

Annual Review

Rocglen Coal Mine

Name of operation	Rocglen Coal Mine
Name of operator	Whitehaven Coal Mining Pty Ltd
Development consent/project approval number	PA 10_0015
Name of holder of development consent/project approval	Whitehaven Coal Mining Pty Ltd
Mining lease number	ML 1620, ML 1662
Name of holder of mining lease	Whitehaven Coal Mining Pty Ltd
Water licence number	WAL29461 and WAL 36758
Name of holder of water licence	Whitehaven Coal Mining Pty Ltd
MOP start date	1 st November 2015
MOP end date	31 st October 2020
Annual review start date ¹	1 st August 2016
Annual review end date	31 st December 2016
I, Nigel Wood, certify that this audit report is a true and accurate record of the compliance status of Rocglen Coal Mine for the period 1st August 2016 to 31st December 2016, and that I am authorised to make this statement on behalf of Whitehaven Coal Mining Pty Ltd. <i>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.</i> <i>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).</i>	
Name of authorised reporting officer	Nigel Wood
Title of authorised reporting officer	Director – Whitehaven Coal Mining Pty Ltd
Signature of authorised reporting officer	
Date	31.5.2017
¹ NSW Annual Review Guideline was released in October 2015	

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1 STATEMENT OF COMPLIANCE

The compliance status of the Rocglen Coal Mine (RCM) as at 31st December 2016 is summarised in Table 1. Table 2 notes non-compliances that occurred during the reporting period, and non-compliances from previous reporting periods that still require management action. References to the Environment Protection Licence (EPL) are limited to those that relate to the Project Approval conditions, specifically Schedule 3 Conditions 4, 12, 17, 18(b), 21 and 22, and Schedule 5 Condition 8.

Table 1 - Statement of Compliance

Were all conditions of the relevant approval(s) complied with?	
PA 10_0015	No
EPL 12870 (applicable conditions as above)	No
ML 1620	Yes
ML 1662	Yes
WAL 29461	Yes
WAL 36758	Yes

Table 2 - Non-compliances

Relevant Approval	Condition Schedule and Number	Condition Description (summary)	Compliance status	Comment	Where Addressed in Annual Review
PA 10_0015	Schedule 2(2)	Works carried out in accordance with EA, approval, and statement of commitments.	NC	Non-compliances with approval detailed below.	Section 11.2
	Schedule 2(8)	Prior to the surrender of project approval 06_0198 the conditions of that approval will prevail to the extent of any inconsistency between the two approvals.	NC	Project Approval surrender has been submitted, but not finalised.	Section 11.2
	Schedule 3(1)	Ensure noise generated by the project does not exceed the criteria.	NC	One noise exceedance recorded during the reporting period.	Sections 6.1.2, 11.2
	Schedule 3(13)	Ensure no offensive odours are emitted from site.	NC	One fume event during the reporting period.	Sections 6.4.2, 11.2
	Schedule 3(18)	Requirement for continuous meteorological monitoring.	NC	Continuous monitoring was not achieved due to communication issues and breakdowns.	Section 11.2
	Schedule 3(31)	Establish and maintain an	NC	Existing visual screen	Section 11.2

		effective vegetative screen along the boundary of the site that adjoins public roads;		not adequate.	
EPL 12870	A3.1	Works carried out in accordance with licence.	NC	Non-compliances with licence detailed below.	Section 11.2
	M4.1, M4.2	Requirement for continuous meteorological monitoring.	NC	Continuous monitoring was not achieved due to communication issues and breakdowns.	Section 11.2

Note: Non-compliances identified within the most recent Independent Environmental Audit are addressed in Table 5 and Section 10.

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 eighth Annual Review (AR), previously Annual Environmental Management Report, produced for the RCM, and it has been prepared in accordance with Conditions 4 and 5 of Mining Lease (ML 1620) (Mining Act 1992), Condition 4 of Mining Lease (ML 1662) and Condition 3 Schedule 5 of PA 10_0015, as modified. This report covers the short period between 1st August 2016 and 31st December 2016, in order to bring the RCM reporting period to calendar year. The AR follows the format required by the NSW Government Annual Review Guideline (October, 2015).

The RCM is located approximately 28km north of Gunnedah (Refer Figure 1). The RCM is owned by Whitehaven Coal Limited (WCL) and operated by Whitehaven Coal Mining Pty Ltd (WCMPL).

The RCM was initially approved on the 15th April 2008 under PA 06_0198 with a minor modification (PA 06_0198 MOD 1) granted in May 2010 to address highwall stability issues. Whitehaven submitted a Project Application, and accompanying Environmental Assessment, under Part 3A of the *Environmental Planning and Assessment Act 1979* in March 2010. PA 10_0015 was issued on the 27th September 2011 and allows for additional extraction of up to 5 million tonnes of coal at a maximum recovery rate of 1.5 million tonnes per annum (i.e. increased projected life of the operation for coal extraction by up to four years).

PA 10_0015 was modified (PA 10_0015 MOD 1) on the 10th November 2014, to condition cumulative coal haulage from the Tarrawonga/Vickery/RCM mines, with a further modification (PA 10_0015 MOD 2) approved on the 24th August 2015 allowing changes to coal reject haulage to the site.

2.1 Mine Contacts

The management personnel responsible for operational and environmental performance at the RCM and their relevant contact details are as follows:

- Mr Blair Meyers, Manager Mining Engineering - statutory responsibility for mining activities at the site. Contact: (02) 6740 7000.
- 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.

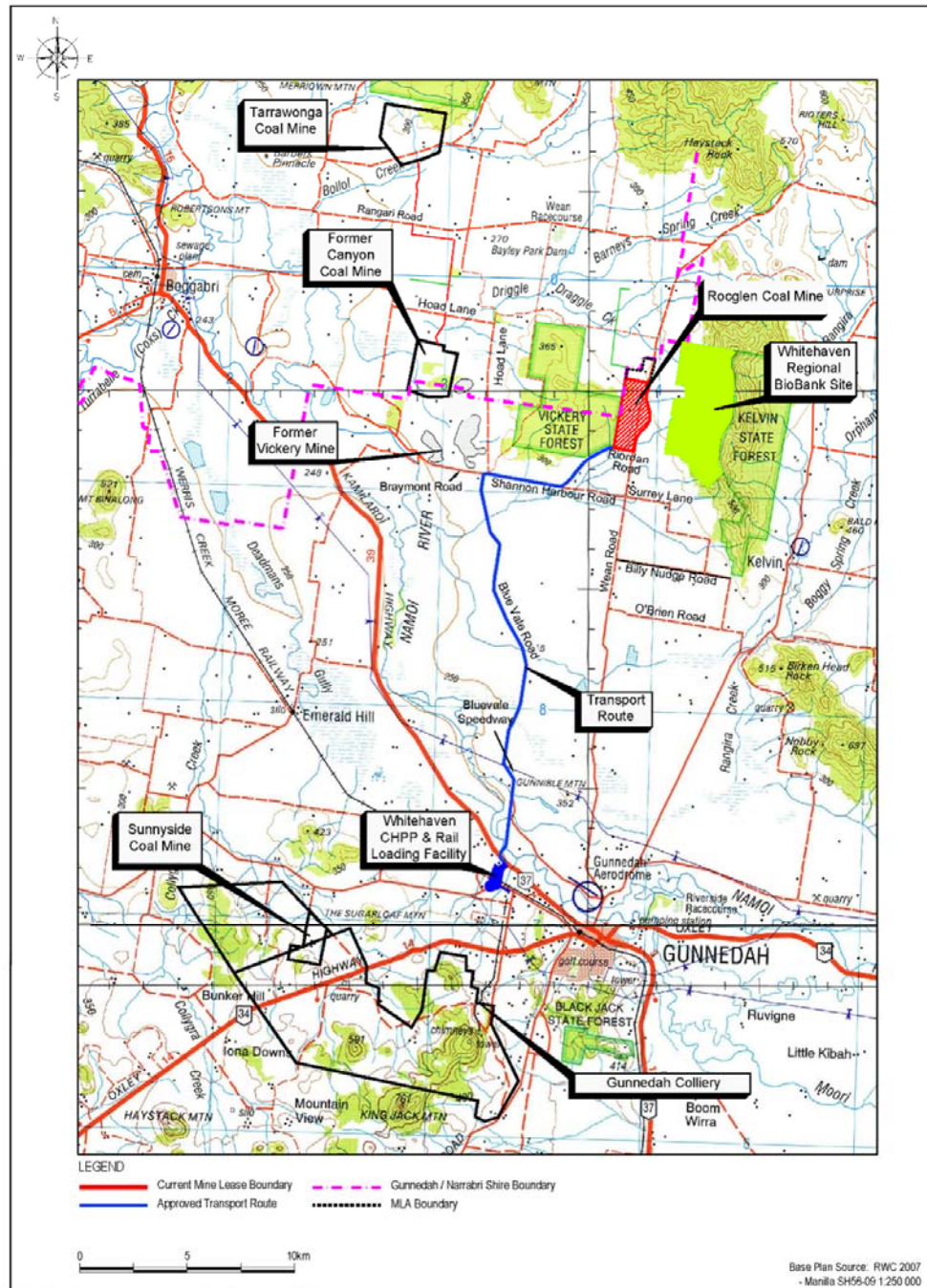


Figure 1 Locality Plan

3 APPROVALS

3.1 Tenements, Licences, and Approvals

Table 3 identifies the approvals in place for the RCM 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	Project Approval PA 10_0015	27 th September 2011	31 st December 2022	Modification allowing changes in coal reject haulage to the site, made 24 th August 2015.
Environment Protection Authority	Environment Protection Licence No. 12870	31 st July 2008	N/A Anniversary date 31 st July	Variation submitted in March 2016 for relocation of meteorological station still pending.
Department of Primary Industries – Division of Resources and Energy	ML 1620	10 th June 2008	10 th June 2029	-
Department of Primary Industries – Division of Resources and Energy	ML 1662	9 th January 2012	9 th January 2033	-
Division of Resources and Energy (DRE)	Mining Operations Plan (MOP)	28 th October 2015	30 th October 2020	MOP amendment to address schedule of activities, made 10 th November 2016.

