

***ANNUAL ENVIRONMENTAL
MANAGEMENT REPORT
2008***

***BLOOMFIELD COLLIERIES
Pty Limited***

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 -	1/4/2008	AEMR End Date-	31/3/2009
Name of leaseholder -	Bloomfield Collieries Pty Limited		
Name of Mine Operator -	Bloomfield Collieries Pty Limited		
Reporting Officer -	Lachlan Crawford		
Title -	Environmental Officer		
Signature -			
Date -			

EXECUTIVE SUMMARY

During the reporting period, Bloomfield operated 15 shifts a week for 48 weeks employing 72 personnel. Production was 787,665 tonnes of raw coal, 505,345 tonnes of saleable coal and 6.05 million 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 4.6ha of land was prepared for mining during the reporting period. This area was situated to the south of Creek Cut. The area was largely devoid of woody vegetation, having been cleared previously. Any groundcover and regrowth vegetation was removed with the topsoil. Available topsoil was removed and placed directly on shaped overburden areas as part of the rehabilitation program.

There has been an ongoing program of internal upgrading to the coal handling and preparation plant (CHPP) to increase throughput from 5Mtpa to 6.5Mtpa, as approved under Abel Consent. The upgrade process is largely complete and throughput is currently rated at 1000 tonnes per hour.

During the reporting period, disposal of tailings into the disused open cut void at U Cut. Water continues to be pumped from the old underground workings for use in dust suppression on haul roads and other highly trafficked unsealed areas.

As part of the Part 3A Major Project Application for continued operations in the Bloomfield open cut, the Environmental Assessment (EA) for the project was lodged with the NSW Department of Planning during the reporting period. It is anticipated that project determination will occur during the next reporting period. Additional environmental management requirements conditioned in the development consent will be incorporated into future management strategies.

Dust monitoring results indicated that the dust generated through mining operations (as indicated at Sites 3 and 4) is largely contained on site. With the exception of contaminated/vandalised results and Site 4, the monthly results were below the 4 g/m²/month recommended limits. Site 4 was temporarily removed, and then relocated as Site 4a, during the reporting period due to the incursion of operational overburden dumps.

Background water monitoring results indicate the levels in Four Mile Creek are generally consistent with water quality guidelines (pH 6.5-8.5). Electrical conductivity results at Site W11 (Four Mile Creek at New England Highway) were elevated throughout the year; most likely due to seepage from old underground workings. Five monthly samples from the creekline adjacent to Rathluba were of low pH, which is consistent with historical results.

Twenty-five days of licenced discharge were conducted during the reporting period, with a total discharge volume of 970ML. Two surface water pollution incidents (exceedances of EPL discharge thresholds) were reported to the NSW DECC.

A groundwater monitoring program measuring 24 groundwater piezometers across (at eight locations) was undertaken during the reporting period.

Approximately \$39,000 was spent across the site on weed control. Priority of treatment is targeted at pampas grass, blackberry and mother-of-millions.

During the reporting period a total of 142 blasts were initiated on the site. Of these, four (2.8%) exceeded 115 dB blast overpressure and four blasts (2.8%) exceeded 5 mm/sec ground vibration. No blasts exceeded the EPL blast overpressure limit of 120 dB.

Noise level investigations of the open cut operation and individual mobile plant were undertaken, and noise attenuation shielding was installed at the RLF during the reporting period.

Bloomfield received six community complaints during the reporting period, consisting of:

- Four complaint about blast noise and/or ground vibration;
- A complaint about visual impact from the overburden dumps; and
- A night lighting complaint.

Two hazard reduction burns were conducted by the Rural Fire Service during the reporting period.

A net decrease in rehabilitated land of 52.7 ha was recorded for the reporting year, due to the increase in overburden dump area disturbing previously rehabilitated land. Actual rehabilitation completed was approximately 9.2 ha. 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 is located at East Maitland, NSW, and produces approximately 0.65 million tonnes of product coal by open cut methods per year. Coal has been mined on the property for over 100 years, however underground mining by the current owner began in 1937. The open cut started operations in 1964 and has slowly increased in size to its current production. The last coal extracted from underground operations was in May 1992.

The other mine owned by Big Ben is Rix's Creek Mine, which is located north of Singleton and currently produces approximately 1.2 million tonnes of product coal per year.

Bloomfield produces mainly thermal coal with some semi soft coking coal, principally for the Asian export market.

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 1/4/2008 to 31/3/2009, 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
Consolidated Coal Lease (CCL) 761	20 October 1991	29 October 2010	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 (DECC NSW). Review date 15 November 2009

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

Development Approval for the Abel Underground Mine (05_0136) (Abel Consent) allows for the operation of the Bloomfield Coal Handling and Preparation Plant (CHPP), Rail

Table 2: Annual Environmental Inspection

Issue	Action Required	Where dealt with in AEMR
The dirty water drain located east of the current open cut operations has not been properly constructed. This drain is conveying highly saline water across an undefined drainage path leading to sheetflow erosion.	Construct a suitably designed dirty water drain in accordance with the guideline “Managing Urban Stormwater: Soils and Construction (Department of Housing, 2004). Drain reconstructed and rock incorporated along the length of the drain.	2007 AEMR - section 3.2.4

2 OPERATIONS DURING THE REPORTING PERIOD

2.1 Exploration

No exploration took place at Bloomfield during the reporting period.

2.2 Land Preparation

Approximately 4.6ha of land was prepared for mining during the reporting period. This area was situated to the south of Creek Cut.

The area was largely devoid of woody vegetation, having been cleared previously. Any groundcover and regrowth vegetation was removed with the topsoil.

Available topsoil was removed and placed directly on shaped overburden areas as part of the rehabilitation program. Topsoil volumes are presented in Table 3.

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 72 personnel. Production was 787,665 tonnes of raw coal, 505,345 tonnes of saleable coal and 6.05 million 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.

A Reedrill SK75 drill was purchased during the reporting period and a new Caterpillar 777 water cart was brought into service. The current primary production equipment is: -

Hitachi EX5500 excavator
1 Caterpillar 777 Rear Dump Truck
1 Caterpillar 785 Rear Dump Truck
5 Caterpillar 789 Rear Dump Trucks
1 Caterpillar 793 Rear Dump Truck
2 Cat D11 Dozers
2 Cat D10 Dozers
1 Cat D9 Dozer
1 Cat 16 Grader
2 Cat 777 Water Cart

1 Cat 992 Highlift Loader

The secondary production equipment includes:-

1 Cat 666 Scraper

During the next reporting period, Bloomfield are planning to introduce three Caterpillar 793 rear dumps, which will replace the existing 789s.

Run of Mine (ROM) coal and overburden volumes are presented in Table 3.

2.5 Mineral Processing

There has been an ongoing program of internal upgrading to the coal handling and preparation plant (CHPP) to increase throughput from 5Mtpa to 6.5Mtpa, as approved under Abel Consent. The upgrade process is largely complete and throughput is currently rated at 1000 tonnes per hour. ROM coal and clean coal volumes are presented in Table 3.

