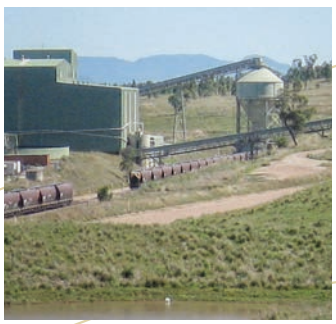
AngloAmerican

DARTBROOK MINE

Annual Review | 2015



Hansen Bailey
ENVIRONMENTAL CONSULTANTS

ANGLO COAL (DARTBROOK MANAGEMENT) PTY LTD

DARTBROOK MINE

ANNUAL REVIEW 2015






Annual Review Title Block

Name of operation	Anglo Coal Dartbrook Mine
Name of operator	Anglo American Coal
Development consent	DA 231-07-2000
Name of holder of development consent	Dartbrook Coal Pty Ltd
Mining Leases	CL 386, ML 1497, ML 1381, ML 1456
Name of holder of mining leases	Anglo Coal Dartbrook Pty Ltd & Marubeni Coal Pty Ltd
Water licences	See Table 2 of **Appendix B**
Name of holder of water licences	Anglo Coal Dartbrook Pty Ltd & Marubeni Coal Pty Ltd
MOP start date	1st January 2013
MOP end date	31 December 2017
Annual Review start date	1 January 2015
Annual Review end date	31 December 2015
I, Douglas Fleming Stewart, certify that this audit report is a true and accurate record of the compliance status of Anglo Coal (Dartbrook Management) Pty Ltd for the period (2015) and that I am authorised to make this statement on behalf of Anglo Coal (Dartbrook Management) 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	DOUGLAS FLEMING STEWART
Title of authorised reporting officer	Environmental Coordinator
Signature of authorised reporting officer	
Date	March 2016

Dartbrook Mine Contacts 2015

Anglo American Contacts	
Project Director – NSW:	Mr Rick Fairhurst
Environment Manager:	Mr Jason Fittler
Dartbrook Safety, Health & Environment Coordinator:	Mr Doug Stewart
Dartbrook Statutory Mine Manager:	Mr Ross Campbell
Contact Details	
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Facsimile Number:	(02) 6541 1935
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Dartbrook 24-hour Environment & Community Hotline:	1300 131 058

Annual Review Distribution

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Dartbrook Community Consultative Committee Members

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1.0 STATEMENT OF COMPLIANCE

This Annual Review has been prepared to provide a summary of the performance of the Dartbrook Coal Mine over the reporting period.

The compliance status of the Dartbrook against relevant approvals is summarised in Table 1.

It was determined that there were no non-compliances in the 2015 reporting period.

Table 1

Statement of Compliance

Where all the conditions of the relevant approvals complied with?	Yes/No
Development Consent	Yes
Environmental Protection Licence	Yes
Coal Lease 386	Yes
Mining Lease 1497	Yes
Mining Lease 1381	Yes
Mining Lease 1456	Yes

2.0 INTRODUCTION

2.1 BACKGROUND

Anglo Coal (Dartbrook Management) Pty Ltd, a subsidiary of Anglo American Pty Ltd (Anglo American), manages Dartbrook Mine (Dartbrook), which is located 10 kilometres (km) north of Muswellbrook and 3 km south-west of Aberdeen (see Plan 1 and Photo 1) in New South Wales (NSW). Until October 2006, Dartbrook operated as an underground longwall coal mine. As a result of ongoing operational and geological issues, mining was suspended, with the mine placed under Care and Maintenance from 1 January 2007. Under Care and Maintenance, the operation generally consists of:

- The Hunter Tunnel, which with the Kayuga interseam drift, are the only areas of the underground mine that are still accessible and connect to the Eastern and Kayuga Western mine entrances;
- The western facilities (West Site), which are located west of the New England Highway and include the administration office, a small workshop, and Wynn and Kayuga mine entrances to the underground mine; and
- The eastern facilities (East Site), which are located east of the New England Highway and include the maintained Coal Handling and Preparation Plant (CHPP), rail load out facilities, cleared coal stockpiles and the rehabilitated Reject Emplacement Area (REA).

During Care and Maintenance, mining approvals, licences and permits have been retained, with Dartbrook continuing to maintain compliance with these.

In late December 2015 the proposed sale of Dartbrook to Australian Pacific Coal was announced.

2.2 PURPOSE

This Annual Review provides a summary of activities, environmental management and performance at Dartbrook for the reporting period (i.e. 1 January to 31 December 2015).

The Annual Review has been prepared to be generally consistent with:

- Care and Maintenance Mining Operations Plan (MOP);
- Mining Lease (ML) conditions;
- Development consent conditions;
- Environment Protection Licence (EPL) 4885; and
- Anglo American Safety, Health and Environment Policies (see Appendix A).

All figures, tables and graphs pertain to the reporting period, unless stated otherwise.

The Annual Review has been prepared in accordance with the NSW Government document *Annual Review Guideline, Post-approval requirements for State Significant Mining Developments* (October 2015). A summary monitoring data for the reporting period has been provided in this report with further data available on request.

2.3 PERFORMANCE SUMMARY

No mining or coal processing activities were undertaken at Dartbrook during 2015, due to the site being under Care and Maintenance. This has meant UGM, as contractors, continued to be the statutory managers of the site, and have the responsibility for the maintenance activities completed in 2015 (refer to Section 3.0).

Being under Care and Maintenance, Dartbrook has continued to comply with legislative requirements, permits, licences and approvals (as discussed in Table 3 and Section 3.0), as well as implementing practices to monitor, mitigate and minimise any safety, health, environment and community impacts (see Section 4.0 to Section 6.0).

Maintenance work has continued on the River Restoration Project, which was originally established in 2005 as a three-year joint project established with the Hunter - Central Rivers Catchment Management Authority (HCRCMA) (Section 8.4.1). Key activities included the continuation of the maintenance strategy to exclude stock from the tree seedlings, noxious plant and feral animal control and the ongoing monitoring of the rehabilitated areas.

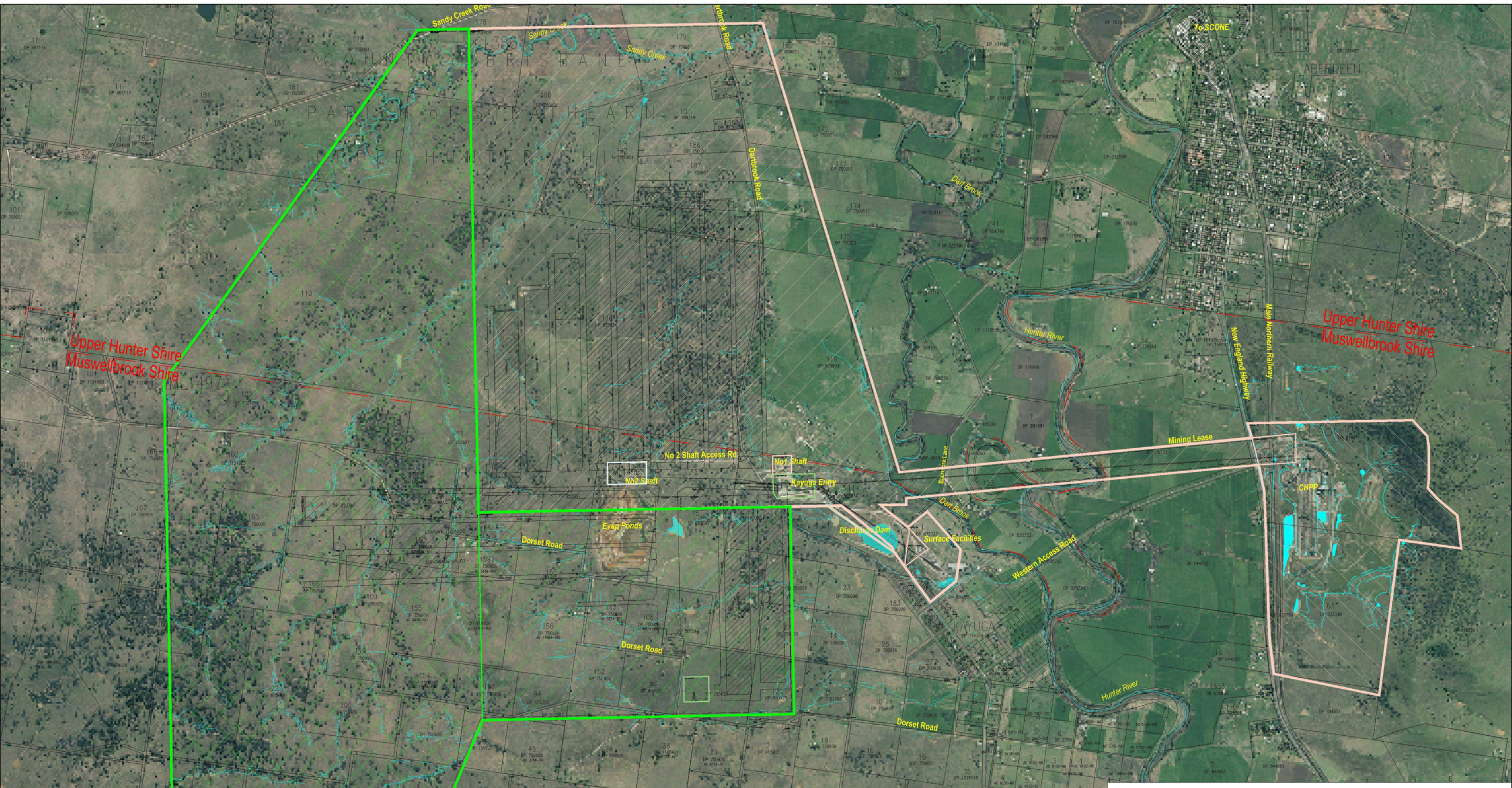
No formal complaints were received in 2015 (see Section 9.1) and both formal and informal communications continued with neighbours and community stakeholders throughout the year.

The Dartbrook Mine Community Consultative Committee (DCCC) continued to meet throughout the year, with three meetings held in 2015 (see Section 9.2).

The specific aspects of environmental performance for 2015 are described further in this report.

Photo 1

Tree screen planting on the Dartbrook site entry, looking southward, 2015



LEGEND

- CL 386
- ML 1381
- ML 1456
- ML 1497
- Unlimited Depth
- 20m to Unlimited Depth
- Surface to 20m
- Below 20m Above Roof of Mt Arthur Seam

N

0 100 200 400 600 800 1000 metres

Mine Surveyors Certification of Accuracy Date

AngloAmerican

DRAWN
PC
09/05/03

REVISIONS

REV.	DATE	BY	DESCRIPTION	CHK.
P	16/02/10	PC	Shire Boundary Highlighted	DS
Q	15/12/10	PC	Updated to 2010	DS
R	18/02/11	PC	Logo Modified to AngloAmerican	DS
S	12/02/13	PC	Air Photo Updated	DS
0	21/12/09	PC	A3 Layout Scale Changed to 1:30000	DS

Dartbrook Mine
Mine Context Plan
PLAN 1

Datum :	AHD	SCALE	A3	DRG.	REV.
GRID :	MGA(56)	1:30000		29411	S

2.1 MINE CONTACTS

The mine contacts for the reporting period are listed below in Table 2.

Table 2
Dartbrook Mine Contacts 2015

Anglo American Contacts	
Project Studies Manager – NSW:	Mr Rick Fairhurst
Environment Manager: 2015	Mr Jason Fittler
Dartbrook Safety, Health & Environment Coordinator:	Mr Doug Stewart
Dartbrook Statutory Mine Manager:	Mr Ross Campbell
Contact Details	
Dartbrook Mine Address:	Anglo Coal (Dartbrook Management) Pty Ltd PO Box 517 Muswellbrook NSW 2333
Phone Number:	(02) 6540 8888
Facsimile Number:	(02) 6541 1935
Dartbrook Care and Maintenance Contractor Phone Number:	(02) 6540 8950
Dartbrook 24-hour Environment & Community Hotline:	1300 131 058

3.0 APPROVALS SUMMARY

Dartbrook operates within the consents, leases and licences summarised in Table 3. Modifications to Dartbrook's approvals platform and renewals to existing leases and licences granted since the last reporting period are highlighted in blue. A comprehensive list of all environmental approvals held for Dartbrook, including current water licences, is contained in Appendix B. Copies of these documents are available on request.

The MOP in use during the reporting period covered the Care and Maintenance phase of operations. The current approval period of the MOP is from 1 January 2013 to 31 December 2017.

Table 3
Consents, Leases & Licences

Description	Date	Approval Authority
Authorisation 256	Expires 02/5/2015**	DRE
Coal Lease (CL) 386	30/12/1991 19/12/2033	DRE
Mining Lease 1381	Expires 23/10/2016	DRE
Mining Lease 1456	Expires 26/09/2020	DRE
Mining Lease 1497	6/12/01 5/12/2022	DRE
Exploration Licence 4574	Expires 07/04/2015**	DRE
Exploration License 4575 (Rossgole)	Expires 23/05/2016	DRE
Exploration License 5525 (Hanging Rock)	Expires 21/09/2016	DRE
Dartbrook Extended Development Consent (DA 231-07-2000)	29/08/2001	DP&E
Approval for an Emplacement Area (s126 approval)	13/03/1996	DRE
Building Application to construct Tailings Filter Press at the CHPP	3/07/1996	Muswellbrook Shire Council (MSC)
Issuance of EPL 4885	30/11/2000	NSW Environmental Protection Agency (EPA)
Stage 4 Reject Emplacement Approval C95/2265 (s126 approval)	02/01/2000	DRE
MOP for Dartbrook Extended Coal Project for underground workings up to longwall commencement in the Kayuga Seam	-	DRE
Consent modification to accommodate changes to traffic conditions (extension of truck haulage) for Dartbrook Extended (File No S02/02195)	30/03/2004	DP&E
Approval for 14^0 slopes in the REA Stage 4 (s126 approval)	08/04/2004	DP&E
Surface Safety Management Plan	Submitted 02/06/2004	DP&E
KA102 - KA107 Subsidence Monitoring Program	18/09/2006	DP&E
Interim Approval for KA101 Subsidence Monitoring Program (under s138 approval)	Expired end of KA101	DP&E
Variation of EPL4885 - Notice No: 1044827 (following EPA review of licence)	27/11/2006	EPA
Consent (DA 231-07-2000) modification for changes to REA disposal (continue to truck)	4/05/2005	EPA

Description	Date	Approval Authority
Dartbrook Development Consent (DA 231-07-2000) Modification for Underground Tailings Disposal, additional Run–of-Mine (ROM) stockpiles and Nitrogen Plant (MOD-129-08-2005)	1/11/2005	DP&E
Notification to Work Cover for storage and handling of Dangerous Goods	10/11/2005	Work Cover – Dangerous Goods Licensing
Revised Erosion and Sediment Control Plan (revised for Consent Modification 1/11/05)	Approved 12/11/2014	DP&E
Revised Dust Management Plan	Approved 10/06/2015	DP&E
Revised Noise Management Plan (revised for Consent Modification 01/11/05)	Approved 22/08/2006	DP&E
Revised Site Water Management Plan	Approved 20/04/2015	DP&E
Variation of Approved Plan for KA101 - KA107 (s138 approval)	Approved 25/08/2006	DP&E
Dartbrook Development Consent (DA 231-07-2000) - Minor amendment to application of conditions during Care and Maintenance	Accepted 07/09/2006	DP&E
KA102 - KA107 Subsidence Monitoring Program - Modification for pending closure (under s138 Approval)	Approved 18/09/2006	DP&E
Suspension of Mining Operations for Care and Maintenance, 06/7016, under Part 5, Div 3, Section 70 (1) and Suspension of Conditions under Part 5, Div 4, Section 168 (1) of the *Mining Act 1992*. For CL 386, Mining Lease 1381 & Mining Lease 1497	Suspension in effect as of 01/01/2007 Extension requested for a further 4 years**	DP&E
Variation of EPL 4885 (Increase in discharge rate for Care and Maintenance)	09/10/15	EPA
Notification and Declaration to WorkCover that no dangerous goods stored or handled at Dartbrook	Submitted 13/12/2006	Work Cover – Dangerous Goods Licensing
Application for Discontinuance of Use of Emplacement Areas (s101 approval)	Submitted 13/08/2007	DRE
MOP for Care and Maintenance - extension	Accepted 18/12/2012 Expires 31/12/2017	DRE

*Note: ** Application lodged with DRE*

4.0 OPERATIONS SUMMARY

4.1 EXPLORATION

Exploration boreholes are generally drilled for the purpose of evaluating, confirming, improving and upgrading the structure, coal quality and geotechnical characteristics of the coal seams. Coal seams at Dartbrook include the Blakefield, Glen Munro Woodlands Hill, Arrowfield, Bowfield, Warkworth, Mt Arthur, Kayuga, Piercefield and Vaux coal seams with some boreholes extending to the Broonie, Bayswater and Wynn coal seams.

No exploration drilling was undertaken at Dartbrook during 2015. During 2015 the applications to extend Exploration Lease 4574 and of Authorisation 256 were lodged with the DRE.

Following the 2014 audit of the condition of the existing exploration boreholes, the 25 open boreholes are scheduled and budgeted for rehabilitation in 2016 and 2017 (see Photo 2).

4.2 LAND PREPARATION

No land preparation work was undertaken in 2015 for the Care and Maintenance operations (see Plan 2).

Under Care and Maintenance, land preparation has been restricted to activities associated with exploration drilling. Prior to the commencement of any drilling a Permit to Disturb is approved, and topsoil is stripped from the area and temporarily stockpiled. On completion, the topsoil is respread and the area revegetated.

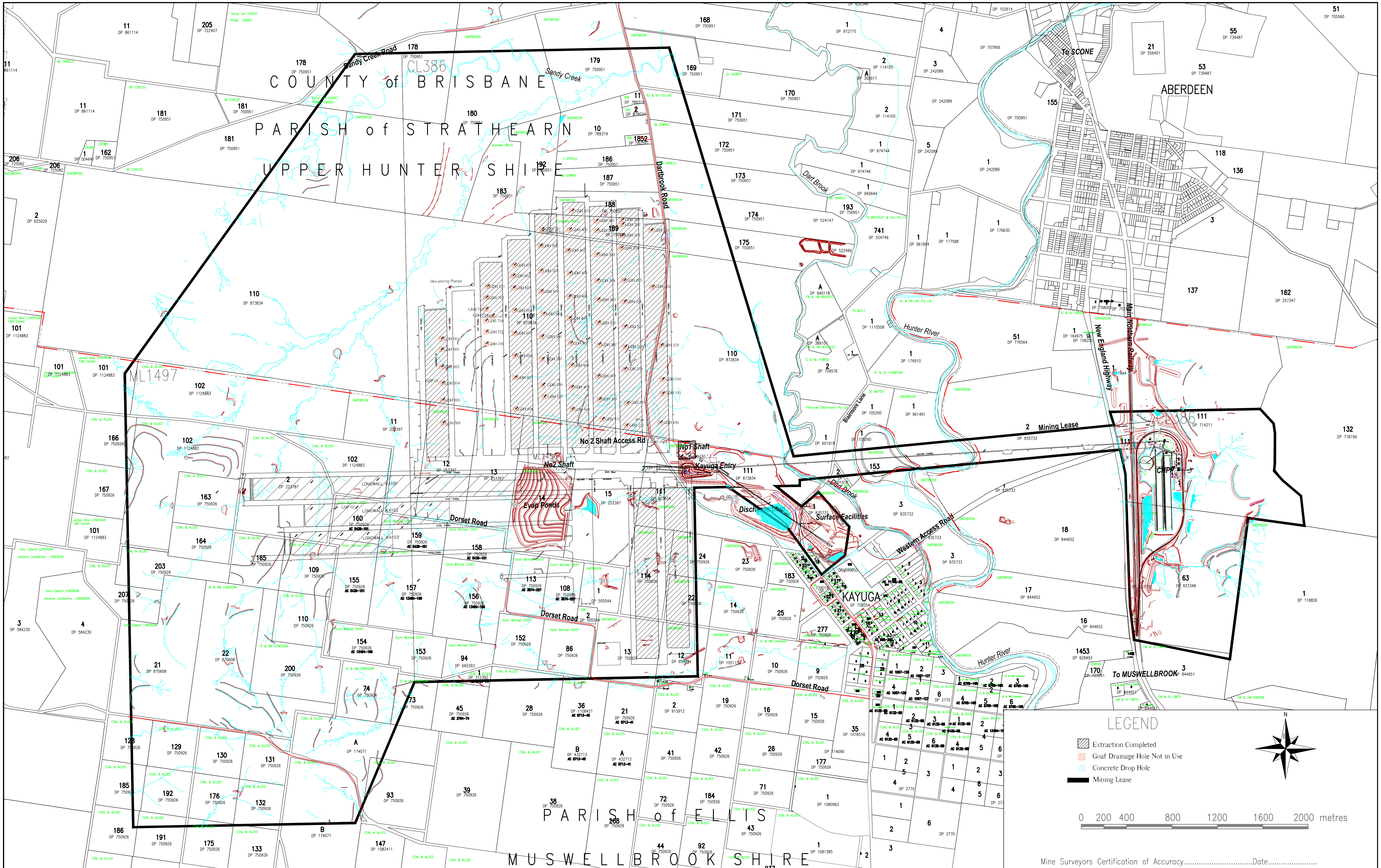
No topsoil was stripped in 2015 for mining, exploration drilling or rehabilitation purposes. An estimate of the quantity of topsoil available to be used in rehabilitation is provided in Table 4.

4.3 CONSTRUCTION & DEMOLITION

Only minor maintenance repairs to the Riverview Homestead, in preparation for the open day, (see Photo 3) and Kayuga Homestead were carried out in 2015.

The vandalised residence on upper Dorset Road was demolished during 2015 (see Photo 4).

Photo 2
Borehole RDH 182 scheduled for rehabilitation in 2016


COUNTY of BRISBANE
PARISH of STRATHEARN
UPPER HUNTER SHIRE
PARISH of ELLIS
MUSWELLBROOK SHIRE
ABERDEEN
KAYUGA
To SCONE
To MUSWELLBROOK
CL386
ML1497
Sandy Creek Road
Sandy Creek
Dartbrook Road
Dart Brook
Hunter River
New England Highway
Main Northern Railway
Blairmore Lane
Dorset Road
Western Access Road
No 2 Shaft Access Rd
No1 Shaft
No2 Shaft
Kayuga Entry
Evap Ponds
Surface Facilities
CHPP
Mining Lease
Dewatering Pumps
LONGWALL KA101
LONGWALL KA102
LONGWALL KA103
LEGEND
Extraction Completed
Goaf Drainage Hole Not in Use
Concrete Drop Hole
Mining Lease
0 200 400 800 1200 1600 2000 metres
N
Mine Surveyors Certification of Accuracy................................Date.......................

AngloAmerican

DRAWN: PC
12/01/07

REVISIONS

REV.	DATE	BY	DESCRIPTION	CHK.
P	15/12/10	PC	Updated to 2010	DS
Q	18/02/11	PC	Logo Modified to AngloAmerican	DS
R	26/02/13	PC	Plan No Changed from 4a to 2	DS
N	16/02/10	PC	Updated to 2009 program	DS
O	01/03/10	PC	Scone Shire Changed to Upper Hunter Shire	DS

Dartbrook Mine
Proposed Mining Activities
PLAN 2

Datum : AHD
GRID :
SCALE 1:30000
A3
DRG. 29412
REV. R

Photo 3
Riverview Homestead - original section constructed approx. late 1800s

Photo 4
Site of derelict residence on Dorset Road during and after demolition

4.4 MINING

The DRE Director General has approved the suspension of labour and expenditure conditions of Dartbrook's Coal and Mining Leases to 31 December 2017. The Care and Maintenance MOP has also been accepted by DRE for the period 1 January 2013 to 31 December 2017.

The mining and engineering contracting firm UGM was responsible for Dartbrook's Care and Maintenance during the reporting period. UGM conducted the daily tasks required to maintain the site and the CHPP, including the servicing and maintenance of equipment such as pumps, mine ventilation fans, electrical apparatus and underground mine vehicles. Other routine tasks included road works, housekeeping, strata control, statutory inspections, monitoring and reporting associated with the underground mine.

Although no coal was mined during 2015, access to the underground mine was retained via the Hunter Tunnel, the inter-seam decline, the Western Drift and the portions of the Wynn and Kayuga seam workings which are required to access these points. The underground air quality is monitored utilising a tube bundle system, and statutory inspections were carried out by UGM in accessible areas in 2015.

Ventilation shaft No. 1 is currently in operation and gas emissions are monitored through CITECT from the CHPP. The No. 2 vent shaft was sealed in 2010 and is not in use.

With the commencement of the *Clean Energy Act* in June 2012, the greenhouse gas monitoring system was upgraded with new sensors installed in Fan House 1.

As stated earlier, the proposed sale of Dartbrook to Australian Pacific Coal was announced in December 2015. The sale was publically announced on 27 December 2015.

The annual mine production and waste summary for 2015 is summarised in Table 3.

4.5 MINERAL PROCESSING

No coal was processed in 2015. Routine maintenance of the CHPP was undertaken by UGM, which involved the periodic dry running of the plant and associated pumps and conveyors. Minor repairs to structural items and the management of corrosion were also undertaken.

4.6 WASTE MANAGEMENT

4.6.1 Process Waste Management

The total footprint of the REA covers an area of 29 ha (see Plan 3). Final rehabilitation of the majority of the area was completed in mid-2007, with monitoring and appropriate maintenance works being undertaken since that time. The rehabilitation of a small tailings dam was completed in 2015.

No additional coarse reject materials were disposed of in the REA in 2015, nor were any tailings or fines disposed of in the mine goaf.

The Section 126 approval (see Table 3) requires "an independent engineering assessment to be made...at periods not exceeding three years of the dams and holding structures associated with the rejects disposal project..." A stability inspection of the REA was undertaken by Douglas Partners in November 2015. The assessed risk of slope failure of the REA was classified as being *very low* to *low* in the short to medium term due to the potential for liquefaction of the coal reject under an earthquake loading. This rating will improve to *very low* in the long term after the coal reject consolidates, provided that drainage is maintained.

The drainage of the REA was maintained in 2015. The drainage basin and the trash trap flowing into the underground pipe in the REA were kept clean to ensure the pipeline was kept in working order.

In December 2014 thermocouples at sites 9 and 10 were reading high. An investigation found that these thermocouples were faulty and both were replaced in February 2015. This area has been under close monitoring and inspections since then (see Section 6.13) and no raised temperatures have been measured.

Internal environmental / rehabilitation audits of the REA were conducted regularly throughout the year; and these confirmed that at the end of 2015 the rehabilitated areas were in good condition.

4.6.2 Non-Process Waste Management

Dartbrook uses a colour coded waste system to maximise recycling opportunities. Remondis has the responsibility for managing the removal and disposal of all waste generated on-site, including: hazardous, non-hazardous and recyclable waste streams.

During the reporting period, approximately 22.7 tonnes of waste was taken from site (see Table 5); this volume was significantly more than last year and reflects the additional clean up activities conducted on site in 2015.

No hazardous waste was removed from site, while 14.8 tonnes of non-hazardous waste was disposed to landfill. Approximately 7.9 tonnes of scrap metal was recycled as well as 0.1 tonnes of co-mingled recyclable materials (see Table 5).

4.6.3 ROM & Product Coal Stockpiles

The capacity of the coal stockpile areas are listed in Table 6. No coal material was stored on any stockpile in 2015.

Table 4
Production & Waste Summary

	Cumulative Production (t)		
	Start of Period 01/01/2015	End of Period 31/12/2015	End of next period 31/12/2016
Topsoil Stripped	0	0	0
Topsoil used / spread	0	0	0
Waste Rock	n/a	n/a	n/a
ROM Coal	n/a	n/a	n/a
Processing Waste	n/a	n/a	n/a
Product Coal	n/a	n/a	n/a
Topsoil Stockpile	14,780	14,780	14,780
Overburden Stockpiles and Bunds	655,747	655,747	655,747

Table 5
Waste Generation

Waste Type	Disposal	Quantity
General Waste - Non-hazardous (t)	Landfill	14.837
Scrap Metal (t)	Recycled	7.847
Office Paper and Commingled Recyclables (t)	Recycled	0.1
Hazardous Waste - Sewage Sludge (Litres)	Treatment	0
Waste Oil (Litres)	Recycled / Treatment	726
Hazardous Waste - Chemical Anchors / Resins (t)	Treatment / Approved Landfill	0

Table 6
Coal Stockpile Status

Stockpile	Coal Type	Capacity (Tonnes Approx.)	Status
Emergency Stockpile	ROM	50,000	Rehabilitated
Circular Stockpile	ROM	80,000	Cleared of coal material
Eastern ROM stockpile	ROM	185,000	Rehabilitated
Western ROM Stockpile	ROM	90,000	Rehabilitated
Southern ROM Stockpile	ROM	70,000	Rehabilitated
Northern ROM Stockpile	ROM	5,000	Rehabilitated
Rectangular Product Stockpile No. 1	Product	200,000	Cleared of coal material
Rectangular Product Stockpile No. 2	Product	200,000	Cleared of coal material
Reject Stockpile	Reject	20,000	Cleared of coal material
TOTAL		900,000	

4.7 WATER MANAGEMENT

Dartbrook has a water management system where all water on-site has generally been retained in storages (such as mine water dams or the underground goaf area (the Wynn Seam Goaf)). Water can be transferred from these storages via pipelines to the CHPP and the mine or between the East and West Sites. Dartbrook also has a licence, with 10 credits, to discharge excess water under the Hunter River Salinity Trading Scheme (HRSTS).

The site water management system is shown on Figure 1 and Figure 2, with a schematic included as Appendix I.

In 2015, the strategy continued to control water levels in the Wynn Goaf by pumping water to surface dams to maximise evaporation. Water accumulating in the goaf is reclaimed by the Wynn Seam Goaf Dewatering Plant, with a pipeline able to transfer water to the Evaporation Ponds, the Staged Discharge Dam (SDD) and the Western Holding Dam (WHD). Water may also be fed by gravity to the Eastern Holding Dam (EHD) for disposal by irrigating it into the coal pads.

Dust Suppression

Historically, the main loss or consumption of water at Dartbrook was via the moisture retained in the product coal or waste reject material as well as water utilised for dust suppression.

Given there was no mining in 2015 and only limited site activities under Care and Maintenance that required the use of water for dust suppression, there was minimal water consumed in 2015.

Fresh Water Use

Approximately 4.1 megalitres (ML) of potable water was sourced from the Aberdeen town water supply for the eastern facility in 2015. Two groundwater bores (1.4 ML) were utilised for clean water at the mine western facility over the period.

Sewage

No treated sewage effluent water was used to irrigate land in 2015.

Surface Water Dams

During the reporting period, water levels in the EHD and WHD (see Photo 5 and Photo 6) were maintained as low as practical (50 - 70 %) to ensure that adequate capacity was available to capture and contain storm water run-off from the site. The water level in these dams will continue to be maintained at low levels during Care and Maintenance. The Evaporation Ponds and SDD were maintained at high levels to maximise water losses to evaporation.

The main surface water management Target Action Response Plans (TARP) for the key dams on site are as follows:

- EHD – to be managed at 50 - 70 % capacity before it is reduced by pumping to the West Site or underground to the Wynn Seam Goaf;
- WHD – to be managed at 50 - 70 % capacity before it is reduced by pumping to the East Site or to the SDD; and
- SDD – to be managed at 70 - 75% capacity to provide a reasonable hydraulic head for possible HRSTS discharges.

Hunter River Salinity Trading Scheme

In order to maximise evaporation and readiness for the gravity fed HRSTS discharge system, the SDD is maintained at approximately 70% capacity.

Dartbrook discharged 6.84135 ML under the HRSTS in April 2015.

Evaporation

Evaporation from site process water dams calculated at 395 ML in 2015. The major evaporation occurred at:

- The Evaporation Ponds, where approximately 254 ML was evaporated in 2015;
- The SDD, where approximately 93 ML was evaporated in 2015. This water is available for discharge under the HRSTS.

Groundwater

There was an estimated 175 ML of groundwater inflow into the Hunter Tunnel during the reporting period, which was directly pumped into the Wynn Seam Goaf for storage. Groundwater seepage, mainly from the Wynn Seam into the goaf is estimated at 149 ML over 2015.

The groundwater inflow into the Hunter Tunnel appears to be decreasing. The measured 2015 inflow is 3% less than 2014, and 24% less than the measured inflow for 2012 after which a downward trend became apparent.

The accumulation of water in the Wynn Seam Goaf is the main groundwater management issue for the site while Dartbrook is under Care and Maintenance. The management strategy is to dewater the Wynn Seam Goaf so as to have the rate of outgoing water the same as the rate of incoming water. The re-installation of a new “Wilo” underground pump will ensure the dewatering capacity from the goaf.

The TARP for the Wynn Seam Goaf is to increase the dewatering capacity when the water level reaches RL 9,934 m, or 269.3 m in depth at the pleuger pump monitoring site. This level was reached in November and an active investigation plan to accelerate evaporation using additional sprays, located above the SDD, has commenced.

Wynn Goaf Inventory Management

Pump metering and model groundwater seepage estimates indicate that the Wynn Goaf increased by a net 133 ML during 2015. OPSIM model results indicate the Wynn Goaf increased by a net 135 ML over the period. Dipping records over the same period indicated a net gain of 197 ML from all sources.

Site Inventory

Measured site inventory increased from 3,317 ML to 3,520 ML during 2015, a net gain of 203 ML, compared to a gain of 32 ML in 2014. OPSIM model results indicate site inventory increased from 3,317 ML to 3,434 ML during 2015, a net gain of 117 ML. The difference between the two results is attributable to errors inherent in the methods used to estimate the inventory of surface water storages.

The OPSIM water model for the site continues to indicate that there is a surplus of water accumulating in the Wynn seam which should be managed through evaporation and discharges through the HRSTS as the opportunity presents.

Table 7
2015 Estimated Dartbrook Water Balance Components

Water Stream	2015 (ML)
Inputs	
Fresh Water (Blairemore bore)	1
Groundwater Seepage In (including Hunter Tunnel)	325
Rainfall Runoff	383
Recycled to CHPP from Tails & Storage (not included in total)	0
Imported Potable (Aberdeen)	4
Water from ROM Coal	0
Total Inputs	713
Outputs	
Groundwater Seepage Out	50
Dust Suppression	8
Evaporation - Mine Water & Tailings Dams	395
Entrained in Process Waste	0
Discharged (HRSTS)	6.8
Water in Product Coal	0
Potable Usage	6
Total Outputs	466
Estimated Change in Pit Storage (increased)	247

* *The change in storage value estimated from monthly inspections of dam storage inventories indicates an increase in storage of 203 ML over the year.*

Photo 5
Eastern Holding Dam

Photo 6
Western Holding Dam,

Table 8
Dartbrook Stored Water Summary

	Location	Volume Held (m^3)		
		Start of Period 1/01/2015	End of Period 31/12/15	Storage Capacity
Clean Water	No clean water stored on-site			
Dirty Water (runoff)				
Sediment Dam 1 (KGA)	West site	850	950	1,000
Sediment Dam 2 (KGA)	West site	200	320	1,000
Northern Dam REA	East Site	0	0	3,500
Southern Dam REA	East Site	2800	1600	10,800
Stage 4 REA Dam	East Site	0	0	7,700
Controlled Discharge Water				
SDD	West Site	319,500	330,000	430,000
Contaminated Water				
Western Holding Dam *	West Site	8,470	12,320	15,000
Eastern Holding Dam *	East Site	44,240	61600	90,000
Evaporation ponds	West Site	118,800	99000	132,000
Wynn Seam Goaf	Underground	~2,642,000	~2,642,000	2,915,000

*Note: * Maintained at <50-70% as standard practice to ensure sufficient capacity for storm events.*

4.8 HAZARDOUS MATERIALS MANAGEMENT

No licensable quantities of dangerous goods were stored or used at Dartbrook in 2015. There are nominal quantities of hazardous substances required for use at Dartbrook during Care and Maintenance. A permit system is in place for the introduction of chemical substances on the site and a register maintained using ChemAlert. When substances are no longer required they are removed from site.

Dartbrook also has a licence to possess radiation apparatus, and the appropriate licences to enable the monitoring of coal quality at the CHPP.

4.9 OTHER INFRASTRUCTURE MANAGEMENT

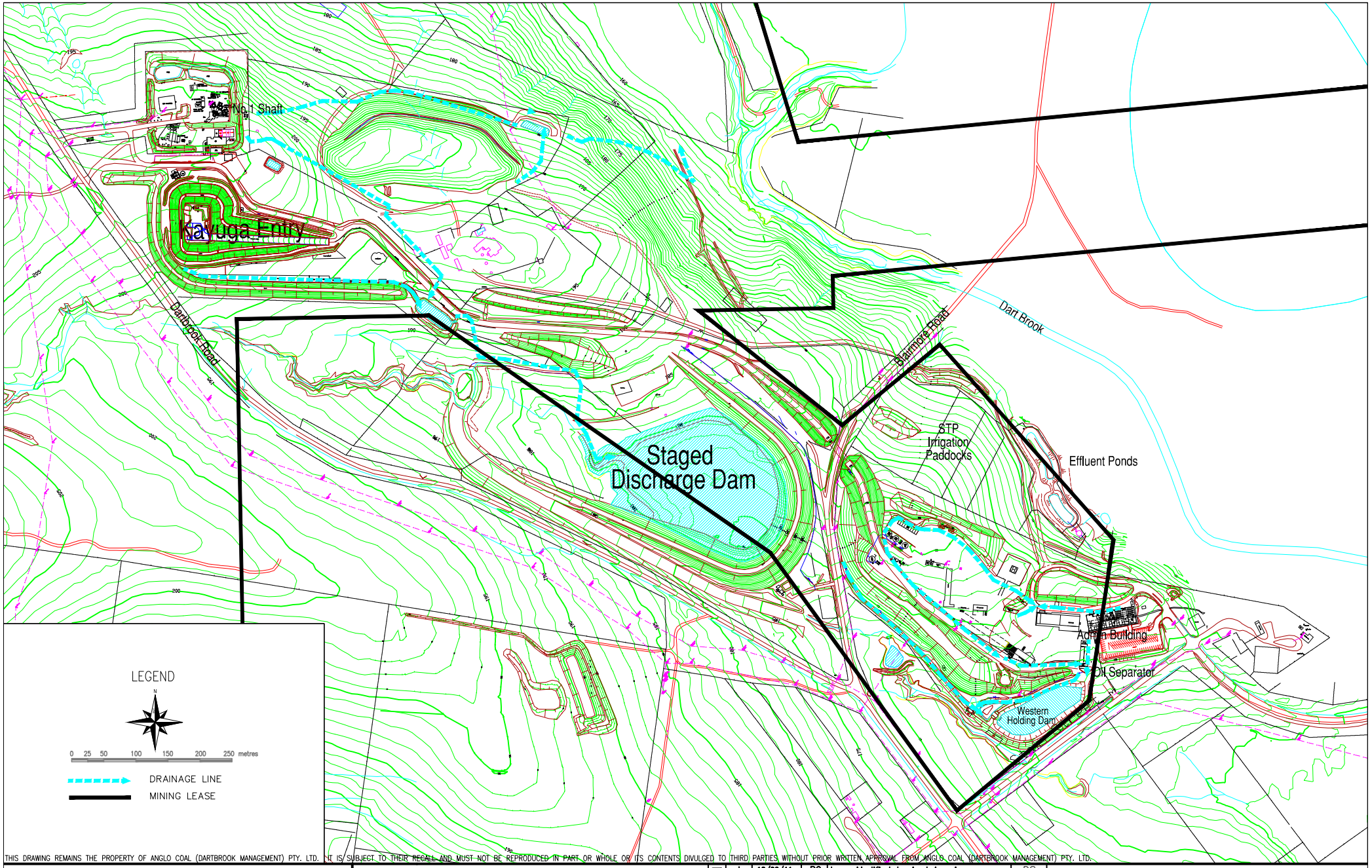
The disposal of minor equipment and machinery, such as the unserviceable Hunter Tunnel infrastructure and excess conveyor belt continued in 2015 (see Photo 7).

While no major projects were undertaken during the year, various minor projects were undertaken:

- Pleuger pump No.1 is being replaced by a WILO submersible pump, and
- The No 1 Fan blade and motor were removed, refurbished and re-erected.

Arrangements for the auction of currently unused items such as longwall shields, motors, chains, transformers and pumps on the laydown pad have been placed on hold for the time being.