Issuing / Responsible Authority	Type of Lease, Licence, Approval	Date of Issue	Expiry	Comments
Department of Primary Industries - Water	WAL 29461	25 th October 2012	In perpetuity	-
Department of Primary Industries - Water	WAL 36758	4 th September 2014	In perpetuity	-

4 OPERATIONS SUMMARY

4.1 Mining Operations

Table 4 – Production Summary

Material	Approved Limit (t)	Previous Reporting Period (t) (actual)	This Reporting Period (t) (actual)	Next Reporting Period (t) (forecast)
Waste Rock/Overburden	N/A	5,080,179	1,974,300	5,176,598
ROM Coal/Ore	1,500,000	1,260,349	467,518	1,321,978
Reject Material ¹	700,000	322,707	136,820	395,999
Saleable Product	N/A	936,457	314,383	837,414

¹ RCM does not separately record coarse and fine reject volumes.

4.2 Other Operations

4.2.1 Hours of Operations

RCM hours of operation during the reporting period were within Project Approval limits, which permit mining 24 hours per day Monday to Saturday, with the exclusion of public holidays, except for blasting, which is restricted to 9:00am – 5:00pm Monday to Saturday. Currently the mine has two 10 hour production shifts on weekdays which are day shift (6:00am to 4:00pm) and afternoon shift (3:40pm to 1:40am). A Saturday shift is not currently rostered for RCM, although they are occasionally undertaken if required. Other ancillary tasks and maintenance activities continued 24 hours per day, seven days per week.

4.2.2 Coal Haulage

For the reporting period there were 10,942 trucks movements to transport 451,202t of ROM coal along the approved haulage route from RCM to the Whitehaven Gunnedah CHPP. There was also 5,244 return truck movements to transport 194,455t of coal reject from the CHPP back to RCM.

Transport of coal from the site or receipt of coal reject from the Whitehaven CHPP by truck has only occurred during the approved hours of:

- (a) 7 am to 9.15 pm Monday to Friday;
- (b) 7 am to 5.15 pm Saturday; and
- (c) at no time on Sundays or public holidays.

4.2.3 Exploration

No exploration was undertaken during the reporting period.

4.3 Next Reporting Period

The mine production rates are planned for approximately 1.5Mt of ROM coal and approximately 5.25 million bank cubic metres (Mbcm) of overburden during the next reporting period.

Vegetation clearing activities in mining areas over the next reporting period will be conducted in accordance with the approved MOP.

5 ACTIONS REQUIRED FROM PREVIOUS ANNUAL REVIEW

Actions from the previous Annual Review are noted in Table 5.

Table 5 - Actions Required from the Previous Annual Review

Action Required from Previous Annual Review	Requested By	Action Taken by the Operator	Where Discussed in Annual Review
Include a status update for all actions as per the IEA Response to Audit Recommendations.	DPE	2016 Audit Action Plan available on the Whitehaven Coal Website. An updated Audit Action Plan will be submitted to DP&E in the first half	Section 10

		of 2017, and reported upon within the 2017 Annual Review	
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In addition to the required action noted in Table 5, DP&E made the following recommendations for improvement for future Annual Reviews:-

- Include all relevant approvals and licences – recommendation not adopted as not required by DP&E Annual Review Guideline (2015),
- Separately report coarse and fine rejects – recommendation not adopted as Rocglen Coal Mine is consented to receive a total of coarse and/or fine rejects,
- Include a summary of attended noise monitoring results - refer section 6.5.3,
- Provide air, noise and water monitoring data in a graph that readily shows monitoring results, Approval limits and Environmental Assessment predictions – recommendation not adopted as it isn't feasible to create such a graph that readily presents the nominated information,
- Include a summary of community engagement activities and community contributions – recommendation not adopted as not required by DP&E Annual Review Guideline (2015),
- Provide a copy of the complaints register, which includes actions proposed/completed as an outcome of each complaint – register not included as no complaints were received during the reporting period,
- Provide a comparison of the previous five years complaints data – refer section 9.2,
- Include a timeframe for the implementation of activities to be completed in the next reporting period – refer section 12.

6 ENVIRONMENTAL PERFORMANCE

The following sub-sections document the implementation and effectiveness of the various control strategies adopted at the RCM, together with monitoring data for the reporting period. Life of mine monitoring data is included as Appendices in this AR, where relevant, to allow for discussion on longer-term trends.

6.1 Air Quality

6.1.1 Criteria

The air quality criteria applicable to the RCM are specified in PA 10_0015, and are summarised below.

- Acceptable mean annual increase in deposited dust – 2 g/m²/month.
- Mean annual dust deposition (all sources) – 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 Environmental Management Measures

Monitoring of deposited dust is undertaken on a monthly basis whilst PM₁₀ levels are monitored every 6 days.

Table 6 and Figure 2 present a summary of the deposited dust monitoring data.

Table 6 - Deposited Dust Monitoring Data Summary 2016

Site	EPL ID no.	Property Name	Annual Mean Total Insoluble Solids (g/m ² /month)	Annual Mean Ash (g/m ² /month)	Long term Insoluble Solids Average (g/m ² /month)
BD 3		Belah	0.8	0.4	1.2
BD4	4	Surrey	0.5	0.2	1.0
BD5		Stratford	0.9	0.5	1.1
BD6	6	Roseberry	1.0	0.5	1.2
BD7	7	Roseglass	0.6	0.4	1.0
BD8		Yarrawonga	0.9	0.3	1.1
BD2-A		Penryn	1.9	0.8	3.0

A review of the above shows that the annual average limit for deposited dust was not

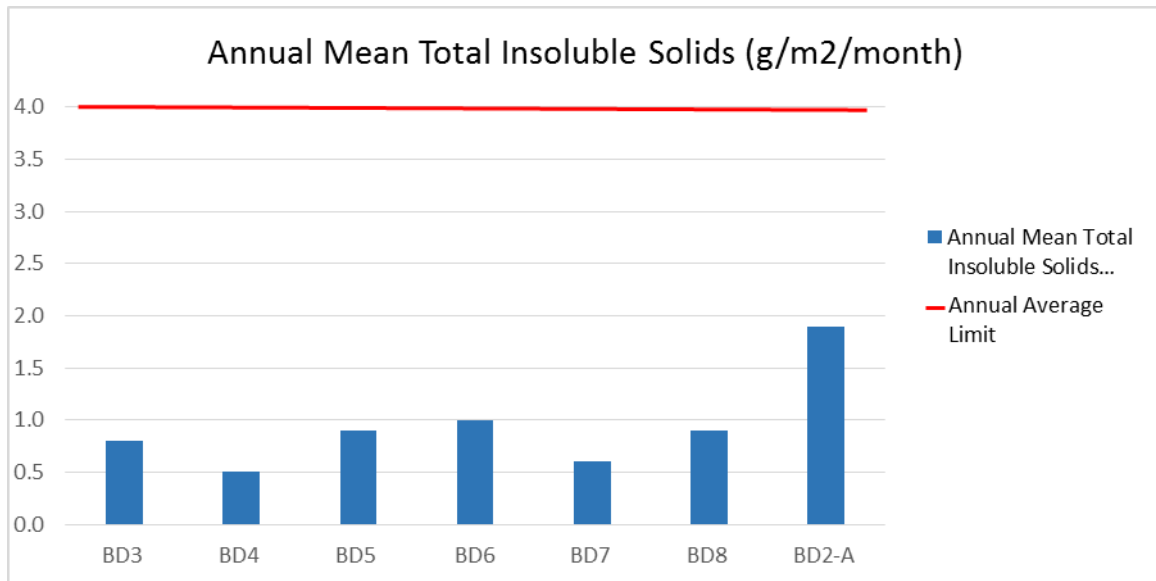


Figure 2 Annual Mean Total Insoluble Solids

exceeded at any location during the reporting period.

Whitehaven has two High Volume Air Samplers (PM₁₀). One is located at the project related property “Costa Vale”, to the north of the mine site. The other PM₁₀ monitoring location is licensed (EPL ID – 10), and is located on the privately owned (under private agreement) “Roseberry” property to the south-east of the mine site. The PM₁₀ results for the reporting period show compliance with the annual average criteria, with annual averages of 15.88µg/m³ at Costa Vale, and 12.18µg/m³ at Roseberry, and comparable to results of 15.74µg/m³ and 12.35µg/m³ respectively for the previous reporting period.

The 24 hour average PM₁₀ particulate level of 50µg/m³ was exceeded on one occasion during the reporting period, and occurred on the 1st December 2016 with a result of 50.1µg/m³. Notification and information on weather conditions and operations on the day of the exceedance was provided to the EPA on the 13th January 2017. The report stated that given both the RCM weather station and Costa Vale HVAS are located to the north of operations, that recorded data indicated that there were no abnormal operations or dust observations to the north of the mine site, and that prevailing wind direction on the day was from the NE, it is likely that the elevated PM₁₀ reading was not related to mining activity.

In accordance with Schedule 3 Condition 16 of PA 10_0015, RCM also operated a continuous real time dust monitor, or Tapered Element Oscillating Microbalance (TEOM) to monitor (PM₁₀), at the “Roseberry” property during the period. Data is generated every 15 minutes and correlated against current weather conditions, with alarms notifying site personnel of

elevated PM₁₀ results when wind conditions and direction is indicative of mining influence on the monitor. It is important to note that offsite dust sources also influence the TEOM results, given that the unit is not located on the mine premises. The monitor is used as a management tool for assessing dust levels on a real time basis through its web based platform. Maximum daily results are provided for the period in Figure 3.

