

Annual Review

Canyon Coal Mine

Name of operation	Canyon Coal Mine
Name of operator	Whitehaven Coal Mining Ltd
Development consent/project approval number	DA 8-1-2005
Name of holder of development consent/project approval	Whitehaven Coal Mining Ltd
Mining lease number	ML 1464, ML 1471
Name of holder of mining lease	Whitehaven Coal Mining Ltd
Water licence number	WAL 29458
Name of holder of water licence	Whitehaven Coal Mining Ltd
MOP start date	7 September 2015
MOP end date	6 September 2022
Annual review start date ¹	1 July 2016
Annual review end date	31 December 2016

I, Nigel Wood, certify that this audit report is a true and accurate record of the compliance status of Canyon Coal Mine for the period July 1st 2016 until 31st December 2016, and that I am authorised to make this statement on behalf of Whitehaven Coal Mining Pty Ltd.

Note. a) The Annual Review is an 'environmental audit' for the purposes of section 122B (2) of the Environmental Planning and Assessment Act 1979. Section 122E provides that a person must not include false or misleading information (or provide information for inclusion in) an audit report produced to the Minister in connection with an environmental audit if the person knows that the information is false or misleading in a material respect. The maximum penalty is, in the case of a corporation, \$1 million and for an individual, \$250,000.

b) The Crimes Act 1900 contains other offences relating to false and misleading information: section 192G (Intention to defraud by false or misleading statement—maximum penalty 5 years imprisonment); sections 307A, 307B and 307C (False or misleading applications/information/documents—maximum penalty 2 years imprisonment or \$22,000, or both).

Name of authorised reporting officer	Nigel Wood
Title of authorised reporting officer	Director- Whitehaven Coal Mining Ltd
Signature of authorised reporting officer	
Date	24.2.2017

¹ NSW Annual Review Guideline was released in October 2015.

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1 STATEMENT OF COMPLIANCE

The compliance status of the CCM as at 31st December 2016 is summarised in Table 1. Table 2 notes non-compliances that occurred during the reporting period.

Table 1 - Statement of Compliance

Were all conditions of the relevant approval(s) complied with? ¹	
ML 1471	Yes
ML 1464	Yes
DA 88-1-2005	No
WAL 29458	Yes

Table 2 - Non-compliances

Relevant Approval	Condition Schedule and Number	Condition Description (summary)	Compliance status	Comment	Where Addressed in Annual Review
DA- 8-1-2005	2(2)	The Proponent shall carry out the development: Generally in accordance with the EIS; and In accordance with the conditions of this consent.	NC	Non-compliances with the Development Consent were identified during the 2015 Independent Environmental Audit process.	Section 10.2
DA- 8-1-2005	3(30)	At least 6 months prior to the cessation of mining, unless the Secretary directs otherwise, the Applicant shall commission, and pay the full cost of, an Independent Audit of the offset strategy.	NC	Audit of offset strategy to be completed during 2017 reporting period.	Section 10.2
DA- 8-1-2005	5(12)	Revision of strategies and plans within 3 months of submission of an Annual Review.	NC	Revision and any necessary review of the Water Management Plan (WMP) to be undertaken during next reporting period.	Section 10.2

Note: Non-compliances identified within the most recent Independent Environmental Audit are listed in Table 8 .

Compliance status key for Table 2

Risk level	Colour code	Description
High	Non-compliant	Non-compliance with potential for significant environmental consequences, regardless of the likelihood of occurrence
Medium	Non-compliant	Non-compliance with: • potential for serious environmental consequences, but is unlikely to occur; or • potential for moderate environmental consequences, but is likely to occur
Low	Non-compliant	Non-compliance with: • potential for moderate environmental consequences, but is unlikely to occur; or • potential for low environmental consequences, but is likely to occur
Administrative non-compliance	Non-compliant	Only to be applied where the non-compliance does not result in any risk of environmental harm (e.g. submitting a report to government later than required under approval conditions)

2 INTRODUCTION

This is the 16th Annual Review (AR), formally Annual Environmental Management Report, produced for the Canyon Coal Mine (CCM), and it 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, as modified. The AR follows the format required by the NSW Government Annual Review Guideline (October, 2015). The AR covers the short period from 1st July 2016 until 31st December 2016, in order to bring the CCM reporting period to calendar year.