Photo 7
Removal of excess conveyor belt from site



AngloAmerican

REVISION	REV.	DATE	BY	DESCRIPTION	CHK.
	I	18/02/11	PC	Logo Modified to AngloAmerican	DS
	G	30/03/07	PC	A4 View Added	FY
	H	16/02/10	PC	General update	DS

DRAWN	DATE	CHECKED	APPROVED
PC	09/05/03		

Dartbrook Mine
Water Management West Site
FIGURE 1

SCALE		DRG.	REV.
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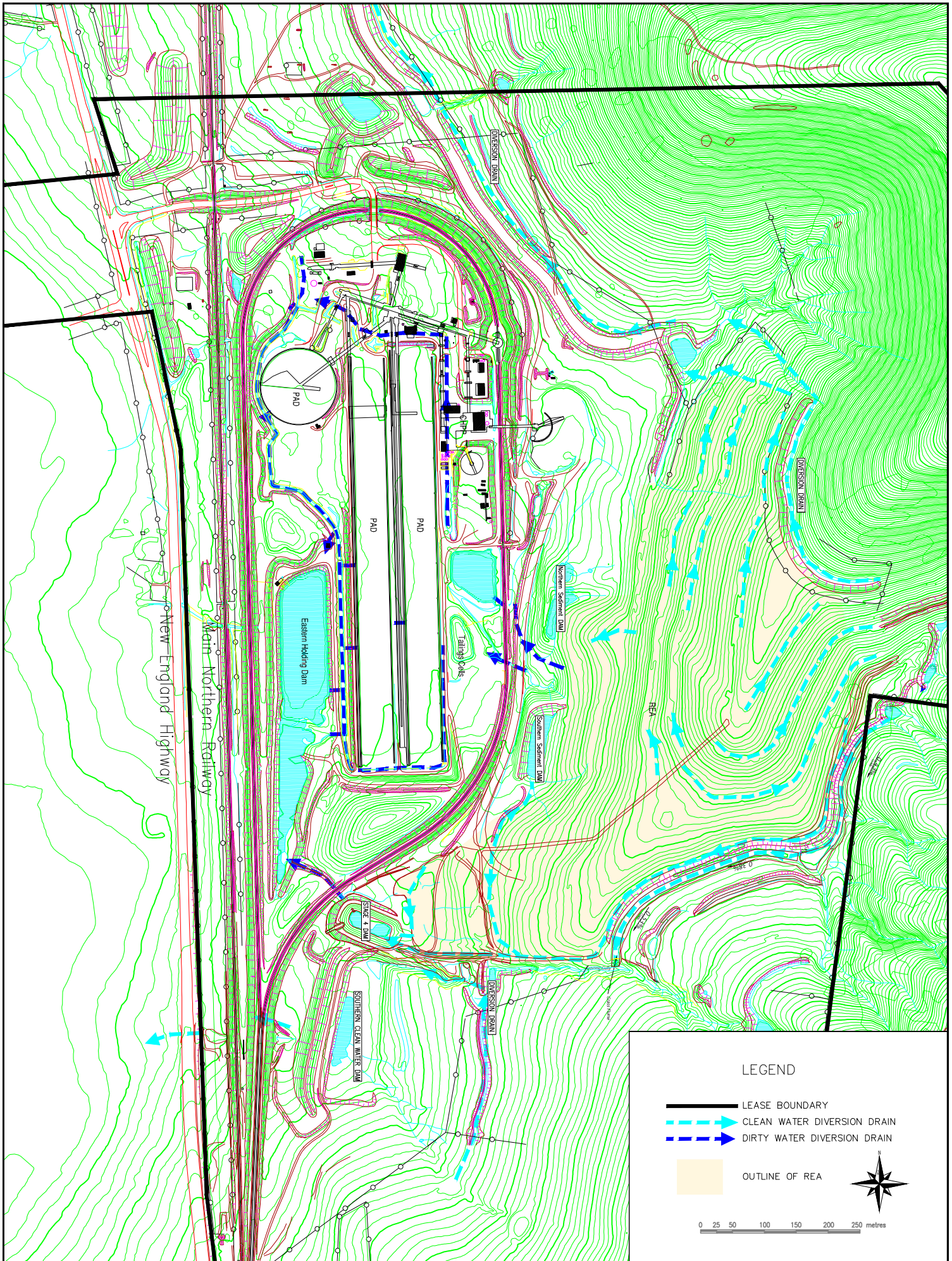


AngloAmerican

REVISION	REV.	DATE	BY	DESCRIPTION	CHK.
	L	18/02/11	PC	Logo Modified to AngloAmerican	
	J	08/05/08	PC	REA Contours Updated	
	K	17/02/10	PC	REA Drainage Updated	

DRAWN	DATE	CHECKED	APPROVED
PC	06/03/01		

Dartbrook Mine
Water Management East Site
FIGURE 2

SCALE		DRG.	REV.
1:7500	A4	23346	L

5.0 ACTIONS REQUIRED FROM PREVIOUS ANNUAL REVIEW

An inspection following the submission of the 2014 Annual Environmental Management Report (AEMR) was undertaken by the DRE on the 10 September 2015.

Catherine Lewis of the DRE reviewed the 2014 AEMR and found it satisfactory.

Scott Brooks of the DP&E reviewed the 2014 AEMR and also found it generally in accordance with the Development Consent.

Table 9 shows the issues raised and the responses to the above reviews.

Table 9
Dartbrook Action Plan arising from DRE and DP&E 2014 AEMR reviews

Action required	Requested by	Action taken by operator	Section
Nil	DRE	N/A	N/A
Investigations into increasing onsite water evaporation.	DP&E	To undertake the design and construction of an additional on site evaporation system	6.5
Development of the Borehole Rehabilitation Plan	DP&E	Schedule and budget the rehabilitation for the 2016/2017 period	4.1
Information re consultation with the OEH and NOW re rationalising site water monitoring requirements	DP&E	Schedule the discussions for 2017	12.0

6.0 ENVIRONMENTAL MANAGEMENT & PERFORMANCE

6.1 ENVIRONMENTAL MANAGEMENT SYSTEM

Dartbrook's Safety Health Environment and Community Management System (SHECMS) is an integrated, structured system for proactively identifying and managing safety, health, environment and community risks associated with the operation. SHECMS is modelled on the International Standards Organisation (ISO) 14001: *Environmental Management Systems* and Australian and New Zealand Standards (AS/NZS) 4801/2001: *Occupational Health and Safety Management System Standard*. . The system is aimed at ensuring continual improvement in SHEC performance as required by Anglo American (Appendix A).

The SHECMS reflects the Care and Maintenance status of the mine and accommodates the relevant UGM procedures for the Statutory Mine Area. An internal operational compliance audit of rehabilitation, water, biodiversity and hydrocarbon management components of the SHECMS was undertaken in April 2015. This audit found that there were no non-compliances.

6.2 METEOROLOGICAL SUMMARY

A summary of the meteorological monitoring data for 2015 is included in Table 10, Table 11 and Appendix C. Rainfall recorded at Dartbrook during the reporting period was 657.14mm over 79 rain days. This rainfall was considerably above the average annual rainfall (587.1 mm) recorded at Dartbrook since mine records commenced in 1995. A high proportion of this rain fell in January (82 mm), April (126.5 mm) and November (79.2 mm) and December (87 mm).

The temperature measurements shown in the summary table are averages compiled from the available data collected each month. The 2015 temperatures were generally cooler than 2014.

Prevailing wind conditions were generally south-south-east during the summer months and north-east during the winter months. Over all, the wind speeds were generally lower than in 2014, with the summer months having a greater percentage of time with winds above 5.0 m/s.

Dartbrook has two operating meteorological stations. For Annual Review reporting purposes, data from Dartbrook Meteorological Station 02 is used due to the availability of long term data (from 1995 to the present). Throughout the reporting period, the average data availability was 99.5% for Meteorological Station 02. Both meteorological monitoring sites are operated via real-time telemetry, to assist with accurate data acquisition.

6.3 AIR QUALITY

6.3.1 Environmental Management

Potential impacts to air quality at Dartbrook include airborne dust and odour. These impacts are managed in accordance with the SHECMS, consent conditions and relevant environmental management plans.

As specified in the approved Dust Management Plan which was updated in June 2015, there are a number of controls that are implemented to minimise dust impacts.

Coal stockpile areas and the REA have been previously cleared of coal material and revegetated, in order to minimise potential dust emissions during Care and Maintenance.

Dartbrook is generally not undertaking activities that generate dust. There was no requirement for the usage of water carts during 2015 due to the limited activities undertaken on site.

There was no evidence of dust being generated from the Evaporation Ponds during 2015 as they were generally covered with water which was being evaporated. These ponds were used throughout the year as stated in Section 4.7.

Table 10
Meteorological Summary for 2015

Month	Rainfall (mm) 2014	Cumulative Rainfall (mm) 2014	Number of Wet Days	Number of Rain Days	Min Temperature (°C)	Ave Temperature (°C)	Max Temperature (°C)
January	106	106	10	10	12.4	23.3	34.7
February	20.8	126.8	5	3	10.6	22.9	35.0
March	12.6	139.4	6	5	8.9	22.3	38.4
April	126.5	265.9	5	5	10.0	17.8	29.5
May	58.2	324.1	13	8	2.2	14.4	25.0
June	39	363.1	11	6	-0.5	10.8	21.1
July	22.2	385.3	12	9	-0.5	10.0	18.9
August	57.2	442.5	5	4	-1.1	11.0	24.5
September	15	457.5	8	6	2.2	13.8	26.7
October	33.4	490.9	9	7	7.2	19.9	35.0
November	79.2	570.1	10	8	9.5	21.7	38.4
December	87	657.1	10	8	11.1	22.6	35.6
Annual	657.1		104	79	-1.1	17.5	38.4

Table 11
Wind Summary for 2015

Month	% Period with Wind Speed <3.0 m/s	% Period with Wind Speed >3.0 m/s	% Period with Wind Speed >5.4 m/s	Predominant Wind Direction
January	57	43	11	S
February	51	49	15	SSE
March	56	44	13	SSE
April	57	43	9	NNE
May	62	38	5	NNE
June	82	18	3	N
July	65	35	7	N
August	58	42	9	N
September	69	31	5	NNE
October	60	40	10	SSE
November	50	50	3	SSE
December	47	52	18	SSE
Average	60	40	9	-

Dust Monitoring Criteria

The dust standards and goals specified in Condition 6.1(ai) and Condition 6.1(axvii) of the Development Consent are presented in Table 12 and Table 13, respectively.

The National Environment Protection Council (NEPC) 24-hour PM_{10} goal allows for five exceedances per year. It should be noted that the goals listed in Table 13 are not actual compliance standards for Dartbrook, but reporting goals only.

Discussions with the DP&E and the Office of Environment and Heritage (OEH), regarding rationalising the dust monitoring for both deposition and High Volume Air Samplers (HVAS), were commenced in 2014 and continued in 2015. Dartbrook' latest Dust Management Plan (dated 16 June 2015) states that the dust monitoring network includes:

- Three dust deposition gauges at locations representative of the closest private residences (including Aberdeen) to the East Site;
- Two PM_{10} monitoring locations located to the south of the CHPP and south of the West site workshop representative of the closest private residences;
- Two dust deposition gauges at locations representative of the closest private residences to the south and west of the West Site surface operations; and
- A meteorological station at the East and West Sites.

This Plan was approved by the DP&E on 24 November 2015. However for the purposes of the 2015 Annual Review, all 17 dust deposition and 5 High Volume monitors have been included.

6.3.2 Environmental Performance

Dust Deposition

Dust monitoring was undertaken at 17 dust fallout monitoring sites located throughout the area. Dust deposition gauges have been established on a grid network that covers the major points in relation to all surface activities within the Mining Leases. Figure 3 illustrates the location of the dust monitoring sites.

Results from dust deposition gauges are expressed as insoluble solids, comprising of combustible matter (or organic matter) and ash residue. Ash residue is considered to be more representative of the dust component (from soils and weathered rock) while the remainder, typically organic matter, includes bird droppings, leaf or grass litter, insects and coal. Standard units are reported as g/m^2/month. Most Insoluble Solid results that are above 4 g/m^2/month undergo a XRD scan (microscopic examination) of the combustible matter to determine whether the material is coaly in nature, organic matter or sandy clay matter. Appendix D presents results of air quality monitoring undertaken throughout the year.

Graph 1 and Table 14 summarise the annual average deposition rate of insoluble solids and the ash component of the insoluble solids.

The annual average dust deposition results for insoluble solids for 2015 ranged from 0.83 g/m^2/month (Site D13 and Aberdeen East) to 2.35 g/m^2/month (Macairstrip) located to the west of the West Administration building (Figure 3). All sites were below the annual average dust limit of 4 g/m^2/month.

Results where the monthly Insoluble Solids recorded are greater than 4 g/m^2/month are displayed in Table 14.

Since Dartbrook is not producing coal, the majority of elevated dust results can be attributed to background levels including farming and grazing activities and/or from insects and bird droppings.

Table 12
Dartbrook Air Quality Standards & Goals

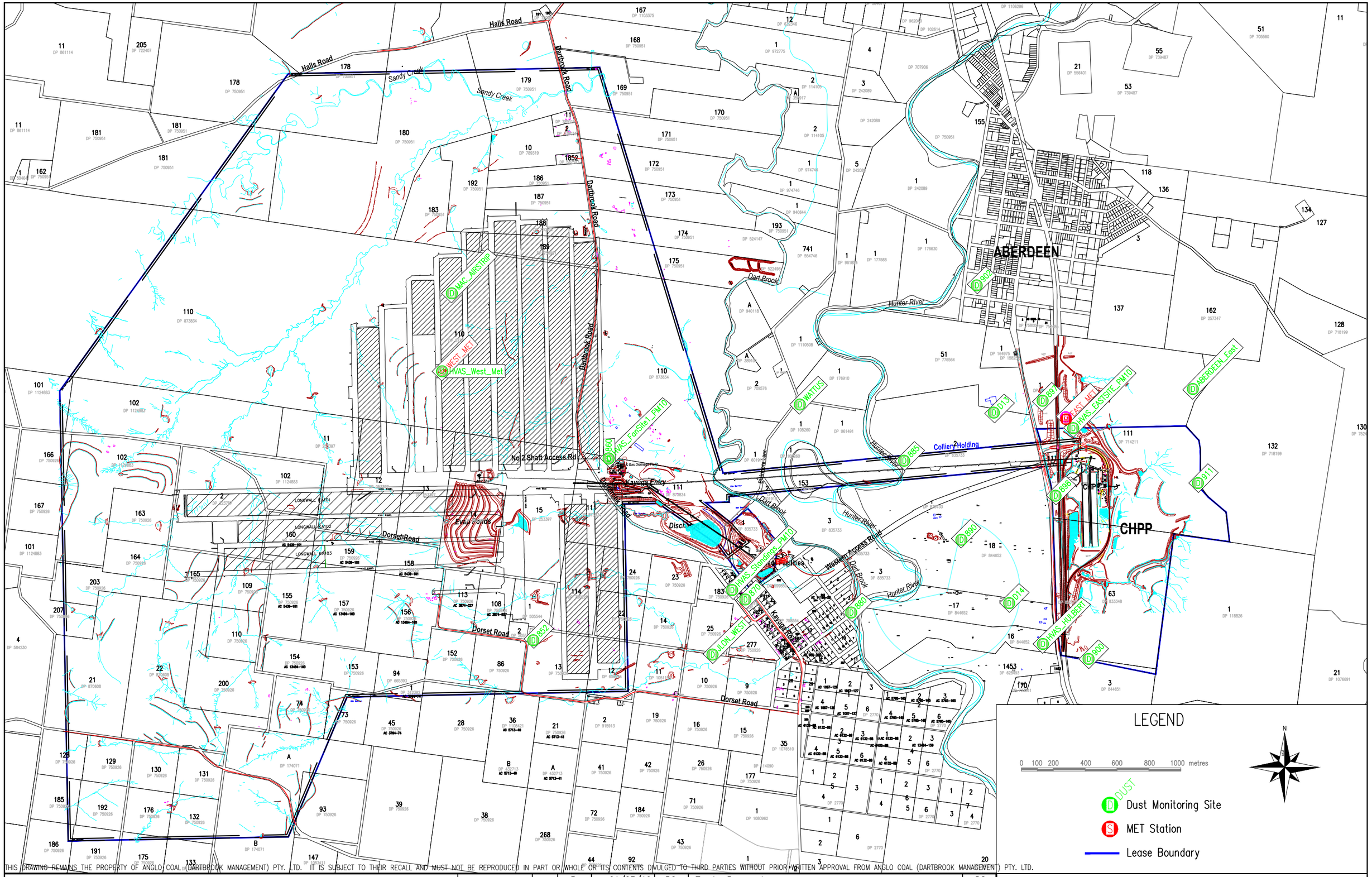
Health Based Standards/Goals		
Dust Type	Standard/Goal	Agency
Total Suspended Particulate Matter (TSP)	90 μg/m^3 (annual mean)	National Health and Medical Research Council
NSW EPA Amenity Based Standards/Goals for Dust Fallout		
Existing Dust Fallout Level (g/m^2/month)	Maximum Acceptable Increase Over Existing Deposition Levels (g/m^2/month)	
	Residential	Other
2	2	2
3	1	2
4	0	1

Table 13
Dartbrook PM_{10} Air Quality Goals

PM_{10} Goal	Agency
50 μg/m^3 (24-hour average)	NEPC
50 μg/m^3 (annual average)	EPA

Table 14
Annual Mean Dust Deposition for 2015

Site	Location description	Insoluble Solids (g/m2/mth)	Ash Component (g/m2/mth)	Number of samples
852	Dorset Road	0.92	0.55	12
860	No. 1 Vent Shaft	0.80	0.45	12
870	Kayuga Village	1.05	0.64	12
880	Hunter River / Dart Brook Junction	1.17	0.55	12
885	Frazer Farm paddock near the Hunter River	1.63	0.99	12
890a	Garoka Dairy	0.70	0.34	12
897	Eastern Site North	0.94	0.43	12
898	Eastern Site West	0.94	0.48	12
900	Eastern Site South	0.97	0.54	12
902	Aberdeen Tree Screen	0.70	0.38	12
911	Browns Mountain	1.09	0.57	12
Aberdeen East	South east of Aberdeen	0.83	0.46	12
D13	Residence northwest of CHPP	1.03	0.49	12
D14	Southwest of CHPP	0.83	0.41	12
JLON West	Residence south of West Site	2.00	0.80	12
Macairstrip	Northwest of West site	2.35	1.40	12
Wattus	Between Dart Brook and Hunter River	1.76	0.94	12



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DRAWN	REV.	DATE	BY	DESCRIPTION	CHK.
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20/03/00	Q	18/02/11	PC	Logo Modiified to AngloAmerican, Scale to 1:30000	DS
	R	24/02/11	PC	MET Stations added	DS
	S	27/02/12	PC	HVAS at Airstrip Added	DS
	0	16/02/10	PC	Updated to 2009	DS

REVISIONS

Plan Showing Location
of Dust Monitoring Sites
FIGURE 3

Datum :	AHD	SCALE	A3	DRG.	REV.
GRID :	MGA(56)	1:30000		27433	S

Graph 1
Dust Deposition Gauges Annual Average Results 2015

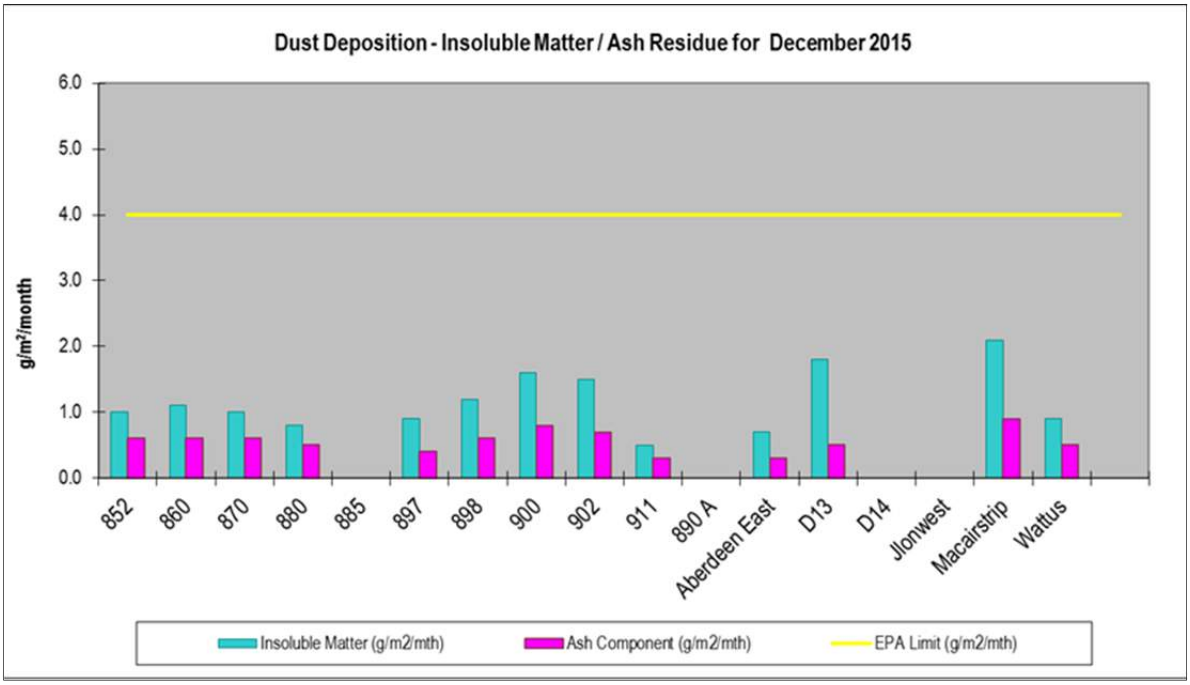


Table 15
2015 Elevated Monthly Dust Deposition Results

Site	Date	Insoluble Solids	Combustible Matter	Ash Component	Reason for high reading
		(g/m^2/mth)	(g/m^2/mth)	(g/m^2/mth)	
852	24/04/2015	5.6c	3.8c	1.8c	dust, insects, bird droppings
852	22/09/2015	4.7c	3.1c	1.6c	dust, insects
860	21/08/2015	8.8c	4.7c	4.1c	dust, insects, bird droppings
885	21/08/2015	4.9c	3.2c	1.7c	insects, bird droppings
885	21/09/2015	7.0c	3.7c	3.3c	insects, bird droppings
885	18/12/2015	4.1c	3.0c	1.1c	insects, bird droppings, beetles
900	22/05/2015	16.4c	11.4c	5.0c	insects, bird droppings
D14	23/03/2015	5.4c	3.8c	1.6c	insects, bird droppings
Jlonwest	19/02/2015	4.3c	2.2c	2.1c	insects, bird droppings
Jlonwest	23/03/2015	6.2c	3.5c	2.7c	insects, bird droppings
Jlonwest	24/04/2015	4.7c	3.3c	1.4c	insects, bird droppings
Jlonwest	20/10/2015	7.6c	5.7c	1.9c	dust, insects, bird droppings
Macairstrip	19/02/2015	7.7c	3.8c	3.9c	insects & bird droppings
Macairstrip	23/03/2015	16.3c	12.6c	3.7c	dust, insects
Macairstrip	22/05/2015	38.8c	17.6c	12.2c	insects, bird droppings, rock
Macairstrip	20/10/2015	8.5c	5.2c	3.3c	dust, insects, bird droppings
Macairstrip	19/11/2015	11.6c	2.8c	8.8c	insects

Site	Date	Insoluble Solids	Combustible Matter	Ash Component	Reason for high reading
Wattus	23/03/2015	5.2c	2.6c	2.5c	dust, insects, bird droppings
Wattus	24/04/2015	5.4c	2.4c	3.0c	dust, insects
Wattus	22/06/2015	22.1c	4.9c	17.2c	insects, bird droppings, vegetation
Wattus	22/07/2015	4.9c	4.2c	0.7c	dust, insects, bird droppings

Note: c = contaminated sample

High Volume Air Sampling

Dartbrook has five HVAS that monitor PM_{10} (particulate matter less than 10 microns) dust concentration. PM_{10} data is also utilised to estimate TSP levels, in accordance with the approved Air Quality Management Plan. Dust is monitored for a 24-hour period on a 6 day cycle. Sample analyses are carried out in accordance with relevant Australian Standards.

The locations of the HVAS are illustrated in Figure 3 and described in Table 16, with results presented in Appendix D.

The data recovery rate was 100% for all HVAS sites. All sites were compliant with the NEPC standard, which requires recovery of data to be greater than 75%. The 24-hour annual average PM_{10} results for the HVAS, as presented in Graph 2, show a slight increase across the summer period. The annual average was below the EPA criteria of 50 µg/m^3 at all sites throughout 2015.

The annual average results for TSP for the HVAS are presented in Graph 3. These results show that the annual average criterion was not exceeded at any site in 2015. Peaks were found to be due to localised industrial and farming activities.

The Calculated TSP Annual Average Results for the HVAS are presented in Graph 4. The annual average for all sites was below the National Health and Medical Research Council standard of 90 µg /m^3.

The total annual average PM_{10} dust concentration at the five monitoring sites in 2015 in comparison with levels predicted in the EIS and subsequent modifications is summarised in Table 17. This comparison shows that during 2015 most of the sites were below the predictions made in the EIS and subsequent modifications. It should also be noted that the 2015 year was wetter than 2014.

6.3.3 Further Improvements

Dust monitoring will continue throughout the Care and Maintenance period in accordance with the Development Consent and the Dust Management Plan.

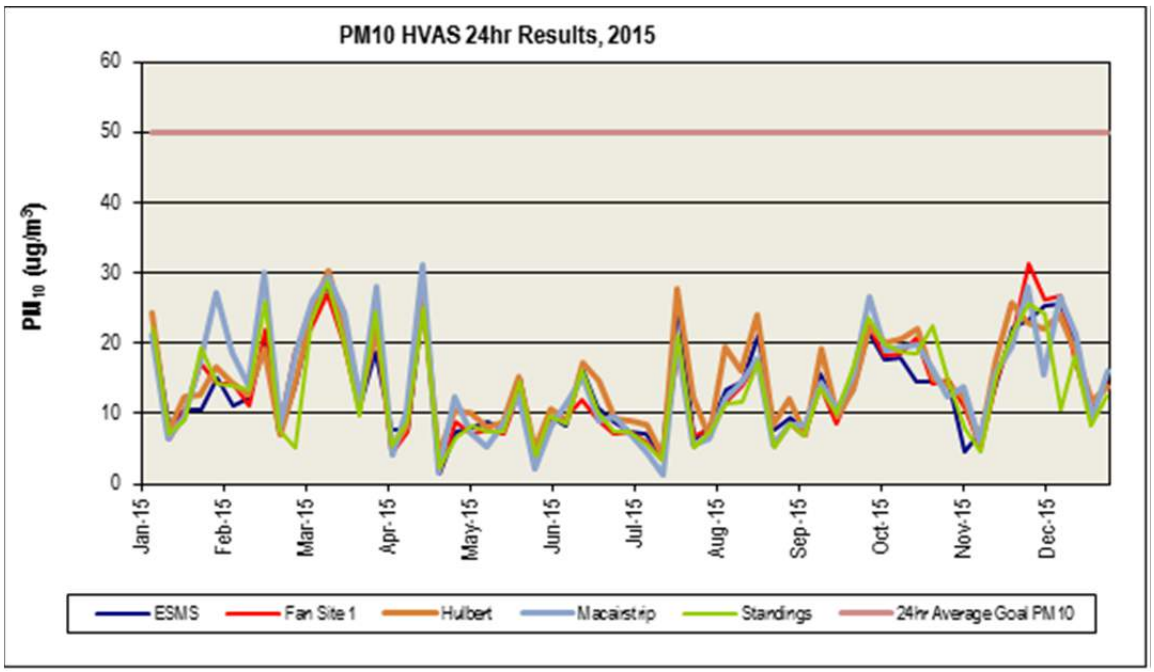
Rationalisation discussions with the DP&E and OEH regarding have been completed but the 2016 monitoring may be subject to requirements made on the new owner of Dartbrook.

Table 16
HVAS Monitoring Sites for PM10

HVAS Site	Location
East Site Meteorological Station (ESMS)	East Site, north of the CHPP
Fan Site Number 1	West Site, adjacent to the ventilation fan
Hulbert	East Site, south-south-west of the CHPP
Standings	West Site, south of the surface infrastructure
Macairstrip	West Site, centre of the Mining Leases

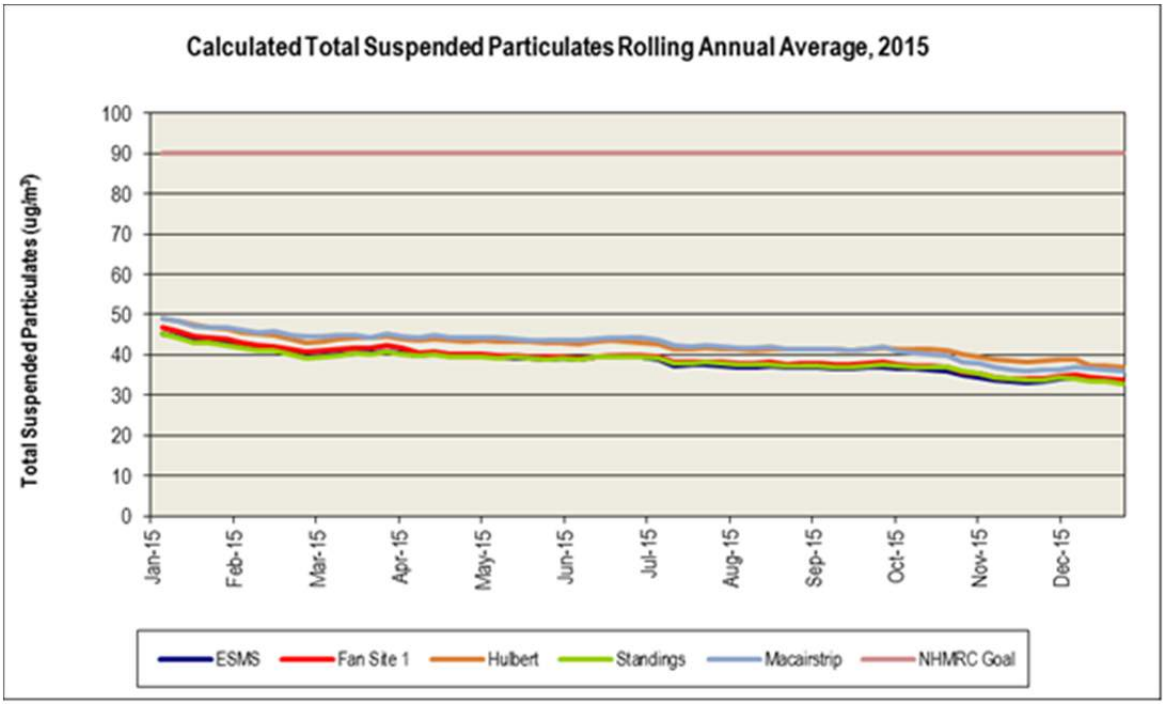
Graph 2

PM_{10} HVAS 24hr Results, January – December 2015



Graph 3

TSP HVAS Annual Average Results, January – December 2015



Graph 4
Calculated TSP annual averages for HVAS, 2015

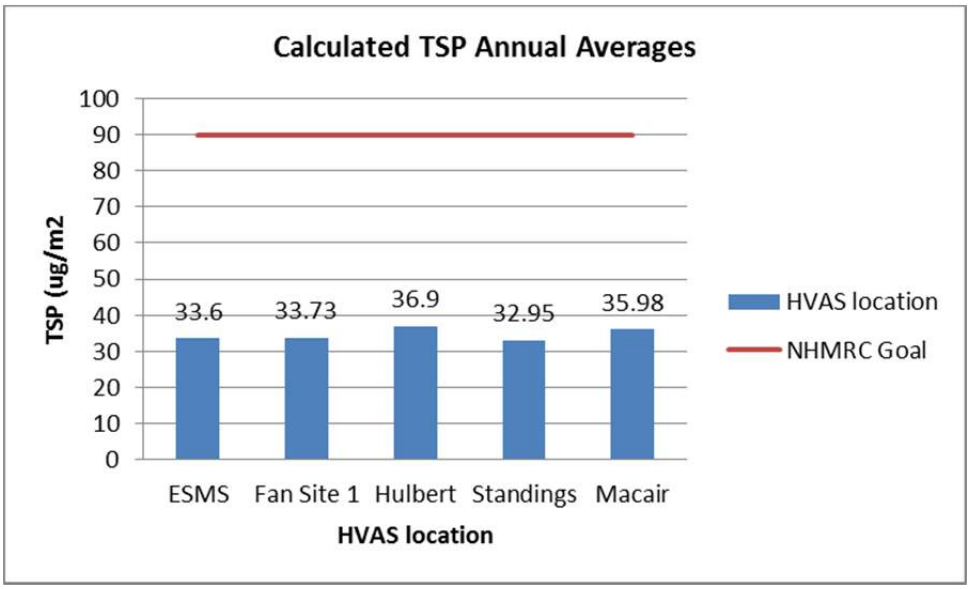


Table 17
PM_{10} Concentration Comparison with Predictions

Location	Units	Total Predicted Annual Average	Annual Average Result 2015
ESMS	µg/m³	20.1	13.46
Fan site 1	µg/m³	18.7	13.49
Hulbert	µg/m³	17.4	14.76
Standings	µg/m³	17.3	14.39
Macairstrip	µg/m³	17.0	13.2

6.4 EROSION & SEDIMENT

6.4.1 Environmental Management

Erosion and sediment control across the site remains a priority, despite the relatively small amount of surface disturbance. Strategies to prevent erosion and control sediment include:

- The installation of diversion drains and contour banks to redirect overland flow from disturbed areas into dams and sediment structures;
- The use and maintenance of silt traps to slow water flow and capture water borne sediments;
- Design of rehabilitation areas to reduce slope length and minimise the potential for erosion;
- The re-establishment of vegetation onto disturbed areas to minimise exposure of bare ground with erosion risk; and
- Monitoring and inspection of rehabilitation areas and disturbed areas to identify risks of erosion.

Erosion and sediment control is managed as described in Dartbrook's Erosion and Sediment Control Plan dated 21 October 2014.

6.4.2 Environmental Performance

The maintenance of drains, sediment traps and sumps was ongoing in 2015, with routine inspections undertaken of all sediment structures. Any drains, sumps or traps that contained greater than 30% sediment are scheduled to be cleaned out in a dry period in 2016.

Contour banks, drains and sediment traps constructed as part of the final landform of the REA ensure runoff is directed into appropriate sediment and water control structures (see Photo 8 and Photo 9). During 2015, only minor repairs continued to be made to key contour banks to ensure the flow of runoff waters, while rehabilitation continues to gradually build up surface vegetation and litter.

6.4.3 Further Improvements

Sediment structures will continue to be maintained during 2016, with an ongoing monitoring and desilting program. Water runoff from any disturbed areas will continue to be directed into sediment dams until areas are adequately revegetated with grass cover.

6.5 SURFACE WATER

6.5.1 Environmental Management

Dartbrook's Water Management Plan dated 20 April 2015 includes strategies for the potential impacts for surface water and groundwater relevant to the Care and Maintenance period. Multiple control strategies have been implemented across Dartbrook to minimise the risks associated with water pollution. These strategies include:

- Separation of clean and mine water sources;
- Use of sedimentation dams and traps to collect sediment;
- Diversion of clean water around the site;
- Containment of runoff from disturbed areas;
- Usage and re-use of potentially contaminated runoff and process water from the mine;
- Pumping and pipeline systems to transfer water between the surface and underground and also between the East and West Sites;
- Maximise water evaporation through the Evaporation Ponds (see Photo 10).
- Employee and contractor awareness and training in relation to spill response and pollution control;
- Licensed discharge facilities to discharge excess water from the SDD into the Hunter River in accordance with the requirements of the HRSTS; and
- Regular sampling and inspections of surface waters.

Water samples are collected and analysed on a regular basis from water dams and streams in and around the mining lease to examine the water quality. Specifically, samples are collected from an upstream and downstream site in the Hunter River and Dart Brook.

This sampling regime is in place to confirm that Dartbrook is not having an adverse impact on the water catchment and streams.

Analysis of water sampled includes pH, Electrical Conductivity (EC), Alkalinity, Calcium, Chloride, Magnesium, Potassium, Sodium, Sulphates, Total Dissolved Solids (TDS) and Total Suspended Solids (TSS). Selected mine water dams are also tested for reactive phosphorus, Methylene Blue Active Substances (foaming agents), oil and grease as well as algae.

All runoff from the western workshop and hardstand area eventually flows through the oil separator and into the WHD. Water from the WHD is pumped to the SDD or to the EHD, as required, to ensure the WHD is maintained at 50 - 70 % capacity (see Photo 5 and Photo 6).

All runoff from the CHPP and disturbed surrounds eventually flows into the EHD. Water from the EHD is pumped on to the coal stockpile areas for evaporation, to the Wynn Seam Goaf or to the WHD, as required, to ensure the EHD is maintained at approximately 50% capacity.

The general levels of the major dams are inspected weekly and the water level of the SDD, WHD and EHD are continuously monitored via the Dartbrook CITECT system. The SDD is also registered under the *Dams Safety Act 1978* and such is subject to a regular surveillance audits. The 2015 inspections did not observe any non-compliances or issues.

The surface water monitoring sites located across Dartbrook are listed in Table 18 and illustrated in Figure 4.

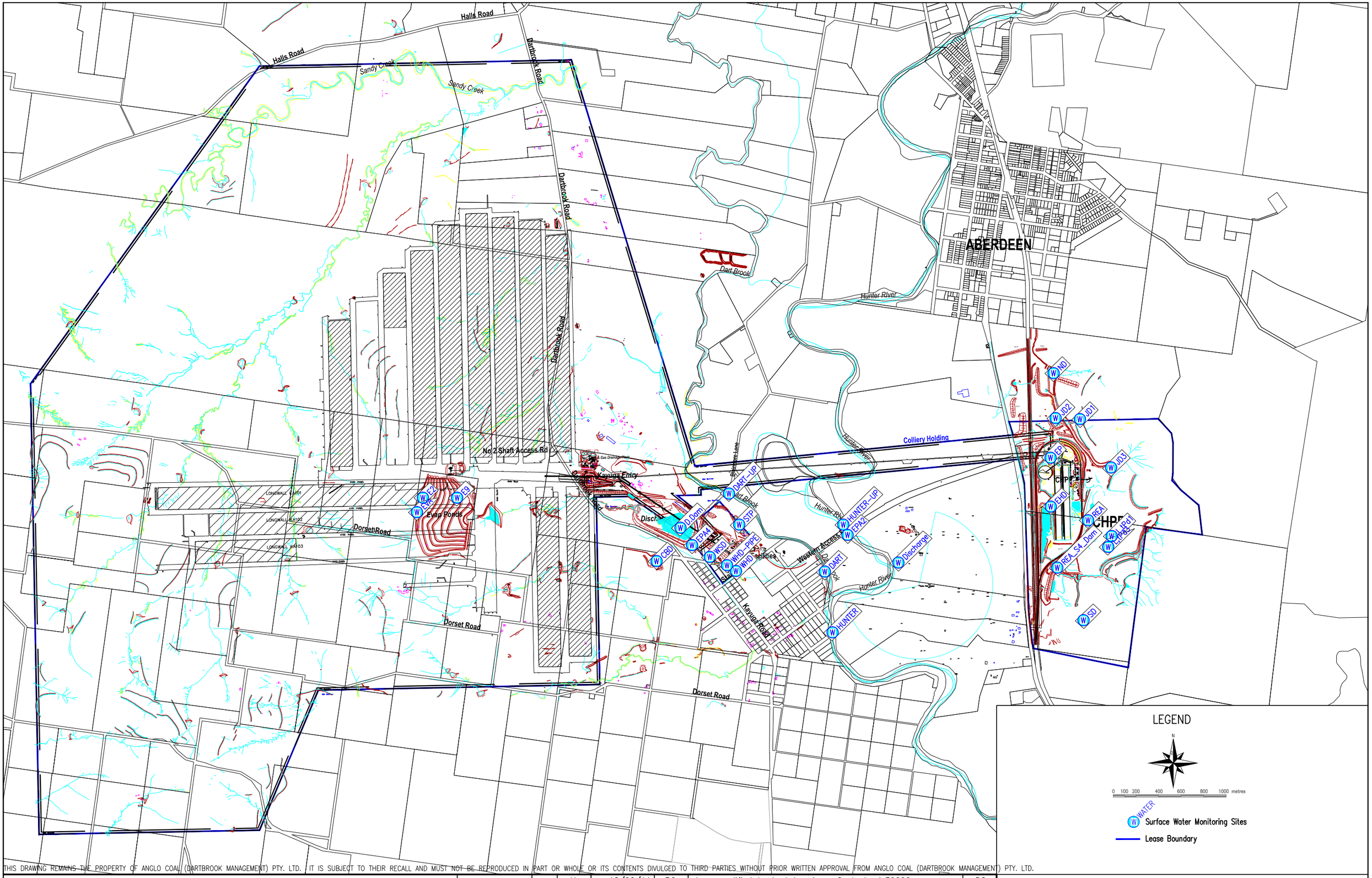
Photo 8
REA Rehabilitation 2015 – western slope looking downhill to the southwest

Photo 9
REA Rehabilitation 2015 – western slope looking north

Photo 10
Evaporation Ponds

Table 18
Surface Water Monitoring Sites

Sampling Site	Location
CBD	Contour Bank Dam (Wattus Ponds)
DART(a)	Dart Brook downstream of the Access Road bridge, (upstream of confluence with Hunter River)
DARTUP	Dart Brook at Macintyre's bridge
Dewatering Plant Tank	Tank located at the Goaf Dewatering Boreholes
Dirty Raw Water Tank	Dirty Raw Water Tank (West Site)
E2, E9	Evaporation ponds 2 and 9
East Site	Potable Water
East Site Tank (at WHD)	Mine water
EHD	Eastern Holding Dam, below the CHPP on the East Site
EP	Eastern Portal dam adjacent to Hunter Tunnel
EPA2	Discharge pipeline on the Hunter River bank adjacent to the Hunter River Bridge
EPA4	The bypass line from the 1,200 mm concrete main discharge line
EPA5	Irrigation area. Paddocks 1-4, West Site
EVA	Farm dam located on western boundary of evaporation ponds
HUNT	Hunter River downstream of junction with the Dart Brook
HUNTUP	Hunter River upstream of access road bridge
JD1	Jones Dam (Sediment Dam in northern diversion system for REA)
JD2	Jones 2nd Dam (Sediment Dam in northern diversion system for REA)
JD3	Jones 3rd Dam (Sediment Dam in northern diversion system for REA)
Leachate Pond 1b	Reject Area
Leachate Pond 3	Reject Area
ND	Northern Dam (farm dam) – North of the CHPP
REA	REA (Underdrainage)
REA Stage 4 Dam	Stage 4 of the REA (Run-off from REA)
SD	Southern Dam (farm dam) – South of the CHPP
Sewage Treatment Plant	Sewage Treatment Plant
SSD	Staged Discharge Dam, West Site above the junction of the Dartbrook and Blairemore roads.
Treated Potable Water	Potable water supply to west site administration
Untreated Potable Water	Untreated potable water at the west site
WHD	Western Holding Dam, dam below workshop on the West Site
WHI&I NSWPE	Western Holding Dam pipe (Sample from WHD near pipeline - mine water dam)
WSD	Western Surface Dam (Spillway dam for the WHD, mine water dam)



LEGEND

N

0 100 200 400 600 800 1000 metres

WATER Surface Water Monitoring Sites

Lease Boundary

AngloAmerican

DRAWN
PC
09/05/03

REVISIONS					
REV.	DATE	BY	DESCRIPTION	CHK.	
K	18/02/11	PC	logo modified to AngloAmerican, Scale to 1:30000	DS	
G	30/03/07	PC	E7 Renamed to E2	FY	
H	02/05/08	PC	General Update	FY	
I	23/06/09	PC	Updated to 2008	RC	
J	01/03/10	PC	Roads Removed for Clarity	DS	

Plan Showing Location
of Surface Water Monitoring Sites
FIGURE 4

Datum :	AHD	SCALE	A3	DRG.	REV.
GRID :	MGA(56)	1:30000		29419	K

6.5.2 Environmental Performance

Appendix E includes a summary of surface water quality monitoring undertaken in 2015. Most surface water sampling is undertaken for internal use only. 6.84135 ML was discharged under the HRSTS in April 2015 in accordance with the conditions of EPL 4885.

All relevant monitors are calibrated annually as required by the HRSTS to maintain compliance with Dartbrook's EPL requirements.

