



WHITEHAVEN COAL MINING PTY LTD

(ABN 65 086 426 253)

**ANNUAL ENVIRONMENTAL
MANAGEMENT REPORT**

for the

CANYON COAL MINE

(MLs 1464 and 1471)

01 October 2010 – 30 September 2011



Whitehaven Coal Mining Pty Ltd
Annual Environmental Management Report
for the
Canyon Coal Mine
(MLs 1464 and 1471)

MOP (Canyon Extension) Commencement Date - July 2006

MOP (Canyon Extension) Completion Date - June 2008

MOP Amendment Commencement Date - August 2008

MOP Amendment Completion Date - February 2010

Closure Plan - July 2009 onwards

AEMR Commencement Date 01.10.10 – AEMR Completion Date 30.09.11

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Canyon Coal Mine Community Consultative Committee

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1 INTRODUCTION AND OBJECTIVES

1.1 Scope

1.1.1 Introduction and Period of Reporting

This Annual Environmental Management Report (AEMR), is the eleventh such document submitted for the Canyon Coal Mine, and has been prepared in accordance with Condition 3 of Mining Leases (MLs) 1464 and 1471 (Mining Act 1992) and Condition 5 (Schedule 5) of DA 8-1-2005 MOD 2. The AEMR generally follows the format identified in the Department of Primary Industries - Mineral Resources document entitled "Guidelines to the Mining, Rehabilitation and Environmental Management Process" Version 3 dated January 2006.

Though primarily covering the period from 1st October 2010 to 30th September 2011 (the reporting period), where relevant the AEMR provides information on historical aspects of the operation and longer term trends in environmental monitoring results.

Canyon Coal Mine is located within the Narrabri Shire, approximately 30 km north-west of Gunnedah, 16 km east-south-east of Boggabri and immediately north of the former Vickery Coal Mine (Figure 1).

1.1.2 The Company

Canyon Open Cut Coal Mine is owned by Whitehaven Coal Mining Pty Ltd (WCM), which is a 100% owned subsidiary company of the publicly listed company Whitehaven Coal Limited (WCL).

WCL also owns the Whitehaven Siding and CHPP approximately 6 km north-west of Gunnedah, the Rocglen Open Cut Coal Mine, the former Gunnedah Colliery and Sunnyside Open Cut Coal Mine (through subsidiary company Namoi Mining Pty Ltd), Werris Creek Open Cut Coal Mine (through subsidiary company Werris Creek Coal Pty Ltd), and is the majority shareholder of the Tarrawonga Open Cut Coal Mine (Tarrawonga Coal Operations Pty Ltd) and Narrabri Underground Coal Mine (Narrabri Coal Operations Pty Ltd). WCL continues actively pursuing other prospective tenements with a view of maintaining a long-term presence in the Gunnedah Basin.

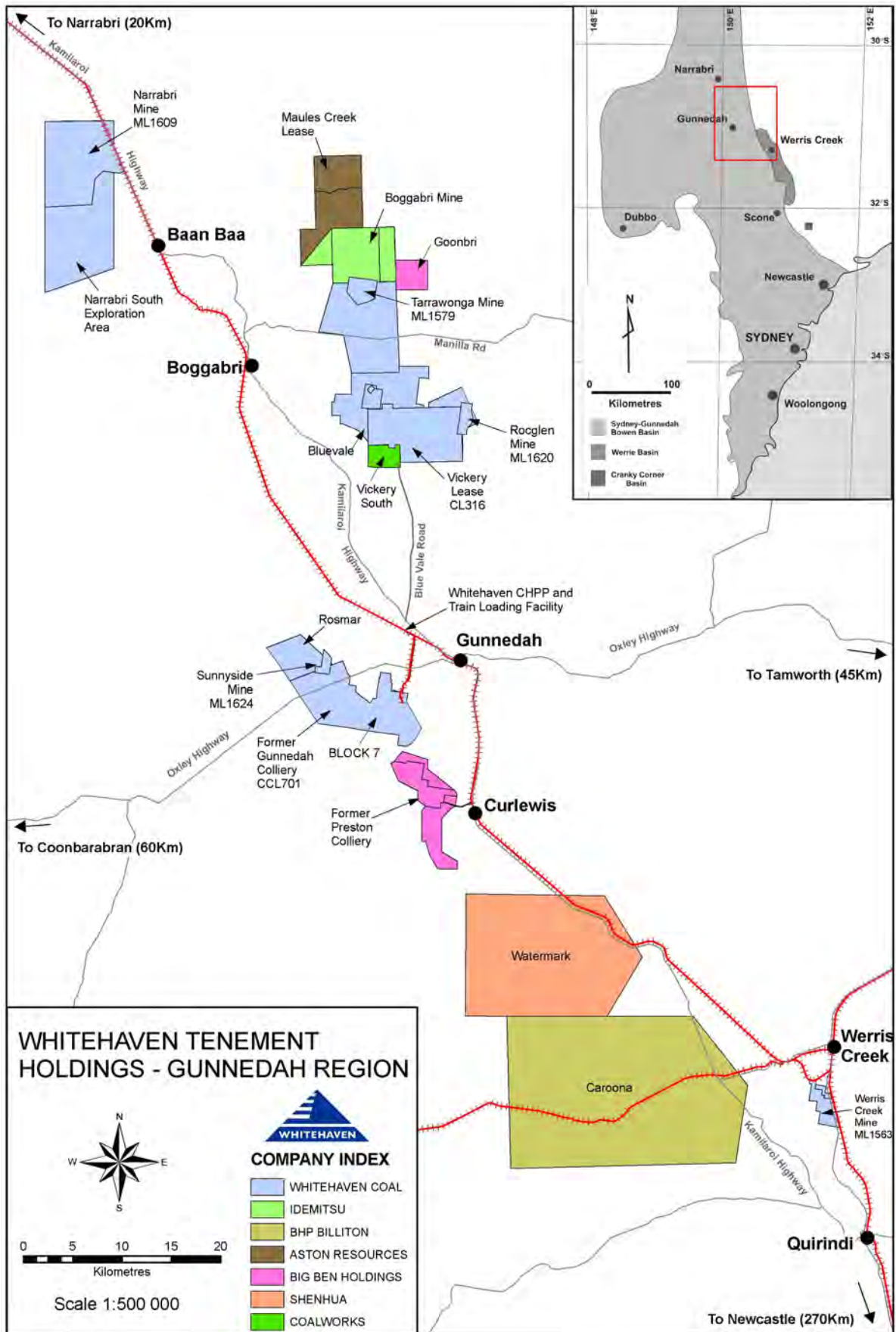


Figure 1 - Locality Plan

1.1.3 Background and History of the Canyon Coal Mine

The Canyon Coal Mine was developed in two stages commencing in January 2000. The first stage, a trial mine which commenced production in February 2000, was developed to supplement and maintain continuity of supply to the former Gunnedah Colliery's domestic customers and enable domestic and export coal quality evaluation and an assessment of market acceptability. The Development Consent (182/99) for the trial mine was issued by Narrabri Shire Council (NSC) for a duration of two years, lapsing on 19th November 2001.

Based on the success of the trial mine, in March 2000 a Development Application for the Stage 2 (750000 tpa) mine (and an accompanying Environmental Impact Statement (EIS)) were lodged with the then Department of Urban Affairs and Planning. The Application, which extended upon and incorporated relevant aspects of the Stage 1 development, was approved in August 2000 subject to a number of general, operational and statutory conditions. Stage 2 mining commenced in September 2000.

In June 2002, WCM lodged a S.96 (EP&A Act, 1979) Application with Planning NSW seeking approval to modify DA 72-03-2000 to enable an increase in the Stage 2 mine production limit to 1.25 Mtpa. The Application also sought approval for the disposal of rejects from the Whitehaven CHPP at the mine, an activity previously identified and approved under the Development Approval for the Whitehaven Siding CHPP (DA 0079.2002) but not identified specifically in DA 72-03-2000.

The modification (MOD-8-2-2003-1) was approved on 3rd September 2003 subject to six conditions or amendments to the wording within DA 72-03-2000.