CCM 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).

Mining at CCM ceased in July 2009, and the mine is now in Closure, with a small area leased to Hitachi as a maintenance compound.

2.1 Mine Contacts

The management personnel responsible for the CCM and their relevant contact details are as follows:

- Mr Nigel Wood, General Manager, Open Cut Operations - oversees Open Cut Operations for the Whitehaven Group. Contact: (02) 6741 9309.
- Mrs Madeline Whitten, Graduate- Environment – oversees day to day environmental and rehabilitation performance across the site. Contact: (02) 6741 9324.

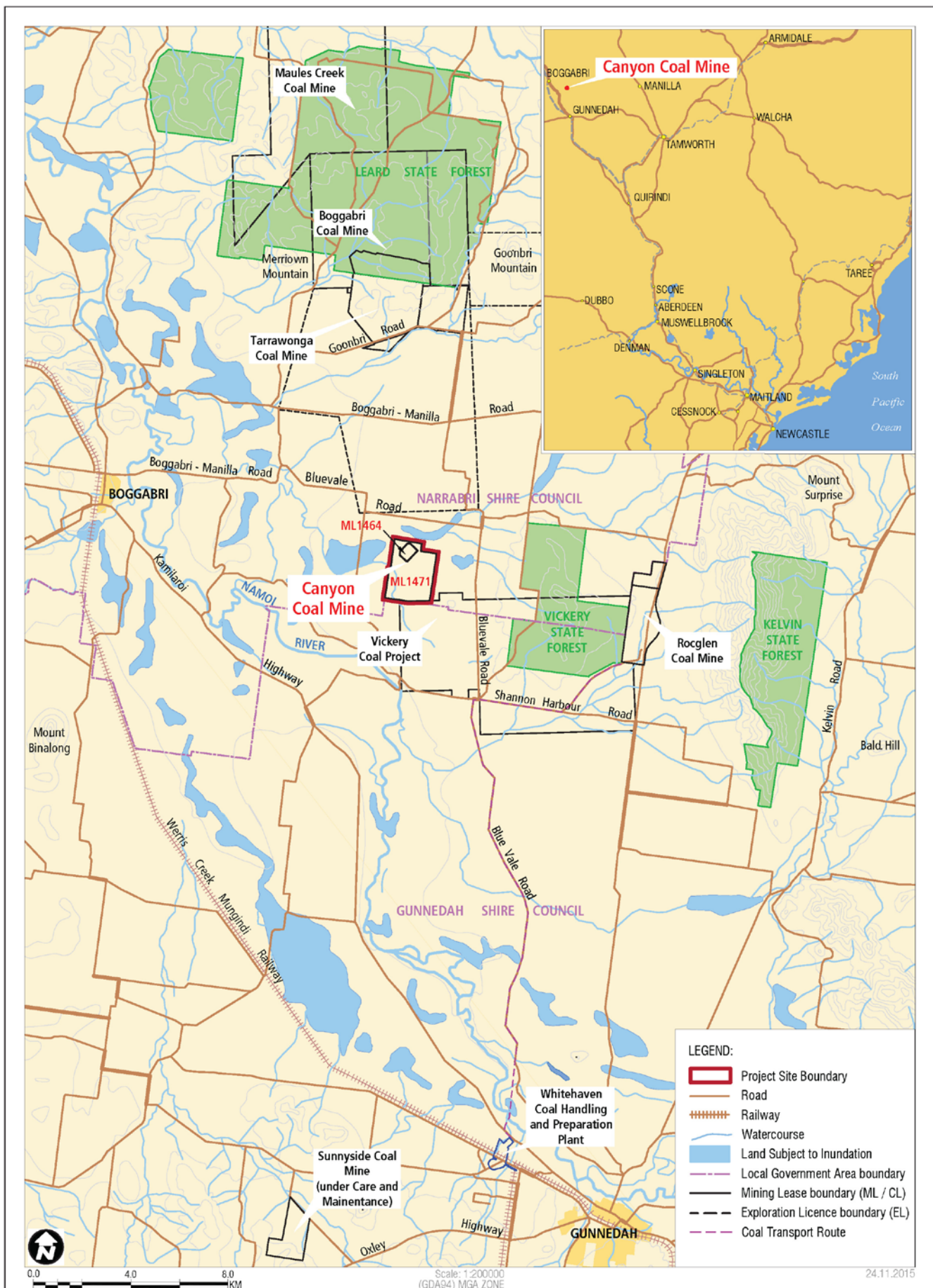


Figure 1 - Locality Plan

3 APPROVALS

3.1 Tenements, Licences, and Approvals

Table 3 identifies the approvals in place for the CCM at the end of the reporting period, the issuing / responsible Authority, dates of issue, expiry date and relevant comments.

Table 3 - Tenements, Licences and Approvals

Issuing / Responsible Authority	Type of Lease, Licence, Approval	Date of Issue	Expiry	Comments
Department of Planning and Environment	Development Consent DA 88-1-2005, Modification 3	3 September 2015	N/A	-
Department of Primary Industry- Division of Resources and Energy	ML 1471	7 th September 2000	7 th September 2021	-
Department of Primary Industry- Division of Resources and Energy	ML 1464	21 August 2006	21 st August 2027	-
Department of Primary Industry - Water	WAL 29458 (90WA822498)	12 September 2012	In perpetuity	-

4 OPERATIONS SUMMARY

4.1 Mining Operations

No mining operations have occurred at the CCM during the reporting period.

Table 4 – Production Summary

Material	Approved Limit	Previous Reporting Period (actual)	This Reporting Period (actual)	Next Reporting Period (forecast)
Waste Rock/Overburden	n/a	0	0	0
ROM Coal/Ore	n/a	0	0	0
Coarse Reject	n/a	0	0	0
Fine Reject (Tailings)	n/a	0	0	0
Saleable Product	n/a	0	0	0

