following corrective steps were undertaken:

- Operational Support Team Co-ordinator modified the Pit 5 North West light vehicle road bund by hand to reduce rate of water overtopping.
- A grader was mobilised to Pit 5 North West estimated to have arrived at the location to perform below actions at 9:45am.
- Repair damage drain and also installed additional drains from the light vehicle road into Pit 5 to direct water captured on the light vehicle road into pit.
- Increased the height of the Pit 5 North West light vehicle road bund.

11.2 Non-Compliances

There were a total of sixteen non-compliances as identified in **Table 3**, identified during the 2015 review period. Six non-compliances were recorded against the PA05-0021 and ten non-compliances were recorded against EPL11245. A summary of the non-compliances, the cause of the non-compliance and actions to address the non-compliances are provided in **Table 32**.

Table 32 Details of Non-Compliances

| Relevant Approval | Date of | Details of Non-Compliance | Cause of Non-Compliance | Action to Address Non-Compliance |
|--------------------------------------|------------------------|---|---|---|
| PA 05-0021, Sch 2 Condition 8 | NA | ...ensure that all new buildings and structures....and structures, are constructed in accordance with the relevant requirements of the BCA. | Previously constructed buildings identified during internal audit to lack building and occupation certificates. | Program undertaken by WCPL to certify each individual building that was identified. |
| PA 05-0021, Sch 3 Condition 24 | 17/07/2015 | Oil and grease (O&G) result of 20mg/L was recorded from weekly grab sample from EPL Point 24. | Results likely caused by laboratory error or interference in the analysis method. The manufacturer of the water treatment facility confirmed it is not possible for O&G to pass through RO membranes. | Duplicate sample taken on 22- Oct-2015 detected an O&G level of <5mg/L. Laboratory are continuing to investigate any O&G result above 5mg/L.. There have been no O&G results above the EPL criterion of 10mg/L. |
| PA 05-0021, Sch 3 Condition 37 | N/A | By the end of December 2015, unless the DG agrees otherwise, make suitable arrangements to protect ECAS and BOA in perpetuity.... | Delays in reaching an agreement with National Parks & Wildlife Service (NPWS) for the transfer of the land listed in Table 11 of the Project Approval 05-0021 | Ongoing consultation with NPWS regarding the agreement to transfer the land identified in Table 11 05-0021 (Appendix 5). WCPL Requested DP&E (16 th December 2015) to grant an extension for Condition 37, Schedule 3 of the Project Approval. |
| PA 05-0021, Sch 3 Condition 39 | N/A | By 31 December 2015, unless otherwise agreed by the DG, lodge a Conservation Bond for BOAs | Conservation Bond for the BOA's is based on the commitments of the Biodiversity Management Plan. Biodiversity Management Plan is still to be approved by DP&E | Ongoing consultation with DP&E regarding Biodiversity Management Plan, and requirements to satisfy DP&E requirements (Appendix 5). Recent consultation with DP&E regarding the requirements of the Conservation Bond and extension to condition. |
| PA 05-0021, Sch 3 Condition 54 | N/A | The Proponent shall minimise the visual impacts of the project to the satisfaction of the Director- General. | Failure to consult and seek the approval of the DP&E Director – General regarding the minimisation of visual impacts of the project. | Consultation and formal approval from DP&E Director – General entered into WCPL compliance management system for completion in 2016. |
| EPL 12455 M2.2 | 7/02/2015 8/02/2015 | Air monitoring requirements for EPL point 28 (TEOM 4) did not occur. | Power failure, general repairs and maintenance. | No action taken as there were no adverse effects from this non-compliance. |
| EPL 12455 M2.2 | 7/02/2015 8/02/2015 | Air monitoring requirements for EPL point 13 (TEOM 3) did not occur. | Power failure, general repairs and maintenance. | No action taken as there were no adverse effects from this non-compliance. |
| EPL 12455 M2.2 | 7/02/2015 8/02/2015 | Continuous monitoring for air temperature, wind speed/direction, lapse rate, rainfall and humidity did not occur | Calibration and maintenance of equipment. | No action taken as there were no adverse effects from this non-compliance. |