In December 2004, WCM lodged a new development application under Part 2, Schedule 3 of the Environmental Planning and Assessment Act 1979 in which approval was sought for a southward extension of the open cut into an area referred to as the Canyon, and the relocation of facilities including the ROM coal stockpile, crushing plant, coal bin and various support buildings. The Canyon area, covering approximately 46 ha, lies within the confines of ML 1471. The application (DA 8-1-2005) was approved on 30th June 2005.

In August 2007, a modification to DA 8-1-2005 was lodged with the Department of Planning seeking an amendment to the boundary of the pit limit as defined in the original consent. An additional 3 hectares was approved on the 22nd August 2007 vide DA 8-1-2005 MOD 1 which enabled the removal of a difficult to work corner from the pit face.

In July 2008 a modification to DA 8-1-2005 MOD 1 was lodged with the Department of Planning seeking an amendment to the boundary of the pit limit as defined in the original consent. An additional 8 hectares was approved on the 19th August 2008 vide DA 8-1-2005 MOD 2 which enabled access to a further 440,000 tonnes of ROM coal (Appendix 1).

Over the life of the mine, a total area of approximately 217 ha has been disturbed for mining and associated activities within MLs 1464 and 1471.

The external boundary of ML 1471 corresponds to the DA Area referred to in DA 8-1-2005 and covers an area of approximately 417 ha. ML 1464 lies wholly within ML 1471.

1.1.4 Products and Markets

No coal has been produced at the mine during the reporting period.

1.1.5 Operational and Environmental Management

1.1.5.1 Contacts

The WCM management personnel responsible for operational and environmental performance at the Canyon Coal Mine and their relevant contacts are as follows:

- Mr Casper Dieben – General Manager, Operations - oversees Open Cut Operations for the Whitehaven Group. Contact: 0407 123 958.
- Mr Danny Young, Group Environmental Manager – oversees day to day environmental and rehabilitation performance across the site. Contact: 02 6741 9316 or 0427 497 710.

1.1.5.2 Support Personnel

In addition to the personnel identified in Section 1.1.5.1, WCM utilise specialist assistance as and when required. Specialist environmentally-based or related companies or consultants involved in activities at the mine during the reporting period included:

- Countrywide Ecological Services (CES);
- G & B Ward Earthmoving Pty Ltd;
- ALS Acirl;
- Soil Services; and
- Eco Logical Australia Pty Ltd.

All activities are undertaken generally in accordance with the MOP, Closure Plan, management plans and procedures prepared in satisfaction of WCM Mining Leases, Environment Protection Licence (EPL) 10094, Development Consent and relevant acts and regulations.

1.1.6 Corporate Occupational Health, Safety and Environmental Policy

WCL has a documented Health, Safety and Environmental policy which states:

Whitehaven is committed to supplying coal in a safe, efficient and environmentally responsible manner. Whitehaven will conduct business in a way that maintains a safe and healthy workplace for our employees, contractors, visitors and the surrounding community and will protect the environment in all stages of mining and processing.

Whitehaven's Goals are:

- *To achieve zero injuries and occupational illnesses.*
- *To achieve zero equipment damage.*
- *To achieve zero environmental incidents.*

Whitehaven will achieve these goals by:

- *Ensuring health, safety and environment is considered in all planning and work activities.*
- *Involving our employees through regular communication, consultation and training.*
- *Identifying and controlling all potential hazards in the workplace through hazard identification and risk analysis.*
- *Ensuring all incidents are reported, controlled and learning's applied and shared.*
- *Providing effective injury management and rehabilitation for all employees.*
- *Seeking continuous improvement in performance by taking into account employee & community concerns and advances in health, safety and environment.*
- *Providing details of legislative and other requirements and necessary training and resources to meet these requirements.*

Responsibilities:

All persons working for Whitehaven have a personal responsibility to comply with this policy and subsidiary Health, Safety & Environment systems. No work is to be undertaken without a clear understanding of a safe method that minimises the risk of injury, equipment damage and environmental harm.

Whitehaven employees shall share the responsibility to:

- *Work in a healthy, safe and environmentally responsible manner.*
- *Encourage others to work in a healthy, safe and environmentally responsible manner.*
- *Promptly report incidents, unsafe practices or conditions and environmental concerns as they become apparent.*
- *Co-operate with Management in the support of promotion of health and safety and responsible environmental management in the work place.*

This policy applies to all mines operated by Whitehaven Coal Limited and its subsidiaries.

1.2 Approval Status

1.2.1 Leases, Licences and Approvals

Table 1 identifies the leases, licences and approvals in place for the Canyon Coal Mine at the end of the reporting period, the issuing / responsible Authority, dates of issue, duration (where limited) and relevant comments. The list is presented chronologically according to the date of issue.

Reviews of compliance/performance with the conditions identified in DA 8-01-2005 MOD 2, EPL 10094, and MLs 1464 and 1471, are presented in Appendix 3, Tables A3-1, A3-2 and A3-3 respectively.

Table 1 - Tenements, Licences and Approvals

Issuing / Responsible Authority	Type of Lease, Licence, Approval	Date of Issue	Expiry	Comments
Department of Mineral Resources* ²	Exploration Licence (EL 4699)	1994* ¹	22.09.2013	Last renewed 15.12.2010
Department of Mineral Resources* ²	Mining Lease (ML) 1464	21.12.1999	21.12.2020	ML 1464 covers the Stage 1 (trial) Mine area and lies wholly within the boundary ML1471
Environment Protection Authority* ³	Environment Protection Licence No. 10094 (Appendix 2)	10.02.2000	Nil Anniversary date: 06 April Next review: 2014	Approval granted to commence Stage 1 operations. Final licence issued 6/4/2000 and subsequently amended 12/7/2001 by Notice of Variation to incorporate the Stage 2 operations. Review of licence issued Sept 2009. Scheduled Activities: Mining for Coal, Coal Works, Crushing, Grinding or Separating Works to 2 Mtpa.
Minister for Urban Affairs and Planning* ⁴	Development Approval (DA) 72-03-2000	10.08.2000	31.12.2005	Approval for Stage 2 Mine.
Department of Land and Water Conservation* ⁵	Water Licence 90BL249901 90BL252067	06.09.2000 12.05.2004	Nil Nil	Combined allocation of 100 ML pa.
Department of Mineral Resources* ²	ML1471	07.09.2000	07.09.2021	ML1471 surrounds ML1464
Minister for Infrastructure and Planning* ⁴	Modification MOD-8-2-2003-1	03.09.2003	07.09.2015	Approval granted permitting ROM coal production increase to 1.25 Mtpa and coarse reject disposal to the mine.
Minister for Infrastructure and Planning* ⁴	DA 8-1-2005	30.06.2005	07.09.2015	Approval for Canyon extension, relocation of facilities and services. Requires surrender of DA 72-3-2000 on 30/12/2005. Covers activities approved under DA 72-03-2000.
Minister for Planning	Modification	22.08.2007	07.09.2015	Approval for modification to Canyon Extension to remove

Issuing / Responsible Authority	Type of Lease, Licence, Approval	Date of Issue	Expiry	Comments
	MOD-8-1-2005-1			difficult to work corner associated with original consent.
Minister for Planning	Modification MOD-8-1-2005-2 (Appendix 1)	19.08.2008	07.09.2015	Approval for modification to Canyon Extension to access additional 8ha (440,000t).
Narrabri Shire Council	DA 31/2012	25.07.2011	25.07.2013	Approval for parts storage and maintenance offices.
* ¹	Originally issued to Namoi Valley Coal Pty Ltd and transferred to Whitehaven Coal Mining Pty Ltd 01.10.99			
* ²	Now, DTIRIS – Division of Resources and Energy (DRE)			
* ³	Now, Office of Environment and Heritage (OEH)			
* ⁴	Now, Minister for Planning. Responsible department, Department of Planning and Infrastructure (DoPI)			
* ⁵	Now, NSW Office of Water			

1.2.2 Amendments to Leases, Licences and Approvals

In August 2011, Whitehaven submitted a licence variation to OEH for the removal or modification of a number of conditions in the EPL, generally associated with noise, dust and blasting, to reflect the current status of the site. The variation had not been finalised by the end of the reporting period.