Fuel usage onsite was limited to that used within the leased Hitachi compound, and consisted of 44,480L of diesel, primarily consumed by the onsite generator.

4.2 Next Reporting Period

Operations forecast for the next reporting period are expected to be limited to environmental monitoring and maintenance earthworks, if and as required.

5 ACTIONS REQUIRED FROM PREVIOUS ANNUAL REVIEW

There were no actions required from the 2015-16 Annual Environmental Management Report.

6 ENVIRONMENTAL PERFORMANCE

The following sub-sections document the implementation and effectiveness of the various control strategies adopted at the CCM.

6.1 Air Quality

6.1.1 Criteria

The air quality criteria applicable to the CCM are specified in DA 8-1-2005, and are summarised below.

- Maximum increase in deposited dust – 2 g/m²/month.
- Maximum mean total deposited dust level (insoluble solids) – 4 g/m²/month.
- Mean annual Total Suspended Particulate (TSP) matter (all sources) concentration – 90 µg/m³.
- Mean annual PM₁₀ particulate level – 30 µg/m³.
- 24 hour average PM₁₀ particulate level – 50 µg/m³.

6.1.2 Dust Monitoring

Monitoring of deposited dust is undertaken on a monthly basis, with results presented below in Table 5.

Table 5 - Deposited Dust Monitoring Data

Site	Property Name	Annual Mean Total Insoluble Solids (g/m ² /month)	Annual Mean Ash (g/m ² /month)
D1	Whitehaven	1.2	0.6
D2	Merton	0.7	0.4
D12	Whitehaven	3.5	3.9
D13b	Womboola	1.6	0.6

NOTE: Site averages calculated over the full 12 months of 2016.

A review of Table 5 shows that the annual average limit for deposited dust was not exceeded at any location during the reporting period.

6.1.3 Key Environmental Performance/Management Issues

No key environmental performance/management issues were identified during the reporting period. Areas of erosion in the gravel pit area and on void batters at risk of dust lift off were seeded during the reporting period.