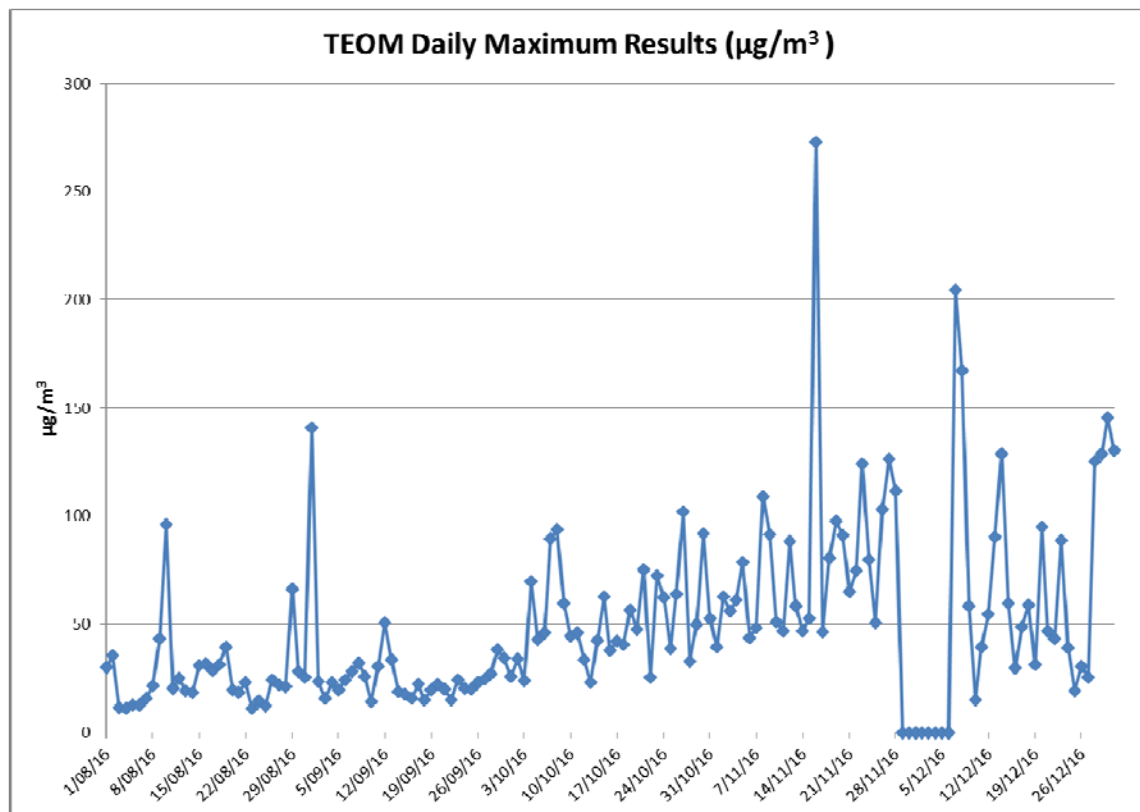


Figure 3 TEOM Maximum Daily Results

6.1.3 Long term trends

A review of the life-of-mine data set for deposited dust shows that the results for this period are consistent with the long term average. The results are also consistent with predictions from the Environmental Assessment (EA) undertaken by PAE Holmes Pty Ltd, which forecast that dust deposition levels at all receptors would be well below the relevant criteria.

6.1.4 Key Environmental Performance/Management Issues

No key environmental performance/management issues were raised during the period, with compliant monitoring results for both deposited dust and PM₁₀ levels maintained throughout the reporting period.

6.1.5 Proposed Improvements to Environmental Management

The HVAS unit currently located on the Roseberry property is proposed to be relocated to a privately owned neighbouring property which is not under agreement with RCM. Discussions with relevant landholders have commenced, and it is intended that the monitor will be relocated within the next reporting period.

6.2 Onsite Biodiversity

6.2.1 Threatened Flora

Whitehaven has prepared a Rehabilitation Management Plan (RMP) in accordance with Schedule 3 Condition 36 of PA 10_0015 which was approved by the Division of Resources and Energy in April 2012. The plan includes requirements for flora monitoring on rehabilitated areas. Rehabilitation monitoring was undertaken at RCM during the reporting period, however results have not yet been received. It is intended that in future the RCM Mining Operations Plan (MOP) will meet the requirements of Schedule 3 Condition 36 of PA 10_0015.

To address and offset vegetation impacts of the RCM, a Biodiversity Offset Management Plan (BOMP) was prepared as part of the Rocglen Extension Project. The area of offset required was calculated using the NSW BioBanking Assessment Methodology, which calculates the number of “credits” required at the impact site based on the area and condition of each vegetation type impacted, and the number of credits generated at a BioBank Site based on the improvement in biodiversity values via conservation management. On the 28th June 2012, the Whitehaven Regional BioBank site was formally established under BioBank Agreement 43. This BioBank site, which includes the “Yarrari” and “Belah” properties, now accounts for the RCM offset requirements. The BioBank credits required to be retired for these approvals occurred on the 17th April 2013, and the area is now subject to active management in accordance with the Management Plan for the Regional BioBank site.

A BioBank Management Plan has been prepared for the site, with active management required to commence on release of the first years management costs from the BioBank Trust Fund.

6.2.2 Threatened Fauna

Whitehaven engaged RPS Harper Somers O'Sullivan to undertake a Flora and Fauna Assessment to support the application for the Extension Approval. Further to Countrywide Ecological Service investigations in 2007, RPS recorded a total of 100 fauna species, including one additional threatened species, the Speckled Warbler (*Pyrrholaemus sagittatus*), present within the project area.

As discussed in Section 6.2.1, Whitehaven developed a Rehabilitation Management Plan (RMP), which includes detail on monitoring, and where fauna monitoring will be undertaken biennially. Fauna monitoring plots were established during spring 2009 in areas adjacent to the site.

Fauna monitoring was undertaken late during the reporting period, with results to be reported during the next reporting period.

It has been found that due to RCM's proximity to Vickery State Forest, much of the fauna species richness can still be expected to continue to exist on the mine site throughout the life of the mine. It has also been noted that the abundance of water located at the RCM site has attracted many animals to congregate on the rehabilitation and in the woodlands around the mine.

6.2.3 Weeds

Weed management within the project area involves targeted monthly inspections to determine levels of weed infestation, followed by targeted campaign spraying of identified areas of concern. Weed control is undertaken by Whitehaven's own qualified personnel; all persons involved with weed control hold the required chemical handling certificates.

Ongoing weed management comprised general weed spraying on two occasions during the reporting period, in November and December 2016 around the workshop and administration building. Targeted spraying of African Boxthorn was also undertaken once in September 2016 on the northern rehabilitation area. No other noxious weed infestations were identified on rehabilitation areas.

6.2.4 Feral Animal Control

Feral animals are not a significant land management issue on RCM'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. In accordance with prior commitments, mine personnel will continue to monitor feral animal occurrences and implement necessary control programmes if and when necessary.

6.2.5 Key Environmental Performance/Management Issues

African Boxthorn has been identified on site in previous years, and was targeted again during the period along the northern boundary of the site. Spot spraying has been effective at limiting the population on site, and ongoing management continues to address new plants and regrowth.

6.2.6 Proposed Improvements to Environmental Management

No improvements are proposed within the next reporting period.

6.3 Biodiversity Offset Area (BOA) Management

The (BOMP) requires that 1,524ha of native woodland and forest to be maintained and improved on the Yarrari and Belah properties.

6.3.1 Offset Security Management

The BOMP indicates that discussions have been had with OEH regarding their intention to transfer the property to the National Parks estate as an addition to the Boonalla (Kelvin) Aboriginal Area. Should such a land dedication be made and accepted by the NSW Minister for the Environment, the balance of funds held in the Biobanking Trust Fund would be transferred to the Minister in accordance with Section 36 of the Threatened Species Conservation (Biodiversity Banking) Regulation 2008 to provide for the ongoing management of the reserve.

6.3.2 Infrastructure Management

During the reporting period, 6.7km of redundant internal fences were deconstructed across the Biobank BOA ahead of revegetation works.

6.3.3 Seed Management

Four routine seed assessments were completed across the Biobank BOA in February, May, August and November 2016 designed to identify on a seasonal basis the life cycle stage and development of native plants to identify what, where, when and how to target appropriate

resources to collect seed for future revegetation programs. The seed assessments resulted in timely and prioritised seed collection with the spatial information directly given to seed collection contractors to undertake overstorey seed collection works in accordance with standard industry practice outlined in the Florabank guidelines.

As part of the WHC group wide revegetation planning; a local revegetation provider was engaged in November 2016 with the relevant overstorey species collected above sent to a reputable nursery for propagation ahead of the planned Autumn 2017 revegetation program for the Biobank BOA of Box Gum and non-EEC/CEEC Woodland. Targeted native understorey species were also collected during the reporting period.

6.3.4 Revegetation Management

In accordance with the BMP revegetation schedule focusing on cleared non-native grassland (former cultivation) and derived native grasslands; WHC organised 459ha of due diligence assessments of potential Box Gum and non-EEC/CEEC Woodland revegetation across the Biobank BOA investigating potential ecological constraints and heritage sites within areas required to be disturbed as part of the revegetation process. During the reporting period, revegetation ground preparation (dozer ripping three tynes wide to a depth >0.3m every 5m along the contour and lightly scarifying the soil surface to relieve compaction, improve permeability and infiltration to increase sub-surface soil moisture as well improve soil seed bed to maximise soil-seed contact during sowing) was completed over 277ha of the Biobank BOA in October 2016. The record wet weather during winter and early spring significantly delayed and impacted earthmoving machinery undertaking ground. The ecology due diligence identified 45ha of natural regeneration revegetation not requiring additional active revegetation of the cleared non-native grassland and derived native grasslands. The understorey sowing and overstorey planting of the areas with ground prepared for revegetation will occur in 2017.

