THE WALLERAWANG COLLIERIES LIMITED

2007 ANNUAL ENVIRONMENTAL

MANAGEMENT REPORT

Name of mine		Baal Bone Colliery	
Titles/Mining Leases		CCL 749, MPL 261, CL 391, ML 1302, ML 1382	
MOP Commencement Date	10/07/2006	**MOP Completion Date**	10/07/2009
AEMR Commencement Date	01/01/2007	**AEMR End Date**	31/12/2007
Name of leaseholder		The Wallerawang Collieries Limited	
Name of mine operator (if different)		Baal Bone Colliery	
Reporting Officer		Tony King	
Title		Environment and Community Co-ordinator	
Signature		.....	
Date	28/02/2008		

Managed by xstrata coal

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SECTION 1.0: INTRODUCTION

1.1 Scope

This Annual Environmental Management Report (AEMR) for Baal Bone Open Cut and Underground mines is prepared annually by Baal Bone Colliery to fulfil the reporting requirements of various regulatory departments.

The layout of this AEMR has been aligned to the Department of Primary Industries – Mineral Resources' (DPI-MR) document: '*Guidelines and Format for Preparations of an Annual Environmental Management Report'*, Version 3, January 2006.

The report will be submitted to the following Authorities:

- Department of Primary Industries –Minerals Resources (DPI-MR);
- Department of Planning (DoP);
- Department of Water and Energy (DWE);
- Lithgow City Council (LCC);
- Department of Environment and Climate Change (DECC);
- Sydney Catchment Authority (SCA);
- Forests NSW.

The reporting period for this AEMR is 1st January 2007 to 31st December 2007.

It should be noted that this AEMR does necessarily provide a comprehensive description of each individual operation or environmental control that is currently employed at Baal Bone; this level of detail is available in the Mining Operations Plan (MOP) for Baal Bone's Underground and Open Cut Operations (July 2006 and as amended).

Rather, this AEMR will focus on providing a succinct review of the significant operational and environmental activities undertaken throughout the year. It will also examine the performance of key site operations and environmental controls throughout the 2007 reporting period.

Included is a summary of monitored data (as applicable), a discussion regarding the level of compliance achieved; together with an overview of initiatives proposed and actions planned for the 2008 reporting period.

1.2 Consents, Leases and Licences

1.2.1 Current Consents, Leases and Licences

During the reporting period, a Part 3A Development Approval was received for the construction and operation of a ventilation shaft and associated power line; a Subsidence Management Plan (SMP) also received approval for the extraction of Longwalls 29 to 31. A list of all current consents, leases, licences and approvals are included below in **Table 1.1**.

Table 1.1. Consents, Leases, Licences and Approvals.

Type	Regulatory Authority	Approval Number	Holder	Issue Date	Expiry/Review Date	Scope
Development Consent	DoP	Nil	Coalex Pty Ltd	13/09/1982	Perpetuity (Under model provisions exp. 01.08.10)	Original development consent for Baal Bone Colliery – coal for export.
			Coalex Pty Ltd	31/12/1992	Perpetuity (Under model provisions exp. 01.08.10)	Section 102 EP&A Act (1979) modification of original Development Consent (13/09/1982) to include road haulage of 150,000 tonnes of coal per annum for industrial purposes
	DoP	164/98	The Wallerawang Collieries Ltd	19/08/1999	30/12/2000	Road haulage of 1.5 million tonnes of coal per annum for domestic market.
				25/08/2000	31/12/2003	Modification to DA 164/98 for the extension of coal haulage time for 900,000 tonnes of coal on the haulage road from Baal Bone Colliery by public road.
				23/12/2003	31/12/2015	Modification to DA 164/98 for the extension of the duration of the haulage road from Baal Bone Colliery to Mt Piper and Wallerawang Power Stations.
	Greater Lithgow Council	186/95	The Wallerawang Collieries Ltd	27/02/1996	Perpetuity	Development consent for open cut mining and associated development of Boxcut as part of the Northern Extension
	DoP	07_0035	The Wallerawang Collieries Ltd	24/10/2007	Perpetuity	Ventilation Shaft and Power Line Project
Environment Protection Licence	DECC	765	The Wallerawang Collieries Ltd	28/04/2006	17/11/2009	Premises and Scheduled Activity (Coal Mining/ Washery) Licence
Mining Operations Plan	DPI – MR	06/4648	The Wallerawang Collieries Ltd	10/07/2006	10/07/2009	MOP for Baal Bone Colliery OC and LW 25-28.
Mining Leases	DPI - MR	CCL 749	The Wallerawang Collieries Ltd	05/04/1990	23/03/2010	Mining Entitlement (Consolidates MPL 209, CL 246, CL 329, CL 330, CL331 and CL332) Various depths – refer Plan A
	DPI – MR	MPL 261 (Act 1973)	The Wallerawang Collieries Ltd	22/08/1990	22/08/2011	Mining Entitlement (Southern mine dewatering bores) Parish: Ben Bullen, Depth: Surface - 10m
	DPI – MR	CL 391 (Act 1973)	The Wallerawang Collieries Ltd	24/02/1992	24/02/2013	Mining Entitlement Parish: Ben Bullen Depth: > 20m

Type	Regulatory Authority	Approval Number	Holder	Issue Date	Expiry/Review Date	Scope
	DPI – MR	ML 1302 (Act 1992)	The Wallerawang Collieries Ltd	29/09/1992	29/09/2013	Mining Entitlement Parish: Ben Bullen Depth: >20m
	DPI – MR	ML 1389 (Act 1992)	The Wallerawang Collieries Ltd	09/05/1996	09/05/2017	Mining Entitlement Parish: Ben Bullen Depth: Surface – unlimited Surface - 20m
S126(1) Approval	DPI – MR	317524306001	Baal Bone Colliery	14/11/2005	Perpetuity	Section 126(1) of the CMRA (1982) Construction and operation REA V
Clause 88(1) Approval	DPI – MR	C05/2226	Baal Bone Colliery	17/08/2007	31/01/2009	Extension to original Section 138 CMRA (1982) approval (dated 09/05/05) to mine longwalls 25-28
Subsidence Management Plan	DPI-MR	06/7570	Baal Bone Colliery	07/12/2007	01/12/2014	Subsidence Management Plan for Extraction of Longwalls 29-31, Lithgow Seam
Occupation Permit	Forests NSW	14719	Baal Bone Colliery	05/03/1991	Perpetuity	Occupation permit relevant to the power line route from the company's freehold land to MPL 261 (Long Wall 1 Mine dewatering bore). Extension in 2002 to include clearing, access path and discharge pipeline.
		14161	Baal Bone Colliery	08/03/1991	Perpetuity	Occupation Permit for the powerline that supplies power to the railway loop on the western edge of Ben Bullen State Forest.
S22H (1)(a) Approval	DWE	N/A	Baal Bone Colliery	27/07/1991	Perpetuity	Section 22H(1)(a) of the Rivers and Foreshores Act (1948) exemption. Permission to undertake activities on streams and drainage lines within the Baal Bone Mining Leases
Bore Licences	DWE	80BL127440	The Wallerawang Collieries Ltd	03/06/2003	02/06/2008	Section 115 of the Water Act 1912. Bore – potable water supply (adjacent to southern boundary of site) – no longer in use not to be renewed in 2008
	DWE	80BL136703	The Wallerawang Collieries Ltd	14/01/2008	13/01/2013	Section 115 of the Water Act 1912. Bore – (under UC1 and UC2). Main washery water make-up bore near UC1
	DWE	80BL135509	The Wallerawang Collieries Ltd	09/06/2007	08/06/2012	Section 115 of the Water Act 1912. Borehole No. 6 near Rail Loop; washery make-up and dust suppression
	DWE	80BL236132	The Wallerawang Collieries Ltd	18/01/1995	Perpetuity	Section 115 of the Water Act 1912. Bore – Mine dewatering Long Wall 1 (South Bore 1)

Type	Regulatory Authority	Approval Number	Holder	Issue Date	Expiry/Review Date	Scope
	DWE	80BL236134	The Wallerawang Collieries Ltd	18/01/1995	Perpetuity	Section 115 of the Water Act 1912. Bore – Mine dewatering Long Wall 1 (South Bore 2)
	DWE	80BL239077	The Wallerawang Collieries Ltd	19/06/2006	18/06/2011	Section 115 of the Water Act 1912. Bore – Mine dewatering Long Wall 19. North Bore.
	DWE	10BL601877	The Wallerawang Collieries Ltd	08/06/2007	Perpetuity	BBN175; LW29-31 groundwater monitoring piezo
	DWE	10BL601816	The Wallerawang Collieries Ltd	08/06/2007	Perpetuity	BBN176; LW29-31 groundwater monitoring piezo
	DWE	10BL601817	The Wallerawang Collieries Ltd	08/06/2007	Perpetuity	BBN177; LW29-31 groundwater monitoring piezo
	DWE	10BL601970	The Wallerawang Collieries Ltd	05/09/2007	Perpetuity	BBN 179; LW29-31 groundwater monitoring piezo
Water Licence	DWE	80SL046064	The Wallerawang Collieries Ltd	17/07/2007	17/07/2012	Section 12 of the Water Act 1912. Diversion works, 2 pumps, overshot and block dams, bywash dam.
Acknowledgement of Dangerous Goods on Premises	Work Cover Authority	35/023231	The Wallerawang Collieries Ltd	05/04/2007	05/04/2008	Dangerous Goods Licence.
Radiation Gauge	DECC	29207	The Wallerawang Collieries Ltd	20/12/2007	16/01/2011	To sell and posses – Radiation Control Act 1990. Coal quality sensing device
	DECC	1123	The Wallerawang Collieries Ltd	15/10/2007	15/09/2009	Registration Certificate – Radiation Control Act 1990; fixed radiation gauge.

Abbreviations:

CCL – Consolidated Coal Lease
CL – Coal Lease
CMRA – Coal Mines Regulation Act 1982
DA – Development Application
DEC – Department of Environment and Conservation
DNR – Department of Natural Resources
DoP – Department of Planning
DPI-MR – Department of Primary Industries - Mineral Resources
EPL – Environment Protection Licence
ML – Mining Lease
MOP – Mining Operations Plan
MPL – Mining Purposes Lease
REA - Refuse Emplacement Area

1.2.2 Amendments During the Reporting Period

Following a thorough review of 2006 site operations, combined with the results of a MOP Audit conducted in December 2006 and together with a review of proposed and completed

activities in late 2007, Baal Bone identified several areas within the MOP that required amendment.

An amendment was prepared to address the following aspects:

- a delay in the underground mining sequence as a result of poor roof conditions in late 2006 and early 2007
- a future extension of life of mine due to an expansion of underground operations into LW's 29-31 (the "south-east extension")
- subsequent retention of the southern open cut void to cater for fine and coarse reject storage for extended life of mine, together with an amendment to the rehabilitation program for this area
- minor alterations to the final void in the northern open cut area so as to maintain potential future access into the lease's northern underground reserves.

This Amendment (No. 4) was accepted by the DPI-MR on 14th November 2007. A fifth amendment is currently in the final stages of preparation and will include the ventilation shaft and the extraction of LW's 29-31.

Four piezometers were also installed during 2007, in order to monitor groundwater levels prior to, during and following extraction of LW's 29-31. These have subsequently been licenced by the Dept. Water and Energy, and are identified above as 10BL601877, 10BL601816, 10BL601817 and 10BL601970.

1.3 Mine Contacts

Baal Bone Colliery can be contacted via telephone on (02) 6350 6900 and fax (02) 6359 0530. The postal and street addresses are as follows:

Postal: Baal Bone Colliery
PO Box 13, Lithgow NSW 2790

Street: Baal Bone Colliery
Off Castlereagh Highway
Cullen Bullen, NSW 2790

Personnel responsible for environmental issues at Baal Bone Colliery are shown in **Table 1.2**. The current organisation chart is shown in **Figure 1.1**.

Table 1.2. Mine Personnel Contact Details

Contact Person	Position	Contact Details
David Hetherington	Operations Manager	Ph: (02) 6350 6928 Email: dhetherington@xstratacoal.com.au Fax: (02) 6359 0596

Ray Smith	Technical Services Manager	Ph: (02) 6350 6945 Email: rsmith@xstratacoal.com.au Fax: (02) 6359 0530
Tony King	Environment and Community Co-ordinator	Ph: (02) 6350 6920 Email: tking@xstratacoal.com.au Fax: (02) 6359 0530

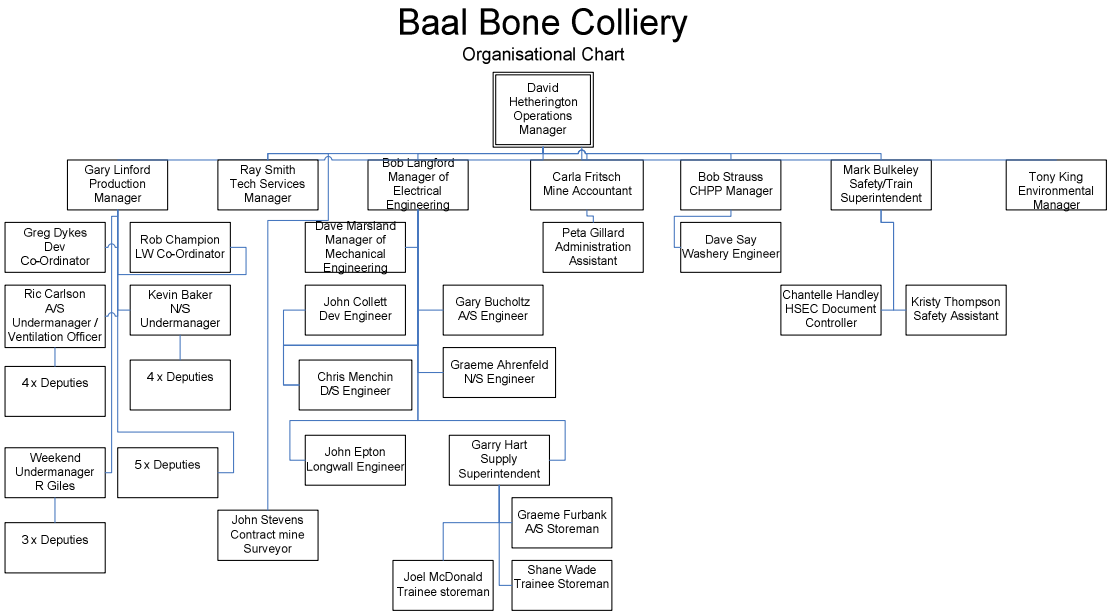

Figure 1.1. Baal Bone Organisational Chart

1.4 Actions Required at Previous AEMR Review and Site Inspection

The Dept. Primary Industries – Mineral Resources, Dept. Environment and Climate Change and Lithgow City Council representatives attended a Joint Agency AEMR review meeting and site inspection at Baal Bone Colliery on 3rd April 2007. The purpose of the meeting was to review progress of site operations and to discuss issues relating to environmental management and performance for the 2006 AEMR reporting period. Actions arising from the review are detailed in **Table 1.3** below.