A Development Application and associated Statement of Environmental Effects was submitted to Narrabri Shire Council in June 2011 for the construction and operation of a parts/stores shed and compound (Maintenance Facility) at the Canyon site for Whitehaven's open cut operations. Development Consent was issued on the 25th July 2011, with construction and occupation certificates issued after the completion of this reporting period.

The facility will provide a central storage location for various mine equipment such as tyres, fittings and spare parts for Whitehaven's operating open cut mines, particularly the Rocglen and Tarrawonga mine sites. It will provide for easier movement, management and security of maintenance equipment. The Canyon site was chosen as an appropriate location on the basis that it occupies the former Canyon workshop laydown/hardstand area which would not require any additional clearing or general disturbance. Approximately 12 employees will be based at the facility with hours of operation being Monday to Friday, 6am to 6pm.

Whitehaven also lodged a Project Description and Preliminary Environmental Assessment in October 2011 for the Vickery Project, located immediately south and south-west of the Canyon site. Whilst this occurred outside of the reporting period it is important to identify as it has significant implications for the rehabilitation of the site. The proposed Vickery western emplacement encompasses the entire Canyon void and a portion of the rehabilitated Canyon waste emplacement. The impact of the Vickery project on Canyon rehabilitation is further discussed in Section 5.

1.3 Actions Requested at Previous AEMR Review

The 2009-2010 AEMR was submitted in January 2010. A site inspection has not been undertaken and Whitehaven is yet to receive advice from DRE regarding acceptance of the AEMR. As a result, no actions have been requested.

The former Department of Planning (DOP, now Department of Planning and Infrastructure) provided comment on the AEMR via an email dated the 7th April 2011. The email stated that the Department did not have any specific comments to make but advised that the conditions of consent require the Director-General's approval for a significant alteration to the functioning of the Community Consultative Committee (CCC). Whitehaven and the Canyon CCC have no intention at this stage to alter the frequency of meetings however any future changes would be directed to the Director-General for approval. The CCC is further discussed in Section 4.3.

2 SUMMARY OF OPERATIONS

2.1 Exploration, Resources / Reserves and Mine Life

There has been no exploration in the past 12 months for ML1471/1463. Coal resources which remain within ML1471 occur to the northeast of the Canyon open cut and have not been assessed to date.

Production at Canyon ceased in June 2009 and the mine is currently in the closure phase.

2.2 Land Preparation

Land preparation activities undertaken at the mine during the reporting period were restricted to some minor works around the remaining workshop and construction of a gravel hardstand for the Maintenance Facility discussed in Section 1.2.2. The only remaining infrastructure areas (Maintenance Facility and original workshop, access road and internal road) comprise 7.02 ha. Topsoil and subsoil stockpile locations are shown on Plan 3.

Table 2, the "Production and Waste Summary", shows little change over the reporting period with the exception of the soil that was stripped from the Maintenance Facility area and spread over areas around the original workshop.

Table 2 - Production and Waste Summary

	Cumulative Production (cubic metres)		
	Start of Reporting Period	At end of Reporting Period	End of next Reporting Period (estimated)
Soil Stripped * ¹ (m ³)	752,081	756,581	756,581
Soil Used/spread (m ³)	872,962	877,462	877,462
Waste Rock (m ³)	48,560,994	48,560,994	48,560,994
ROM Coal (t)	6,452,980	6,452,980	6,452,980
Processing Waste (t) * ²	655,295	655,295	655,295
Product (t)	5,279,707	5,279,707	5,279,707
* ¹	Excludes friable overburden		
* ²	Transported to the mine for disposal. Plan 4 shows the coarse reject disposal area.		

No coarse reject has been disposed of at the site and no gravel has been transported from the site in the last 12 months.

2.3 Construction

With the exception of the gravel hardstand, which was prepared for the Maintenance Facility, no construction occurred during the reporting period.

2.4 Mining

No mining was undertaken during the reporting period. All rehabilitation works were carried out during daylight hours only.

2.5 Waste Management

No wastes were generated at the mine during the reporting period, with the exception of a minor amount of effluent from a single toilet which is treated via a septic system.

No coarse reject from the Whitehaven CHPP was disposed of at Canyon during the reporting period. Coarse reject is currently disposed of at Whitehaven's Tarrawonga mine.

2.6 Stockpile Capacity

No coal was stockpiled during the reporting period. The stockpile area has been rehabilitated, as discussed in Section 5.

2.7 Water Management

2.7.1 Objectives

The Canyon Coal Mine lies within the catchment of Driggle Draggie Creek, with any runoff originating from undisturbed areas within the DA Area flowing directly or indirectly to that creek and hence, the Namoi River. Limited opportunities also exist for the discharge of runoff from mine-disturbed area (i.e. after appropriate detention time to satisfy licensed discharge criteria). Five discharge points, i.e. Storage Dams SD-1 (WW-7), SD-2 (WW-8), SD-3 (WW-9), SD-4 (WW-13) and SD-5 (WW-14) (Plan 4) are nominated in EPL 10094.

The management of water at the Canyon Coal Mine is undertaken with the following objectives:

- i. The quantity of water exhibiting elevated suspended solids loadings is minimised.
- ii. Erosion is minimised.
- iii. Sediment-laden water is contained for a sufficient period that discharges, if occurring, satisfy the discharge criteria identified in EPL 10094.
- iv. Surface water is harvested off-site to the extent permissible, thereby minimising water extraction from bores or other sources.
- v. Ground-waters are not contaminated.
- vi. Downstream water users are not adversely affected by the Mine's operations, either in terms of quantity or quality.

- vii. The water management system is consistent with planned rehabilitation objectives and long-term land use.

2.7.2 Surface Water Management

A total of 13 sediment basins and 8 storage dams remain in place within the DA Area, with a combined storage capacity of approximately 93 ML, i.e. 38 ML in sediment basins and 55 ML in storage dams.

Of the storage dams, all but SD-6, SD-7 and SD-8 (Plan 4) primarily collect flows emanating from the array of linked sediment basins and provide a final “polishing” storage prior to off-site discharge.

All sediment basins, storage dams and associated banks and drains within the DA area have been designed and constructed by Department of Lands - Soil Services personnel. The principal components of the water management system in place at the end of the reporting period are shown on Plan 4.

Two 50,000 L diesel fuel tanks were previously positioned within a bunded area with a capacity to hold 240,000 L. The bunded area, which also contained stored oils, incorporated a clay over plastic liner to minimise the potential of soil contamination in the event of a spill. Pipes and lockable valves were in place to enable removal of spills and rainwater from the area.

The tanks were removed in mid-2010 and the area tested for hydrocarbon contamination to determine rehabilitation requirements. Section 3.17 further discusses this process.

2.7.3 Discharges

There have been three wet weather discharges during the reporting period, which are discussed in detail in Section 3.3.

2.7.4 Water Sources, Demand and Use

Within the DA Area and immediate vicinity of Canyon Coal Mine, surface water resources are limited to a number of ephemeral drainage lines which flow for a short period after substantial rainfall into farm dams, an excavation on Driggle Draggie Creek, water storage dams on the adjacent former Vickery Coal Mine site and a series of interlinked sediment basins and storage dams within the DA Area as shown on Plans 3 and 4.

With the exception of a minor amount of water used for tree watering purposes, no water has been used at the mine during the reporting period.

2.7.5 Stored Water

Table 3 presents an estimate of the volume of stored water at the beginning and end of the reporting period. The estimate remains the same as the previous reporting period. No water has been used onsite and it is assumed that losses through evaporation and gains through rainfall cancel each other out in terms of water stored.

Table 3 - Stored Water

	Volumes Held (m ³)		Storage Capacity at the end of the Reporting Period (m ³)
	Start of Reporting Period	At end of Reporting Period	
Clean Water (in Storage Dams)	50 000	50 000	55 000
Dirty Water (in Sediment Basins)	34 000	34 000	38 000
Contaminated Water	Nil	Nil	20

2.7.6 Groundwater Management

During final shaping of the void, care was taken to ensure the RL of the void floor was higher than the RL of the extracted coal seam in order to avoid groundwater seepage into the void. Initial water quality testing since completion of the final void is indicative of EC levels expected in surrounding surface water storages, with no indication of groundwater infiltration. The EC has remained very consistent over the last 12 months with the initial EC being 394µs/cm in July 2010 and more recent samples being 346µs/cm in February 2011, 395µs/cm in May 2011 and 451µs/cm in August 2011. During mining operations, pit water was generally in the range of 3000-4000µs/cm. pH levels have remained between 8.1 and 8.9 since July 2010. The water will continue to be monitored over time to determine any change in void water quality.

