BLOOMFIELD

# BLOOMFIELD MINING OPERATIONS

## Annual Environmental Management Report

| Ver | Date | Description | By | Chk | App |
|---|---|---|---|---|---|
| 1 | 120811 | Draft | KH | ML | |
| 2 | 24811 | Draft | ML | JH | |
| 3 | 310811 | Final | GL | ML & JH | SG |

*File Name: AEMR 2010-11_Final.doc*

# Bloomfield Collieries Pty Ltd

# Annual Environmental Management Report (2010-2011)

| | | | |
|---|---|---|---|
| Name of Mine | Bloomfield Colliery | | |
| Titles/Mining Leases | Consolidated Coal Lease 761 dated 20/11/91 | | |
| MOP Commencement Date | 2004 | MOP Completion Date | 2011 |
| AEMR Commencement Date | 1/4/2010 | AEMR End Date | 31/3/2011 |
| Name of leaseholder | Bloomfield Collieries Pty Limited | | |
| Name of Mine Operator | Bloomfield Collieries Pty Limited | | |
| Reporting Officer | Greg Lamb | | |
| Title | Environmental Officer | | |
| Signature | | | |
| Date | | | |

**Executive Summary**

Project Approval (07_0087) for the continued operation and rehabilitation of the site was granted by the Minister for Planning on the 3rd of September, 2009. The project approval was modified (07_0087_Mod 1) on 16th May 2011. In a response to the conditions of the approval and subsequent modification, a number of draft management plans are being prepared and will be submitted to relevant government agencies and departments for comment and approval. These will be finalised and implemented during the next reporting period.

During the reporting period, Bloomfield operated 15 shifts a week for 48 weeks employing 93 personnel. Production was 802,545 tonnes of raw coal, 472,745 tonnes of saleable coal and 5.19 million banked cubic meters of overburden moved primarily using a Hitachi 5500 excavator and Caterpillar rear dump trucks.

Mining operations continued in S Cut and Creek Cut throughout the year, generally in accordance with the mining methods described in the 2004 MOP. During the next reporting period, mining in S Cut will continue towards the west and Creek Cut will continue towards the south. Approximately 13.4 ha of land was prepared for mining during the reporting period.

The coal handling and preparation plant (CHPP) operates at a throughput of 6.5 Mtpa, as approved under the Abel Coal Project Consent (05-0136). The throughput is currently rated at 1000 tonnes per hour.

Thirteen licensed discharges were conducted with a total discharge volume of 505 ML. No surface water pollution incidents (exceedance of EPL discharge thresholds) occurred.

During the reporting period a total of 105 blasts were initiated on the site. Of these, four (3.8% of total shots) exceeded 115 dB blast overpressure and nil blasts (0%) exceeded 5 mm/sec ground vibration. An over pressure reading of 127.9 dB was recorded at Elliots (u645) on 27th September 2010. The incident was reported to DECCW (now OEH) and a full report submitted.

Fifteen community enquiries were registered during the reporting period, consisting of:

- Seven complaints about blast noise and/or ground vibration;
- Six complaints about noise;
- One complaint about highway truck movements that was found not be associated with Bloomfield; and
- One complaint about dust.

A number of tracks required for hazard reduction were maintained for access and slashing undertaken along an asset protection zone near an adjoining residential area. A hazard reduction burn was planned but not undertaken due to persistent unfavourable weather conditions.

There was a net decrease of 13.9ha of rehabilitated land recorded for the reporting year, due to an increase in the active mining area and overburden dump area disturbing previously rehabilitated land. Actual rehabilitation completed was approximately 8.5ha; large areas of rehabilitation maintenance and remedial rehabilitation were also completed

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# 1 INTRODUCTION

Bloomfield Collieries (Bloomfield) is one of two open cut coal mines owned by its parent company, Big Ben Holdings Pty Limited (Big Ben). Bloomfield Colliery is located at East Maitland, NSW, and produces approximately 0.6 million tonnes of product coal by open cut methods per year. Coal has been mined on the property for over 100 years. Underground mining by the current owner commenced in 1937 and the last coal extracted from underground operations was in May 1992. The open cut commenced operations in 1964. Bloomfield produces mainly thermal coal with some semi soft coking coal, principally for the Asian export market.

The parent company also owns Rix's Creek Mine which is located north of Singleton. Rixs Creek currently produces approximately 1.2 million tonnes of product coal per year.

This report is prepared to meet the requirements for the production of Annual Environmental Management Reports (AEMR), as outlined by the NSW Department of Primary Industries - Mineral Resources (DPI-MR) in the Guidelines to the Mining, Rehabilitation and Environmental Management Reporting Process (edg03 V3, DPI-MR, 2006). The report covers the period 1/4/2010 to 31/3/2011, being Bloomfield's fiscal reporting year.

## 1.1 Consents, Leases and Licences

Bloomfield operates under consents, leases and licenses presented in Table 1.

**Table 1: Approvals, Leases and Licenses for Bloomfield Colliery.**

| Approval/Lease/License | Issue Date | Expiry Date | Details/ Comments |
|---|---|---|---|
| Project Approval 07_0087 | 3 September 2009 | 31 December 2021 | Granted by the Minister for Planning |
| Consolidated Coal Lease (CCL) 761 | 20 October 1991 | Renewal sought | Granted by Minister for Natural Resources |
| Project Approval 05_0136 (Abel) | 7 June 2007 | 31 December 2028 | Granted by Minister for Planning |
| Environmental Protection License 0369 | 31 December 2007 | Renewed Annually | Issued by Department of Environment and Climate Change (now EOH) |
| Project Approval Modification, 07_0087_ Mod 1 | 16 May 2011 | | Granted by Minister for Planning and Infrastructure |

The lease area for CCL 761 is shown on the Bloomfield site locality plan in Figure 1.

Project Approval (05_0136) for the Abel Underground Mine allows for the operation of the Bloomfield Coal Handling and Preparation Plant (CHPP), Rail Loading Facility (RLF) and other related facilities required for the handling and processing of coal.

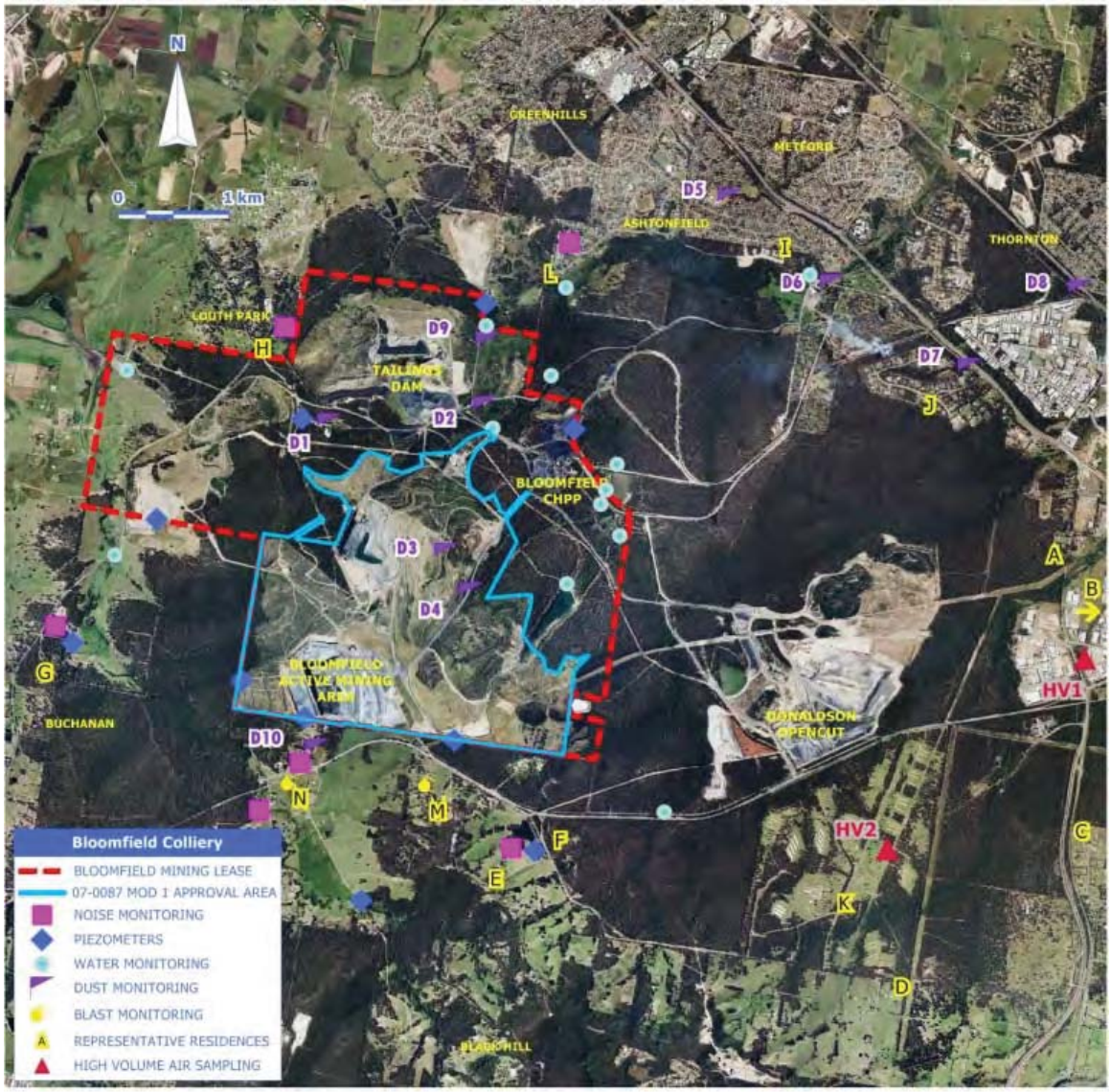



**Figure 1: Bloomfield Colliery**

Project Approval (07_0087) was granted by the Minister for Planning under Part 3A of the *Environment Planning & Assessment Act 1979* (EP&A Act) to allow for the completion of open cut mining operations and rehabilitation. The approval was issued 3 September, 2009 and is subject to a number of conditions. A variation to modify the Project Approval under s75W of the EP&A Act was granted on 16 May 2011 (07_0087_Mod 1).

The current Mining Operations Plan (MOP) for Bloomfield Collieries was lodged with the DPI-MR in 2004. There were no changes to the MOP in the reporting period. It is

anticipated that the MOP will be revised during the next reporting period once the renewal of CCL 761 is finalised.

### 1.2 Mine Contacts

The Bloomfield Mine Manager/Group Mining Superintendent, Mr Garry Bailey, is the primary mining contact and is responsible for regulatory compliance. The Environmental Officer is Mr Greg Lamb who coordinates environmental management and rehabilitation operations at Bloomfield Colliery.

| | | |
|---|---|---|
| Postal Address | PO Box 4<br>East Maitland. NSW 2323 | Tel:02 4930 2624<br>Fax:02 4933 8940 |
| Site Address | Four Mile Creek Rd<br>Ashtonfield NSW 2323 | |
| Environmental Hotline | | BH: 02 4930 2624<br>AH: 0407 938 002 |
| Mr Garry Bailey | | Tel: 02 4930 2618<br>Mob: 0407938003<br>Email: gbailey@bloomcoll.com.au |
| Mr Greg Lamb | | Tel: 02 4930 2689<br>Mob: 0457 819 211<br>Email: glamb@bloomcoll.com.au |

### 1.3 Actions Required at Previous AEMR Review

There were no outstanding issues arising from the previous AEMR.

# 2 OPERATIONS DURING THE REPORTING PERIOD

## 2.1 Exploration

There were no exploration activities at Bloomfield during the reporting period.

## 2.2 Land Preparation

Approximately 13.48 ha of land was prepared for mining during the reporting period. This area was to the west of South Cut and the south of Creek Cut. Vegetation (regrowth) and groundcover was removed with the topsoil. The topsoil was removed and placed directly on shaped overburden areas as part of the rehabilitation program. Topsoil volumes are presented in Table 2.

## 2.3 Construction

No major construction was undertaken on the site during the reporting period.

## 2.4 Mining

During the reporting period, Bloomfield operated 15 shifts a week for 48 weeks employing 93 personnel. Production was 795,949 tonnes of raw coal, 472,745 tonnes of saleable coal and 6.78 million cubic metres of overburden moved primarily using a Hitachi 5500 excavator and Caterpillar rear dump trucks.