Table 1.3. Actions from a Review of the 2006 AEMR and Annual Environmental Inspection

Action Required	Where dealt with in this AEMR
Include drawing or map showing all internal and external water monitoring points (previously only external monitoring points as required by EPL were shown)	Section 3: Drawings 1 & 2

Action Required	Where dealt with in this AEMR
Clearly distinguish between EPL required water quailty monitoring points and internal water quality monitoring points	Section 3: Drawings 1 & 2 Table 3.1
Ensure all current Departmental names are used in the Consent, Leases, Licences and Approvals Table.	Table 1.1
Identify background EC levels in Jews Creek for research purposes	Not included in AEMR; information was supplied directly to DPI-MR in email dated 22.08.07
Consult with Lithgow City Council prior to commencement of biosolids trial	Not included; planning for biosolids trail has not progressed during 2007
Baal Bone to reply to Judith Egan's letter regarding development consent for exploratory drilling	Not included; Baal Bone responded directly to Judith Egan in a letter dated 19.06.07
Baal Bone to provide current estimate of mine rehabilitation liability	Information regarding liability assessment conducted in late 2006 was provided directly to DPI in email dated 09.08.07. Current estimate completed in January 2008 has been included in Section 5.5.2

1.5 Employment Status and Demographics

Employment details for staff based at Baal Bone Colliery are found in **Tables 1.4 – 1.7** below:

Table 1.4 Employment Type

Employment Type	Number of persons in reporting period
Permanent	178
Contractor	30

Table 1.5 Male/Female Breakdown of Workforce

Gender	Number of persons in reporting period
Male	202
Female	6

Table 1.6 Residential Location of Employees

Residential Location	Number of persons in reporting period
Lithgow Shire	182
Bathurst	11
Blue Mountains	7
Mudgee	2

1.6 Environmental and Community Vision and Policy

Baal Bone Colliery has developed an Environment and Community Vision and Policy. These policies have the commitment and support of Baal Bone Management and have been developed with the Xstrata Coal NSW (XCN) Environment and Community Vision and Policy. They are displayed in prominent locations accessed by the workforce, contractors and visitors, as well as being provided on the intranet for all staff awareness. The Environment and Community vision and policy confirms Baal Bone's commitment to being recognised leaders in environmental management and valued operators within the community.

1.7 Enduring Value – The Australian Mineral Industry Framework for Sustainable Development

Xstrata Coal is a signatory to "Enduring Value – The Australian Minerals Industry Framework for Sustainable Development". As Baal Bone Colliery is owned and managed by Xstrata Coal Pty Ltd. (Xstrata Coal), it is obliged to operate within the guidelines for environmental management as part of Enduring Value..

1.8 National Pollution Inventory

In December 1997, the NSW Parliament passed a number of new legislation that saw the start of the National Pollution Inventory (NPI) reporting process. The NPI is an internet database designed to provide the community, industry and the government with information on the types and amounts of certain substances being emitted to the environment.

In late September 2007, Baal Bone Colliery submitted an NPI report for the period of 1st July 2006 to 30th June 2007. The report detailed emissions of listed substances from Baal Bone Colliery to air, water and land requiring collation, analysis and interpretation of site-specific data. Results can be obtained from the NPI website www.npi.gov.au.

SECTION 2.0: OPERATIONS DURING THE REPORTING PERIOD

2.1 Exploration

A confirmation drilling programme within CCL 749 was conducted in Q2 2006 to confirm resource potential and to assess potential structural zones to the south and east of current underground workings.

A continuation of this confirmation drilling programme was undertaken in late 2006 to identify the exact location and extent of the previously identified Coxs River lineament that is adjacent to the proposed south east extension of the underground workings. This work was finalised in January 2007.

2.2 Land Preparation

During the 2007 reporting period land preparation activities have proceeded in accordance with the detail discussed in the current MOP (with amendments).

2.2.1 Clearing and Vegetation Disposal

Throughout 2007 a total of 82,242 m^2 of grassland was cleared ahead of advancing open cut operations. Several isolated tress were also removed as part of this process and these have been set aside specifically for use in the open cut rehabilitation program.

In mid December 2007, 2,500 m^2 of vegetation was cleared within the Ben Bullen State Forest as part of the ventilation shaft project. All vegetative material was mulched using a tub grinder and has been retained for use in the rehabilitation phase of the project.

There were no other additional areas of clearing or vegetation disposal associated with underground or opencut operations during the reporting period.

2.2.2 Topsoil Volumes and Subsoil Removal

The total volume of topsoil and subsoil materials (aka. freedig) removed by the open cut operations during the reporting period was approximately 230,000 m^3.

Approximately 85,000 m^3 of this material was subsequently respread to cover rehabilitation areas in the northern open cut precinct. A further stockpile of approximately 350,000 m^3 of freedig material has been set aside for use in future rehabilitation works at mine closure.

2.3 Construction

The existing administration, amenities, workshops and coal handling infrastructure associated with the Baal Bone Colliery should remain unchanged for the remaining life of mine. Surface

facilities and infrastructure are shown on **PLAN 1**. Further construction activities were not envisaged during the preparation of the MOP in June 2006.

Since this time however, the life of mine has been extended by a further 26 months with approval to extract 4.3 million tonnes of minable coal in longwall panels 29-31. Accordingly, construction of an 11 kV transmission line and an upcast ventilation shaft has begun; this will provide ventilation to the south east extension of the underground operations.

Following receipt of the necessary consents and approvals, construction and operation of the vent shaft and transmission line is being included in an Amendment to the MOP. The vent shaft location is illustrated on **PLAN 2**.

2.4 Mining

2.4.1 Underground Mining Activities

Underground operations continue to extract coal using longwall mining methods. Underground coal is conveyed to the Coal Handling and Preparation Plant (CHPP) where it is washed, graded and stockpiled. Export coal is loaded onto trains at Baal Bone's rail loop and delivered to Port Kembla.

2.4.2 Open Cut Mining Activities

The Baal Bone Open Cut Operation commenced in 2005 for:

- the recovery of remaining viable open cut reserves within the Lithgow coal seam contained within the northern section of the abandoned Ben Bullen Open Cut Mine; and
- the generation of suitable overburden and capping material for the rehabilitation of the abandoned Ben Bullen Open Cut site.

Baal Bone Open Cut Operation utilised a truck and excavator operation to remove overburden, to extract and transport coal to the open cut ROM stockpile. This coal was then crushed and dispatched directly to Mt Piper Power Station. Open cut operations ceased in July 2007 and all open cut areas (with the exception of the reject emplacement area) have been, or are currently being rehabilitated.

2.4.3 Current Reserves and Estimated Mine Life

Approximately 1.39 million tonnes of minable coal remain in longwall panels covered by the current MOP (LW 25-28), with extraction scheduled for completion in Q4 2008.

Mine life has been extended by a further 26 months with approval to extract 4.3 million tonnes of minable coal in longwall panels 29-31. An application under Part 5 of the EP&A Act and a Subsidence Management Plan were prepared and lodged with DPI-MR in mid 2007.

Open cut extraction was completed in July 2007.

PLAN 1 & **PLAN 2** shows the current mine layout and lease areas for both the open cut rehabilitation areas, reject emplacement areas, underground operations and associated surface facilities.

2.4.4 Production

The total Run of Mine (ROM) production for the 2007 reporting period was approximately 2.025 million tonnes. The principle export markets for the product in 2007 were Japan, Korea and Taiwan. A small quantity of coal was also supplied to several domestic customers including Mount Piper Power Station and Bluescope Steel (BHP). **Table 2.1** shows the production record for 2005-2007 at Baal Bone Colliery.

Table 2.1 Production Record (2005 -2007) for Baal Bone Colliery (1000 tonnes)

Product	2005	2006	2007
Domestic	767	629	0
PCI	148	159	147
Premium	-	-	-
Thermal	1498	1770	1410
Total Saleable	2414	2558*	1557
ROM Production	2913 (UG) 543 (OC)	1840 (UG) 648 (OC)	1614 (UG) 411(OC)

* total coal sold in 2006 exceeds ROM production due to a significant stockpile carry over from 2005

2.4.5 Resource Utilisation

Both open cut and underground operations target the Lithgow Seam of the Illawarra Measures. This is the only seam in the area of sufficient thickness and quality to warrant economic recovery. Other seams in the Baal Bone area do not justify mining operations.

The Lithgow Seam in the open cut area ranged in thickness from 1.9-2.7m and was mainly of dull, medium volatile and generally non-swelling bituminous coal of moderate ash content (average 19.4%) and low sulphur content (0.6%) (Corkery & Co., 1995). The overburden to coal ratio averaged 6 BCM/t.

The Lithgow Seam in the underground workings ranges from 2.25-2.5m in thickness and the full seam height is extracted.

2.4.6 Changes in Mining Equipment or Method

Mining method remains the same as the previous reporting period. The major mining equipment fleet utilised at Baal Bone during 2007 is outlined in **Tables 2.2a, b** and **c** below.

Table 2.2a. Open Cut Mining Equipment

Equipment Type	Number of units
Hydraulic Excavator (L994 Excavator Liebherr P3447)	1
Haul Trucks (785B Dump Trucks)	4
Diesel Rotary Drill (Drill Gardner Denver)	1
Dozers (D9R Dozer Caterpillar P.23816, D11RCD Dozer Caterpillar P.23905)	2
Water Cart (Water Truck Miscella P.27482)	1
Grader (14G Grader Caterpillar P.22551)	1
Lube/Fuel/Service Cart (Service Truck Mack P.27483, Mobile Compress P.26479)	2
Lighting Plants	6
966D Tyre Handler P.23035	1
Hired Plant P.31874	1

Table 2.2b Washery Equipment

Equipment Type	Number of Units
Caterpillar Dump Truck (773)	1
Dozers (Michigan W 380, CAT D11)	2
Caterpillar Front End Loader (966F)	1
Bobcat Skid Steer Loader (753)	1
Washery Water Cart	1
Toyota Landcruiser Utility	1
Gradall Forklift	1

Table 2.2c Underground Mining Equipment

Equipment Type	Number of Units
Bobcat Skid Steer Loader	1
913 Eimco	4
912 Eimco	1
915 Eimco	1
130 Eimco	2
Forklift	2
Domino Road Grader	1
PJB Man transports	8

During 2007 the CHPP decommissioned a Tiger 690B and a Clarke 380B wheeled dozer. With the cessation of open cut mining in July 2007 and the finalisation of outstanding rehabilitation/bulk land shaping works in August 2007, the plant identified in Table 2.2a above was stood down. Whilst some of this plant and equipment has been removed from site by the contractors, a significant quantity still remains stored temporarily at Baal Bone.

2.5 Mineral Processing

Baal Bone produces three grades of washed coal, principally for the export market; these being 9%, 14% & 18% ash coal.

During the 2007 reporting period 1.614 Mt ROM underground coal was washed at a nominal rate of 550 tonnes per hour, compared with 1.84 Mt washed during the 2006 reporting period.

During the reporting period 411,000 tonnes of open cut coal was produced; 34,815 tonnes of this was crushed, stockpiled and dispatched directly to Mount Piper Power Station. The balance was blended, washed and dispatched for export as 18% ash product.

There have been no changes or additions to the process or facilities during the reporting period.

2.5.1 Production, Processing and Waste Summary

Table 2.3 shows production and waste for the reporting period plus an estimate for the 2008 reporting period. It must be noted that open cut ROM coal is not washed prior to delivery to Mount Piper Power Station.

Table 2.3 Production, Processing and Waste Summary

	Cumulative Production			
	Start of Reporting Period	2007 Total (non cumulative)	**End of Reporting Period**	**End of next reporting period (estimated)**
Topsoil stripped (m^3)	790,104	229,988	1,020,092	1,020,092
Topsoil used/spread (m^3)	376,224	85,316	461,540	491,540
Waste Rock (open cut) (m^3)	4,031,682	1,778,844	5,810,526	5,810,526
ROM coal (1000 tonnes)	51,926	2025	53,951	55,951
Processing Waste (CHPP) (1000 tonnes)	11,252	645	11,897	12,497
Product (1000 tonnes)	40,410	1,557	41,967	43,467

2.5.2 Product Destination and Transportation

During the reporting period there were no changes to the product transportation process. Product destination and tonnages for 2007 has been summarised in **Table 2.4** below.

The total quantity of coal dispatched from Baal Bone during the reporting period included a total of 1,433,354 tonnes by rail and 44,336 tonnes by road. This compares to 628,194 tonnes dispatched by road during the 2006 reporting period. Baal Bone holds a Development Consent to transport up to 900,000 tonnes per annum by public road to the Mount Piper and Wallerawang Power Stations.

Coal haulage by road to Mount Piper Power Station under the most recent Delta contract was concluded in January 2007. Due to the current strong price of export coal, and the relatively weak prices for domestic thermal coal, it is not envisaged that coal delivery to the power stations will recommence in the short to medium term.

Table 2.4 Product destination and tonnages for 2007

Destination	**Tonnes dispatched (2007)**	**Mode of transportation**
Export – Port Kembla	1,336,965	Rail
Delta Electricity – Mount Piper Power Station	34,815	Road
Bluescope Steel – Port Kembla	96,389	Rail
Manildra Flour Mill and Australian Paper Mill – both in Nowra	6,622	Road
James Cummings – Auburn	2,437	Road
Sanitarium – Newcastle	282	Road
Other Domestic	180	Road

2.6 Waste Management

2.6.1 Washery Waste

Baal Bone Colliery reject comprises a mixture of high ash coal and non-coal materials, such as sedimentary rock and clay. These materials occur both within the coal seam and as floor or roof materials extracted during the mining operation. They are rejected during the beneficiation process on a specific gravity basis.

2.6.2 Coarse Reject

Baal Bone's coarse reject has a particle size ranging from 100 mm to 100 micron and comprises approximately 22% of Washery feed. Analysis of the Baal Bone coarse reject material confirms that it is non saline and pH is near neutral with negligible acid producing capacity. It does however exhibit poor physical characteristics with a coarse texture and low water holding capacity.

Even though it is chemically benign, this material is not suitable for use as a growth medium. All reshaped areas are therefore covered with a minimum of 300mm of soil (freedig) material to provide a covering layer in which a sustainable and protective vegetative cover will be established.

Coarse rejects are currently being strategically placed around in and around the southern open cut void to eventually create the design final landform. Three dimensional modelling completed in late 2006 confirms that a further 4.73Mt of coarse reject can be placed in this area. Based on current production rates this area should provide sufficient capacity for the remainder of the life of mine.

2.6.3 Fine Reject

Fine Washery reject is generally smaller than 100 micron in diameter and comprises around 7% of Washery feed. Fine reject is pumped as 20–25 % w/w slurry to the designated tailings emplacement area contained within the southern open cut void.

Baal Bone Colliery currently disposes of fine rejects in Reject Emplacement Area 5 (REA 5) which was commissioned in early 2006. Planning for Reject Emplacement Area 6 (REA 6) has been completed and a Section 100 (CMH&S Act) application is currently before the DPI-MR. The construction of REA 6 will utilise the void of the southern open cut workings and will have a volume of approximately 485,000m^3 and based on current delivery rates will have an adequate capacity for fine material emplacement up until closure of mining activities in 2011.

Leachate generated by REA 6 is to be collected in an adjacent leachate collection dam and will be returned to the process water circuit for reuse by the CHPP.

It is expected that REA 5 will be decommissioned in Q2 2008 and will be capped, covered and rehabilitated in Q2 or Q3 2009. REA 2A and REA 4 were decommissioned and rehabilitated during 2006 and these areas were ameliorated, seeded and fertilised in October 2007. This was

in conjunction with the remainder of the rehabilitation areas in the southern open cut precinct which was completed during August and September.