6.1.4 Proposed Improvements to Environmental Management

No improvements are proposed within the next reporting period.

6.2 Biodiversity

6.2.1 Flora

Biodiversity management of the Biobank Offset Site for CCM was ongoing during the reporting period, with the next Annual Biobank Report due during the next reporting period.

6.2.2 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 micro bat species and a koala recorded within open woodland areas within the “Womboola” property. No targeted fauna monitoring was completed during the short reporting period.

6.2.3 Weeds

Weed spraying was undertaken by Whitehaven’s own qualified personnel following the detection of weeds within the monthly environmental inspections during the reporting during October 2016, and twice in December 2016. Contractor weed spraying was also undertaken of 200 ha of broadleaf weeds spraying in November 2016.

6.2.4 Feral Animal Control

Feral animals are not a significant land management issue on CCM’s landholding and are limited to isolated occurrences of pigs, foxes, hares and rabbits. In view of the low frequency of occurrence, and in the absence of an extensive programme by all surrounding landowners, no broad scale feral animal control programme was considered warranted during the reporting period. One pig trap has been in place on site since April 2016, however no animals have been captured.

6.2.5 Key Environmental Performance/Management Issues

No key environmental performance/management issues were identified during the reporting period.

6.2.6 Proposed Improvements to Environmental Management

Ongoing campaign weed spraying will be undertaken as required on site, along with opportunistic feral animal control.

6.3 Blasting

6.3.1 Criteria

Blasting criteria for the CCM are noted in DA 8-1-2005, however they are not relevant for this reporting period, as no blasting has been undertaken onsite.

6.3.2 Key Environmental Performance/Management Issues

No blasts were undertaken during the reporting period.

6.3.3 Proposed Improvements to Environmental Management

No blasting is proposed within the next reporting period.

6.4 Operational Noise

6.4.1 Criteria

DA 8-1-2005 details the noise criteria for site operations and coal haulage, however there was no requirement for noise monitoring during the reporting period.

6.4.2 Key Environmental Performance/Management Issues

No key environmental performance/management issues were identified during the reporting period.

6.4.3 Proposed Improvements to Environmental Management

No improvements are proposed within the next reporting period.

6.5 Aboriginal Heritage Management

6.5.1 Environmental Management Measures

Four Aboriginal heritage sites have been discovered since 1999, during investigations for the CCM. Two of these sites, Whitehaven 3 and Whitehaven 4, were located within the Mining Lease area. Whitehaven 3, a scar tree located adjacent to the southern mine lease boundary,

has been protected by fencing to minimise the potential for adverse impacts. Whitehaven 4 was located within the extraction area, and artefacts at this site were salvaged by representatives of the Red Chief LALC in accordance with a Section 90 Permit (No 2051) prior to disturbance. The remaining two heritage sites, Whitehaven 1 and Whitehaven 2, although not located within the Mine Lease boundary, have also been fenced and demarcated to avoid disturbance.

6.5.2 Consultation

No soil stripping has been undertaken for the CCM. No additional Aboriginal cultural heritage items have been discovered during the reporting period, and no consultation with Aboriginal stakeholders was conducted.

6.5.3 Environmental Management Measures

Given the status of the site the environmental management measures for Aboriginal Heritage are limited to ensuring that any identified heritage sites remain undisturbed.

6.5.4 Key Environmental Performance/Management Issues

No key environmental performance/management issues were identified during the reporting period.

6.5.5 Proposed Improvements to Environmental Management

No improvements are proposed within the next reporting period.

6.6 Natural Heritage

There are no features of natural heritage within the Project Approval area and hence no specific management procedures are required.

6.7 Bushfire Management

6.7.1 Environmental Management Measures

CCM is located within an area of cleared agricultural land, and Whitehaven Coal personnel liaise with the local Rural Fire Service, as required. All fire breaks were graded in early November 2016 in preparation for summer. There have been no bushfire incidents on, or adjacent to, the mine site during this reporting period.