Mining operations continued in S Cut and Creek Cut throughout the year, generally in accordance with the mining methods described in the 2004 MOP. During the next reporting period, Mining in S Cut will continue towards the west and Creek Cut will continue towards the south.

1 x Hitachi EX5500 excavator
1 x Caterpillar 785 rear dump truck
3 x Caterpillar 789 rear dump truck
4 x Caterpillar 793 rear dump truck
3 x Cat D11 dozer
1 x Cat D10 dozer
1 x Cat D9 dozer
2 x Cat 777 water cart
1 x Cat 24h grader
1 x Cat 992 loader
1 x Cat 994 loader
1 x Reedrill SK75 drill
1 x D40k drilltech

The secondary production equipment includes:-

1 x Cat 666 scraper

## 2.5 Mineral Processing

The coal handling and preparation plant (CHPP) has a throughput of 6.5 Mtpa, as approved under the Abel Consent. The throughput is currently rated at 1000 tonnes per hour. ROM coal and clean coal volumes are presented in Table 2.

**Table 2: Production and Waste Summary**

| | Cumulative Production (Annual Production) | | |
|---|---|---|---|
| | **Start of Reporting Period** | **At end of Reporting Period** | **End of next reporting (estimated)** |
| **Topsoil stripped (bcm)** | 172,000 | 200,000 | 220,000 |
| **Topsoil used/spread (bcm)** | 172,000 | 200,000 | 220,000 |
| **Waste Rock (bcm)** | 39,771,130 | 44,961,921 (5,190,791) | 50,135,056 |
| **Run Of Mine Coal (t)** (Bloomfield) | 6,783,119 | 7,579,068 (795,949) | 8,394,095 |
| (Donaldson) | 15,411,668 | 16,215,019 (803,351) | 17,371,304 |
| (Tasman) | 1,678,319 | 2,290,417 (612,098) | 2,874,641 |
| (Abel) | 781,654 | 1,954,441 (1,172,787) | 3,429,143 |
| ***TOTAL ROM*** | *24,654,760* | *28,038,945* | *32,069,183* |
| **Processing Waste (t)** (Bloomfield) | 3,498,583 | 3,821,787 (323,204) | 4,166,532 |
| (Donaldson) | 4,592,309 | 4,854,332 (262,023) | 5,231,469 |
| (Tasman) | 575,003 | 716,331 (141,328) | 851,223 |
| (Abel) | 357,923 | 678,735 (320,812) | 1,047,367 |
| ***TOTAL WASTE*** | *9,023,818* | *10,071,185* | *11,331,359* |
| **Coal (tonne)** (Bloomfield) | 3,946,998 | 4,419,743 (472,745) | 4,890,025 |

## 2.6 Waste Management

***Process Waste:*** Process Waste from the CHPP consists of breaker reject, coarse rejects and fine rejects (tailings). Breaker reject consists of large diameter (>150mm) rocks and coal rejects, and is hauled by truck to operational open cut pits and placed under advancing overburden dumps. Coarse rejects which are separated out during processing, and are currently disposed of under advancing overburden dumps and in the U Cut open cut pit on site. Fine tailings are currently pumped as 20% solids slurry to U Cut, a disused open cut pit in north of the mine site. Reject fines settle out of the slurry, gradually backfilling the pit, whilst the decant water is returned to the CHPP for re-use in processing. Process waste volumes are provided in Table 2.

***Waste Oil:*** Waste oil from scheduled maintenance of mining equipment and the workshop oil separator is collected in a storage tank and periodically evacuated for reprocessing and re-use by a licensed waste oil contractor. The waste contractor re-synthesise the waste oil to a fuel oil product for re-use in ANFO explosive for blasting operations. Approximately 101,950 L of waste oil was collected in the reporting period.

***Waste Metal:*** Bloomfield has a well implemented scrap metal recycling program, and has a high rate of on-site re-use of suitable steel. If no longer suitable for re-use, scrap metal is collected in designated skips and sold for recycling. The total scrap metal for the reporting period was 360 tonnes.

***Waste Tyres:*** Discarded earthmoving machinery tyres are used on site wherever possible for the protection of the base of concrete plinths and metal columns located in areas where heavy vehicles are operated. As there is no recycling process available for heavy earthmoving machinery tyres, surplus tyres are disposed of progressively in the open cut void and buried. Tyres are disposed of as deep in the void as possible, without being placed on the pit floor, to avoid the potential of re-surfacing. The void is then progressively backfilled with overburden and rehabilitated in the normal process.

***General Waste:*** General waste is placed in 1.5$m^3$ and 3.0$m^3$ bins and collected by licensed waste contractor for disposal. Recycling waste bins will be installed and will be reported on in the next reporting period.

## 2.7 Product Stockpiles

The ROM stockpile pad has a capacity of 30,000 tonnes and the clean coal stockpiles have a capacity of approximately 500,000 tonnes.

## 2.8 Water Management

The water management system has been designed with three primary goals and objectives:

- separation of clean water and mine water;
- safe storage and priority use of mine water on-site;
- management of water that is discharged so as to preserve the environmental values of Four Mile Creek and comply with the conditions of EPL 396.

In meeting these objectives, the following components of the system have been constructed or implemented.

***Mine Water:*** Bloomfield has two major mine water storage facilities, Lake Kennerson and Lake Foster. Water pumped from the open cuts (S Cut and Creek Cut) reports via open drains to Lake Kennerson. Run off from disturbed areas (i.e. high wall, haul roads, overburden dumps awaiting rehabilitation) which has the potential to carry suspended solids, is also directed to Lake Kennerson. Lake Kennerson dissipates velocity and allows the settlement of suspended solids.

Lake Kennerson has a valve controlled pipe which, when opened, feeds to Lake

Foster. Lake Foster also receives decant water from the tailings storage facility (U Cut) and water from the stockpile dam, which collects the run off from the CHPP and coal stockpile pads. Mine water is pumped, primarily from Lake Foster, to the CHPP for use in coal processing and for dust suppression spraying on the coal stockpile pads.

Mine water is discharged, via lockable valve pipes, into an open drain that flows to Four Mile Creek. Discharges are undertaken in accordance with conditions of the Environmental Protection Licence (EPL 396). Water samples are collected during discharge for independent water quality analysis. A monitoring station located downstream in Four Mile Creek continuously measures electrical conductivity (EC) and water level. Monthly background sampling is conducted in Lake Kennerson, Lake Foster and various upstream and downstream watercourses (see Section 3.3 for details).

During the reporting period, fine coal rejects (tailings) was transferred for disposal to a disused open cut pit (U Cut). Water from the historic underground workings is used in dust suppression and coal processing. Water storage volumes are presented in Table 3.

***Clean Water:*** Run off from undisturbed and rehabilitated areas is directed away from operational areas and mine water storages via diversion banks and channels. These banks and channels direct this run off into clean water dams or natural watercourses. The major clean water storage dam is Possums Puddle. No clean water is accessed for operational purposes and these dams overflow into natural drainage systems. Further isolation of smaller rehabilitated catchment areas from the mine water system will continue as rehabilitation work progresses.

The major natural creek running through the site is Four Mile Creek. Most of the operational mining areas at Bloomfield are located within the catchment of Four Mile Creek. A series of drains and levees direct Four Mile Creek around Lake Foster (mine water storage) and into Possums Puddle (clean water storage). From Possums Puddle clean water overflows, or can be discharged, back into Four Mile Creek.

**Table 3: Stored Water**

| | Volumes held (cubic metres) | | |
|---|---|---|---|
| | **Start of Reporting Period** | **At end of Reporting Period** | **Storage Capacity** |
| **Clean Water** | 90ML | 90ML | 90ML |
| **Dirty Water** | | | |
| Lake Kennerson | 120ML | 140ML | 245ML |
| Lake Foster | 40ML | 35ML | 45ML |
| U Cut | 400ML | 400ML | 600ML |
| S Cut | NIL (operational pit) | NIL (operational pit) | NIL (operational pit) |
| Creek Cut | NIL (operational pit) | NIL (operational pit) | NIL (operational pit) |
| **Controlled Discharge Water** (EPL 396) | | 505 ML | |
| **Contaminated Water** | NIL | NIL | NIL |

Rainfall for the period is shown in Table 4. The total rainfall for the twelve month period was 784.8mm compared with 676.7 mm for the previous year. This was 83.7 mm below the annual average of 868.5 mm. However, the months of June and November received notably higher than average rainfall.

**Table 4: Annual Rainfall**

| **Month** | **APRIL** | **MAY** | **JUNE** | **JULY** | **AUGUST** | **SEPTEMBER** | **OCTOBER** | **NOVEMBER** | **DECEMBER** | **JANUARY '11** | **FEBRUARY '11** | **MARCH '11** | **TOTAL** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Rainfall | 28.3 | 75.0 | 118.3 | 61.5 | 42.5 | 27.3 | 66.0 | 151.0 | 70.0 | 32.0 | 40.5 | 72.5 | 784.8 |
| Average Rainfall (1989 – 2010) | 75 | 75 | 85 | 47 | 41 | 51 | 56 | 76 | 64 | 74 | 128 | 95 | 868.5 |

A comparison of monthly recorded rainfall for the reporting period and annual average data is shown in Figure 2.

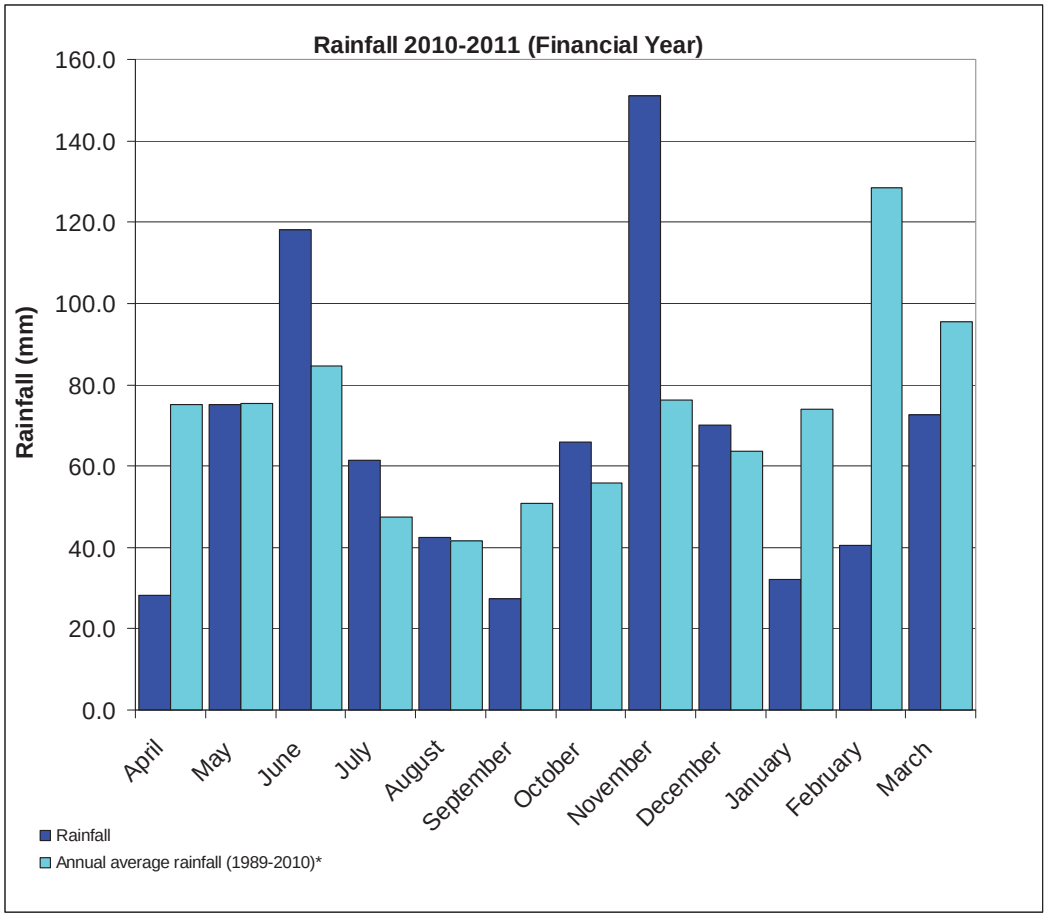



**Figure 2: Rainfall.**

***Waste water:*** Wastewater generated on site, consisting of domestic waste from bathhouses, administration offices and associated amenity areas, passes through a septic system. The septic tank provides a primary and secondary process with solid waste being processed by anaerobic bacteria. Effluent then passes to a maturation pond prior to disposal by evaporation and transpiration.