2.6.4 Open Cut Waste Rock

During the reporting period approximately 1,778, 844 bcm of overburden and waste rock was generated as a result of the open cut operations. This material was strategically placed in and around the disturbed areas in the northern open cut area to create the final design landform.

2.7 Ore and Product Stockpiles

The maximum working capacity of the Baal Bone coal stockpiles (both ROM and product) is approximately 1,000,000 tonnes.

During April 2007 the maximum tonnage of stockpiled underground ROM coal reached 242,829 tonnes and the maximum tonnage of stockpiled washed coal peaked at 189,538 tonnes in August.

2.8 Water Management

The Baal Bone Water Management System Flow Chart is shown schematically in **Figure 2.1**. The location of some monitoring points and the analysis undertaken at each of these were reviewed in Q1 2007. Discussions have been held with DEC in this regard.

2.8.1 Process Water Circuit

Baal Bone Colliery has a cyclic Process Water Management System. That is, all site runoff is directed into and is reticulated around the Process Water Circuit for use in general site operations and the CHPP. Some water is discharged into the Jews Creek through an EPL licenced discharge point during high intensity rainfall events.

As at 31st December 2007, approximately 92 ML of water was held within the process water circuit, see **Table 2.5**. This water is used throughout the CHPP at a rate of 2.5 ML/day. Up until cessation of open cut mining in July 2007, an additional 0.5 ML/day is supplied to the open cut operations for dust suppression purposes.

Tailings slurry from the CHPP is pumped to the tailings dam at an average rate of 150 m^3/hr. From the tailings dam, water is gravity fed through a filter embankment to the leachate collection dam, from where it is pumped back into the Dirty Water Dam.

Water from the Dirty Water Dam is subsequently pumped into the Process Water Dam prior to redistribution to the CHPP and to the underground operations for wash down, dust suppression and fire fighting purposes.

2.8.2 Potable Water

Potable water is purchased from State Water and is supplied through a connection into the Fish River Water Supply Pipeline. This connection services the administration centres and bathhouses, and is also used underground in a solcenic emulsion for the longwall hydraulic roof support system. Drinking water is also taken underground in containers.

The annual potable water bill received from State Water is based on a usage period from 1st July 2006 to 30th June 2007. This invoice confirmed that for the twelve months to June 2007, Baal Bone used 29.95 ML of potable water; a reduction of 12.63 ML from the previous year.

Table 2.5 Stored Water at Baal Bone Colliery

	Volume Held			
	Start of Reporting Period	**End of Reporting Period**	**Volume lost/gained**	**Maximum Storage Capacity**
Dirty Water Dam	20 ML	30 ML	10 ML, gained	37 ML
Process Water Dam	50 ML	55 ML	5 ML, gained	55 ML
Box Cut Sump	3 ML	6.9 ML	3.9 ML, gained	6.9 ML
Controlled Discharge Water (Salinity Trading Schemes)	Nil	Nil	Nil	Nil
Contaminated Water	Nil	Nil	Nil	Nil

2.8.3 Sewage Treatment and Disposal

Sewage and grey water effluent from site facilities, including the administration building, bathhouse, CHPP and amenities are collected in a sump and directed through macerator pumps to an on-site sewage treatment plant (STP). The waste is treated by an activated sludge treatment process then is discharged into two maturation ponds, with a total residence time of approximately 20 days.

Following treatment and maturation the overflow from the second pond discharges onto a well vegetated transpiration bed; this is an EPL Discharge and Monitoring Point. The location of the STP and maturation ponds is shown on **PLAN 1**.

Contra-Shear Technology has been engaged by Baal Bone to provide formal operational reviews of this system in December 2006 and January 2008.

2.8.4 Changes to the Water Management System During 2007

The Box Cut Sediment Dam was removed in Q4 2006 due to the advancing open cut operations. Whilst this was a Licenced discharge point it had not been utilised for a

considerable period of time as the Box Cut precinct was no longer an active underground mining area.

All water from the Box Cut sump, which previously discharged through this point, now discharges directly into the LW19 goaf and is eventually pumped to the surface by the north mine dewatering bore and is discharged into Jews Creek via Licenced discharge point No. 6.

In times of severe water deficit the opportunity remains to return water from the Box Cut Sump into the Dirty Water Dam for incorporation into the process water circuit.

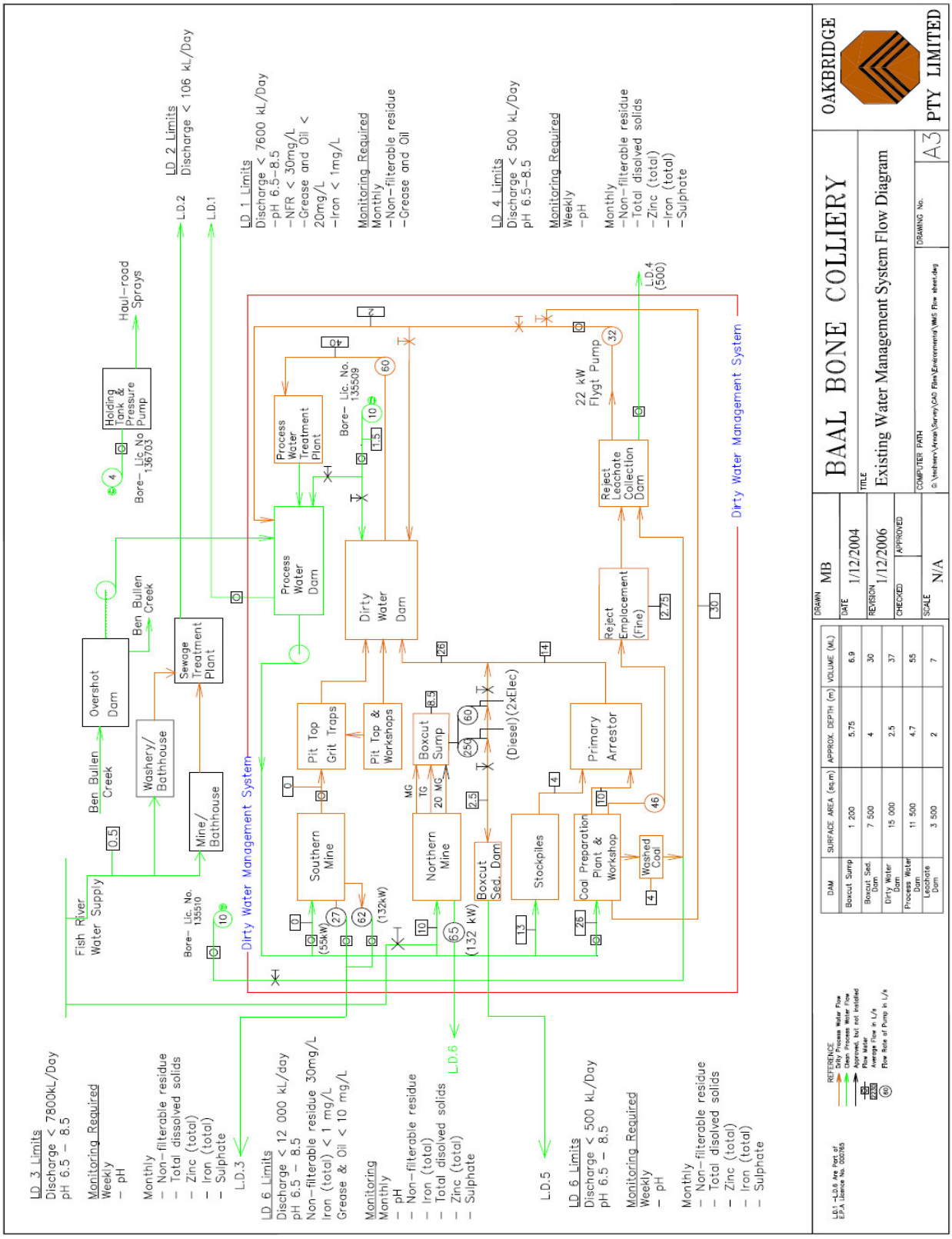

Figure 2.1. Baal Bone Water Management System Flow Chart

2.9 Hazardous Material Management

2.9.1 Status of Licence

Baal Bone holds an *Acknowledgement of Notification of Dangerous Goods on Premises* (35/023231). In order to be granted a licence to store explosives, in accordance with the Explosives Regulation (2005), Baal Bone has nominated suitable persons to hold an Unsupervised Handling Licence following appropriate state and federal security background check. Accordingly the Explosive and Detonator Magazine was also included in the Acknowledgement.

Details of hazardous materials stored on-site during the reporting period are provided in **Table 2.6.** Location of the storage of hazardous goods can be found on **PLAN 1**.

Table 2.6 Hazardous Materials Stored On Site

Hazardous Material	Dangerous Goods Classification	Maximum Quantity Stored	Storage Type
Explosives; blasting, Type A	Class 1.1D	480 kg	Surface Explosive Magazine
Detonator, non-electric and electric	Class 1.1B	1000 kg	Surface Explosives Magazine
Petroleum gases, liquefied	Class 2.1	45,500 L	Above Ground Tanks (Pit-top and CHPP)
Diesel	Class C1	50,000 L	UST (Pit-top)
Diesel	Class C1	47,000 L	AST (CHPP)

2.9.2 Material Safety Data Sheets

Under Baal Bone Colliery's Environmental Management System (EMS) there is a Hazardous Substance Standard (HSEC STD 5.03 – Hazardous Substances), which deals with the safe storage, handling and disposal of chemicals and other hazardous substances. Materials Safety Data Sheets (MSDS) are made available to all employees at the Store facility.

The Colliery also has a comprehensive online "Chemalert" database, which provides all employees easy assess to information on all chemicals held on site. Information includes but is not limited to: the safe handling of products, Personal Protective Equipment (PPE) requirements, storage, use and disposal of the materials and spill response procedures. Chemalert is available on most PCs including the one for general employee use in the lamp room.

2.10 Other Infrastructure Management

The location of existing infrastructure is shown on **PLAN 1**. There were no changes to the existing infrastructure during the reporting period, nor were there changes or additions to processes or facilities.

SECTION 3.0: ENVIRONMENTAL MANAGEMENT AND PERFORMANCE

Baal Bone Colliery maintains and operates an Environmental Management System (EMS), which has been prepared to reflect industry best practice and to specifically address Development Consent conditions, approvals, licence and other statutory requirements.

Detailed Plans of Management and Performance Standards for a wide range of environmental elements have subsequently been developed. These Plans and Standards detail relevant control measures, management strategies, monitoring requirements, reporting procedures and performance expectations/criteria.

SP Solutions Pty Limited conducts annual Broad Brush Risk Assessments (BBRA) at Baal Bone, with the 2007 review completed in October. Being a Broad Brush Risk Assessment this review tends to focus on high level health, safety, environmental and community issues.

In conjunction with a wide ranging EMS review completed during 2007, Baal Bone also commissioned a full Environment and Community Risk Assessment (ECRA); this was conducted by SP Solutions in March 2007.

This process enabled a more comprehensive range of risks to be assessed and facilitated development of an updated Aspects and Impacts Register for Baal Bone. All management plans and operating procedures were reviewed accordingly and updated as required; several new documents were also developed so as to better manage identified risks / deficiencies.

It should be noted that this Section of the AEMR does necessarily provide a comprehensive description of each individual environmental control mechanism that is currently employed at Baal Bone; this level of detail is available in the Mining Operations Plan (MOP) for Baal Bone's Underground and Open Cut Operations (July 2006, with Amendments).

Rather, this Section will focus on providing a succinct review of the performance and/or modification of key control measures throughout the 2007 reporting period. Also included is a review of significant activities undertaken or actions completed throughout the year, a summary of monitored data (as applicable), a discussion regarding the level of compliance achieved; together with an overview of initiatives proposed and actions planned for the 2008 reporting period.

3.1 Air Pollution

3.1.1 Wind Speed and Direction

The Ben Bullen Range (and State Forest) provides reasonable shelter from winds with the exception of those from the north-west which have a clear fetch of approximately 12km upwind of the site. However, strong winds from the southwest and southeast may funnel through the gaps in the Ben Bullen Range and along the valleys.

Wind speed and direction at Baal Bone is comparable to the wind conditions from the Lithgow (Birdwood Street) Weather Station. Historic seasonal wind roses for this weather station are found in **Figure 3.1**.

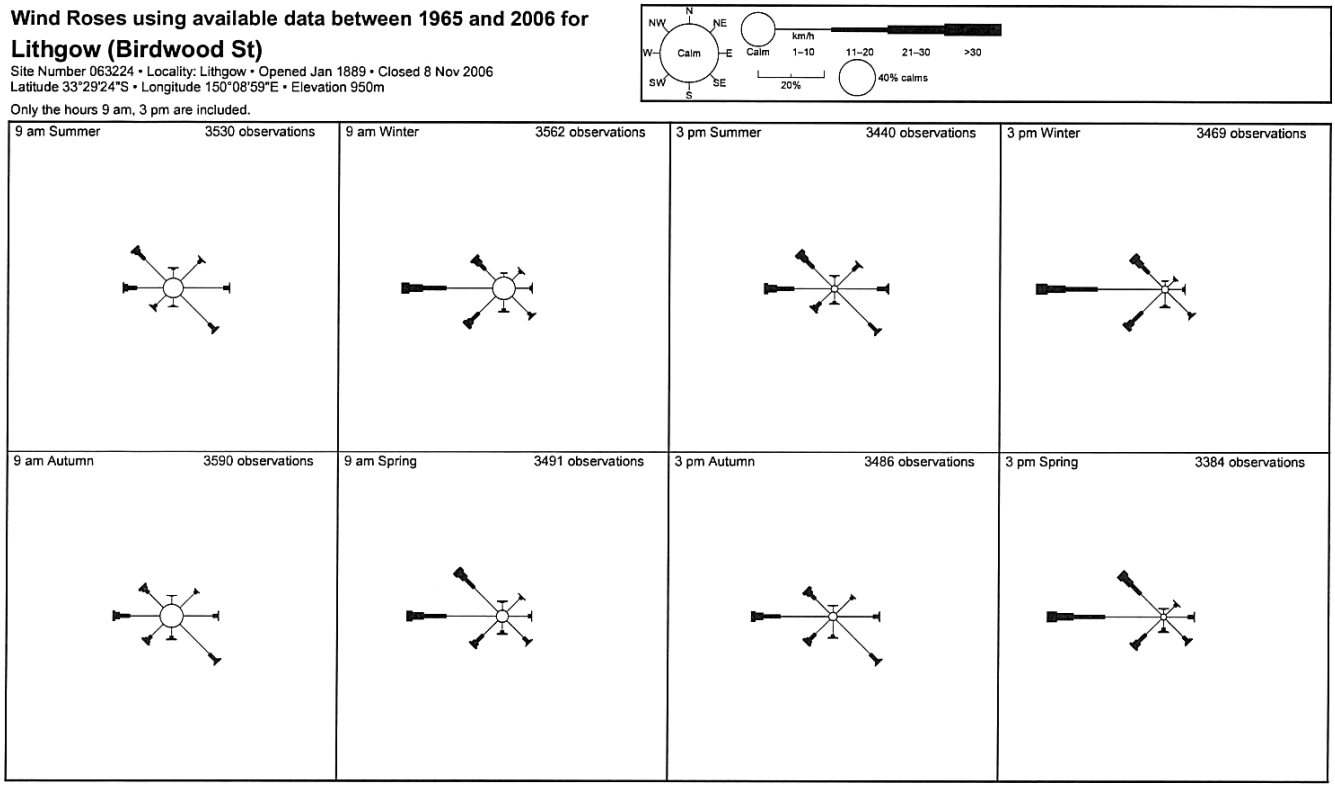

Figure 3.1 Historic Wind Roses for the Lithgow Weather Station (Birdwood Street)

3.1.2 Dust Monitoring and Sample Locations

Monthly dust fall-out monitoring is carried out in accordance with Australian Standard AS3580.10.1 and EPL requirements. Baal Bone has engaged Ecowise Environmental Pty Limited, a NATA Accredited laboratory, to undertake monthly sampling, monitoring and analysis.