Table 3: Production and Waste Summary

	Cumulative Production (cubic metres)		
	Start of Reporting Period	At end of Reporting Period	End of next reporting (estimated)
Topsoil stripped (bcm)	120,000	146,000	161,000
Topsoil used/spread (bcm)	120,000	146,000	161,000
Waste Rock (bcm)	27,239,146	33,291,028 (6,051,882)	39,347,225
Run Of Mine Coal (t) (Bloomfield)	4,891,577	5,679,242 (787,665)	6,600,757
(Donaldson)	12,374,312	13,898,786 (1,524,474)	15,328,882
(Tasman)	450,410	969,344 (518,934)	1,553,264
(Abel)	0	140,612	769,577
TOTAL ROM	17,716,299	20,687,984	22,992,216
Processing Waste (t) (Bloomfield)	2,674,666	2,956,986 (282,320)	3,330,200
(Donaldson)	3,516,537	4,001,082 (484,545)	4,430,110
(Tasman)	154,218	346,987 (192,769)	522,163
(Abel)	0	83,589	335,175
TOTAL WASTE	6,345,421	7,388,644	8,617,648
Coal (tonne) (Bloomfield)	2,879,373	3,384,718 (505,345)	3,330,019

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 3.

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. During the reporting period Bloomfield switched to a waste contractor who re-synthesise waste oil to a fuel oil product for re-use in ANFO explosive for blasting operations. Approximately 87,600L 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 94.4 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 1.5m³ and 3.0m³ bins and collected by licensed waste contractor for disposal.

2.7 Product Stockpiles

In accordance with the Abel consent, Bloomfield has increased the capacity of the ROM coal and clean coal stockpile pads. During the reporting period, both the ROM and clean coal stockpile areas were expanded to accommodate the increased capacity. The ROM stockpile pad now has a capacity of 300,000 tonnes and the clean coal stockpiles have a capacity of 500,000 tonnes.

2.8 Water Management

The water management system, implemented to manage surface water at Bloomfield, has been designed with three primary objectives:

1. Segregation of clean and mine waters on site;
2. Safe storage and priority use of contaminated water on-site;
3. Management of mine water discharges so as to preserve the environmental values of Four Mile Creek and comply with 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 water 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 continues to be pumped from the old underground workings for use in dust suppression and coal processing. Water storage volumes are presented in Table 4.

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

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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 4: Stored Water

(if more than one storage of each type, list separately)	Volumes held (cubic metres)		
	Start of Reporting Period	At end of Reporting Period	Storage Capacity
Clean water	90ML	90ML	90ML
Dirty water			
Lake Kennerson	155ML	145ML	245ML
Lake Foster	35ML	40ML	45ML
U Cut	500ML	500ML	600ML
Creek Cut	NIL (operational pit)	NIL (operational pit)	NIL (operational pit)
Controlled discharge water (EPL 396)	970ML		
Contaminated water	NIL	NIL	NIL

Rainfall for the period is shown in Table 5. Total rainfall for twelve month period was 1279.5 mm compared with 655.9 mm for the previous year and was 429.4 mm above the annual average of 850.1 mm

Table 5: Annual Rainfall

BLOOMFIELD COLLIERIES ANNUAL RAINFALL													
Month	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY '09	FEBRUARY '09	MARCH '09	TOTAL
Total Rainfall	239.8	3.5	130.5	33.1	32	166	0	0	0	6	340	107	1279.5
Average Rainfall	66.1	78.6	81.5	48.3	44	45.5	54.7	74.5	64.4	74.0	119.8	98.5	850.1

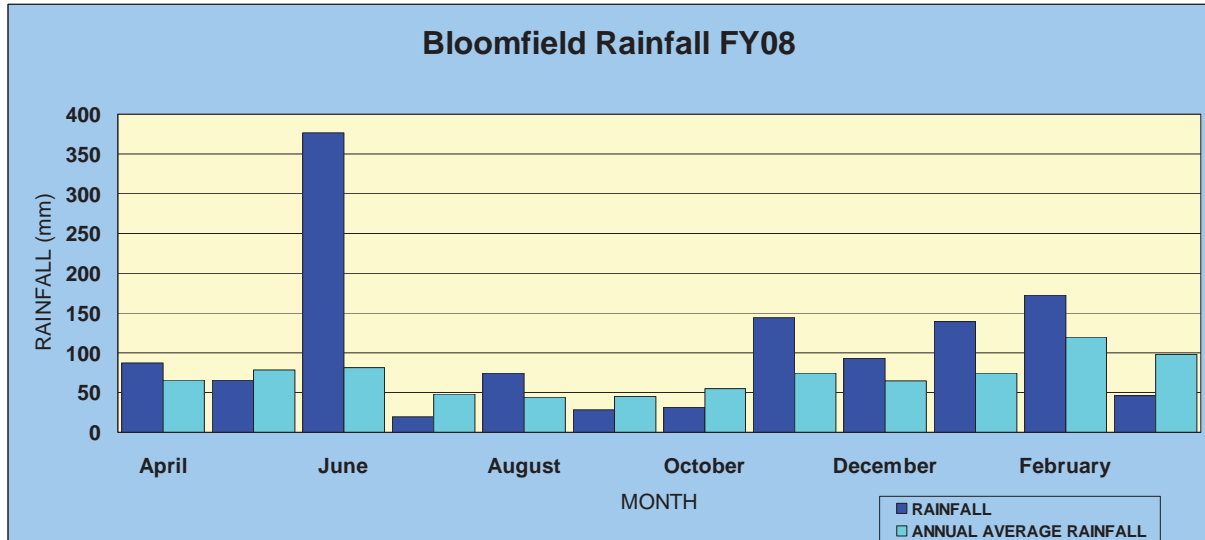


Figure 1: Rainfall.

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 Licence Number 35/028550. Under current WorkCover legislation notification has been made to WorkCover of the substances stored on site. A separate application to store and handle explosives on site has been made.

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 AS 2187. 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 licenced 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. During the reporting period, the CHPP stopped using distillate and MIBC for coal processing and is trialling Nalco frother and collector products as alternatives. As a result, distillate and MIBC is no longer stored at the CHPP.

2.10 Other Infrastructure Management

Silt traps have been excavated at intervals along the edges of haul roads and other hard stand areas to capture surface run off during rain events and settling suspended sediment before dispersing water into adjacent bushland or natural watercourses.

All silt traps, dams, drains, bunds, lines, valves and other infrastructure used to manage environmental impacts are inspected on a quarterly basis as part of the site Environmental Management System (EMS). Any maintenance works required are completed immediately or reported to management for further investigation.

3 ENVIRONMENTAL MANAGEMENT AND PERFORMANCE

3.1 Air Pollution

3.1.1 Environmental Management

Operational dust is the main air quality impact at Bloomfield. Dust impacts may be caused 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. A second Cat 777 water truck was brought into service during the reporting period, providing a fleet of three water trucks to allow for greater coverage and flexibility in dry and/or windy conditions.

Rock drills use dust extraction systems to control dust from the drilling operation. 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.

The CHPP clean coal stockpile pads were recently expanded in area, in accordance with the Abel Consent. The dust suppression spray system has been expanded and upgraded to ensure the expanded stockpile area has adequate dust suppression coverage.

A dust monitoring program has been implemented at Bloomfield. There are a total of 10 dust deposition gauges located on and around the mine lease area. Their location is listed in Table 6 and shown on Plan 2. The dust deposition gauges conform to Australian Standard 2724.1.1984 Ambient Air Particulate Matter, Part I. Determination of Deposited Matter expressed as insoluble solids and ash residue. Gauges have 150-mm funnels located two metres above the ground. Samples are collected by independent environmental consultants and analysed by a NATA registered laboratory.

Table 6: 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	6 Bali Cl. Ashton Field

6	Off Four Mile Creek Road
7	Off New England Highway Avalon Estate
8	Adjacent of Main North Rail line at Rail Loop
10	McNaughton property adjacent to John Renshaw Drive

3.1.2 Environmental Performance

Table 7 summarizes the monthly deposition rates for insoluble solids during the reporting period and includes long-term averages for the site. Full Air quality monitoring results are included in Appendix A.