6.3.5 Heritage Management

During the reporting period, heritage due diligence assessment of Biobank BOA identified 14 aboriginal heritage sites that required 16.6km of identification/demarcating fencing to be installed.

6.3.6 Habitat Management

During the reporting period, no habitat augmentation was undertaken in accordance with the BOMP.

6.3.7 Weed Management

WHC coordinated routine formal weed monitoring/inspections undertaken across Biobank BOA in April, July, October and December 2016. The priority weeds for control were noted as general broadleaf weeds (noxious and environmental species) in areas proposed for revegetation as well as legacy noxious weeds inherited from previous owners' management regimes such as African/Consul Lovegrass, African Boxthorn and Common Prickly Pear. The weed monitoring/inspections ensure that timely and prioritised weed control is undertaken on a seasonal basis with the spatial information directly given to spraying contractors to identify what, where, when and how to target appropriate resources across the Biobank BOA for weed control.

During the reporting period, WHC implemented a comprehensive weed control program across the Biobank BOA including 1025ha treated between June and December 2016. The record wet weather during winter and early spring resulted in significant areas of broadleaf weed requiring spraying. Only appropriately qualified and experienced weed contractors were engaged to undertake weed control works for WHC.

6.3.8 Feral Animal Management

WHC coordinated routine formal feral animal monitoring across Biobank BOA in March, June, October and December 2016. The adoption of a "monitor, measure and manage" approach to feral animal management will allow WHC to implement adaptive management in response to changes being measured through monitoring in feral animal abundance specific to the different geographical regions of the Biobank BOA.

Feral animal monitoring utilises the relevant methodologies for specific feral animals generally in accordance with the NSW DPI Monitoring Techniques for Vertebrate Pests so that a range of methods can be used such as transects/spotlighting, sand pads, cameras traps where practicable and relevant to specific offset areas/properties. Monitoring demonstrated that the feral animals in moderate to high abundance were the European Red Fox, Feral Pig and Feral Goat. The feral animal monitoring ensures that timely and prioritised feral animal control is undertaken on a seasonal basis identifying what, where, when and how to target appropriate resources across the Biobank BOA for feral animal management.

During the reporting period, WHC implemented a comprehensive feral animal control program across the Biobank BOA with fox baiting and pig trapping undertaken in May (6 out of 26 fox baits taken and 32 pigs trapped), July (no fox baits laid for goat mustering and no

pigs trapped) and November 2016 (no fox baits laid for goat mustering and X pigs trapped). The wet weather during winter and early spring limited the success of control programs during this period with a goat harvester appointed but not being able to successfully get over the ground to muster goats until December 2016. Only appropriately qualified and experienced feral animal contractors were engaged to undertake feral animal control works for WHC.

6.3.9 Soil and Erosion Management

During the reporting period, no specific treatment or soil erosion mitigation works were undertaken.

6.3.10 Grazing Management

During the reporting period, the Biobank BOA was not stocked and subsequently grazing was excluded.

6.3.11 Bushfire Management

During the reporting period, WHC organised for fuel load monitoring to be undertaken in October 2016 with the average fuel load rating for the Biobank BOA being High in accordance with “Overall Fuel Assessment Guide” (July 2010). In accordance with the BMP, WHC then prioritised resources targeting maintenance and upgrade of fire breaks and tracks across the Biobank BOA with 27.3km of fire breaks completed respectively in October 2016.

6.3.12 Monitoring Program

During the reporting period, ecological monitoring of the Biobank BOA consisted of annual flora monitoring which was undertaken in October 2016.

6.4 Blasting

6.4.1 Criteria

Blasting criteria for the RCM are noted in PA 10_0015, and included below:

The overpressure level from blasting operations must not:

- exceed 115dB (Lin Peak) for more than 5% of the total number of blasts over each reporting period; and
- exceed 120dB (Lin Peak) at any time, at any residence on privately-owned land.

Ground vibration peak particle velocity from the blasting operations must not:

- exceed 5mm/s for more than 5% of the total number of blasts during each reporting period; and
- exceed 10mm/s at any time, at any residence on privately-owned land.

6.4.2 Key Environmental Performance/Management Issues

RCM did not exceed the blasting criteria for any blast during the reporting period. There was one incident of blast fume leaving the mine site which occurred on the 10th August 2016. Notification was made as per the Pollution Incident Response Management Plan (PIRMP) following the event, with a detailed report provided to DPI, EPA and DP&E on the 17th August 2016. On the 25th August WHC received a Notice to Provide Information requesting further information on the blast. Following submission of the required information, WHC received a second Notice to Provide Information on the 4th November 2016, with submission of the further requests made on the 17th November 2016. WHC are currently awaiting further advice. Table 7 below summarises the blast monitoring results during the period.

Table 7 - Blast Monitoring Results

Location	Parameter	100thile limit	Average	Max	95thile limit	>95thile
Roseberry	Air blast overpressure (dB(Lin Peak))	120	100.7	114.3	115	0
	Vibration (mm/s)	10	0.31	1.14	5	0
Retreat	Air blast overpressure (dB(Lin Peak))	120	95.1	103.1	115	0
	Vibration (mm/s)	10	0.14	0.32	5	0

Post blast inspections for fly rock have demonstrated that current blast procedures are sufficient in ensuring that blasting carried out within 500 metres of privately owned land is not compromising the safety of the people or livestock, or damaging the buildings and/or structures, on that land.

6.4.3 Proposed Improvements to Environmental Management

Given that the Roseberry property is currently under private agreement, RCM intends to relocate the blast monitor located on that property to alternate privately owned land which is not under private agreement. Discussions with relevant landholders and regulators have commenced, and it is intended that the monitor will be relocated within the next reporting period.

6.5 Operational Noise

6.5.1 Criteria

The operational noise criteria specified in PA 10_0015 and EPL 12870 are as follows:

Noise Criteria dB(A)

<i>Location</i>	<i>Day</i>	<i>Evening</i>	<i>Night</i>	
	<i>L_{Aeq} (15 min)</i>	<i>L_{Aeq} (15 min)</i>	<i>L_{Aeq} (15 min)</i>	<i>L_{A1} (1 min)</i>
<i>All privately-owned land</i>	35	35	35	45

The cumulative road noise criteria specified in PA 10_0015 (RCM) and PA 11_0047 (Tarrawonga) is:

Road Traffic Noise Criteria dB(A)

<i>Location</i>	<i>Day L_{Aeq} (15 hour)</i>	<i>Evening L_{Aeq} (15 hour)</i>	<i>Night L_{Aeq} (9 hour)</i>
<i>All privately-owned residences</i>	60	60	55

6.5.2 Environmental Management Measures

Control of noise generation and propagation at the mine is by a combination of general source and propagation path methods including:

- Where operationally feasible, scheduling activities to minimise operation of equipment in exposed locations when winds are blowing towards residences and elevated locations when temperature inversions are present;
- Equipment removal or replacement;
- Changing operational procedures;

- Restricting hours of operations;
- Enclosure of fixed items of plant, e.g. generators;
- Bunding close to noise sources to create obstructions to the propagation path;
- On-going site road maintenance using the mine-based grader; and
- Regular equipment maintenance.

6.5.3 Key Environmental Performance/Management Issues

In accordance with the Condition 3(c) of Schedule 3 of PA 10_0015 RCM is required to regularly assess real-time noise levels and meteorological forecasting data to ensure compliance with the operational noise criteria. RCM utilises a mobile real time noise monitor which is used to actively monitor noise at surrounding properties which are likely to receive the greatest impact from operations. The unit monitors operational noise levels in comparison with compliance levels and when noise levels approach criteria an alarm system is triggered to operations personnel. Operations and environmental personnel are able to log on to a web based platform where real time noise and weather data is viewable. The web based platform may also be used to live stream from the monitor to identify specific sources of noise which will be used to confirm if the source is mining related.

Attended noise monitoring was undertaken on a quarterly basis during the reporting period, in September and December 2016, with full results available in Appendix 1. Cumulative road noise monitoring occurred in December 2016, as required under the Road Traffic Noise Management Plan.

One exceedance of the noise criteria was recorded at the Surrey property during morning monitoring on the 6th September 2016. Noise levels during the 90 minute monitoring period ranged from 36 to 39dBA. As the results were unexpected, RCM engaged a noise consultant to undertake an additional noise assessment, which was undertaken on the 24th October 2016. This assessment concluded that noise levels recorded at the Surrey property complied with the relevant LAeq 15 minute day period criterion. RCM received an official warning for the incident from DP&E on the 17th October 2016, and on the 1st November 2016 received a Show Cause Notice from the EPA, to which a response was provided detailing advice received from the RCM noise consultant, along with the results of the additional monitoring. Notification was provided to the affected landholders following receipt of both monitoring results. No exceedances of the cumulative road noise criteria were recorded during the reporting period.

6.5.4 Long term trends

The road noise monitoring results are consistent with the predictions of the Whitehaven ROM Coal Haulage Modification Environmental Assessment for the southern section of the approval transport route, and show consistent trends within compliance limits.

The mine noise exceedance recorded during the period was the first exceedance, as defined under the NSW Industrial Noise Policy, recorded at the Surrey property since August 2010. The retesting returned compliant results consistent with results from the previous five reporting periods.