6.7.2 Key Environmental Performance/Management Issues

No key environmental performance/management issues were identified during the reporting period.

6.7.3 Proposed Improvements to Environmental Management

No improvements are proposed within the next reporting period.

6.7.4 Environmental Management Measures

Access to the site is restricted to authorised personnel only.

6.7.5 Key Environmental Performance/Management Issues

No key environmental performance/management issues were identified during the reporting period.

6.7.6 Proposed Improvements to Environmental Management

No improvements are proposed within the next reporting period.

6.8 Waste

No waste was produced by Whitehaven Coal Mining (WHC) at the Canyon mine site during the reporting period. The small compound currently leased to Hitachi is managed by the tenants, who maintain responsibility of their own waste treatment and removal.

6.9 Environmental Performance Summary

An environmental performance summary for CCM is presented in Table 6 below.

Table 6 – Environmental Performance

Aspect	Approval Criteria / EIS Prediction	Performance during the reporting period	Trend / Key Management Implications	Implemented / proposed management actions
Erosion	N/A	Areas of surface erosion occurring on void batters and gravel pit area.	Nil	Stabilisation of void batters and gravel pit was achieved through the sowing of a cover crop during the reporting period.

7 WATER MANAGEMENT

7.1 Surface Water Management

Surface water monitoring on site is limited to the void, and wet weather monitoring as required, with the complete surface water monitoring results presented in Appendix 1.

This period has seen a return to normal oil and grease levels, following two high readings in late 2015, while the long term water results are continuing to show a slight upward trend in pH and EC readings. CCM has commenced work into determining the basis of the observed trends.

7.1.1 Discharges

There were no wet weather discharges during the reporting period.

7.1.2 Water Take

During the reporting period no water was taken from any bores on site.

7.2 Groundwater Management

7.2.1 Environmental Performance/Management

Current requirements include 6 monthly monitoring of:

- Standing water level, pH, conductivity, Cl, Na, and oil and grease at GW-11 and P3; and
- Standing water level at GW-7, GW-8, AND GW-9.

Groundwater testing was undertaken once during the reporting period, in August 2016.

Water quality results and standing water levels have remained relatively consistent throughout the monitoring period. GW11 results continue to indicate a slightly increasing conductivity trend, along with a slight calcium concentration increase, while all other monitored parameters remain consistent. CCM has commenced work into determining the basis of the observed trends. GW8 continues to show large fluctuations in standing water level, as it has for the previous 3 years. GW8 is located on mine owned land, and is currently leased. It is expected that the drawn down is being caused by farm use, with a solar pump installed on the bore, and therefore unrelated to Whitehaven Coal.

Full monitoring data results for GW11 and GW8, along with all other groundwater monitoring sites, are included in Appendix 2.

7.3 Rehabilitation Performance during the Reporting Period

7.3.1 Status of Mining and Rehabilitation

Table 7 – Rehabilitation Status

Mine Area Type ¹	Previous Reporting Period (Actual) 2015-16 (ha)	This Reporting Period (Actual) 2016 (ha)	Next Reporting Period (Forecast) 2017 (ha)
A. Total Mine Footprint	416.98	416.98	416.98
B. Total Active Disturbance	2.9	2.9	2.9
C. Land Being Prepared for Rehabilitation	0	0	0
D. Land Under Active Rehabilitation	249.8	249.8	249.8
E. Completed Rehabilitation	0	0	0

¹ Refer Annual Review Guideline (p.11) for description of mine area types.

7.3.2 Post Rehabilitation Land Uses

The overall closure goal for Canyon is for the restored landform to be capable of sustaining pre-mining land-uses.

7.3.3 Renovation or Removal of Buildings

No renovation or removal of buildings occurred during the reporting period.

7.3.4 Other Rehabilitation Undertaken

No additional rehabilitation of explorations areas, infrastructure, shafts, adits, dams, fence lines or bunds occurred during the reporting period.

7.3.5 Departmental Sign-off of Rehabilitated Areas

No departmental sign-off of rehabilitated areas was received during the reporting period.