## 2.9 Hazardous Materials Management

Bloomfield held dangerous goods notification and a licence to store and handle explosives in accordance with WorkCover legislation for substances stored on site. The notification covers depots for explosives, distillate, gas cylinder stores, sodium hydroxide and MIBC reagent.

Explosives are stored in an explosive magazine located on site. The magazine complies with the relevant standards for storage of explosives. Bulk materials are also stored on site in a hopper for loading into a mobile mixing unit. This area is enclosed within concrete bunding and any spillage from this area is directed into a collection tank for periodic evacuation by a licensed contractor.

A bunded fuel farm, designed in accordance with AS1940, is used for bulk distillate storage at the open cut workshop. Spill protected racks are used for small volume oil and lubricant storage. Distillate, MIBC and sodium hydroxide used for coal processing in the CHPP are stored in tanks contained in bunded enclosures.

ChemAlert is an online Material Safety Data Sheet (MSDS) database service and is used to provide up to date MSDS information. If new chemicals are introduced to site they must comply with system requirements and be approved by the Mine Manager.

No hazardous materials-related environmental incidents were reported during the reporting period.

## 2.10 Other Infrastructure Management

Silt traps along the edges of haul roads and hard stand areas are cleaned at regular intervals. They have been designed to capture surface run off during rain events and allow sediment to settle. All silt traps, dams, drains, bunds, lines, valves and other infrastructure used to manage runoff are inspected on a quarterly basis as part of the site Environmental Management System (EMS). Issues identified during the inspections are reported and appropriate actions taken address these matters.

# 3 ENVIRONMENTAL MANAGEMENT AND PERFORMANCE

## 3.1 Air Pollution

3.1.1 Environmental Management

Dust can be generated by the operation of mobile plant on unsealed surfaces, loading and handling of coal and overburden in dry and windy conditions, or by blasting.

Operational procedures are in place to minimise dust impacts on the surrounding environment and community. Vehicular generated dust is controlled through the use of water carts on all internal roads and high traffic areas. The company provides a fleet of three water trucks to allow for greater coverage and flexibility in dry and/or windy conditions.

Sprinkler systems operate on coal stockpile areas and the surrounds of the washing plant. Conveyor systems at the washing plant and rail loader are enclosed on at least two sides. Operational practices such as not dumping to exposed locations, minimizing the drop height into trucks during loading are also employed.

A dust monitoring program is in place with 10 dust deposition gauges located on and around the mine lease area. The locations are listed in Table 5 and generally conform to the relevant Australian Standard. Samples are collected by independent environmental consultants and analysed by a NATA registered laboratory.

**Table 5: Dust Monitoring Sites**

| Site | Location |
|---|---|
| On Lease | |
| 1 | Adjacent to Buttai Reservoir |
| 2 | Adjacent to Main Haul Road |
| 3 | Plantation Site |
| 4 | Off Haul Road West of Stoney Pinch Reservoir |
| 9 | Shamrock Lane |
| Off Lease | |
| 5 | Bali Close Ashtonfield |
| 6 | Off Four Mile Creek Road |
| 7 | Off New England Highway Avalon Estate |
| 8 | Adjacent of Main North Rail line at Rail Loop |
| 10 | Private property adjacent to John Renshaw Drive |

3.1.2 Environmental Performance

Table 6 summarises the monthly deposition rates for insoluble solids during the reporting period and includes long-term averages for the site. A copy of the air quality monitoring results is included in Appendix A.

**Table 6: Annual Average Dust Deposition for Reporting Period**

| SITE | MAXIMUM RESULT 2010 (g/m$^2$/month) | MINIMUM RESULT 2010 (g/m$^2$/month) | YEARLY AVERAGE 2010 (g/m$^2$/month) | YEARLY AVERAGE 2009 (g/m$^2$/month) | LONG TERM AVERAGE (1991 – 2010) (g/m$^2$/month) |
|---|---|---|---|---|---|
| 1 | 2.8 | 0.3 | 1.1 | 1.8 | 1.8 |
| 2 | 2.7 | 0.7 | 1.6 | 2.4 | 1.9 |
| 3 | 3.0 (7.6$^C$) | 0.9 | 1.8 | 3.2 | 1.7 |
| 4 | 2.8 | 0.8 | 1.6 | - | 1.6 |
| 5 | 1.5 | 0.6 | 0.9 | 1.4 | 1.4 |
| 6 | 5.1 (15.8$^C$) | 0.7 | 2.1 | 1.6 | 2.0 |
| 7 | 2.5 | 0.7 | 1.4 | 2.3 | 1.8 |
| 8 | 2.1 | 0.6 | 1.4 | 1.8 | 1.6 |
| 9 | 1.8 | 0.3 | 1.1 | 1.5 | 1.3 |
| 10 | 2.4 (50.3$^C$) | 1.2 | 1.8 | 2.8 | 1.9 |
| **EPL Limit** | | | **4** | **4** | |

*Notes: Site 4 - Repositioned and insufficient data for annual average*

*"C" Denotes highest result contaminated with insects, vegetation or bird droppings and considered non standard*

Sites 3 and 4 are located adjacent to operational areas well within lease boundaries. Results from these sites indicate the level of dust generated by mining operations. Site 4 was repositioned in the previous reporting period to allow for the stabilisation of the batter adjacent to the haul road where it was originally located. Dust levels at Site 3 are lower than the previous year and consistent with the long-term average. As discussed, Sites 3 and 4 are located well within the lease, adjacent to mining operations, and operational dust contributing to these elevated results is unlikely to impact off site.

Not including contaminated results (insects, vegetation, bird droppings, etc, maximum results for offsite gauges (Sites 5-10) are generally below the OEH guideline of 4 g/m$^2$/month. The maximum levels recorded at Sites 6 and 10 exceeded the guidelines, however, annual averages for those sites are well below the guidelines. The maximum result for Sites 6 (15.8 g/m$^2$/month) and Site 10 (50.3 g/m$^2$/month) in June was due to contamination by bird droppings. Although levels above the guideline were recorded during the reporting period, the annual average and long-term average for site 6 and 10 are below the guideline of 4 g/m$^2$/month. Results for other offsite gauges indicate that the dust generated through mining operations, as indicated at Sites 3 and 4, is largely contained on site.

Figure 3 shows the individual monthly insoluble solids deposition rates for each site during the reporting period, compared with the long term average and OEH guideline of 4 g/m$^2$/month.

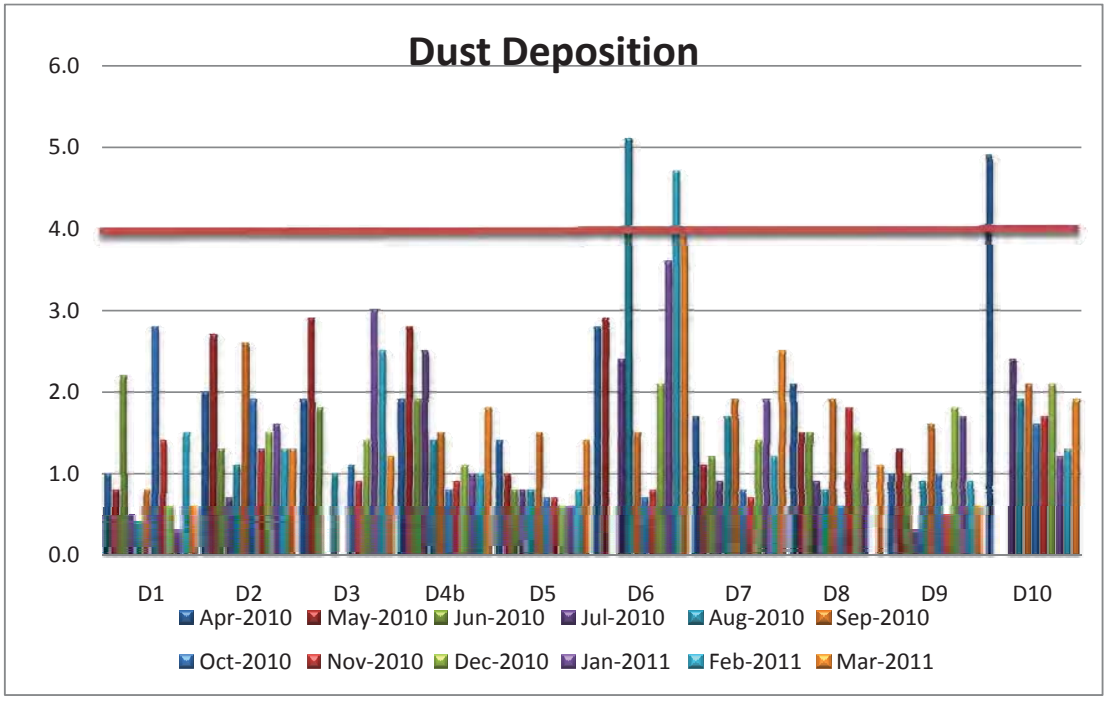



**Figure 3: Dust Deposition - Insoluble Solids**

Field notes show the highly elevated results of some gauges had potentially been contaminated with insects, vegetation matter or bird droppings.

3.1.3 Reportable Incidents

No reportable incidents relating to air pollution occurred within the reporting period.

3.1.4 Further Improvements

In accordance with the Project Approval, a dust monitoring plan has been prepared for the site. During the next reporting period high volume air samplers ($PM_{10}$ and TSP) will be installed.

## 3.2 Erosion and Sediment

3.2.1 Environmental Management

Erosion and sedimentation control is an integral part of the site's water management system. The design of rehabilitated areas incorporates water management structures to effectively shed run-off water, whilst minimising erosion and sediment load. Progressive rehabilitation of disturbed areas as soon as is practicable also reduces the potential for erosion and downstream sedimentation.

There are a number of sediment basins around the site that are positioned to intercept run-off from other disturbed areas on-site, such as along haul roads, stockpile pads, infrastructure areas, and recently rehabilitated areas. These structures are inspected as part of the site EMS and cleaned as necessary.

Site drains used to transport mine water, or natural catchment flow, are inspected for erosion or damage as part of the site EMS, and remedial maintenance works conducted as necessary.

3.2.2 Environmental Performance

No major erosion or problems with erosion and sediment control were observed during the reporting period. Rehabilitated areas are regularly inspected in addition to quarterly inspections of erosion and sediment controls across the site.

3.2.3 Environmental Incidents

No reportable incidents relating to erosion and sediment occurred during the reporting period.

3.2.4 Further Improvements

An erosion and sediment control plan has been prepared in accordance with the conditions of the Project Approval. As mining and rehabilitation progresses the recommendations will be followed including ongoing quarterly inspections of erosion and sediment control structures.

### 3.3 Surface Water Pollution

3.3.1 Environmental Management

Bloomfield Colliery has prepared and submitted a Site Water Management Plan (SWMP) in accordance with Development Consent requirements for the operation of the mine. The Plans prescribe the process water source and supply requirements, site-water balance, storage, impact management and monitoring of surface water in the vicinity of the mining operations.

Bloomfield has several sources of surface water (mine water) that require management to avoid pollution, or a non-compliance with the site EPL.

In addition to the physical, or infrastructure, components of the mine water management system (as detailed in Section 2.8), the two major management controls for surface water pollution are *water quality monitoring* and *licenced mine water discharge*.

***Water Quality Monitoring:*** The water monitoring program at Bloomfield consists of discharge sampling, which is under *licensed mine water discharge*, and background monitoring. The background monitoring sites are centred on Four Mile Creek and its tributaries. Progressing down the catchment, the four Mile Creek sites are:

- John Renshaw Drive (W10);
- Four Mile Creek upstream of Lake Foster (W6);
- Possums Puddle Overflow (W4);
- Ewells Creek and Four Mile Creek junction (W3); and
- Four Mile Creek at New England Highway (W11).