6.5.5 Proposed Improvements to Environmental Management

No improvements are proposed within the next reporting period.

6.6 Aboriginal Heritage Management

6.6.1 Environmental Management Measures

In 2010, RPS archaeologists conducted an assessment and field survey of the potential impact of the Rocglen Extension on Aboriginal heritage. The archaeological field survey, which covered the area proposed to be disturbed by the expansion of the Northern Emplacement Area, was undertaken with members of four local Aboriginal Stakeholder groups. In summary, three stone artefact sites were located comprising of one isolated find (IF1) and two artefacts scatters (AS1 and AS2). To date, the measures in place to protect Aboriginal Cultural Heritage are considered satisfactory, with all measures identified in the EA and consent criteria in place.

6.6.2 Consultation

No further stripping or clearing was undertaken during the reporting period, and as such no consultation has been undertaken.

6.6.3 Key Environmental Performance/Management Issues

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

6.6.4 Proposed Improvements to Environmental Management

A review of the Heritage Management Plan is proposed to be undertaken during the next reporting period.

6.7 Natural Heritage

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

6.8 Bushfire Management

6.8.1 Environmental Management Measures

The mine maintains firebreaks around both its landholding and the mine area and maintains firefighting equipment as well as earthmoving equipment, a water truck and fire tender which would be used in the control of fires. RCM personnel also liaise with the local (Nandewar) Rural Fire Service and the Regional Fire Control, as required.

6.8.2 Key Environmental Performance/Management Issues

No key environmental performance/management issues were identified during the reporting period, with no fires occurring on site or on project-related mine owned land.

6.8.3 Proposed Improvements to Environmental Management

No improvements are proposed within the next reporting period.

6.9 Waste

6.9.1 Environmental Management Measures

Waste oils from maintenance activities were pumped from equipment to bulk storage tanks bundled in accordance with EPA requirements. When breakdown maintenance was undertaken away from the workshop, oil was pumped from the equipment to a tank on the service truck and subsequently transferred to the bulk storage tank.

Waste oil and filters stored at the maintenance workshop were collected and disposed of by a licensed contractor.

Runoff from the concrete vehicle and equipment wash pad was directed to an oil separator and containment system for subsequent pump out and disposal.

RCM also continues to record waste streams such as general domestic-type waste and recycling, overburden and interburden, mine reject waste, and mine equipment tyres.

No incidents relating to waste management occurred during the reporting period.

6.9.2 Key Environmental Performance/Management Issues

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

6.9.3 Proposed Improvements to Environmental Management

No improvements are proposed within the next reporting period.

6.10 Environmental Performance Summary

An environmental performance summary for RCM is presented in Table 8 - below.

Table 8 - Environmental Performance Summary

Aspect	Approval Criteria / EIS Prediction	Performance during the reporting period	Trend / Key Management Implications	Implemented / proposed management actions
Air Quality	Refer section 6.1	One exceedance of the HVAS criterion during the reporting period, which was determined to be non-mine related.	Nil	Nil
Biodiversity	Refer section 6.2	Approval criteria met.	Nil	Nil
Blasting	Refer section 6.3	One instance of blast fume leaving the mine site occurred during the reporting period. All blasts remained within blast criteria.	Nil	Review blast management methodologies
Noise	Refer section 6.4	One exceedance recorded during attended noise monitoring during the period.	Nil	Retesting was undertaken, and returned compliant results.
Heritage	Refer section 6.5	Approval criteria met.	Nil	Nil
Bushfire Management	Refer section 6.7	No bushfires on site or in biobank site during reporting period.	Nil	Nil
Rehabilitation	Refer section 11.3	Ongoing.	Nil	Additional rehabilitation to be undertaken as per MOP.

7 WATER MANAGEMENT

7.1.1 Surface Water Management

The mine lies within the catchment of the Namoi River, and in close proximity to Driggle Draggie Creek. The design of sediment detention basins on site aims to limit the opportunity of discharge of runoff from mine-disturbed areas, until such time as the licenced discharge criteria are met. All sediment basins, storage dams and associated banks and drains have been designed and constructed in accordance with the Managing Urban Stormwater: Soils and Construction Vol 2E Mines and Quarries (DECC, 2008) in conjunction with the references to Volume 1 (Landcom, 2004). At the end of the reporting period onsite water levels were at 116ML, up considerably from the 63.6ML recorded at the end of the previous reporting period, following a very wet spring.

7.1.2 Surface Water Monitoring Results

RCM has a requirement to undertake surface water monitoring on a quarterly basis, in addition to any monitoring required during discharge events. Whilst there are no criteria or concentration limits specified for the quarterly surface water samples, the results do provide an indication as to the quality of waters on-site. The assessment of sediment load, salinity, pH, oil and grease and other monitoring parameters during these quarterly water monitoring events also provides an indication of the capacity for those storages to meet water quality criteria should a wet weather discharge occur, and if additional treatment methods would be warranted to minimise potential for a non-compliant discharge. The quarterly surface water testing includes the void water dam (Void), 3 additional out of pit surface water storages, (SD3, SB19, Dam B), and one offsite upstream dam (SD7).

Overall, samples taken throughout the reporting period indicate relative consistency across all monitoring parameters, with the exception of Total Organic Carbon (TOC) which continues to show slight fluctuations for all sites. SD3 showed results continuing to return to normal levels following high results for pH and Total Organic Carbon in early 2015.

7.1.3 Long term trends

The surface water assessment carried out by GSS Environmental for the Extension EA predicted that there would be minimal impact on flow regimes downstream of the Project Site due to the RCM, which has proven to be generally correct over the long term operations of the site.

Soil and water assessments for the site suggested that Total Suspended Solids (TSS) is likely to be the key water quality parameter requiring management during the life of the Project to ensure the water quality in downstream watercourses is not impacted. During the period TSS has not been as problematic in surface water at RCM, compared to previous years due to a high focus on water management. A number of surface water management recommendations were made in the surface water assessment for the Extension Project including the installation of sediment basins, targeting final discharge dams for water use and using flocculants to settle suspended solids. These measures have been implemented throughout the reporting period, and ensured that, as predicted in EA investigations, downstream water courses were minimally impacted by TSS, ensuring continuing long-term adherence to the EA predictions.

7.1.4 Discharges

There are two licenced discharge points (LDPs) nominated in the current EPL 12870: LDP11 to the south of the site, and LDP12 to the north of the site. There were nineteen controlled discharges of water during the period utilising these LDPs, undertaken as part of ongoing onsite water management following frequent wet weather during spring. All of these discharges occurred following flocculant treatment and water sample analysis, and met the water discharge criteria specified for the site.

There was also one uncontrolled discharge from the site following a prolonged period of wet weather. This discharge occurred from LDP 11 on the 16th September 2016, and met the discharge water quality criteria for the RCM. Results are summarised in Tables 9 and 10 below.

Table 9 - Discharge Water Quality Results

Discharge Point	EPA ID	pH	Suspended Solids (mg/L)	Oil & Grease (mg/L)
	EPL 100% Limit	6.5-8.5	50	10
LDP 11	11	7.8	30	<5

Table 10- Offsite Water Quality Results

EPA ID	Number of samples	pH	Suspended Solids (mg/L)	Oil & Grease (mg/L)
SD7 (upstream)	1	7.52	<5	<5
UNDC (downstream)	1	7.45	<5	<5

7.1.5 Water Take

The water taken by the operation is summarised in Table 11, and shows compliance with licence entitlements.

Table 11 - Water Take

Water Licence Number	Water Sharing Plan, Source and Management Zone (as applicable)	Entitlement	Passive take/ inflows	Active Pumping	TOTAL
WAL 29461	Gunnedah - Oxley Basin Mdb Groundwater Source	120 units	0	0L	0L
WAL 36758	Gunnedah - Oxley Basin Mdb Groundwater Source	700 units	0	183.9ML ¹	183.9ML

¹ Includes incidental pit surface water runoff

7.2 Groundwater Management

7.2.1 Environmental Performance/Management

The mine's performance with respect to groundwater performance/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 bores within the Project Area and adjacent properties.

7.2.2 Groundwater Monitoring

The details of the groundwater monitoring program utilised throughout the reporting period are listed below in Table 12. Groundwater sampling and analysis was undertaken by ALS Acirl Pty Ltd during the reporting period.

Table 12 – Groundwater Monitoring Program

Site (See Figure 3)	Registered Bore No. / Licence No	Property / Location	Frequency		Purpose
			SWL* ² , EC* ³ and pH	Representative Metals and Ions* ⁴	
MP-2	GW968534 90BL254856	Mine site	Quarterly	Six monthly	To determine existing status and any impacts
MP-2a	90BL256103	Mine site	Quarterly	Six monthly	To determine existing status and any impacts
MP-3	GW968535 90BL254857	“Stratford”	Quarterly	Six monthly	To determine existing status and any impacts
MP-3a	90BL256108	“Stratford”	Quarterly	Six monthly	To determine existing status and any impacts
MP-4* ¹	GW968536 90BL254858	Surrey Lane	Quarterly	Six monthly	To determine existing status and any impacts
MP-4a* ¹	90BL256140	Surrey Lane	Quarterly	Six monthly	To determine existing status and any impacts
MP-4b* ¹	90BL256141	Surrey Lane	Quarterly	Six monthly	To determine existing status and any impacts
MP-5	GW968537 90BL254859	“Yarrawonga”	Quarterly	Six monthly	To determine existing status and any impacts
MP-5a	90BL256106	“Yarrawonga”	Quarterly	Six monthly	To determine existing status and any impacts
MP-6	90BL256105	“Costa Vale”	Quarterly	Six Monthly	To determine existing status and any impacts
MP-7	90BL256104	Mine site	Quarterly	Six Monthly	To determine existing status and any impacts
MP-8	90BL256102	Mine site	Quarterly	Six Monthly	To determine existing status and any impacts
WB-1* ¹	GW000743	“Costa Vale”	Quarterly	Six monthly	To determine existing status and any impacts
WB-2* ¹	GW050395 90BL111536	“Roseberry”	Quarterly	Six monthly	To determine existing status and any impacts
WB-3	GW050166 90BL110883	“Glenroc”	Quarterly	Six monthly	To determine existing status and any impacts
WB-4	GW045621 90BL104367	“Yarrawonga”	Quarterly	Six monthly	To determine existing status and any impacts
WB-5* ¹	GW011066 90BL004169	“Roseberry”	Quarterly	Six monthly	To determine existing status and any impacts
WB-6	GW044068 90BL102845	“Yarrari”	Quarterly	Six monthly	To determine existing status and any impacts
WB-7* ¹	GW022319 90BL013922	“Roseberry”	Quarterly	Six monthly	To determine existing status and any impacts
WB-8* ¹	GW052958 90BL107181	“Surrey”	Quarterly	Six monthly	To determine existing status and any impacts