Table 7: Annual Average Dust Deposition for reporting period

SITE	MAXIMUM RESULT 2008 (g/m ² /month)	MINIMUM RESULT 2008 (g/m ² /month)	YEARLY AVERAGE 2008 (g/m ² /month)	YEARLY AVERAGE 2007 (g/m ² /month)	LONG TERM AVERAGE (1991 – 2008) (g/m ² /month)
1	2.5 (16.3c)	0.9	1.8	2.7	2.1
2	3.5 (4.4c)	0.9	1.9	1.9	2.1
3	7.9	1.9	3.0	1.6	1.7
4	7.6	5.0	-	5.2	2.7
5	2.7	0.5	1.3	2.1	1.6
6	4.1	0.2	1.7	2.0	2.1
7	4.1	0.9	2.0	1.9	1.8
8	3.9	0.9	1.9	2.2	1.4
9	2.5 (34ns)	0.6	1.3	1.2	1.17
10	12.6 (12.9c)	0.6	2.9	2.3	1.76

Note: “c” denotes highest result that may have been contaminated. “ns” denotes result is 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. As with previous years, Site 4 continues to show a number of elevated results, ranging between 5.0 and 7.6 g/m².month. Site 4 was temporarily discontinued due to batter stabilization work in the immediate vicinity. The site will be re-established as Site 4a early in the next reporting period. Dust levels at Site 3 are higher than the previous year and the long-term average, as operational overburden dumps move closer to that vicinity. 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) or vandalised sites, maximum results for offsite gauges (Sites 5-10) are generally below the DECC guideline of 4 g/m²/month. Maximums at Sites 6 and 7 marginally exceeded the guidelines; however, annual averages for those sites are well below the DECC guideline. The maximum result for Site 10 in May (12.6 g/m²/month) is believed to be an anomaly. Prevailing winds for May are from the west and south-east, neither of which would have increased site generated dust contributions at Site 10, which is located to the south-west of the operational areas. The annual average and long-term average for site 10 is below the DECC guideline. 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 2 shows the individual monthly insoluble solids deposition rates for each site during the reporting period, compared with the long term average and DECC guideline of 4 g/m²/month.

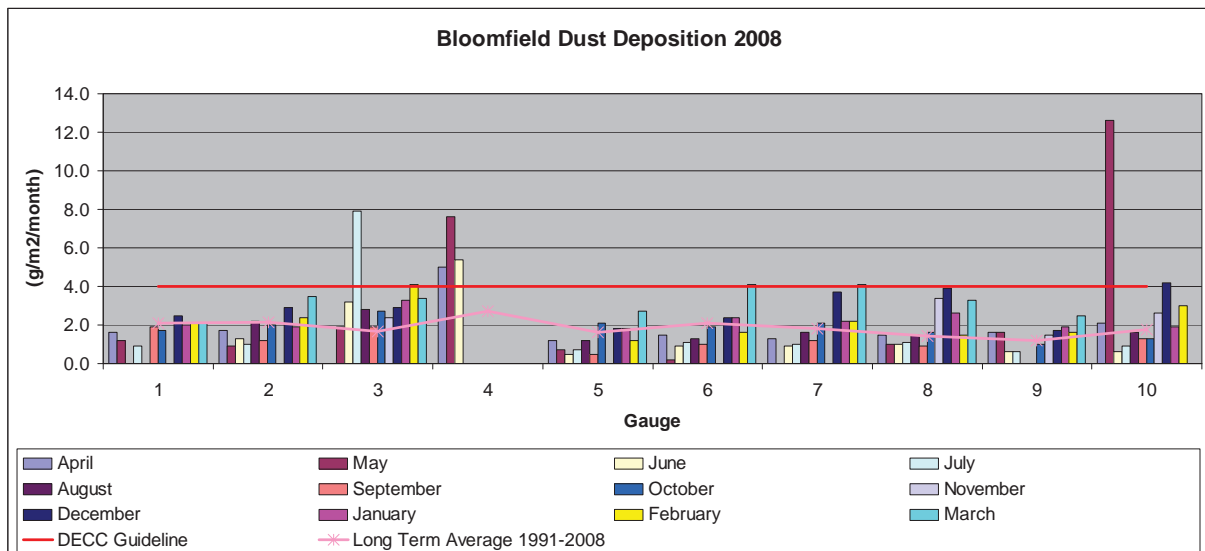


Figure 2: Dust Deposition - Insoluble Solids

Field notes for the following highly elevated results indicate that the gauge was potentially contaminated with insects, vegetation matter or bird droppings.

- Site 1, June 08 – 8.7 g/m²/month;
- Site 1, August 08 – 16.3 g/m²/month;
- Site 2, November 08 – 4.4 g/m²/month;
- Site 7, May 08 – 4.8 g/m²/month;
- Site 7, November 08 – 13.7 g/m²/month;
- Site 9, August 08 – 38.4 g/m²/month;
- Site 10, May 08 – 12.6 g/m²/month; and
- Site 10, July 07 – 12.9 g/m²/month.

Several sites were also vandalized and no result was recorded for certain months.

3.1.3 Reportable Incidents

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

3.1.4 Further Improvements

Modifications to the water supply system to the CHPP dust suppression spray system are planned for the next reporting period, to ensure continuous adequate water pressure.

3.2 Erosion and Sediment

3.2.1 Environmental Management

Erosion and sedimentation control are an integral part of water management. Rehabilitation landform design 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.

Mine water storage dams (primarily Lake Kennerson) are used for the temporary storage of water from the operational open cut area. The temporary storage of this moderately saline water allows sediment to settle out prior to licenced discharge. Augmenting these bulk mine water storages, are sediment detention basins located so as 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 de-silted 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

Total Suspended Solids (TSS) results from discharge sampling are the main indicators of sediment control. TSS results are discussed in Section 3.3 Surface Water Pollution.

Bloomfield has recently implemented a rehabilitation monitoring program, which assesses rehabilitation establishment over 50m transects at 22 sites. Erosion is assessed at each site by a count of active erosion rills along each 50m transect and a qualitative assessment of erosion evidence within the vicinity of the transect. No active erosion rills were identified in the first year of monitoring and, whilst some bare patches were identified which have the potential to develop into erosion if not addressed, erosion was not assessed to be a significant issue in rehabilitated areas of the site.

3.2.3 Reportable 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 was developed as part of a surface water assessment, completed for an Environmental Assessment (EA) in support of Development Application to the NSW Department of Planning. The recommendations of this control plan will be incorporated into mining operations as the mine progresses, in accordance with consent conditions following consent determination.

3.3 Surface Water Pollution

3.3.1 Environmental Management

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 minewater management system (as detailed in Section 2.8), the two major management controls for surface water pollution are *water quality monitoring* and *licensed minewater discharge*.

Water Quality Monitoring: The water monitoring program at Bloomfield consists of discharge sampling, which will be discussed under *licensed minewater discharge*, and background monitoring. The background monitoring sites are centered 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 (W9);
- Lake Foster (W8); and
- Possums Puddle (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.

Additional quarterly analysis was introduced in accordance with the conditions of the Abel Consent. Quarterly analysis now 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 minewater 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 water monitoring station is located on Four Mile Creek, approximately 500m upstream of the New England Highway. This monitoring station measures EC and water flow level (via pressure sensor and V-notch weir) every 15 seconds and logs results every hour or when there is a greater than 5% change in measured results.

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

The Lake Kennerson spillway was also expanded and regraded to reduce erosion and sedimentation potential during times of overflow.