Table 19 presents a summary of the water quality results for the Hunter River and Dart Brook for 2015. Surface water monitoring of the Hunter River in 2015 showed that the EC, TDS and pH were similar at both upstream and downstream sites.

The Dart Brook had a higher EC and TDS upstream, with the pH results for water quality approximately the same at both sites. The Dart Brook upstream EC fluctuated throughout 2015 with higher readings in the first half of the year. The downstream monitoring site is located within the vicinity of the Hunter River confluence, meaning this site's recordings can be influenced by flow from the Hunter River, hence the marginally lower EC and TDS results than upstream. These results generally follow the trends of previous years.

The water salinity trends observed throughout most of 2015 were generally higher for the Hunter River and the Dart Brook when compared to the 2014 readings.

The pH levels for the Dart Brook upstream were slightly higher than the downstream readings - ranging between levels of 7.8 and 8.4.

The pH levels for the Hunter upstream and downstream readings were similar – ranging between 8.0 and 8.5.

6.5.3 Further Improvements

Surface water monitoring will continue during 2016, as required.

The HRSTS discharge system will remain in readiness so that, if the appropriate opportunity presents, discharge events will be undertaken in 2016. The opportunity may be taken to purchase HRSTS salinity credits in the 2016 Credit Auction.

The investigation and implementation of an active evaporation system above the SDD will continue in 2016. This system involves pumping mine water through a series of fine nozzles to accelerate evaporation while minimising any offsite effects.

Table 19
Summary of Water Quality Results for the Hunter River and Dart Brook for 2014

Site	EC Range (µS/cm)	TDS Range (mg/L)	pH Range
Hunter River Upstream	330 - 520	210 - 350	8.0 - 8.5
Hunter River Downstream	320 - 618	210 - 410	8.0 - 8.5
Dart Brook Upstream	1,510-4,040	1,030 - 2,710	7.8 - 8.4
Dart Brook Downstream	1,430-2,460	960-1,650	7.8 - 8.2

6.6 GROUNDWATER

6.6.1 Environmental Management

There are two main aquifer systems within the Dartbrook area:

- Alluvial aquifer systems associated with the Hunter River, Dart Brook and Sandy Creek; and
- Coal seam aquifers.

The alluvial aquifers are the most important with respect to groundwater dependent ecosystems and human use. The Hunter River alluvial aquifer is used for irrigation, stock and domestic purposes, whereas the alluvium associated with Dart Brook and Sandy Creeks is primarily used for stock and domestic supplies. The Hunter River alluvium is a major aquifer providing good yields and high water quality.

The coal seam aquifers are generally deep, low yielding and contain poor quality (brackish to saline) groundwater. They are far less significant aquifers and therefore the impact of the mine on these aquifers has less significance.

Dartbrook have an extensive groundwater monitoring program in place. The main focus of the groundwater monitoring program is to monitor the potential impacts on the alluvial aquifers.

In particular, the monitoring program is designed to detect any impacts on alluvial groundwater levels or quality resulting from seepage pathways that may have been induced by mining. The key potential impacts are seepage from the Hunter River alluvium to the Hunter Tunnel, and seepage from the REA and Wynn Seam Goaf Tailings water storage area.

The groundwater monitoring program is required to satisfy the following regulatory requirements:

- Dartbrook Development Consent which requires groundwater quality and quantity monitoring as outlined in the Water Management Plan; and
- Monitoring of nominated landowner bores in accordance with the approved Property Subsidence Management Plans.

The primary objective of the monitoring program, as defined in the Development Consent Condition 4.2 (a), is to ensure the program has the capacity to collect sufficient data to adequately assess:

- The impact on groundwater levels on neighbouring properties and in the locality, and to identify any water quality impacts;
- The impact of the development on groundwater associated with the alluvial aquifer of the Hunter River including the ongoing monitoring of the volume and quality of inflows into the Hunter Tunnel;
- Regional groundwater levels and water quality; and
- Any concerns or complaints from surrounding landholders on groundwater matters, and any ensuing actions, which shall be recorded and be available to the NOW.

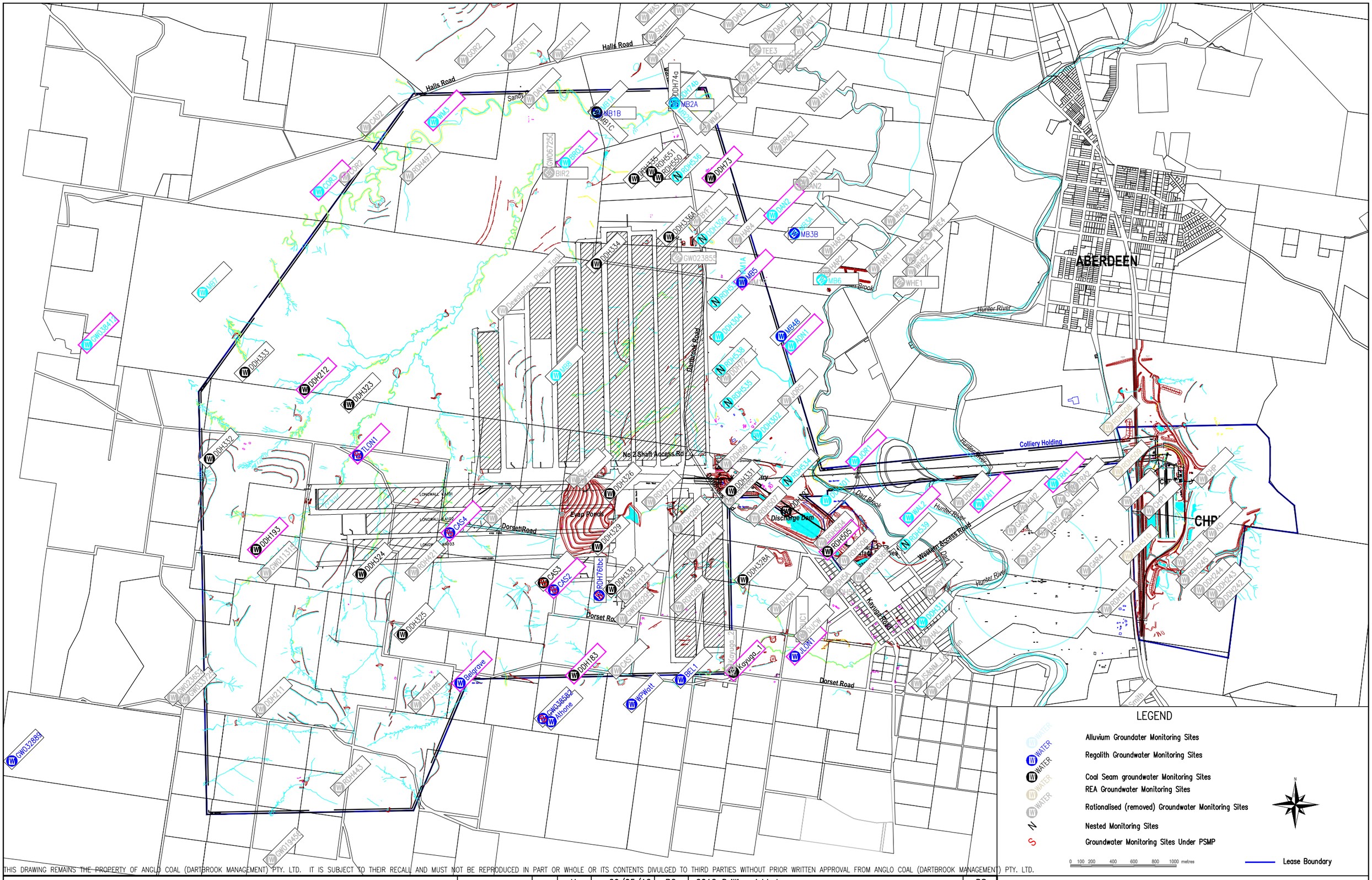
The revised groundwater monitoring bores, their type, aquifer monitored, purpose and parameters monitored are described in Table 20. The groundwater monitoring program was reduced due to the project being on Care and Maintenance. Figure 5 shows the locations of all groundwater monitoring bores sampled during 2015.

Table 20
Groundwater Monitoring Bores

Bore	Bore Type	Aquifer Monitored	Details	Parameter / Frequency
Hunter River Alluvium over Conveyor Tunnel Alignment Bores				
FRA1	well	Hunter River Alluvium	Monitor any leakage to the Hunter Tunnel from the Alluvial. Located in a west to east direction across the alluvial plain along the alignment of the Hunter Tunnel.	Monitored on an annually basis for pH, EC and water depth.
JOR1	well			
KAI1	well			
WAL2	well			
Dart Brook Alluvium Bores				
ADN1	well	Dart Brook alluvium	Monitor the Dart Brook alluvium, which occurs between the underground mine area and Hunter River alluvium, and therefore should first respond to any impact from the mine.	Monitored on an annually basis for pH, EC and water depth.
DAN2	well			
WM1A	bore			
Sandy Creek Alluvium Bores				
BRO3	bore	Alluvium	Four bores/wells are located in the Sandy Creek alluvium to provide an even spread along the creek.	Monitored on an annually basis for pH, EC and water depth.
COR3	bore	Sandy Creek alluvium		
WM3	bore			
GWO38412	well			
Coal Seam Bores				
Kayuga 1	bore	Kayuga Seam**	Monitor the Kayuga, Piercefield, Wynn or Mt Arthur Seam aquifers. Located around the perimeter of the mining areas.	Monitored on an annually basis for pH, EC and water depth.
DDH183	bore	Kayuga Seam		
DDH193	bore			
DDH212(a)	bore	Wynn Seam**		
Regolith Bores				
CAS2	bore	Regolith – shallow overburden	CAS2, CAS4, and TLON1 monitor the regolith and are located above the Kayuga longwall panels and centre of the mining area.	Monitored on an annually basis for pH, EC and water depth.
CAS4	windmill			
JLON1	windmill			
TLON1	windmill			
REA Bores				
RDH508	bore	Hunter River alluvium	These bores are located west of the REA and CHPP. Monitoring of these bores is a requirement of the current conditions of consent. Monitoring bores RDH508 and RDH509 on the eastern side of the Hunter River Alluvium should also detect seepage to the Hunter Tunnel; however their primary purpose is to detect any seepage from the REA.	Monitored on an annually basis for pH, EC and water depth.
RDH509	bore			
RDH510	bore			
RDH511	bore			

Bore	Bore Type	Aquifer Monitored	Details	Parameter / Frequency
Landowner Bores				
GWO38582	bore		Privately owned bores, which are monitored as a requirement of the Property Subsidence Management Plans.	Monitored on an annually basis for pH, EC and water depth.
Belgrave	windmill	**		

*Note: ** = Bore depth to be surveyed to confirm which aquifer is monitored*
i. Bore = Monitoring bore and not a current water supply



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AngloAmerican

DRAWN	REVISIONS	REV.	DATE	BY	DESCRIPTION	CHK.
PC		U	29/05/12	PC	2012 Drilling Added	DS
20/03/00		V	05/07/12	PC	RDH550 & RDH551 Added	JF
		R	18/02/11	PC	Logo Modified to AngloAmerican, Scale to 1:30000	DS
		S	27/01/12	PC	Points Highlighted	DS
		T	27/02/12	PC	Bores Included in Program, Moved West to Show GW032889	DS

Plan Showing Location
of Ground Water Monitoring Sites
FIGURE 5

Datum :	AHD	SCALE	A3	DRG.	REV.
GRID :	MGA(56)	1:32000		27431	V

6.6.2 Environmental Performance

A list of all groundwater monitoring results for 2015 and supporting graphs showing long term trends are included in Appendix F.

The reduced scope of the groundwater monitoring program was continued in 2015 due to Dartbrook being under Care and Maintenance. This resulted in most bores only being sampled once during the year, and several bores being excluded from the groundwater monitoring program. The monitoring program results discussed and analysed further relate to this updated groundwater monitoring program.

Appendix F includes graphs of groundwater levels for the monitored aquifers, a range of water quality parameters and graphs of the main quality parameters that could indicate mining related impacts. Monitoring results for pH and EC are also included in Appendix F.

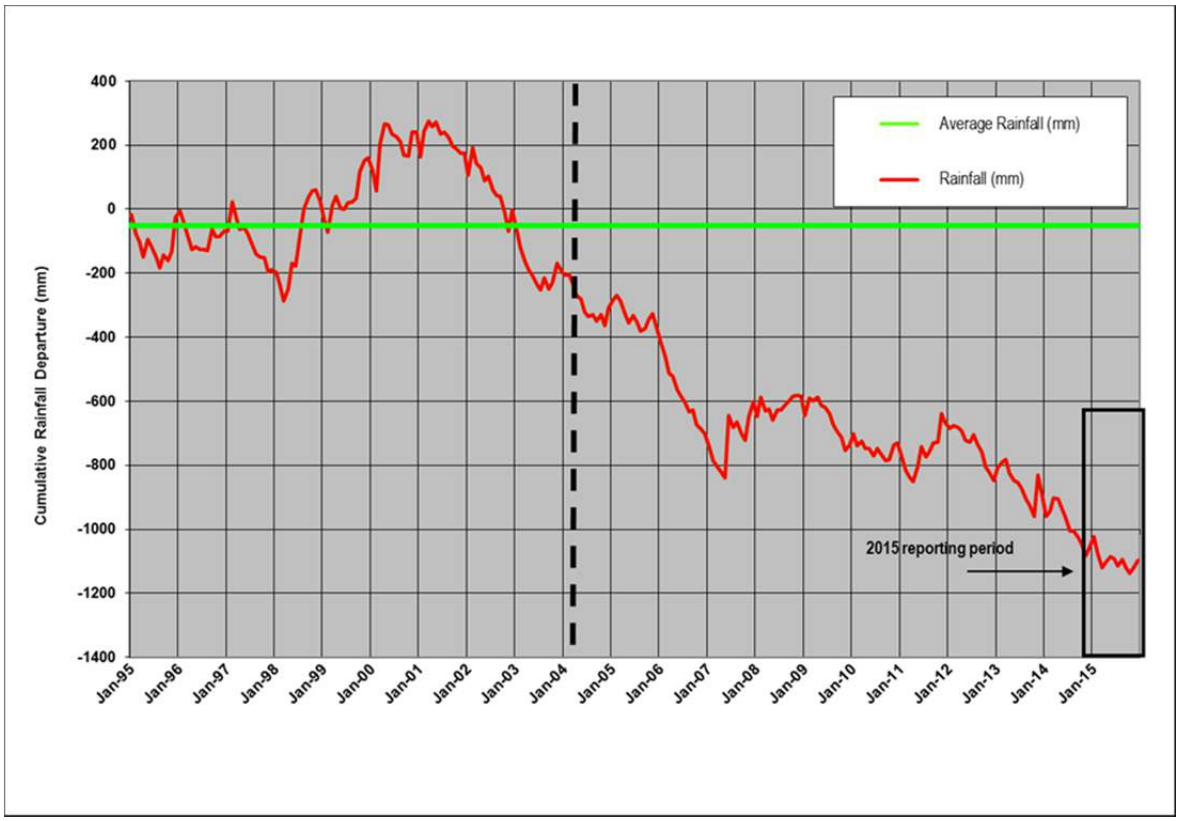
6.6.3 Cumulative Rainfall Departure

Groundwater levels in relatively shallow wells or bores constructed in alluvium or the regolith are generally highly dependent on rainfall recharge and can rise or decline quite rapidly in response to rainfall events.

Where hydrographs of shallow wells or bores indicate a declining trend in groundwater levels, a comparison is made with the Cumulative Rainfall Departure (CRD) otherwise referred to as Residual Mass Balance. The CRD is the cumulative difference between average monthly and actual observed monthly rainfall and can be used to assess recharge rates to a shallow, water table aquifer.

The CRD trends on Graph 5 show that during the reporting period, the Dartbrook Mine area received rainfall slightly above the average, with an associated recovery in some groundwater levels.

Graph 5
Cumulative Rainfall Departure



6.6.4 Hunter River Alluvium

Water Levels

As shown in Graph F-1 in Appendix F, the groundwater levels of the Hunter River Alluvium Bores recovered slightly or remained relatively stable during the reporting period. Bore KAI2 could not be accessed for monitoring during the reporting period.

The monitoring results for 2015 support the results of previous reporting period's results which indicated that the depth to groundwater in these bores was not impacted by previous Dartbrook mining operations, and rather, they are influenced by prevailing meteorological conditions and rainfall received.

Water Quality

Water quality trends for the Hunter River Alluvium Bores are shown in Graphs F-2 and F-3 of Appendix F. Graph F-2 shows that over the reporting period, pH levels for FRA1 and KAI1 increased to slightly basic levels, while JOR1 and WAL21 pH levels declined slightly. Graph F-3 indicates that the EC levels recorded at each the four Hunter River Alluvium Bores remained consistent with the results from previous years.

6.6.5 Dart Brook Alluvium

Water Levels

During the reporting period, groundwater monitoring data was collected for the three Dart Brook Alluvium Bores (WM1A, DAN2 and ADN1), with the results of this monitoring are shown on Graph F-4 in Appendix F. Graph F-4 shows that depth to groundwater levels recovered slightly across all three bores during the reporting period. In particular, the groundwater levels in bore ADN1 recovered after the drop of approximately 3m recorded during 2014.

Water Quality

Water quality trends for the Dart Brook Alluvium Bores are shown in Graphs F-5 and F-6 in Appendix F. The graphs show that pH levels during the reporting period remained generally consistent with results recorded in previous years. EC levels also remained relatively stable, being consistent with the historic monitoring results recorded at each bore site.

6.6.6 Sandy Creek Alluvium

Water Levels

Groundwater levels for the Sandy Creek Alluvium Bores are shown on Graph F-7 in Appendix F. Groundwater levels recorded during the reporting period declined slightly for bores COR3 and WM3, while the BRO3 results were relatively stable. The groundwater levels of GWO38412 recovered further from the levels recorded during the 2014 reporting period.

Water Quality

Water quality for the Sandy Creek Alluvium Bores is shown on Graphs F-8 and F-9 in Appendix F. Graph F-8 shows that pH levels in bores COR3, WM3 and GWO38412 remained consistent with those recorded in 2014. Results for bore BRO3 showed a decline in pH toward neutral levels, continuing a trend observed at the site since the 2013 reporting period.

EC results for are shown in Graph F-9. Graph F-9 shows that during the reporting period, EC levels remained relatively stable across all Sandy Creek Alluvium Bores, consistent with results from previous years.

6.6.7 Coal Seams

Water Levels

Groundwater levels for the Coal Seam Bores are shown on Graph F-12 in Appendix F. Graph F-12 shows that depth to groundwater levels for all four Coal Seam Bores remained relatively steady, with Kayuga 1 (declining slightly), and DDH193 (rising slightly) continuing trends recorded since the 2013 reporting period.

Water Quality

Water quality for the Coal Seam Bores is shown in Graphs F-13 and F-14 in Appendix F. Graph F-13 shows that pH levels for bores DDH193, DDH212a and Kayuga 1 remained steady in comparison to historical results, whilst bore DDH183 recorded a slight drop in pH during 2015.

Graph F-14 shows that EC levels in each of the Coal Seam Bores in 2015 have remained similar to results recorded since 2009, with EC levels for DDH183, DDH193 and Kayuga 1 remaining between 6,000-7,500 µS/cm. EC levels for DDH212a have remained steady throughout the entire duration of the groundwater monitoring program.

6.6.8 Regolith

Water Levels

Graph F-15 in Appendix F shows that groundwater levels have remained steady in the Regolith Bores CAS4 and TLON1 over the reporting period, while the monitoring of CAS2 continued to show a trending decline in water levels. Monitoring at bore JLON1 was not undertaken during the reporting period.

Water Quality

Graphs F-16 and F-17 in Appendix F show the pH and EC results for the Regolith Bores over the reporting period. Graph F-16 shows that over the reporting period, the pH recorded at all regolith bores remained at neutral levels, similar to results recorded since 2013.

Graph F-17 shows that during the reporting period, EC results for bores CAS2 and CAS4 remained at similar levels to those recorded since the 2013 reporting period. Results recorded at bore TLON1 during 2015 indicated a slight decline after a period of increasing EC levels recorded over the period from 2012 - 2014.

6.6.9 Rejects Emplacement Area

Water Levels

Groundwater levels for the REA Bores are shown in Graph F-18 in Appendix F. Graph F-18 shows that depth to groundwater levels recorded for bores RDH508, RDH509 and RDH511 have remained steady over the reporting period, while bore RDH510 showed a minor recovery during 2015. Monitoring at all Regolith Bores are consistently recording between 7.5 m and 10.5 m depth to groundwater.

Water Quality

pH and EC results for the REA Bores are shown on Graphs F-19 and F-20 in Appendix F, respectively. Graph F-19 shows that bores RDH509, RDH510 and RDH511 recorded minor decreases in pH during 2015, while RDH508 results showed a minor increase.

Graph F-20 shows that EC levels recorded at bored RDH508, RDH509 and RDH510 remained relatively consistent with results recorded since 2015.

EC levels recorded at bore RDH511 continued to show fluctuations in results observed since 2010, however the 2015 results remained within historic limits recorded at that location.

6.6.10 Landowner Bores

Water Levels

Graph F-21 in Appendix F shows the water level results for bores GWO38582, Belgrave and CAS2 (the three Landowner Property Bores monitored during 2015). Graph F-21 shows that over the reporting period, recorded depth to groundwater levels in the bore declined slightly, with bore CAS2 continuing a general trend observed since the 2005 reporting period.

Water Quality

Graph F-22 in Appendix F shows the pH results for the Landowner Property Groundwater Bores. Graph F-22 shows that pH levels recorded during the reporting period in bores CAS2 and Belgrave remained consistent with results recorded in previous, while GWO38582 continued a trend of minor increases observed since 2012.

Graph F-23 in Appendix F shows that EC results recorded at the Landowner Property Groundwater Bores during 2015 monitoring remained consistent with historic levels at each site.

6.6.11 Groundwater Assessment

Condition 4.1.b of the Development Consent requires the proponent to conduct an annual assessment of the accuracy of the groundwater model predictions contained in the Dartbrook EIS. The assessment involves comparing the results of actual monitoring with predictions under the model. In 2015, this assessment was carried out by Australasian Groundwater and Environmental Consultants Pty Ltd (AGE).

The AGE assessment for 2015 came to the following conclusions:

- Monitoring results from the alluvium in 2015 confirms the statement in the Dartbrook EIS that “existing bores and wells in the alluvial lands will remain unaffected by depressurization within the coal measures” (MER, 2000).

Where a decline in groundwater level has been recorded, it can be attributed to below average rainfall from mid-2001 to mid-2007 and not to mining activities. This finding is confirmed by a rise in groundwater levels in the alluvial bores as a result of above average rainfall recorded during the period of mid-2007 to mid-2009 and again during the period 2010 - 2012. This trend of correlation between groundwater levels and rainfall data is particularly evident in the Dart Brook and Sandy Creek Alluvium Bores;

- Groundwater levels recorded from the bores in the Dart Brook and Sandy Creek alluvium continue to show a greater range of fluctuations that correlate better with rainfall data;
- A similar conclusion is reached for the shallow regolith bores, except where the bores are located over, or in close proximity to subsidence areas. Shallow surface fracturing in these areas may have resulted in temporary declines in groundwater levels in the regolith. This temporary decline was not modelled or discussed in the Dartbrook EIS by MER (2000). Groundwater levels in the regolith show a recovery during the periods of mid-2007 onwards, likely due to the filling of surface fractures with groundwater sourced from above average rainfall. Recent changes in groundwater levels are likely to be the result of rainfall received during 2015;
- Groundwater level declines recorded in the coal seams due to depressurisation has been less than that predicted in the Dartbrook EIS; however the planned 20 year period of mining that was modelled did not eventuate due to the mine being placed in Care and Maintenance in 2007. Since the cessation of mining, groundwater levels in the coal seam monitoring bores distant from the longwall panels have shown clear signs of recovery (albeit at different rates) until these levels stabilised at level corresponding to that of the flooded Wynn Seam goaf.

  AGE also noted that the groundwater levels recorded in DDH193 may indicate that the Kayuga longwall goaf is depressurising as a result of the re-pressurising of the surrounding coal seam aquifers; and
- AGE state that JLON1 may have been impacted by Dartbrook mining, with the bore being dry since 2008. This potential impact is not clear, however, as the bore is known to be quite shallow and dried up on a number of occasions prior to the commencement of Dartbrook operations. AGE recommend that the condition of the bore be investigated to determine if it remains suitable to meet groundwater monitoring objectives, prior to any re-commencement of mining.

In conclusion, the review of monitoring data for groundwater levels during the reporting period showed results were generally consistent with the predictions made in the Dartbrook EIS and in agreement with similar assessments undertaken by AGE in previous years.

6.6.12 Further Improvements

Monitoring will continue in 2016 with the ongoing review of groundwater levels and water quality for bores on lands owned by Dartbrook, in accordance with the requirements of DA 231-07-2000.

6.7 THREATENED FLORA AND FAUNA

6.7.1 Environmental Management & Performance

Dartbrook operations are undertaken in an highly modified and fragmented environment of low significance in terms of threatened flora and fauna species and habitat values.

Ecological studies at Dartbrook in 2011 found that of the four broad vegetation types on site, there are two communities listed as Endangered under the *Threatened Species Conservation Act 1995* (TSC Act). There are approximately 2,252 ha of the Upper Hunter White box Grassy Woodland (Box Gum Woodland) community present within the mine area. There are also about 54 ha of Hunter Floodplain Red Gum Woodland in the NSW North Coast and Sydney Basin Bioregions (Hunter Floodplain Red Gum Woodland Complex) present within the mine area.

Two threatened plant species were also recorded as occurring within the mine area, which are Austral Toadflax (*Thesium australe*) and Black Orchid (*Cymbidium canaliculatum*).
The study also found six fauna species that are listed as either threatened under the TSC Act or migratory under the Commonwealth *Environmental Protection and Biodiversity Act 1999* (EPBC Act).

These species included:

- Eastern Bentwing Bat (*Miniopterus schreibersii oceanensis*), listed as vulnerable under the TSC Act;
- Large-footed Myotis (*Myotis macropus*), listed as vulnerable under the TSC Act;
- Speckled Warbler (*Chthonicola sagittata*), listed as vulnerable under the TSC Act;
- Little Eagle (*Hieraaetus morphnoides*), listed as vulnerable under the TSC Act;
- Rufous Fantail (*Rhipidura rufifrons*), listed as marine and migratory under the EPBC Act; and
- White-throated Needletail (*Hirundapus caudacutus*), listed as marine and migratory under the EPBC Act.

Flora and fauna impacts are managed in accordance with the approved Flora and Fauna Management Plan.

Similar to threatened flora, the areas where the Dartbrook Care and Maintenance activities are undertaken have low significance in terms of threatened fauna distribution and habitat.

Previous aquatic surveys of areas within the lease also concluded that there are no significant aquatic habitats within the areas affected by previous mining operations.

Despite the low ecological significance of the site, Dartbrook seeks to minimise ground disturbance and vegetation destruction as much as possible. During Care and Maintenance, land disturbance is restricted to minimal vegetation clearing for exploration drilling activities. Prior to any land clearing, a Permit to Disturb system ensures that areas are checked for any significant flora or fauna. There were no impacts to threatened flora or fauna species identified in 2015. No trees were cleared for exploration activities.

The Dartbrook River Restoration Project (River Restoration Project) continued in 2015 (see Photo 11), as discussed in Section 8.4.1. Activities to-date have included:

- The strategic removal of introduced willow trees;
- Placing stabilising woody debris in the Hunter River and Dart Brook;
- The control of weeds and feral animals;
- The maintenance of native seedlings along the riparian corridor of the Hunter River. This is aimed at increasing the density and diversity of native vegetation, as well as providing a habitat corridor for fauna within the area; and
- The strategic placement of fish hotels in the Hunter River by DRE (previously Industry & Investment NSW) (Aquatic Habitat Rehabilitation) and HCRCMA was designed to encourage the establishment of native fish stocks.

The River Restoration Project is also undertaking work to enhance and protect a population of *Eucalyptus camaldulensis* (River Red Gums), listed as being endangered under the TSC Act in the Hunter Valley. The area has been fenced to exclude stock and has over 4,000 River Red Gums planted amongst the mature population. In 2015 the River Red Gums, which had naturally regenerated as a result of artificial flooding in 2007, continued to thrive within the constructed bunds.

In 2015 both the River Red Gum area and the Native Forest Plantation were surveyed by Umwelt as part of the ongoing two yearly monitoring of these areas. Both areas were found to be progressing satisfactorily.

The tree screen, to the west of the New England Highway, was planted in 2011 with approximately 20% River Red Gums and also continue to progress satisfactorily (see Photo 1 and Photo 13).

6.7.2 Further Improvements

During 2016, fauna and flora communities present on the site will continue to be managed in accordance with the approved Flora and Fauna Management Plan. In circumstances where clearing is required, pre-clearing surveys will continue to be undertaken.

In 2016, the tree screen along the New England Highway (see Photo 1) and the area north of the CHPP planted with native forest will continue to be surveyed and maintained.

The River Restoration Project will continue in 2016 with the maintenance of previously rehabilitated areas. Monitoring will also continue to be undertaken, with the next monitoring survey due in 2017. Dartbrook will renew the Scientific Licence to enable management of the River Red Gum area to continue, at the appropriate time.

6.8 NOXIOUS WEEDS AND FERAL ANIMALS

6.8.1 Environmental Management & Performance

The management of noxious weeds and feral animals forms an integral part of the land management practices adopted for the site, as described in the approved Land Management Plan.

Noxious weeds such as African Boxthorn, St Johns Wort, Galenia, Bathurst Burr and Green Cestrum have been located on Dartbrook owned land in the past and their eradication remains a key land management objective.

The control of weeds on the alluvial river flats and riverbank areas on Dartbrook owned land also provides management challenges and the company seeks to work with leaseholders to contain weed outbreaks in these areas. The Upper Hunter Weeds Authority undertakes inspections on a regular basis to review the effectiveness of weed control and advises on further weed control measures.

Dartbrook maintains a Weed Management Register, which outlines the location of the weeds identified, method for control of the weeds and the control works undertaken across the site. Throughout 2015, any disturbed areas were rehabilitated and seeded as soon as possible to reduce the potential for weed invasion.

Weed management activities undertaken in 2015 are outlined in Table 18. Substantial weed control was continued along the stretches of the Hunter River and Dart Brook on Dartbrook owned land as part of the River Restoration Project (see Section 8.4.1).

Weed control also continued across the rehabilitated sites throughout the year, with approximately 5 ha of Galenia infestation being sprayed with Grazon. Generally the area of St John's Wort on the western side of the lease was prevented from setting seed in 2013 and did not require treatment in 2014. Only isolated patches of St John's Wort required treatment in 2015 (see Photo 12).

Slashing to encourage thickening of grass swards and discourage seed set in weeds was carried out on approximately 30 ha. Additionally, licensees sprayed weeds, slashed and grazed approximately 100 ha of the lease.

Approximately 5 ha of Giant Reed regrowth south of the Hunter River was controlled with Roundup. This area had been heavily treated in 2013 and 2014.

Feral animal control at Dartbrook during 2015 was focused on dogs, kangaroos and pigs. Only minor rabbit poisoning continued, in coordination with the Hunter Local Land Services (LLS) (previously the Livestock Health and Pest Authority), near neighbours, Roads and Maritime Services and the Australian Rail Track Corporation.

Pig monitoring sites to the east and west of the site were established with successful trapping at the west site, in the River Red Gum Project area, capturing 29 pigs.

A professional kangaroo shooter holding appropriate licences was engaged to cull the kangaroos to the west of the mine, and 136 Kangaroos were euthanised during 2015.

6.8.2 Further Improvements

During 2016, regular inspections by mine site personnel and scheduled inspections by the LLS will continue to be undertaken across the lease area. In particular, inspections of rehabilitated areas including the REA and hardstand areas will be undertaken regularly. In addition, transect type surveys of the site's vegetation will continue.

Feral animal control will be ongoing and the Dartbrook Weed Management Register will be maintained in 2016.

Photo 11
Dartbrook River Red Gum Project Area

Photo 12
Herbicide spraying to control weeds

Table 20
Weed Management Undertaken

Type of Weed	Area Controlled
African Boxthorn	Spray Dartbrook Road to Halls Road, Browns Mountain, River Restoration Project areas, along the New England Hwy, Dorset Road paddocks, adjacent to Dartbrook Road, River Ridge property, former Ducey property, West Site and Evaporation Ponds and Kayuga Scrub Paddock (Lot 110) and the River Red Gum.
Patterson's Curse	Pleuger pump line again had no regrowth largely due to continuing dry conditions.
Green Cestrum	Banks of Hunter River, Dart Brook upstream of Access Road Bridge and Russell Island.
Giant Reed	Hunter River downstream from Hunter Bridge.
St John's Wort	Area north Dorset Road (Lot1, Lot 144, Lot 22), and Lot 110 (Scrub Paddock) inspected with some isolated patches retreated late in the year. The SDD and Pleuger paddocks were also treated.
Tiger Pear	Above Macintyre Bridge was re-treated. The Kayuga Homestead paddock and the flats above the access road bridge were also treated.
General weed control (bamboo, thorn apple, Bathurst burr, Noogoora burr, sticky beak, Galena etc.)	Generally adjacent to the Hunter River and Dart Brook the Lessees retreated annual and perennial weeds (usually sprayed as a pre-emergent) on 500 ha of Class 1 land leased for dairy farming.

6.9 OPERATIONAL NOISE

6.9.1 Environmental Management

In 2012, the DP&E granted approval for Dartbrook not to undertake noise monitoring while under Care and Maintenance strategy. The Care and Maintenance strategy involves low level equipment and machinery operation for maintenance activities only. Since coal is not mined at the site, there is no need to have production equipment or operate the CHPP.

6.9.2 Environmental Performance

It is proposed to commence noise monitoring when Dartbrook changes from Care and Maintenance to coal mining operations.

6.10 VISUAL AND LIGHTING

6.10.1 Environmental Management & Performance

Dartbrook facilities, in Care and Maintenance, may still have the potential to generate visual and stray light impacts for sensitive receivers located in the surrounding environment. With the use of tree screens, earthen bunds, fencing and shielding the impacts of visual and stray light are minimised.

The approved Landscape and Lighting Management Plan (LLMP) includes a comprehensive description of the extent of bunding and screening implemented across the operation.

The DP&E advised that Development Consent Condition 3.8 requirement for "the independent review of the visual impact has been suspended whilst the mine is on Care and Maintenance." This review would otherwise have been required in 2015.

In 2003, a 75 ha Forestry Plantation was established north of the CHPP, as detailed further in Section 8.4.4. This plantation was surveyed by Umwelt in 2015 and was found to progressing well with Spotted Gum dominating. As the trees mature they are proving effective in screening the township of Aberdeen from the CHPP.

The health of the tree screens, located on either side of and adjacent to the New England Highway, is monitored on an annual basis. The results for the reporting period are provided in Appendix G. Of the trees monitored, both the Eucalypt and Casuarina species were predominately healthy and growing rapidly (see Photo 13).

In 2015 during several dry periods, the western tree screen was drip irrigated to ensure survival and optimum growth.

6.10.2 Further Improvements

Maintenance of the tree screening areas will continue throughout 2016, as required, subject to the prevailing weather conditions.

Replacement trees will continue to be planted in the bunds and tree screens when mortalities occur.

6.11 ABORIGINAL HERITAGE

6.11.1 Environmental Management & Performance

The preservation of Aboriginal Heritage is an important aspect of the operations undertaken at Dartbrook. There are over 100 known Aboriginal sites identified within the Mining Lease and Exploration Lease areas. Sites that are located within the vicinity of the surface facilities are fenced and signposted to ensure their protection. Dartbrook also has a permit system in place which checks any planned disturbances on site against a database of the known Aboriginal sites to ensure that disturbance of these sites is avoided.

Under the Archaeology and Cultural Heritage Management Plan, post-subsidence monitoring of Aboriginal sites was undertaken within 12 months of undermining.

All post subsidence monitoring of Aboriginal sites located above mining areas have been completed. There have been no incidences of harm or damage to Aboriginal sites identified.

Dartbrook did not apply for any new Section 90 consents to destroy under the *National Parks and Wildlife Act 1974* during the reporting period and no new Aboriginal sites were discovered in 2015.

In 2013, Dartbrook applied for an Aboriginal Heritage Impact Permit (AHIP) to relocate a remanent scar tree log (see Photo 14) from the warehouse to Simpson Park adjacent to the existing reconciliation mural in Muswellbrook. OEH have advised that this AHIP is still active and in conjunction with the Muswellbrook Shire Council the scar tree is planned to be reallocated in 2016.

6.11.2 Further Improvements

The existing Permit to Disturb system will continue to be utilised throughout 2016 for activities such as exploration and rehabilitation.

Construction of the shelter for the relocation of the remnants of the scar tree to Simpson Park, Muswellbrook is scheduled to occur in 2016.

Photo 13
Visual Bund Survey 2015

6.12 EUROPEAN HERITAGE

6.12.1 Environmental Management & Performance

Management of European Heritage is undertaken in accordance with Dartbrook's Archaeology and Cultural Heritage Plan.

During 2015 general maintenance, such as mowing, slashing and fence repairs was carried out to protect the heritage items under the control of Anglo American. Such areas include Riverview (see Photo 3) and Kayuga Homesteads, and the Macintyre, Kayuga and the Dartbrook Cemeteries.

In April 2015 Anglo American hosted an open day to celebrate the history of Riverview homestead and the Kayuga Cemetery which dates back to 1828. About 250 people attended the opening by Michael Johnsen MP with local historian, Rob Tickle, launching his book about the history of the cemetery (see Photo 15).

6.12.2 Further Improvements

It is proposed to continue existing efforts to minimise the impact of the operation on the European heritage and to continue the upkeep of the various sites throughout 2016.

6.13 SPONTANEOUS COMBUSTION

6.13.1 Environmental management

The risks posed by surface spontaneous combustion at Dartbrook during 2015 generally remained *low* to *very low* and were limited to the REA. Dartbrook has an approved Spontaneous Combustion Management Plan for the REA, which outlines measures for monitoring and mitigating potential spontaneous combustion issues.

6.13.2 Environmental Performance

The REA underground temperature is monitored using thirteen thermocouples installed in boreholes, located in the various stages of construction, to measure the temperature of the rejects material.

The risk of spontaneous combustion continues to be considered low at Dartbrook as the REA has been fully rehabilitated and all coal material has been removed from the coal stockpiles, as discussed in Section 4.6.3.

There were no incidents of spontaneous combustion in 2015. However, in December 2014 REA monitoring sites 9a, 9b, 9c, 10a and 10b showed considerably elevated temperature readings. Intensive follow-up monitoring and investigations in early 2015 found anomalies with the thermocouples. The faulty thermocouples were replaced, in February 2015, and have been reading satisfactorily throughout the reporting period (see Graph 6).

When observing the long-term trends there has been a variable increase in temperatures observed since 2001. This appears to have stabilised since 2004, decreased slightly in the second half of 2007 and remained relatively stable throughout 2015.

Appendix H shows the REA temperature monitoring summary from 2001 to 2015.

The REA is also monitored for sub-surface water level movements, which have remained stable all year (see Appendix H).

6.13.3 Further Improvements

Thermocouple temperatures and piezometric water levels will continue to be monitored and reported throughout 2016.

Photo 14
Scar Tree Log Stored in Dartbrook Warehouse

Photo 15
Kayuga Cemetery during heritage open day

6.14 BUSHFIRE

6.14.1 Environmental Management & Performance

The bushfire management strategy employed at Dartbrook relies on prevention as a primary goal, as outlined in the Bushfire Management Plan.

All surface facilities with the potential to create a fire hazard, such as electrical substations, are kept clear of combustible materials to minimise the risk of a fire within these areas. Roadsides are slashed on a regular basis and most surface areas managed by Dartbrook are also grazed by cattle, which assists in the control of fuel build up.

Dartbrook has a fire trailer equipped with a 1,000 L water tank and pump, which can be utilised to control any fire outbreaks if required.

A copy of the 2014 AEMR and Bushfire Management Plan was provided to the Muswellbrook Branch of the Rural Fire Service (RFS) in 2015 as per the Bushfire Management Plan. Dartbrook's nearest RFS are the Kayuga and Edinglassie brigades.

There was no fire outbreaks on Dartbrook owned land in 2015.

6.14.2 Further Improvements

In 2016, fuel loads across the site will continue to be monitored and reduced as required.

6.15 MINE SUBSIDENCE

6.15.1 Environmental Management

The management of the effects of subsidence is undertaken as detailed in the originally approved Property Subsidence Management Plans (PSMPs) and the Longwall Subsidence Management Plan (LSMP). The current management generally involves an annual inspection to determine if there are any ongoing impacts from subsidence, with remediation works will be undertaken as required.

6.15.2 Environmental Performance

There has been no further subsidence activated since September 2006, when longwall mining ceased. In total, 817.8 ha of land have been subsided since mining began at Dartbrook.

There has been negligible impact to land as a result of subsidence to date, with generally only minor cracks (<50 mm) occurring, which appeared around the beginning and end of the longwall blocks. In most instances, earthworks were not required to repair subsidence cracks as the minor cracks naturally repaired themselves.

There have not been any changes to agricultural land suitability classes resulting from longwall mining.

The annual subsidence survey included inspection of areas affected by mining of the Kayuga Seam longwall panels KA101 - KA103. This was to check for any redevelopment of surface cracking and to assess the condition of previous remediation works. The inspection found that the previously treated areas have remained stable. Any disturbed areas were sown with a pasture seed mixture and now have good cover established.

Subsidence resulting from mining the Kayuga Seam has affected three 2nd and 3rd order tributaries of Sandy Creek. There has been only minor cracking and grade changes have been subtle and localised with little impact on stream hydrology. There has been no change to agricultural land capability resulting from Dartbrook mining the Kayuga Seam.