Site (See Figure 3)	Registered Bore No. / Licence No	Property / Location	Frequency		Purpose
			SWL* ² , EC* ³ and pH	Representative Metals and Ions* ⁴	
WB-9* ¹	N/A	"Carlton"	Quarterly	Six monthly	To determine existing status and any impacts
WB-10* ¹	N/A	"Brolga"	Quarterly	Six monthly	To determine existing status and any impacts
WB-11* ¹	N/A	"Brolga"	Quarterly	Six monthly	To determine existing status and any impacts
WB-12* ¹	N/A	"Brolga"	Quarterly	Six monthly	To determine existing status and any impacts
WB-13* ¹	N/A	"Carlton"	Quarterly	Six monthly	To determine existing status and any impacts
WB-14* ¹	N/A	"Barock"	Quarterly	Six monthly	To determine existing status and any impacts
WB-15* ¹	N/A	"Kahana"	Quarterly	Six monthly	To determine existing status and any impacts
Yarrari	N/A	"Yarrari"	Quarterly	Six monthly	To determine existing status and any impacts
Surrey No.2* ¹	N/A	"Surrey"	Quarterly	Six monthly	To determine existing status and any impacts
*¹ Non-Company owned bore *² SWL – Standing Water Level *³ EC = Electrical Conductivity *⁴ As specified in SWMP					

Groundwater levels

Groundwater levels have remained relatively consistent at the majority of monitoring sites during the reporting periods, with limited exceptions detailed below.

- WB5, located on the Roseberry property, and WB13 continue to show fluctuating levels associated with non-mining influences.
- MP-5a is a piezometer installed directly adjacent to MP-5. Since monitoring commenced in March 2013, it showed a reasonably consistent SWL until September 2013, where the SWL dropped 4.4m to 71.25m. The SWL dropped a further 5.3m in November 2013, where it remained consistent at around 76.6m. For the previous reporting period and this reporting period the bore has remained relatively consistent, dropping only 1.75m since the beginning of 2014. There remains insufficient data at this point to verify any ongoing trend, however being in relatively close proximity to the open cut pit (within 1km), drawdown is not unexpected.

The pressure transducers/loggers installed in monitoring bores on site in accordance with the EA have shown consistent groundwater levels at all 5 recording sites for the previous two years. These results are generally consistent with the results of quarterly monitoring undertaken in the reporting period for these monitoring bores. A summary of the pressure transducer monitoring data is provided in Figure 2.

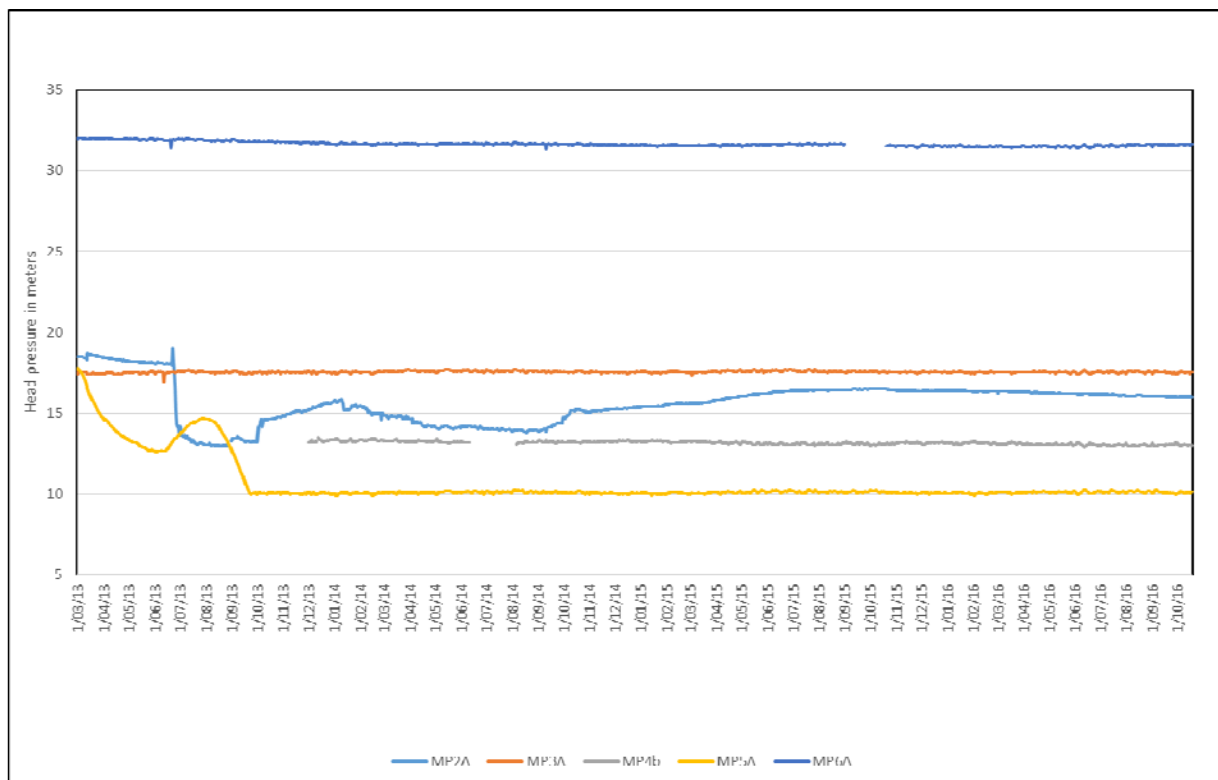


Figure 4 Rocglen VW Piezometers Ground Water Head Pressure

Groundwater quality

With the exception of fuels and oils, no materials occur, or are retained on the mine sites which are likely to be a source of groundwater pollution.

Analysis of samples taken during the reporting period has shown that groundwater quality has remained generally in line with historical data at all locations monitored. Water quality has been compared to the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2000) (ANZECC) guidelines for stock watering (cattle).

Previous monitoring has shown that after unusually elevated results, analyte concentrations usually return to more typical levels and it is expected that this trend will continue.

7.2.3 Long term trends

The hydrogeological assessment undertaken by Douglas Partners for the Extension EA concluded that drawdown on the surrounding groundwater system as a result of the expanded mining operation would be limited during the operation of the mine. This is due to faulting in the vicinity of the mine and generally low permeability of the Maules Creek Formation strata, with hydraulic connectivity within the alluvium at the north and south of the site considered to be limited. As found during the reporting period, standing water levels generally have not lowered at the monitoring and groundwater bores surrounding the mine, with the exception of MP-5a. Douglas Partners predicted that at the end of the northern phase of mining during the extension of the pit, MP-5 / MP-5a could be drawn down by up to 13.4m. Results indicate that the actual drop of approximately 15.35m in SWL is slightly higher than this prediction.

7.2.4 Groundwater Management

At the end of the reporting period there was no water held in the pit. Inflows into the open cut at other times during the period result from a combination of:

- Direct rainfall runoff and infiltration through the emplaced overburden which flows down to the open cut; and
- Inflows from the exposed coal seam.

Contamination of groundwater is controlled by the management of chemical, oil and grease spills and storage, with:

- Vehicle maintenance carried out in designated areas;
- Any spills being cleaned up, with contaminated soil placed in designated bioremediation areas; and
- Fuels, oil, and grease being stored within a bunded area, constructed in accordance with EPA requirements.

Groundwater from surrounding bores is monitored on a regular basis to detect and assess any changes in groundwater quality or level that may be attributable to the mine.

8 REHABILITATION

8.1 Rehabilitation Performance during the Reporting Period

8.1.1 Status of Mining and Rehabilitation

The status of mining and rehabilitation at the completion of the reporting period is presented in Table 13 and Figure 5.

Table 13 - Rehabilitation Status

Mine Area Type ¹	Previous Reporting Period (Actual)	This Reporting Period (Actual)	Next Reporting Period (Forecast)
	2015/16 (ha)	2016 (ha)	2017 (ha)
A. Total Mine Footprint	360	366	366
B. Total Active Disturbance	231	227	224
C. Land Being Prepared for Rehabilitation	12.4	23	26
D. Land Under Active Rehabilitation	116	116	116
E. Completed Rehabilitation	0	0	0

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



Figure 5 Rehabilitation and Mining Status

8.1.2 Post Rehabilitation Land Uses

The disturbed area within the Project Site will be restored to either rehabilitated bushland or rehabilitated pasture, with approximately 5 hectares (1 percent) remaining as a stabilised highwall of the final void.

8.1.3 Rehabilitation Monitoring

As stated in Section 6.2, monitoring required under the Rehabilitation Management Plan is undertaken biennially, and was undertaken during the reporting period in November 2016. At the end of this reporting period the results accompanying report had not been received, and as such will be reported in the next reporting period.