Baal Bone maintains a network of 4 dust deposition gauges to monitor dust levels around site and in the vicinity of our nearest neighbour, these are:

- Sample Location DM1 (EPL Monitoring Point No. 7)
- Sample Location DM2 (EPL Monitoring Point No. 8)
- Sample Location DM3 (EPL Monitoring Point No. 9)
- Sample Location DM4 (EPL Monitoring Point No. 10)

Location of these gauges are illustrated on **Drawing 1**.

3.1.2 Modifications to the Dust Monitoring Network

There has been no change to any location of Ball Bone Colliery's dust fallout monitoring network during the reporting period.

3.1.3 Review and Interpretation of Dust Monitoring Results

Levels of *Total Solid Particles* were monitored in accordance with EPL 765 and the DECC Guideline of 4.0g/m^2/month has been adopted as a reasonable maximum level. Results of dust fallout monitoring conducted during the 2007 reporting period are illustrated graphically in **Figures 3.2 – 3.5** below.

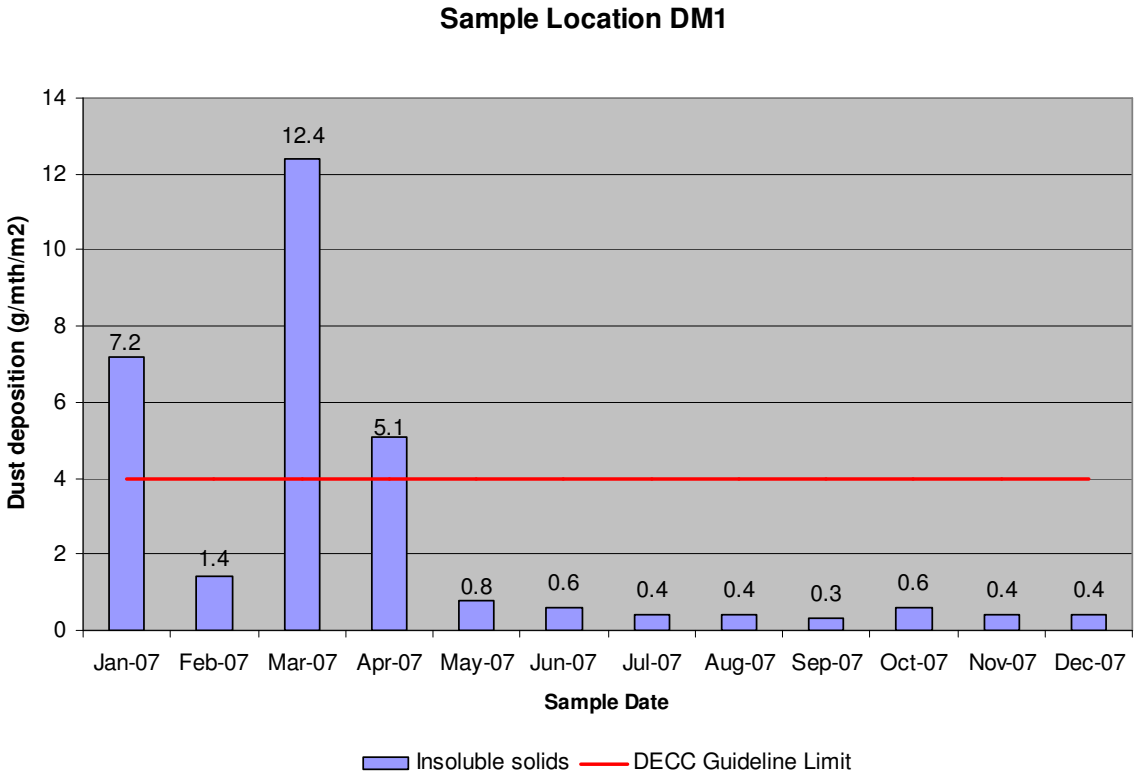

Figure 3.2. Monthly dust deposition results for Sample Location DM1

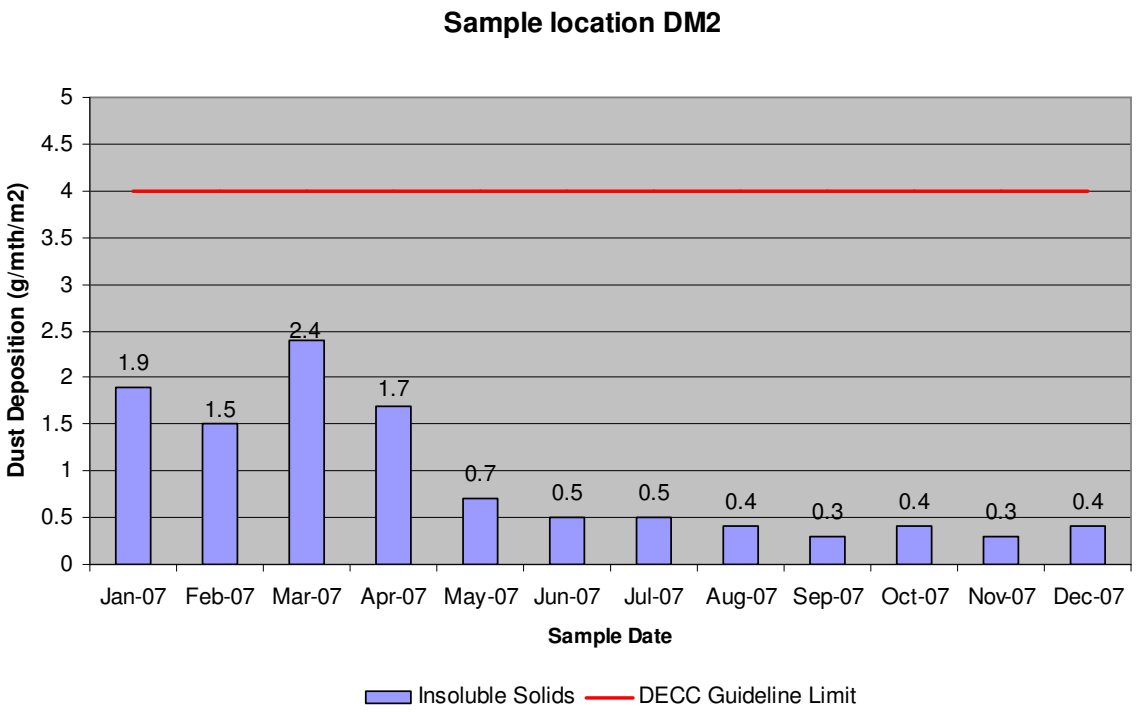

Figure 3.3. Monthly dust deposition results for Sample Location DM2

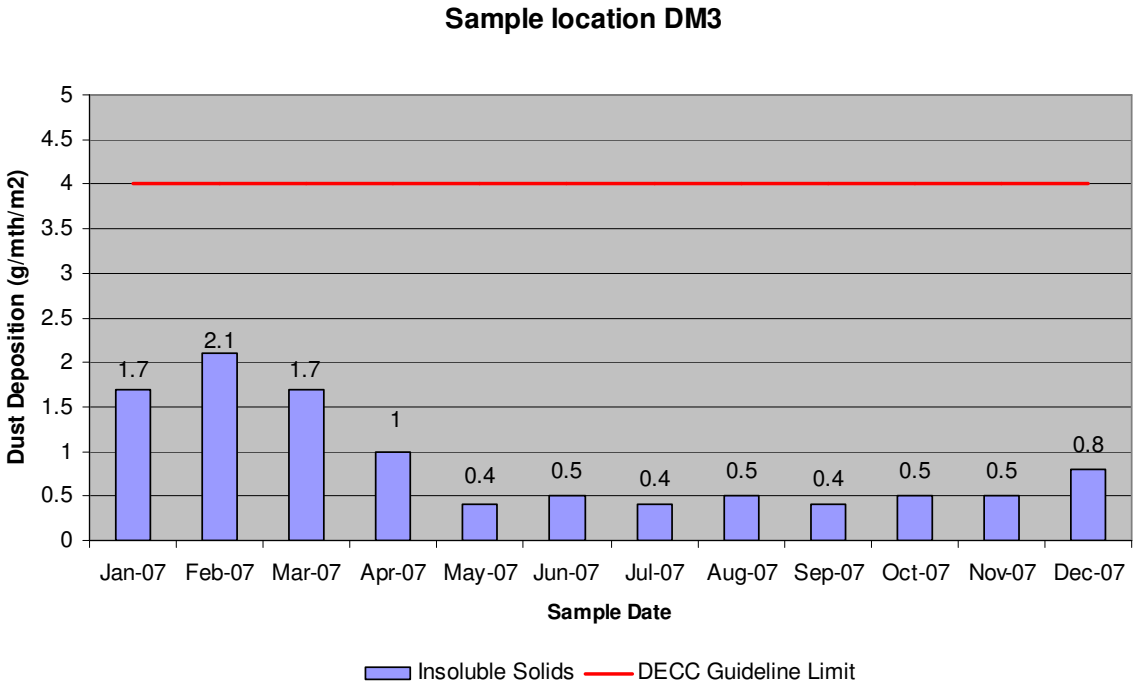

Figure 3.4. Monthly dust deposition results for Sample Location DM3

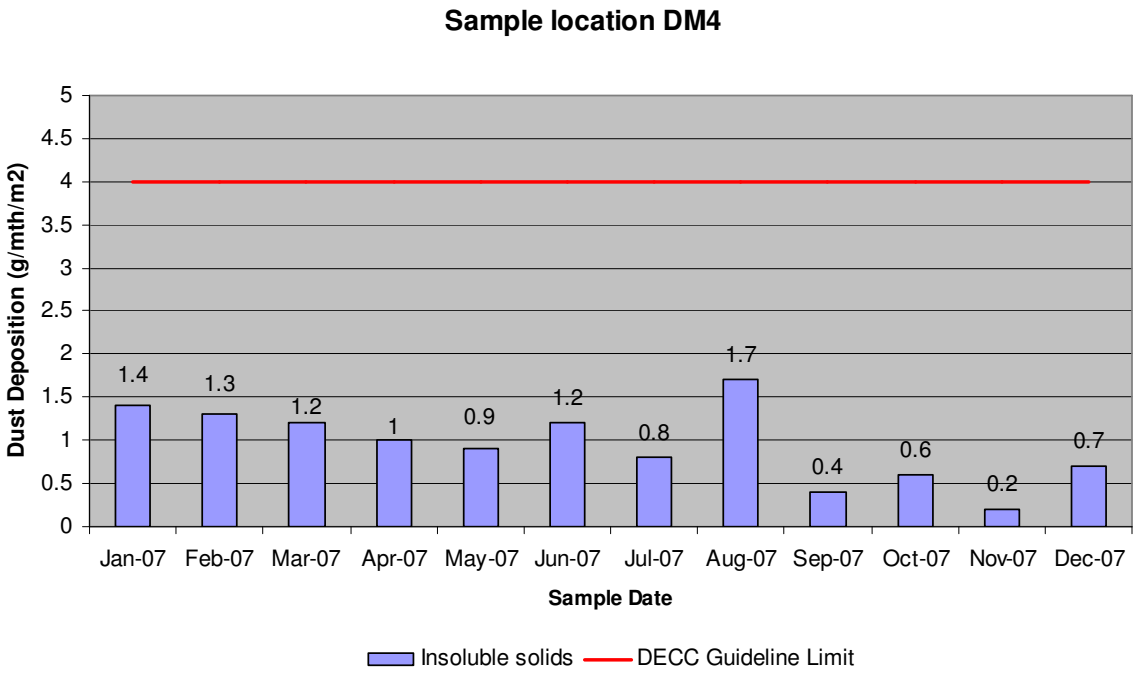

Figure 3.5. Monthly dust deposition results for Sample Location DM4

All four dust deposition gauges were sampled monthly during the reporting period. With the notable exception of the January, March and April readings for DM1, all other monthly concentrations of *Total Solid Particles* were well below the DECC Guideline, based on AS 3580.10.1-1991, which suggests that the annual dust deposition average should not exceed 4.0g/m^2/month .

As soon as the high results for January became evident an inspection of the monitoring location was undertaken. Dust deposition gauge DM1 is located in an adjacent rural paddock to the west of Baal Bone's Coal Handling and Preparation Plant (CHPP). This land is not owned or managed by Baal Bone.

During the inspection it was noted that there were cattle in the paddock and these were subsequently found to be lousy. The cattle were observed walking around and around the dust monitor enclosure rubbing against the fence. Due to the dry conditions they were creating a large amount of dust which was being deposited directly into the gauge. Photographs of the site were taken by Baal Bone to substantiate the condition of the site at the time of inspection.

Field sheets supplied by the sampling contractor also confirmed the presence of "brown" material which reflects the colour of local soils and is not consistent with that of carbonaceous material from the CHPP.

Rains during February accounted for a much lower deposition rate for the month (ie. 1.4 g/m^2/mth).

No other abnormal or unseasonal spikes were recorded during the reporting period.

3.2 Erosion and Sediment Control

In non-active areas of the mining lease, there have been negligible levels of erosion and sedimentation. Agisted livestock were removed in Q2 and Q3 2007 so as to ensure the maintenance of a satisfactory level of ground cover during the dry conditions. However, good spring and early summer rains have subsequently resulted in a very good level of ground cover.

As discussed in Section 2, all active surface mining and rehabilitation areas fall within Baal Bone's Surface Water Management System which is subdivided into "clean water" and "dirty water" systems. Features of the "clean water" system includes upslope diversion banks, levee banks, lined channels and drains and reed beds within the Ben Bullen Creek; features of the "dirty water" system include graded contour banks, containment bunds, primary arrestor/grit traps, sediment dams, water treatment plant and settlement dams.

The dirty water system is incorporated into Baal Bone's process water circuit. This is a closed circuit which provides water for the CHPP, in addition to water for dust suppression, fire fighting and general underground operations. Water from this circuit is reused and is not discharged from site

The Overshot Dam is located on the Colliery's northern boundary and is the final point of containment for the clean water system. It also provides an additional opportunity for settlement and/or other treatment if required. The discharge from the Overshot Dam is a Licenced Discharge point that is noted on EPL 765.

3.2.1 Activities During the Reporting Period

Rehabilitation activities in both the southern and northern open cut areas progressed well during 2007, with approximately 42 ha and 13.5 ha seeded in the southern and northern open cut precincts respectively. An additional 82 ha in the northern open cut precinct has been prepared and is currently awaiting soil amelioration and seeding.