Background monitoring samples are also collected from tributaries of Four Mile Creek at:

- Shamrock Creek (W2); and
- Ewells Creek (W12).

The three on-site water storage dams are sampled, namely:

- Lake Kennerson – mine water (W9);
- Lake Foster - mine water(W8); and
- Possums Puddle – surface water (W7).

One monitoring site (W1) is located adjacent to the old Rathluba Colliery site in the west of the mine lease area, on a tributary of Wallis Creek. Plan 2 shows the location of monitoring sites. These sites are sampled monthly and analysed at an independent laboratory for the following analytes:

- pH;
- Electrical Conductivity (EC);
- Dissolved Oxygen;
- Turbidity;
- Total Suspended Solids (TSS);
- Total Dissolved Solids (TDS); and
- Filterable Iron.

Quarterly analysis includes:

- Chloride;
- Sulphate;
- Alkalinity (HCO3);
- Alkalinity (CO3);
- Calcium;
- Magnesium;
- Sodium; and
- Potassium.

These results are reviewed and, if required, remedial action or further investigation initiated to identify the cause of anomalies.

***Mine Water Discharge:*** Mine water is discharged in accordance with conditions P1, L3 and L4 of Environmental Protection Licence 0396 (EPL). These conditions allow discharge of 40ML of mine water per day, within water quality limits, dependent on rainfall. Representative samples are collected at the discharge point and at the Four Mile Creek monitoring station during each day of discharge. Samples are tested on site to ensure discharge water is within the allowed water quality limits, before being dispatched to an independent laboratory for analysis. Discharge samples are tested for:

- pH;
- EC;
- Total Suspended Solids (TSS);
- Total Dissolved Solids (TDS); and
- Filterable Iron (for discharge point samples).

A permanent monitoring station is located on Four Mile Creek, approximately 500m upstream of the New England Highway. It records EC and water level (via pressure sensor and V-notch weir) every 15 minutes and logs the results every hour.

***Other Management:*** All infrastructure (i.e. drains, dams, spillways, discharge pipes and valves) used for the separation of clean water and mine water, or the discharge of mine water, are inspected as part of the site EMS, with a documented quarterly check sheet being completed.

### 3.3.2 Environmental Performance

***Background Monitoring Results:*** The background water monitoring results are shown in Figures 4 to 6, below. Figure 4 shows EC results for the Four Mile Creek sites. Figure 5 shows the pH results for Four Mile Creek and Rathluba. Figure 6 shows pH and EC for the site water storages – Lake Kennerson (mine water), Lake Foster (mine water) and Possums Puddle (catchment water). Full surface water monitoring results are presented in Appendix B.

Figure 4 shows salinity levels are slightly elevated in the lower end the catchment. Four Mile Creek is ephemeral and the EC level varies with rainfall and mine discharge. The higher salinity results along Four Mile Creek (Ewells Creek Junction and New England Highway) reflect concentration of solutes in ponds during low flow periods from licensed discharges in addition to off site sources such historic underground workings. The results for the period from April to June show that EC was lower and consistent with normal background conditions.

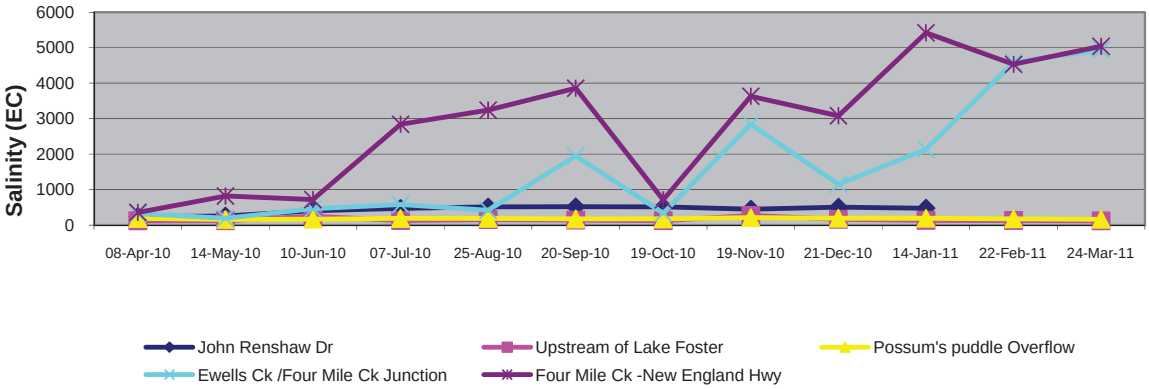



**Figure 4: Four Mile Creek Catchment Electrical Conductivity**

Figure 5 shows the pH levels in Four Mile Creek are generally consistent with water quality guidelines (pH 6.5-8.5). The two samples taken from the drainage line adjacent to Rathluba were of low pH. Only two samples were taken as the drainage line was dry at other times. Previous results indicate that the surface flow adjacent to Rathluba has historically been of low pH, regardless of mining impacts. This drainage line carries surface flow from non-mining land and rehabilitated mining land, indicating that other off-site effects may be influencing the water quality in the area. For the majority of the reporting period this site was dry and no samples were taken.

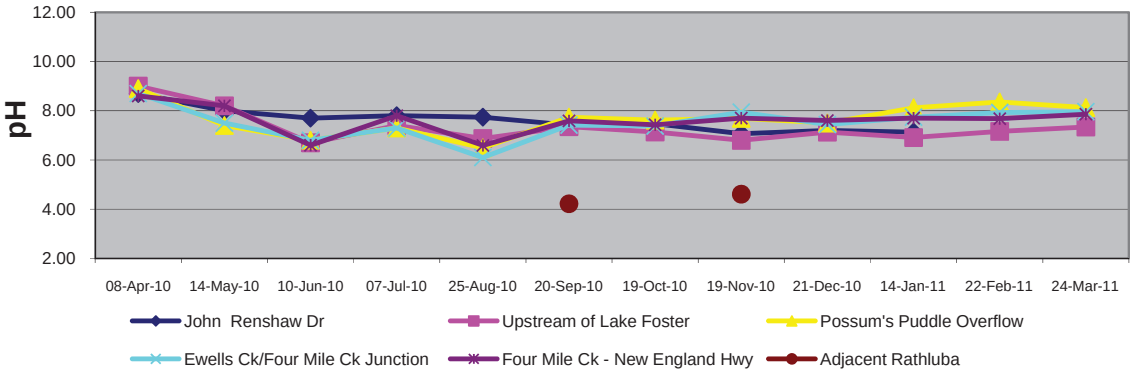



**Figure 5: pH of Four Mile Creek and Rathluba**

Water quality within the mine water storage dams (Lake Kennerson and Lake Foster) varies throughout the year depending on rainfall capture in the open cut pits, CHPP water usage and frequency of licensed discharge events, which are also rainfall dependent (see Figure 5). The freshwater dam (Possums Puddle) remains fairly constant throughout the year as it is separate from mining influences.

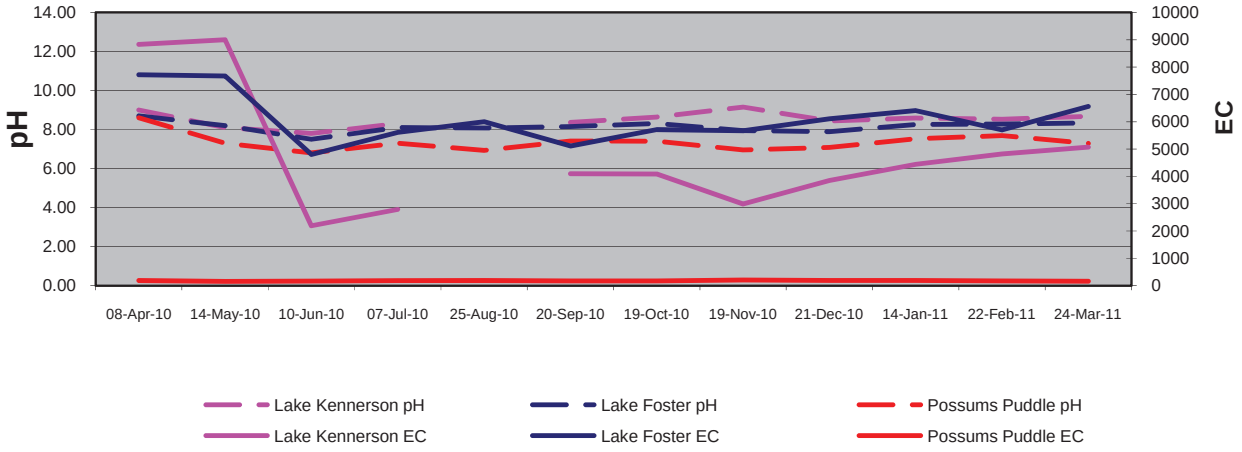



**Figure 6: pH and EC in site water storages**

***Discharge Monitoring Results:*** there were 13 licensed discharges conducted during the reporting period, with a total discharge volume of 505 ML. Table 7 shows the water quality results at the discharge point, compared to EPL discharge water quality thresholds. The results show that no EPL discharge criteria were exceeded.

**Table 7: Discharge Sampling Analytical Results**

| DATE | pH | TOTAL SUSPENDED SOLIDS (mg/L) | TOTAL DISSOLVED SOLIDS (mg/L) | SPECIFIC CONDUCTANCE (uS/cm) | IRON (mg/L) | DISCHARGE VOLUME (KL/day) |
|---|---|---|---|---|---|---|
| **EPL Limits** | **6.5-8.5** | **30** | **-** | **6,000** | **1** | **40,000** |
| 22-Jun-10 | 8.0 | 6 | 1,710 | 2,520 | <0.05 | 40,000 |
| 10-Jul-10 | 8.1 | 3 | 1,870 | 2,830 | <0.05 | 40,000 |
| 29-Jul-10 | 8.1 | 1 | 4,220 | 5,350 | <0.05 | 40,000 |
| 25-Oct-10 | 8.2 | 17 | 2,830 | 4,200 | <0.05 | 40,000 |
| 11-Nov-10 | 8.0 | 2 | 3,420 | 4,960 | <0.05 | 40,000 |
| 17-Nov-10 | 8.3 | 2 | 2,700 | 3,770 | <0.05 | 40,000 |
| 01-Dec-10 | 8.1 | 4 | 4,100 | 5,300 | <0.05 | 40,000 |
| 02-Dec-10 | 8.1 | 26 | 2,710 | 3,600 | <0.05 | 40,000 |
| 03-Dec-10 | 8.1 | 26 | 2,390 | 3,470 | <0.05 | 25,000 |
| 06-Jan-11 | 8.3 | 3 | 3,420 | 4,970 | <0.05 | 40,000 |
| 18-Feb-11 | 8.1 | 5 | 4,440 | 5,900 | <0.05 | 40,000 |
| 22-Mar-11 | 7.8 | 7 | 4,560 | 5,960 | <0.05 | 40,000 |
| 31-Mar-11 | 8.5 | 2 | 3,700 | 5,310 | <0.05 | 40,000 |

3.3.3 Environmental Incidents

There were no reportable surface water incidents.

3.3.4 Further Improvements

Project Approval was granted during the reporting period and is subject to a number of consent conditions. The surface water monitoring program will be continued in accordance with SWMP requirements.

### 3.4 Ground Water Pollution

3.4.1 Environmental Management

Bloomfield Colliery has prepared and submitted a Site Water Management Plan (SWMP) in accordance with Development Consent requirements for the operation of the mine. The Plans prescribe the process water source and supply requirements, site-water balance, storage, impact management and monitoring of groundwater in the vicinity of the mining operations.

3.4.2 Environmental Performance

As outlined in the 2009-2010 AEMR groundwater monitoring commenced in the current reporting period. Only two rounds of quarterly monitoring were undertaken during the period and the results are summarised in Table 8. At this stage insufficient data has been collected to provide an analysis of any trends in the groundwater quality. Full ground water monitoring results are presented in Appendix B.