8.1.4 Renovation or Removal of Buildings

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

8.1.5 Other Rehabilitation Undertaken

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

8.1.6 Departmental Sign-off of Rehabilitated Areas

Departmental sign-off has not been requested for any rehabilitated areas.

8.1.7 Variations in Activities against MOP (RMP)

The MOP was amended during the reporting period to address the schedule of activities proposed for the MOP period. Following the amendment, operations and activities were undertaken in accordance with the approved modification. A Closure MOP is scheduled to be developed for the RCM within the next reporting period.

8.1.8 Trials, Research Projects and Initiatives

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

8.1.9 Key Issues to Achieving Successful Rehabilitation

There are four key issues in achieving successful rehabilitation, including:

- Poor vegetation establishment and growth due to poor soils/lack of nutrient;
- Weed and feral animal infestation;

- Excessive erosion and sedimentation resulting in land stability and vegetation growth issues; and
- Harsh weather conditions limiting growth, i.e. extended periods of drought.

In cases where performance is sub-optimal, additional management measures will be implemented (e.g. replanting, repairing landform and water management features, application of mulch/fertilisers, feral animal and weed control etc.) Advice may also be sought from the Whitehaven Biodiversity Specialist to determine best course of action.

8.2 Actions for Next Reporting Period

Rehabilitation is undertaken on site in accordance with the MOP. RCM have committed to rehabilitating 21.2ha during the next MOP year (November 2016-October 2017). This will consist of a section of the northern active pit, and the western section of the northern overburden emplacement area. Additional planting will also be undertaken on the northern emplacement area following poor vegetation establishment previously.

Rehabilitation monitoring which was undertaken in spring will be reported in the next AR.

9 COMMUNITY

9.1 Community Consultation

In accordance with Condition 5 of Schedule 5 of PA 10_0015 a Community Consultative Committee (CCC) continues to be operated for RCM. The committee comprises representatives of Gunnedah Shire Council, RCM and the community.

Since its inception, the CCC has met on a regular basis, moving from quarterly to six-monthly meetings in March 2015. During the reporting period a meeting was held on 14th December 2016, the minutes of which are available on the Whitehaven Coal website.

9.2 Community Complaints

RCM 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.

There were no complaints received during the short reporting period, compared to three in the previous reporting period, none in 2015, three in 2014, four in 2013, and eleven in 2012.

10 INDEPENDENT AUDIT

The most recent independent environmental audit (IEA) for RCM occurred during the previous reporting period in May 2016.

Non-compliances identified by the IEA were risk ranked by the auditor in accordance with the compliance status key for Table 2 and RCM subsequently developed an Audit Action Plan for these non-compliances. As the Audit Action Plan is available on the Whitehaven Coal website, individual non-compliances have not been replicated in Table 2.

A summary of outstanding audit actions is summarised as follows:-

- Surrender of PA 06_0198
- Removal of redundant erosion and sediment control measures,
- Additional tree planting within roadside visual screen,
- Complete incorporation of Rehabilitation Management Plan into an Amended Mining Operations Plan,
- Update site water balance, and
- Complete surface and groundwater assessments.

Future Annual Reviews will include status updates until all outstanding audit actions have been addressed. An amended Audit Action Plan will be submitted to DP&E in the next reporting period to propose revised due dates for any outstanding actions. The next Rocglen IEA is scheduled for 2019.

11 INCIDENTS AND NON-COMPLIANCES DURING THE REPORTING PERIOD

11.1 Reportable Incidents

RCM reported three incidents during the reporting period, being a blast fume incident on 18th August 2016, refer section 6.4.2; a noise exceedance in September 2016, refer section 6.4.3; and a HVAS exceedance on 1st December 2016, refer section 6.1.2.

11.2 Non-compliances

All of the non-compliances with relevant approvals have been ranked as either administrative or low, with very limited potential for environmental harm, and are addressed below.

- Schedule 2 Condition 8 of PA 10_0015 refers to the surrender of project approval 06_0198. WHC has made application to surrender this approval, but has not finalised the process, and therefore is still subject to the approval conditions. RCM is non-compliant with one condition of PA 06_0198, being the advertising of the complaints number annually in the local newspaper. The surrender of PA 06_0198 is intended to be completed in the 2017 reporting period.
- Schedule 3 Condition 1 of PA 10_0015 requires the proponent to ensure that the noise generated by the premises does not exceed the specified criteria. During the reporting period there was one noise exceedance recorded during the September quarterly monitoring, see section 6.1.2. Following the unexpected result, retesting was undertaken in October which returned compliant noise levels. Quarterly noise monitoring from December 2016 also returned compliant results.
- Schedule 3 Condition 13 of PA 10_0015 requires that no offensive odours or blast fume are emitted from site. Notification was provided following a blast fume event on 18th August 2016. Notification was made as per the Pollution Incident Response Management Plan (PIRMP) following the event, with a detailed report provided to DPI, EPA and DP&E on the 17th August 2016, see section 6.4.2.
- Schedule 3 Condition 18 of PA 10_0015 and conditions M4.1 and M4.2 of EPL 12870 all refer to the requirement of continuous real time meteorological monitoring. Periodic connection failure and equipment malfunction resulted in minor data gaps during the reporting period. Regular maintenance is performed on the meteorological station, however the meteorological station continues to suffer connectivity problems. An EPL Variation Application has been submitted to relocate the meteorological station to the mine site in an attempt to address these connectivity issues.
- Schedule 3 Condition 31 of PA 10_0015 requires that RCM establishes and maintains an effective vegetative screen along the boundaries of the site that adjoin public roads. This condition was reported to be non-compliant in the IEA, and RCM have

agreed to undertake infill planting along the eastern boundary within the next reporting period.

Details of actions for non-compliances identified during the 2015 IEA are provided in the Audit Action Plan, available on the Whitehaven Coal website.

11.3 Regulatory Actions

RCM received an Official Warning from DP&E for the September noise exceedance, (see section 6.4.3).

In addition to the above regulatory action, RCM received, and responded to, two Notices to Provide Information from the EPA in relation to the blast fume incident discussed in section 6.3.2.

12 ACTIVITIES TO BE COMPLETED IN THE NEXT REPORTING PERIOD

The following measures will be continued, or implemented, in the next reporting period:

- Undertake rehabilitation and mining activities in accordance with the MOP timing;
- The continuation of environmental monitoring and management, as per relevant approvals and environmental management plans;
- Completion of outstanding IEA actions, as per timing indicated in the Audit Action Plan, available on the Whitehaven Coal website;
- Review and revision of various environmental management plans, as per PA 10_0015, including relocation of any monitoring currently on mine owned land to privately owned land; and
- Continued community liaison and engagement with local stakeholders, as required.

Appendix 1

Quarterly Noise Monitoring Results

EPL ID	Date	Start Time	Period (mins)	Measured Levels – dB(A) Leq 15min Day	Measured Levels – dB(A) Leq 15min Evening	Measured Levels – dB(A) Leq 15min Night	Measured Levels – dB(A) LA 1min Night	Limits	Wind speed (m/s) /direction	Compliant (Y/N)	Comments
N1	5-9-16	3:49pm	15	<20				35 dB(A) Leq (15 min) Day, Evening, Night 45dB(A) LA (1 min) Night	2.3/147	Y	One exceedance of the noise monitoring limits occurred at the Surrey property during the morning period on September 6 th .
		8:57pm	15		<20				1.3/34	Y	
		11:33pm	15			<20			1.2/201	Y	
		11:33pm	1				<20		1.2/201	Y	
	6-9-16	7:30am	15	39					1.2/188	N	
		8:56pm	15		20				1.3/32	Y	
		11:35pm	15			<20			3.0/45	Y	
		11:35pm	1				<20		3.0/45	Y	
	7-9-16 – 8-9-16	10:34am	15	<20					2.7/8	Y	
		7:48pm	15		<20				1.7/25	Y	
		12:34pm	15			<20			1.7/313	Y	
		12:34pm	1				<20		1.7/313	Y	
N2	5-9-16	1:46pm	15	<20				35 dB(A) Leq (15 min) Day, Evening, Night 45dB(A) LA (1 min) Night	1.7/157	Y	
		8:15pm	15		<20				1.9/30	Y	
		10:03pm	15			30			1.5/36	Y	
		10:03pm	1				35		1.5/36	Y	
	6-9-16	9:34am	15	<20					1.6/165	Y	
		8:06pm			<20				1.3/229	Y	
		10:02pm	15			23			2.6/37	Y	
		10:02pm	1				26		2.6/37	Y	
	7-9-16	7:26am	15	32					4.2/33	Y	
		8:34pm	15		<20				2.2/51	Y	
		10:54pm	15			<20			2.7/7	Y	
		10:54pm	1				<20		2.7/7	Y	