A restoration plan for the Ben Bullen Creek diversion was prepared in June 2007. This plan incorporates the philosophy of natural channel design, and attempts to recreate a system of pools, riffles and meanders. Following consultation with NSW Fisheries and the Dept. Water and Energy (previously DNR) construction of two grade stabilising structures within the creek were also completed during 2007.

Further detail regarding rehabilitation activities are included in Section 5.

3.3 Surface Water

Baal Bone has engaged Ecowise Environmental Pty Limited, a NATA Accredited laboratory, to undertake monthly sampling, monitoring and analysis of a range of surface and subsurface waters.

Baal Bone maintains a network of 7 licenced Discharge and Monitoring Points in accordance with EPL 765 (viz. LD1, LD2, LD3, LD5, LD6, LDP1 and WMP1) (**Drawing 1 & Drawing**

2). In addition, another 23 monitoring points are located throughout the site and the data obtained is used to assist internal management and planning decisions.

A description of discharge and monitoring sites, analyses conducted, frequency of sampling and concentration limits (where applicable) are shown in **Table 3.1** below.

Table 3.1. Baal Bone Colliery Water Monitoring Locations and Monthly Analysis

NB: Monitoring points highlighted in yellow indicate Licenced Discharge and Monitoring Points.

Sample Name	Sample Location	Frequency	Pollutants Analysed	EPL Limits Apply
BBLD1	EPL Monitoring Pt No.1 Immediately below V-notch weir at outlet of process water dam	Monthly during discharge	EC, oil & grease, iron, TSS, pH, flow rate	Not specified
BBLD2	EPL Monitoring Pt No.2. In sump at discharge from STP maturation pond to transpiration bed area	Monthly during discharge	Oil & grease, TSS, pH, BOD, faecal coliforms, nitrogen, phosphorus	Not specified
BBLD3	EPL Monitoring Pt No. 3. In stilling pond at pipe outlet of south mine dewatering bores	Monthly during discharge	EC, oil & grease, sulphate, iron, TSS, pH, MBAS, Pseudomonas, flow rate	Oil & grease, pH, TSS,
BBLD5	EPL Monitoring Pt No. 5. Discharge from box cut sediment dam	Monthly during discharge	EC, oil & grease, sulphate, iron, TSS, pH	Oil & grease, pH, TSS, iron
BBLD6	EPL Monitoring Pt No. 6. In stilling pond at pipe outlet of north mine dewatering bore	Monthly during discharge	EC, oil & grease, sulphate, iron, TSS, pH, MBAS, Pseudomonas, flow rate	pH, iron, TSS
BBLDP1	EPL Monitoring Pt No.11 Immediately below the pipe outlet or in stilling pool below spillway of overshoot dam	Monthly during discharge	EC, oil & grease, sulphate, iron, TSS, pH, flow rate, hardness, MBAS, nitrogen, phosphorus	Oil & grease, pH, TSS, iron
BBWMP1	EPL Monitoring Pt No. 12 Pool within Ben Bullen creek upstream of active surface mining area	Monthly (during flow)	EC, oil & grease, sulphate, iron, TSS, pH, flow rate, hardness, nitrogen, phosphorus	Not specified
BBPOT	Potable water from main bathroom in Administration	Monthly	pH, EC, Hardness, heterotrophic standard plate count, total coliforms, E coli, Pseudomonas	
BBBH	Potable water from Washery bathroom	Monthly	pH, EC, Hardness, heterotrophic standard plate count, total coliforms, E coli, Pseudomonas	
BBLR	Leachate pond on western side of REA5	Monthly	EC, oil & grease, sulphate, iron, TSS, pH, flow rate	
BBMW No.5	Mine water discharge	Monthly	Flow rate, pH, EC, TSS, iron,	

Sample Name	Sample Location	Frequency	Pollutants Analysed	EPL Limits Apply
	pipeline adjacent to No. 5 Adit	(only if discharging)	sulphates, oil & grease, MBAS, heterotrophic standard plate count, faecal coliforms, pseudomonas	
BBMW No.3	Mine water discharge pipeline adjacent to No. 3 Adit	Monthly (only if discharging)	Flow rate, pH, EC, TSS, iron, sulphates, oil & grease, MBAS, heterotrophic standard plate count, faecal coliforms, pseudomonas	
BBPit 1	Pit-top grit trap/oil separator (eastern)	Monthly (only if discharging)	pH, oil & grease, MBAS	
BBPit 2	Pit-top grit trap/oil separator (western)	Monthly (only if discharging)	pH, oil & grease, MBAS	
BBPit 3	Washery grit trap/oil separator	Monthly (only if discharging)	pH, oil & grease, MBAS	
BBDW	Dirty water dam	Monthly	EC, Iron, oil & grease, pH, Sulphate, TSS, Hardness, MBAS	
BBPRW	Process water dam	Monthly	EC, Iron, oil & grease, pH, Sulphate, TSS, Hardness, MBAS, heterotrophic standard plate count, pseudomonas	
BBSTP1	STP Maturation Pond No 1	Monthly	pH, BOD, Faecal coliforms, nitrogen, phosphorus	
BBSTP2	STP Maturation Pond No 2	Monthly	pH, BOD, Faecal coliforms, nitrogen, phosphorus	
BBBC	Box cut sump	Monthly	pH, EC, iron, sulphates	
BBBBC Mid	Ben Bullen Creek mid-way through site	Monthly (during flow)	Flow rate, pH, EC, TSS, iron, sulphates, hardness, oil & grease, nitrogen, phosphorus	
BBBBC End	Ben Bullen Creek upstream of the Overshot Dam	Monthly	pH, EC, TSS, iron, sulphates, hardness, oil & grease, nitrogen, phosphorus	
BBJ	Jews Creek junction with discharge channel from Overshot Dam (downstream of all mining operations and dewatering bore discharges)	Monthly (during flow)	Flow rate, pH, EC, TSS, iron, sulphates, hardness, oil & grease, nitrogen, phosphorus	
BBJC2	Jews Creek upstream of mining operations, but below dewatering bore discharges	Monthly (during flow)	Flow rate, pH, EC, TSS, iron, sulphates, hardness, oil & grease, nitrogen, phosphorus	
BBJC3	Jews Creek at	Monthly	Flow rate, pH, EC, TSS, iron,	

Sample Name	Sample Location	Frequency	Pollutants Analysed	EPL Limits Apply
	confluence with un-named flowline from mine dewatering bore discharge	(during flow)	sulphates, hardness, oil & grease, nitrogen, phosphorus	
BBJCH	Jews Creek headwaters upstream of all mining operations and mine dewatering discharges	Monthly (during flow)	Flow rate, pH, EC, TSS, iron, sulphates, hardness, oil & grease, nitrogen, phosphorus	
BBLW19 Sed Dam	North bore settlement dam	Monthly	EC, Iron, oil & grease, pH, Sulphate, TSS, hardness, MBAS, pseudomonas	
BBN 129	Piezometer in Ben Bullen State Forest	Quarterly	pH, EC, Depth to water	
BBN 134 - Pipe 2	Piezometer in Ben Bullen State Forest	Quarterly	pH, EC, Depth to water	
BBN 135	Piezometer in Ben Bullen State Forest	Quarterly	pH, EC, Depth to water	

BOD – Biochemical Oxygen Demand
COD – Chemical Oxygen Demand
EC – Electrical Conductivity
MBAS – Metheleyne Blue Active Substances
TSS – Total Suspended Solids

3.3.2 Interpretation and Review of Monitoring Results

Monitoring results for Baal Bone's seven licenced Discharge and Monitoring Points as required by EPL 765 are discussed below. Where available, samples were taken *monthly during discharge* in accordance with the EPL. However due to the continuing dry conditions discharges at many sites were minimal, with most of the water reused or recycled on site, and samples were not regularly available for collection. **Table 3.2** summarises the locations and months during which samples from the licenced Discharge and Monitoring Points were collected.

Results of these samples are tabulated below in **Table 3.3;** graphic interpretation of these results where the Licenced Discharge and Monitoring Points have Concentration Limits is included in **Figures 3.8 - 3.11**.

Table 3.2. Baal Bone's Licenced Discharge and Monitoring Points – samples available for collection in 2007

EPL Point	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
BBLD1	No	Yes	No	Yes	Yes	No	Yes	No	No	No	No	No
BBLD2	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
BBLD3	No	No	Yes	No	Yes	Yes	No	Yes	Yes	Yes	No	Yes
BBLD5	No	No	No	No	No	No	No	No	No	No	No	No
BBLD6	No	No	No	No	No	No	No	No	No	Yes	No	No
BBLDP1	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	No	No
BBWMP1	Yes	No	No	No	No	No	No	No	No	No	No	No

Table 3.3. Results of All Samples Recorded for DEC Licenced Discharge and Monitoring Points

EPL Point	Month	Electrical Conductivity uS/cm	Oil & Grease mg/L	Sulphate mg/L	Iron mg/L	TSS mg/L	pH
BBLD1	Feb	860	<2	NA	0.13	8	8.0
	Apr	1070	4	NA	0.32	9.8	7.2
	May	1030	<2	NA	0.09	<2	8.5
	July	1250	<2	NA	0.05	<2	8.6
BBLD2	Feb	NA	<2	NA	NA	85	7.9
	Mar	NA	<2	NA	NA	76	7.8
	Apr	NA	2	NA	NA	100	7.4
	May	NA	<2	NA	NA	103	7.4
	June	NA	2	NA	NA	93	7.0
	July	NA	3	NA	NA	92	9.1
	Aug	NA	3	NA	NA	75	9.1
	Sept	NA	3	NA	NA	89	7.3
	Oct	NA	2	NA	NA	76	7.3
	Nov	NA	3	NA	NA	66	7.9
	Dec	NA	<2	NA	NA	67	7.4
BBLD3	Mar	1580	<2	310	4.9	10	6.8
	May	1480	<2	229	3.4	5	7.1
	June	1520	<2	267	3	5	7.2
	Aug	1510	<2	284	2.4	2	6.8
	Sept	1470	<2	344	140	12	6.8
	Oct	1570	<2	247	3.1	6	6.8
	Dec	1450	<2	349	0.12	2	6.8
BBLD6	Oct	1390	<2	268	0.16	<2	7.2
BBLDP1	Jan	1500	<2	640	0.12	<2	8.4
	Feb	530	<2	150	0.33	16	7.3
	Mar	620	<2	159	0.62	8	7.3
	Apr	950	<2	290	0.24	7	7.8
	June	640	<2	164	0.68	25	7.8
	July	890	<2	463	0.9	3	7.9
	Aug	460	<2	149	5.4	266	8.2
BBWMP1	Jan	110	<2	30	178	6000	7.7

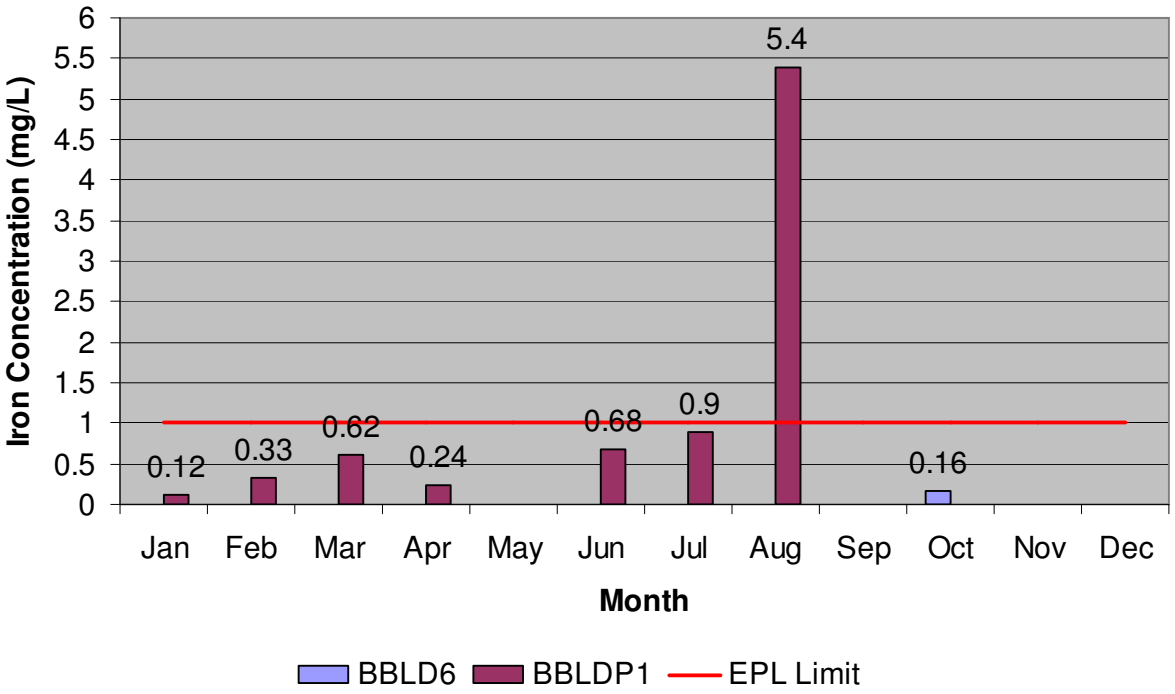

Figure 3.8. Total Iron Levels of Samples Recorded in Relation to EPL Concentration Limit of 1.0mg/L.

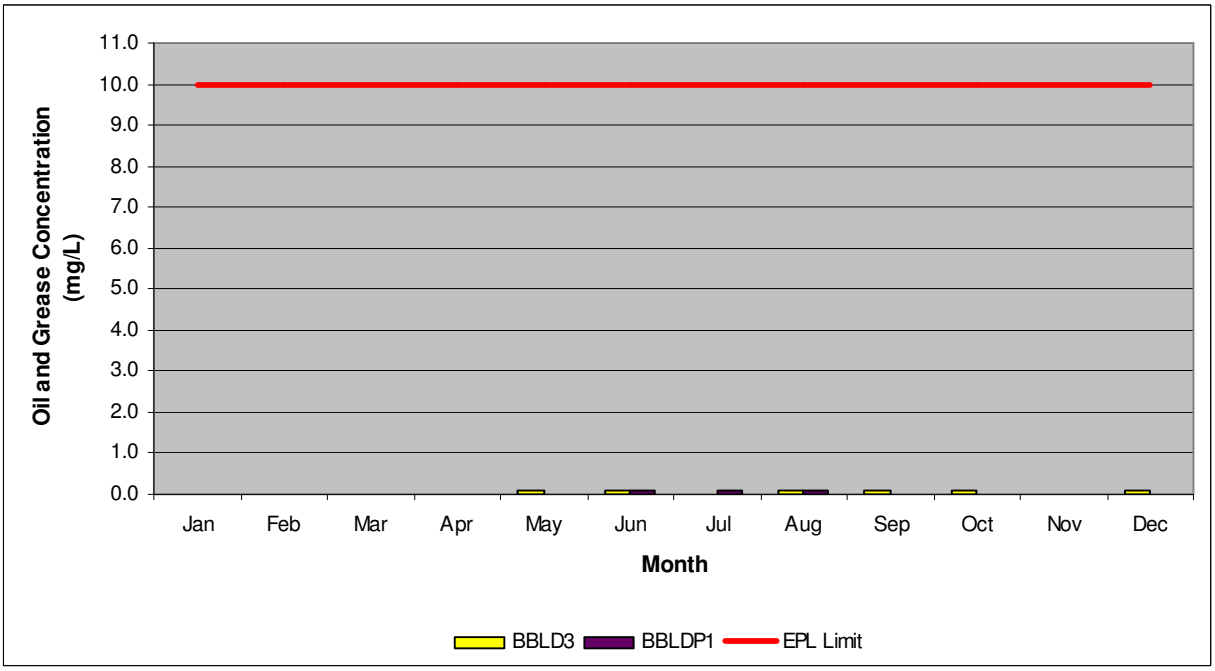

Figure 3.9. Oil and Grease Levels of Samples Recorded in Relation to EPL Concentration Limit of 10mg/L.