3.3.2 Environmental Performance

Background Monitoring Results: The background water monitoring results are shown in Figures 3 to 5, below. Figure 3 shows EC results for the Four Mile Creek sites.

Figure 4 shows the pH results for Four Mile Creek. Figure 5 shows pH and EC for the site water storages – Lake Kennerson (mine water), Lake Foster (mine water) and Possums Puddle (catchment water).

Figure 3 indicates an increase in salinity levels down the catchment. Four Mile Creek is ephemeral and creek flow and EC levels vary with rainfall and mine discharge. The higher salinity results recorded at the lower sites along Four Mile Creek (Ewells Creek Junction and New England Highway) result from concentration of solutes in ponds during non-flow periods, sampling coinciding with licenced mine water discharge and contribution of flow from off-site sources such as historic underground workings.

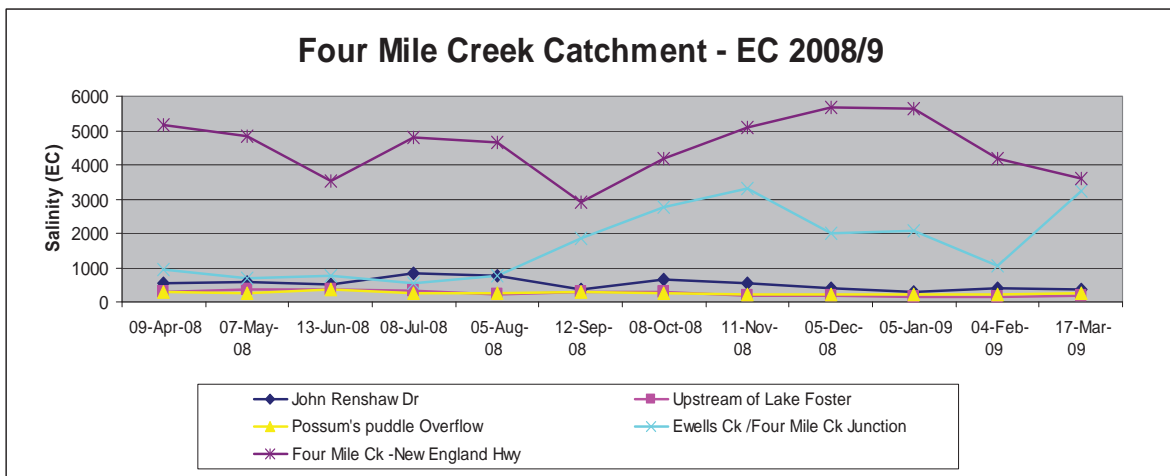


Figure 3: Four Mile Creek Catchment EC.

The pH monitoring results in Fig 4 indicate the levels in Four Mile Creek are generally consistent with water quality guidelines (pH 6.5-8.5).

Several monthly samples from the drainage line adjacent to Rathluba were of low pH. Previous years' 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. Full background water monitoring results are presented in Appendix B.

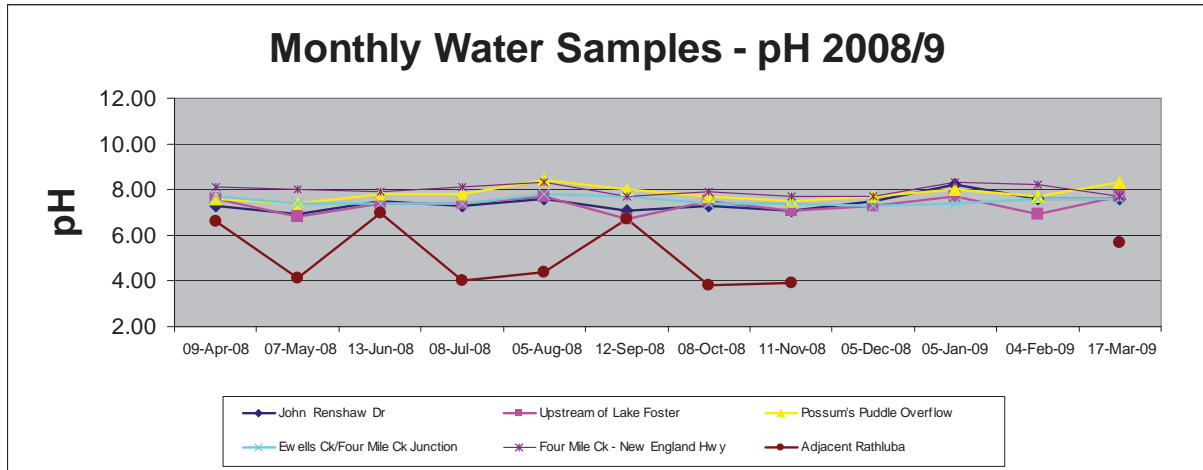


Figure 4: pH Results for Four Mile Creek and Rathluba.

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 licenced discharge events, which are also rainfall dependent (see Figure 5). pH and EC within the freshwater dam (Possums Puddle) remains fairly constant throughout the year as it is separate from mining influences.

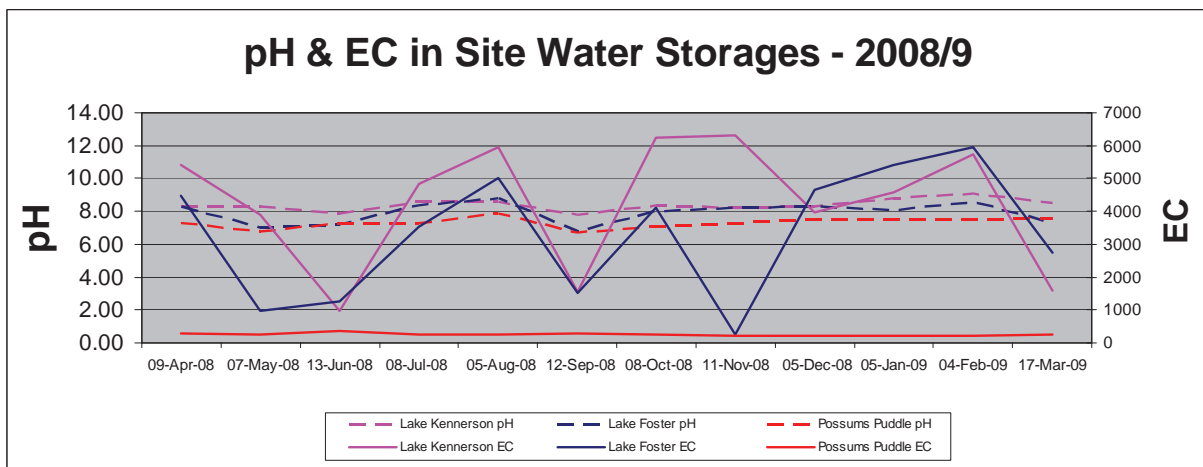


Figure 5: pH and EC in site water storages

Discharge Monitoring Results: 25 days of licenced discharge were conducted during the reporting period, with a total discharge volume of 970ML. Samples collected from two discharges exceeded EPL discharge thresholds for EC. Table 8 shows the water quality results at the discharge point, compared to EPL discharge water quality thresholds. Results are highlighted where EPL discharge water quality thresholds were exceeded.