**Table 8: Groundwater Monitoring Results**

| Month | Monitoring Bore ID | Depth to Water | pH | EC (uS/cm) |
|---|---|---|---|---|
| Sep-10 | PD2.1 | 56.33 | 6.8 | 6030 |
| | PD2.2 | 63.37 | 6.8 | 5920 |
| | PD3 | 7.12 | 4.1 | 2730 |
| | PD4.1 | 21.35 | 7.1 | 12920 |
| | PD4.2 | 2.69 | 6.1 | 9600 |
| | PD7.1 | 10.37 | 6.7 | 4620 |
| | PD8.1 | Dry | | |
| | | | | |
| Jan-11 | PD2.1 | 56.36 | 6.49 | 6120 |
| | PD2.2 | 63.28 | 6.54 | 5970 |
| | PD3 | 7.22 | 6.48 | 5790 |
| | PD4.1 | 24.16 | 7.03 | 1265 |
| | PD4.2 | 2.68 | 5.41 | 9200 |
| | PD7.1 | 10.72 | ns | ns |
| | PD8.1 | Dry | | |

ns – No sample able to be collected due to low water level

3.4.3 Environmental Incidents

No reportable incidents relating to groundwater pollution occurred during the reporting period.

3.4.4 Further Improvements

The groundwater monitoring program begin during the current reporting period will be continued in accordance with SWMP requirements.

### 3.5 Contaminated Land

3.5.1 Environmental Management

No contaminated or polluted land has been identified at Bloomfield. No significant hydrocarbon or chemical spills occurred within CCL7 61 requiring special response, clean-up or ongoing management.

3.5.2 Environmental Performance

Quarterly inspections of hydrocarbon storage facilities are completed as part of the site EMS, and no land contamination or significant polluting incidents were reported during these inspections.

3.5.3 Reportable Incidents

No reportable incidents relating to land contamination occurred during the reporting period.

3.5.4 Further Improvements

As no areas of land contamination have been identified, no improvements to the current management system are planned.

### 3.6 Threatened Flora and Fauna

3.6.1 Environmental Management

The Environmental Assessment included an assessment of the potential impacts associated with the clearance vegetation. Any clearing of vegetation within the project area must be undertaken in accordance with the requirements of the Project Approval.

3.6.2 Environmental Performance

No vegetation was cleared for Bloomfield mining or coal washing operations during the reporting period. Biodiversity enhancement has also been considered during the planning and implementation of land rehabilitation.

3.6.3 Reportable Incidents

No reportable incidents relating to flora and fauna management occurred during the reporting period.

3.6.4 Further Improvements

The Project Approval included a condition for Bloomfield to provide a $20,000 contribution towards a conservation project within the Cessnock LGA. The contribution was made to the Stanford Merthry Reserve rehabilitation project being undertaken by the Land and Property Management Group (formerly Crown Lands).

A Biodiversity Offset Area is to be established in the next reporting period to compensate for land clearance at the mine. Further details on the establishment of the Biodiversity Offset Area will be provided in the next AEMR.

### 3.7 Weeds & Pests

3.7.1 Environmental Management

Bloomfield undertakes regular inspections and has a treatment program to control weeds across the site. A contract weed-sprayer is employed in addition to mechanical support from mine plant such as dozers and backhoes when required. Over the reporting period priority was given to the control of pampas grass, blackberry and mother-of-millions. Lantana was also targeted during the reporting period.

3.7.2 Environmental Performance

Approximately $35,000 was spent across the site on weed control during the reporting period.

No Class 1 or Class 2 declared weeds were identified onsite. The following weed species were identified and treated during the reporting period include:

- Mother-of-millions (class 3)
- Pampas grass (class 4)
- Blackberry (class 4)
- Crofton weed (class 4)

- Noogoora Burr (class 4)
- Lantana (class 5)

3.7.3 Reportable Incidents

No reportable incidents relating to weed management occurred during the reporting period.

3.7.4 Further Improvements

The weed management budget for the upcoming reporting period will be maintained at a similar level to previous years. The control of pampass grass and blackberry remains the priority for the next reporting period in addition to the ongoing management of Lantana.

### 3.8 Blasting

3.8.1 Environmental Management

Blasting activities are licensed under the site EPL. The EPL restricts blasting hours, as well as limiting airblast overpressure and ground vibration impacts at the nearest residences. Blasting techniques have been developed in conjunction with ORICA, utilising the "nonel" initiation system and implemented to achieve maximum fragmentation and maintain levels ground vibration and overpressure levels within the approved criteria for the site.

Each blast is monitored at two nearby residences for ground vibration and overpressure. One monitor is located at a residence immediately to the south of current open cut operations and the second is stationed at a residence to the south-east on John Renshaw Drive.

Records are maintained for all blasts which include shot design, explosive type and volume, initiation method and monitoring results.

3.8.2 Environmental Performance

All blast results for the reporting period are included in Appendix C and are summarised in Table 9.

**Table 9: Blast Monitoring Summary**

| Blasting Criteria Limits | Allowable Exceedance[1] | Results 2010-2011 |
|---|---|---|
| **Airblast Overpressure Level dB (Lin Peak)** | | |
| 115 | 5 % | 3.8 % |
| 120 | 0 % | 0.9 % |
| **Ground Vibration Peak Particle Velocity (mm/s)** | | |
| 5 | 5 % | 0 % |
| 10 | 0 % | 0 % |

Note: 1. Percentage of the total number of blasts over a period of 12 months

During the reporting period a total of 105 blasts were initiated on the site. Of these, four (3.8% of total shots) exceeded 115 dB blast overpressure and nil blasts (0%) exceeded 5 mm/sec ground vibration. One blast on the 16th of September 2010 resulted in an over

pressure reading of 127.9 dB at Elliots (u645). The incident was reported to DECCW (now OEH) and a full report submitted.

3.8.3 Reportable Incidents

As mentioned above, one blast (16/09/10) resulted in an exceedance of overpressure during the reporting period. This incident was reported to DECCW and a penalty notice was issued.

3.8.4 Further Improvements

Monitoring of blasts will continue in accordance with EPL and Project Approval requirements. As a result of the reportable incident outlined above, the following actions have been taken:

- Where there is uneven level of cover less than 3m, the drill pattern will be set out and where possible the narrow holes drilled in the shallow section first. The larger diameter holes will be drilled following the completion of the area with cover less than 3 m. This will prevent larger diameter holes being drilled where there is less cover and reduce the opportunity of blow outs from backfilled or insufficiently stemmed holes occurring; or
- If it is not possible to drill the narrower holes first, any larger diameter holes that have been drilled in an area of less than 3 m cover will be stemmed with aggregate prior to blasting in the adjacent area to reduce the opportunity of blowouts from backfilled or insufficiently stemmed holes occurring.

## 3.9 Operational Noise

3.9.1 Environmental Management

A draft noise monitoring plan has been prepared in accordance with the conditions of the Project Approval. It is expected that the noise monitoring plan will be endorsed by the Director General during the next reporting period. Quarterly noise monitoring has been undertaken in accordance with the draft monitoring plan.

3.9.2 Environmental Performance

Attended quarterly noise monitoring was undertaken during the reporting period which assessed noise impacts from Bloomfield Colliery against relevant criteria detailed within PA 07_0087. The respective criteria for each of the five locations and a summary of the attended noise monitoring results undertaken during the reporting period are presented in Appendix D. The results in Appendix D are the results obtained in the absence of all other noise sources.

Noise exceedances were recorded at Locations G (Buchanan Road, Buchanan) and N (Lings Road, Buttai) during the December quarterly noise monitoring undertaken SLR Heggies. However, the monitoring indicated that compliance with the sleep disturbance consent criteria was met at all locations during the night-time period.

The March quarterly noise indicted a noise exceedance at Location F on Black Hill. This property is now owned by an adjoining mine and Bloomfield Colliery is likely to enter a negotiated noise agreement with the current owner, Donaldson Coal.

3.9.3 Reportable Incidents

During the reporting period there were two occasions (December and March) that noise monitoring showed operational noise exceeded the consent criteria. The Department of Planning and Infrastructure was informed of both non compliances.

3.9.4 Further Improvements

During the reporting period additional noise monitoring and modelling has been undertaken on site to help identify ways to minimise noise from the operation. A draft noise monitoring plan has been prepared in accordance with the conditions of the Project Approval. The noise monitoring plan will be finalised during the next reporting period and quarterly monitoring will continue.

## 3.10 Visual, Stray Light

3.10.1 Environmental Management

Progressive rehabilitation of disturbed land is the main strategy for minimising visual impacts. In addition to providing a safe and stable landform, one of the key objectives of rehabilitation planning is to provide vegetated landforms that blend with the surrounding landscape.

Fixed lighting around the site has been positioned and/or shielded where possible to minimise light shed. Consideration is also given to the location and alignment of mobile light to minimise stray light.

3.10.2 Environmental Performance

The visual assessment of the Bloomfield open cut noted that the main visual impacts are on residences to the south of John Renshaw Drive, to the south of the mine.

3.10.3 Reportable Incidents

No reportable incidents relating to visual amenity or stray light occurred during the reporting period.

3.10.4 Further Improvements

Rehabilitation of areas visible from nearby residences or road traffic will be given priority during mine planning and rehabilitation scheduling.

## 3.11 Aboriginal Heritage

3.11.1 Environmental Management

In response to a condition of the Project Approval, an Aboriginal Cultural Heritage Management Plan (ACHMP) was prepared in consultation with Mindaribba LALC. The plan was endorsed by DECCW and the Director General of Planning during the reporting period.

3.11.2 Environmental Performance

A number of Aboriginal sites identified during the Project Approval process were salvaged in accordance with the ACHMP. Representatives from Mindaribba LALC participated and

monitored the process ahead of preparation for mining activities. In all, 34 artefacts were salvaged and are being stored with the Mindaribba LALC.

3.11.3 Reportable Incidents

No reportable incidents relating to Aboriginal heritage occurred during the reporting period.

3.11.4 Further Improvements

The ACHMP will continue to implemented in the next reporting period which includes management of identified sites.

**3.12 Natural Heritage**

3.12.1 Environmental Management

No National Parks, nature reserves, or other areas of protected natural heritage are located near Bloomfield. The nearest, Pambalong Nature Reserve, is located approximately 6km to the south-east of Bloomfield mining operations. Therefore, natural heritage management is not considered a significant environmental risk.

3.12.2 Environmental Performance

N/A

3.12.3 Reportable Incidents

No reportable incidents relating to natural heritage occurred during the reporting period.

3.12.4 Further Improvements

No improvements are planned with regards to natural heritage management.

**3.13 Spontaneous Combustion**

3.13.1 Environmental Management

There was no spontaneous combustion incidences recorded. Historically the site does not have a problem with spontaneous combustion and no management actions were required during the reporting period

3.13.2 Environmental Performance

N/A

3.13.3 Reportable Incidents

No reportable incidents relating to spontaneous combustion occurred during the reporting period.

3.13.4 Further Improvements

No improvements are planned with regards to spontaneous combustion management.

**3.14 Bushfire**

3.14.1 Environmental Management

A Bushfire Management Plan for Bloomfield Colliery was prepared in consultation with representatives of the NSW Rural Fire Service (RFS). The plan divides the site into 44 fire management Sectors, describes fire risk levels across the site, and outlines site features

relevant to fire management such as vegetation type, access trail locations, asset locations, and water supplies.

Weather conditions permitting, hazard reduction burns are conducted annually by the RFS. Selection of burn location is based on risk levels, as determined by fuel load assessment and location of assets/asset protection zones. Hazard reduction clearing/slashing was also undertaken by Bloomfield along fire trails, asset protection zones and the mine boundary.

3.14.2 Environmental Performance

An asset protection zone adjacent to an urban area near Ashtonfield was slashed and maintenance work completed on a number of tracks to enable access for hazard reduction activities by the RFS. A hazard reduction burn was planned but not undertaken due to persistent unfavourable weather conditions. No bushfires were recorded on the site during the reporting period.

3.14.3 Reportable Incidents

No reportable incidents relating to bushfire management occurred during the reporting period.

3.14.4 Further Improvements

No improvements to the Bushfire Management Plan are planned, however, ongoing hazard reduction burning and clearing will continue in consultation with the RFS.

**3.15 Mine Subsidence**

3.15.1 Environmental Management

Areas of the Bloomfield mine site (CCL 761) are undermined by historic underground workings, some relatively shallow. Sink holes associated with shallow workings are infrequent, but have previously been identified. If identified, the standard management procedure is to flag off and isolate the sink holes from access, back fill the holes and monitor for further subsidence. Once deemed stable, the area will then be rehabilitated and periodical inspections will continue.