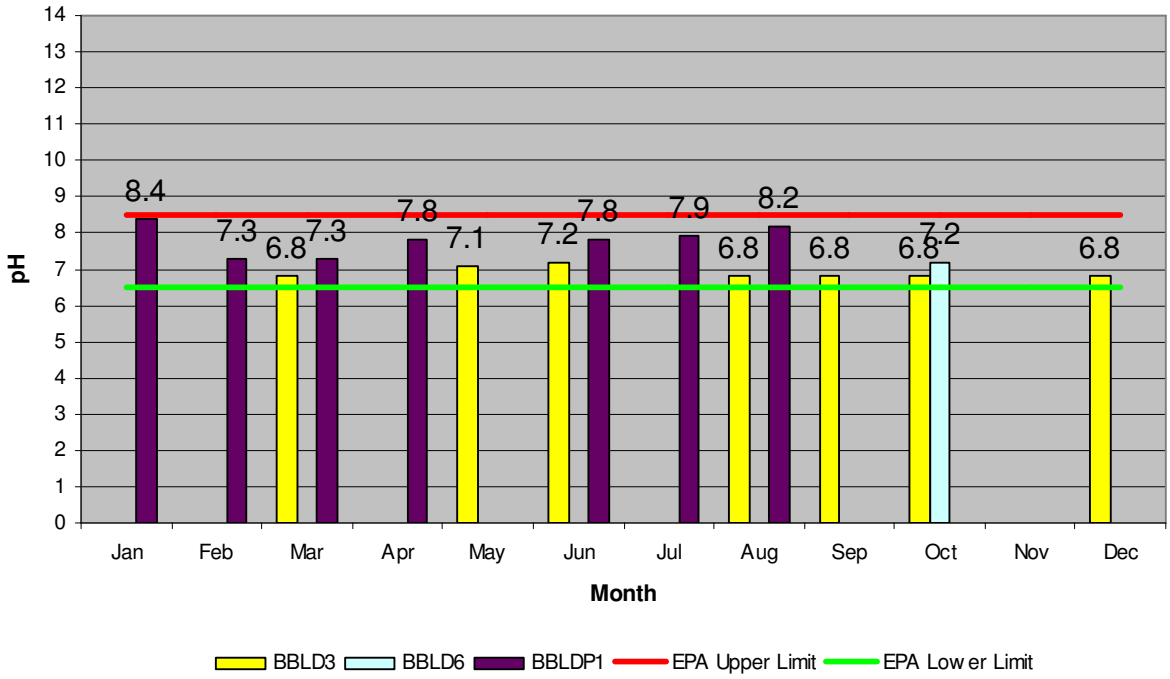

Figure 3.10. pH Levels of Samples Recorded in Relation to EPL Range of 6.5-8.5.

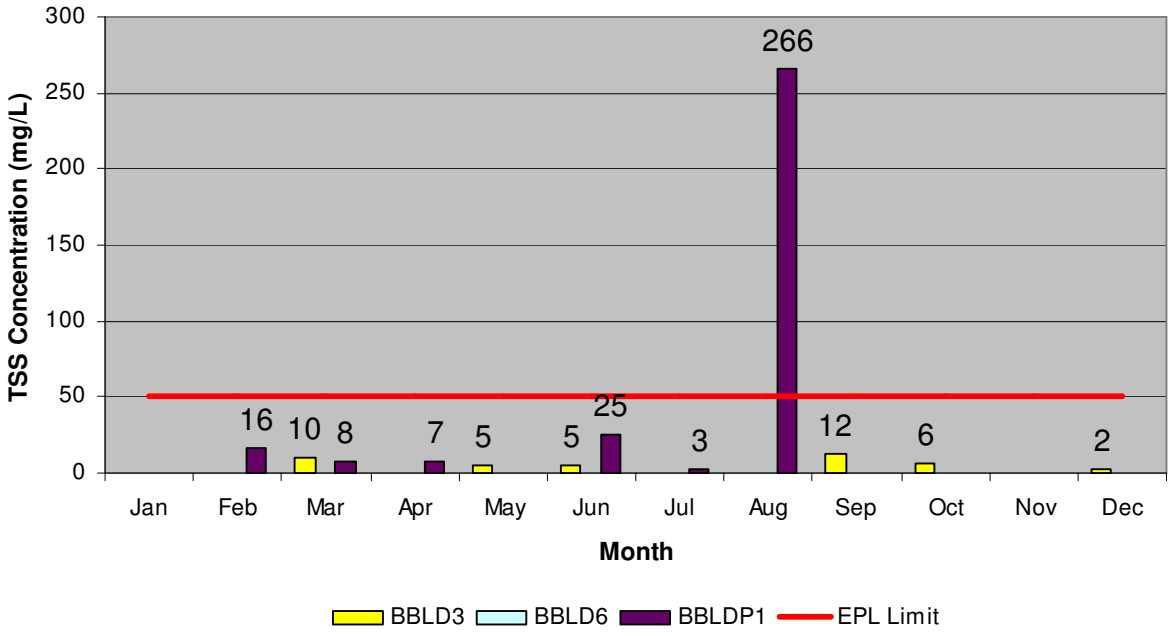

Figure 3.11. TSS Levels of Samples Recorded in Relation to EPL Concentration Limit of 50mg/L.

With the notable exception of one Total Iron reading and one Total Suspended Solids reading for Monitoring Point LDP1 all samples recorded were within EPL Concentration Limits. A summary of monitoring results for EPL discharge and monitoring points (those with specified Concentration Limits) can be found below:

- results of the August water sampling initially indicated that TSS levels were 266 mg/L and Iron was 5.4 mg/L. These extremely high levels were considered erroneous as they were not substantiated or supported by TSS and Iron levels measured at either of Baal Bone's internal sampling locations immediately upstream and downstream of LDP1 (EPLMonitoring Point No. 11)
- an immediate retest was ordered; these results confirmed TSS levels of 25 mg/L and Iron levels of 0.9 mg/L. These results were consistent those levels previously measured immediately upstream and downstream of Monitoring Point No. 11, and were within licence limits
- all remaining samples for both TSS and Total iron were within EPL specified concentration limits of 50mg/L and 1.0mg/L respectively
- all samples returned oil and grease concentration levels of <2mg/L, which is well below the EPL Concentration Limit of 10mg/L;
- all samples returned pH results that were within the upper and lower EPL Limits (8.5 and 6.5 respectively); and

3.4 Ground Water and Pollution

Baal Bone Colliery currently has ten bores and piezometers licenced with Dept. Water and Energy; these are summarised in **Table 3.4**.

Table 3.4 Licenced Bores and Piezometers

Licence Number	Expiry Date	Location
80BL127440	02/06/2008	Potable water supply (adjacent to southern boundary of site) – no longer in use not to be renewed in 2008
80BL136703	13/01/2013	Main washery water make-up bore near UC1
80BL135509	08/06/2012	Borehole No. 6 near Rail Loop; washery make-up and dust suppression (low yielding; not used)
80BL236132	Perpetuity	Mine dewatering Long Wall 1 (South Bore 1)
80BL236134	Perpetuity	Mine dewatering Long Wall 1 (South Bore 2)

80BL239077	18/06/2011	Mine dewatering Long Wall 19. North Bore.
10BL601877	Perpetuity	BBN175; LW29-31 groundwater monitoring piezo
10BL601816	Perpetuity	BBN176; LW29-31 groundwater monitoring piezo
10BL601817	Perpetuity	BBN177; LW29-31 groundwater monitoring piezo
10BL601970	Perpetuity	BBN 179; LW29-31 groundwater monitoring piezo

It should be noted that licenced bore 80BL127440 is no longer in use and will not be renewed upon expiry in 2008.

Four new piezometers (inc. above) were installed during the reporting period to gather background data and to monitor subsidence effects on local groundwater regimes as part of the SMP for LW 29-31. Connell Wagner (Ian Forster) has been engaged to interpret data gathered by these facilities and to prepare quarterly reports.

To date no mining in this area has occurred, so monitoring is providing information regarding baseline conditions. A strong correlation between standing water levels and rainfall has been established.

Baal Bone currently also monitors three active piezometers in the vicinity of previous workings; these are monitored quarterly for analytes including pH, EC, iron, sulfates, oil & grease and depth to ground. A further five piezometers have previously been blocked or otherwise destroyed by subsidence.

3.4.1 Ground Water Extraction

EPL 765 imposes volumetric limits on two of Baal Bones Licenced Discharge Points. Discharge from LD5 at the Box Cut Sediment Dam is limited to a maximum of 20 ML/day; however during the reporting period no water was discharged from LD5.

Discharge from the north mine dewatering bore at LD6 is limited to 12 ML/day; during the reporting period an average of 0.9 ML/day was discharged. A total of 331.5 ML was discharged at LD6 during 2007.

Bore Licences 80BL136703 and 80BL135509 as issued by Dept. Natural Resources impose a maximum total extraction limit of 750 ML/year. As stated previously, the yield from Bore 80BL135509 has proven to be unreliable and its use has since been discontinued. A total of 22.57 ML was extracted from Bore 80BL136703 during January 2007 only.

During the reporting period, the south mine dewatering bores (80BL236132 and 80BL236134) discharged a total of 1084 ML into the Jews Creek.

3.5 Contaminated Land

Known contaminated or polluted lands at Baal Bone are limited to those affected by hydrocarbons. Hydrocarbon contamination is discussed in Section 3.17.

There were no environmental incidents recorded or additional areas of contaminated land identified during the reporting period.

3.6 Threatened Flora

3.6.1 Floral Studies

Over the past 25 years Baal Bone Colliery has undertaken numerous floral and faunal studies within the lease to satisfy various planning and approval requirements, and in accordance with its Biodiversity and Land Management Plan.

From the floral surveys undertaken to date there have been no endangered species found, however 2 vulnerable species and 1 species of regional significance have been identified in the area around Baal Bone. These include Capertee Stringybark *(Eucalyptus cannonnii)*, Clandulla Geebung *(Persoonia marginata)* and Blue Devil *(Eryngium vesiculosum)* respectively.

Potential habitat for both *E. cannonnii* and *P. marginata* are isolated to areas north of the current lease area and they have not been affected by mining activities on site. Baal Bone has developed a Biodiversity and Land Management Plan to ensure that site operations (in particular vegetation clearing and ground disturbing activities) do not potentially impact on these species. This Plan was reviewed and updated in Q4 2007.

A full Environmental Assessment (EA) of a proposed ventilation shaft site and transmission line corridor was undertaken by Umwelt Consultants and was finalised in June 2007. This accompanied an application under Part 3A of the EP&A Act for the construction and operation of the proposed ventilation shaft and fan. Concurrent with this, an REF of the proposed LW 29-31 extraction area was also completed to accompany an SMP application.

Gingra Ecological Surveys (Roger Lembit) have been undertaking routine seasonal baseline surveys of the LW 29-31 and also completed an end of panel/start of panel ecological assessment for LW's 25 and 26.

None of the assessments/surveys mentioned have identified any populations of threatened plant species within the application area.

3.7 Threatened Fauna

In addition to the faunal surveys conducted as part of the vent shaft EA and the extraction area REF (as mentioned above), Mount King Ecological Surveys (Martin Denny) has continued with routine seasonal baseline surveys of the LW 29-31 area.

Four threatened species are known to occur in or close to LW 29-31 SMP Extraction Area, these include the Gang-gang Cockatoo *(Callocephalon fimbriatum),* Brown Treecreeper *(Climacteris picumnus),* Turquoise Parrot *(Neophema pulchella)* and the Squirrel Glider *(Petaurus norfolcensis).*

All surveys conducted to date indicate that there should be no significant impact on either of these four species, or the twenty six other threatened species identified with the potential to occur in the area.

3.8 Weeds

A comprehensive weed eradication campaign was undertaken in 2007. A full land management review of the Baal Bone site was undertaken by Land Asset Management Pty Limited in January 2007, which identified targeted species and their location.

A comprehensive weed spraying campaign was subsequently completed during March. A follow up spraying program targeting Blackberry, St John's Wort, Sweet Briar has been scheduled for Autumn 2008.

3.9 Blasting

3.9.1 Blast Criteria

EPL 765 imposes the following limits on blasting operations at Baal Bone:

a. air blast overpressure must not exceed 115dB (Lin Peak) for more than 5% of the blasts in the reporting period, and 120dB (Lin Peak) at any time
b. the ground vibration peak particle velocity from blasting operations must not exceed 5mm/sec for more than 5% of the total blasts and 10mm/sec at any time.

3.9.2 Blast Monitoring

In accordance with EPL 765, air blast overpressure and vibration levels were measured at a location one metre from the nearest residential boundary (*Blue Rocks* homestead) for all blasts carried out (**PLAN 1**). This monitoring was undertaken by Roche Blasting Services (RBS); RBS were also responsible for setting and firing all shots during the reporting period.

Trigger levels for the blast and vibration monitor were set at 0.5mm/sec and 100dB. The instrumentation used meets the requirements of AS 2187.2 1993. Monitoring results for blasts that triggered monitoring equipment at Blue Rocks are tabulated in **Table 3.5**.

Table 3.5 Blasting Operations that triggered Noise and Vibration Monitoring at Blue Rocks Residence

Blast	Date	Vibration (mm/sec)	Pressure (dBL)
BB080	17/01/2007	0.09	114.1
BB081	30/01/2007	0.1	106.9
BB083	20/02/2007	0.74	89
BB086	16/03/2007	0.72	92.7

3.9.3 Review of Blast Monitoring Results.

During the 2007 reporting period, 16 blasts occurred in the Baal Bone Open Cut precinct. Four of these triggered activation of the monitoring equipment adjacent to the boundary with *Blue Rocks;* however none of these registered above 115dBL. The maximum limit of 120dBL at this point was not exceeded at any one time.

Ground vibration peak particle velocity was less than 0.8 mm/sec for all blasts, which is well below the EPL limits of 5mm/sec (periodic) and 10mm/sec (at any time).

3.10 Operational Noise

During the reporting 2007 period there was one noise related complaint; further details are contained in Section 4.1.

3.11 Visual, Stray Light

All lighting associated with the CHPP and the UC1 conveyor/ROM stockpile has been designed and constructed so as to minimise glare and stray light. No complaints have been received during the reporting period in this respect.

3.12 Aboriginal and European Heritage

3.12.1 Aboriginal Heritage

In February 2007 Baal Bone lodged an application with DPI-MR for a Mining Lease for Mining Purposes so as to secure tenure to the surface lands required for the construction and operation of the new ventilation shaft. Baal Bone already held tenure to the underground resources, to within 10m of the surface, via Combined Coal Lease (CCL) 749.

During this process it was identified that the vent shaft site was within an area the subject of a registered native tile claim under the Native Title Act 1993. Baal Bone chose to follow the Right to Negotiate process (RTN) with the Gundungarra Tribal Council Aboriginal Corporation (GTCAC), who were the registered claimant. An Ancillary Deed has subsequently been negotiated between the GTCAC and Wallerawang Collieries Limited.