Table 8: Discharge sampling analytical results

DATE	pH	TSS (mg/l)	TDS (mg/l)	EC (uS/cm)	IRON (mg/l)	DATE	pH	TSS (mg/l)	TDS (mg/l)	EC (uS/cm)	IRON (mg/l)
16-Feb-09	8.2	12.0	3000	4300	0.06	07-Jun-08	8.0	18.0	1150	1980	0
17-Feb-09	8.2	8.0	2560	3770	0	24-Jul-08	8.1	8.0	3674	4670	0
05-Mar-09	7.7	9.0	3100	4000	0	23-Aug-08	8.4	9.0	4345	6975	0
14-Mar-09	8.0	8.0	2800	3600	0	04-Sep-08	8.1	5.0	4530	6335	0
15-Mar-09	7.9	9.0	2600	3300	0	05-Sep-08	8.1	14.0	2890	4110	0
31-Mar-09	8.0	4.0	4310	4800	0	06-Sep-08	8.4	3.0	2760	3620	0
22-Apr-08	8.5	12.0	3735.0	5075	0	07-Sep-08	8.2	4.0	1510	1950	0.13
23-Apr-08	8.4	17.0	3515.0	4660	0	08-Sep-08	8.3	3.0	1720	2905	0.05
24-Apr-08	8.4	16.0	3090.0	5525	0	09-Sep-08	8.0	3.0	1450	1932	0.06
25-Apr-08	8.2	6.0	2820.0	2860	0	23-Sep-08	7.8	13.0	3100	4700	0.05
04-Jun-08	7.8	12.0	2555.0	4165	0	24-Sep-08	8.2	10.0	2635	3005	0.08
05-Jun-08	7.7	12.0	1308.0	2070	0	25-Sep-08	8.2	14.0	2035	3035	0.1
06-Jun-08	7.8	20.0	1258.0	1950	0						
EPL Limits	6.5-8.5	30	n/a	6000	1.0	EPL Limits	6.5-8.5	30	n/a	6000	1.0

No TSS results exceeding EPL discharge thresholds were recorded during this reporting period, indicating a low contribution of sediment to Four Mile Creek from mine water discharge and low potential for associated contamination.

3.3.3 Reportable Incidents

Surface water pollution incidents reported to the NSW DECC in the EPL Annual Return consisted of two instances of EPL pollutant concentration limits being exceeded during discharge. These exceedences are highlighted in Table 9.

3.3.4 Further Improvements

Development Consent is expected to be determined in the next reporting period. The following upgrades to the surface water management system, as recommended in a surface water assessment, will be implemented in accordance with consent conditions:

- a) Implementation of a new Surface Water Management Plan;
- b) Installation of a background monitoring site on Buttai Creek;
- c) The construction of a new sediment control dam in the western extent of the proposed mining area; and
- d) The implementation of a Surface Water Response Plan.

3.4 Ground Water Pollution

3.4.1 Environmental Management

A groundwater investigation was undertaken by an independent hydrogeologist during the previous reporting period, as part of studies being prepared in support of a Development Application. The aim of the investigation was to assess impacts on groundwater resources from continued open cut mining at Bloomfield. One outcome of this investigation was the installation of 24 groundwater piezometers across (at eight locations) across the site and the recommended implementation of a groundwater monitoring program.

3.4.2 Environmental Performance

The quality of groundwater sampled from within the Bloomfield lease is variable, with total dissolved solids (TDS) ranging from less than 1000 mg/L to 13,000 mg/L. pH is close to neutral, with reported values in the range 6.00 to 7.44. The groundwater investigation concluded that no adverse impacts on groundwater quality are expected as a result of the continued open cut mining. The groundwater in the project vicinity is generally saline, and of negligible beneficial use value. No adverse impacts on groundwater quality are expected as a result of the completion of mining and rehabilitation at Bloomfield.

3.4.3 Reportable Incidents

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

3.4.4 Further Improvements

Groundwater pollution has not been identified as a significant risk and no further improvements relating to groundwater pollution are planned. However, the groundwater monitoring program, as recommended in the groundwater assessment, will be implemented following consent determination, which is anticipated during the next reporting period. The monitoring program will consist of:

- Three monthly measurement of water levels in all piezometers;
- Six-monthly sampling of all standpipe piezometers for EC, TDS and pH;
- Annual sampling from all standpipe piezometers for physical properties (EC, TDS, pH), major cations and anions, nutrients, and dissolved metals; and
- Monthly measurement of EC and pH of mine water pumped from the open cuts.

3.5 Contaminated Polluted Land

3.5.1 Environmental Management

No contaminated or polluted land has been identified at Bloomfield. No significant hydrocarbon or chemical spills occurred 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

Procedures are in place at Bloomfield to ensure that adequate assessment is undertaken prior to disturbance of remnant native vegetation. Biodiversity enhancement is also considered during the planning for mined land rehabilitation.

A flora and fauna study of the proposed mining disturbance area was undertaken during the previous reporting period, as part of EA investigations. The aim of the study was to assess potential open cut mining impacts against the requirement of the *Threatened Species Conservation Act 1995* and the *Environmental Protection and Biodiversity Conservation Act 1999*.

3.6.2 Environmental Performance

No vegetation was cleared for Bloomfield mining or coal washing operations during the reporting period.

3.6.3 Reportable Incidents

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

3.6.4 Further Improvements

If clearing of the identified EEC is required as part of future operations, an appropriate mitigation strategy will be implemented, in accordance with anticipated development consent conditions and commitments. Existing pre-disturbance procedures will also be formalised into a documented protocol as part of a Flora and Fauna Management Plan.

3.7 Weeds & Pests

3.7.1 Environmental Management

Bloomfield undertakes an extensive inspection and treatment program each year to control weeds across the site. Approximately \$39,000 was spent across the site on weed

control during the reporting period. Weed spraying is undertaken by a contract weed-sprayer, with mechanical support from mine plant such as dozers and backhoes. Priority of treatment is targeted at pampas grass, blackberry and mother-of-millions. However, areas of lantana were also targeted during the reporting period.

A noxious weeds inspection of those areas of the minesite that lie within Maitland City Council local government area was conducted by the Senior Weeds Officer in September 2008. The inspection report observed that significant improvements have been made by Bloomfield with regards to the control of noxious weeds, but recommended continued action to control pampass grass.

3.7.2 Environmental Performance

No Class 1 or Class 2 declared weeds were identified onsite. The following weed species were identified and treated on-site in the previous reporting period:

- 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 has been maintained at approximately \$70,000. Control of pampass grass and blackberry will remain the priority for the next reporting period, with another area of lantana targeted for treatment during the year as a secondary concern.

It is proposed to undertake feral dog control in the western areas of the mine during the next reporting period.

3.8 **Blasting**

3.8.1 Environmental Management

Blasting is conditionally licenced under the site EPL. The EPL restricts blasting hours, as well as limiting airblast overpressure and ground vibration impacts at the nearest residences. Operational procedures for blasting (known as site laws) require blasts to be designed according to local geological conditions and distance from nearest residences. Blasting is also not allowed under adverse weather conditions (i.e. high wind speed). Public safety is also considered where there is a likelihood that dust generated from the

blast will reduce visibility at the lease boundary, John Renshaw Drive or Mt.Vincent Road.

Blasting techniques are 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 criteria specified in the site EPL.

Each blast is monitored at three nearby residences for ground vibration and overpressure. One monitor is permanently located at the Elliot residence on John Renshaw Drive, immediately to the south of current open cut operations. The second is stationed at the McNaughton residence on John Renshaw Drive to the south-east. The third is located to the east of site at a residence located on the corner of Black Hill Rd and John Renshaw Drive (see Plan 2 for blast monitoring locations). This third monitor is maintained by Donaldson Coal, with blast monitoring data being shared with Bloomfield.

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

An assessment of blasting impacts from proposed open cut operations was undertaken as part of EA investigations during the previous reporting period. The blast prediction results presented in this assessment indicated that predicted airblast and ground vibration levels will meet the DECC guidelines for blasting at all residences surrounding the development during future mining operations.