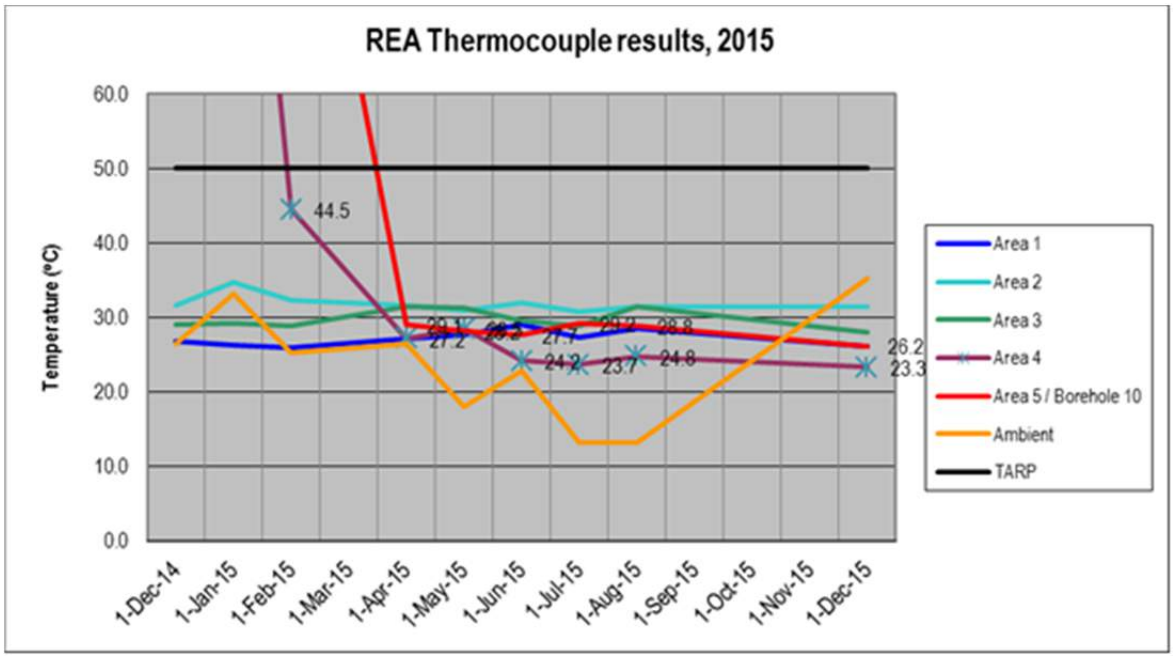
There was no damage to archaeological sites as a result of subsidence or rehabilitation works during 2015.

A summary of impacts to groundwater as a result of mining and subsidence is provided in Section 6.6.

6.15.3 Further Improvements

There will be minimal subsidence monitoring required in 2016. Treated areas will be re-inspected to determine if further cracking has occurred.

Graph 6
Thermocouple temperatures from the REA in 2015



6.16 HYDROCARBON CONTAMINATION

6.16.1 Environmental Management & Performance

There are only minimal quantities of hydrocarbon based products such as oil or diesel fuels stored or used at Dartbrook during Care and Maintenance. This has greatly reduced the potential risk of groundwater or surface water contamination from such products. Any oil or fuels that are required to be stored at Dartbrook are appropriately bunded and maintained to prevent spillages to land or water.

The facilities have been constructed so that all drainage from the workshop and service areas flows by gravity into an oil separator for clarification before return to the WHD. The separator and existing sump continued to be serviced and cleaned out regularly during Care and Maintenance, to ensure the system remains effective.

Inspections of the workplace are ongoing to ensure good housekeeping standards are maintained.

Environmental training, which included spill response, water management and hydrocarbon management continued to be offered to new staff and contractors at the site.

Spill kits containing absorbent materials are strategically located on site to assist in containing and immediately cleaning up any spills should they occur. There have not been any contaminated sites confirmed at Dartbrook.

Ninety three longwall roof supports remain stored on the West hardstand in 2015. Subject to the new ownership of Dartbrook the remaining supports are due to be disposed of in 2016/17 (see Photo 16).

The hardstand area also has controlled drainage, eventually reaching the WHD through the oil separation system.

6.16.2 Further Improvements

Environmental training for new staff and contractors working in the field will continue to be offered as appropriate.

Continued maintenance of the oil separation system will be continued in 2016.

6.17 GAS DRAINAGE / VENTILATION

6.17.1 Environmental Management & Performance

The majority of gas from the underground mine is managed by the mine ventilation and exhausted through an upcast shaft. During Care and Maintenance, methane (CH_4) and carbon dioxide (CO_2) are vented to atmosphere via the Ventilation Shaft No. 1.

Scope 1 are emissions from the underground fugitives (split into methane and carbon dioxide), diesel, petrol, LPG, oils and greases, SF6 stock and wastewater. Scope 2 emissions are those from the use of electricity on site. The total emissions are calculated from both Scope 1 and Scope 2 emissions combined.

Tube bundles measure the gas mix, which have been extrapolated to establish monthly quantities, as shown in Table 21.

All gas drainage boreholes and plants that were previously utilised to extract gas from the mine goaf have been closed.

As shown in Table 21, a total of 57,868.65 tonnes of CO_2 equivalent gas (CO_2-e) was emitted in 2015. The main contributor to total emissions was gas emitted from the underground mine, in tonnes of carbon dioxide equivalents was CH_4, at 45,111.8 tonnes CO_2-e.

This amount cannot be compared to the predictions made in the EIS, because of the changes in the mine area that is being ventilated during the Care and Maintenance phase of operations.

Table 21
Summary of 2015 Greenhouse Gas Emissions

	Scope 1		Scope 2	Total Emissions (t CO_2-e)
	Methane (t CO_2-e)	Carbon Dioxide (t CO_2-e)	Carbon Dioxide (t CO_2-e)	
Jan	3,800.0	778.4	505.38	5,087.41
Feb	3,156.8	614.6	440.27	4,215.04
Mar	3,644.3	686.9	390.57	4,725.41
Apr	3,129.4	617.9	432.95	4,183.42
May	3,326.5	640.2	418.13	4,388.15
Jun	3,234.6	638.1	384.29	4,260.52
Jul	4,646.9	768.4	387.29	5,806.03
Aug	4,653.3	671.9	369.70	5,698.88
Sep	1,674.0	378.5	369.82	2,425.98
Oct	4,007.3	663.2	424.55	5,098.67
Nov	5,018.7	605.1	382.68	6,010.43
Dec	4,820.0	710.5	435.03	5,968.71
2015 Total	45,111.8	7,773.7	4,940.66	57,868.65

6.17.2 Further Improvements

The monitoring of gas emissions, electricity and fuel use from the site will continue to be undertaken in 2016.

6.18 PUBLIC SAFETY

6.18.1 Environmental Management & Performance

Dartbrook seeks to ensure that the safety of visitors, neighbours and the general public is maintained at all times. Signage, restricted access, fencing, and inspections by security personnel are established means of warning the public and preventing access to operational areas of the mine. To account for the Care and Maintenance situation and the reduced number of personnel on site, a number of additional security measures have been implemented, including:

- Installation of security fences around the box cut mine entrance and the Hunter Tunnel entrance;
- Establishment of secure gates on all mine portals to prevent unauthorised access;
- Employment of a security firm to patrol the site nightly from Monday – Friday and on a 24-hour basis on weekends; and
- Installation of remote surveillance cameras on the east CHPP site and western workshop area.

During 2015, there weren't any significant security breaches. Regular security patrols are undertaken along the boundary fence between the CHPP and the 'Aberdeen Common' a public access area. In addition, remote motion activated cameras have been strategically placed around the site to monitor any areas that are vulnerable to trespassers.

In 2015 Dartbrook's private access road to the New England Highway remained strategically closed at night to reduce the incidence of trespass. This strategy continues to be successful.

6.18.2 Further Improvements

Regular patrols by security personnel will continue throughout 2016. Fences will be maintained and gates remained locked and secured. Further investigations will be undertaken to consider additional surveillance cameras on the West Site.

Photo 16
Longwall roof supports on the west hardstand

7.0 WATER MANAGEMENT

Dartbrook water take during the reporting period is summarised in Table 22, with a conceptual water balance schematic included in Appendix I.

A discussion of surface and groundwater monitoring and management in 2015 is provided in Section 6.5 and Section 6.6, respectively.

Table 22
Site Water Take 2015

Water Licence #	Water Sharing Plan, Source And Management Zone	Entitlement	Passive Take / Inflows	Active Pumping	Total
20BL 166121	Dart Brook Water Source, lower Dart Brook Management Zone	25	0	1.4	1.4
20BL 169122	Dart Brook Water Source, lower Dart Brook Management Zone	25	0	0	0
20BL 169015	Dart Brook Water Source, lower Dart Brook Management Zone	30	0	30	30
20BL 169016	Dart Brook Water Source, lower Dart Brook Management Zone	150	0	150	150

8.0 REHABILITATION (this reporting period)

8.1 BUILDINGS

Under the Care and Maintenance program, there were no mine related buildings constructed or rehabilitated in the reporting period.

8.2 REHABILITATION OF DISTURBED LAND

No rehabilitation was undertaken in 2015. A summary of rehabilitation activities undertaken in during the year is provided in Table 23, Table 24 and on Plan 3, Plan 4 and Plan 5.

The REA was covered, topsoiled and seeded in 2007. The land capability of the area has considerably improved since to that of grassland as seen in Photo 8 and Photo 9 in Section 6.4.

The visual bund plantings (2007) at the entry to the East Site, had ongoing infill plantings planted on the bund during 2015.

During 2015 there was a minor rehabilitation to the surface of a small tailings / rejects pit in the REA. The pipe drainage system in the REA continued to function satisfactorily.

As discussed in Section 6.15, land that was undermined by longwall mining did not show significant impacts from subsidence and therefore no rehabilitation work for this issue was undertaken in 2015.

Table 23
Rehabilitation Status

		Area Affected/ Rehabilitated (ha)		
		To date (End 2015)	Last report (End 2015)	Next Report (Est End 2016)*
A:	MINE LEASE AREA			
A1	Mine Lease(s) Area CL386, ML1381, ML1497, ML1456	3,258	-	-
B:	DISTURBED AREAS			
B1	Infrastructure area (other disturbed areas to be rehabilitated at closure including facilities, roads)	117	117	117
B2	Active Mining Area (excluding items B3 - B5 below)	-	-	-
B3	Waste emplacements (active/unshaped/in or out-of-pit)	0	0	0
B4	Tailings emplacements (active/unshaped/uncapped)	0	1	0
B5	Shaped waste emplacement (awaits final vegetation)	Nil	Nil	Nil
ALL DISTURBED AREAS		118	118	118
C:	REHABILITATION PROGRESS			
	Overburden Dump	3.7	3.7	3.7
	Wattus Ponds	14.7	14.7	14.7
	Rejects Emplacement Area	29.2	29.2	29.2
	Infrastructure Area	4	4	4
C1	Total Rehabilitated area (except for maintenance)	51.6	51.6	51.6
D:	REHABILITATION ON SLOPES			
D1	10 to 18 degrees	32.9	32.9	32.9
D2	Greater than 18 degrees	-	-	-
E:	SURFACE OF REHABILITATED LAND			
E1	Pasture and grasses	51.6	51.6	51.6
E2	Native forest/ecosystems	-	-	-
E3	Plantations and crops	-	-	-
E4	Other (includes non-vegetative outcomes)	-	-	-

** Subject to new Dartbrook ownership*

Table 24
Maintenance Activities on Rehabilitated Land

	Area Treated (ha)		
NATURE OF TREATMENT	Report period (2015)	Next period (2016)*	Comment / control strategies / treatment detail
Additional erosion control works (drains re-contouring, rock protection)	0	1	Maintenance works may be required if settlement has occurred in 2016.
Re-covering (detail - further topsoil, subsoil sealing etc.)	0	0	No re-covering of the REA erosion control contour banks in 2015. .
Soil treatment (detail - fertiliser, lime, gypsum etc.)	0	0	No additional gypsum and fertilizer to the REA erosion control contour banks in 2015.
Treatment/management (detail - grazing, cropping, slashing etc.)	0	0	Continued controlled grazing of Wattus Ponds area. Some areas of the REA rehabilitation were slashed. Areas in the River Restoration Project were also slashed. Grazing commenced on the REA in 2015.
Re-seeding/replanting (detail - species density, season etc.)	<1	<1	Infill planting undertaken on visual bund in 2015. Maintenance of disturbed REA erosion control contour banks areas in 2015.
Adversely affected by weeds (detail - type and treatment)	~20	~20	The following weeds were controlled by spraying or slashing in 2015 across the mine area: Galenia, St John's Wort, Tiger Pear, Bathurst Burr, Turnip weed, Boxthorn. Weed spraying and slashing was also undertaken in the River Restoration Area's prior to re-planting. The weed control program will continue in 2016.
Feral animal control (detail - fencing, trapping, baiting etc.)	10	10	Appropriate rabbit control in the visual bund and along and both sides of the New England Highway in conjunction with the LLS. Pig trapping using the LLS when appropriate. Kangaroo culling with National Parks and Wildlife Service approval in 2015 and 2016.

* *Subject to new Dartbrook ownership*

8.3 OTHER INFRASTRUCTURE

No structural exploration work was undertaken in 2015. Exploration work to be undertaken during the 2016 reporting period will be the responsibility of the new owner as the proposed rehabilitation of open exploration boreholes is scheduled for December 2016 (see Section 4.1).

8.4 REHABILITATION TRIALS AND RESEARCH

8.4.1 River Restoration Project

The River Restoration Project, a joint project established with the HCRCMA, ran from 2005 to 2010, with monitoring and maintenance continuing in 2015. The main maintenance activities undertaken in 2015 for this project included:

- Maintenance of native trees planted along the banks of the Russell Island Channel and Hunter River upstream of the bridge (northern site);
- Removal of selected willows in the above areas, especially when establishing engineered log structures; and
- Maintenance within the River Restoration Project areas (see Section 6.7), including slashing, and weed and pest control.

The project will continue in 2016 with ongoing maintenance within the River Restoration Project areas (particularly Russell Island Channel), including weed and pest control in areas that have a low survival rate of seedlings.

During July 2015 an inspection of river stabilisation works, River Red Gums and 20 Log Jams constructed in the Hunter River was made by representatives of the Local Land Services Hunter

Two Fish-Hotels and about 20 Log Jams have been constructed over a 6.5 km stretch of the Hunter River where it interfaces Dartbrook owned land. These create a pool and riffle sequences as well as stabilised the bank. The more diverse habitat created favours native fish species.

8.4.2 River Red Gums Restoration

This project is to enhance and protect a population of River Red Gums listed as being endangered in the Hunter Valley. The area is remote from any mine related infrastructure, has been fenced to exclude stock and has over 2,500 River Red Gums planted amongst the mature population. Currently the River Red Gums that had naturally regenerated as a result of artificial flooding in 2007 continue to thrive within the constructed bunds. Monitoring (every two years) by Umwelt ecologists found this area progressing well in 2015 (see Photo 11).

Research and monitoring of the River Red Gum Project area will continue in 2016.

8.4.3 Evaporation Ponds Rehabilitation Strategy

The proposed rehabilitation of the evaporation ponds is currently on hold. The Evaporation Ponds were recommissioned in 2011 as a strategy to reduce the amount of water accumulating in the Wynn Seam Goaf, primarily from the Hunter Tunnel dewatering process. Water is pumped into the Evaporation Ponds from the Wynn Seam Goaf by way of two submersible (Pleuger and Wilo) pumps. This water accumulates and evaporates from the upper sections of the Evaporation Ponds.

The Ponds are essential elements in the management of groundwater at Dartbrook and as such, their rehabilitation has been postponed and will become a closure issue.

8.4.4 Forestry Plantation

During 2003, in conjunction with Forests NSW, Dartbrook commenced the establishment of a 75 ha forestry plantation on undulating grazing land north of the CHPP, and south of the town of Aberdeen (see Plan 3).

The area was planted in 2004 and 2005, with a total of approximately 75,000 seedlings, comprising mainly of Spotted Gum (*Corymbia maculata*).

The plantation was part of a regional plan to create a sustainable resource in the Upper Hunter Valley for the future on land that was previously grazed. With improved seasonal conditions, the plants continued to grow well in 2015.

The 2015 biennial monitoring by Umwelt found the most successful species were Spotted gum and Grey box. It is still early in the project but the additional objectives of establishing a biodiversity corridor, visual screen and stabilising the soil are all on a successful trend.

8.4.5 Sustainable Cattle Grazing Trial

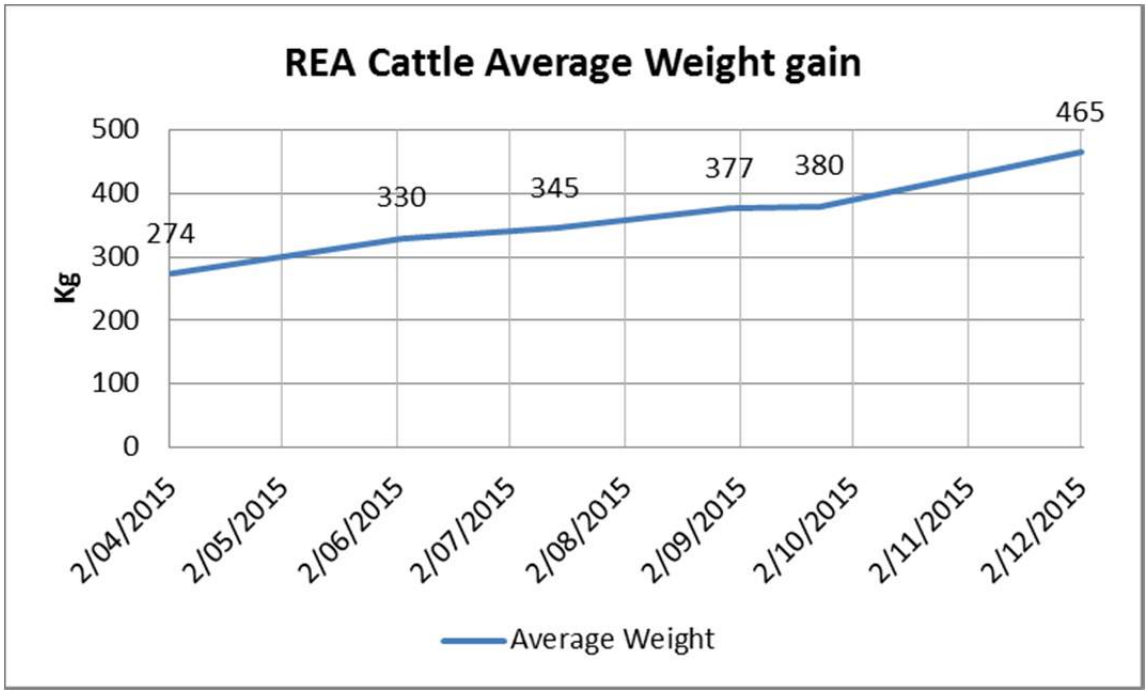
Dartbrook commenced a grazing trial in 2015 to demonstrate that the rehabilitated land, in this case the Reject Emplacement Area at Dartbrook East Site, could sustain grazing by livestock, be productive and blend with the landuse of adjacent areas.

27 Angus and Angus/ Herefords Cross steers were introduced in April 2015 as weaner steers, averaging 274 kg.

The steers were weighed 7 times through 2015 (see Graph 7) and showed have gained weight throughout the year, but at reduced rates in winter when weather was cold and dry. In December, average weight was 462kg (see Graph 7).

Pasture growth was monitored on five occasions to coincide with weighing of the steers from five sites. Sites 1 and 4 were Rhodes Grass dominant pasture, exceeding 80% coverage throughout the year. Site 2 hayed off more than other sites with some lodging of the tall Rhodes Grass. Site 3 and Site 5 had other species dominating including kikuyu, couch and medics. The latter were significant in providing palatable high protein feed in July to September period when summer growing species were dormant. Phalaris, Green Panic and Lucerne are widespread throughout the REA and many native grasses observed sporadically including Queensland Blue Grass, Plains Grass, Chloris spp., Wallaby Grass, Wiregrass, Barbwire Grass and Sporobolus spp. Graph 8 shows the successful maintenance of groundcover throughout the trial.

Graph 7
Average Steer Weight from Dartbrook Grazing Trial



Graph 8
Sustained Pasture Levels

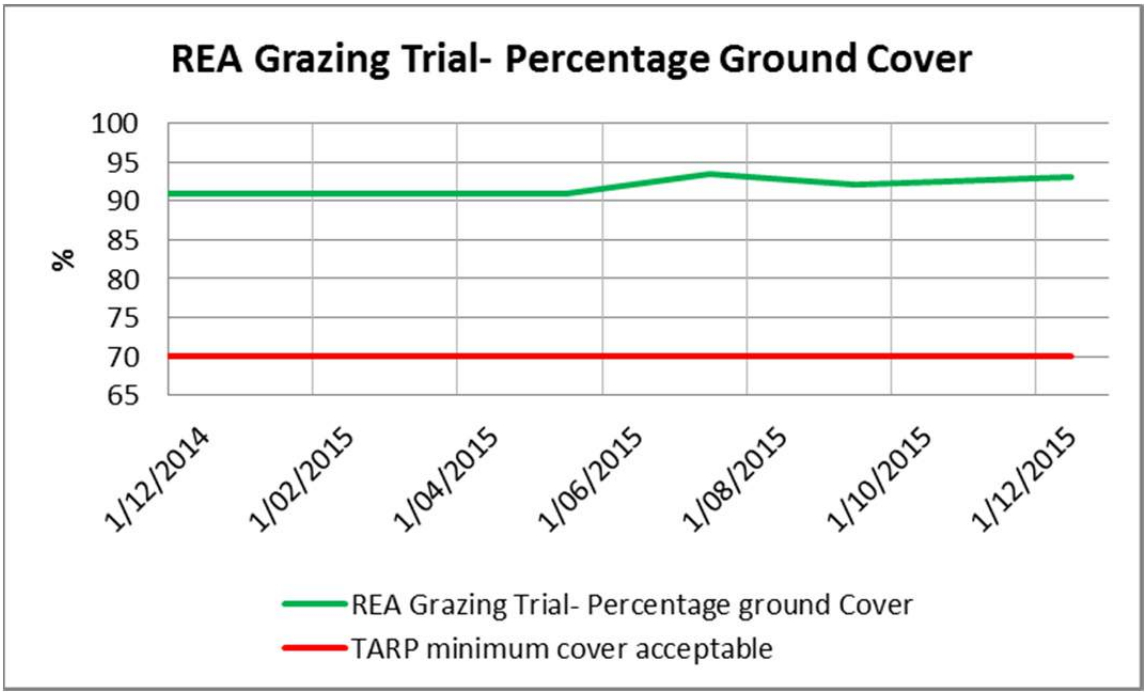
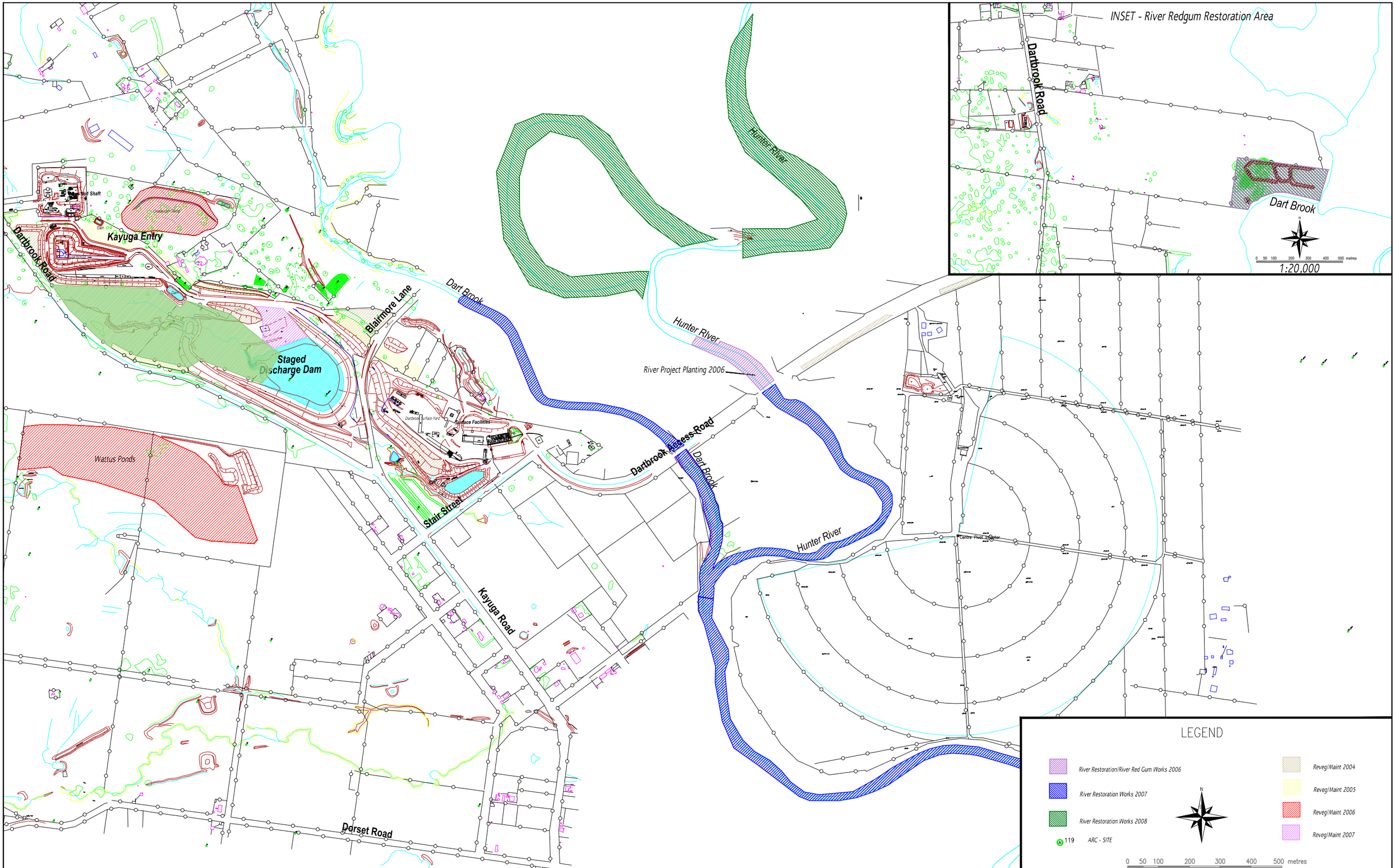


Photo 17
Steer being weighed during 2015 grazing trial



AngloAmerican

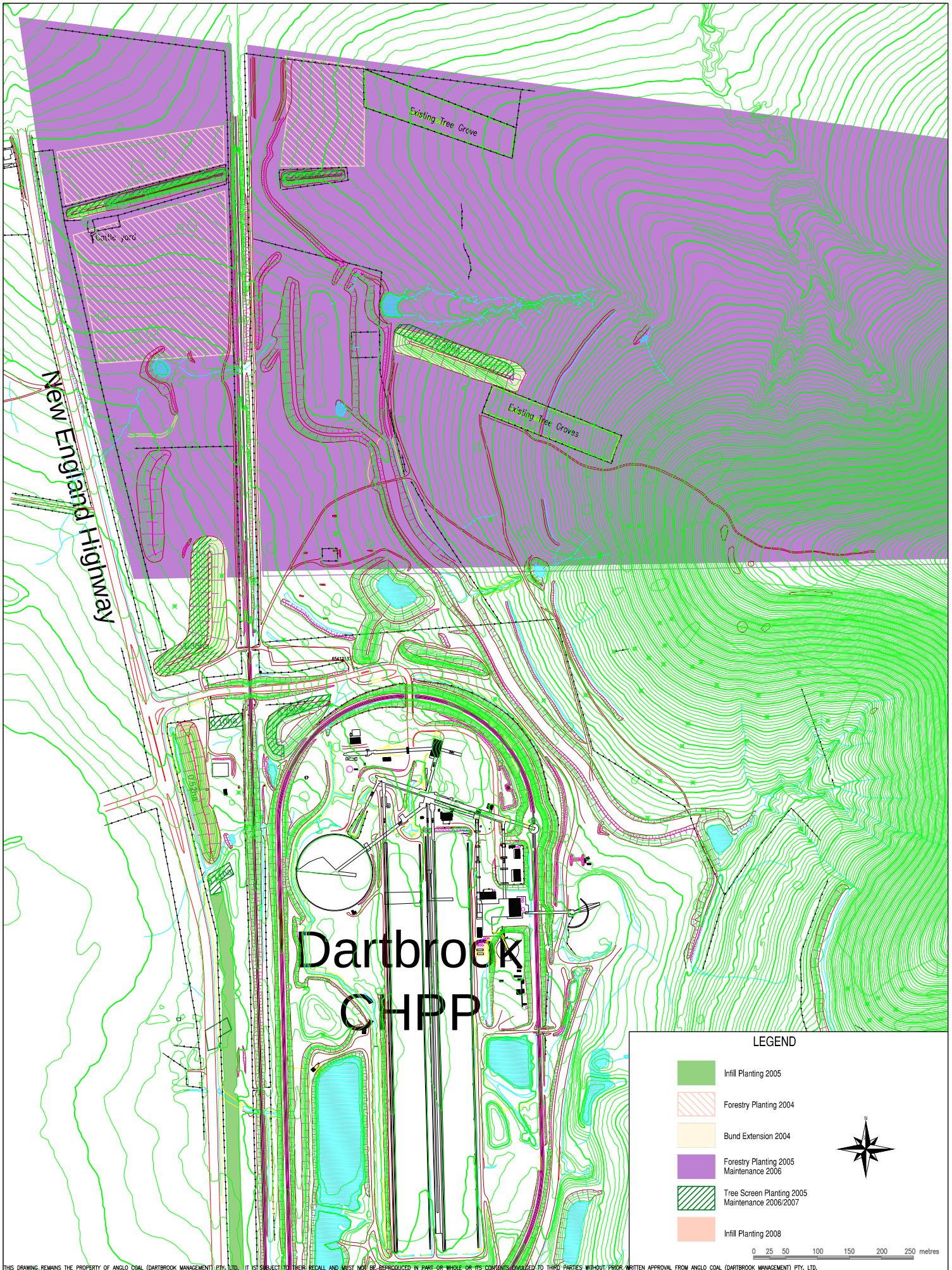
DRAWN
PC
9/05/03

REVISIONS

REV.	DATE	BY	DESCRIPTION	CHK.
K	23/06/09	PC	Updated to 2008	RC
L	01/03/10	PC	Roads Removed for Clarity	DS
M	18/02/11	PC	Logo Modified to AngloAmerican	DS
N	26/02/13	PC	Plan No Changed from 5a to 3	DS
J	02/05/08	PC	Areas Updated	FB

Dartbrook Mne
West Site Rehabilitation Activities
PLAN 3

Datum :	AHD	SCALE	A3	DRG.	REV.
GRID :	MGA(56)	1:10000		29420	N



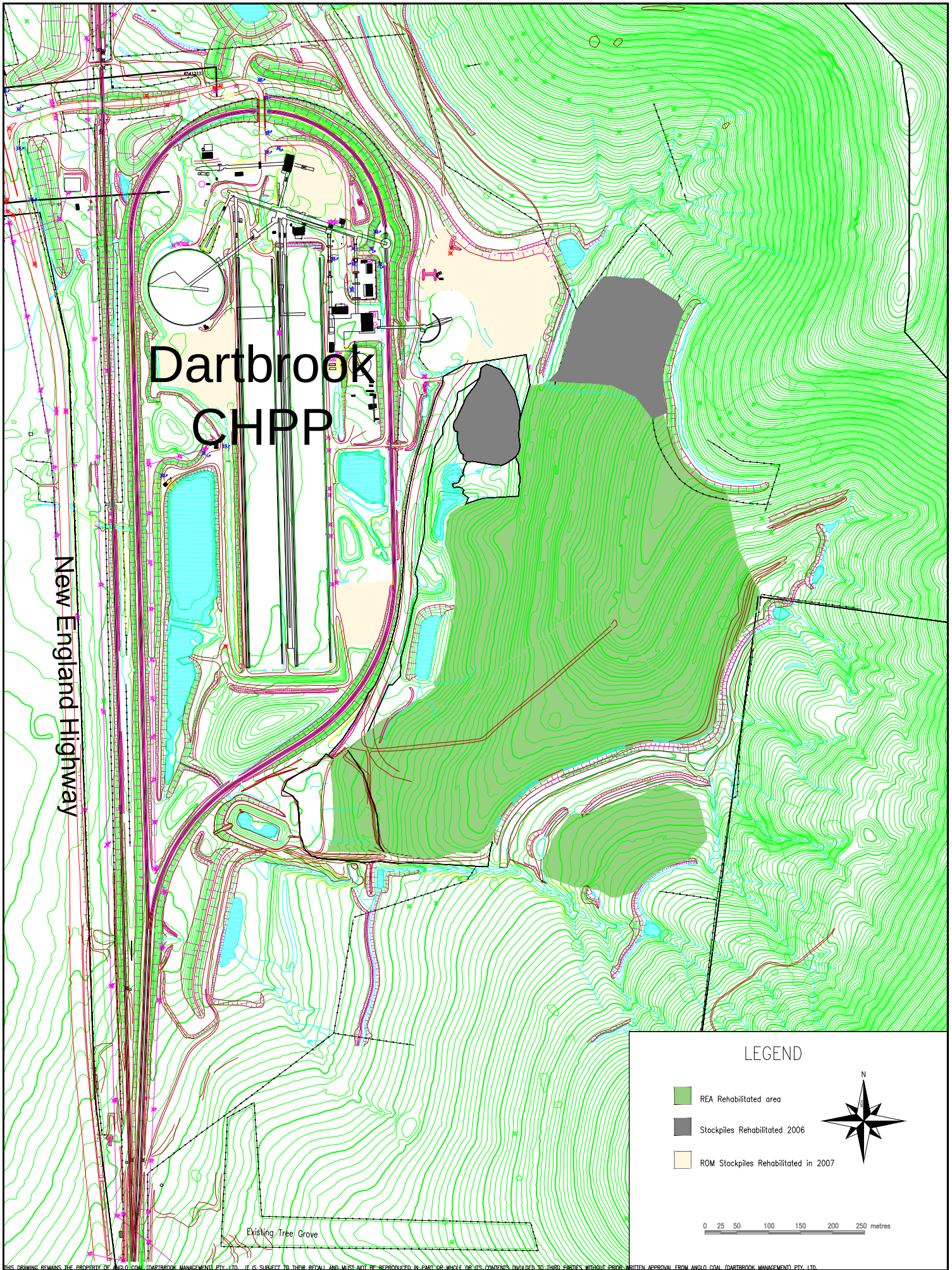
AngloAmerican

REVISION				
I	18/02/11	PC	Logo Modified to AngloAmerican	
J	26/02/13	PC	Plan No Changed from 5b to 4	
H	23/06/09	PC	Updated to 2008	
REV.	DATE	BY	DESCRIPTION	CHK.

DRAWN	DATE	CHECKED	APPROVED
AS	06/10/04		

Dartbrook Mine
East Site Rehabilitation Activities
PLAN 4

SCALE		DRG.	REV.
1:7500	A4	31031	J



AngloAmerican

REVISION				
REV.	DATE	BY	DESCRIPTION	CHK.
H	01/03/10	PC	REA Banks Updated	
I	18/02/11	PC	Logo Modified to AngloAmerican	
J	26/02/13	PC	Plan No Changed from 5c to 5	

DRAWN	DATE	CHECKED	APPROVED
PC	18/05/05		

Dartbrook Mine
Rehabilitation of Reject Emplacement Area
PLAN 5

SCALE		DRG.	REV.
1:7500	A4	32043	J

9.0 COMMUNITY RELATIONS

9.1 ENVIRONMENTAL COMPLAINTS

Dartbrook has an approved Complaints Handling Protocol, which details the process for receiving and responding to complaints. The process involves:

1. Recording the complaint;
2. Seeking immediate identification and addressing the cause of the complaint, where possible;
3. Telephone contact with the complainant within 24 hours, where possible; and
4. Formal follow up with a letter of response.

Complaints can be received via a dedicated complaints telephone line, in person, facsimile, email, letter or general telephone. All complaints received are recorded in a Complaints Register.

There were no formal complaints made to Dartbrook during 2015. This is consistent with 2014, where there were also no complaints received (see Graph 9).

9.2 COMMUNITY LIAISON

9.2.1 Dartbrook Community Consultative Committee

Due to the limited activities occurring during Care and Maintenance, the number of meetings was reduced from six to three per annum in 2006. In 2015, Dartbrook hosted three Dartbrook Community Consultative Committee (DCCC) meetings.

The DCCC is usually comprised of community representatives from both the Muswellbrook Shire Council (MSC) and Upper Hunter Shire Council (UHSC), council staff and community representatives. The current Council representatives are Jennifer Lecky (Chair and MSC representative) and Kiwa Fisher (UHSC representative). Craig Fleming (MSC), and Paul Smith (UHSC) were council staff representatives. Following Craig Fleming's resignation in April 2015 MSC have not yet appointed a replacement.

Community representatives are Arthur Mitchel, Annette Rahn, Tony Lonergan and Noel Downs (also from the Wannaruah Local Aboriginal Land Council).

Graph 9
Comparison of Annual Complaints Received (2002 – 2015)

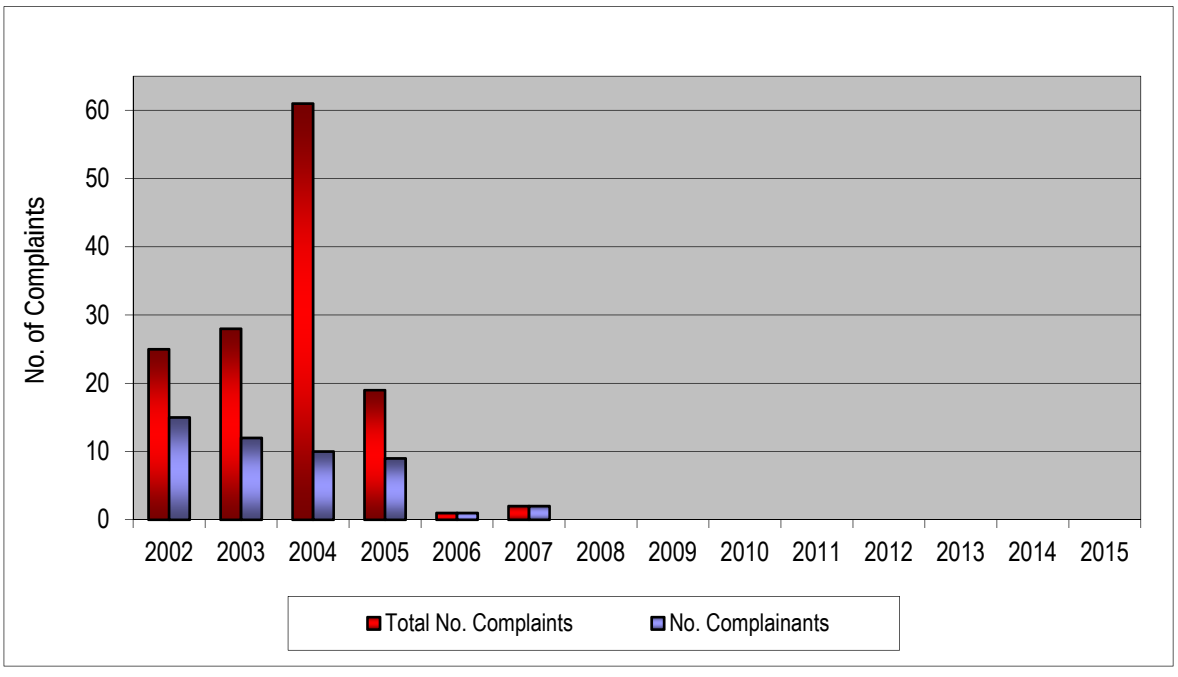


Photo 18
Aberdeen Highland Games

Table 25 lists the dates of meetings held during 2015 and the topics discussed such as the drilling program, fire hazard and land management, and the relocation of the scar tree (see Photo 14). In addition to those items listed, each DCCC meeting also discusses business arising from the previous meeting minutes, complaints received, correspondence and general business. Minutes of the meetings are posted on the Dartbrook website. Updates of Anglo American activities were also distributed to the DCCC during the reporting period.

9.2.2 Community Activities / Participation

Through 2015 Dartbrook continued its established partnership with the community paper, "The Aberdeen Whisper", by providing ongoing sponsorship. In exchange for the sponsorship, Dartbrook advertised the environmental hotline and had the opportunity to include an article in the paper to provide information to the local community about ongoing activities.

In 2015, Dartbrook also continued hosting the Aberdeen Rifle Club, which is now located on land owned by Dartbrook.

Anglo American supports a diverse range of projects benefiting the communities of Muswellbrook, Upper Hunter and Singleton Local Government Areas. Throughout much of 2015, community contributions were made regularly through applications processes which are advertised in the local papers. In these advertisements, community members belonging to schools and organisations requiring funding for projects, equipment or events are encouraged to complete the application forms available on the Anglo American website, for consideration.

Dartbrook continued to support projects relating to education, health, sport, arts, culture, heritage and the environment. Some key projects in 2015 were

- The Aberdeen Highland Games (see Photo 18);
- Riverview Open Day; and
- Muswellbrook Chamber of Commerce.

Attendance at the regular meetings for many groups, including fundraising activities for the skate park and the Aberdeen Community Caring Group Inc., is also part of the Anglo American 2015 commitment to these local community groups.

With a commitment of $10,000 in 2015, Anglo American remained a major sponsor of the Aberdeen Highland Games, which showcase the rich Scottish heritage in the Hunter Valley. Participation at monthly meetings as a committee member also contributed to the success of this great event in 2015.

9.2.3 Further improvements

Australian Pacific Coal will take over the responsibilities for ongoing community relations in 2016.

With the closure of the "Aberdeen Whisper" in late 2015 Dartbrook's Community Hotline will, in future, be advertised in the Upper Hunter Connector.

Table 25
Summary of topics discussed during 2015 Dartbrook CCC Meetings

Date	Topics Discussed
26/03/2015	• Summary of environmental monitoring and performance. • Project Exploration activities on hold. • Prefeasibility suspended indefinitely. • Security issues. • GHG monitoring ongoing. • Annual Return for EPA Licence and Annual Environmental report distributed. • Repairs to Riverview homestead and Kayuga Cemetery. • Tree screen maintenance including drip irrigation with RRG slashing. • Scar tree relocation – waiting for ARTC approval to install at the Reconciliation Mural shelter. • Feral Animal and Weed control. Box Thorn, Green Cestrum, Tiger Pear and St Johns Wort. YTD 39 Kangaroos. • REA borehole temperature monitoring – resolved the high readings with the installation of new thermocouples. • Water management - Evaporation pond usage and the gradual rise in the Wynn Seam groundwater level. • REA Sustainable Grazing demonstration- preparing fences and yards. • RRG maintenance including slashing.
11/08/2015	• Summary of the Dartbrook's environmental performance. • Prefeasibility studies suspended indefinitely. • Project Exploration – EL 4574 and A 256 renewals EMRs submitted. Riverview Homestead open day for Heritage Week. • Noxious P&A – YTD 51 kangaroos, 29 pigs with 1080 baits laid for wild dog and fox control as a community program. Also Box thorn, Green Cestrum and Tiger Pear spraying. • Tree trimming and bushfire management. • Upper Dorset Rd House demolition. • Tree screen management and drip irrigation. Fence repairs to the Aberdeen Common boundary fence. • EPA HRSTS Return lodged. • Visits by the LLS and EPA – no issues. • Internal compliance audit – no issues. • Scar Tree and AHIP discussions progressing with ARTC and OEH. • REA Sustainable Grazing demonstration- cattle and pasture being monitored. • Sponsor Highland Games. • REA borehole temperature monitoring – resolved the high readings with the installation of new thermocouples.