| Relevant Approval | Date of | Details of Non-Compliance | Cause of Non-Compliance | Action to Address Non-Compliance |
|-------------------|--|---|--|---|
| EPL 12455 M2.2 | 29/04/2015 | Total insoluble matter not determined for EPL points (dust gauges) 3, 4, 6, 9, 10, 11, 12 & 26 for the April exposure period. | Due to Laboratory error, Total Insoluble Matter could not be determined. The source of the error was that during the filter preparation the humidity of the lab was very high and the papers initial weight was therefore incorrectly high | ALS Mudgee has since had our air conditioning altered so the lab area is isolated from the rest of the building and can be controlled by the addition of a dehumidifier. This has created a situation where there is greater control over the temperature and humidity in the lab area. |
| EPL 12455 R4.1 | 31/07/2015 | A noise compliance assessment report not submitted to the EPA within 30 days of the completion of the second round of quarterly monitoring. | The two compliance assessment reports were prepared for the reporting period, but not submitted to the EPA by the due date. | The requirement to submit the compliance assessment reports by due date is included in the WCPL's Environmental Compliance System. |
| EPL 12455 M2.2 | 14/08/2015 | One PM10 dust sample was not analysed for EPL point 13 (HV1). | The HVAS did not run for the required time being 24Hrs due to an unplanned power outages causing the HVAS to stop. . | No action taken as there were no adverse effects from this non-compliance. |
| EPL 12455 M2.2 | 27/11/2015 29/12/2015 | Total insoluble matter not determined in accordance with AS3580.10.1 for dust gauge (DG13), EPL point 11. | Mining operations in Pit 5 south have now advanced to within 5 metres of EPL point 11 (i.e. DG13). | WCPL will lodge with EPA an application to vary EPL and to remove point 11 from EPL12455. |
| EPL 12455 M2.2 | 28/02/2015, 6/03/2015, 12/03/2015, 6/04/2015, 11/04/2015, 11/05/2015, 23/05/2015 | Seven PM10 dust samples were not analysed at EPL point 20 (HV4). | A fault was detected with: (i) the high volume air sampler (HVAS); and then (ii) the power supply problems. | HVAS unit replaced and power supply fault identified and fixed. |
| EPL 12455 M2.2 | 17/07/2015 | Oil and grease (O&G) result of 20mg/L was recorded from weekly grab sample from EPL Point 24. | Results likely caused by laboratory error or interference in the analysis method. The manufacturer of the water treatment facility confirmed it is not possible for O&G to pass through RO membranes. | Duplicate sample taken on 22- Oct-2015 detected an O&G level of <5mg/L. Laboratory are continuing to investigate any O&G result above 5mg/L.. There have been no O&G results above the EPL criterion of 10mg/L. |
| EPL 12455 L1.1 | 22/12/2015 | Short duration rain water flow over light vehicle (LV) control bund into road culvert. Event occurred in Pit 5 area. Water flow did not leave the premises or enter any natural waterway. | A large localised storm event (approximately 93.6mm). Refer to Section 11.1 for more details. | LV road control bund modified and height increased. A damaged drain repaired and additional drains installed to drain water back into Pit 5 from LV road. Toolbox talk for pump crews and other relevant personnel promoting awareness of diversions drains from light vehicle roads. |

12.0 ACTIVITIES FOR NEXT REPORTING PERIOD

Activities proposed to be carried out by WCPL at the Mine during the 2016 review period (i.e. 1 January 2016 to 31 December 2016) include the following:

- Continued exploration activities in EL 6169 and EL 7091.
- Continued exploration drilling within ML 1573 (including both infill drilling and lower density drilling).
- Continuation of rehabilitation works in completed mined areas.
- Commencement of mining in Pit 6 area.
- Capping of Tailings Dam 3 (TD3).
- Inspection and review of rehabilitation areas to assess maintenance requirements.
- Continued weed and animal pest control across WCPL-owned land.
- Continued stock exclusion in the ECAs to promote regeneration.
- Ongoing demolition of derelict houses, including in-pit disposal of inert building material.
- Continued consultation with surrounding landholders.
- Ongoing CCC meetings, including continued publication of the meeting minutes on the Peabody website.
- Expansion of existing Wollar “Have-a-chat” sessions to include Mudgee and Gulgong.
- Install a real time surface water flow meter system throughout the mine.
- Undertake geochemical analysis through the geological profile.
- Continue the Spontaneous Combustion Propensity testing regime.
- Finalise approval of the Biodiversity Management Plan
- Undertake tasks outlined within 3-year Schedule of the BMP
- Make suitable arrangements to protect the Enhancement and Conservation Areas and Biodiversity Offset Areas in Table 11 of Project Approval 05-0021
- Complete seeding of 70ha by Q4 2016 – in accordance with Approved Mine Operations Plan.
- Development of an internal rehabilitation sign off process to ensure planning and scheduling, actions, responsibilities, and inspections are systematically approached and documented
- Progress pretreatment options for Water Treatment Facility.
- Lodge Development Application and associated Mining Lease Applications for the Wilpinjong Extension Project.

In accordance with Condition 4, Schedule 5 of Project Approval (05-0021), WCPL will review, and if necessary, revise the strategies, plans and programs required under the Project Approval within three months following submission of this Annual Review and Environmental Management Report or as otherwise specified in the Project Approval.

13.0 REFERENCES

- *Wilpinjong Coal Mine – Water Balance Model Existing System Performance Assessment*, WRM Water & Environment Pty Ltd (November 2015)
- *Wilpinjong Coal Biodiversity Monitoring Program – Spring 2015*, Eco Logical Australia Pty Ltd (March 2016)
- *Translocation of Tiger Orchid Cymbidium canaliculatum*, Forest Fauna Surveys Pty Ltd (January 2016)
- *Wilpinjong & Cumbo Creek Stability Assessment, 2015* – Barnson Pty Ltd (March 2016)
- *Review of Hydrogeological Data for Wilpinjong Licensing Audit – October 2015*, HydroSimulations (October 2015)
- *Wilpinjong Coal Mine Aboriginal Rock Art Monitoring and Assessment Program – December 2014*, Navin Officer Heritage Consultants Pty Ltd (July 2015)
- *Environmental Noise Monitoring (January 2015 to December 2015)*, Global Acoustics Pty Ltd
- *Ambient Air Quality Monitoring Validate Report/s (January to December 2015)*, Ecotech Pty Ltd
- *Independent Environmental Water Audit for Wilpinjong Coal Pty Ltd - November 2015*, Hansen Bailey (November 2015)

Appendices

| | |
|-------------------|---|
| Appendix 1 | Rail Haulage |
| Appendix 2 | Exploration |
| Appendix 3 | Environmental Performance |
| | Appendix 3A Meteorological Data |
| | Appendix 3B Air Quality Monitoring Data |
| | Appendix 3C Surface Water Monitoring Data |
| | Appendix 3D Groundwater Monitoring Data |
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