3.8.2 Environmental Performance

During the reporting period a total of 142 blasts were initiated on the site. Of these, four (2.8%) exceeded 115 dB blast overpressure and four blasts (2.8%) exceeded 5 mm/sec ground vibration. No shots exceeded the absolute limits of 120dB or 10mm/s. All blast results for the reporting period are included in Appendix C.

3.8.3 Reportable Incidents

No reportable incidents, with regards to blasting, occurred during the reporting period.

3.8.4 Further Improvements

It is anticipated that Bloomfield will receive consent determination during the next reporting period. As part of this consent, it is expected that consent conditions will require an upgrade in procedures with regards to community blast notification and blast damage inspections of neighbouring properties. These requirements will be implemented and documented in the Explosives and Blasting Management Plan.

3.9 Operational Noise

3.9.1 Environmental Management

A noise impact assessment of open cut operations was undertaken during the previous reporting period, as part of EA investigations. The noise assessment modeled noise impacts on nearby residences from open cut mining operations for the planned remaining mine life. As a follow up to the original study, Bloomfield undertook significant internal noise monitoring and additional noise modeling during the reporting period to verify noise levels predicted during initial assessment modeling.

Partial shielding of the CHPP was also undertaken during the reporting period, in accordance with commitments made in the Abel EA.

3.9.2 Environmental Performance

No routine noise monitoring or reporting is currently required; however, no complaints relating to operational noise were received during the reporting period.

3.9.3 Reportable Incidents

No reportable incidents relating to operational noise occurred during the reporting period.

3.9.4 Further Improvements

It is expected that Bloomfield will be required to introduce scheduled operational noise monitoring and reporting following development consent determination, which is anticipated during the next reporting period.

3.10 Visual, Stray Light

3.10.1 Environmental Management

A visual amenity assessment of the open cut operations was undertaken during the previous reporting period as part of EA investigations. This assessment noted visual impacts of mine facilities and operations on surrounding residents and vehicular traffic.

Progressive rehabilitation of mining disturbed land is the main strategy for minimising visual impacts from Bloomfield. As well as 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.

With the exception of access tracks, all mined land visible from the Mt Vincent-Buchanan Rd has now been reshaped to low rolling hills, and revegetated to a mixture of pasture grass with tree belts and plots.

Abel EA Statements of Commitment require Bloomfield to ensure night lights facing towards the north do not shine above the horizontal, and to paint visible CHPP infrastructure dark grey. Those lights that could safely be angled below the horizontal

(and still provide safe illumination of night work areas) have been re-aligned to meet this commitment. Those lights that weren't able to be re-aligned for safety reasons were fitted with metal shades to ensure light did not shine above the horizontal.

Painting of the CHPP infrastructure was completed during the reporting period, with those surfaces of the CHPP visible from Ashtonfield being painted a dull grey colour.

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. Bloomfield has also received two enquiries about the location of night lighting – one from Ashtonfield and one from the Buttai Valley.

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

A truck-mounted portable lighting plant has been introduced into service during the reporting period, which allows for greater flexibility and targeted illumination. Operational procedures specify this plant will be positioned in a way that minimizes light spillage to surrounding residences, whilst allowing for the safe illumination of night work areas.

Rehabilitation of areas visible from nearby residences or road traffic will be given the highest priority during mine planning.

3.11 Aboriginal Heritage

3.11.1 Environmental Management

An Aboriginal Heritage Impact Assessment of proposed mining disturbed land was undertaken by an independent archaeological consultant during the previous reporting period. This assessment identified low density stone artifact scatters across six Aboriginal Heritage Sites. These sites were marked and isolated, and the importance of the sites communicated relevant sections of the workforce.

As part of the Abel project, the Bloomfield CHPP stockpile areas are being expanded. A pre-disturbance Aboriginal heritage inspection of these proposed expansion areas was conducted by a representative of Mindaribba Local Aboriginal Land Council (MLALC) during the previous reporting period. No sites or items of heritage significance were identified during this inspection.

3.11.2 Environmental Performance

N/A

3.11.3 Reportable Incidents

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

3.11.4 Further Improvements

Once consent for continued open cut mining has been granted by DoP, an Aboriginal Heritage Management Plan will be developed by Bloomfield in consultation with the MLALC and DECC. This plan will detail the procedures Bloomfield have implemented to identify Aboriginal Heritage ahead of land disturbance and manage identified Aboriginal Heritage Sites, as well as actions to be undertaken on the identification of further Aboriginal Heritage Sites or artifacts.

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 were no incidences of spontaneous combustion recorded during the year and the site historically does not have a problem with spontaneous combustion. Therefore, no management actions were undertaken 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 produced 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.

Hazard reduction burns are conducted by the RFS annually – mainly in Autumn and Spring. 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

Two hazard reduction burns were completed during the reporting period, one to the north of U cut and the other to the east of Lake Kennerson, and no bushfires were recorded on the site during the reporting period. Hazard reduction clearing was undertaken adjacent to nearby residential properties in Ashtonfield.

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

One sink hole was identified, to the north of U Cut, during the reporting period. The hole, and surrounding area, was remediated in accordance with the procedure described above, and the area rehabilitated.

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. Hydrocarbon storages at Bloomfield consist of a bulk diesel storage area at the open cut workshop and two smaller storage tanks at the CHPP for diesel and Methylisobutylcarbinol (MIBC). Usage of these two hydrocarbon products (diesel and MIBC) in the CHPP has been suspended indefinitely, as the company trials the use of substitute products – NALCO frother and NALCO collector.

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. The bunded area at the open cut storage workshop is lined with an impervious 'Claymax' product barrier and drains via a locked-valve sump to an oil separator. Separated hydrocarbons are directed to a waste oil tank for recycling and water to the contaminated water system. The CHPP storage tank bunds are lined with clay and gravel.

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

Bloomfield received six community complaints during the reporting period. Details of these complaints are recorded in the electronic *Community Contacts Register*, which is maintained by the site EO. Four of the complaints were in relation to blasting; two of which were also reported to the DECC enquiries line. The other two complaints were in relation to night lighting (Buttai) and visibility of overburden dumps from Ashtonfield.

4.2 Community Liaison

As part of the EA planning process, Bloomfield conducted a comprehensive community consultation program during previous reporting periods. A newsletter, outlining the proposed project and the DA process, was distributed to all neighbouring residences. Community focus group meetings were held on several occasions throughout the application period to update residents and gain community feedback on the EA/DA process. Finally, a door knocking program, conducted by the Technical Services Manager and a Bloomfield company director, visited neighbouring residences in 2006 to inform residents of the project and DA process.

A follow-up newsletter was distributed and final community focus group meeting was held during the reporting period. Relevant news and updates are also available to the public on the company website: www.bloomcoll.com.au.

It is expected that development consent will be determined during the next reporting period, and that the requirement for the establishment of a Community Consultative Committee will be a consent condition.

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.
- Reinststate 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 approximately 9.2ha of land was rehabilitated during the reporting period, there was still a net decrease in rehabilitated land of 52.7ha recorded for the reporting year (see Table 9). This 9.2ha of rehabilitation consisted mainly of the remaining area in the vicinity of the explosives magazines being completed during the year.

Large areas of maintenance and remedial rehabilitation were completed during the year, mainly in the vicinity of the "Save-a-mile" haul road. Mulching and fertiliser topdressing were also undertaken in existing rehabilitated areas. These activities are summarised in Table 10.