Date	Topics Discussed
12/11/2015	• Summary of the Dartbrook's environmental performance. • Dartbrook's sale progress. • Noxious P & A – 92 kangaroos & 29 pigs YTD, and Rabbit poisoning. Also Box thorn, Green Cestrum, St Johns Wort, Prickly Acacia, Pattersons Curse, African Olives and Galenia spraying. • Water management – new evaporation system to be constructed near the SSD to overcome the gradual rise in the Wynn Seam groundwater level. • REA Sustainable Grazing demonstration- cattle and pasture being monitored Repairs to rural houses. • Tree screen management and drip irrigation. • REA borehole temperature monitoring – no high readings since the installation of new thermocouples. • Scar tree relocation – ARTC would not approve. Already held consultations with Aboriginal reps. OEH in agreement re move onto MSC land. • Visits from LLS (river stabilization) and DRE representatives. • DRE and DP&E advised that 2014 AEMR satisfactory. • Desktop Emergency environmental exercise undertaken. • Annual REA geotechnical inspection undertaken. • Bi-annual River Red Gum and Forestry Plantation Area inspections undertaken.

10.0 INDEPENDENT AUDIT

An Independent Audit of Dartbrook operations was not required during the reporting period. Under the conditions of DA 231-07-2000 (as modified), the next Independent Environmental Audit of the site is required to be completed during the third quarter of 2016.

The outcomes of the audit and responses to any identified environmental management actions will be reported in the next Annual Review.

11.0 ENVIRONMENTAL INCIDENTS & NON-COMPLIANCES

11.1 ENVIRONMENTAL INCIDENTS

There were no reportable environmental incidents during 2015.

One internal incident occurred when the initial Wynn Seam groundwater level TARP was triggered, which caused further investigation and expedited the installation of an additional evaporation system (see Section 6.5). This incident did not result in a non-compliance against the conditions of regulatory approvals and licences held for Dartbrook in 2015.

11.2 ENVIRONMENTAL NON-COMPLIANCES

As part of the SHECMS (as discussed in Section 2.3), internal audits are undertaken to assess compliance against environmental licences and approvals including the Development Consent, EPL 4885 and Mining Lease conditions. The internal audits did not find any non-conformances (see Section 1.0 and Appendix J).

Dartbrook has ceased having surveillance audits against ISO 14000.

12.0 ACTIVITIES PROPOSED IN THE NEXT REPORTING PERIOD

12.1 ACTIVITIES IN 2016

The activities proposed to be undertaken in 2016 are summarised in Table 26. Further information on the activities listed has been provided for specific issues in Section 6.0 under the sub-headings of 'Further Improvements'.

Anglo American will continue the maintain Dartbrook on Care and Maintenance until the sale of the asset. Subsequently, the new owner will be responsible for compliance with all consent and licence conditions.

Table 26
Dartbrook Environmental Management Activities Proposed for 2016

Area	Proposed Activity
Air Quality	Minor dust controls may need to be considered where needed during 2016. Air quality monitoring will continue in accordance with the Air Quality Management Plan.
Erosion and Sediment	Sediment structures will continue to be maintained in 2016 as necessary. Water runoff from disturbed areas will continue to be directed into sediment dams until areas are adequately revegetated with grass cover.
Surface Water Management	Surface water monitoring will continue in 2016, as required subject to an ongoing review to rationalise the frequency required by NOW, EPA and DP&E.
Ground Water Management	Groundwater monitoring will continue in 2016, as required in the Site Water Management Plan.
Threatened Flora and Fauna	Fauna and flora communities will be managed in accordance with the approved Management Plan. In circumstances where clearing is required, the disturbance permits process will continue to be undertaken. The River Restoration Project monitoring will continue.
Noxious Weeds and Feral Animals	Weed control will continue to be of focus across the Mining Lease areas and the Weed Control Register will be maintained in 2016. Feral animals will be controlled as necessary.
Operational Noise	Not required.
Visual / Stray Light	Maintenance of the tree screens will be ongoing throughout 2016, as required.
Aboriginal Heritage	The existing permit system will continue to be utilised throughout 2016 for activities such as exploration and rehabilitation. The relocation of the remnant scar tree is planned to be undertaken on 2016.
European Heritage	Existing efforts to minimise impacts to European heritage will be continued throughout 2016.
Spontaneous Combustion	Thermocouple temperatures will continue to be monitored and reported throughout 2016.
Bushfire	In 2016, fuel loads across the site will continue to be monitored and reduced as required.
Mine Subsidence	Treated areas will be re-inspected to determine if further subsidence cracking has occurred.
Hydrocarbon Management	Ongoing appropriate storage and maintenance of the oil separator and associated facilities.
Gas drainage / Ventilation	Monitoring of gas emissions from the mine will be continued.
Public Safety	Regular patrols by security personnel will continue throughout 2016 with CCTV surveillance. Fences will be maintained and gates remained locked and secured as required. Roadside vegetation slashing and New England Highway verge upgrade will occur within 2016.
REA	Continuation of the grazing demonstration trail to prove the sustainability of the REA's rehabilitation.

Anglo American Safety, Health & Sustainable Development Policies

Appendix

A

AngloAmerican

Hansen Bailey
ENVIRONMENTAL CONSULTANTS

SUSTAINABLE DEVELOPMENT

SAFETY
COAL, AUSTRALIA AND CANADA

OUR VISION

ZERO HARM

Our vision is to achieve Zero Harm through effective management of safety in all our managed operations.

We believe our people are our key asset and Zero Harm is achievable – we do not accept that people may be injured while working for us. All employees should be able to return home fit and well at the end of each shift. We believe one injury is one too many.

OUR PRINCIPLES

Underpinning the Vision are three fundamental Safety Principles:

ZERO MINDSET

All injuries and occupational illnesses are preventable.

NO REPEATS

All necessary steps are taken to learn from incidents in order to prevent recurrence.

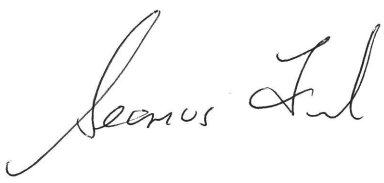
SIMPLE NON–NEGOTIABLE STANDARDS

Safety standards and rules are consistently applied throughout the Group.

OUR POLICY

Anglo American's Coal business is one of Australia's leading coal producers with extensive coal mining interests in Queensland, New South Wales, and British Columbia, Canada. To realise our vision and principles at all operations:

- We hold all employees and contractors accountable for the safety of our people.
- We expect managers and supervisors to provide effective leadership in safety while recognising and supporting that good safety behaviour is the responsibility of all those who work for us.
- Management at all operations is responsible for the full implementation of the Coal Safety, Health & Environment Management System, The Safety Way, our Group Technical Standards (Safety) and all relevant legislation. This requires the allocation of appropriate resources and the provision of training, education, consultation and auditing to ensure compliance.
- We commit to open, honest communication with our employees, contractors, suppliers, other business partners and interested third parties to encourage a safety culture that reflects the intent of this policy.
- We will set measurable objectives and targets and monitor progress against these to ensure continual improvement towards our goal of Zero Harm.



Seamus French
CEO, Coal

September 2014

This policy will be reviewed at appropriate intervals and revised when necessary to keep it current.

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SUSTAINABLE DEVELOPMENT

OCCUPATIONAL HEALTH COAL, AUSTRALIA AND CANADA

OUR VISION

ZERO HARM

Our vision is to achieve Zero Harm through effective management of safety in all our managed operations.

We believe our people are our key asset and Zero Harm is achievable – we do not accept that people may be injured while working for us. All employees should be able to return home fit and well at the end of each shift. We believe one injury is one too many.

OUR PRINCIPLES

Underpinning the Vision are three fundamental Health Principles:

ZERO MINDSET

All injuries and occupational illnesses are preventable.

NO REPEATS

Learn from our monitoring of exposure and surveillance of disease incidence and use this information to prevent the occurrence of occupational disease.

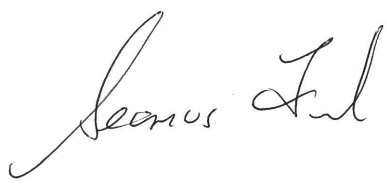
SIMPLE NON–NEGOTIABLE STANDARDS

Health standards and rules are consistently applied throughout the Group.

OUR POLICY

Anglo American's Coal business is one of Australia's leading coal producers with extensive coal mining interests in Queensland, New South Wales, and British Columbia, Canada. To realise our vision and principles at all operations:

- We hold all employees and contractors accountable for the occupational health of our people.
- We expect managers and supervisors to provide effective leadership in occupational health management while recognising and supporting that all of those who work for us have a responsibility to contribute to a working environment that is without significant risk to health.
- We commit to the reduction of exposure at source through good engineering practice and the application of the As Low As Reasonably Possible (ALARP) principle. Compliance with the law will always be the minimum standard.
- Management at all operations is responsible for the full implementation of the Coal Safety, Health & Environment Management System, The Safety Way, our Group Technical Standards (Occupational Health) and all relevant legislation. This requires the allocation of appropriate resources and the provision of training, education, consultation and auditing to ensure compliance.
- We commit to open, honest communication with our employees, contractors, suppliers, other business partners and interested third parties to encourage a health and safety culture that reflects the intent of this policy.
- We will set measurable objectives and targets for employees and contractors and monitor progress against these to ensure continual improvement towards our goal of Zero Harm.



Seamus French
CEO, Coal

September 2014

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SUSTAINABLE DEVELOPMENT

ENVIRONMENTAL MANAGEMENT COAL, AUSTRALIA AND CANADA

OUR VISION

ZERO HARM

Our vision is to minimise harm to the environment by designing, operating and closing all of our operations in an environmentally responsible manner.

OUR PRINCIPLES

Underpinning the Vision are three fundamental Environmental Principles:

ZERO MINDSET

We shall apply the mitigation hierarchy of avoiding, minimising and mitigating environmental impacts arising from our activities, products and services.

NO REPEATS

All necessary steps will be taken to learn from environmental impacts, incidents, audit findings and other non-conformances, to prevent their recurrence.

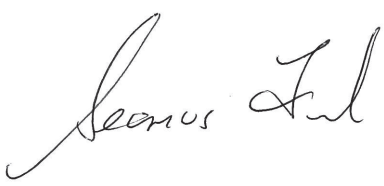
SIMPLE NON–NEGOTIABLE STANDARDS

Common, non-negotiable Environmental Management and Performance Standards and procedures shall be applied throughout the Group as a minimum requirement.

OUR POLICY

Anglo American's Coal business is one of Australia's leading coal producers with extensive coal mining interests in Queensland, New South Wales, and British Columbia, Canada. To realise our vision and principles at all operations:

- We hold all employees and contractors accountable for the environmental management of our activities.
- We expect line managers and supervisors to provide effective leadership in environmental management while recognising that environmental management is the responsibility of everyone who works for us.
- Managers of every business or operation are responsible for the full implementation of the Coal Safety, Health and Environment Management System, the Anglo Environmental Management Framework and participation in the Peer Review Program.
- This requires:
  - the allocation of appropriate resources and the provision of training, education, consultation and auditing to ensure compliance
  - the development, implementation and maintenance of environmental policies, programs and procedures
  - effective environmental impact identification, assessment and control, designed to achieve proactive management of our activities, products and services
  - setting environmental objectives and targets, reviewing performance and communicating results
- We shall conserve and protect environmental resources through, amongst approaches, the efficient use of energy and water, reduction in greenhouse gas emissions intensity, minimising waste and preventing pollution.
- We shall demonstrate active stewardship of the land, freshwater systems and biodiversity with which we interact.
- We respect people's cultural beliefs and heritage.
- We shall comply with environmental legislation and other standards which we have adopted, and develop a culture of continual improvement.
- We commit to open communication with our employees, local communities, contractors, suppliers, investors, business partners and other interested third parties to encourage an environmentally responsible culture that reflects the intent of this policy.



Seamus French
CEO, Coal

September 2014

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SUSTAINABLE DEVELOPMENT

SOCIAL WAY

OUR VISION

The Anglo American Social Vision is to make a lasting, positive contribution to the communities associated with our operations, be a partner of choice for host governments and communities and be an employer of choice.

We recognise mining involves the depletion of a resource and therefore, if we are to contribute to sustainable development we need to enhance the social, human and manufactured capital in the communities around our operations.

We intend to be an industry leader in the management of social issues, to contribute to good governance, to seek the consent of local people and to innovate in our practices.

OUR PRINCIPLES

Anglo American's Social Vision is based on four core principles:

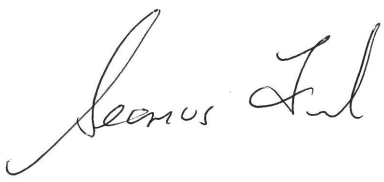
1. We will engage respectfully with host communities throughout the project cycle, and be accountable to our stakeholders.
2. Host communities should experience a lasting benefit from the presence of Anglo American operations and we will seek to maximise the benefits flowing from the operation of our core business in addition to traditional social investment.
3. All necessary steps will be taken to spread the application of good practice, and to learn from negative social impacts, complaints, incidents, audit findings and other non-conformances to prevent their recurrence. We will put in place appropriate mechanisms for handling and resolving grievances.
4. Common, non-negotiable performance standards and procedures shall be applied throughout the Group as a minimum requirement.

OUR POLICY

The future of our business and our longer term access to mine resources is dependent upon the trust, goodwill and consent of others. To secure trust, it is essential we behave in a consultative, accountable and transparent manner.

The Coal business and management team is committed to upholding our social responsibilities and the Anglo American Social Way. We will:

- Build open and honest relationships and engage regularly with all stakeholders in our host communities.
- Conduct the SEAT (Socio-Economic Assessment Toolbox) process at each operation every three years to understand issues that are important to the local community and develop Social Management Plans.
- Undertake Environmental Impact Studies as part of our project planning process, incorporating Social Impact Management Plans to minimise the impacts of our operations on our host communities.
- Advertise our Social Investment and Donations Programme in local publications calling for applications from local community groups. Applications will be assessed against a set of social criteria to ensure projects supported deliver sustainable benefits for people in our host communities and are aligned with priority areas set out in the SEAT report.
- Partner with local councils and governments to identify projects to support that will make a meaningful difference.
- Implement a Complaints and Grievance Procedure to identify and resolve any issues relating to our operation.



Seamus French
CEO, Coal

September 2014

This policy will be reviewed at appropriate intervals and revised when necessary to keep it current.

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ANG24295B_09/14

SUSTAINABLE DEVELOPMENT

INDIGENOUS PEOPLES POLICY COAL, AUSTRALIA AND CANADA

OUR VISION

Anglo American respects the traditions, values and cultures of Australia's Indigenous Peoples.

We fully recognise their rights and their special relationship with their traditional lands.

OUR PRINCIPLES

Our goal is to work in partnership and close cooperation with the Indigenous Peoples of the lands in which we operate in a relationship of care, respect, understanding and trust.

OUR POLICY

- Establish open and constructive consultation with Traditional Owners;
- Adopt consultation procedures that are developed with Indigenous Peoples as the foundation for achieving mutually beneficial outcomes;
- Join with Traditional Owners in devising management plans to integrate consideration of cultural heritage into every aspect of the planning and operation of our developments;
- Encourage and support initiatives that provide Indigenous Peoples with fair access to employment and business opportunities associated with our operations;
- Provide cultural learning programs for our employees to increase understanding of the cultural heritage and native title rights and interests of Traditional Owners.

We will actively promote the endorsement of this policy by our Joint Venture partners and contractors.

Seamus French
CEO, Coal

September 2014

This policy will be reviewed at appropriate intervals and revised when necessary to keep it current.

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Environmental Licences & Approvals

Appendix

B

AngloAmerican

Hansen Bailey
ENVIRONMENTAL CONSULTANTS

Table 1
Licences and Approvals

Statutory Document Description	Date of Issue / Expiry	Statutory Agency/ Reference
Development Consent/ Applications		
Dartbrook Extended Development Consent (File No N99/00230, DA 231-07-2000)	29/08/2001 / 29/08/2022	Department of Urban Affairs and Planning
Consent modification to accommodate blasting conditions for Dartbrook Extended	19/06/2002	Planning NSW
Consent modification to allow construction and use of another emergency tailings cell	16/06/2003	Planning NSW
Consent modification to make changes to the condition of use of the Kayuga road network by vehicles accessing the mine (File No. S02/02195).	4/11/2003	Planning NSW
Consent modification to accommodate changes to traffic conditions (extension of truck haulage) for Dartbrook Extended (File No S02/02195)	30/03/2004	Planning NSW
Consent modification for changes to REA disposal (continue to truck)	4/05/2005	Department of Infrastructure Planning and Natural Resources (DIPNR)
Dartbrook Development Consent Modification for Underground Tailings Disposal, additional ROM stockpiles and Nitrogen Plant	1/11/2005	Department of Planning (DoP)
Dartbrook Development Consent - Minor amendment to application of conditions during Care & Maintenance	07/09/2006	DoP
Mining Leases		
Coal Lease 386	19/12/2033	Department of Mineral Resources (DMR)
Mining lease No. 1497 (Kayuga)	6/12/2001 5/12/2022	DMR
Mining lease No. 1497 (Excl. Kayuga)	6/12/2001 5/12/2022	DMR
Mining lease No. 1381	23/10/1995 22/10/2016	DMR
Mining lease No. 1456	27/09/1999 26/09/2020	DMR
Suspension of Mining Operations (for Care & Maintenance) (Reference 06/7016)	Suspension in effect as of 01/01/07 to 31/12/2017	Department of Primary Industries – Mineral Resources (DPI-MR)
Mining Operations Plans		
Mining Operations Plan for KA101 to KA 107	Submitted 02/06/2004	DMR
Mining Operations Plan for KA101 to KA 103	Approved 09/08/2006	DPI-MR
Mining Operations Plan for Care & Maintenance	Accepted 18/12/2012 Expires 31/12/2017	DRE
Exploration Licence		
Authorisation 256	02/5/2015 *	DMR
Exploration Licence 4574	07/04/2015 *	DPI-MR
Exploration License 4575 (Rossgole)	23/05/2016	DPI-MR

Statutory Document Description	Date of Issue / Expiry	Statutory Agency/ Reference
Exploration License 5525 (Hanging Rock)	20/09/2016	DMR
Reject Emplacement Area Applications and Approvals		
Ministerial Approval for An Emplacement Area (Stages 1 - 3)	13/03/1996	DMR
Stage 4 Reject Emplacement Approval C95/2265	2/01/2000	DMR
Modification to REA Stage 4 Approval – approval of tailings cell and alteration to shape of REA (but within original footprint)	18/12/2003	DMR
Supporting information for Section 126 Approval for Dartbrook REA	18/12/2003	DMR
s126 Modification Approval - 14° slope area in Stage 4	8/04/2004	DMR
s101 Application for Discontinuance of Use of Emplacement Area	Submitted 13/08/2007	DPI-MR
Mining Applications and Approvals for Kayuga (e.g. s138)		
Section 138 Application for Kayuga Seam (Longwall Panels 101 and 107)	-	DMR
Section 138 Approval for Kayuga Seam (Longwall Panels KA101 to KA107)	18/05/2004 30/05/2009	DMR
Surface Safety Management Plan	Submitted 02/06/04	DMR
Interim Agreement for KA101 Subsidence Monitoring Program (under s138 approval)	Expires end of KA101	DMR
KA102 - KA107 Subsidence Monitoring Program	Approved	DPI- MR
Section 138 Variation of Approved Plan for KA101 - KA107	Approved 25/08/06	DPI- MR
KA102 - KA107 Subsidence Monitoring Program - Modification for pending closure	Approved 18/09/06	DPI- MR
EPA Licences		
Environment Protection Authority Licence number 004885	Issued 1/12/1996	Environmental Protection Authority (EPA)
Variation of EPA Licence 4885 (Reduction in tonnage for Care & Maintenance).	Issued 27/11/2009	EPA
Variation of EPA Licence 4885 (Increase in HRTS discharge volume).	13/10/2015	EPA
Other Licences and Approvals		
Section 90 Consent Permits	-	Office of Environment and Heritage- National Parks and Wildlife Service (OEH)
Radiation Management Licence	14/08/2015	EPA
Notification to WorkCover for storage and handling of Dangerous Goods	10/11/2005	Work Cover - Dangerous Goods Licensing
Notification and Declaration to WorkCover that no dangerous goods stored or handled at Dartbrook	Submitted 13/12/2006	Work Cover - Dangerous Goods Licensing
National Parks and Wildlife Services - Scientific Licence (S11997) to conduct rehabilitation, restoration activities	24/12/2011 31/12/2016	Department of OEH
Apparatus Licence - Licence No 499792, Type: Fixed, Callsign:VMN804	08/08/2016	Australian Government Australian Communications and Media Authority
Apparatus Licence - Licence No 1250869, Type: Fixed, Callsign:AXN778	11/09/2016	Australian Government Australian Communications and Media Authority
Apparatus Licence - Licence No 1251075, Type: Land Mobile System. Call Sign: VJE223	04/02/2016	Australian Government Australian Communications and Media Authority
Apparatus Licence – Licence No 1251076, Type: Land Mobile System. Call Sign: VJE224	04/02/2016	Australian Government Australian Communications

Statutory Document Description	Date of Issue / Expiry	Statutory Agency/ Reference
		and Media Authority
Certificate for Corrosion Protection System – No. CP1261, Impressed current cathodic protection system on water pipeline	15/08/2019	DWE
Fire Trailer registration	Expires 11/10/2016	RMS
Development Consent Management Plans		
Environmental Management Strategy	15/04/2002	
Complaints Handling Protocol	15/04/2002	DPE
Archaeology and Cultural Heritage Management Plan	9/12/2002	DPE
Blast Management Plan	9/12/2002	DPE
Bushfire Management Plan	19/05/2011	DPE
Land Management Plan	27/01/2002	DPE
Landowner Communication and Consultation Plan	9/12/2002	DPE
Vibration Management Plan	9/12/2002	DPE
Waste Management Plan	9/12/2002	DPE
Dust Management Plan	10/06/2015	DPE
Noise Management Plan	8/11/2007	DPE
Erosion and Sediment Control Plan (Revised for DC modification 1/11/05)	21/10/2014	DPE
Flora and Fauna Management Plan	16/07/2011	DPE
Landscape and Lighting Management Plan	13/07/2011	DPE
Dartbrook Mine Closure Plan	9/10/2002	DPE
Site Water Management Plan	20/04/2015	DPE
Soil Stripping Management Plan	11/06/2011	DPE
Longwall Subsidence Management Plan	22/12/2003	DIPNR and DMR
JO Casey Property Subsidence Management Plan	22/12/2003	DIPNR and DMR
DHH McIntyre Property Subsidence Management Plan	22/12/2003	DIPNR and DMR
JS and NM Lonergan Property Subsidence Management Plan	22/12/2003	DIPNR and DMR
JA and WE Lonergan Property Subsidence Management Plan	22/12/2003	DIPNR and DMR
GM Casey Property Subsidence Management Plan	22/12/2003	DIPNR and DMR
JE Lonergan Property Subsidence Management Plan	22/12/2003	DIPNR and DMR

** Extension application lodged*

Table 2
Bore Water Licences

Water Licences - Bores for Stock, Water and/or Domestic Use:	Date Issued/ Date Expiry	Statutory Agency/ Reference
20BL030444 (20PT910024) 20AL207820 WAL 18210	17/05/2008	NSW Office of Water (NOW)
20BL031359 (20PT910024) 20AL207820 Wal18210	06/10/2008	NOW
20BL031360 (20PT910024) 20AL207820 WAL18210	05/10/2008	NOW
20BL103726 (20PT910551) 20AL208002 20CA208003 WAL18134	01/08/2009	NOW
20BL150466 (20PT910551) 20AL208002 WAL18134	31/05/2009 30/05/2014	NOW
20BL119568 (20PT910361) 20AL207978 20CA207979 WAL 18239	01/08/2009	NOW
20BL119567 (20PT910361) 20AL207978 20CA207979 WAL 18239	01/08/2009	NOW
20BL121506 (20PT910361) 20AL207978 WAL 18239	07/06/2008	NOW
20BL132575 (20PT910361) 20AL207978 WAL 18239	30/04/2008	NOW
20BL120262 (20PT910321) 20AL206893 20CA206894 * WAL 17781	01/08/2009	NOW
20BL120918 (20PT910321) 20AL206893 20CA206894 * WAL17781	01/08/2009	NOW
20BL167916 (20PT910321) 20AL206893 20CA206894 * WAL17781	01/08/2009	NOW
20BL128424 (20PT910206) 20AL207906 20CA207907 WAL18225	01/08/2009	NOW
20BL134934 (20PT910206) 20AL207906 20CA207907 WAL18225	01/08/2009	NOW
20BL167955 (20PT910801) 20AL208044 20CA208044 WAL 18228	01/08/2009	NOW
20BL136549	04/08/1987 Perpetuity	NOW
20BL015046 20WA206616	13/05/1965 Perpetuity	NOW
20BL015045	13/05/1965 Perpetuity	NOW
20BL015043 (20PT911119) 20CA207010	13/05/1965 Perpetuity	NOW
20BL142369 (20PT910249) 20AL207914 20CA207915* WAL 18174	01/08/2009	NOW
20BL105550	27/10/1976 Perpetuity	NOW
20BL012711 (20PT910756) 20AL206947 WAL 17762	1/02/1962	NOW
20BL005764 (20PT910756) 20AL206947 WAL 17762	1/02/1956	NOW
20BL109113 (20PT910756) 20AL206947 WAL 17762	21/11/2008	NOW
20BL008565 (20PT910024) 20AL207820 WAL 18210	-	NOW
20BL006448 20WA206679	1957	NOW
20BL015600 20AL207061 WAL 17863	1965	NOW
20BL166148 20AL206919 20CA206894 WAL 17739	01/08/2009	NOW

* *License renewal being followed up with NOW*

MINING BORES:		
20BL166121 (20PT910566) 20AL200402 (GW078058) WAL23875	31/07/2022	NOW
20BL166122 (20PT910566) 20AL211402 (GW078059) WAL 23875	31/07/2022	NOW
20BL169015 (20PT911199)	25/08/2003 Not yet converted	NOW
20BL169016 (20PT911200)	25/08/2003 Not yet converted	NOW
TEST BORES:		
20BL167825	12/04/2000 Perpetual	NOW
20BL166538	4/10/1996 Perpetual	NOW
20BL166539	4/10/1996 Perpetual	NOW
20BL166540	4/10/1996 Perpetual	NOW
20BL166541	4/10/1996 Perpetual	NOW
20BL166542	4/10/1996 Perpetual	NOW
20BL166543	4/10/1996 Perpetual	NOW
20BL166947	27/10/1999 Perpetual	NOW
20BL172321	20/08/2009 Perpetual	NOW
20BL172322	20/08/2009 Perpetual	NOW
20BL172323	20/08/2009 Perpetual	NOW
20BL172324	20/08/2009 Perpetual	NOW
20BL172390	22/12/2009 Perpetual	NOW
20BL172391	22/12/2009 Perpetual	NOW
20BL172393	22/12/2009 Perpetual	NOW
20BL172394	22/12/2009 Perpetual	NOW
20BL172396	22/12/2009 Perpetual	NOW
20BL172397	22/12/2009 Perpetual	NOW
20BL172398	22/12/2009 Perpetual	NOW
20BL172399	22/12/2009 Perpetual	NOW

Table 3
Surface Water Licences

Previous Surface Water Licences (Water Act 1912)	Date Issued/ Date Expiry	Statutory Agency/ Reference	WAL Number G - General S - Supplementary H - High Security	Water Access Licences (Water Act, 2000)	Approvals
20SL045342	31/07/2004 30/06/2017	NOW	WAL1005 (G) WAL1313 (S)	20AL201335 20AL203026	20CA201336
20SL045339	31/07/2004 30/06/2017	NOW	WAL1023 (H) WAL1024 (G) WAL1317 (S)	20AL201385 20AL201386 20AL203032	20CA201387
20SL045504	31/07/2004 30/06/2017	NOW	WAL1235 (G)	20AL201915	20CA201916
20SL046409	01/07/2004 12/01/2018	NOW	WAL996 (G)	20AL201304	20CA201305
20SL060818	31/07/2004 30/06/2017	NOW	WAL955 (H) WAL956 (G)	20AL201215 20AL201216	20CA201217
20SL060047	31/07/2004 30/06/2017	NOW	WAL1025 (G) WAL1026 Domestic & stock	20AL201388 20AL201389	20CA201390
20SL044961	31/07/2004 30/06/2017	NOW	WAL1022 (G) - 264 WAL1316 (S) - 10	20AL201381 20AL203031	20CA201382
20SL042634	03/08/2012 02/08/2017	NOW	WAL 17889	20AL207131	20CA207132
20SL023159	01/07/2004 06/11/2018	NOW	WAL759 (G) - 24 WAL1267 (S) - 6	20AL200737 20AL202963	20CA200738
20SL038148	31/07/2004 30/06/2017	NOW	WAL1027 (G) - 63 WAL1318 (S) - 23.8	20AL201391 20AL203033	20CA201392
20SL051598	08/09/2009 14/03/2014	NOW	NA	-	20WA209200
20SL038778	31/07/2004 30/06/2017	NOW	WAL1021 (G)	20AL201379	20CA201380
20SL035586	01/07/2004 01/03/2018	NOW	WAL9048 (G) - 135 WAL9055 (S) - 35	20AL200228 20AL202899	20CA200229
20SL036681	0/07/2004 20/03/2019	NOW	WAL 13386 (G) 270 WAL 13336 (S) 18.7	20AL201476 20AL203049	20CA201477
20SL060087	01/07/2004 30/06/2017	NOW	WAL 13363	20AL200597	20WA200598
20SL026514	31/07/2004 30/06/2017	NOW	WAL506 (G)	20AL200119	20CA200120
20SL048970	31/07/2004 30/06/2017	NOW	WAL838 (H)	20AL200951	20WA200952
	01/07/2004 30/06/2017	NOW	WAL14605 (S) WAL14607 (G) WAL14609 (H)	20AL203509 20AL203511 20AL203531	20WA201572

Table 4
Summary of Minor Amendments to Development Consent Conditions during Care & Maintenance

Approval Document Reference	Development Consent No. Reference	Existing Requirement	Requirement During Care & Maintenance
Complaints protocol	6.5a (iv)	Complaints line is required to be manned 7 days week, 24hrs day.	A pager system will be responded to on week days.
Complaints protocol & Environmental Management Strategy	10.2a (ii)	6 monthly complaints report to DoP, MSC, UHSC, EPA, DPI-MR and CCC.	Complaints to be included in Annual Environmental Management Report and Community Consultative Committee Meetings only.
Community Consultation	10.1 (i)	The DCCC meet 6 times per year (every two months).	Three DCCC meetings per annum.
Community Consultation	10.1 (ii)1	Two company representatives required on the DCCC.	One company representative on the DCCC.
Development Consent	10.2b	Required to have two company persons available as EPA contact 24hrs day.	One person as the EPA person contact. This person will be available via a pager system.
Development Consent & Environmental Management Strategy	32.f	Review of Environmental Management Plans is required every 5 years (2007 due).	Continue to operate under existing mgt plans without reviewing. Propose to modify these Mgt Plans should any activities recommence.
Development Consent	3.3 (l)	Surface subsidence monitoring is required up to 3 years following mining.	Reduce this period due to limited impacts observed on the surface from subsidence to-date.
Development Consent	8.1a	An Independent compliance audit is required every 3 years (due 2007).	Audit to occur, scope to be re-defined (e.g. cannot audit against EIS predictions etc).
Development Consent	3.2d	Preparation of the Water Mgt Plan and Soil Stripping Mgt Plan is required prior to construction of the REA.	As the REA is not being constructed and there are no further construction activities proposed, a Soil Stripping Management Plan is not necessary. The Water Management Plan will be prepared prior to Care & Maintenance.
Development Consent	2.1 (e)	A Mine Closure Plan is required to be prepared 2 years prior to completion of mining, in consult with DoP, DPI-MR, DNR, MSC, UHSC & approved by DoP and DPI-MR.	Decision and process to be managed through MOP.
Environmental Management Strategy & Dust Management Plan	6.1b (iii)	Required to report on a quarterly basis the results of air quality monitoring data to DoP and MSC.	Report on annual basis via the AEMR.
Lighting and Landscape Management Plan		Monitoring of tree screens is required 2 - 3 times per year.	Monitor once per year.
Waste Management Plan		A Waste audit is required to be undertaken annually.	Waste to be reported via the AEMR.
Noise Management Plan	6.4.1b	Attended noise surveys are to be undertaken on a quarterly basis.	DP&I advised that noise monitoring could be suspended as from 10/05/12 .
REA Surveillance Program		Extensive monitoring requirements for the current REA (e.g. weekly thermocouples).	To be managed through the MOP process with DRE.

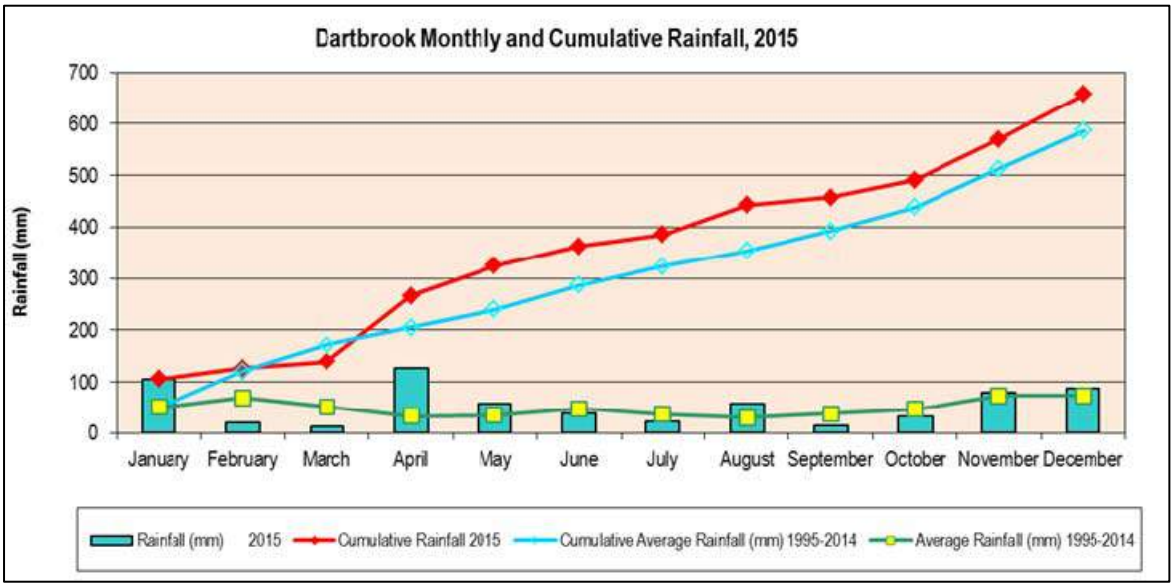
Meteorological Summary

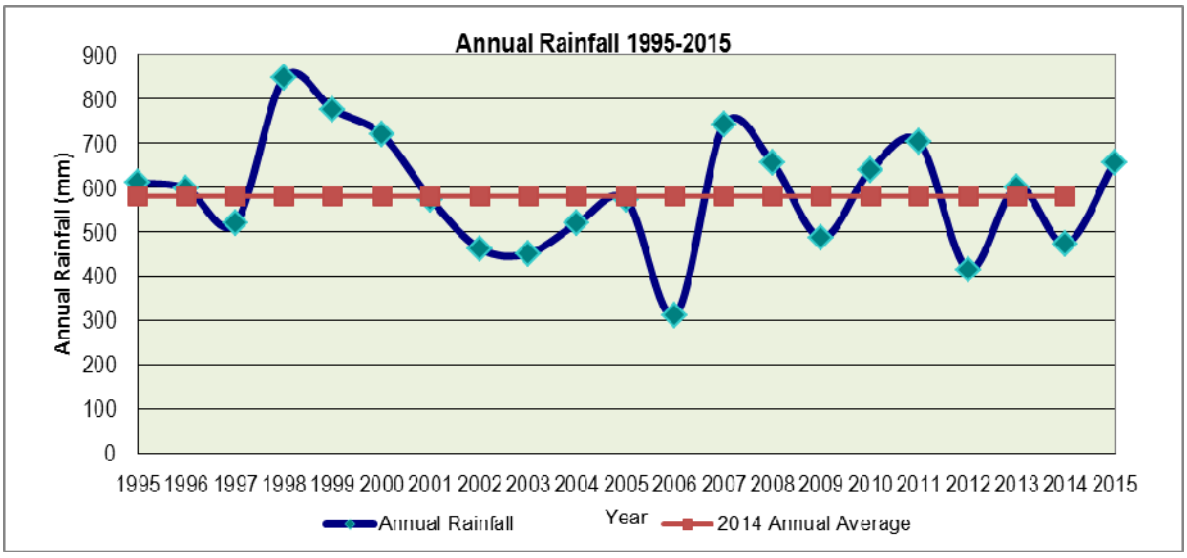
Appendix

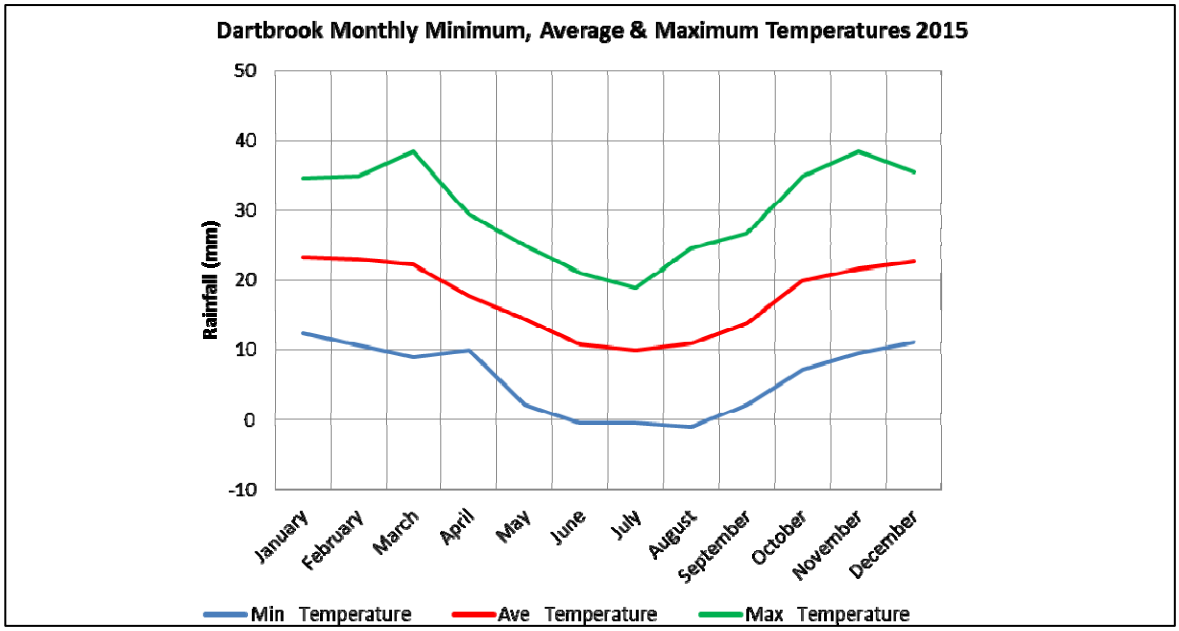
C

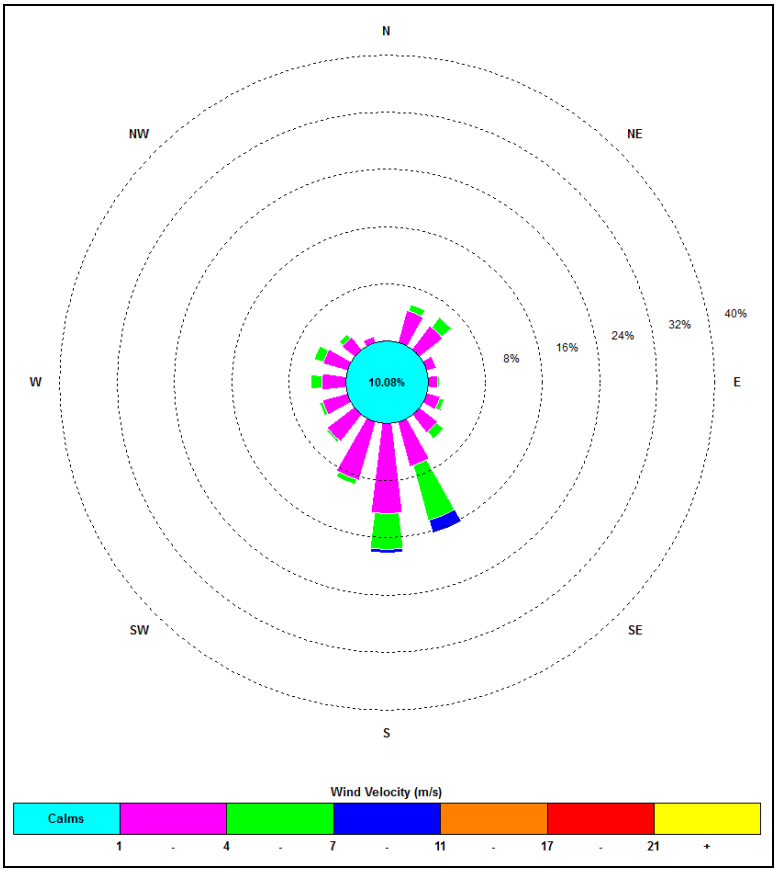
AngloAmerican

Hansen Bailey
ENVIRONMENTAL CONSULTANTS

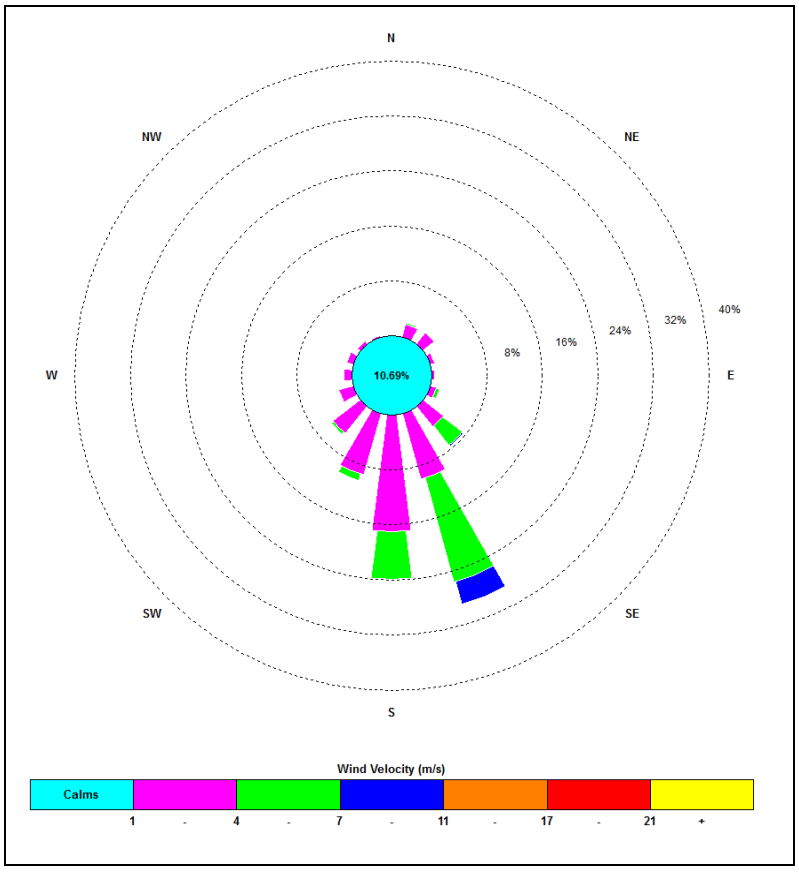

Dartbrook Monthly and Cumulative Rainfall, 2015
Rainfall (mm)
700
600
500
400
300
200
100
0
January
February
March
April
May
June
July
August
September
October
November
December
Rainfall (mm)
2015
Cumulative Rainfall 2015
Cumulative Average Rainfall (mm) 1995-2014
Average Rainfall (mm) 1995-2014