7.3.6 Variations in Activities against MOP/RMP

Not applicable.

7.3.7 Trials, Research Projects and Initiatives

No rehabilitation trials, research projects or other initiatives were undertaken during the reporting period.

7.3.8 Key Issues to Achieving Successful Rehabilitation

The key issues to achieving successful rehabilitation are:-

- Landform stability (Final Void);
- Soil quality;
- Water quality;
- Pasture development; and
- Land management, including weed control.

Management measures to address these key issues, including both trigger levels and response, are described in the Closure MOP prepared by SLR Consulting Australia, and approved in September 2015 by the Division of Resources and Energy.

7.4 Actions for Next Reporting Period

Ongoing environmental monitoring and management, as per DA 88-1-2005 and relevant environmental management plans.

8 COMMUNITY

Whitehaven Coal maintains an open door policy for interested local groups, including local residents, landholders, schools and community groups, to visit the mine where practically possible. Furthermore, Canyon has a designated complaints line advertised on the Whitehaven Coal website and, in the event of a complaint, details pertaining to the complainant, complaint and action taken are recorded. A complaints register is maintained on Whitehaven's website. No complaints have been received for the site since 2008.

A Community Consultative Committee (CCC) for Canyon is covered under the terms of reference of the Vickery Coal Mine CCC, which last met in November 2016.

Community contributions are managed in accordance the Whitehaven Coal Donations and Sponsorship Policy.

9 INDEPENDENT AUDIT

The most recent independent audit of CCM was undertaken by Environmental Resource Management Australia Pty Ltd (ERM) in early 2016, with the site component completed on the 23rd March 2016. Outstanding items from the 2016 Audit Action Plan, and how they are being addressed, are summarised in Table 8 below.

Table 8 – 2016 Independent Audit- Outstanding Actions

Condition/Plan	Proposed Action	Status
Minister's Conditions of Approval DA 8-1-2005	Ensure the transport management plan for the Vickery Project outlines the requirements of this consent condition for any material transported to the Canyon Mine prior to works commencing.	TMP to be updated prior to commencement of Vickery construction.
	Consider including the requirement to report volume discharged from site and the method for estimating /calculating the volume of any discharges from site into the Water Management Plan	WMP to be revised in accordance with DA 8-1-2005 Schedule 5 Condition 12.
	Consider submitting the revised plan to DPI (Water), EPA and DP&E requesting comment. Consider including evidence of any consultation and liaison into the annex of the plan.	Consultation to be undertaken as part of WMP revision. Consultation and liaison records not to be included in WMP.
	Consider including line items in the revision history table to record any reviews completed of the Environment Management Strategy.	Future revisions to be noted in table.
Water Access Licence 29458	Consider including record keeping requirement for the water access licence into the Water Management Plan.	WMP to be revised in accordance with DA 8-1-2005 Schedule 5 Condition 12.
Closure Mining Operations Plan	Consider adding into the Air Quality Monitoring Program mitigation measures for managing dust and actions to be taken in the case of exceedances of the air quality parameters.	AQMP to be revised in accordance with DA 8-1-2005 Schedule 5 Condition 12..
	Consider including in the references section of the Rehabilitation Monitoring Reports the list of operational records as discussed in this commitment to indicate these records have been considered.	To be included in the next Annual Rehabilitation Monitoring Report.
	MOP to be updated to reflect EPL surrender.	Next MOP amendment.
Water Management Plan	Although the water in the void will remain on site, further investigation is required to determine the reason for higher pH than the groundwater and surface water pH.	Investigation has begun, with Whitehaven currently in the process of selecting an appropriate Environmental Consultant to advise on the matter.

Rehabilitation Monitoring Program	Consider completing LiDAR assessment as detailed in the Rehabilitation Monitoring Plan	To be included in the next Annual Rehabilitation Monitoring Report.
	Consider updating the Rehabilitation Monitoring Program to reflect the review recommendations once stakeholder feedback has been requested and received (see below).	Next MOP amendment.
	Consider issuing the letter outlining the review to key stakeholders to ensure acceptance of the proposed changes.	Next MOP amendment.