At several other times throughout the year, representatives of the Bathurst Local Aboriginal Land Council have assisted Baal Bone with surveys prior to small scale earth disturbing activities such as installation of piezometers. No artefacts or Indigenous sites were recorded as a result of these assessments.

3.12.2 European Heritage

No European Heritage Sites have been identified within the Baal Bone mining lease.

3.13 Natural Heritage

No natural heritage sites have been identified within the Baal Bone mining lease. However, the Gardens of Stone National Park lies approximately 5 kilometres northeast of the Colliery and the Blue Mountains World Heritage Area is located approximately 80 kilometres to the southeast of the Colliery.

The Ben Bullen State Forest covers much of the lease area; it is anticipated that this will be gazetted as a State Conservation Area at some time in the future.

3.14 Spontaneous Combustion

No spontaneous combustion events occurred in 2007.

Baal Bone has a Spontaneous Combustion Management Plan for the ROM stockpile. The plan principally involves regulating the duration of ROM storage on the stockpile to reduce residence time and therefore potential oxidation, and monitoring of internal stockpile temperatures.

3.15 Bushfire Management

There was no outbreak of bushfire during the reporting period at Baal Bone Colliery.

In the event of a bushfire with the adjacent State Forest, Forests NSW would assume responsibility for all fire fighting and emergency response activities. An agreement was been reached between Forests NSW and Baal Bone regarding use of the Colliery's helipad, first aid room and process water dam in emergency situations.

In the event that a bushfire is ignited on company owned land or where bushfire poses a threat to the mining operations, the Baal Bone's Emergency Response Procedure will be activated.

In addition, site management will ensure that:

- all boundary roads around the land within the Colliery freehold land are maintained in a condition suitable for use as fire breaks and access tracks during an emergency situation;
- a water cart at the Washery can assist in fire fighting activities;
- main access road and helipad are maintained suitable for use by emergency services;

- dams, voids and any other areas that may be utilised as watering points can be accessed by fire fighting equipment;
- portable radios are used at the time of emergency solely by the emergency response team who are trained and are provided with protective clothing;
- site earthmoving equipment can be utilised; and
- emergency phone, fire extinguishers and fire depots are located at strategic locations around the surface facilities.

Bushfire preparedness has also been included in Baal Bone's Biodiversity and Land Management Plan.

3.16 Mine Subsidence

3.16.1 Current Approvals

Baal Bone currently holds a Section 138 approval (dated 9 May 2005) for extraction of LW's 25-28. This is supported by a *Subsidence and Environmental Plan and Monitoring Procedures for LW's 25-28* that received approval from the Principal Subsidence Engineer (DPI – Minerals) on 4 July 2006.

This s138 approval was due to expire on 1 January 2008, however a 12 month extension was sought due to unexpected delays to the mining sequence. Due to a change in legislation this extension approval was made under Clause 88 (1) of the Coal Mines Health and Safety Regulation 2006; it was received on 17 August 2007 and is due to expire on 31 January 2009.

A Subsidence Management Plan for development and extraction of LW 29-31 was lodged with DPI-MR in June 2007. Approval was received from The Deputy Director General on 7 December 2007, with the approved period of mining to expire on 1 December 2014 (or at the expiry/cancellation of Baal Bone's Coal and Mining Leases). Extraction of LW 29 is expected to commence in Q1 2009.

3.16.2 LW 25 End of Panel Subsidence Monitoring Report

An End of Panel Subsidence Monitoring Report was prepared in September 2007 for submission to the Department of Primary Industries (Minerals) in accordance with clause 6.1.7 of the Approval to Longwall Mine Panels 25 to 28, Baal Bone Colliery (Section – 138(1) Coal Mines Regulation Act 1982).

This condition requires Baal Bone to ensure that: *"The results of all monitoring undertaken as part of the subsidence and Environmental Management Plan be complied into a report and submitted to the Assistant Director Environment and the Principal Subsidence Engineer three months after the extraction of each longwall."*

This report confirmed that maximum subsidence of 1,262mm was recorded at A26 on the AA subsidence survey line (centre of the goaf with 200m cover) and a maximum of 1,506mm recorded in the centre of the panel on the LW 25 cross line (with 120m cover). Predicted ranges for subsidence were 1.5m to 1.6m in the valley regions with 140-160m depth of cover and around 1.4m on the ridge lines with 230-240m depth of cover.

A maximum horizontal movement (westward) of 422mm was also recorded at A26, with the predicted ranges being 700mm in the valley regions and 400mm on the ridges with the greater depth of cover.

The subsidence monitoring program undertaken for Longwall 25 indicates that, within the accuracy of the survey techniques used, the subsidence behaviour and expected impacts are consistent with those that have previously been observed at Baal Bone and elsewhere. The integrity of the escarpment appears to have been maintained and the 26.5^0 angle of draw has been effective in preventing any damage to it.

Given the topography and vegetative cover of the extraction area, impacts from subsidence had a negligible environmental impact and are barely perceptible. The levels of vertical subsidence and horizontal movement were within the predicted ranges; there has been no damage to forest infrastructure and there has been no threat to the safety of the general public.

3.16.3 Subsidence Management Planning for LW's 29-31

As discussed previously, Baal Bone received SMP approval for the extraction of LW's 29-31 on 7 December 2007.

Although extraction of LW 29 is not currently scheduled to commence until early in 2009, Baal Bone continued to undertake a range of baseline flora, fauna and hydrogeological studies during 2007. Theses will continue into 2008, with the addition of additional baseline studies to include the Wolgan Escarpment and other surface features.

3.17 Hydrocarbon Contamination

3.17.1 Hydrocarbon Contamination Assessment

A Preliminary (Phase 1) Assessment of Hydrocarbon Contamination at Baal Bone Colliery was conducted by HLA Environsciences Pty Ltd (HLA), with the report being finalised in April 2006. This assessment included a comprehensive soil and ground water investigation, sampling and monitoring program.

This assessment identified localised contamination from the Underground Storage Tank (UST) at the pit-top area and recommended ongoing groundwater monitoring to confirm the extent and level of contamination.

HLA were subsequently engaged to conduct a Phase 2 Hydrocarbon Contamination Assessment with the objective being to supplement previous investigations and to better quantify the nature and extent of potential soil and groundwater contamination. Concurrent with this HLA were also engaged to determine remedial requirements following closure of the mine.

The Phase 2 assessment quantified TPH contamination in shallow soils within the CHPP and pit-top areas of the site. TPH impacts at depth up to 2.8 m bgs were identified in the vicinity of the two diesel storage tanks.

The general remediation strategy proposed by HLA includes excavation of contaminated areas and landfarming of hydrocarbon impacted soils on site, with off site disposal of excess material impacted by contaminants where remediation by landfarming is not appropriate. It also recommends supervision and validation of remediation works by a suitably qualified environmental consultant to validate completion of remediation and confirm the suitability for the proposed final Landuse. A conceptual working plan has been produced by HLA and is included in their Remediation Action Plan.

3.18 Methane Drainage and Ventilation

During the reporting period, monthly gas bag samples from the underground ventilation system were analysed by Coal Mines Technical Services, a NATA accredited company.

Results from the sampling completed throughout the reporting period confirm non-detectable levels of methane at Baal Bone Colliery (<0.01%). Consequently, methane drainage is not required at Baal Bone.

3.19 Public Safety

A fully automated entry gate was installed on the main mine access road during 2007. After hours entry is restricted to those holding a valid e-tag or PIN; an intercom system will permit access to authorised visitors as required.

Fences are in place around the mining lease area, with all other boundary gates locked and maintained in correct working order. All access points onto the mine area are signposted to warn the public of Baal Bone Colliery's mining operations and of the risks involved. Warning signs have also been erected along public tracks in the Ben Bullen State Forest warning of mine subsidence and prohibiting entry to unauthorised persons.

A boom gate and flashing light system is installed at the intersection of the main mine entry road and the haul road to the southern open cut area. This haul road is currently used by the CHPP to haul to the coarse reject emplacement in the southern open cut void.

Security ("man proof") fencing is placed all around all open cut highwalls. During open cut blasting activities, sentries were posted at all access points to prevent unauthorised entry into the blast zone.

All employees and contractors who enter the mining operations or workshop areas are inducted and must be suitably trained. All visitors must sign in and accompanied by an employee or staff member of the mine if they have not been inducted by the Safety and Training Superintendent.

No incidents relating to public safety have been recorded during the reporting period.

3.20 Other Issues and Risks

3.20.1 Reportable Incidents

Pursuant to Xstrata's Categorisation of incidents, any incident that falls into the categories below must be reported to the Group Environment and Community Manager, the General Manager for Open Cut or Underground Operations (depending on the type of incident) and the Chief Operating Officer.

Category I: An incident that has caused negligible, reversible environmental impact, requiring very minor or no remediation. For example, exceeding EPL Limits or a hydrocarbon spill >20L.

Category II: An incident that has caused minor, reversible environmental impact, requiring minor remediation. For example, Hydrocarbon spill >20L but <205L AND contained on site.

Category III: An incident that has caused moderate, reversible environmental impact with short-term effect, requiring moderate remediation. For example, illegal discharge offsite that causes local but reversible damage. Also, a hydrocarbon spill <205L that was not contained readily or a spill of any amount of hydrocarbon into public waterways.

Category IV: An incident that has cause serious environmental impact, with medium-term effect, requiring significant remediation. For example, an incident that requires a remediation program over 1-12 months.

Category V: An incident that has caused disastrous environmental impact, with long-term effect, requiring major remediation. For example, an incident that requires a long-term remediation program over 12 months.

There was only one Category 1 environmental incident recorded during the reporting period, which related to a spill of approximately 50 litres of hydraulic oil in the CHPP. The incident was caused by human error during a maintenance procedure; the oil was released onto a concrete floor within the CHPP. It was contained and cleaned up using absorbent spill kit material; there was no environmental harm caused as a result.

There were no fines or penalties recorded during the reporting period

3.20.2 Audits Conducted During the Reporting Period

In an order to assess our environmental performance at Baal Bone and to plan and implement a process of continual improvement, the following internal audits were completed during the reporting period:

- Coal Haulage Consent Audit; a scheduled external audit for the DoP, conducted RW Corkery & Co in October 2007
- Dam Failure Core Hazard Audit, conducted by Umwelt Australia Pty Limited in October 2007
- Environmental Breaches Core Hazard Audit, conducted by Umwelt Australia Pty Limited in October 2007

- Flora and Fauna Extinction, and Archaeological Disturbance Core Hazard Audit, conducted by Umwelt Australia Pty Limited in October 2007
- Health, Safety, Environment and Community Systems Assurance Audit; an external audit conducted by URS Corporation and Xstrata Coal.

SECTION 4.0: COMMUNITY RELATIONS

4.1 Environmental Complaints

In accordance with Baal Bone Health, Safety, Environment and Community (HSEC) Procedure PRO 01.09.01.02.009 (Community Complaints Management), Baal Bone Colliery has a comprehensive system in place to document and respond to community complaints in a timely manner and to maintain a comprehensive complaints database.

Consistent with the Mine's Environmental Protection Licence, Baal Bone maintains a 24 hour telephone complaints line and answering service for the purposes of receiving and responding to any complaints from members of the public in relation to activities conducted within the Baal Bone Colliery.

Upon receipt of a complaint, the following details are obtained from the complainant:

- Date of complaint;
- Notification method;
- Date of incident;
- Name of complainant;
- Contact details of complainant;
- Type of complaint;
- Actions taken;
- Persons notified; and
- Details of follow up actions taken, if required.

Following the receipt of a complaint, a thorough investigation of the complaint is undertaken and the complainant advised of the results of the investigation. Any action to be taken to prevent a recurrence is undertaken as soon as practicable.

Baal Bone recorded only one complaint during the reporting period; details of this are as follows:

COMPLAINT No. 1

Date: 14th February 2007

Nature of Complaint: Noise

Details of Complaint: Mr Muldoon, an adjacent resident, contacted the CHPP to complain about being woken around 1.00 am by noise coming from what he assumed to be the crushing plant at the open cut ROM stockpile.

Actions Taken: The complaint was investigated and Roche confirmed that the crushing plant does not operate at night. Following discussions with CHPP personnel it was confirmed that a new impact plate

had recently been fitted to the UC1 (underground) conveyor to the ROM stockpile. At that time the underground crews were recovering a face fall on the longwall and as a result a large amount of rock was being transported out of the mine via UC1.

The noise Mr Muldoon heard was rock striking the new impact plate and then falling heavily onto an empty stockpile. A light south easterly breeze blew the noise in the direction of Mr Muldoon's residence.

4.2 Community Liaison

4.2.1 Community Initiatives

During 2007 the following community involvement initiatives were implemented:

- Assist with repairs to the recreation area at the Coleman House aged car facility in Portland
- Donation to assist with library resources at the Zig-Zag Primary School in Lithgow
- Donation of computers to the Portland Primary School
- Sponsorship of the Life Education Van to attend Cullen Bullen and Wallerawang Primary Schools
- Donation to Lithgow Christian Fellowship to provide Christmas lunch and Christmas hampers to the underprivileged in Lithgow
- Prize sponsorship of the annual Portland Art Show.

Planned community involvement activities for 2008 include:

- Support of Ironfest arts and cultural festival in Lithgow
- Sponsorship of the Life Education Van to attend Capertee Primary School
- Assist Cullen Bullen Public School with their school environmental improvement program (rain water tanks and pump)
- Prize sponsorship of the annual Portland Art Show
- Sponsorship of team in the Movember Campaign
- Sponsorhip of book prizes for the Cullen Bullen School annual speech day
- Donation to Lithgow Christian Fellowship to provide Christmas lunch and Christmas hampers to the underprivileged in Lithgow.

4.2.2 Community Consultative Committee

The Baal Bone Colliery Community Consultative Committee (CCC) has been established to provide a formal conduit for exchange of information and views between the local community and Baal Bone's Management Team.

Membership of the current Baal Bone CCC include:

- Ray Blackley (Resident)
- Barbara Milne (Resident)

- David Speirs (Adjacent landholder)
- Gary Wallace (Lithgow City Council)
- Mark Snow (Cullen Bullen Public School)
- David Hetherington (Operations Manager)
- Tony King (Environment and Community Coordinator)
- Mark Bulkeley (Safety and Training Superintendent)

The CCC met at Baal Bone on the 31 st May and 1st November 2007. Regular agenda items included:

- Operations Manager's update
- Health and Safety Manager's update
- Environment Manager's update
- Open cut rehabilitation update
- General Business and any other issues of concern from the community

The Baal Bone CCC is scheduled to meet again on 1st May 2008.

4.2.3 Baal Bone Newsletter

Baal Bone Colliery circulates a periodic community newsletter, *The Baal Bone Community Newsletter,* to approximately 200 neighbouring residents, to selected locations in Lithgow, Wallerawang and Portland, in addition to all Baal Bone employees and contractors.

The newsletter provides topical information regarding the mine's operational progress, environment and safety performance, and other areas of general interest including site rehabilitation and mine closure.

The next edition of the newsletter is scheduled for distribution in March 2008.

SECTION 5.0: REHABILITATION (in this AEMR period)

5.1 Buildings

No buildings were renovated or removed during the reporting period.