Table 9: 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)	75.0	69.7	78.0
B2:	Active Mining Area (excluding items B3 – B5 below)	48.6	44.0	53.5
B3	Waste emplacements, (active/unshaped/in or out-of-pit)	176.2	144.3	210
B4	Tailings emplacements, (active/unshaped/uncapped)	55.0	55.0	55.0
B5	Shaped waste emplacement (awaits final vegetation)	25.6	27.3	25.0
ALL DISTURBED AREAS		380.4	340.3	421.5
C REHABILITATION PROGRESS				
C1	Total Rehabilitated area (except for maintenance)	465.8	518.5	472.8
D: REHABILITATION ON SLOPES				
D1	10 to 18 degrees	31.95	16.47	33.0
D2	Greater than 18 degrees	-	-	-
E: SURFACE OF REHABILITATED LAND				
E1	Pasture and grasses	460.8	513.5	467
E2	Native forest/ecosystems	-	-	-
E3	Plantations and crops	5	5	5
E4	Other (include nonvegetative outcomes)	-	-	-

F1

F2

Although the active pit area only increases by 4.6ha, active overburden dump area increased by approximately 32ha, much of which was over areas included in C1, *Total Rehabilitated Area* in previous AEMR. 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 10: 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)	-	-	Nil
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, but approximately 248 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)	12	18	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	No pest control undertaken in this reporting period. Feral dog baiting planned for next reporting period.

5.3 Further Development of the Final Rehabilitation Plan

Bloomfield has prepared a Land Rehabilitation Management System (LRMS), which outlines the rehabilitation planning, operation and monitoring process for Bloomfield Group mining operations. This LRMS also presents rehabilitation objectives and completion criteria. A draft closure and rehabilitation strategy for the CHPP areas of the Bloomfield site has also been prepared in accordance with the requirements of the Abel consent.

Detailed information on the proposed final post-mining land-use and landform was also included in the EA that was lodged with DoP during the reporting period. It is anticipated that a Rehabilitation Management Plan will be required for the open cut areas as a requirement of the Bloomfield Open Cut Consent and Bloomfield are hoping to use the LRMS to meet this requirement.

Bloomfield has implemented a rehabilitation monitoring and sign off process, as part of the LRMS. A presentation was made to the DPI-MR during the reporting period, outlining the rehabilitation monitoring and sign off process, and requesting sign-off of additional rehabilitated land. This process was given conditional approval by DPI-MR, subject to compatibility with the anticipated new rehabilitation assessment process to be introduced by DPI-MR in the short-term future.

It is anticipated that, following consent determination, Bloomfield will be required to lodge a new MOP 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.

Table 11: MOP Provisional Rehabilitation Schedule

MOP Provisional Rehabilitation Schedule				
Year	2006	2007	2008	2009
Area to be Rehabilitated (Ha)	30	30	30	30
Cumulative Area Rehabilitated (Ha)	536	566	596	626

The Bloomfield 2003 MOP estimated approximately 30 ha of rehabilitation would be completed annually. This reporting period saw a net reduction in Total Rehabilitated Area, as compared to the MOP scheduled, 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 scheduled activities for the ensuing year will be generally in line with the MOP schedule. Operational methodology will be as described for this reporting period (in Section 2). Production will be marginally less than the MOP Schedule (see Table 10); however, it is expected that overburden will exceed the MOP schedule by up to 1.5 million BCM, increasing the stripping ratio.

Table 12: Mining Operation Plan Procedure Schedule

Year	Overburden (bank Cubic Metres)	Saleable (tonnes)	Strip Ratio
2008	4,201,000	457,000	9.26
2009	4,449,300	506,000	11.05
2010	4,541,000	503,000	10.0
2011	3,031,000	457,000	10.0

As there are few areas available for bulk rehabilitation, is planned to rehabilitate 8 ha in the next reporting period. The emphasis of rehabilitation operations with be centred on remedial rehabilitation and maintenance of existing areas. As such, it is planned that 12 ha of 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 EA for a development application under Part 3A of the NSW Environmental Planning and Assessment Act, 1979 was submitted to DoP during this reporting period. It is expected that determination of this consent will be received during the next reporting period and that modifications to the Bloomfield EMS will largely be driven by conditions contained in the development consent. A new MOP and application for surface mining lease will also shortly follow consent determination.

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

APPENDIX A

AIR QUALITY MONITORING RESULTS

APPENDIX B

MONTHLY WATER QUALITY MONITORING RESULTS

APPENDIX C

BLAST MONITORING RESULTS

Result exceeding EPL limits	5%	Result exceeding EPL limits
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Date	Shot time	Elliot's	Elliot's	McNaughtons	McNaughtons
		Overpressure (dB)	Vibration (mm/s)	Overpressure (dB)	Vibration (mm/s)
7/04/2008	12.26pm	98.3	0.54	100	0.3
17/04/2008	3.35pm	100.5	0.1	104.8	0.27
22/04/2008	1.45pm	103.4	0.45	101.4	0.18
2/05/2008	1.23pm	99.9	0.28	103.9	0.35
8/05/2008	2.06pm	89.4	0.44	103.9	0.32
10/05/2008	9.20am	108	0.5	106.2	0.13
12/05/2008	1.50pm	101.3	0.3	98.5	0.37
13/05/2008	2.28pm	108.6	0.46	103	0.15
16/05/2008	1.40pm	109.4	0.47	106.1	0.17
20/05/2008	9.58pm	100.3	0.49	103.9	0.45
23/05/2008	1.52pm	101.4	1.45	104.8	1.07
26/05/2008	1.45pm	107.6	0.47	108.6	0.05
29/05/2008	3.42pm	88	0.63	98.4	0.44
30/05/2008	10.08am	DNR	DNR	DNR	DNR
5/06/2008	11.50am	DNR	DNR	DNR	DNR
6/06/2008	9.58am	112.6	0.56	109.6	0.13
6/06/2008	12.13pm	DNR	DNR	DNR	DNR
11/06/2008	2.25pm	DNR	DNR	DNR	DNR
17/06/2008	2.47pm	DNR	DNR	DNR	DNR
19/06/2008	1.41pm	DNR	DNR	DNR	DNR
20/06/2008	9.36am	DNR	DNR	DNR	DNR
20/06/2008	10.52am	96	1.58	110.7	0.99
23/06/2008	1.50pm	DNR	DNR	DNR	DNR
27/06/2008	3.02pm	DNR	DNR	DNR	DNR
2/07/2008	9.05am	118	0.29	113.9	0.12
15/07/2008	10.35am	115.8	5.03	118.6	1.21
16/07/2008	1.40pm	107.2	2.59	106.1	0.58
23/07/2008	9.07am	106.1	5.25	103.8	1.79
25/07/2008	10.00am	97.3	2.32	99.5	0.67
30/07/2008	9.07am	99.3	1.96	102.6	0.83
4/08/2008	9.59am	99.5	1.63	97.1	0.59
5/08/2008	9.43am	DNR	DNR	DNR	DNR
12/08/2008	9.25am	104.2	5	102.1	1.07
12/08/2008	1.50pm	108.3	0.27	119	0.21
13/08/2008	11.27am	99.7	2.38	105.5	0.62
15/08/2008	10.17am	105.1	0.61	108.8	0.34
15/08/2008	1.37pm	DNR	DNR	DNR	DNR
18/08/2008	2.58pm	DNR	DNR	DNR	DNR
19/08/2008	2.30pm	DNR	DNR	DNR	DNR
21/08/2008	1.47pm	DNR	DNR	DNR	DNR
22/08/2008	9.40am	DNR	DNR	DNR	DNR
22/08/2008	1.05pm	DNR	DNR	DNR	DNR
25/08/2008	2.54pm	DNR	DNR	DNR	DNR
26/08/2008	12.38pm	DNR	DNR	DNR	DNR