Annual Rainfall 1995-2015
Annual Rainfall (mm)
900
800
700
600
500
400
300
200
100
0
1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Annual Rainfall
Year
2014 Annual Average

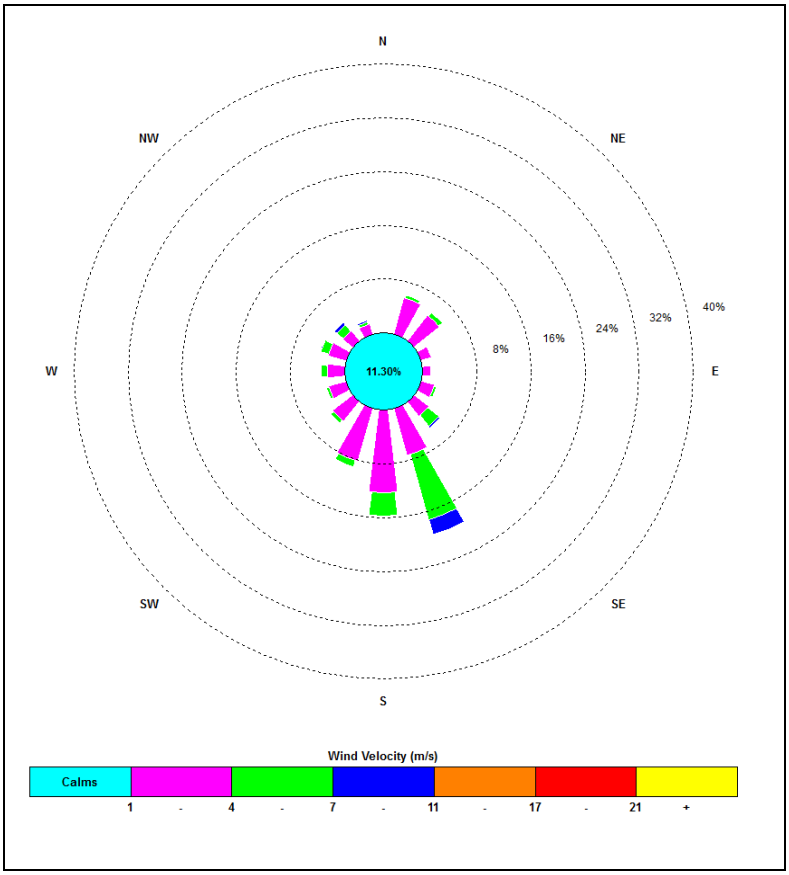

Dartbrook Monthly Minimum, Average & Maximum Temperatures 2015
Rainfall (mm)
50
40
30
20
10
0
-10
January
February
March
April
May
June
July
August
September
October
November
December
Min Temperature
Ave Temperature
Max Temperature



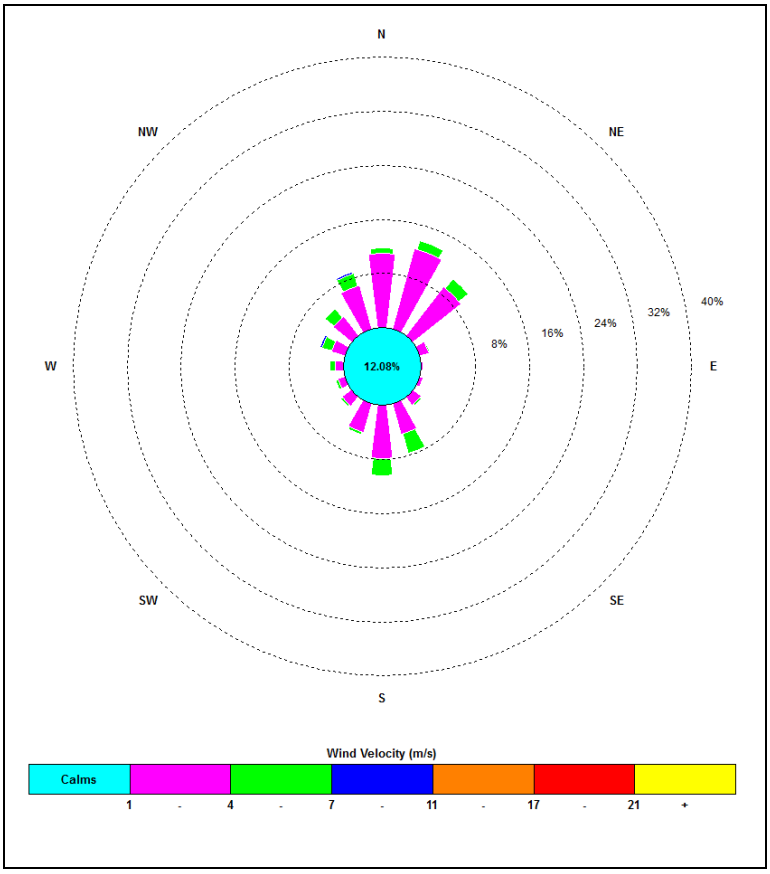
January 2015



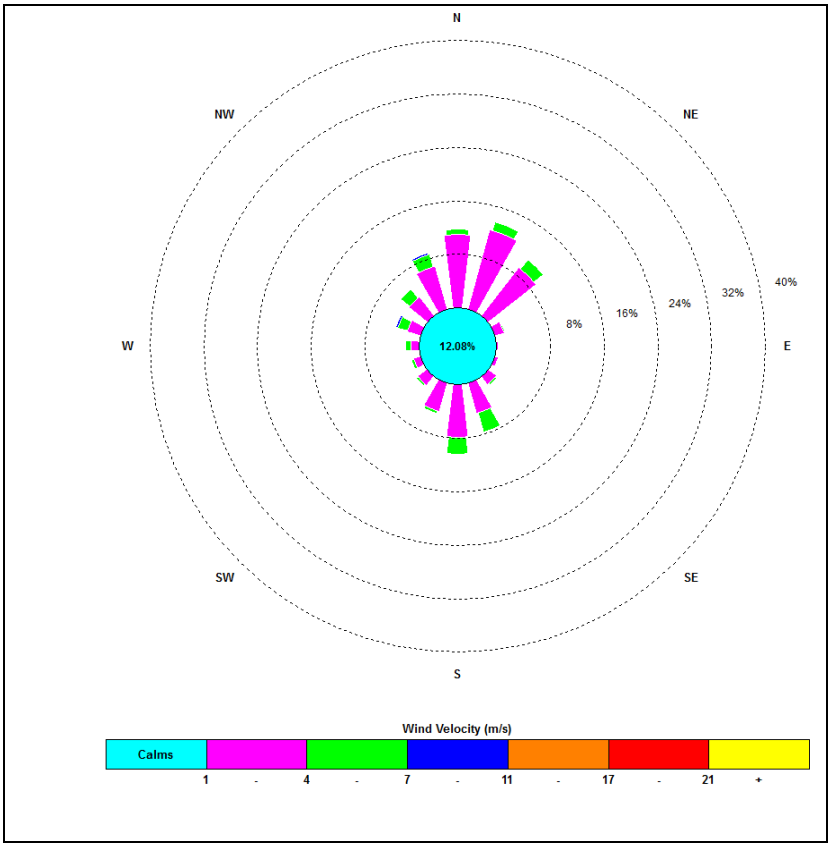
February 2015


N
NE
E
SE
S
SW
W
NW
8%
16%
24%
32%
40%
11.30%
Wind Velocity (m/s)
Calms
1 - 4 - 7 - 11 - 17 - 21 +

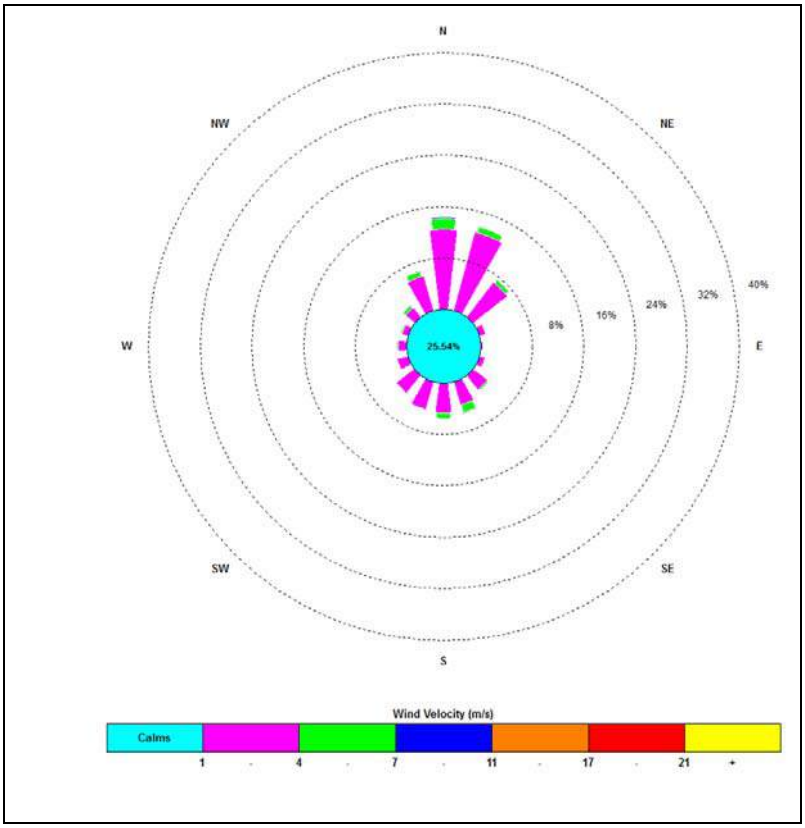
March 2015


N
NE
E
SE
S
SW
W
NW
8%
16%
24%
32%
40%
12.08%
Wind Velocity (m/s)
Calms
1 - 4 - 7 - 11 - 17 - 21 +

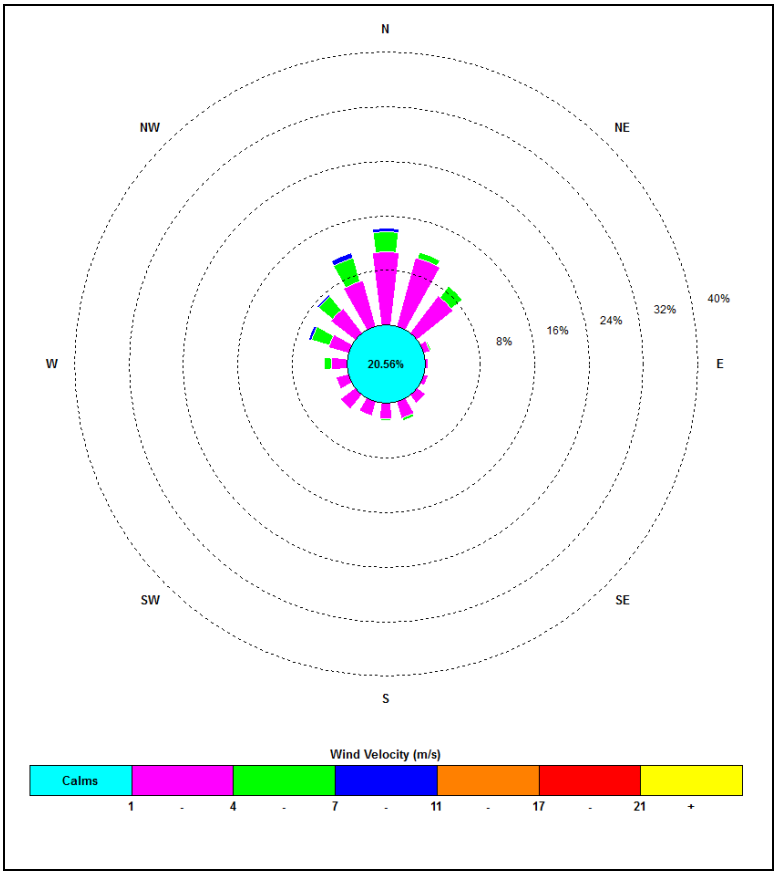
April 2015



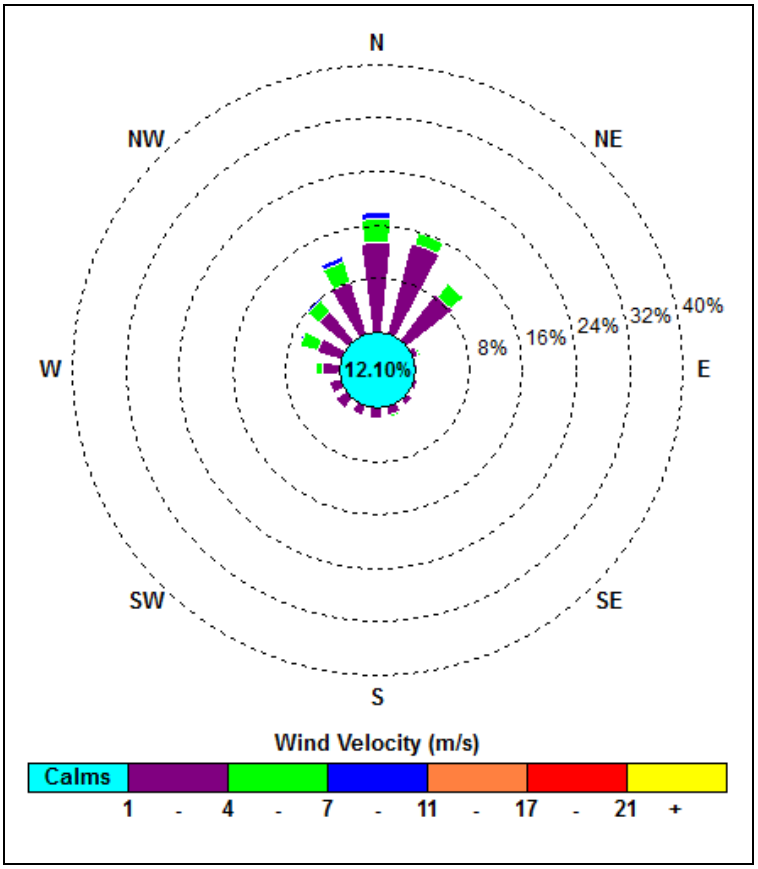
May 2015



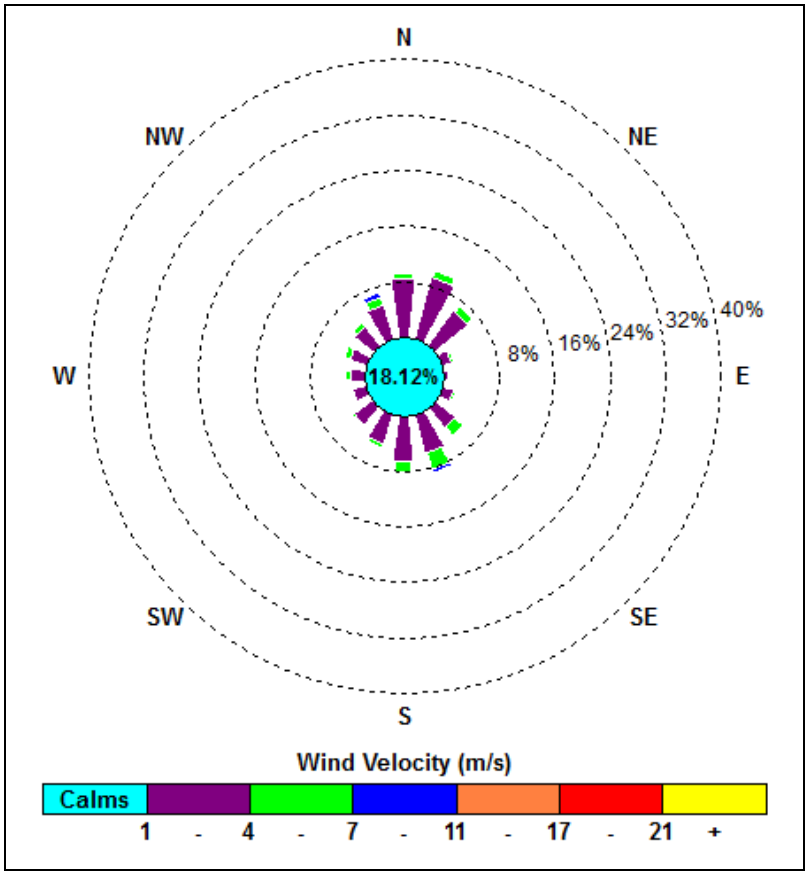
June 2015


N
NW
NE
W
E
SW
SE
S
8%
16%
24%
32%
40%
20.56%
Wind Velocity (m/s)
Calms
1 - 4 - 7 - 11 - 17 - 21 +

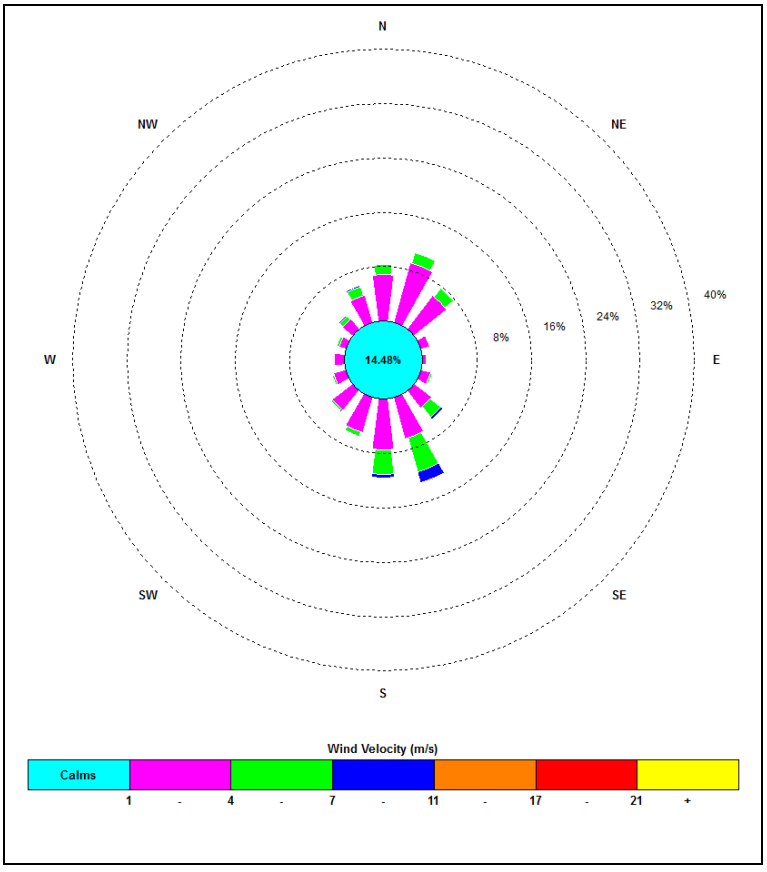
July 2015


N
NW
NE
W
E
SW
SE
S
8%
16%
24%
32%
40%
12.10%
Wind Velocity (m/s)
Calms
1 - 4 - 7 - 11 - 17 - 21 +

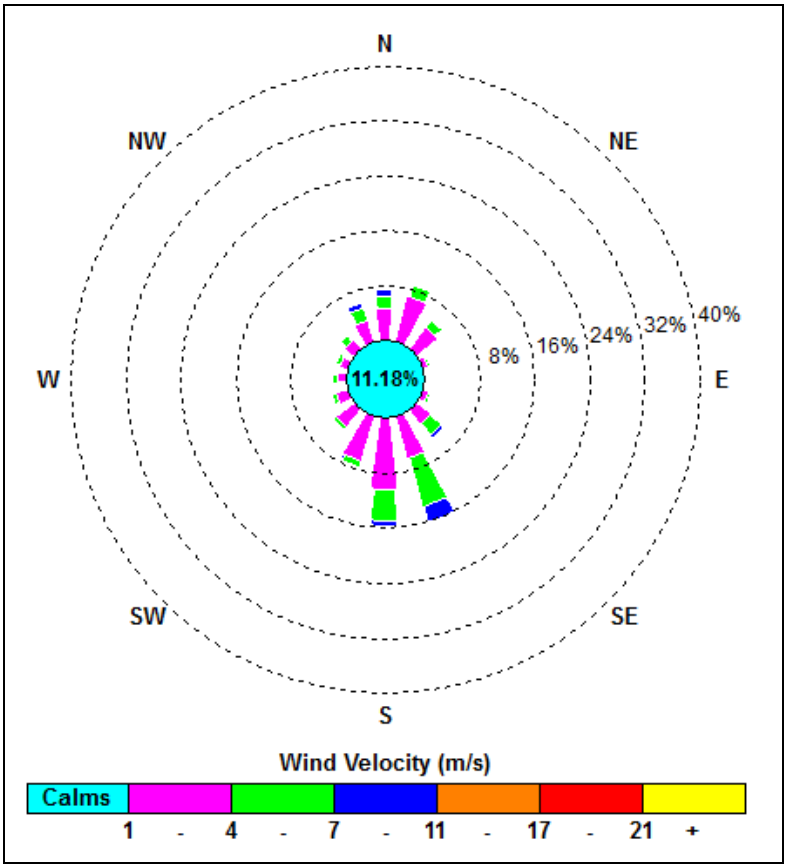
August 2015



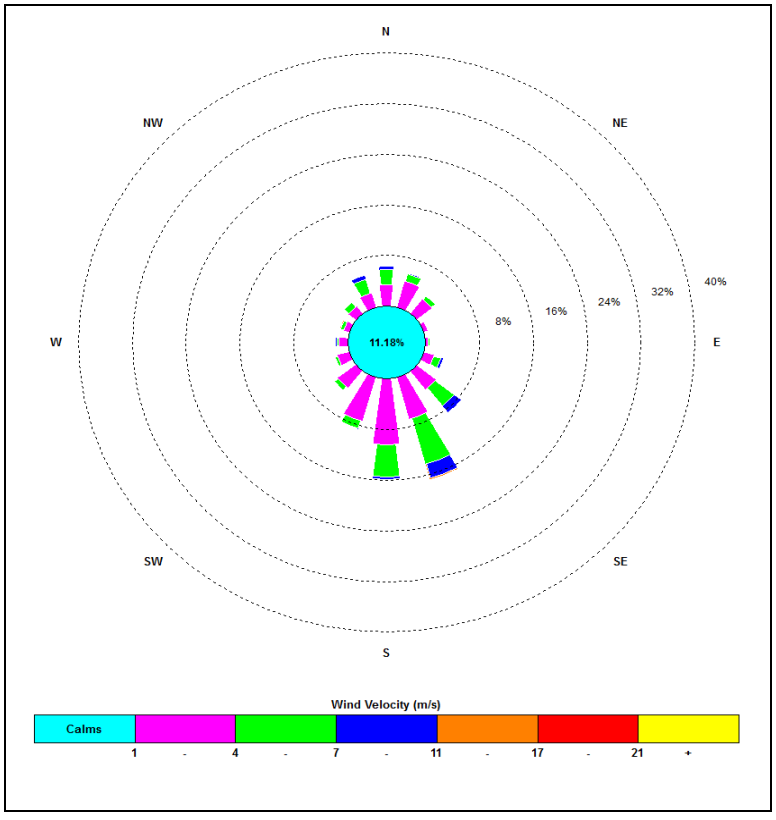
September 2015



October 2015



November 2015



December 2015

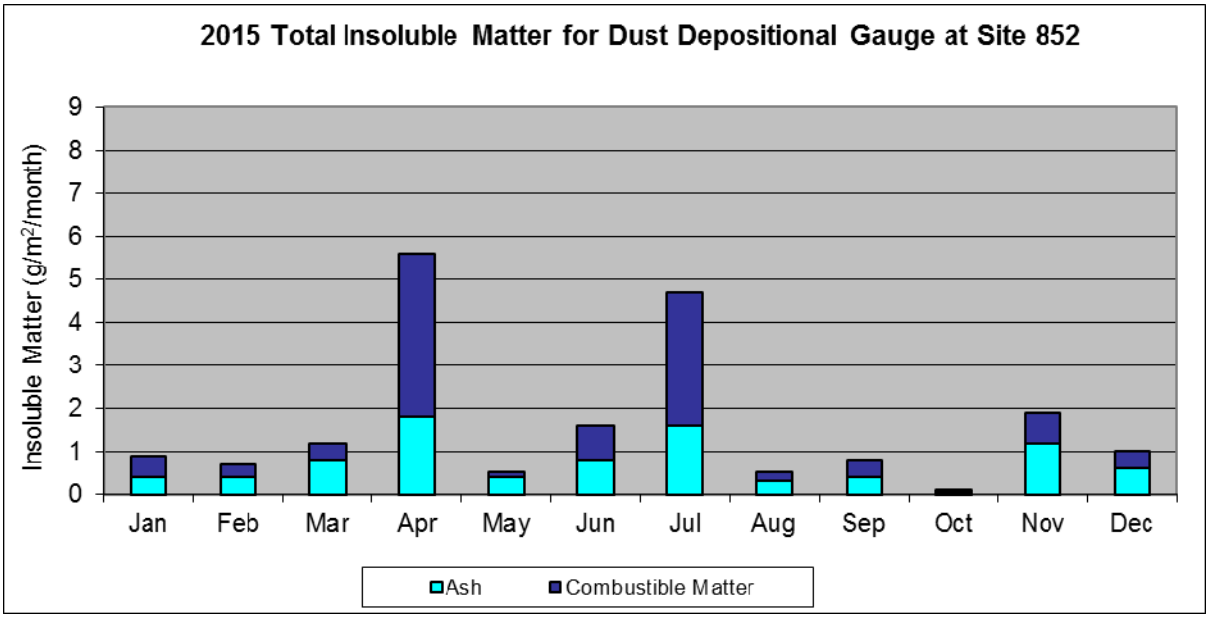
Air Quality Monitoring Summary

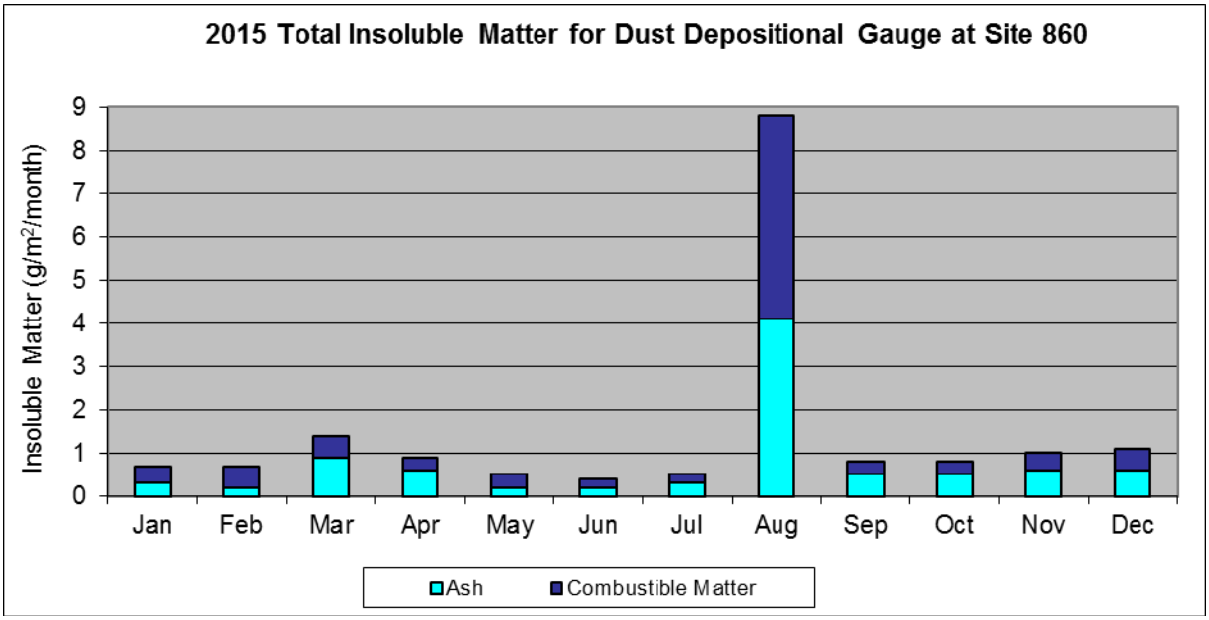
Appendix

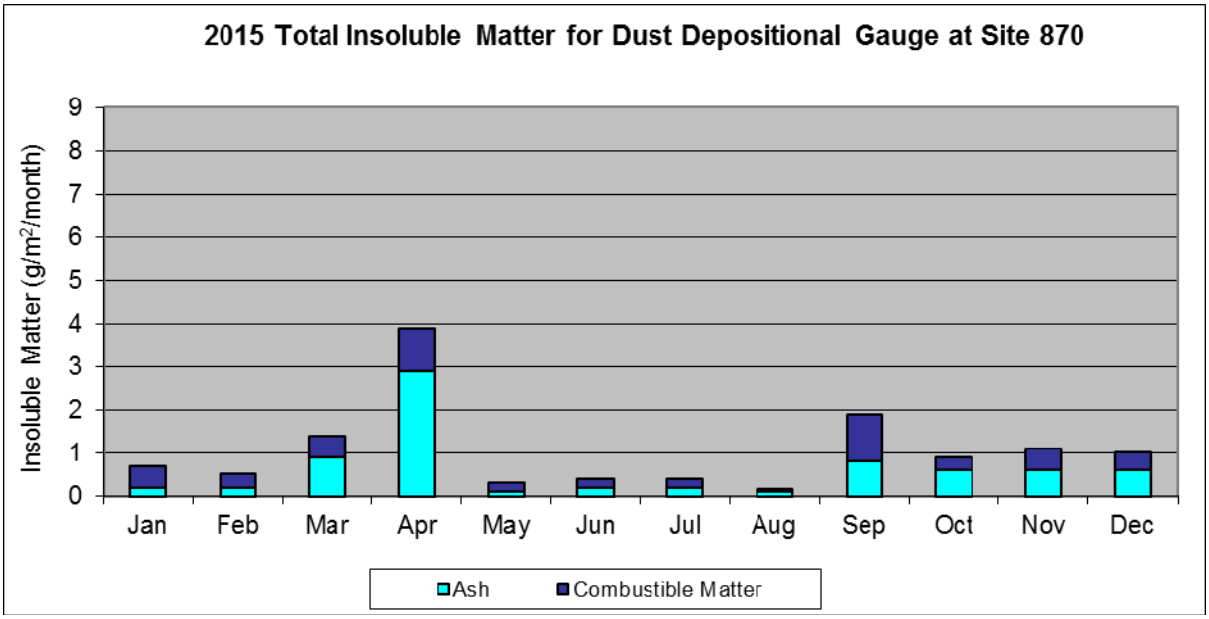
D

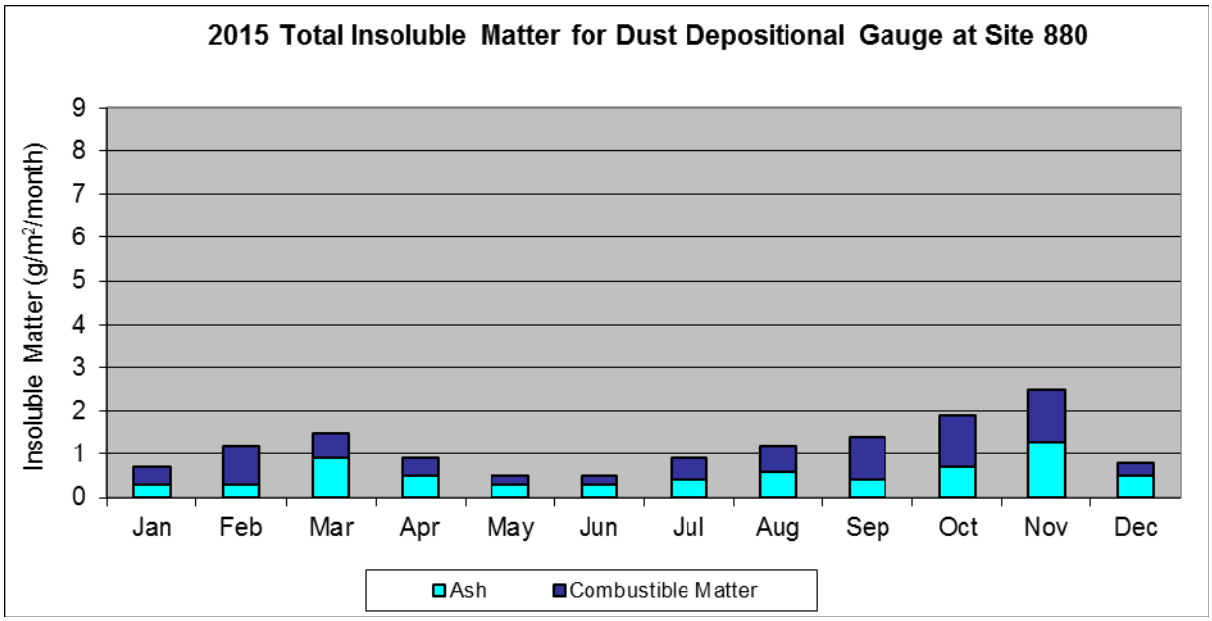
AngloAmerican

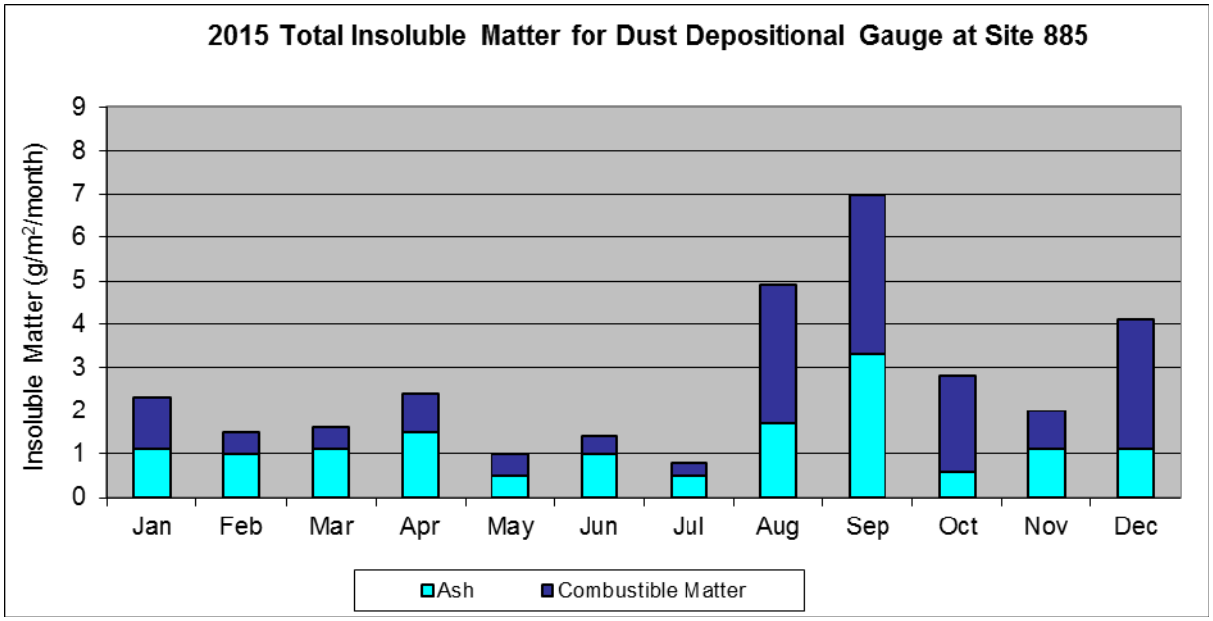
Hansen Bailey
ENVIRONMENTAL CONSULTANTS

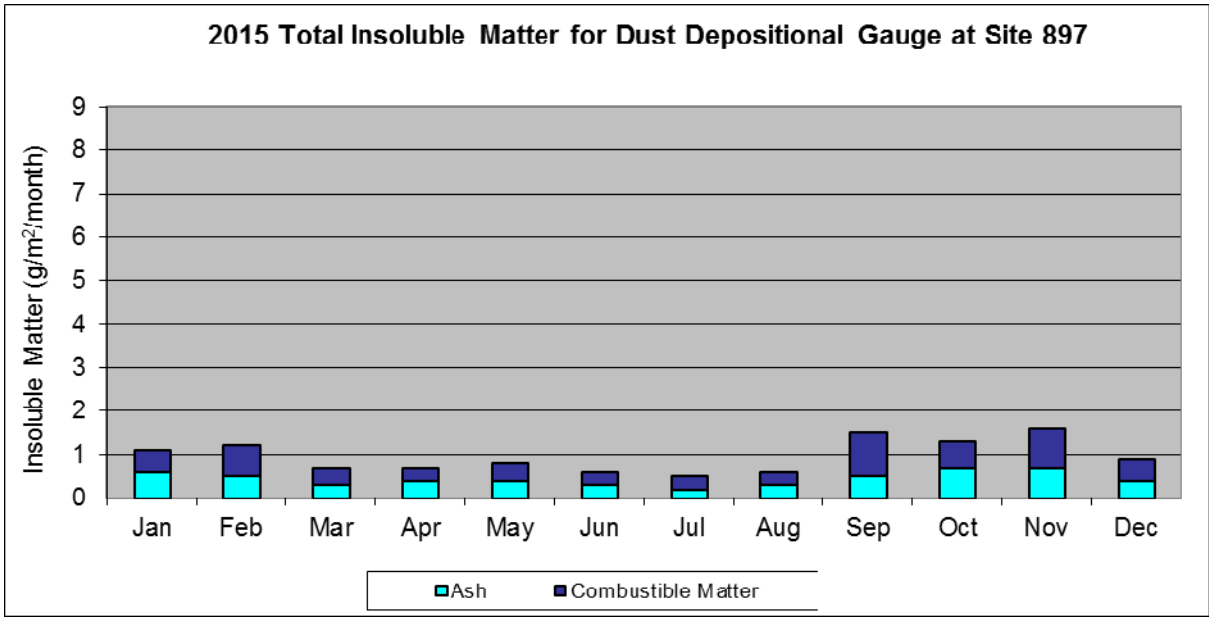

2015 Total Insoluble Matter for Dust Depositional Gauge at Site 852
Insoluble Matter (g/m²/month)
0
1
2
3
4
5
6
7
8
9
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Ash
Combustible Matter

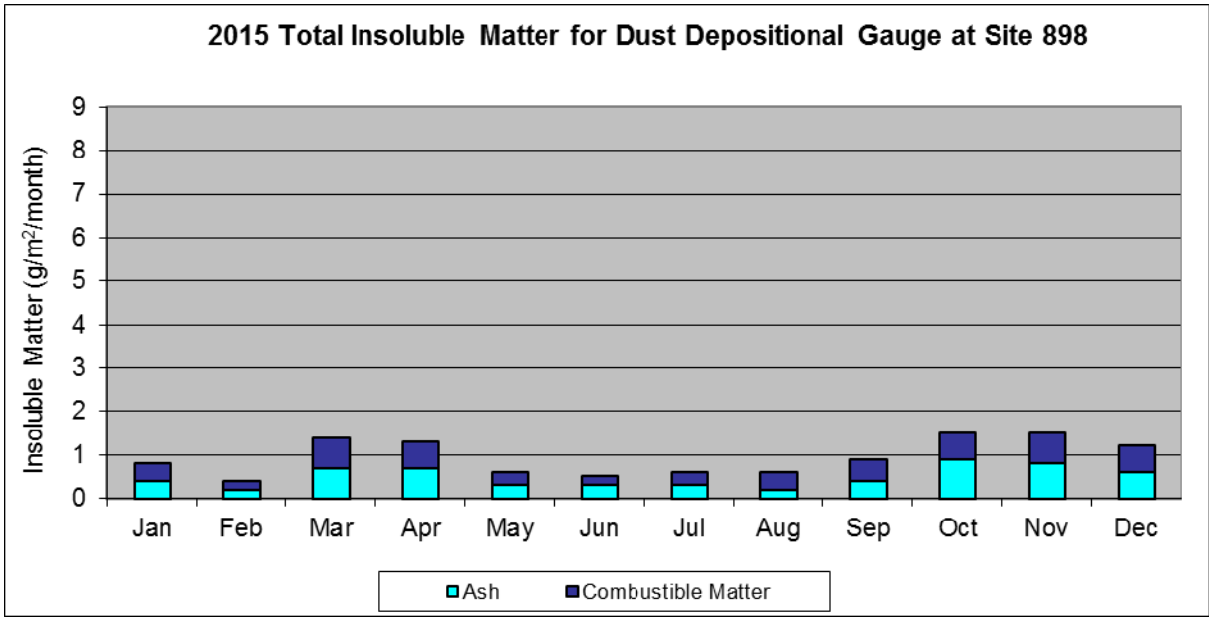

2015 Total Insoluble Matter for Dust Depositional Gauge at Site 860
Insoluble Matter (g/m²/month)
0
1
2
3
4
5
6
7
8
9
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Ash
Combustible Matter