5.2 Rehabilitation of Disturbed Land

5.2.1 Final Landuse and Landform Design

As detailed in Baal Bone's current MOP, the basic objective for the rehabilitation of mined land at Baal Bone Colliery is to return the site to a condition where its landform, soils, hydrology, flora and fauna are self-sustaining, and compatible with the surrounding land fabric.

Therefore the proposed end land use for the site included a combination of grazing and bushland/wildlife habitat. This post-mining landscape would be dominated by Class VI (grazing land) and Class VII (bushland) which are compatible with adjoining lands. All rehabilitation and revegetation works undertaken at Baal Bone previously had been completed with this objective in mind.

However, in May 2007 Xtrata Coal NSW (XCN) released their revised Mine Closure Planning Standard (HSEC STD5.12). This standard requires all sites to validate their final Landuse options when preparing Mine Closure Plans.

Baal Bone engaged GSS Environmental (GSSE) to facilitate a Final Landuse Options Workshop, which was held on 29 November 2007 and included a range of agency and community stakeholders.

The final report is currently being prepared by GSSE, however early indications confirm that the original rehabilitation objectives have been validated; several viable alternatives were also identified and these will be evaluated further as part of the Mine Closure Planning process.

5.2.2 Status of Land Shaping and Rehabilitation Works

During the reporting period approximately 1,778,900 m^3 of overburden and waste rock was generated as a result of the open cut operations, with an additional 500,000 m^3 (approx.) being supplied as coarse reject from the CHPP.

This material has been strategically placed around in and around the southern open cut pit to create the final design landform. Drainage paths, contour drains, ridgelines, and emplacements are being shaped in undulating informal profiles in keeping with natural landforms of the surrounding environment.

The total volume of topsoil and subsoil materials (aka. freedig) removed by the open cut operations during the reporting period were approximately 230,000 m^3. In addition to the material that has already been respread over shaped areas, a total of 558,550 m^3 (approx.) of

freedig has now been stockpiled at various locations around the site for use in future rehabilitation works.

Rehabilitation activities are generally progressing in line the schedule proposed in the MOP, notwithstanding the previous drought conditions. The MOP was however amended during 2007 to account for the extended life of mine provided by the recently approved southeast extension into LW 29-31. The additional LOM has subsequently postponed the final rehabilitation of the fine and coarse reject emplacement area, in the southern open cut precinct, until the end of 2011.

During 2007 approximately 42 ha was seeded in the south pit and 13.5 ha was seeded in the north pit. An additional 82 ha has also been shaped, covered and treated with a range of structural soil conservation and stormwater management works during 2007. It was planned to have the majority of this area seeded by late Spring 2007, however due to the relatively wet conditions during Q4 2007, soil amelioration and seeding works been delayed. Contingent upon favourable conditions, it's planned to have these areas finalised by early Autumn 2008.

Current rehabilitation status at the end of the reporting period is shown on **PLAN 1**. A summary of rehabilitation works at the start of the MOP period (July 2006), an estimate for the end of the MOP period (July 2009) and actual rehabilitation completed during 2007 AEMR reporting period are detailed in **Table 5.1**.

5.2.3 Stabilisation and Restoration of Ben Bullen Creek

In June 2007 a Natural Channel Design and Restoration Plan was prepared for the Ben Bullen Creek by Natural Resource Assessments Pty Limited (NRA) and Revegetation Contractors Pty Limited. This plan now supersedes the outdated Surface Water Management Plan originally produced by Umwelt Australia Pty Limited.

The Natural Channel Design includes a series of pools and riffles, interconnected via a meandering flowpath. It also includes the design of two significant grade stabilisation structures within the Ben Bullen Creek. Concurrence for these works have been obtained from Dept. Water and Energy (previously DNR) and Dept. Primary Industries – NSW Fisheries.

Implementation of works in Sections 1 and 3 commenced in late 2007 and subject to favourable weather conditions they should be completed by late Q1 or early Q2 2008. Section 2 passes through the existing pit-top area and will restoration works not be implemented until final rehabilitation post mine closure.

Table 5.1 Summary of Rehabilitation Performance

	Area Affected/Rehabilitated (hectares)		
	Start of MOP	**End of 2007 AEMR Reporting Period**	**End of MOP Period (July 2009)**
A: MINE LEASE AREA			
A1 Mine Lease(s) Area	5002 ha		
B: DISTURBED AREAS			
B1 Infrastructure area (other disturbed areas to be rehabilitated at closure including facilities, roads)	64.05ha	70.54 ha	70.54 ha
B2: Active Surface Mining Area (excluding items B3 - B5 below)	15.25 ha	Nil	Nil
B3 Waste emplacements (dozer push and dumps in N and S) (active/unshaped/in or out-of-pit)	62.05 ha	44.36 ha	44.36 ha
B4 Tailings emplacements (REA 5) (active/unshaped/uncapped)	5.88 ha	9.88 ha	4.02 ha
B5 Shaped waste emplacement (awaits final vegetation)	93.77 ha	87.69 ha	5.60 ha
ALL DISTURBED AREAS	241.0 ha	212.47 ha	124.52 ha
C REHABILITATION PROGRESS (Cumulative)			
C1 Total Rehabilitated area (except for maintenance)	41.9 ha	79.17 ha	161.26 ha
D: REHABILITATION ON SLOPES (Cumulative)			
D1 10 to 18 degrees	6.25 ha	22.25 ha	38.25 ha
D2 Greater than 18 degrees	2.5 ha	2.5 ha	2.5 ha
E: SURFACE OF REHABILITATED LAND			
E1 Pasture and grasses	Nil	Nil	Nil
E2 Native forest/ecosystems	41.9 ha	95.99 ha*	178.08 ha
E3 Plantations and crops	Nil	Nil	Nil
E4 Other (include non-vegetative outcomes)	Nil	Nil	Nil

5.2.5 Soil Amelioration

A comprehensive agronomic soil analysis of the freedig covering material has previously been undertaken through the Soil Conservation Service Soils Laboratory in Scone. The results confirm that the material is generally of a sandy clay loam texture, with high to spontaneous dispersion in most cases, as evidenced by EAT classes of 2(1) and 2(2). All samples exhibited a

low to moderate cation exchange capacity, with a corresponding low level of chemical fertility. Aluminium toxicity has the potential to be problematic as the pH was in the range 5.5 – 6.7 and many samples returned a high level of exchangeable aluminium.

Following recommendations provided by the SCS gypsum has been incorporated at a rate of 5,000kg/ha across the site to ameliorate the high dispersion percentage and to reduce the erodibility of the freedig material. Agricultural lime has also been included at a rate of between 2,000 – 2,500kg/ha as this will assist with both longer term dispersion amelioration and pH adjustment, thereby reducing potential for aluminium toxicity.

A Grower 12 type chemical fertiliser (20:20:40) at a rate of 250kg/ha has been applied on areas that are to be seeded with a predominantly exotic or improved pasture mix, and a low analysis organic type fertiliser (eg. Dynamic Lifter) at a rate of 250kg/ha has been applied on areas with a predominantly native mix.

5.2.6 Revegetation Species

A comprehensive series of species lists have previously been developed to reflect range of micro-climates on the site and to replicate the diverse nature of the endemic vegetation communities of the area; particularly those associated with the adjacent Ben Bullen State Forest.

These lists attempts to recreate several full and diverse vegetation communities in all dimensions and includes a wider range of native grasses and groundcovers, together with a more robust range of shrub and understorey species. Habitat species for the endangered Purple Copper Butterfly have also been included.

Revegetation of high risk and erosion prone areas such as steep slopes and some overland flowlines have been initially stabilised with a mix of quick growing, introduced pasture species, interspersed with a selection of native shrubs and small trees.

A riparian mix has also been selected that includes a range of macrophytes and other water plants to provide natural bioremediation and bioretention of pollutants, as well as habitat and food sources for aquatic life. This species list has been validated as part of the natural channel design and restoration plan prepared for Ben Bullen Creek.

5.2.7 Final Voids

Three dimensional modelling completed in late 2006 confirms that a further 4.73Mt of coarse reject can be placed in the southern open cut void. Based on current production rates this area should provide sufficient waste storage capacity for the remainder of the life of mine (including the proposed LW's 29-31).

As illustrated on **PLAN 1**, it is intended to retain this area for use as an active reject emplacement area. The proposed REA6 tailings dam, which is located within the southern void, is in the final stages of receiving Section 100 (CMH&S Act) approval from the DPI-MR.

Final rehabilitation of this area will occur concurrent with mine closure. Approximately 178,000 m^3 of freedig covering material has been stockpiled in readiness.

Some adjustment was also required to the final void proposed in the MOP for the northern open cut area. Baal Bone has decided to temporarily seal, but retain access to the adits existing within the Box Cut area so as to not sterilise potential northern underground coal resources. The remnant highwall on the northern and eastern sides of the void will remain until final rehabilitation at mine closure. The MOP has subsequently been amended to include this short to medium term change in plans.

5.3 Other Infrastructure

No other infrastructure was rehabilitated during the reporting period.

5.4 Rehabilitation Trials and Research

There has not been any rehabilitation trials or research carried out at Baal Bone during the reporting period. However, due to the documented lack of fertile topsoil material at Baal Bone, there has previously been a proposal to trial the use of biosolids as an ameliorant and soil conditioner.

There has been no further development of this proposal during 2007 due to the relatively advanced state of rehabilitation works. Whilst not completely discounted from further planning, it's relatively unlikely that the trail will now proceed in the format as originally envisaged.

5.5 Development of a Detailed Mine Closure Plan

5.5.1 Mine Closure Planning

In accordance with XC STD5.12 Mine Closure Planning, Baal Bone has commenced preparation of a Detailed Mine Closure Plan as the Baal Bone reserve has a LOM of less than five years.

Activities completed during 2007 have focussed on the "Pre-Feasibility Stage", with the following activities either completed and/or initiated during 2007:

- Desktop Constraints and Opportunities Analysis for Mine Closure; conducted by Umwelt Australia
- Mine Closure Social Impact Assessment; conducted by Coakes Consulting
- Mine Closure Consultation Strategy; prepared by Umwelt Australia and Coakes Consulting
- Final Landuse Options Workshop and Risk Register; conducted by GSSE
- "Close Now" Rehabilitation Liability Assessment; prepared by GSSE
- Phase 2 Contamination Assessment and Remediation Action Plan; prepared by HLA Envirosciences
- Hazardous Materials Survey and Site Register; previously prepared by SP Solutions (2005)

Mine closure planning activities proposed for 2008 will focus on the "Feasibility Stage" and will include:

- Finalisation of Mine Closure Social Impact Assessment
- Continuation of Mine Closure Consultation Strategy
- Finalisation of Final Landuse Options Workshop and Risk Register
- Feasibility and cost-benefit analysis of preferred final Landuse options
- XCN approval of selected final Landuse options
- Development of closure objectives and completion criteria for approved final Landuse options
- Detailed Environment and Community Risk Assessment with respect to approved final Landuse options
- Development and collation of Detailed Mine Closure Plan document; this is to detail scope of all physical site works required, social mitigation/communication strategies, implementation costs, monitoring requirements, "sign off" and relinquishment procedures, closure indicators/milestones, timeline/critical path network etc.

It is proposed to have a draft Detailed Mine Closure Plan document prepared for internal peer review by the end of Q2 2008.

5.5.2 Rehabilitation Liability Estimate

DPI-MR introduced a new Rehabilitation Security Deposit Policy in November 2005 for implementation from 1st July 2006. The new policy aims to encourage progressive rehabilitation through the regular review of rehabilitation liabilities, mainly through titleholders providing DPI-MR with an estimate of rehabilitation costs. The guidelines requires that the titleholder's rehabilitation cost estimate is provided as a component of all AEMRs from 1st July 2006 (DPI-MR, 2006).

Xstrata Coal calculates security deposits as a "snapshot of current disturbance." That is, if the mine were to close tomorrow, what would the rehabilitation and decommissioning liability for the mine be? The "snapshot" method identifies any proposed variations in rehabilitation liabilities between the time of the "snapshot" and the next AEMR reporting period. These variations are reviewed every AEMR reporting period.

In October 2006, GSSE calculated Baal Bone Colliery's rehabilitation liability to be $12,218,258. Baal Bone has completed a substantial quantity of rehabilitation works over the past eighteen months in association with open cut mining activities, and this work continues.

GSSE undertook a review of the residual liability during December 2007 and January 2008 which identified the current rehabilitation cost estimate (liability) to be **$5,401,438**; a decrease of $6,816,820 from the sum determined in October 2006.

A copy of GSSE's Rehabilitation Liability Assessment Spreadsheet (15.02.08) is attached to this report.

SECTION 6.0: ACTIVTIES PROPOSED IN THE NEXT AEMR PERIOD

6.1 Operations and Systems

Projects and targets for the 2008 reporting period include the following:

- Extraction of LW27 and commencement of LW28
- Completion of rehabilitation of all open cut affected lands in both the north and south open cut precincts
- Completion of restoration works on Section 1 and Section 3 of the Ben Bullen Creek
- Completion and commissioning of the ventilation shaft and powerline
- Continuation of baseline monitoring for LW 29-31
- Finalise MOP Amendment No. 5 to include extraction of LW 29-31, plus operation and rehabilitation of vent shaft and powerline
- Annual review and update of Baal Bone's EMS, including all associated Management Plans and Procedures;
- Finalisation of Detailed Mine Closure Plan;
- Third party audit of Baal Bone's Coal Haulage Consent;

6.2 Rehabilitation

It is expected that the majority of the rehabilitation works on both the north and south open cut precincts should be completed during the 2008 reporting period. Contingent upon climatic conditions at the time, it is anticipated that some final seeding work may be held back to Autumn 2009 in an attempt to reduce the risk of failure.

It should also be noted that the southern void area will be maintained as a coarse and fine reject emplacement area for the remainder of the life of mine. Whilst it may be progressively or temporarily rehabilitated if the opportunity arises, final rehabilitation will be completed concurrent with mine closure. Similarly, the general underground infrastructure areas including the pit-top administration, bathhouses, workshops, conveyors, CHPP and rail loop will not be decommissioned and rehabilitated until after mine closure occurs.

Anticipated rehabilitation works to be completed within 2008 AEMR reporting period include the following:

- Completion of soil amelioration with gypsum and agricultural lime, and seeding with appropriate species mixes in the outstanding portions of the northern open cut precinct
- Completion of restoration of the Ben Bullen Creek in the north and south open cut precincts using a natural channel design philosophy
- Initial establishment of a riparian vegetation corridor alsong the restored sections of the Ben Bullen Creek
- Maintenance and/or augmentation of current and previous rehabilitation areas

6.3 Community Relations

Community Relation projects for the 2008 AEMR reporting period include the following:

- Preparation of two community newsletters;
- Hosting of two CCC meetings;
- Conducting a mine Open Day to highlight open cut rehabilitation works;
- Support of Ironfest arts and cultural festival in Lithgow
- Sponsorship of the Life Education Van to attend Capertee Primary School
- Assist Cullen Bullen Public School with their school environmental improvement program (rain water tanks and pump)
- Prize sponsorship of the annual Portland Art Show
- Sponsorship of team in the Movember Campaign
- Sponsorhip of book prizes for the Cullen Bullen School annual speech day
- Donation to Lithgow Christian Fellowship to provide Christmas lunch and Christmas hampers to the underprivileged in Lithgow.

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