EPL ID	Date	Start Time	Period (mins)	Measured Levels – dB(A) Leq 15min Day	Measured Levels – dB(A) Leq 15min Evening	Measured Levels – dB(A) Leq 15min Night	Measured Levels – dB(A) LA 1min Night	Limits	Wind speed (m/s) /direction	Compliant (Y/N)	Comments
N1	12/12/16	2:49pm	15	<20				35 dB(A) Leq (15 min) Day, Evening, Night 45dB(A) LA (1 min) Night	1.5/227	Y	
		9:05pm	15		<20				2.0/45	Y	
		11:34pm	15			<20			2.6/32	Y	
		11:34pm	1				<20		2.6/32	Y	
	13/12/16 14/12/16	9:03am	15	<20					3.1/288	Y	
		8:34pm	15		<20				1.3/293	Y	
		12:19am	15			<20			1.5/8	Y	
		12:19am	1				<20		1.5/8	Y	
	14/12/16	9:37am	15	<20					4.3/306	Y	
		9:06pm	15		<20				2.0/74	Y	
		11:34pm	15			<20			3.3/159	Y	
		11:34pm	1				<20		3.3/159	Y	
N2	12/12/16	12:40pm	15	<20				35 dB(A) Leq (15 min) Day, Evening, Night 45dB(A) LA (1 min) Night	1.5/131	Y	
		8:01pm	15		20				1.7/37	Y	
		10:00pm	15			23			2.3/18	Y	
		10:00pm	1				27		2.3/18	Y	
	13/12/16	7:00am	15	25					1.7/242	Y	
		7:16pm	15		22				1.6/261	Y	
		10:43pm	15			27			1.2/345	Y	
		10:43pm	1				32		1.2/345	Y	
	14/12/16	7:36am	15	32					3.4/306	Y	
		8:03pm	15		24				1.8/74	Y	
		10:00pm	15			28			3.2/54	Y	
		10:00pm	1				34		3.2/54	Y	

Appendix 2

Surface Water Data

Sample No.	Date	Time	Sample Location	PH (Field)	pH	Electrical Conductivity (µS/cm) (Lab)	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Total Organic Carbon (TOC) (mg/L)	Gross & Oil (mg/L)	Hydroxide Alkalinity as CaCO3 (mg/L)	Carbonate Alkalinity as CaCO3 (mg/L)	Bicarbonate Alkalinity as CaCO3 (mg/L)	Total Alkalinity as CaCO3 (mg/L)	Antimony (mg/L)	Chloride (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Iron (mg/L)	Comments	Arsenous Acid (B)	Arsenic Acid (V)	
31492.01	23 September 2008	1310	UNDC		7.7		150	610		<2														Non-reportable - discharge points are not licensed			
30279.01	17 December 2008	1029	SBI		7.8		295	1090		<2														Non-reportable - discharge points are not licensed			
32278.02	17 December 2008	1100	UNDC		6.6		145	21		<2																	
E0090245-001	24 June 2009	1340	DAM VOID 1		8.3		1540	216	20	<10															Limit of Reporting (LOR) was raised for Oil and Grease due to insufficient samples		
E0090245-002	24 June 2009	1350	SBI		8.39		902	110	10	<10															Limit of Reporting (LOR) was raised for Oil and Grease due to insufficient samples		
E0090245-003	24 June 2009	1319	SD3		8.56		364	1340	35	<10															Limit of Reporting (LOR) was raised for Oil and Grease due to insufficient samples		
E0091284-001	27 August 2009	1335	DAM VOID 1		8.05		2260	60	3	<10															Limit of Reporting (LOR) was raised for Oil and Grease due to insufficient samples		
E0091284-002	27 August 2009	1240	SBI		8.06		904	66	10	<10															Limit of Reporting (LOR) was raised for Oil and Grease due to insufficient samples		
E0091284-003	27 August 2009	1255	SD3		8.34		587	71	8	<10															Limit of Reporting (LOR) was raised for Oil and Grease due to insufficient samples		
E00918304-001	30 November 2009	1130	SBI		7.78		620	128	3	<10															Limit of Reporting (LOR) was raised for Oil and Grease due to insufficient samples		
E00918288-001	16 December 2009	1415	Dam Void 1		9.15		4210	14	4	<10															Limit of Reporting (LOR) was raised for Oil and Grease due to insufficient samples		
E00918290-001	16 December 2009	1320	SBI		9.06		600	19	8	<10															Limit of Reporting (LOR) was raised for Oil and Grease due to insufficient samples		
E00918290-002	16 December 2009	1225	SBI		8.9		577	50	7	<10															Limit of Reporting (LOR) was raised for Oil and Grease due to insufficient samples		
E00918290-003	16 December 2009	1255	SBI4		8.76		510	50	7	<10															Limit of Reporting (LOR) was raised for Oil and Grease due to insufficient samples		
E00918713-001	28 December 2009	1530	SBI19		6.85		110	444	5																		
E01003579-001	25 February 2010	1530	SBI		8.34		423	56	10	<5															Limit of Reporting (LOR) was raised for TOC due to matrix interference		
E01003579-002	25 February 2010	1550	SD3		8.44		374	37	<5	<5																	
E01003579-003	25 February 2010	1531	DAM VOID3		8.08		1390	106	5	<5																	
E01005718-001	25 March 2010	1550	SD3 - after flocc		8.71		445	58		<5																	
E01008743-001	7 May 2010	830	SD3 - after flocc		8.26		434	13		<5																	
E01009996-001	12 May 2010	1400	SBI		8.2		565	64	7	<5																	
E01009996-002	12 May 2010	1408	SD3		8.42		422	19	14	66																	
E01009996-003	12 May 2010	1315	DAM VOID 1		8.9		2470	20	3	<5																	
E01009880-001	24 May 2010	1320	SD3		8.57		412	92	4	6																	
E01014922-001	26 July 2010	840	SBI		8.34		498	17	5	<5															Sample after flocculation		
E01015928-001	9 August 2010	1015	SBI19		7.47		464	238	13	<5																	
E01015928-002	9 August 2010	955	SD3		7.62		468	239	12	<5																	
E01015928-003	9 August 2010	1055	DAM VOID 1		8.56		2330	8	2	<5																	
E01016254-001	8 August 2010	1035	SD7		7.65		8	8	8	<5																	
E0102524-001	8 November 2010	920	SBI19		8.39		636	41	5	<5																	
E0102524-002	8 November 2010	905	SD3		8.42		472	107	7	<5																	
E0102524-003	8 November 2010	950	DAM VOID 1		8.12		2330	14	2	<5																	
E0102524-004	8 November 2010	1010	SD7		7.56		77	52	11	<5																	
E01104559-001	2 March 2011	920	SD3		8.43		605	210	22	<5																	
E01104559-002	2 March 2011	940	SBI19		8.45		543	70	9	<5																	
E01104559-003	2 March 2011	920	SBI19		8.4		724	43	8	<5																	
E01104559-004	2 March 2011	1000	SD7		9.17		1080	236	37	<5																	
E01110300-001	17 May 2011	1000	SBI19		8.15		880	76	9	<5																	
E01110300-002	17 May 2011	1020	SD3		8.31		709	214	15	<5																	
E01110300-003	17 May 2011	1040	SBI19		9.12		1610	3090	17	<5																	
E01110300-004	17 May 2011	925	SD7		7.45		159	78	23	<5																	
E01110300-005	17 May 2011	1100	VOID		8.51		3320	25	2	<5																	
E01118911-001	4 August 2011	1015	SD3		8.6	8.49	411	563	124	11	<5																
E01118911-002	4 August 2011	1200	SBI19		8.2	8.28	484	587	116	8	<5																
E01118911-003	4 August 2011	1120	SBI19		8.7	8.07	513	655	428	18	<5																
E01118911-004	4 August 2011	1225	SD7		8.1	7.4	136	213	290	66	5																
E01118911-005	4 August 2011	1135	VOID		8.16	8.16	2350	70	1	<5																	
E01118911-006	10 November 2011	920	SD3		8.8	8.4	416	51	9	<5																	
E01118911-007	10 November 2011	845	SBI19		9.1	8.33	395	466	18	4	<5																
E01118911-008	10 November 2011	940	SD7		7.9	7.61	145	173	81	16	<5																
E01118911-009	10 November 2011	1040	VOID		8.7	8.42	2010	2030	8	<1	<5																
E01127736-001	28 November 2011	1530	SD7		7.01		154	60	11	<5																	
E01200148-001	4 January 2012	1010	Boxe Pump Dam		8.87		1320	6	3	<5																	
E01201040-001	16 January 2012	1530	VOID		8.5		1890	6	3	<5																	
E01204982-001	21 February 2012	745	SD7		7.62		154	<5	14	<5																	
E01204982-002	21 February 2012	810	SD3		7.97		360	340	17	<5																	
E01204982-003	21 February 2012	845	UNDC		7.51		254	236	26	<5																	
E01205067-001	7 March 2012	1040	SD3		8.4	8.09	330	389	79	3	<5																
E01205067-002	7 March 2012	1100	SBI19		8.6	8.29	332	397	141	3	<5																
E01205067-003	7 March 2012	1015	VOID		8.6	8.47	789	812	34	2	<5																
E01205067-005	7 March 2012	900	SD7		8	7.49	145	165	10	14	<5																
E01211330-001	7 May 2012	1040	SD3		7.8	8.46	583	692	30	5	<5																
E01211330-002	7 May 2012	1100	SBI19		8	8.49	409	490	14	2	<5																
E01211330-003	7 May 2012	1130	SD7		7.6	7.81	167	192	34	14	<5																
E01211330-004	7 May 2012	1015	VOID		8.1	8.49	954	1150	6	<1	<5																
E01214169-001	5 June 2012	1500	SD3 Post Rainfall		8.32		359	263	7	<5																	
E01214503-001	12 June 2012	1030	SD3 Post Flocc		8.02		381	<5	3	<5																	
E01216236-001	26 June 2012	1300	SD3		8.29		403	30	4	<5																	
E01218648-001	30 July 2012	1500	SBI18-post flocc		8.09		332	10	2	<5																	
E012190306-001	1 August 2012	1030	SD3		8.53	8.11	343	383	28	6	<5																
E012190306-002	1 August 2012	1050	SBI19		8.78	8.21	347	398	24	5	<5																
E012190306-003	1 August 2012	1000	SD7		8.44	7.68	134	150	33	12	<5																
E012190306-004	1 August 2012	1130	VOID		8.71	8.15	1090	1130	2	<5																	

[illegible]

Appendix 3

Groundwater Data