10 INCIDENTS AND NON-COMPLIANCES DURING THE REPORTING PERIOD

10.1 Reportable Incidents

No environmental incidents occurred at CCM during the reporting period.

10.2 Non-compliances

Non-compliances with relevant approvals have been ranked as administrative, with very limited potential for environmental harm, as addressed below.

- Condition 3(30) of DA- 8-1-2005 requires an audit of the offset strategy, and is scheduled to be undertaken by the Whitehaven Coal Environmental Specialist (Biodiversity) during the 2017 reporting period.
- Condition 5(12) of DA- 8-1-2005 requires the revision of all strategies and plans following the submission of an AR. The WMP was not updated during the reporting period, following the submission of the previous AR. This plan will be reviewed, and revised as necessary, during the next reporting period.

10.3 Regulatory Actions

No regulatory actions (official cautions or warning letters, penalty notices or prosecution proceedings) were received with respect to the CCM during the reporting period.

11 ACTIVITIES TO BE COMPLETED IN THE NEXT REPORTING PERIOD

The following measures will be continued, or implemented, in the next reporting period to improve the environmental or community performance of the operation:-

- The maintenance of woodland and rehabilitated areas, DA 88-1-2005 and relevant environmental management plans;
- Completion of outstanding Independent Environmental Audit actions, as per Table 8; and
- The continuation of environmental monitoring and management, as per DA 88-1-2005 and relevant environmental management plans.