2.8 Hazardous and Explosive Material Management

The location of the explosives magazines, which are maintained by Orica Mining Services, is shown on Plan 4. It is anticipated that the magazines will remain onsite for some time due to the practical location which is concealed from the public. An access track will be maintained to the magazines which can also be used for rehabilitation access and bushfire management purposes.

2.9 Infrastructure Management

With the exception of the original workshop, no other infrastructure was present on the site during the reporting period. The Maintenance Facility will be constructed during the reporting period.

3 ENVIRONMENTAL MANAGEMENT & PERFORMANCE

The following sub-sections document the implementation and effectiveness of the various control strategies adopted at the Canyon Coal Mine, together with monitoring data for the reporting period. Where relevant, life of mine monitoring data is also included as a basis for discussion on longer-term trends. Existing monitoring locations are shown in Figure 2.

3.1 Air Pollution

3.1.1 Criteria

The air quality criteria applicable to the Canyon Coal Mine are specified in DA 8-1-2005 MOD 2 Schedule 3, Tables 1, 2 & 3 and summarised below:

- Acceptable mean annual increase in deposited dust of 2 g/m²/month.
- Mean annual dust deposition (all sources) of 4 g/m²/month.
- Mean annual TSP (all sources) concentration – 90 µg/m³. Although no specific TSP monitoring occurs, Whitehaven has received approval from DoPI to determine TSP air quality monitoring values by multiplying measured PM₁₀ values by a factor of 2.
- Mean annual PM₁₀ particulate level of 30 µg/m³.
- 24 hour average PM₁₀ particulate level of 50 µg/m³.

Routine air quality monitoring at the Canyon Coal Mine is required for deposited dust only.

3.1.2 Control Procedures

No controls were required during the reporting period as dust generating activities have ceased and minimal exposed soil areas remain.

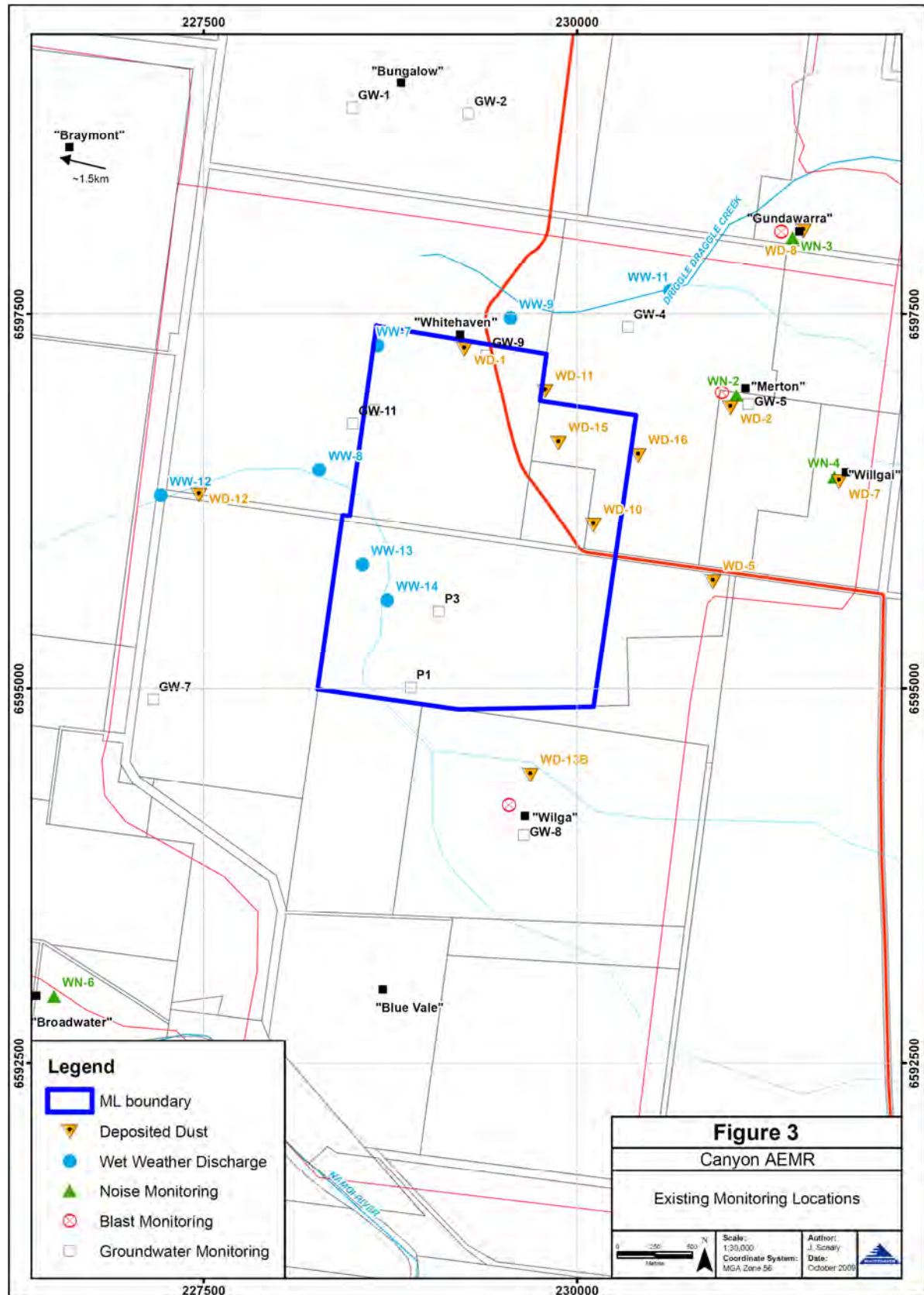


Figure 2 - Existing Monitoring Locations

3.1.3 Dust Monitoring

Table 4 presents a summary of the deposited dust monitoring data for the reporting period while Appendix 4 presents the results of dust monitoring since February 2005. A graphical representation of the total insoluble solids and ash content data for each of the sites monitored during the reporting period, and since February 2005 is also included in Appendix 4. Figure 2 identifies the locations of the various deposited dust gauges maintained during the reporting period.

It should be noted that December 2010 and January 2011 deposited dust results have been excluded from WD-13B Womboola as they were highly anomalous with results from that monitoring location during other months as well as results from other monitoring locations during December and January.

**Table 4 - Deposited Dust Monitoring Data
October 2010 to September 2011**

Site (see Figure 2)	Property	Total Insoluble Solids g/m ² /month		Ash Content g/m ² /month	
		Mean	Standard Deviation	Mean	Standard Deviation
WD-1 ≠	Whitehaven	0.8	0.9	0.6	0.6
WD-2	Merton	0.5	0.3	0.4	0.2
WD-5	Wilga	0.5	0.4	0.4	0.3
WD-7	Willgai	1.3	1.4	0.7	0.4
WD-8	Gundawarra	1.6	1.3	1.2	0.9
WD-10	Merton	1.5	2.0	0.8	0.9
WD-11	Merton	4.0	4.3	1.8	1.9
WD-12 ≠	Whitehaven	1.3	0.7	0.9	0.5
WD-13B	Womboola	1.3	1.7	0.8	0.5
WD-15	Merton	1.5	1.8	0.7	0.7
WD-16	Merton	2.3	2.3	1.3	1.3
≠ Gauge on WCM-owned land					

A review of Table 4 shows that for the reporting period the mean annual average for total insoluble solids (deposited dust) was satisfied at all sites. Given mining ceased in mid 2009, any elevated monthly results or annual averages are believed to be associated with other non-mining related activities such as farming practices and traffic on adjacent unsealed roads.

3.1.4 Greenhouse Gas Investigations

During the reporting period, a total of 17,664 litres of diesel fuel was used at the site for rehabilitation purposes. No explosives were used and no ROM coal was produced.