Date	Shot time	Elliots		McNaughtons	
		Overpressure (dB)	Vibration (mm/s)	Overpressure (dB)	Vibration (mm/s)
28/08/2008	9.55am	DNR	DNR	DNR	DNR
2/09/2008	1.44pm	110.4	1.27	108.9	0.4
8/09/2008	11.57am	110.2	1.43	107.2	0.59
8/09/2008	1.42pm	106.6	1.47	100.3	0.45
9/09/2008	9.02am	105.6	2.28	102.3	0.56
9/09/2008	9.45am	103.5	0.86	98.9	0.23
10/09/2008	9.06am	110.4	2.44	108.7	0.39
10/09/2008	1.07pm	109.3	5.49	107	0.7
10/09/2008	1.32pm	109	1.96	104.3	0.5
11/09/2008	9.03am	103.2	1.22	99.2	0.28
11/09/2008	11.56am	109.9	2.1	108.1	0.48
11/09/2008	2.37pm	110.9	2.24	106.3	0.32
15/09/2008	9.50am	109.4	1.72	106.9	0.39
17/09/2008	12.53pm	109.2	2.64	104.5	0.45
17/09/2008	12.57pm	112	2.39	106.3	0.35
18/09/2008	11.06am	107.7	2.54	104.1	0.39
18/09/2008	11.18am	110.5	2.01	104.3	0.39
18/09/2008	1.18pm	109.9	3.13	106.3	0.27
19/09/2008	11.21am	108.5	3.76	105.4	0.41
22/09/2008	9.12am	110.7	2.88	105.6	0.3
26/09/2008	9.01am	108.4	2.89	103.9	0.36
26/09/2008	11.19am	106.3	2.59	103.4	0.3
8/10/2008	9.58am	DNR	DNR	DNR	DNR
9/10/2008	10.03am	DNR	DNR	DNR	DNR
9/10/2008	1.43pm	DNR	DNR	DNR	DNR
14/10/2008	9.49am	DNR	DNR	DNR	DNR
20/10/2008	9.19am	DNR	DNR	DNR	DNR
20/10/2008	9.47am	DNR	DNR	DNR	DNR
20/10/2008	1.46pm	DNR	DNR	DNR	DNR
21/10/2008	3.27pm	DNR	DNR	DNR	DNR
24/10/2008	10.56am	DNR	DNR	DNR	DNR
24/10/2008	11.55am	DNR	DNR	DNR	DNR
29/10/2008	1.36pm	DNR	DNR	DNR	DNR
29/10/2008	1.45pm	DNR	DNR	DNR	DNR
31/10/2008	10.23am	DNR	DNR	DNR	DNR
31/10/2008	10.46am	DNR	DNR	DNR	DNR
6/11/2008	9.21am	DNR	DNR	DNR	DNR
6/11/2008	2.02pm	DNR	DNR	DNR	DNR
12/11/2008	10.11am	106.6	0.08	99.3	0.23
13/11/2008	3.42pm	DNR	DNR	DNR	DNR
19/11/2008	9.55am	DNR	DNR	DNR	DNR
20/11/2008	10.08am	DNR	DNR	DNR	DNR
21/11/2008	11.17am	DNR	DNR	DNR	DNR
21/11/2008	11.37am	DNR	DNR	DNR	DNR
24/11/2008	3.58pm	DNR	DNR	DNR	DNR
25/11/2008	10.52am	DNR	DNR	DNR	DNR
26/11/2008	12.10pm	98.5	0.08	97.1	0.31
27/11/2008	1.35pm	DNR	DNR	DNR	DNR

Date	Shot time	Elliot's	Elliot's	McNaughtons	McNaughtons
		Overpressure (dB)	Vibration (mm/s)	Overpressure (dB)	Vibration (mm/s)
27/11/2008	2.18pm	DNR	DNR	DNR	DNR
28/11/2008	10.12am	DNR	DNR	DNR	DNR
1/12/2008	1.28pm	DNR	DNR	DNR	DNR
2/12/2008	2.58pm	DNR	DNR	DNR	DNR
3/12/2008	1.18pm	DNR	DNR	DNR	DNR
5/12/2008	10.26am	96.8	0.68	98.9	0.67
9/12/2008	1.43pm	DNR	DNR	DNR	DNR
11/12/2008	9.26am	DNR	DNR	DNR	DNR
11/12/2008	9.48am	92.8	0.88	96.7	0.81
15/12/2008	2.38pm	98.8	0.58	95.1	0.48
18/12/2008	9.52am	94.8	0.52	99.6	0.5
18/12/2008	3.31pm	117	0.72	97.6	0.63
22/12/2008	1.51pm	97.6	0.86	98.9	0.63
23/12/2008	2.18pm	95.5	0.67	101.2	0.56
13/01/2009	2.19pm	103.9	0.4	100.9	0.5
14/01/2009	3.46pm	106.5	6.55	105.6	0.89
20/01/2009	10.17am	100.7	4.59	100.9	0.45
20/01/2009	1.57pm	106.7	0.82	107.2	0.28
21/01/2009	9.55am	103.4	4.14	98.1	0.34
21/01/2009	12.44pm	102	1.26	103.7	0.44
22/01/2009	1.45pm	103.6	0.7	104.3	0.19
23/01/2009	1.48pm	102.8	3.37	102.3	0.54
23/01/2009	1.57pm	105.9	2.05	104.7	0.3
27/01/2009	1.22pm	102	0.68	99.6	0.22
28/01/2009	9.29am	103.6	0.93	102	0.18
28/01/2009	1.44pm	104.4	1.82	102.3	0.19
29/01/2009	1.41pm	104.5	3.6	98.5	0.57
29/01/2009	1.48pm	104.3	1.26	101.7	0.27
2/02/2009	10.00am	106.3	2.42	100.6	0.52
3/02/2009	1.47pm	106.3	4.55	99.2	0.35
3/02/2009	2.02pm	105.7	2.1	102.5	0.36
4/02/2009	9.54am	109.5	3.54	104.5	0.3
5/02/2009	11.07am	DNR	DNR	DNR	DNR
5/02/2009	11.20am	107.6	1.47	105.9	0.27
5/02/2009	3.34pm	107	1.18	102.8	0.28
6/02/2009	1.43pm	108.1	1.82	105.3	0.23
6/02/2009	1.57pm	DNR	DNR	DNR	DNR
10/02/2009	1.52pm	107.9	1.27	107	0.32
10/02/2009	2.10pm	DNR	DNR	DNR	DNR
12/02/2009	10.02am	104.7	1.38	101.5	0.3
16/02/2009	9.43am	103.9	1.86	98.5	0.46
19/02/2009	1.03pm	105	4.83	101.5	0.46
3/03/2009	2.10pm	DNR	DNR	DNR	DNR
5/03/2009	3.34pm	DNR	DNR	DNR	DNR
12/03/2009	1.47pm	95.5	0.43	95.7	0.62
18/03/2009	1.47pm	93.7	0.79	99.9	0.54
19/03/2009	1.24pm	92.8	1.79	97.2	1.39
19/03/2009	1.55pm	101	0.38	104.1	0.59

		Elliot's	Elliot's	McNaughtons	McNaughtons
Date	Shot time	Overpressure (dB)	Vibration (mm/s)	Overpressure (dB)	Vibration (mm/s)
26/03/2009	1.56pm	106.7	2.77	104.9	0.83
27/03/2009	2.15pm	100.3	1.76	DNR	DNR