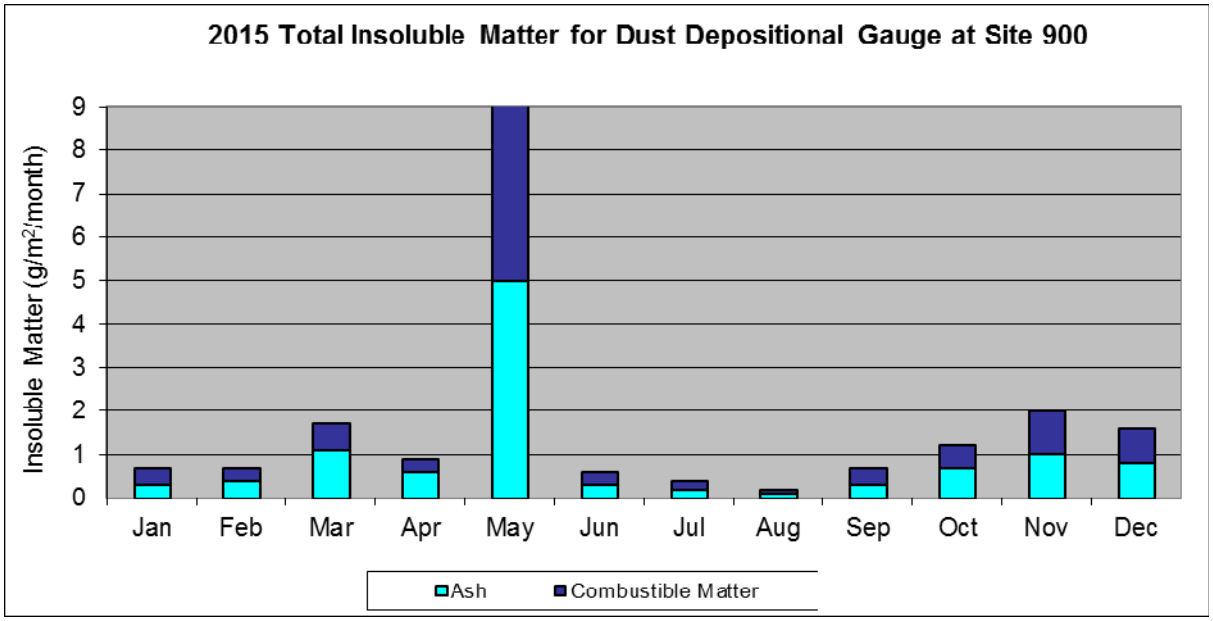

2015 Total Insoluble Matter for Dust Depositional Gauge at Site 870
Insoluble Matter (g/m²/month)
0
1
2
3
4
5
6
7
8
9
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Ash
Combustible Matter

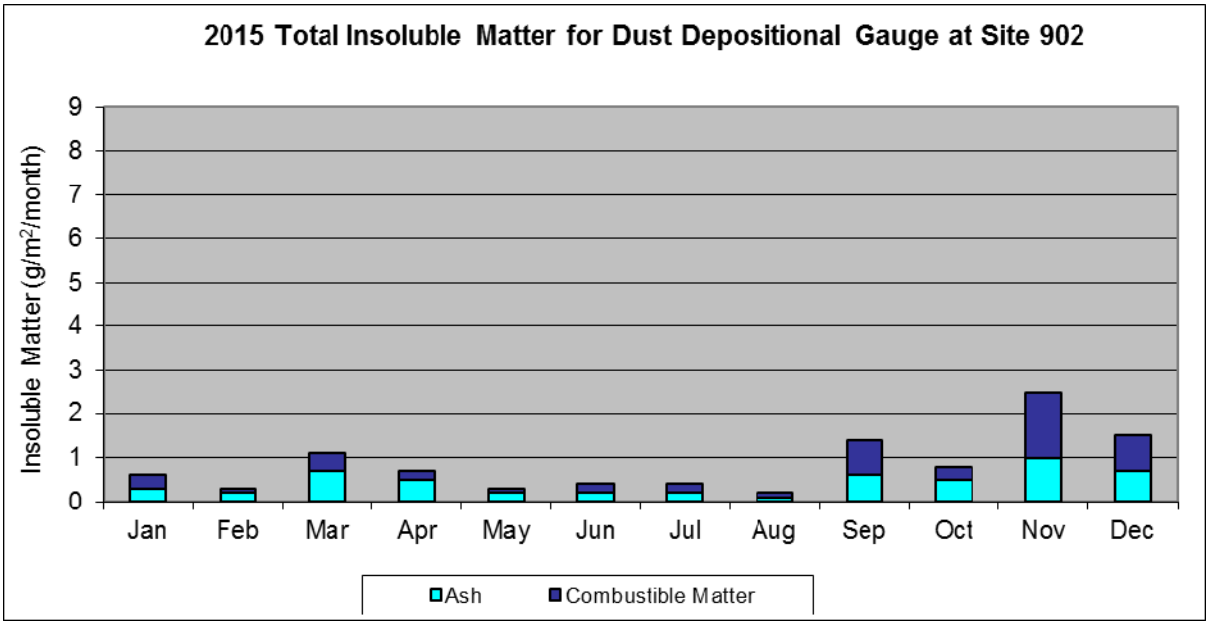

2015 Total Insoluble Matter for Dust Depositional Gauge at Site 880
Insoluble Matter (g/m²/month)
0
1
2
3
4
5
6
7
8
9
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Ash
Combustible Matter

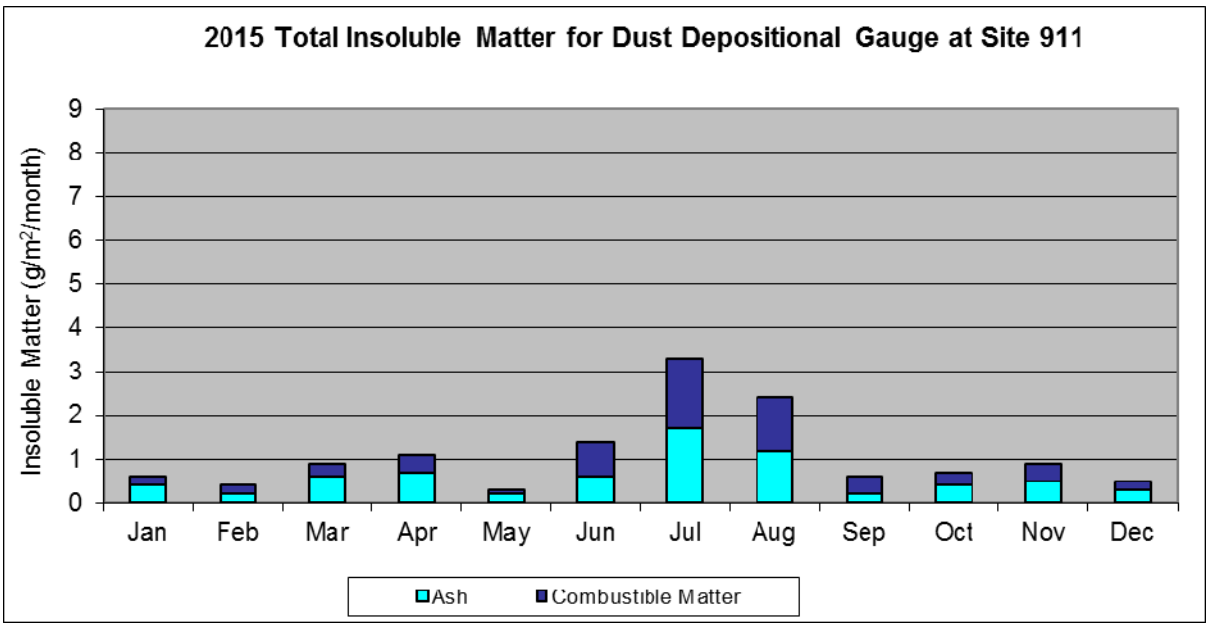

2015 Total Insoluble Matter for Dust Depositional Gauge at Site 885
Insoluble Matter (g/m2/month)
0
1
2
3
4
5
6
7
8
9
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Ash
Combustible Matter

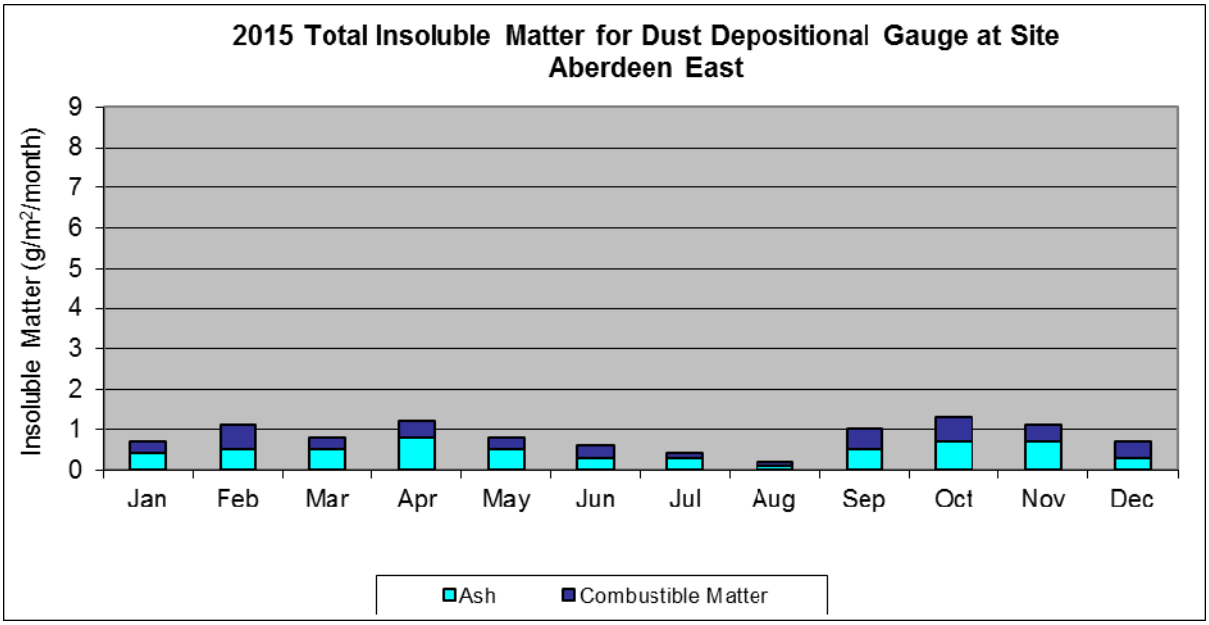

2015 Total Insoluble Matter for Dust Depositional Gauge at Site 897
Insoluble Matter (g/m2/month)
0
1
2
3
4
5
6
7
8
9
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Ash
Combustible Matter

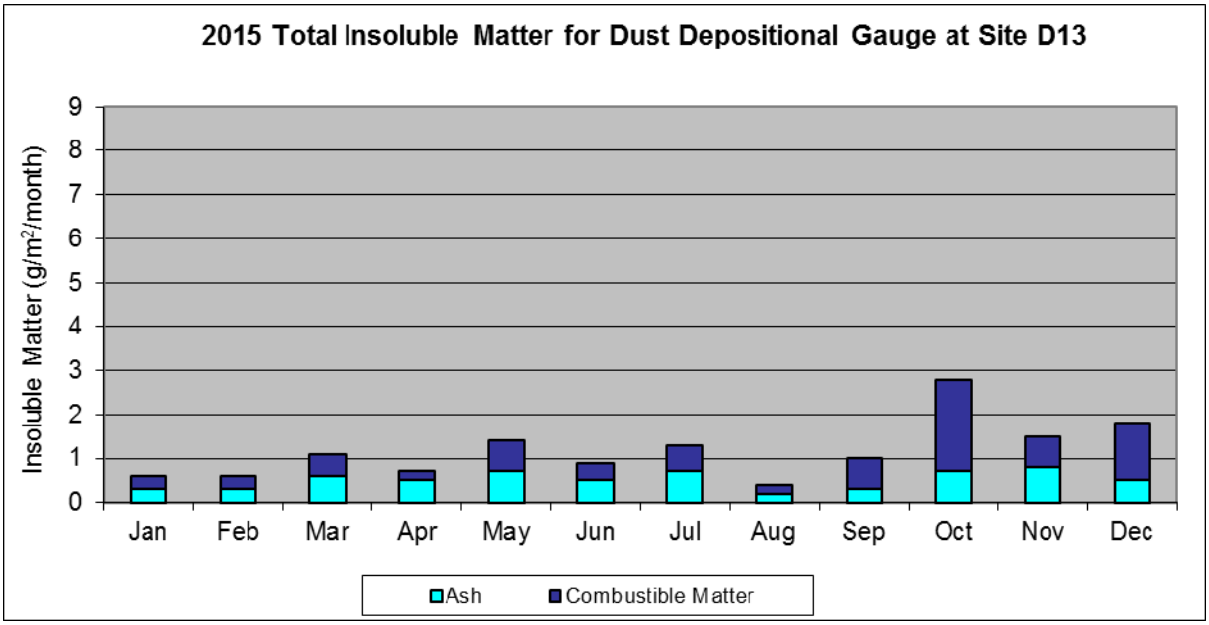

2015 Total Insoluble Matter for Dust Depositional Gauge at Site 898
Insoluble Matter (g/m2/month)
0
1
2
3
4
5
6
7
8
9
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Ash
Combustible Matter

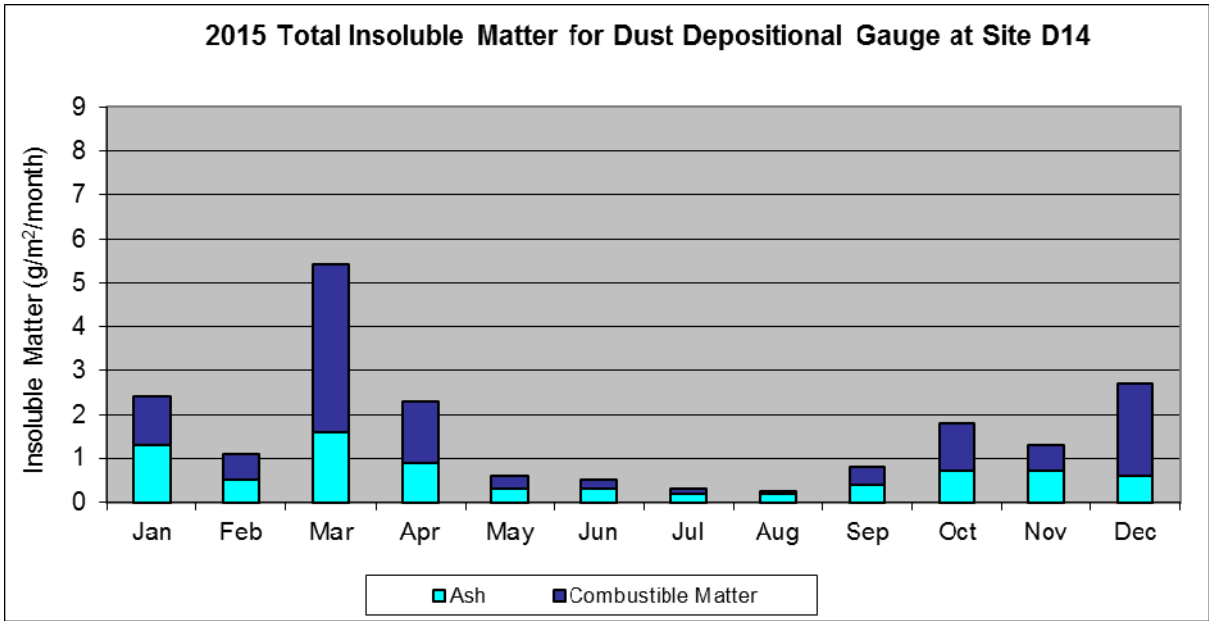

2015 Total Insoluble Matter for Dust Depositional Gauge at Site 900
Insoluble Matter (g/m2/month)
0
1
2
3
4
5
6
7
8
9
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Ash
Combustible Matter

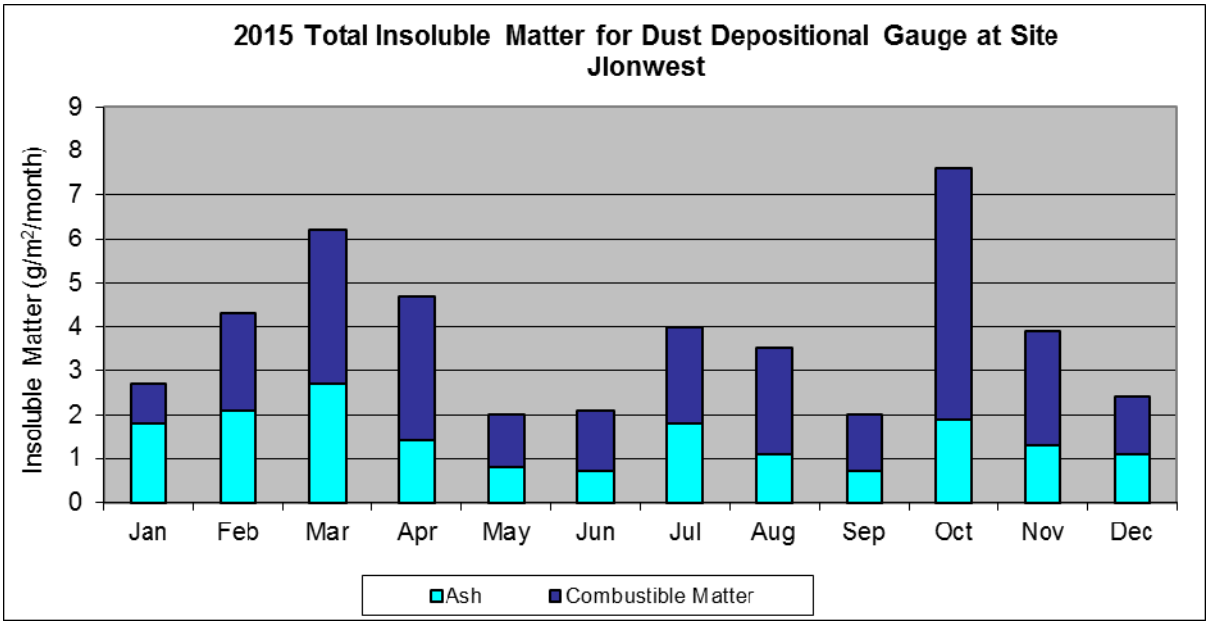

2015 Total Insoluble Matter for Dust Depositional Gauge at Site 902
Insoluble Matter (g/m2/month)
0
1
2
3
4
5
6
7
8
9
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Ash
Combustible Matter

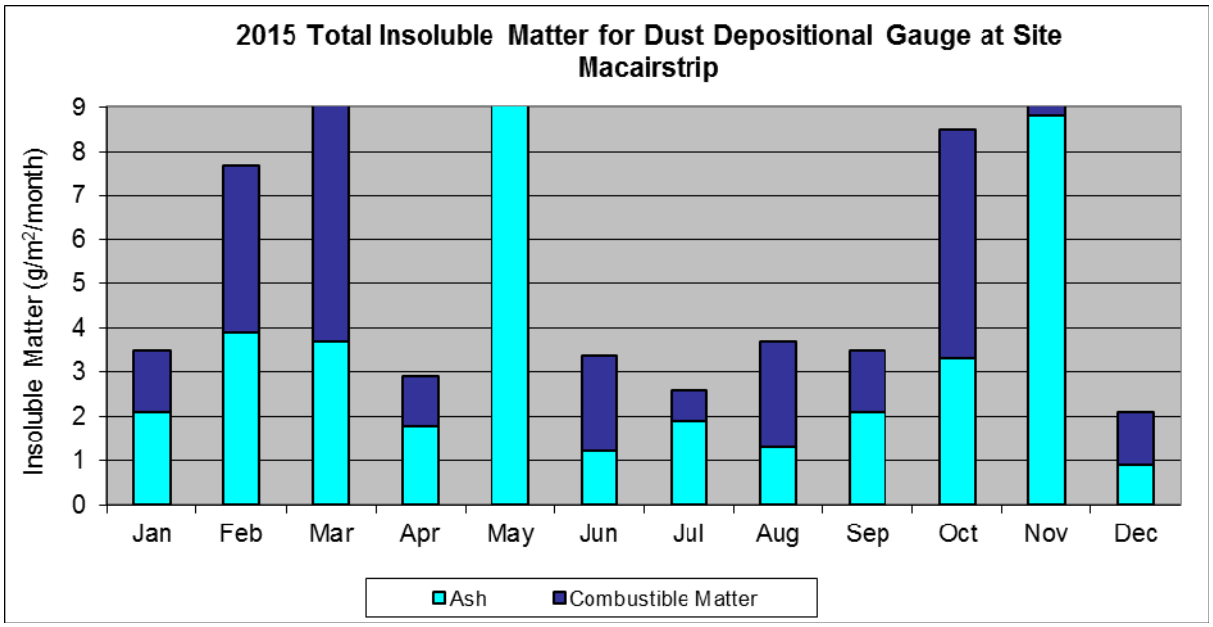

2015 Total Insoluble Matter for Dust Depositional Gauge at Site 911
Insoluble Matter (g/m2/month)
0
1
2
3
4
5
6
7
8
9
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Ash
Combustible Matter

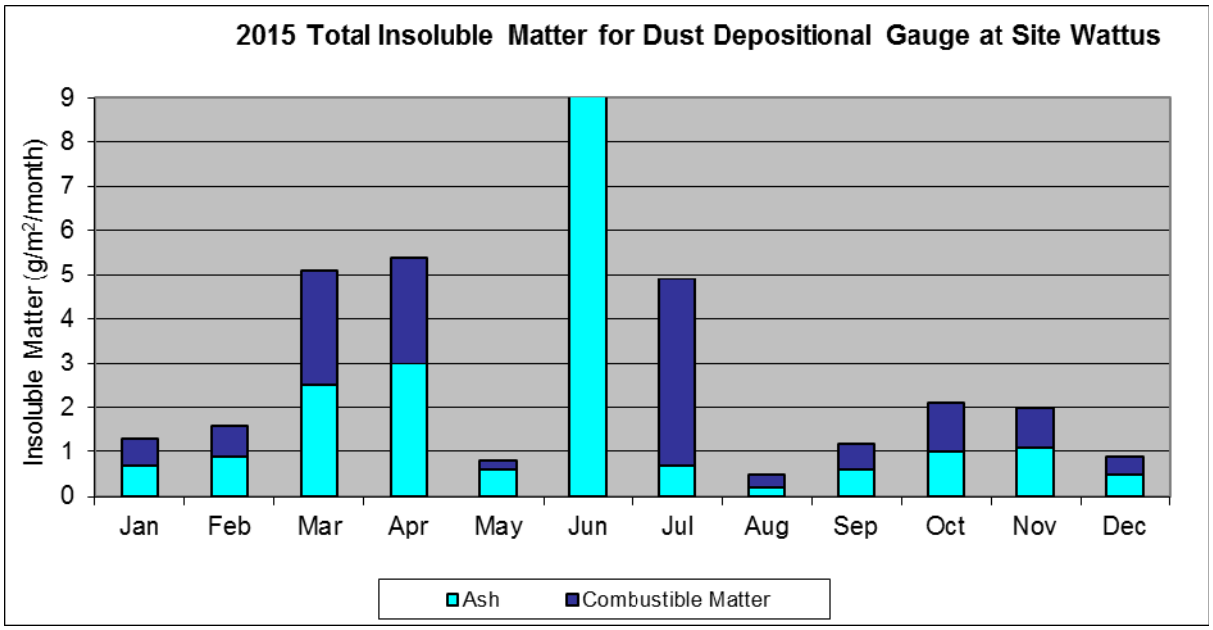

2015 Total Insoluble Matter for Dust Depositional Gauge at Site Aberdeen East
Insoluble Matter (g/m2/month)
0
1
2
3
4
5
6
7
8
9
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Ash
Combustible Matter

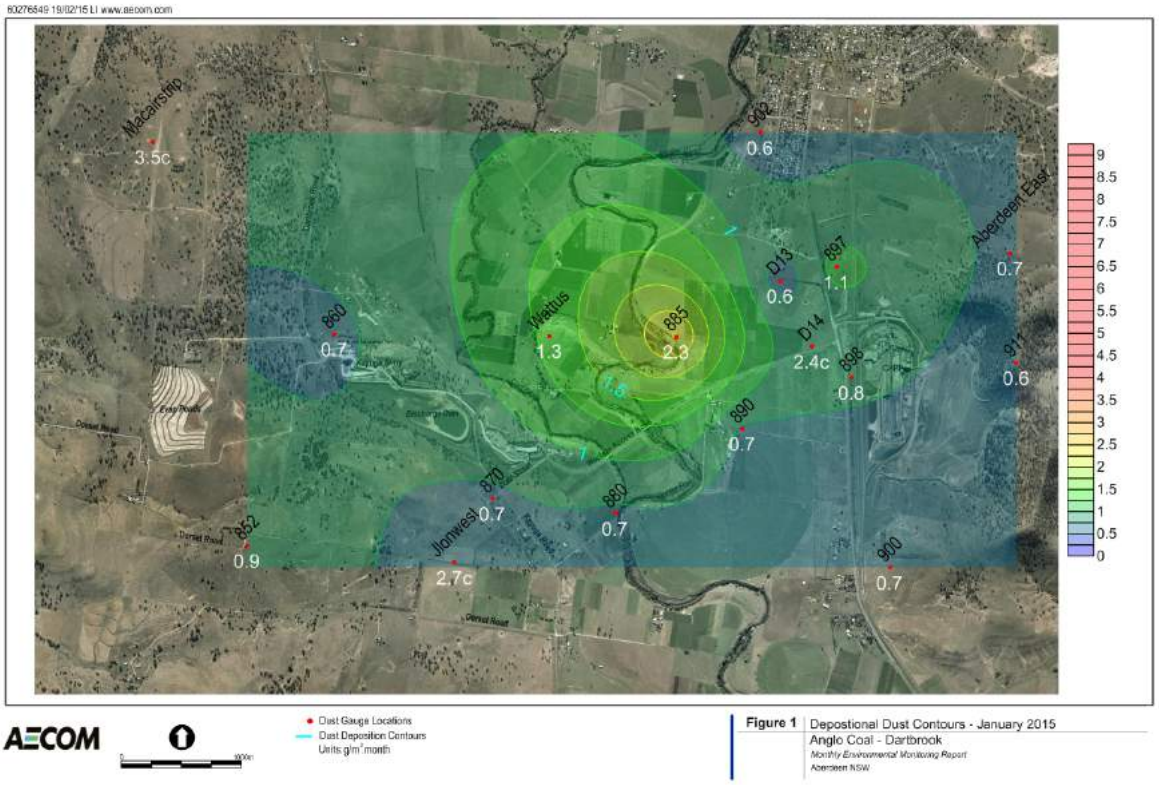

2015 Total Insoluble Matter for Dust Depositional Gauge at Site D13
Insoluble Matter (g/m2/month)
0
1
2
3
4
5
6
7
8
9
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Ash
Combustible Matter

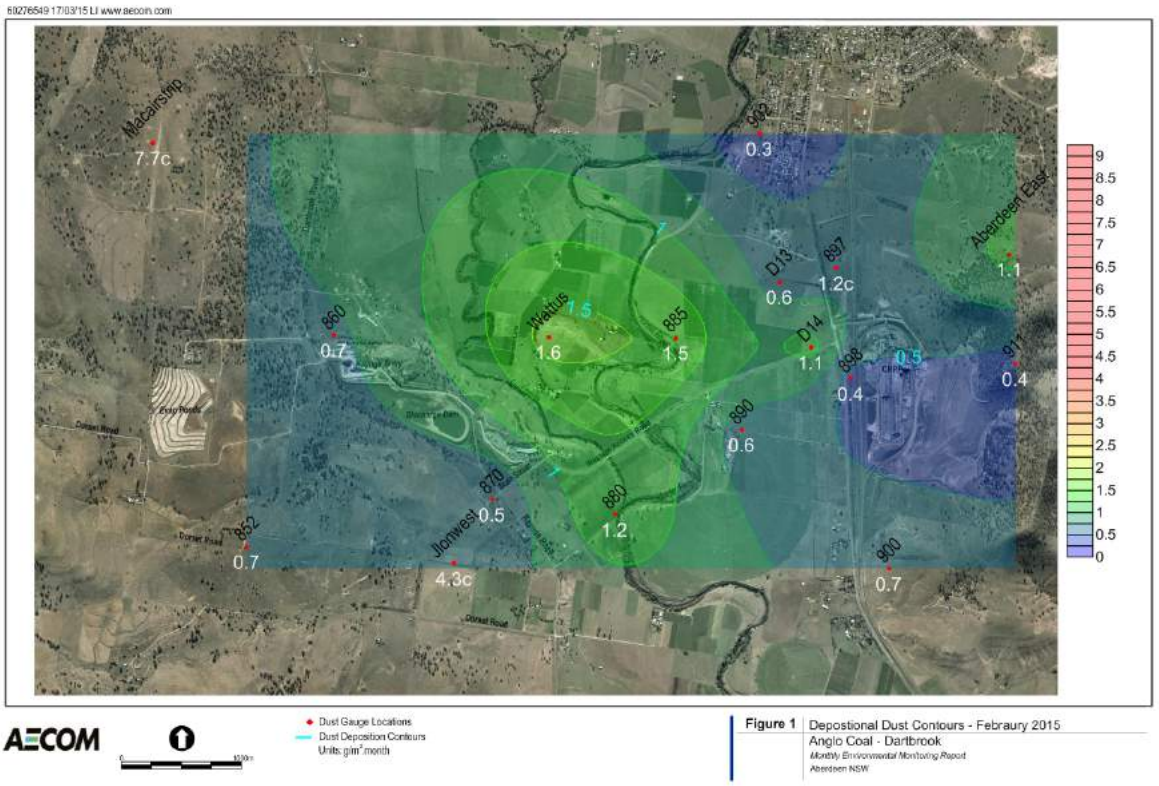

2015 Total Insoluble Matter for Dust Depositional Gauge at Site D14
Insoluble Matter (g/m2/month)
0
1
2
3
4
5
6
7
8
9
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Ash
Combustible Matter

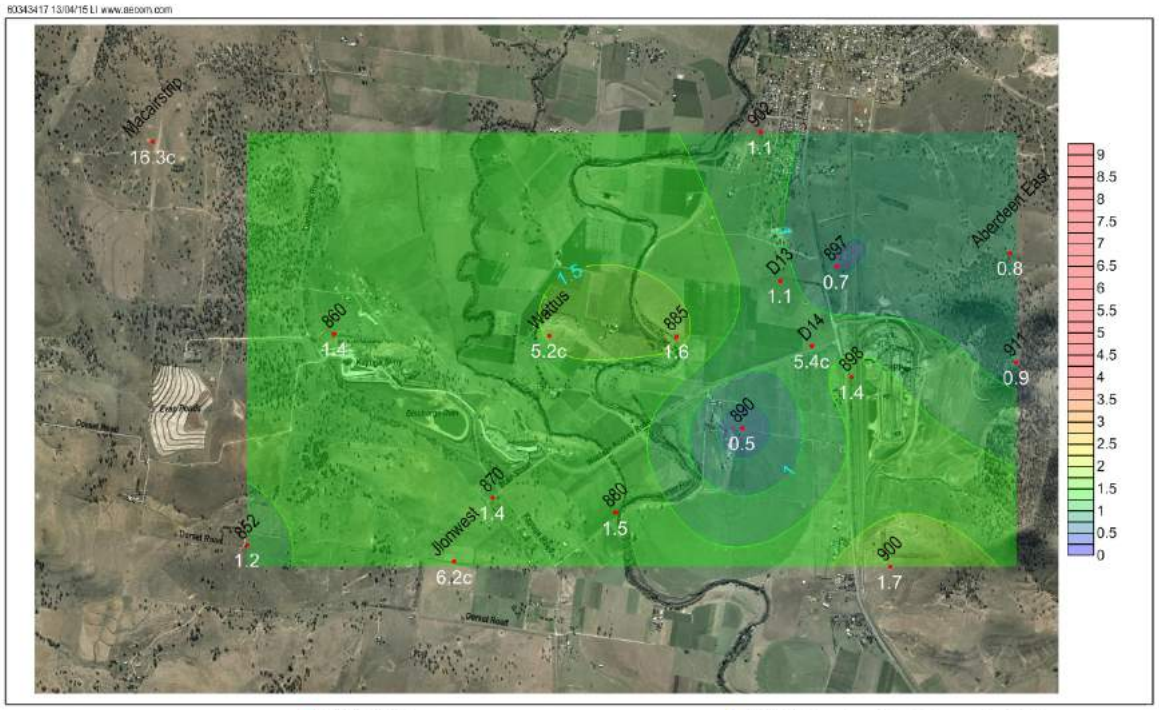

2015 Total Insoluble Matter for Dust Depositional Gauge at Site Jlonwest
Insoluble Matter (g/m2/month)
0
1
2
3
4
5
6
7
8
9
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Ash
Combustible Matter

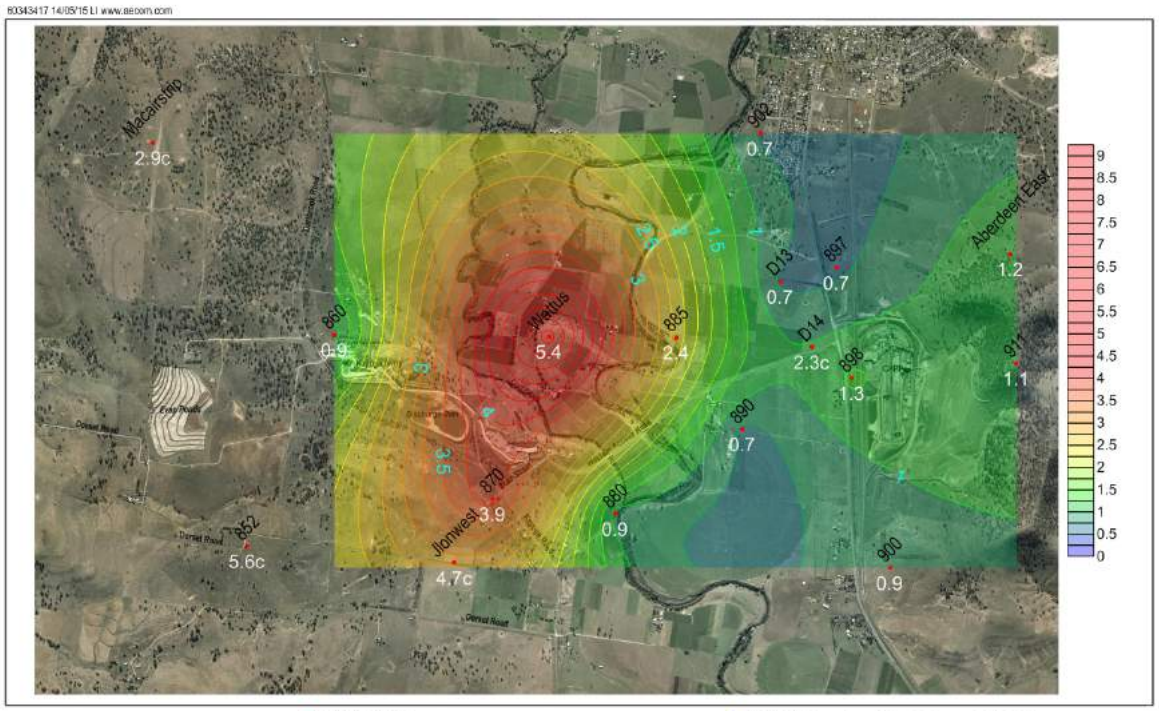

2015 Total Insoluble Matter for Dust Depositional Gauge at Site Macairstrip
Insoluble Matter (g/m2/month)
0
1
2
3
4
5
6
7
8
9
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Ash
Combustible Matter

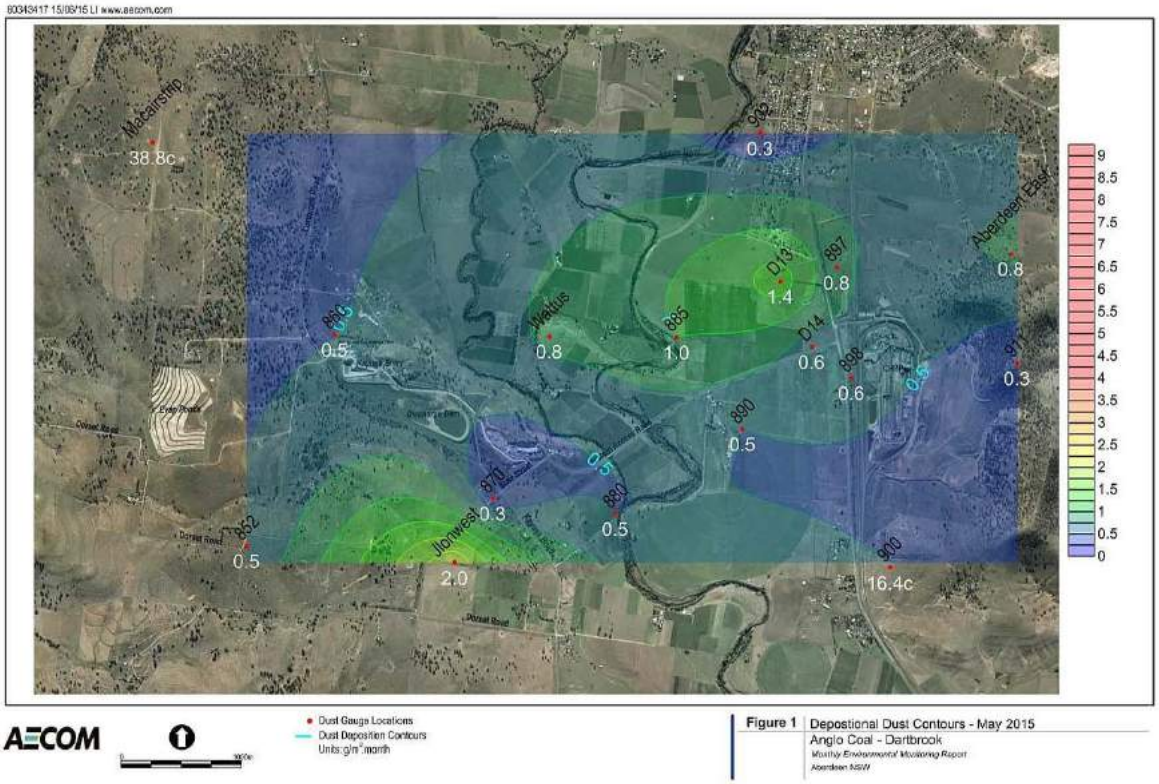

2015 Total Insoluble Matter for Dust Depositional Gauge at Site Wattus
Insoluble Matter (g/m2/month)
0
1
2
3
4
5
6
7
8
9
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Ash
Combustible Matter

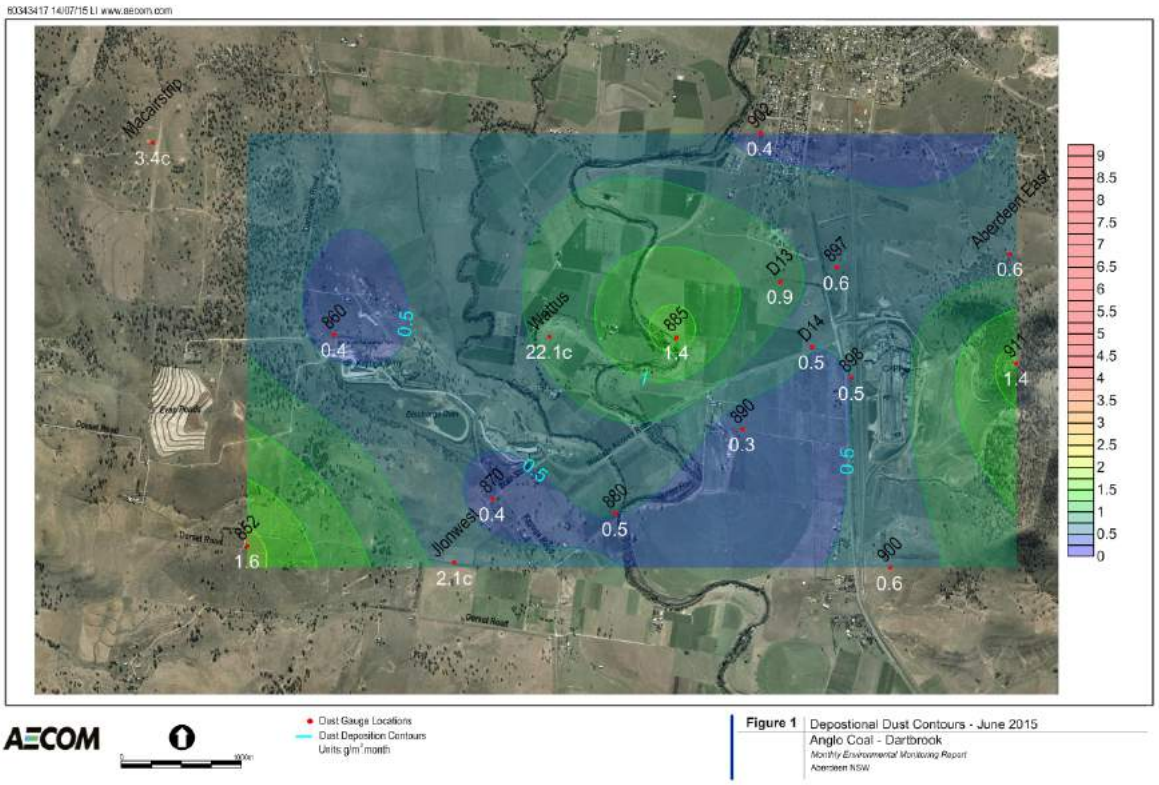

60276549 19/02/15 LI www.aecom.com
Macairstrip
3.5c
862
0.6
Aberdeen East
0.7
D13
0.6
897
1.1
Wrattus
1.3
885
2.3
D14
2.4c
898
0.8
911
0.6
860
0.7
890
0.7
870
0.7
880
0.7
852
0.9
Jlonwest
2.7c
900
0.7
9
8.5
8
7.5
7
6.5
6
5.5
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
AECOM
Dust Gauge Locations
Dust Deposition Contours
Units: g/m²/month
Figure 1
Depostional Dust Contours - January 2015
Anglo Coal - Dartbrook
Monthly Environmental Monitoring Report
Aberdeen NSW