Assuming an energy content of Automotive Diesel Oil (diesel) of 38.6MJ/L and using Table 3 of the National Greenhouse Accounts NGA Factors – January 2008, the estimated direct – scope 1 Greenhouse Gas emissions including all CO₂ and non CO₂ gases are as follows:

	Diesel Fuel usage (KL)	Emission Factor (t CO ₂ –e/KL)	Equivalent tonnes
GHG 2010/2011	17.7	2.7	48

CO₂ emissions have decreased significantly since the previous reporting period as the only fuel use was associated with minor rehabilitation works.

3.2 Erosion and Sedimentation

Methods for the management of erosion and sediment control at the Canyon Coal Mine are presented in the MOP, Closure Plan and the Water Management Plan prepared in accordance with DA 8-1-2005 MOD 2.

Some erosion has occurred within the final void over the last 12 months, especially on the eastern extent. No remediation works have occurred on the basis of the proposed infill of the void with waste rock from the Vickery Project and the fact that any sedimentation is contained within the void.

3.3 Surface Water Pollution

The prevention of surface water pollution is achieved through the management of surface water as presented in Section 2.7.2.

Over the period September 2010 - December 2010, the Canyon site received 344.4mm of rainfall. During this time, the site discharged surface water on the 10th September, 12th November and 6th December 2010. Creek flows were also monitored on the 30th September 2011 despite discharge not occurring from site.

Discharge points WW9 and WW8 are subject to limits provided in EPL 10094. Upstream and downstream samples are also taken during each discharge event for the purpose of Whitehaven to compare water quality before and after it travels through the site. The discharge events are summarised below:

10th September 2010

TSS levels at WW9 were marginally elevated at 54mg/L, however there was no upstream surface disturbance associated with mining activities. Sampling upstream and downstream identified an elevated TSS level upstream at WW11, with reduced loading downstream at

WW12. The discharge event from WW9 followed 10.4mm of rainfall on the 10th of September 2010.

Site	Time	pH	EC (us/cm)	TSS (mg/L)	TOC (mg/L)	Oil/Grease (mg/L)
WW11 (upstream)	13:30	6.88	81	115	18	<5
WW9	14:05	6.94	140	54	23	<5
WW12 (downstream)	13:45	7.00	104	40	21	<5

12th November 2010

23.4mm of rainfall on the previous day triggered discharge at WW9, which recorded an elevated TSS of 68mg/L. In the 5 days leading up to the discharge, 44.2mm of rainfall was recorded. Again, there was no disturbance from site activities upslope of the discharge location. The upstream and downstream samples both recorded elevated TSS levels.

Site	Time	pH	EC (us/cm)	TSS (mg/L)	TOC (mg/L)	Oil/Grease (mg/L)
WW11 (upstream)	10:15	6.64	114	58	25	<5
WW9	10:30	6.57	136	68	41	<5
WW12 (downstream)	10:00	6.85	283	226	33	<5

6th December 2010

Discharge occurred on the 6th December 2010 following 45mm of rainfall in the preceding 3 days. All parameters were compliant with the EPL thresholds with the TSS concentration lower than that recorded at the upstream and downstream monitoring locations.

Site	Time	pH	EC (us/cm)	TSS (mg/L)	TOC (mg/L)	Oil/Grease (mg/L)
WW11 (upstream)	15:00	6.66	112	45	16	<5
WW9	15:15	6.94	301	18	15	<5
WW12 (downstream)	14:45	6.88	197	76	22	<5

30th September 2011

The upstream (WW11) and downstream (WW12) monitoring locations were sampled on the 30th September 2011 following 41.8mm of rainfall in the preceding two days. The site was not discharging at the time. Water quality results are provided below.

Site	Time	pH	EC (us/cm)	TSS (mg/L)	TOC (mg/L)	Oil/Grease (mg/L)
WW11 (upstream)	10:30	7.09	58	412	7	<5
WW12 (downstream)	10:15	6.97	109	236	16	<5

It should be noted that at the time of each discharge, storage capacities could not be reduced via the use of water for dust suppression due to the cessation of mining in July 2009.

Notification of exceedances of EPL thresholds was issued to the former DECCW on the 10th May 2011.

3.4 Groundwater Pollution

No materials occur or are retained on the mine site which are likely to be a source of groundwater pollution.

Throughout the life of the mine to date, WCM's performance with respect to groundwater management, the prevention of pollution and the assessment of impacts on groundwater availability to other surrounding users, has been assessed through groundwater level and chemistry monitoring undertaken at a series of operating and abandoned bores within ML 1471 and extending to distances of up to 3 km from the mining activities, where practicable, at the frequency and for the parameters identified in Table 5.

Table 5 - Groundwater Monitoring

Site (see Figure 2)	Registered Bore No.	Property	Frequency			Purpose
			SWL * ²	EC * ³	pH, Na, Ca, K, Mg, Fe, Mn, Al, As, Cl, SO ₄ , HCO ₃ , NO ₃ and NO ₂ (as N)	
GW-1 * ¹	GW031896	"Bungalow"	Quarterly * ⁴	Six monthly * ⁴		To determine existing status and any impacts
GW-2 * ¹	GW031897	"Bungalow"	Quarterly * ⁴	Six monthly * ⁴		To determine existing status and any impacts
GW-3 * ¹	GW003087	"Gundawarra"	Monitoring ceased on property owners request			
GW-4 * ¹	GW000880	"Merton"	Quarterly	Six monthly		To determine existing status and any impacts
GW-5 * ¹	GW000891	"Merton"	Quarterly	Six monthly		To determine existing status and any impacts
GW-6 * ¹	GW031999	"Womboola"	Mined through			
GW-7 * ¹	GW001653	"Womboola"	Quarterly	Six monthly		To determine existing status and any impacts
GW-8 * ¹	GW005749	"Wilga"	Quarterly	Six monthly		To determine existing status and any impacts
GW-9	GW001613	"Whitehaven"	Quarterly	Six monthly		To determine existing status and any impacts
GW-10	GW001602	"Whitehaven"	-	Six monthly	Annually	To determine existing status and any impacts
GW-11 * ⁵	90BL249739	"Whitehaven"	-	-	Annually	To determine existing status and any impacts
GW-12	90BL252067	"Womboola"	Mined through			
VNW221 * ⁶		"Womboola"	Quarterly	Six monthly * ⁶		To determine existing status and any impacts
VNW222 * ⁶		"Womboola"	Mined through			
VNW223 * ⁶		"Womboola"	Quarterly	Six monthly * ⁶		To determine existing status and any impacts
* ¹ Non-Company owned bore * ³ EC = Electrical Conductivity * ⁵ Company production bore * ² SWL – Standing Water Level * ⁴ Subject to Access * ⁶ Following mining through of GW-12						

Appendix 5 presents the results of the groundwater monitoring undertaken since the commencement of mining at the Canyon Coal Mine. Monitoring sites are shown on Figure 2.

Groundwater sampling and analyses is undertaken by ALS Acirl Pty Ltd.

A review of the groundwater monitoring results presented in Appendix 5 shows that groundwater levels remained relatively constant during the reporting period, with the exception of GW4 which showed a 10m drop in SWL in August 2011. This monitoring point is located on the "Merton" property to the east of the mine site and is equipped with a windmill that is used for non-mining related purposes. Given the bore has fairly consistently remained at approximately 21m since 2005 it is possible that a SWL of 31m is a result of misreading the dip tape or a transcription error on the field sheet. The SWL at this bore will be closely monitored during the next reporting period.

Historically, adjacent landowners have indicated that water level fluctuations have always occurred, and are a reflection of their own use of the bores, down gradient extraction and the low yield of the fractured rock aquifer (0.4 to 0.9 L/s).

DA 8-1-2005 MOD 2 requires the monitoring of impacts of water movement from the groundwater to the surface water present in the final void. Sampling in May 2011, indicated little change to the results recorded in July 2010. Section 2.7.6 discusses the void water monitoring results to date.

3.5 Contaminated or Polluted Land

Prior to mining, the DA Area was a green-fields site. Discussion with landowners during the preparation of the Stage 2 EIS revealed that no environmentally harmful products had been used on their landholding nor had there been any disposal of potential environmental contaminants.

Removal of the fuel tanks, subsequent hydrocarbon testing of the surrounding area and bioremediation is discussed in Section 3.17.