APPENDIX 1 SURFACE WATER MONITORING RESULTS

Sample No.	Date	Time	Sample Location	pH Field	pH	Electricity Conductivity Field	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Hydioxide Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Bicarbonate Alkalinity as CaCO3	Total Alkalinity as CaCO3	Antimony	Arsenic	Molybdenum	Selenium	Chloride	Sodium	Aluminium	Arsenic	Manganese	Iron	Total Organic Carbon (TOC)	Grease & Oil (mg/L)	Comments
ES0909246-001	24 June 2009	1125	WW8		8.42		4110	45															5	<10	Limit of Reporting (LOR) was raised for Oil and Grease due to insufficient samples
ES0909246-002	24 June 2009	1140	WW9		6.77		135	114															43	<10	
ES1000714-001	15 January 2010	1250	WW9		6.82		204	38															20	<5	
ES1000714-002	15 January 2010	1320	WW11		6.77		76	69															5	<5	
ES1000714-003	15 January 2010	1340	WW12		6.5		132	72															9	<5	
ES1103385-001	16 February 2011	1200	VOID SMALL		8.33		264	19															2	<5	
ES1103385-002	16 February 2011	1250	VOID LARGE		8.19		346	14															3	<5	
ES1109073-001	2 May 2011	1240	VOID UPPER		8.66		293	<5															4	<5	
ES1109073-002	2 May 2011	1330	VOID LOWER		8.89		395	48															7	<5	
ES1117879-001	17 August 2011	1350	VOID UPPER		8.39		321	182	<1	3	114	117					17	58	0.29	0.004	0.056	0.17	5	<5	
ES1117879-002	17 August 2011	1410	VOID LOWER		8.52		451	22	<1	12	136	149					31	85	0.41	0.004	0.035	0.33	5	<5	
ES1119820-001	9 September 2011	900	WW 11		7.02		131	147															15	<5	
ES1119820-002	9 September 2011	920	WW 12		6.58		52	282															10	<5	
ES1121348-001	29 September 2011	1015	WW 12		6.97		109	236															16	<5	
ES1121348-002	29 September 2011	1030	WW 11		7.09		58	412															7	<5	
ES1124941-001	14 November 2011	910	WW 12		7.45		84	60															16	<5	
ES1124941-002	14 November 2011	925	WW 11		7.26		183	50															35	<5	
ES1211262-001	8 May 2012	920	VOID UPPER		8.48		242	13															3	<5	
ES1211262-002	8 May 2012	940	VOID LOWER		7.98		376	8															4	<5	
ES1227199-001	15 November 2012	1150	VOID UPPER		8.39		315	20															3	<5	
ES1227199-002	15 November 2012	1230	VOID LOWER		8.68		446	18															4	<5	
ES1303393-001	13 February 2013	1130	VOID UPPER	9.58	9.33	324	330	12															5	<5	
ES1303393-002	13 February 2013	1210	VOID LOWER	9.02	8.79	496	512	23															5	8	
ES1310050-001	1 May 2013	1120	UPPER VOID	9.81	9.68	349	353	17					<0.001	0.004	0.003	<0.01							6	<5	
ES1310050-002	1 May 2013	1150	LOWER VOID	8.78	8.63	523	553	97					<0.001	0.004	0.003	<0.01							7	<5	
ES1313688-001	13 June 2013	1001	WW1 R		7.08		48	74															14	<5	
ES1317466-001	5 August 2013	1135	UPPER VOID	8.7	8.56	574	601	9															6	<5	
ES1317466-002	5 August 2013	1100	LOWER VOID	8.97	9.1	341	348	11															8	6	
ES1323917-001	4 November 2013	1220	UPPER VOID	9.6	9.4	391	429	12	<1	88	117	205					17	71	0.42	0.005	0.017	0.31	8	<5	
ES1323917-002	4 November 2013	1200	LOWER VOID	8.8	8.54	681	776	23	<1	41	234	275					78	119	0.85	0.003	0.072	0.71	8	<5	
ES1402413-001	5 February 2014	1130	UPPER VOID	10.3	9.22	481	533	25					<0.001	0.006	0.003	<0.01							9	<5	
ES1402413-002	5 February 2014	1200	LOWER VOID	9.6	8.74	936	1070	33					<0.001	0.004	0.003	<0.01							7	<5	
ES1409710-001	1 May 2014	905	UPPER VOID	9.6	8.74	478	496	<5	<1	32	202	234					26	90	0.71	0.005	0.075	0.45	7	<5	
ES1409710-002	1 May 2014	935	LOWER VOID	9.4	8.54	1100	1150	<5	<1	26	287	313					165	184	0.25	0.005	0.074	0.18	5	<5	
ES1424402-001	5 November 2014	940	UPPER VOID	10.3	9.66	567	535	6					<0.001	0.004	0.003	<0.01							11	<5	
ES1424402-002	5 November 2014	1015	LOWER VOID	9.2	8.83	1470	1510	36					<0.001	0.003	0.003	<0.01							9	<5	
ES1503935-001	17 February 2015	900	UPPER VOID	10.2	9.34	612	626	44					<0.001	0.005	0.003	<0.01							12	<5	
ES1503935-002	17 February 2015	935	LOWER VOID	9.4	8.5	1800	1900	37					<0.001	0.006	0.005	<0.01							11	7	
ES1521402-001	6 May 2015	1105	UPPER VOID	9.4	8.87	633	626	<5	<1	50	231	280					31	163	0.51	0.005	0.016	0.38	4	9	
ES1521402-002	6 May 2015	1135	LOWER VOID	9.2	8.76	1870	1950	8	<1	71	275	346					425	425	0.53	0.004	0.037	0.42	<1	8	
ES1528268-001	12-August-2015	1100	UPPER VOID	9.8	9.13	617	622	12															15	15	
ES1528268-002	12-August-2015	1025	LOWER VOID	9.3	8.71	1970	1870	46															5	9	
ES1535953-001	10 November 2015	1225	UPPER VOID	9.5	9.3	674	692	12															14	25	
ES1535953-002	10 November 2015	1250	LOWER VOID	9.2	9	2180	2350	20															10	15	
ES1602961-001	9 February 2016	1135	UPPER VOID	9.7	9.06	784	846	19															13	<5	
ES1602961-002	9 February 2016	1205	LOWER VOID	9.5	8.95	2430	2730	111															8	<5	
ES1619369-001	31 August 2016	910	LOWER VOID	9	8.73	2730	2830	13																<5	

APPENDIX 2 GROUNDWATER MONITORING RESULTS

CANYON ANNUAL REVIEW

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