3.15.2 Environmental Performance

No issues arose during the reporting period.

3.15.3 Reportable Incidents

No reportable incidents relating to subsidence management occurred during the reporting period.

3.15.4 Further Improvements

Other than the remediation and rehabilitation of sink holes as identified, no improvements to subsidence management are planned.

**3.16 Hydrocarbon Contamination**

3.16.1 Environmental Management

As no areas of hydrocarbon contamination have been identified within the Bloomfield lease area, management is geared to contamination prevention. Bulk hydrocarbon storages

(including the NALCO products) are located within bunded areas. The volumes of these bunded areas are capable of containing greater than 110% of the largest storage tank.

All machinery is fitted with quick fill mechanisms. The inlets and outlets, at the refueling bay and mobile tanker are positively closed with an automatic cut off when full. This refueling method is quick and minimises any potential for spillage during the refueling operation.

Hydrocarbon storage infrastructure at the CHPP and open cut is inspected regularly and documented maintenance check sheets are completed quarterly.

3.16.2 Environmental Performance

No areas of hydrocarbon contamination were identified during the reporting period.

3.16.3 Reportable Incidents

Nil

3.16.4 Further Improvements

As no hydrocarbon contamination has been identified, no improvements are planned for hydrocarbon management.

**3.17 Public Safety**

3.17.1 Environmental Management

Being situated close to urban areas, Bloomfield has historically had a problem with dumping of rubbish, theft and vandalism on the site. A major fencing and exclusion barrier program has greatly reduced these occurrences. Bloomfield continues to invest significant time and resources into keeping the site closed to unauthorised access, including fencing along all public roads, installing lockable gates and other temporary barriers (such as logs, rocks and concrete blocks) on major access tracks and ensuring clear signage is placed covering likely approaches.

3.17.2 Environmental Performance

No public safety incidents were recorded or reported during the reporting period.

3.17.3 Reportable Incidents

No reportable incidents relating to public safety during the reporting period. Several theft and vandalism incidents reported to the police.

3.17.4 Further Improvements

No overall improvements are planned to manage public safety; however, Bloomfield will continue to maintain existing fencing, gates, barriers and signage.

# 4 COMMUNITY RELATIONS

## 4.1 Environmental Complaints

Fifteen community complaints were received during the reporting period and a summary is provided below (Table 10). Six of the complaints related to noise and Seven of the complaints were in relation to blasting. The seven blasting complaints relate to five separate events. In comparison, with the 2009-2010 AEMR reporting period, there twenty five community complaints and the majority (15) associated with blasting.

**Table 10: Community Contacts Register**

| Date | Issue | Type | Location |
|---|---|---|---|
| 05/04/2010 | Blasting | Resident | Buttai |
| 05/04/2010 | Blasting | Environment Line (DECCW) | Black Hill |
| 05/04/2010 | Blasting | Environment Line (DECCW) | Ashtonfield |
| 13/05/2010 | Noise | Resident | Ashtonfield |
| 14/05/2010 | Noise | Resident | Ashtonfield |
| 24/05/2010 | Truck movements (not related to Bloomfield) | Environment Line (DECCW) | Newcastle/Sugarloaf |
| 04/06/2010 | Noise | Resident | Ashtonfield |
| 07/08/2010 | Blasting | Resident | Louth Park |
| 07/09/2010 | Blasting | Resident | Buchanan |
| 16/9/2010 | Blasting | Resident | Black Hill |
| 29/10/2010 | Blasting | Environment Line (DECCW) | Black Hill |
| 10/12/2010 | Noise | Resident | Black Hill |
| 09/01/2011 | Dust | Resident | Heddon Greta |
| 28/02/2011 | Noise | Resident | Black Hill |
| 01/03/2011 | Noise | Resident | Black Hill |

## 4.2 Community Liaison

In accordance with the Project Approval, a Community Consultative Committee (CCC) has been established. The CCC generally meets on a quarterly basis. Additional information about the operation has been included on the company website (www.bloomcoll.com.au) and information about blasting schedules advertised quarterly in local newspapers.

# 5 REHABILITATION

## 5.1 Buildings

There have been no buildings or structures decommissioned over the site during the reporting period.

## 5.2 Rehabilitation of Disturbed Land

Landscape re-contouring, topsoil handling and revegetation techniques are well established at Bloomfield. The objectives of the rehabilitation program being: -

- To establish post-mining surfaces and vegetation cover which ensure a safe and stable landform of land capability class equal to that which existed prior to mining disturbance.
- Return the land to a condition suitable for a range of post-mining landuses, which take into account the proximity of the site to the urban areas of Maitland and possible future development demands.
- Create landforms that can accommodate overburden and waste products produced during coal mining and processing, and merge with adjoining undisturbed landforms.
- Reinstate a surface drainage network on the rehabilitated landforms that is hydrologically stable and incorporates adequate erosion and sediment control structures so as to effectively protect adjoining areas from potential water-borne impacts.
- Undertake a maintenance program to ensure the continued sustainability of previously rehabilitated areas.

Rehabilitation is carried out throughout the year, with the aim of timing vegetation seeding operations in Spring and Autumn.

The majority of the lease area is relatively undisturbed remnant native bushland and no other activities are carried out on the area other than the mining operation.

The major rehabilitation program undertaken over the past decade has now resulted in only relatively small areas becoming available for rehabilitation each year. Combined with this, was an expansion of dump area over areas previously categorised as rehabilitated. As such, although 8.5ha of land was rehabilitated during the reporting period, there was still a net decrease in rehabilitated land of 13.9ha recorded for the reporting year (see Table 11). The 8.5 ha of rehabilitation consisted of rehabilitation along the eastern side of the tailings emplacement wall, emplacement areas adjacent to South Cut along the John Renshaw Drive Boundary of the site and a small area in the vicinity of Wattle Tree Drive.

Mulching and fertiliser topdressing were undertaken in existing rehabilitated areas. These activities are summarised in Table 12.

**Table 11: Rehabilitation Summary**

| | | Area Affected/Rehabilitated (hectares) | | | |
|---|---|---|---|---|---|
| | | To date | Last report | Next Report (estimated) | |
| **A:** | **MINE LEASE AREA** | | | | |
| **A1** | **Mine Lease(s) Area** | 1,453.26 ha | | | |
| **B:** | **DISTURBED AREAS** | | | | |
| **B1** | **Infrastructure area** (other disturbed areas to be rehabilitated at closure including facilities, roads) | 74.0 | 74.4 | 72.3 | |
| **B2:** | **Active Mining Area** (excluding items B3 – B5 below) | 63.8 | 50.4 | 73.3 | |
| **B3** | **Waste emplacements**, (active/unshaped/in or out-of-pit) | 213.0 | 191.9 | 234.7 | |
| **B4** | **Tailings emplacements,** (active/unshaped/uncapped) | 86.8 | 86.8 | 86.8 | |
| **B5** | **Shaped waste emplacement** (awaits final vegetation) | 16.2 | 22.9 | 20.2 | |
| **ALL DISTURBED AREAS** | | 453.8 | 426.4 | 487.3 | F1 |
| **C** | **REHABILITATION PROGRESS** | | | | |
| **C1** | **Total Rehabilitated area** (except for maintenance) | 441.2 | 455.1 | 431.7 | F2 |
| **D:** | **REHABILITATION ON SLOPES** | | | | |
| **D1** | **10 to 18 degrees** | 32.6 | 31.95 | 30.3 | |
| **D2** | **Greater than 18 degrees** | - | - | - | |
| **E:** | **SURFACE OF REHABILITATED LAND** | | | | |
| **E1** | **Pasture and grasses** | 436.2 | 450.1 | 401.0 | |
| **E2** | **Native forest/ecosystems** | - | - | - | |
| **E3** | **Plantations and crops** | 5 | 5 | 5 | |
| **E4** | **Other** (include nonvegetative outcomes) | - | - | - | |

The active pit area increased by 13.4ha and the active overburden emplacement areas increased by approximately 21.1ha, much of which was over areas included in C1, *Total Rehabilitated Area* in previous AEMRs. All rehabilitated land that was dumped over was rehabilitated to pasture with scattered trees and was stripped of topsoil and surface vegetation before dumping commenced. These materials were placed directly on prepared slopes for rehabilitation, or stockpiled for future use.

**Table 12: Maintenance Activities on Rehabilitated Land**

(This period's activities and activities proposed in the next reporting period)

| NATURE OF TREATMENT | Area Treated (ha) | | Comment/control strategies/ treatment detail |
|---|---|---|---|
| | Report period | Next period | |
| **Additional erosion control works** (drains re-contouring, rock protection**)** | - | - | Construction of contour drain to manage run off from expanded workings. |
| **Re-covering** (detail – further topsoil, subsoil sealing etc) | - | - | Small, isolated bare patches & washouts across the site were ripped, retreated with lime, biosolids and/or fertiliser, and re-seeded during the reporting period. Actual areas small and difficult to calculate, 200 plus tractor hours were dedicated to this activity during the reporting period. This program will continue in future reporting periods. |
| **Soil treatment** (detail – fertiliser, lime, gypsum etc) | - | - | See "Re-covering" above. |
| **Treatment/Management** (detail – grazing, cropping, slashing etc) | 15 | 20 | Slashing of established rehabilitation to encourage nutrient recycling and, where needed, fertiliser application. |
| **Re-seeding/Replanting** (detail – species density, season etc) | - | - | See "Re-covering" above. |
| **Adversely Affected by Weeds** (detail - type and treatment) | - | - | Continual localised areas of weed treatment across all disturbed areas (see Section 3.7), but no specific areas of intensive treatment. |
| **Feral animal control** (detail – additional fencing, trapping, baiting etc) | - | 550 | Feral dog baiting to be undertaken during the reporting period in consultation with other large land holders in the area |

## 5.3 Further Development of the Final Rehabilitation Plan

In accordance with the Project Approval, Landscape Management Plan and Rehabilitation Management Plan have been prepared. These documents outline the rehabilitation planning, operation and monitoring process for Bloomfield Group mining operations. Both are expected to be finalised during the next reporting period.

It is anticipated that Bloomfield will be required to lodge a new MOP/REMP with DPI-MR in order to gain a new surface mining lease. This MOP will include details that tie together final rehabilitation information from the various documents mentioned above.

The MOP estimated approximately 30 ha of rehabilitation would be completed annually. However, this reporting period saw a net reduction in Total Rehabilitated Area due to lack of bulk areas available for rehabilitation, the expanded overburden dump footprint, and the switch of emphasis to remedial rehabilitation and maintenance.

## 6 ACTIVITIES PROPOSED IN THE NEXT AEMR PERIOD

The activities for the ensuing year will generally be in accordance with the rehabilitation and landscape management strategy outlined in the Environmental Assessment and the MOP schedule. Production and rehabilitation will be less than the schedule provided in the MOP.

There are few areas available for bulk rehabilitation so the emphasis of rehabilitation operations will be focused on remedial rehabilitation and maintenance of existing areas. As such, it is planned that older rehabilitation will be subject to remedial rehabilitation activities. Such activities include minor earthworks for failed drainage infrastructure, topdressing bare areas with biosolids and re-seeding. Maintenance activities will include fertiliser application and slashing.