3.6 Threatened Flora

Investigations undertaken by Geoff Cunningham Natural Resource Consultants Pty Ltd as part of the Stage 2 Mine EIS identified no Threatened flora species, ROTAP species or Endangered Ecological communities within the DA Area.

Geoff Cunningham Natural Resource Consultants has, until this year, undertaken annual flora monitoring both on control quadrats surrounding the mine site as well as on the rehabilitated areas to determine the effectiveness of current rehabilitation practices.

As the mine moves towards lease relinquishment, Whitehaven is planning to adjust monitoring to a program that assesses landscape functionality across the mine rather than

isolated fauna and flora monitoring events. A draft Rehabilitation Monitoring Program has been developed by Eco Logical Australia Pty Ltd with the following aims and objectives:

- Draw monitoring objectives from existing plans or develop new objectives if required;
- Prescribe separate methods for pasture and woodland rehabilitation areas with appropriate control areas;
- Allow quantitative tracking of rehabilitation performance including a feedback loop to assist with rehabilitation and monitoring methods improvement;
- For woodland areas, assess key aspects of flora (upper, mid and lower strata), fauna and soil;
- Specify survey locations and survey methods;
- Provide detailed methods of analysis including statistical methods; and
- Analyse data from earlier flora and fauna surveys and where possible integrate sites and methods into the monitoring program.

It is expected that the new monitoring program will be implemented during the next reporting period.

3.7 Threatened Fauna

A series of investigations into the occurrence of Threatened fauna within the DA Area were undertaken by Countrywide Ecological Service as part of the Stage 2 EIS preparation phase, with two Vulnerable microbat species and a Koala having been recorded within open woodland areas within the "Womboola" property.

The EIS investigations also identified the potential occurrence of some Threatened bird, mammal and reptile species within the same area.

Subsequent studies undertaken by Countrywide Ecological Services (CES) as part of the investigation for the proposed Canyon extension of the Whitehaven Coal Mine, also identified the Vulnerable Glossy Black Cockatoo (flying in the distance) and a family of the Vulnerable Grey Crowned Babbler. The Grey Crowned Babbler, though identified in the 1999 survey work, was not listed on the Schedules of the TSC Act at that time. CES did note, however, that the numbers of this species had increased since the 1999 survey as a consequence of WCM's land management practices, despite the presence of the mining activity.

During the reporting period, the annual fauna monitoring survey of eleven separate plots was conducted on the 3rd, 4th and 6th November 2010. The methods used to sample each of the fauna groups are identical to those used in previous samples with the exception of an increased effort for bat call recording due to a suspected reduced sensitivity in some of the equipment that was damaged from exposure to rain (see Appendix 6). Since the last

monitoring event, roof tiles have been randomly placed in Plot 3 and Plot 10 (20 tiles in each plot).

The report by CES noted an increase in species richness and diversity of birds. Nocturnal raptors such as the Southern Boobook Owl and Tawny Frogmouth are starting to frequent more areas of the mine and two families of Grey-crowned Babblers were recorded. One family was attending to several near-independent young which suggests this listed vulnerable species has persisted around the mine and has bred successfully in the remaining woodland area.

CES indicated mammal diversity has not changed substantially since before mining commenced however larger macropods were becoming more common. The report noted reptile numbers similar to previous years however with some different species. The Ornate Burrowing Frog was recorded for the first time on the site.

The occurrence of birds and mammals, reptiles and amphibians were recorded and noted in the formal report attached in the Appendix 6. The report concluded that the site does not appear to have suffered unduly from the mine's operations and activities thus far.

As discussed in Section 3.6, Whitehaven will be implementing a Rehabilitation Monitoring Program during the next reporting period. Outcomes of this program will be reported in subsequent AEMRs.

3.8 Weeds

Weed management within the DA Area involves regular inspections by a Whitehaven employee who holds the required licences for weed and pest control, and his implementation of appropriate control methods for noxious weeds identified.

During the reporting period, active weed eradication was undertaken by spot control of species such as African Boxthorn, Darling Pea, Prickly Pear and Galvanised Burr in both rehabilitated areas and other undisturbed areas within the mining lease.

3.9 Blasting

Blasting criteria for the Canyon Coal Mine are nominated in Development Consent 8-1-2005 (Appendix 1), and Condition L8 of EPL 10094 (Appendix 2). Whitehaven submitted a licence variation application to OEH in August 2011 requesting removal of all conditions in EPL 10094 relating to blasting as no blasting has occurred onsite since mid 2009. As discussed in Section 1.2.2, the variation had not been finalised by the end of the reporting period.

3.10 Operational Noise

Noise criteria is specified in DA 8-1-2005 MOD 2 (Appendix 1) and EPL 10094 (Appendix 2). Given the site has been in closure since mid 2009, a licence variation application has been submitted to OEH to remove all EPL conditions related to noise. The outcome of this variation will be discussed in next year's AEMR.

3.11 Visual, Light

With the progression of rehabilitation on the site, the visual impact of the former operational areas of the site is considered minimal and in keeping with the surrounding landscape. The Maintenance Facility, which will be adjacent to the original workshop, will only be visible from the private section of the coal haulage route that passes Canyon and the properties adjacent to the eastern boundary of the site, although the view from these properties will be partially obscured by the site's topography and vegetation.

3.12 Aboriginal Heritage Management

An investigation of Aboriginal cultural heritage was undertaken as part of the EIS for the Stage 2 Whitehaven Coal Mine and identified three sites of significance as shown on Plan 3.

- Whitehaven 1 – an isolated flake of cherty mudstone found on a vehicle track approximately 160 m west of ML 1471.
- Whitehaven 2 – an open scatter of 15 pale cherty artefacts scattered over a 375 m² area. It is located approximately 60 m west of ML 1471.
- Whitehaven 3 – a scarred Grey Box tree of possible Aboriginal origin located 50 m within the southern boundary of ML 1471.

A further site, No 24-4-0013 (Plan 3), approximately 500 m west of ML 1471 was identified from the AHIMS database.

During 2004, a further cultural heritage survey undertaken as part of the Canyon extension investigations identified a further archaeological site ("Whitehaven 4") approximately 220 m north-east of "Whitehaven 3". A consent to destroy (No 2051) site "Whitehaven 4" was granted by the then DEC and this site has subsequently been removed.

"Whitehaven 3" is essentially the only site within proximity to disturbance being the only retained site within the Mining Lease. Whitehaven 3 remains fenced and assigned as a no-go area for all site personnel.

During the reporting period, no land disturbance activities occurred and no cultural material of significance was identified.

3.13 Natural Heritage

There are no features of Natural Heritage within the DA Area and hence, no specific management procedures are required.

3.14 Spontaneous Combustion

The potential for spontaneous combustion since mining ceased only related to the coarse reject emplaced at the mine. Since reject emplacement at Canyon ceased prior to this reporting period, no spontaneous combustion incidents occurred (as expected).

During the reporting period, there were no spontaneous combustion incidents at the mine.

3.15 Bushfire Management

A Bushfire Management Plan which identifies policies, procedures, responsibilities, equipment and equipment maintenance schedules, emergency response procedures and contact details is in place for the Canyon Coal Mine. WCM management also liaises with the Rural Fire Service as required.

WCM maintains firebreaks around both its landholding and the mine area and maintains fire fighting equipment as well as earthmoving equipment, a water truck etc which would be used in the control of fires.

No fires occurred on or adjacent to the mine site during the reporting period.

3.16 Mine Subsidence

Mine subsidence is not an issue with open cut mines and hence is not an issue at the Canyon Coal Mine.

3.17 Hydrocarbon Contamination

Last year's AEMR discussed removal of the site's fuel storage tanks and soil testing for hydrocarbon contamination. The contaminated soil was excavated and stored in a bunded area onsite for bioremediation. Once bioremediated, the soil was disposed of offsite as general waste.

The area has now been levelled and compacted with gravel as part of the Maintenance Facility.

3.18 Methane Drainage / Ventilation

Methane drainage / ventilation are not of relevance to open cut mining operations.

3.19 Public Safety

The Canyon Coal Mine is located wholly on WCM-owned land in a relatively remote area, in excess of 1 km from any public road and accessible only by a single access road which is locked when the coal haulage route from Tarrawonga is not in use. Appropriate signs are installed along the access road and at the entrance of the mine site. A fence was installed along the entire haul road frontage on cessation of production to deter public access when the site is un-manned. The south-western side of the pit has also been fenced to exclude stock from the final void.

The procedures in place have been effective throughout the reporting period, with no incidents of unauthorised entry or presence on the DA Area, nor any public safety issues arising.

3.20 Feral Animal Control

Feral animals are not a significant land management issue on WCM's landholding and have generally been limited to isolated occurrences of foxes, hares and rabbits. However, CES 2010 (Appendix 6) noted that foxes and cats were common in and around the mine site. Sheep were identified frequenting the rehabilitated area around Plot 8 and the presence of feral pigs was noted in the southern area of the mine around Plot 5.

In view of the relatively low frequency of occurrence, and in the absence of an extensive programme by all surrounding landowners, no broad scale feral animal control programme was again considered warranted during this reporting period.

In accordance with prior commitments, WCM will continue to monitor feral animal occurrences and implement necessary control programmes if and when necessary.

3.21 Land Capability

All land previously disturbed by mining is classified as Land Capability Class M, II, III and IV. As mining has now ceased, the land affected within the DA Area will, in the main, be returned to a classification similar to that prior to mining.

3.22 Meteorological Monitoring

3.22.1 Introduction

In December 2000, WCM commissioned a meteorological station at the mine. The station, shown on Plan 4, has been operating continuously since that time recording 15 minute wind speed, wind direction, temperatures, humidity and rainfall.

Daily meteorological data for the reporting period is presented in Appendix 7.

3.22.2 Rainfall

Rainfall data for the reporting period is presented in Table 6.

Table 6 - Rainfall Data (October 2010 - September 2011)

Month	Monthly Rainfall Reporting Period	Long Term Average * ¹	Raindays Reporting Period (≥1 mm)	Mean * ¹
October 2010	62.2	55.2	6	5.3
November 2010	108.8	61.5	10	5.7
December 2010	126.8	69.8	9	6
January 2011	16.0	71.1	2	5.5
February 2011	21.2	66.5	4	5.1
March 2011	43.0	47.9	5	3.9
April 2011	28.0	37.6	5	3.4
May 2011	68.6	42.5	5	4.1
June 2011	12.0	43.6	4	1.8
July 2011	3.4	42.4	1	4.8
August 2011	26.2	41.4	5	4.8
September 2011	85.6	40.3	6	4.5
TOTAL	601.8	619.8	62	54.9
* ¹ Gunnedah Pool (Station 055 023) Averages from 1876-2011				

A review of Table 6 shows that the total rainfall at the mine during the reporting period was 601.8 mm which is approximately 143.4 mm less than the previous reporting period and similar to the long term annual average for Gunnedah. The majority of this rainfall was received during the period October – December 2010 when monthly rainfall was much higher than long term averages. The first half of 2011 was particular dry with rainfall increasing over the last few months of the reporting period.

3.22.3 Temperature

Average maximum and minimum temperatures for the reporting period are presented in Table 7 together with long-term monthly averages for Gunnedah Pool (Bureau of Meteorology Station 055023).

Table 7 - Average Temperatures (2010/2011)

Month	Average Daily Temperature			
	Reporting Period (°C)		Station 055023 (°C)	
	Min	Max	Min	Max
October 2010	11.9	24.3	10.7	26.7
November 2010	15.2	27.1	14.2	30.3
December 2010	17.4	28.7	16.8	32.9
January 2011	20.3	34.1	18.4	34.0
February 2011	20.6	34.2	18.1	32.9
March 2011	17.3	29.8	15.8	30.7
April 2011	11.4	25.9	11.4	26.4
May 2011	5.5	20.1	7.1	21.3
June 2011	4.6	17.7	4.3	17.6
July 2011	2.5	16.9	3.0	16.9
August 2011	6.1	20.1	4.2	18.9
September 2011	7.1	23.4	7.0	22.8

Table 7 indicates mild weather during the reporting period with minimum temperatures generally similar to or greater than long term averages and maximum temperatures similar to or below long term averages.

3.22.4 Wind Speed and Direction

Fifteen minute average wind speed and direction data is collected from the Canyon meteorological station. Monthly windroses indicate that the dominant wind directions during the reporting period continued to be south-easterlies and north-westerlies which is consistent with previous years.

3.22.5 Inversions

The Canyon meteorological station does not have functionality for inversion assessment. The Tarrawonga station located approximately 15km north of the Canyon site does provide temperature assessment at 2m and 10m heights which can be used for inversion assessment if required.

4 COMMUNITY RELATIONS

4.1 Environmental Complaints

No complaints were received during the reporting period. Table 8 provides a comparison of complaints received over the past six years. The number of complaints remained relatively consistent during the 2004-2005, 2005-2006 and 2006-2007 reporting periods. Only one complaint has been received during the period 2007-2009 which is indicative of the south-western progression of mining operations (away from nearby residences), reduced production levels and the subsequent completion of mining in mid 2009.

Table 8 - Complaints Summary

Year	Issue							Total
	Driver behaviour – coal trucks	Coal from truck breaking windscreen	Blast results not received	Impact from blast	Road maintenance	Load coverage – coal trucks	Noise & dust	
2004-2005	1	1	1					3
2005-2006	1			1				2
2006-2007	1			1	1	1		4
2007-2008							1	1
2008-2009								0
2009-2010								0
2010-2011								0

4.2 Employment Status and Socio-Economic Contributions

4.2.1 Employment Status

No personnel are employed at the mine however Whitehaven personnel, such as environmental staff, access the site on an as needs basis.

4.2.2 Social and Economic Contributions

In addition to direct and indirect employment in the Gunnedah region, the purchase of goods and services from local suppliers, the provision of community infrastructure payments to local Council for new projects as required under project approval conditions, Whitehaven has also made donations to a number of local community organisations throughout the year. These contributions are made not only to assist those organisations in community work, but to demonstrate that Whitehaven Coal Mining Pty Ltd is part of the local community and maintains a strong commitment to ensuring the community continues to prosper.

As members of the Gunnedah / Boggabri area community, Whitehaven employees also contribute socially and economically through their involvement in community sporting,

educational and social organisations and expenditure of a component of their disposable income.

4.3 Community Liaison

In accordance with the requirements of the consent, a Community Consultative Committee (CCC) was formed for the Whitehaven Mine (now Canyon Coal Mine). The committee comprises representatives of Narrabri and Gunnedah Shire Councils (NSC and GSC, respectively), WCM and the community.

Since its inception, the CCC has met on an irregular basis, with the frequency of meetings in any one year determined by the developments at the mine and the extent of concerns expressed by or to the CCC members or the Councils, and by the community in general. On the 5th April 2006, the former Department of Planning approved that the CCC continue to meet on this basis, on the proviso that at least one meeting be held in any one year.

Although the mine has been in closure for 18 months, the Committee agreed at the 2009 meeting that a continuation of annual meetings would be beneficial to assess rehabilitation performance. A meeting was held on the 18th November 2010 with only one community member in attendance. As a result, the Environmental Monitoring Report was not discussed at the meeting but rather posted to all committee members following the meeting. The latest meeting was scheduled for early September 2011, however it was postponed until November 2011 due to wet weather.

Whitehaven representatives continue to maintain regular personal contact with the neighbours in the vicinity of the mine and CHPP. These contacts not only provide a means of information dissemination, but also enable Whitehaven to ascertain and address any potential issues which may arise from time to time.

5 REHABILITATION

5.1 Buildings

No infrastructure or buildings were removed during the reporting period.