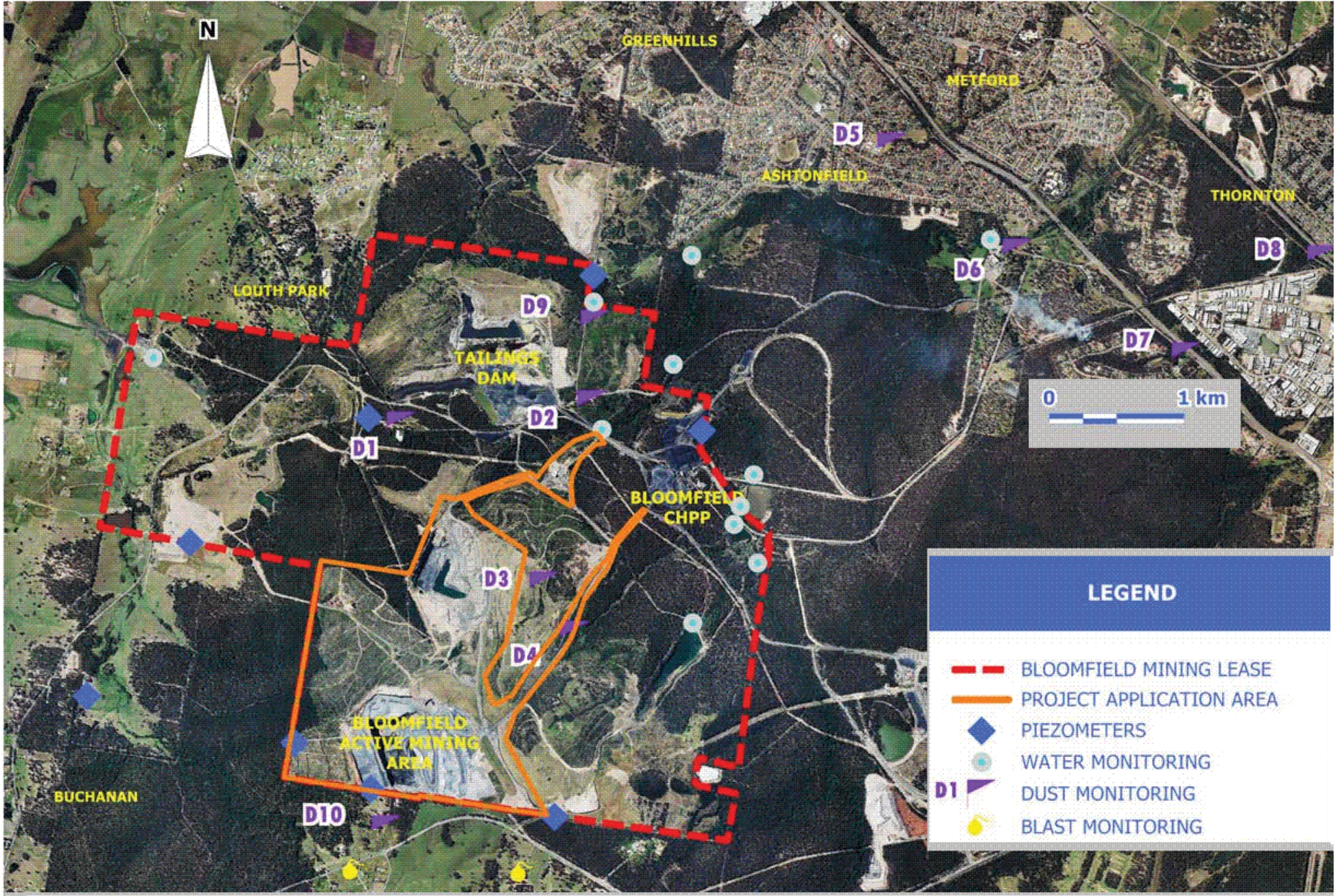
The steep area adjacent to Save a Mile Haul Road will be reshaped and the slope reduced to meet current DII standards. The area will be revegetated including pastures and tree cover in accordance with the draft Rehabilitation Management Plan.

In accordance with the Project Approval, a Rehabilitation Management Plan and Landscape Management Plan have been submitted for endorsement by the Director General. It is expected that both will be finalised during the next reporting period. The Project Approval also requires the Final Void Management Plan and Mine Closure Plan be submitted for approval by the end of 2011 and work will continue on both.

It is anticipated that a new MOP and application for a surface mining lease will be made during the next reporting period. The revised MOP will take into account the various conditions of the Project Approval and DII requirements particularly in relation to the management of the final void and mine closure planning.

Bloomfield will also continue to investigate final sign off for areas of established, stable rehabilitation.

# PLANS

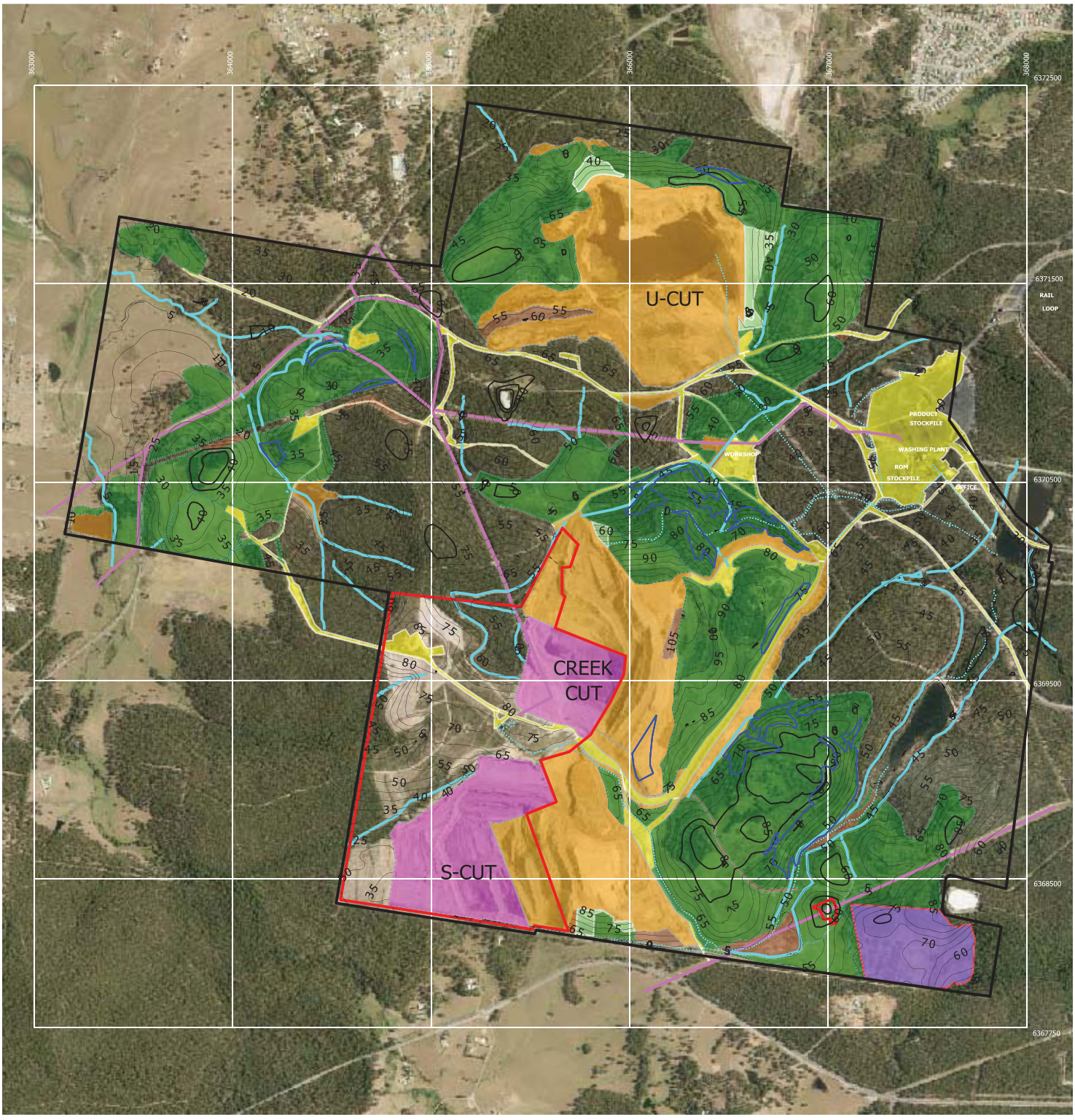



# BLOOMFIELD ANNUAL ENVIRONMENTAL REPORT 2008

## PLAN 1: ENVIRONMENTAL MONITORING SITES

## JUNE 2009

THE Bloomfield GROUP




## LEGEND

0 — 1 km

Contour Interval 5m

N

- Contour (m AHD)
- Clean Water
- Dirty Water
- Approval Area
- Colliery Holding
- Slopes 10 to 18 Degrees
- Power Lines
- Relinquished
- Previous Rehabilitation
- New Rehabilitation
- Unshaped Areas
- Shaped Areas
- Active Areas
- Infrastructure

THE Bloomfield GROUP

# Bloomfield Colliery

**Annual Environmental Management Report**

## Rehabilitaion Plan 2011

| Scale: 1:20000 | Date: March 2011<br>Photo: February 2011 | Drawing: A3 |
|---|---|---|

# APPENDIX A

# AIR QUALITY MONITORING RESULTS

# APPENDIX B

# MONTHLY WATER QUALITY MONITORING RESULTS

# APPENDIX C

# BLAST MONITORING RESULTS

Result exceeding EPL 5% limit

Result exceeding EPL limits

| | | Elliots | | McNaughtons | |
|---|---|---|---|---|---|
| Date | Time | O/pressure | Vibration | O/pressure | Vibration |
| 13/04/2010 | 9.17am | 112.6 | 1.21 | 89.9 | 0.05 |
| 15/04/2010 | 10.11am | 116.0 | 1.57 | 89.9 | 0.16 |
| 19/04/2010 | 9.55am | DNR | DNR | DNR | DNR |
| 20/04/2010 | 9.58am | DNR | DNR | DNR | DNR |
| 22/04/2010 | 10.18am | DNR | DNR | DNR | DNR |
| 4/05/2010 | 10.48am | 97.3 | 1.50 | 97.1 | 1.68 |
| 6/05/2010 | 9.15am | 108.8 | 0.30 | 109.3 | 0.31 |
| 6/05/2010 | 9.31am | 105.0 | 0.31 | 106.9 | 0.29 |
| 11/05/2010 | 2.35pm | 110.2 | 0.53 | 109.2 | 0.50 |
| 13/05/2010 | 1.47pm | 105.4 | 1.50 | 103.8 | 0.31 |
| 20/05/2010 | 9.39am | 103.6 | 1.30 | 104.3 | 0.47 |
| 28/05/2010 | 1.46pm | DNR | DNR | DNR | DNR |
| 28/05/2010 | 2.19pm | DNR | DNR | DNR | DNR |
| 2/06/2010 | 11.55am | 111.0 | 0.78 | 92.1 | 0.55 |
| 3/06/2010 | 2.59pm | DNR | DNR | DNR | DNR |
| 8/06/2010 | 1.47pm | 110.5 | 0.60 | 95.0 | 0.33 |
| 11/06/2010 | 1.49pm | DNR | DNR | DNR | DNR |
| 11/06/2010 | 2.39pm | 109.8 | 0.90 | 110.5 | 0.51 |
| 16/06/2010 | 1.28pm | 104.0 | 1.70 | 102.7 | 0.36 |
| 21/06/2010 | 1.48pm | 113.6 | 1.59 | 106.8 | 0.52 |
| 28/06/2010 | 1.47pm | DNR | DNR | DNR | DNR |
| 29/06/2010 | 3.20pm | 103.1 | 0.80 | 97.6 | 1.05 |
| 2/07/2010 | 1.20pm | DNR | DNR | DNR | DNR |
| 7/07/2010 | 1.03pm | DNR | DNR | DNR | DNR |
| 13/07/2010 | 10.13am | 104.4 | 1.77 | 93.9 | 0.36 |
| 14/07/2010 | 1.27pm | 114.6 | 0.82 | 106.5 | 0.32 |
| 19/07/2010 | 1.43pm | 108.8 | 0.70 | 103.7 | 0.41 |
| 19/07/2010 | 2.12pm | DNR | DNR | DNR | DNR |
| 22/07/2010 | 1.12pm | DNR | DNR | DNR | DNR |
| 22/07/2010 | 1.38pm | 92.9 | 0.90 | 92.8 | 0.85 |
| 26/07/2010 | 1.36pm | 101.6 | 0.42 | 98.5 | 0.65 |
| 9/08/2010 | 12.01pm | DNR | DNR | DNR | DNR |
| 9/08/2010 | 12.11pm | 103.1 | 0.36 | 101.9 | 0.37 |
| 20/08/2010 | 9.50am | 108.0 | 0.86 | 109.4 | 0.42 |
| 27/08/2010 | 9.48am | 109.8 | 1.18 | 107.6 | 0.46 |
| 31/08/2010 | 12.20pm | DNR | DNR | DNR | DNR |
| 7/09/2010 | 2.07pm | 110.9 | 2.80 | 117.4 | 1.54 |
| 9/09/2010 | 9.52am | 108.2 | 1.70 | 103.0 | 0.42 |
| 10/09/2010 | 1.40pm | 112.7 | 1.10 | 109.5 | 0.42 |
| 14/09/2010 | 1.42pm | 108.5 | 1.32 | 104.5 | 0.31 |
| 16/09/2010 | 10.04am | 127.9 | 0.75 | 114.9 | 0.31 |
| 17/09/2010 | 1.48pm | DNR | DNR | DNR | DNR |
| 21/09/2010 | 1.35pm | 110.3 | 1.50 | 110.1 | 0.34 |

**Blast Monitoring Results cont'd**

Result exceeding EPL 5% limit

Result exceeding EPL limits

| | | Elliots | | McNaughtons | |
|---|---|---|---|---|---|
| Date | Time | O/pressure | Vibration | O/pressure | Vibration |
| 23/09/2010 | 9:59am | 108.3 | 0.98 | 105.1 | 0.30 |
| 28/09/2010 | 1.42pm | 112.1 | 0.87 | 111.2 | 0.48 |
| 7/10/2010 | 1.45pm | 109.1 | 0.60 | 110.9 | 0.24 |
| 13/10/2010 | 9.14am | 97.5 | 0.96 | 103.2 | 0.67 |
| 20/10/2010 | 10.00am | 107.3 | 3.26 | 105.4 | 0.55 |
| 22/10/2010 | 1.45pm | 110.4 | 3.11 | 108.5 | 0.63 |
| 29/10/2010 | 1.42pm | 108.6 | 2.59 | 102.9 | 0.51 |
| 4/11/2010 | 2.56pm | 108.8 | 2.80 | 100.8 | 0.50 |
| 10/11/2010 | 1.45pm | 112.7 | 3.06 | 112.5 | 0.68 |
| 18/11/2010 | 1.41pm | DNR | DNR | 105.5 | 0.39 |
| 24/11/2010 | 1.45pm | 115.7 | 0.95 | 108.4 | 0.37 |
| 29/11/2010 | 1.45pm | 99.6 | 0.43 | 97.2 | 0.25 |
| 2/12/2010 | 12.18pm | 100.1 | 0.31 | 100.1 | 0.22 |
| 7/12/2010 | 10.10am | 101.7 | 0.32 | 98.8 | 0.35 |
| 7/12/2010 | 10.33am | DNR | DNR | 102.7 | 0.50 |
| 7/12/2010 | 10.45am | DNR | DNR | DNR | DNR |
| 8/12/2010 | 9.55am | DNR | DNR | DNR | DNR |
| 8/12/2010 | 1.40pm | 103.5 | 0.40 | 102.7 | 0.34 |
| 9/12/2010 | 9.46am | 101.1 | 0.39 | 106.0 | 0.47 |
| 9/12/2010 | 1.34pm | 102.6 | 0.38 | 104.5 | 0.27 |
| 10/12/2010 | 1.04pm | DNR | DNR | DNR | DNR |
| 13/12/2010 | 9.14am | 101.7 | 0.34 | 98.2 | 0.34 |
| 13/12/2010 | 11.16am | DNR | DNR | DNR | DNR |
| 14/12/2010 | 9.10am | 106.1 | 0.67 | 105.1 | 0.48 |
| 14/01/2011 | 9.26am | DNR | DNR | DNR | DNR |
| 14/01/2011 | 9.34am | DNR | DNR | DNR | DNR |
| 14/01/2011 | 9.47am | DNR | DNR | DNR | DNR |
| 17/01/2011 | 1.38pm | DNR | DNR | DNR | DNR |
| 17/01/2011 | 2.00pm | DNR | DNR | DNR | DNR |
| 17/01/2011 | 3.30pm | DNR | DNR | DNR | DNR |
| 20/01/2011 | 10.00am | DNR | DNR | DNR | DNR |
| 20/01/2011 | 10.11am | DNR | DNR | DNR | DNR |
| 21/01/2011 | 9.37am | DNR | DNR | DNR | DNR |
| 21/01/2011 | 2.50pm | DNR | DNR | DNR | DNR |
| 25/01/2011 | 1.41pm | DNR | DNR | DNR | DNR |
| 25/01/2011 | 1.57pm | DNR | DNR | DNR | DNR |
| 28/01/2011 | 1.40pm | 106.3 | 2.55 | 96.1 | 0.47 |
| 1/02/2011 | 1.41pm | 113.9 | 1.66 | 108.0 | 0.38 |
| 2/02/2011 | 1.31pm | 108.9 | 1.72 | DNR | DNR |
| 4/02/2011 | 1.35pm | 109.7 | 1.39 | 101.3 | 0.29 |
| 8/02/2011 | 1.53pm | 101.7 | 0.52 | 99.1 | 0.10 |
| 9/02/2011 | 1.48pm | 108.2 | 1.72 | 94.3 | 0.31 |
| 11/02/2011 | 1.44pm | DNR | DNR | DNR | DNR |

**Blast Monitoring Results cont'd**

Result exceeding EPL 5% limit

Result exceeding EPL limits

| | | Elliots | | McNaughtons | |
|---|---|---|---|---|---|
| Date | Time | O/pressure | Vibration | O/pressure | Vibration |
| 14/02/2011 | 1.43pm | 108.5 | 1.80 | 95.7 | 0.25 |
| 17/02/2011 | 9.54am | 103.2 | 0.30 | 102.3 | 0.08 |
| 21/02/2011 | 9.12am | DNR | DNR | DNR | DNR |
| 25/02/2011 | 10.06am | DNR | DNR | DNR | DNR |
| 1/03/2011 | 9.56am | 104.4 | 0.40 | 107.2 | 0.25 |
| 2/03/2011 | 1.12pm | DNR | DNR | DNR | DNR |
| 3/03/2011 | 12.56pm | DNR | DNR | DNR | DNR |
| 4/03/2011 | 12.20pm | DNR | DNR | DNR | DNR |
| 7/03/2011 | 12.57pm | DNR | DNR | DNR | DNR |
| 9/03/2011 | 9.52am | 105.4 | 0.38 | 102.3 | 0.50 |
| 10/03/2011 | 1.38pm | 105.2 | 1.76 | 101.1 | 0.41 |
| 11/03/2011 | 1.40pm | 109.0 | 2.42 | 101.0 | 0.11 |
| 14/03/2011 | 1.45pm | 106.2 | 2.80 | 107.0 | 0.41 |
| 16/03/2011 | 11.43am | 104.1 | 3.40 | 100.4 | 0.37 |
| 18/03/2011 | 9.51am | 108.0 | 2.60 | 101.5 | 0.47 |
| 22/03/2011 | 9.11am | 107.0 | 2.50 | 104.3 | 0.35 |
| 25/03/2011 | 1.19pm | 106.6 | 1.23 | 103.0 | 0.17 |
| 25/03/2011 | 1.42pm | DNR | DNR | DNR | DNR |
| 28/03/2011 | 9.57am | 101.5 | 1.08 | 98.2 | 0.33 |

# APPENDIX D

# QUARTERLY NOISE MONITORING RESULTS

## June 2010 Quarter Results

| Location | Consent Conditions LAeq(15 minute) | | | Consent Conditions LAeq(15 minute) | | | Compliance | | |
|---|---|---|---|---|---|---|---|---|---|
| | Day | Eve | Night | Day | Eve | Night | Day | Eve | Night |
| F – Black Hill Road, Black Hill | <39[1,2] | <33[2] | <33[2] | 35 | 35 | 35 | NA[1] | Yes | Yes |
| G – Buchanan Road, Buchanan | <30[1,2] | <30[1,2] | 33 | 39 | 42 | 37 | Yes | Yes | Yes |
| L – Kilshanny Ave, Ashtonfield | 35 | 35 | 31 | 35 | 35 | 35 | Yes | Yes | Yes |
| M – John Renshaw Drive, Buttai | 39 | 36 | 36 | 39 | 39 | 37 | Yes | Yes | Yes |
| N – Lings Road, Buttai | <44[1,2,3] | 42 | 35 | 42 | 42 | 35 | Yes[3] | Yes | Yes |

1 - Bloomfield operations inaudible
2 - Estimated contribution equals LA90 minus 10 dBA
3 – Within 2 dBA tolerance as per Chapter 11 of NSW INP

## September 2010 Quarter Results

| Location | Consent Conditions LAeq(15 minute) | | | Consent Conditions LAeq(15 minute) | | | Compliance | | |
|---|---|---|---|---|---|---|---|---|---|
| | Day | Eve | Night | Day | Eve | Night | Day | Eve | Night |
| F – Black Hill Road, Black Hill | <39[1,2] | <43[1,2] | <39[1,2] | 35 | 35 | 35 | NA[1] | NA[1] | NA[1] |
| G – Buchanan Road, Buchanan | <32[1,2] | 41 | 38 | 39 | 42 | 37 | Yes | Yes | Yes[3] |
| L – Kilshanny Ave, Ashtonfield | <33[1,2] | <35[1,2] | <31[1,2] | 35 | 35 | 35 | Yes | Yes | Yes |
| M – John Renshaw Drive, Buttai | <42[1,2] | 37 | 37 | 39 | 39 | 37 | Yes | Yes | Yes |
| N – Lings Road, Buttai | <44[1,2,3] | 42 | <42 | 42 | 42 | 35 | Yes[3] | Yes | NA[1] |

1 - Bloomfield operations inaudible
2 - Estimated contribution equals LA90 minus 10 dBA
3 – Within 2 dBA tolerance as per Chapter 11 of NSW INP

.

## December 2010 Quarter Results

| Location | Consent Conditions LAeq(15 minute) | | | Consent Conditions LAeq(15 minute) | | | Compliance | | |
|---|---|---|---|---|---|---|---|---|---|
| | Day | Eve | Night | Day | Eve | Night | Day | Eve | Night |
| F – Black Hill Road, Black Hill | <39[1,2] | <39[1,2] | <41[1,2] | 35 | 35 | 35 | NA[1] | NA[1] | NA[1] |
| G – Buchanan Road, Buchanan | 45 | 45 | 36 | 39 | 42 | 37 | No | No | Yes[3] |
| L – Kilshanny Ave, Ashtonfield | <42[1,2] | <30[1,2] | <31[1,2] | 35 | 35 | 35 | NA[1] | Yes | Yes |
| M – John Renshaw Drive, Buttai | <38[1,2] | 39 | 39 | 39 | 39 | 37 | Yes | Yes | Yes[3] |
| N – Lings Road, Buttai | <39[1,2] | 44 | 39 | 42 | 42 | 35 | Yes[3] | Yes | No |

1 - Bloomfield operations inaudible

2 - Estimated contribution equals LA90 minus 10 dBA

3 – Within 2 dBA tolerance as per Chapter 11 of NSW INP

## March 2011 Quarter Results

| Location | Consent Conditions LAeq(15 minute) | | | Consent Conditions LAeq(15 minute) | | | Compliance | | |
|---|---|---|---|---|---|---|---|---|---|
| | Day | Eve | Night | Day | Eve | Night | Day | Eve | Night |
| F – Black Hill Road, Black Hill | <39[1,2] | <38[1,2] | <30[1] | 35 | 35 | 35 | NA[1] | No | Yes |
| G – Buchanan Road, Buchanan | <30[1] | <31[1,2] | 37 | 39 | 42 | 37 | Yes | Yes | Yes |
| L – Kilshanny Ave, Ashtonfield | <33[1,2] | 36[2] | 36 | 35 | 35 | 35 | Yes | Yes | Yes[3] |
| M – John Renshaw Drive, Buttai | <33[1,2] | 38 | <30[1] | 39 | 39 | 37 | Yes | Yes | Yes |
| N – Lings Road, Buttai | <45[1,2] | <37[1,2] | <30[1] | 42 | 42 | 35 | NA[1] | Yes[3] | Yes |
| 25 Old Buttai Road, Buttai | <30[1] | 35 | 35 | 35[4] | 35[4] | 35[4] | Yes | Yes | Yes |

1 - Bloomfield operations inaudible

2 - Estimated contribution equals LA90 minus 10 dBA

3 - Within 2 dBA tolerance as per Chapter 11 of NSW INP

4 – No noise criteria is in place for Old Buttai Road, the lowest noise criteria from the INP has been applied as a conservative measure.