5.2 Rehabilitation of Disturbed Land

5.2.1 Objectives

WCM's rehabilitation / land use objectives for the DA Area (i.e. the area within the boundary of ML 1471) are as follows:

- i. Areas affected by mining – short term
 - a. Stabilise all earthworks, drainage lines and disturbed areas that are no longer required from mine related activities; and
 - b. Reduce the visibility of mining activities from adjacent properties and the local road network.
- ii. Areas affected by mining – long term
 - a. Provide a low maintenance, geo-technically stable and safe landform which is commensurate with a variety of agricultural land uses and/or nature conservation;
 - b. Blend created landforms with the surrounding land fabric; and
 - c. Revegetate the majority of the post mining landform to communities which emulate the existing vegetative communities or those that occurred prior to agricultural related disturbance.
- iii. Areas to be unaffected by mining
 - a. Remove grazing pressure from areas of relatively intact native tree, shrub and grassland communities and thereby encourage the extension/diversification of those communities; and
 - b. Undertake enrichment plantings as a means of extending or encouraging the development of native bushland communities.

Whitehaven has established a Regional Biodiversity Offset Strategy which comprises a Biobank site east of its Rocglen operation. All Biobank assessment requirements have now been completed and the site is currently awaiting registration through OEH. It is expected that registration will be completed in the first quarter of 2012. Upon registration, and in accordance with communications with the OEH and DoPI, the area required as an offset for the Canyon site will be taken from the Regional Offset site by retirement of Biobank credits as calculated for the Canyon site. Once this is achieved, the conditional requirements pertaining to offset establishment and security will be effectively met through the Biobank site.

5.2.2 Achievements During the Reporting Period

Rehabilitation across the site continues to progress with the following activities occurring over the period:

- Infill planting of 320 understory tubestock in June 2011 on the western area of the rehabilitation, as detailed in Table 9 (Plate 1);
- Installation of rip lines in the vicinity of the former coal bin for planting during the next reporting period;
- Bioremediation and disposal of hydrocarbon contaminated soil from the former refuelling area; and
- Continued establishment of existing rehabilitation (Plate 2).

Table 9 - List of Tubestock Planted

Date	Species	Common Name	Approx. Quantity
28-29 June 2011	<i>Senna coronilloides</i>		40
	<i>Pittosporum angustifolium</i>	Budda Bush	40
	<i>Acacia hakeoides</i>		40
	<i>Dodonaea viscosa</i>	Sticky Hop Bush	80
	<i>Acacia decora</i>	Western Golden Wattle	40
	<i>Acacia salicina</i>		40
	<i>Senna artemisioides</i>	Punty Bush	40
		Total	320



Plate 1 - Understorey Infill Plantings, June 2011



Plate 2 - Established Rehabilitation, June 2011

Members of the Red Chief Local Aboriginal Lands Council continued to propagate native seedlings at the nursery at the CHPP. WCM also contracted local professional native plant suppliers for the supply of native understorey and overstorey species to propagate understorey species.

Table 10 and Table 11 present a rehabilitation summary and listing of maintenance activities as required in the DMR Guidelines.

Additional rehabilitation and maintenance of existing rehabilitation in and around the void area has not been prioritised during the reporting period due to the proposed disposal of waste rock from the Vickery Project in this area.

Table 10 - Rehabilitation Summary

	Area Affected (hectares)		
	This Report Period (as of 30.09.11)	Last Report Period (as of 30.09.10)	Next Report Period (estimated)
A: MINE LEASE AREA			
A1 Mine Lease(s) Area	416.64		
B: DISTURBED AREAS			
B1 Infrastructure area (other disturbed areas to be rehabilitated at closure including facilities, roads)	7.02	7.606	7.02
B2: Active Mining Area (excluding items B3 - B5 below)	0	0	0
B3 Waste emplacements , (active/unshaped/in or out-of-pit)	0	0	0
B4 Tailings emplacements , (active/unshaped/uncapped)	Nil	Nil	Nil
B5 Shaped waste emplacement (awaits final vegetation)	0	0	0
ALL DISTURBED AREAS	7.02	7.606	7.02
C REHABILITATION PROGRESS			
C1 Total Rehabilitated area (except for maintenance)	183	183	183
D: REHABILITATION ON SLOPES			
D1 10 to 18 degrees	27.5	27.5	27.5
D2 Greater than 18 degrees	0	0	0
E: SURFACE OF REHABILITATED LAND			
E1 Pasture and grasses	45.2	45.2	45.2
E2 Native forest/ecosystems	137.8	137.8	137.8
E3 Plantations and crops	0	0	0
E4 Other (include non vegetative outcomes)	0	0	0

F1

F2

Table 11 - Maintenance Activities on Rehabilitated Land

NATURE OF TREATMENT	Area Treated (ha)		Comment/control strategies/treatment detail
	Report period	Next period	
Additional erosion control works (drains re-contouring, rock protection)	Nil	Nil	Erosion only in void which is proposed to be infilled with waste rock from the Vickery Project. Therefore, no remediation works are proposed.
Re-covering (detail - further topsoil, subsoil sealing etc)	Nil	Nil	
Soil treatment (detail - fertiliser, lime, gypsum etc)	Nil	Nil	
Treatment/Management (detail - grazing, cropping, slashing etc)	Nil	Nil	
Re-seeding/Replanting (detail - species density, season etc)	Nil	Nil	Only infill planting in areas of rehabilitation that will not be affected by the proposed Vickery Project.
Adversely Affected by Weeds (detail - type and treatment)	5	5	Ongoing control of weeds as per previous years.
Feral animal control (detail - additional fencing, baiting etc)	Nil	Nil	See Section 3.20 for details.

5.3 Rehabilitation Monitoring and Performance

Internal rehabilitation / revegetation monitoring undertaken to date has primarily been limited to inspections of water management structures, soil stockpiles and seeded areas for evidence of instability / erosion or poor germination. This process will continue during the closure period, with the extent and nature of activities undertaken being consistent with the Closure Plan and relevant management plans prepared in satisfaction of WCM's relevant Development Consent.

Seasonal conditions have been relatively favourable for continued growth of vegetation in existing rehabilitation areas as well as the establishment of the 320 tubestock planted in June 2011.

As discussed in Section 3.6, Whitehaven is planning to adjust monitoring to a program that assesses landscape functionality across the mine rather than isolated fauna and flora monitoring events. A draft Rehabilitation Monitoring Program has been developed by Eco Logical Australia Pty Ltd which will be implemented over the next 12 months. Outcomes from this monitoring will be reported in subsequent AEMRs.

6 CONTINUOUS IMPROVEMENT AND TARGET INITIATIVES

6.1 Objectives

Whitehaven Coal Mining Pty Ltd has an ongoing commitment to environmental management and aims to minimise any adverse impacts on the physical, biological, cultural and socio-economic environment in the area of the mine and in surrounding areas.

6.2 Achievements to Date

Achievements at the mine since commencement of operations have included:

- The establishment of a working environmental management program and the establishment of culture of environmental awareness / responsibility within all levels of the workforce;
- Routine implementation of all relevant aspects of the approved management plans;
- The establishment and maintenance of an open and honest relationship with the neighbours, community in general, regulatory authorities, Local Government and other groups such as the LALC. WCM recognises that it is part of the community and that its activities have the potential to create benefits which extend beyond the life of the mine. The infrequency of complaints is indicative of the success of this approach;
- Progressive shaping and rehabilitation of the post-mining landform;
- Approval of the Mine Closure Plan in mid 2009 and commencement of mine closure activities at the end of production.
- Advertising of the intended closure of the Canyon Coal Mine and provision of contacts for the community with regard to concerns over closure for which no negative reaction was received.
- Relocation of Canyon personnel to other Whitehaven projects thereby resulting in no net loss of employment as a result of the Canyon closure.
- Completion of all major earthworks in rehabilitation and establishment of native vegetation across the majority of the site;
- Establishment of a re-profiled landform that blends in with the surrounding rural landscape; and
- Submission of a licence variation to remove monitoring requirements from the EPL.

Targets and goals for the next 12 months include:

- Implementation of a more robust rehabilitation monitoring program that assesses landscape functionality rather than just isolated annual assessments of flora and fauna;

- Continued community liaison, support and involvement / education in the site's rehabilitation;
- Compliance with all relevant conditions of all leases, licences and consents.
- Formal registration of the Company's Regional Biodiversity Offset Strategy as the Biobank site, which includes areas set aside as offset against the Canyon site;
- Assessment of areas within the rehabilitated landform to determine proximity to meeting completion criteria of the Closure Plan; and
- Finalisation of amendments to the EPL in order to remove monitoring requirements no longer necessary (ie. noise) as the site is under rehabilitation.