60276549 17/03/15 LI www.aecom.com
Macairstrip
7.7c
862
0.3
Aberdeen East
1.1
D13
0.6
887
1.2c
Wrattus
1.6
1.5
885
1.5
D14
1.1
898
0.4
0.5
911
0.4
860
0.7
890
0.6
870
0.5
880
1.2
852
0.7
Jlonwest
4.3c
900
0.7
9
8.5
8
7.5
7
6.5
6
5.5
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
AECOM
Dust Gauge Locations
Dust Deposition Contours
Units: g/m²/month
Figure 1
Depostional Dust Contours - Febraury 2015
Anglo Coal - Dartbrook
Monthly Environmental Monitoring Report
Aberdeen NSW


60343417 13/04/15 LI www.aecom.com
Macairstrip
16.3c
902
1.1
Aberdeen East
0.8
D13
1.1
897
0.7
D14
5.4c
898
1.4
911
0.9
860
1.4
Wattus
5.2c
885
1.6
890
0.5
870
1.4
880
1.5
Jlonwest
6.2c
852
1.2
900
1.7
9
8.5
8
7.5
7
6.5
6
5.5
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
AECOM
Dust Gauge Locations
Dust Deposition Contours
Units g/m²/month
Figure 1
Depostional Dust Contours - March 2015
Anglo Coal - Dartbrook
Monthly Environmental Monitoring Report
Aberdeen NSW


60343417 14/05/15 LI www.aecom.com
Macairstrip
2.9c
902
0.7
Aberdeen East
1.2
D13
0.7
897
0.7
D14
2.3c
898
1.3
911
1.1
860
0.9
Wattus
5.4
885
2.4
890
0.7
870
3.9
880
0.9
Jlonwest
4.7c
852
5.6c
900
0.9
9
8.5
8
7.5
7
6.5
6
5.5
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
AECOM
Dust Gauge Locations
Dust Deposition Contours
Units g/m²/month
Figure 1
Depostional Dust Contours - April 2015
Anglo Coal - Dartbrook
Monthly Environmental Monitoring Report
Aberdeen NSW


60343417 15/05/15 LI www.aecom.com
Macarsnip
38.8c
902
0.3
Aberdeen East
0.8
D13
1.4
897
0.8
Wiatlus
0.8
885
1.0
D14
0.6
898
0.6
917
0.3
890
0.5
890
0.5
870
0.3
880
0.5
852
0.5
Jlonwest
2.0
900
16.4c
Dorset Road
Dust Gauge Locations
Dust Deposition Contours
Units: g/m²/month
AECOM
Figure 1
Depostional Dust Contours - May 2015
Anglo Coal - Dartbrook
Monthly Environmental Monitoring Report
Aberdeen NSW


60343417 14/07/15 LI www.aecom.com
Macarsnip
3.4c
902
0.4
Aberdeen East
0.6
D13
0.9
897
0.6
Wiatlus
22.1c
885
1.4
D14
0.5
898
0.5
917
1.4
860
0.4
890
0.3
870
0.4
880
0.5
852
1.6
Jlonwest
2.1c
900
0.6
Dorset Road
Dust Gauge Locations
Dust Deposition Contours
Units: g/m²/month
AECOM
Figure 1
Depostional Dust Contours - June 2015
Anglo Coal - Dartbrook
Monthly Environmental Monitoring Report
Aberdeen NSW

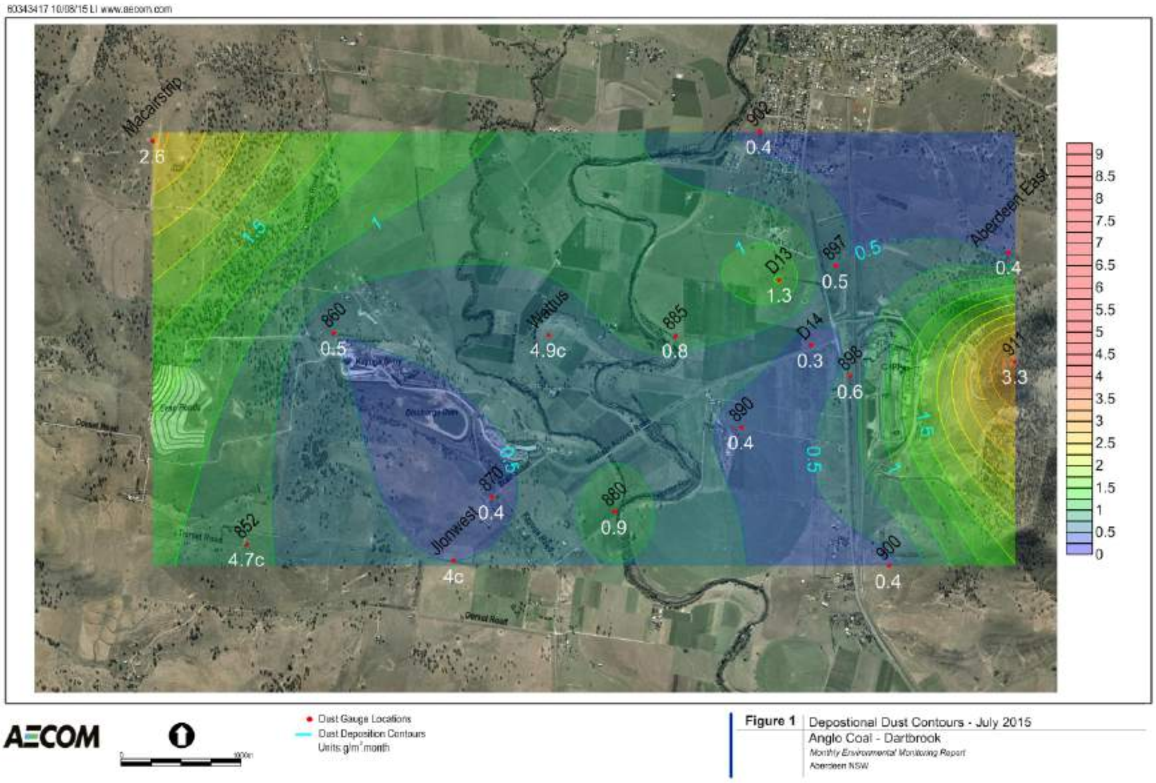


Figure 1 Depostional Dust Contours - July 2015
Anglo Coal - Dartbrook
Monthly Environmental Monitoring Report
Aberdeen NSW

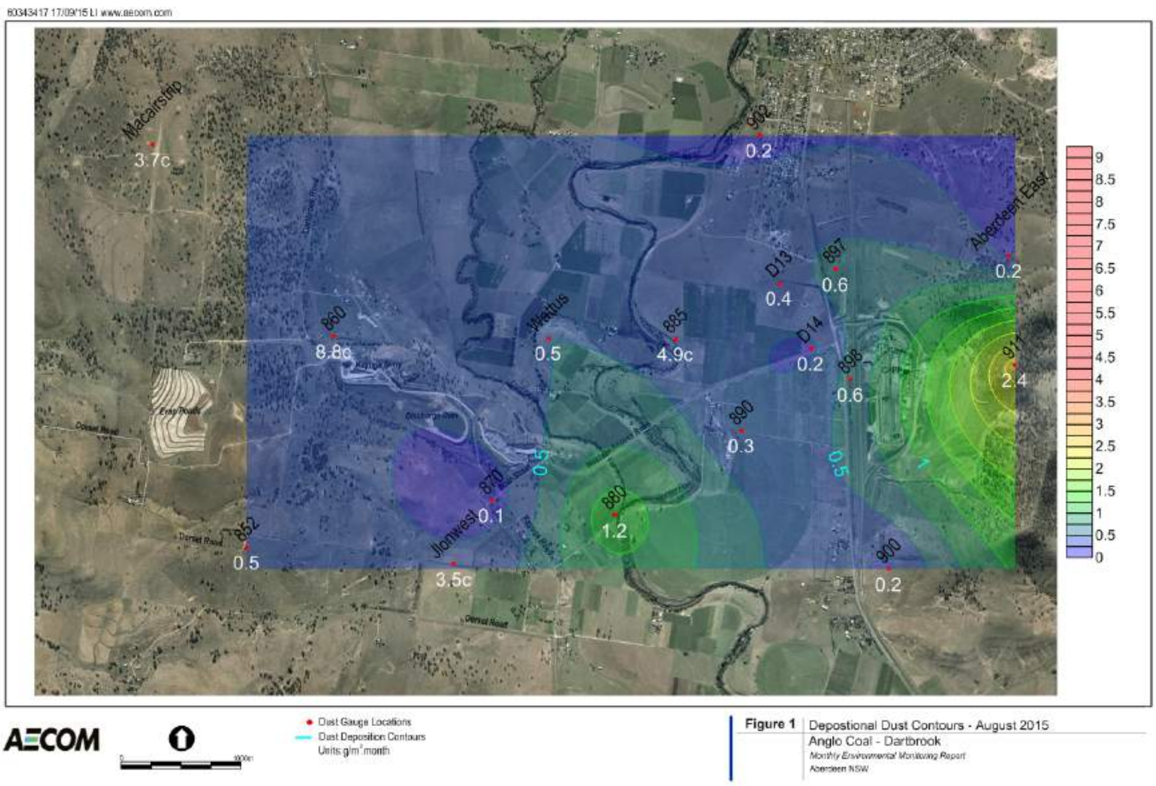
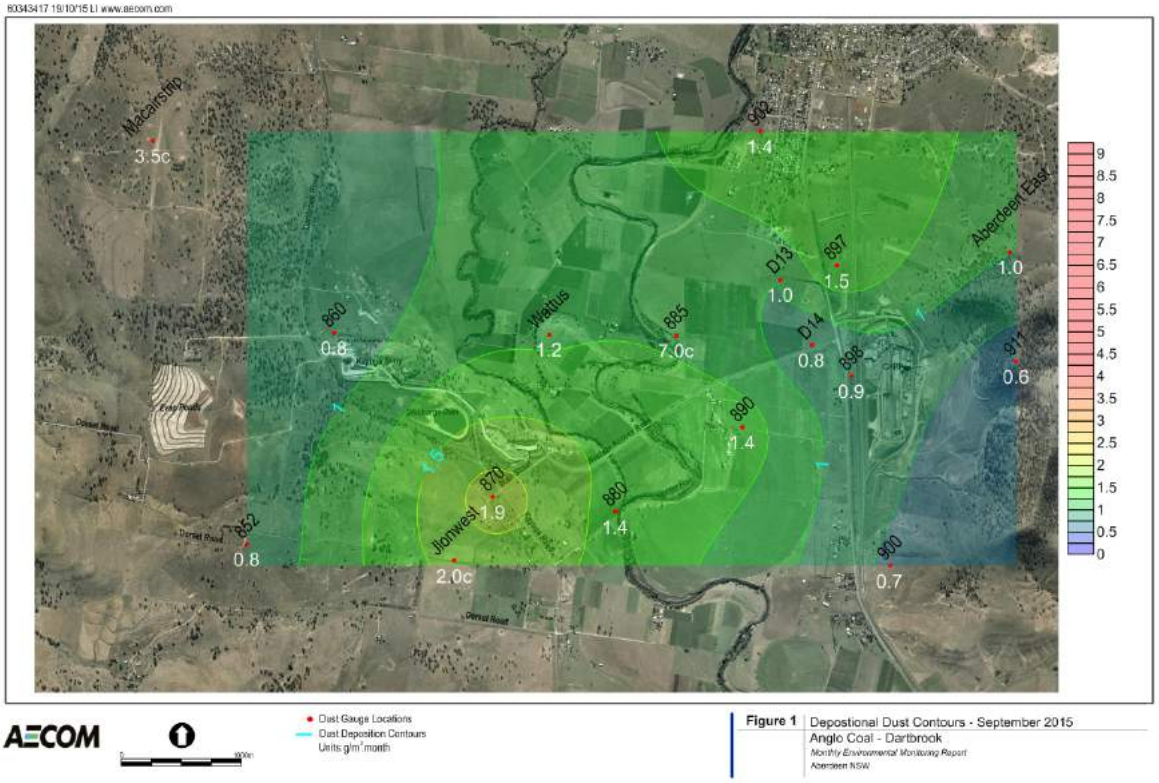
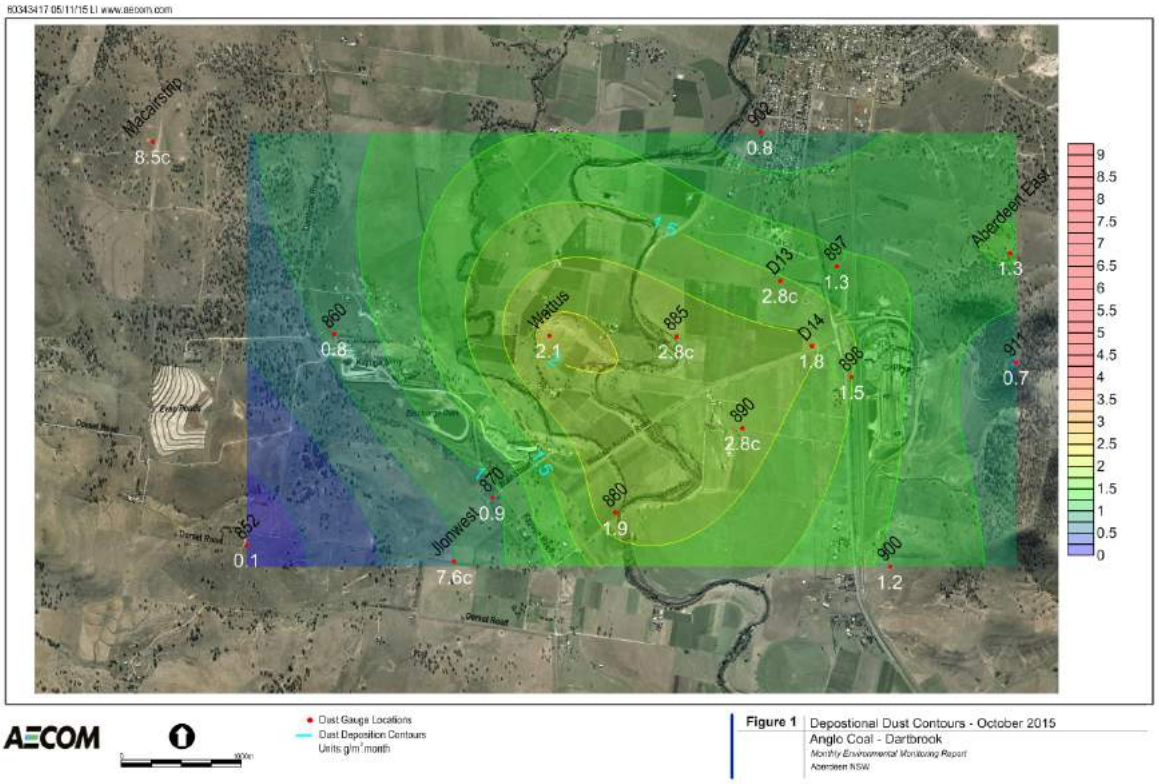
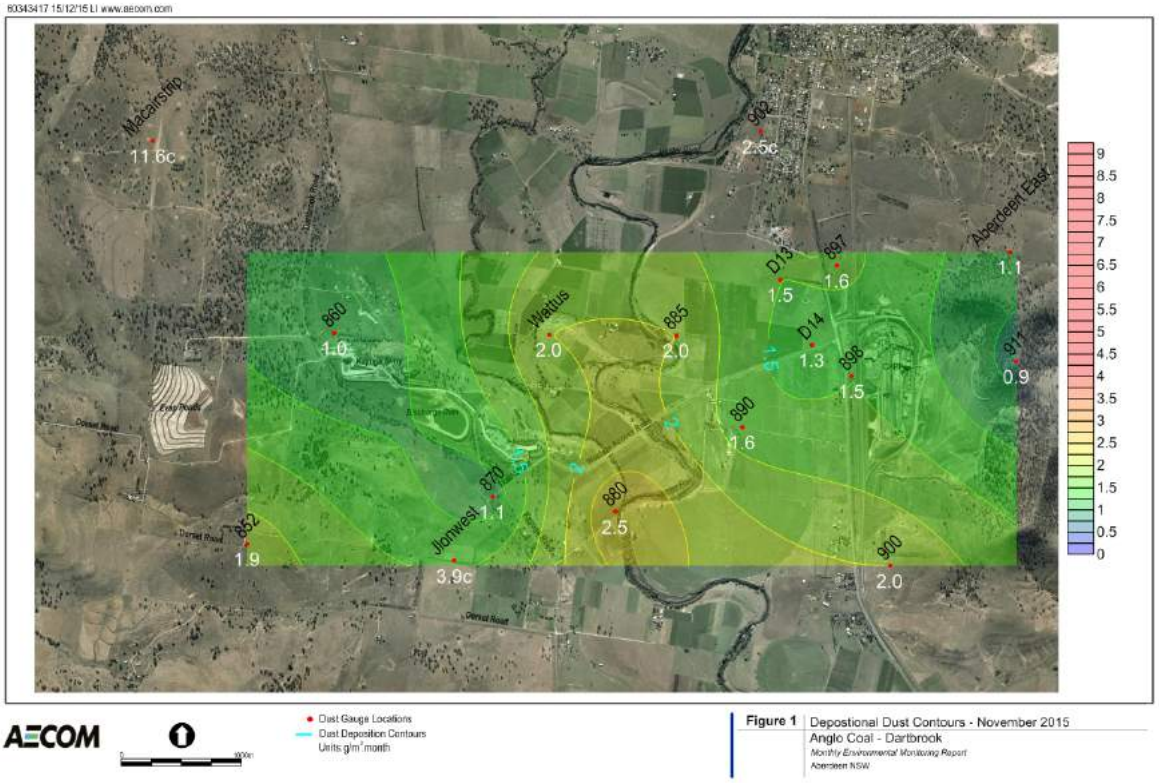
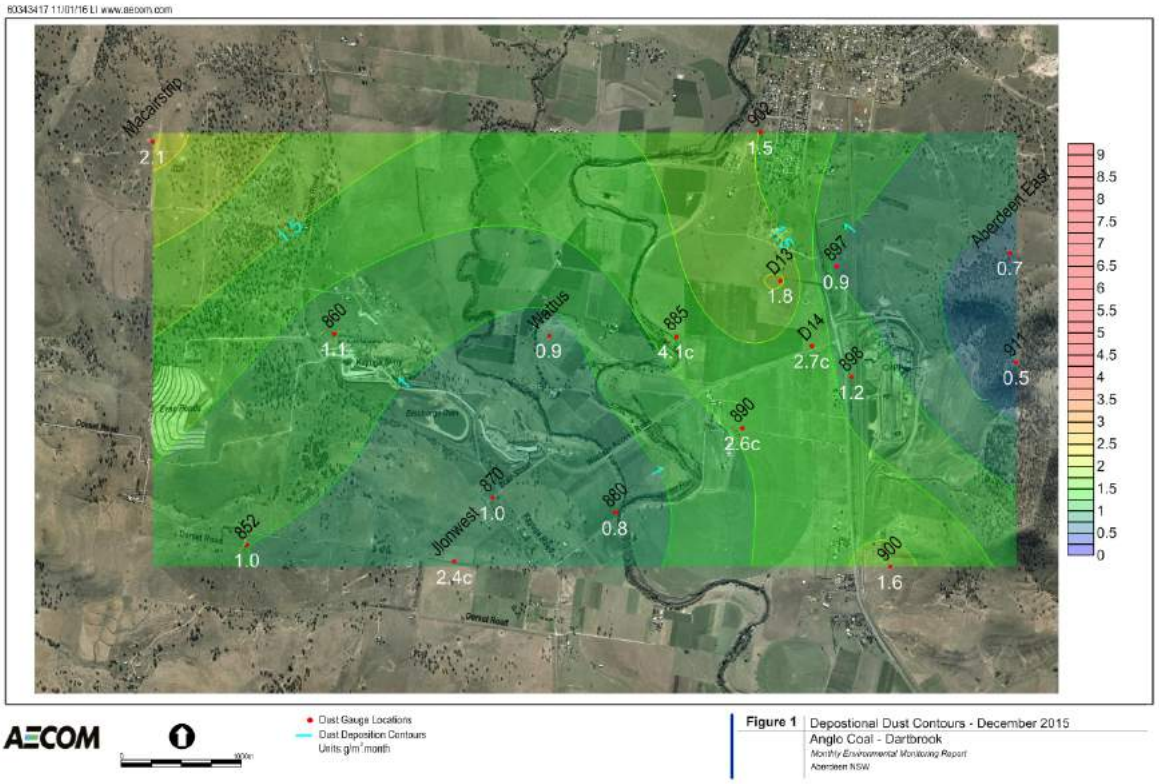


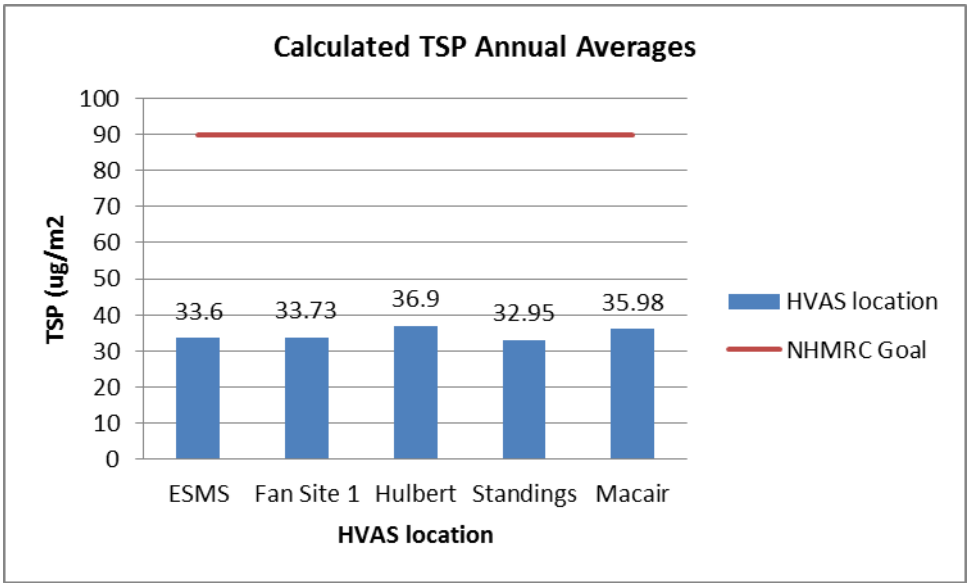
Figure 1 Depostional Dust Contours - August 2015
Anglo Coal - Dartbrook
Monthly Environmental Monitoring Report
Aberdeen NSW


60343417 19/10/15 LI www.aecom.com
Macairsnip
3.5c
902
1.4
Aberdeen East
1.0
D13
1.0
897
1.5
860
0.8
Wratus
1.2
885
7.0c
D14
0.8
898
0.9
911
0.6
890
1.4
870
1.9
880
1.4
852
0.8
Jonwest
2.0c
900
0.7
Dartbrook Road
Pernel Road
9
8.5
8
7.5
7
6.5
6
5.5
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
AECOM
Dust Gauge Locations
Dust Deposition Contours
Units g/m²/month
Figure 1
Depositional Dust Contours - September 2015
Anglo Coal - Dartbrook
Monthly Environmental Monitoring Report
Aberdeen NSW


60343417 05/11/15 LI www.aecom.com
Macairsnip
8.5c
902
0.8
Aberdeen East
1.3
D13
2.8c
897
1.3
860
0.8
Wratus
2.1
885
2.8c
D14
1.8
898
1.5
911
0.7
890
2.8c
870
0.9
880
1.9
852
0.1
Jonwest
7.6c
900
1.2
Dartbrook Road
Pernel Road
9
8.5
8
7.5
7
6.5
6
5.5
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
AECOM
Dust Gauge Locations
Dust Deposition Contours
Units g/m²/month
Figure 1
Depositional Dust Contours - October 2015
Anglo Coal - Dartbrook
Monthly Environmental Monitoring Report
Aberdeen NSW


Macairsnip
11.6c
902
2.5c
Aberdeen East
1.1
D13
1.5
897
1.6
860
1.0
Watus
2.0
885
2.0
D14
1.3
898
1.5
911
0.9
890
1.6
870
1.1
880
2.5
852
1.9
Jonwest
3.9c
900
2.0
Dust Gauge Locations
Dust Deposition Contours
Units g/m²/month
Figure 1
Depositional Dust Contours - November 2015
Anglo Coal - Dartbrook
Monthly Environmental Monitoring Report
Aberdeen NSW


Macairsnip
2.1
902
1.5
Aberdeen East
0.7
D13
1.8
897
0.9
860
1.1
Watus
0.9
885
4.1c
D14
2.7c
898
1.2
911
0.5
890
2.6c
870
1.0
880
0.8
852
1.0
Jonwest
2.4c
900
1.6
Dust Gauge Locations
Dust Deposition Contours
Units g/m²/month
Figure 1
Depositional Dust Contours - December 2015
Anglo Coal - Dartbrook
Monthly Environmental Monitoring Report
Aberdeen NSW


Calculated TSP Annual Averages
TSP (ug/m2
100
90
80
70
60
50
40
30
20
10
0
33.6
33.73
36.9
32.95
35.98
ESMS
Fan Site 1
Hulbert
Standings
Macair
HVAS location
HVAS location
NHMRC Goal

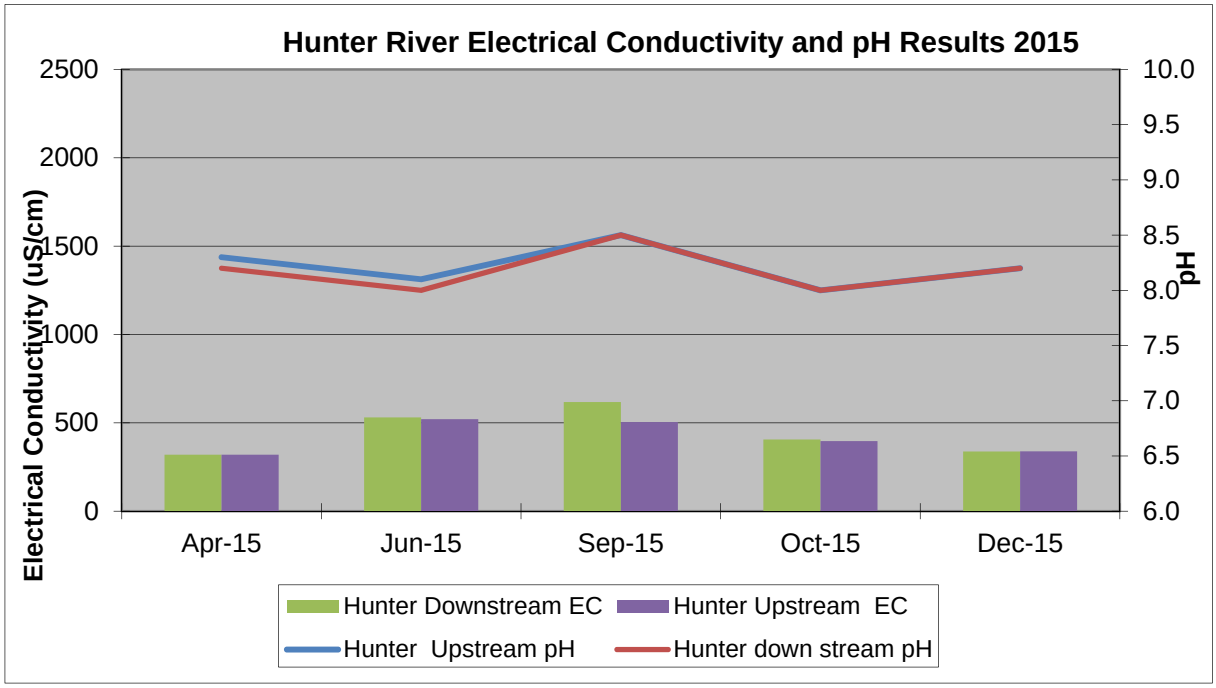
Surface Water Monitoring Summary

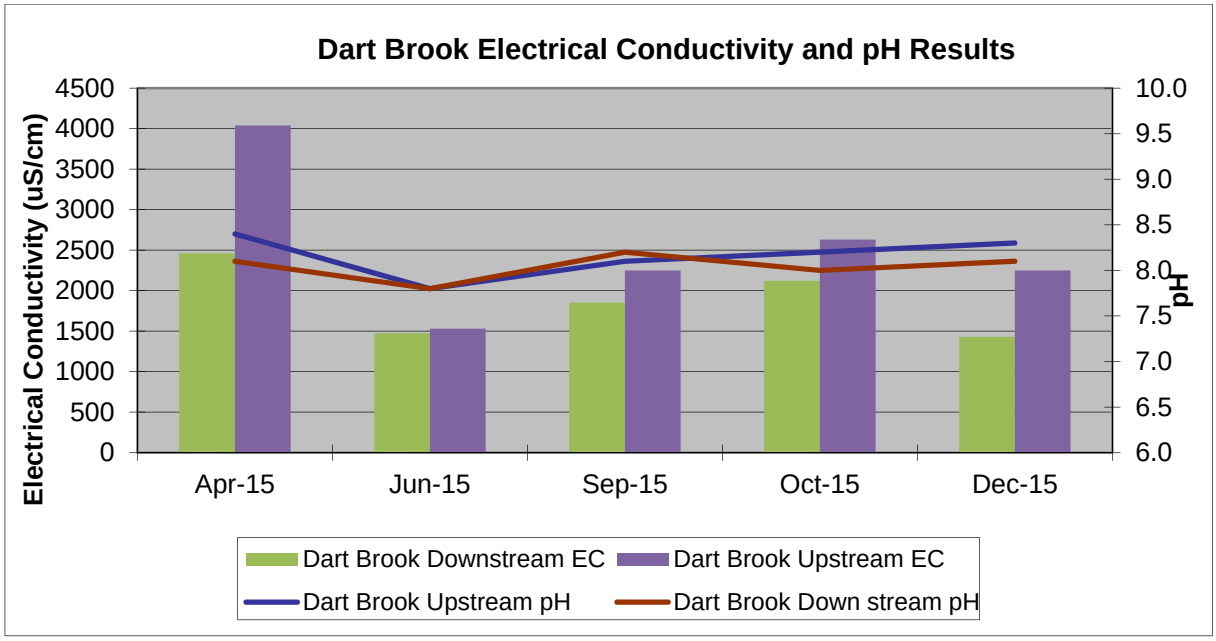
Appendix

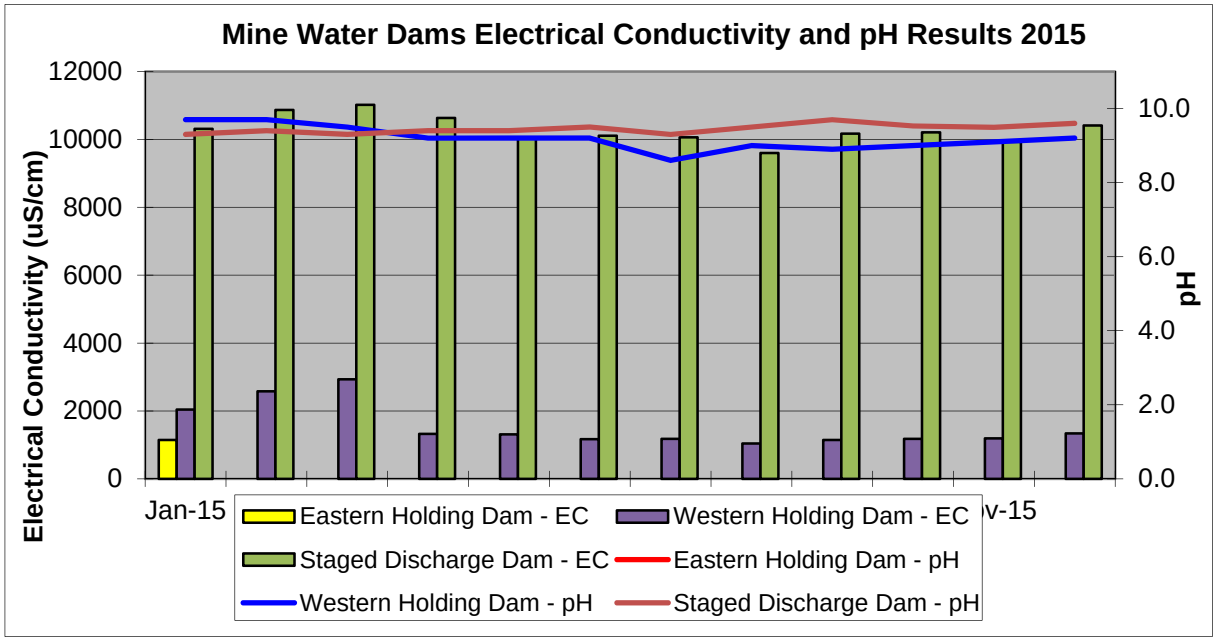
E

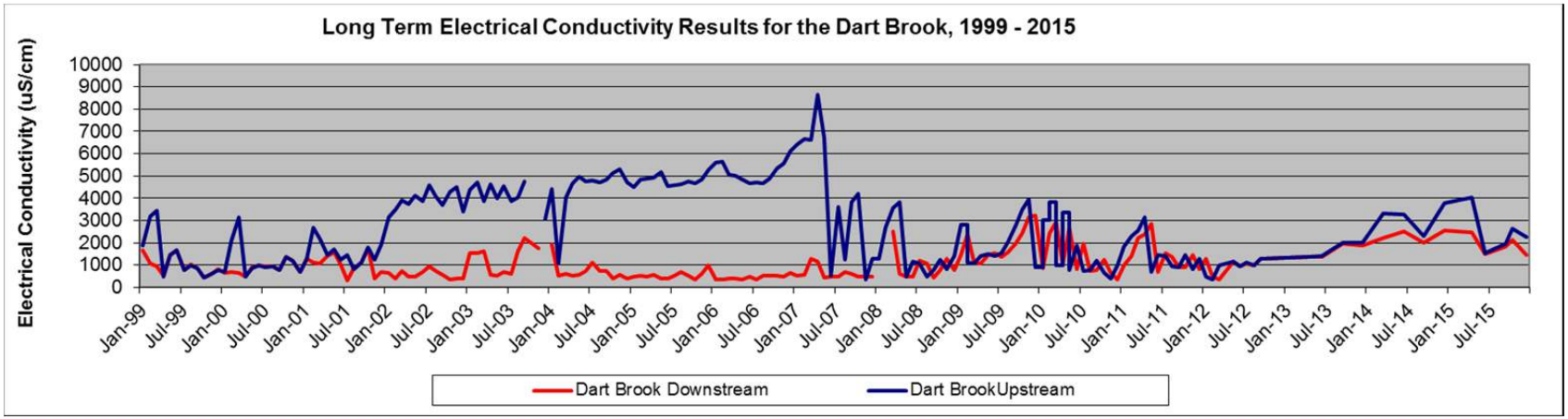
AngloAmerican

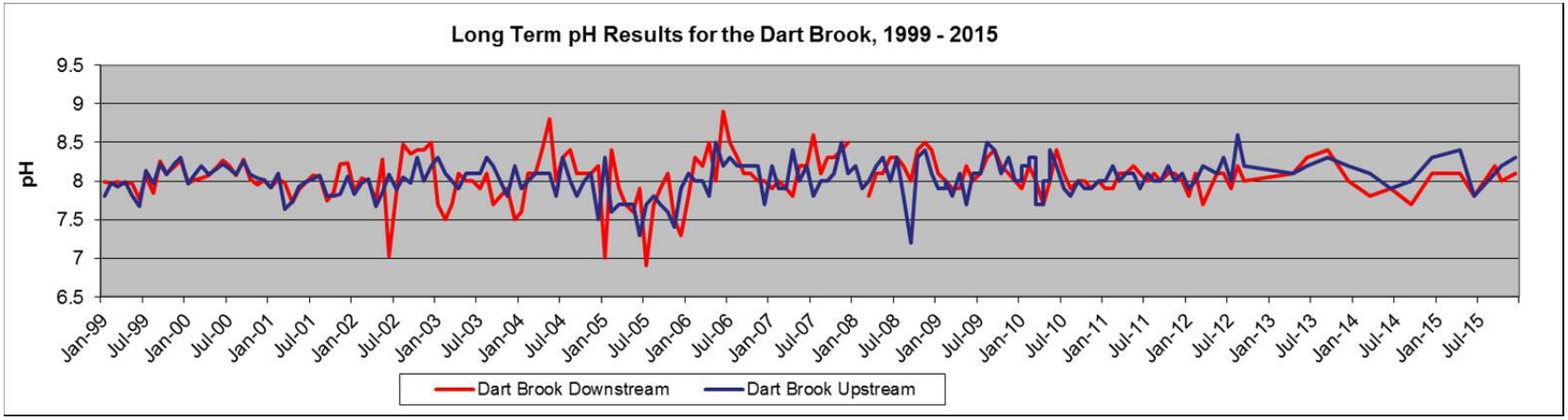
Hansen Bailey
ENVIRONMENTAL CONSULTANTS

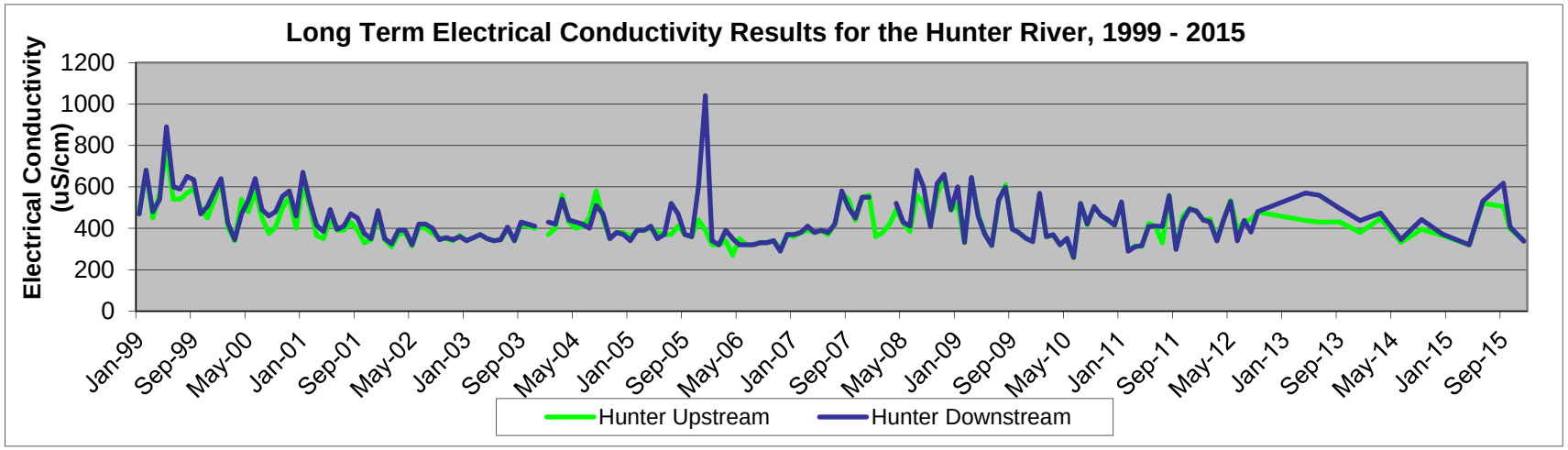

Hunter River Electrical Conductivity and pH Results 2015
Electrical Conductivity (uS/cm)
pH
2500
2000
1500
1000
500
0
10.0
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
Apr-15
Jun-15
Sep-15
Oct-15
Dec-15
Hunter Downstream EC
Hunter Upstream EC
Hunter Upstream pH
Hunter down stream pH

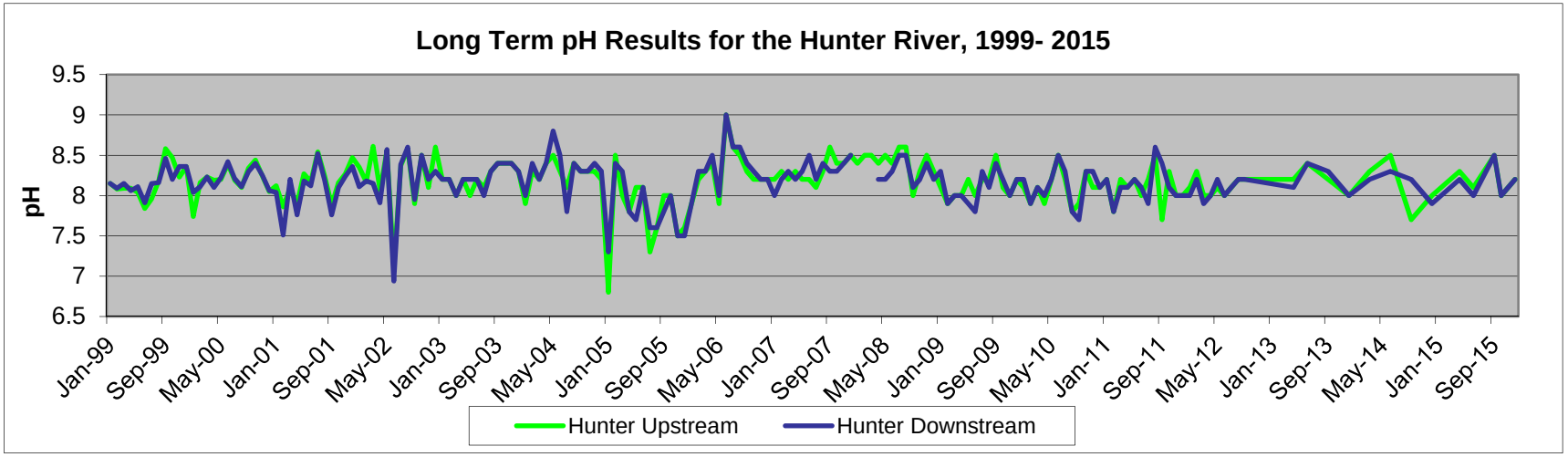

Dart Brook Electrical Conductivity and pH Results
Electrical Conductivity (uS/cm)
pH
4500
4000
3500
3000
2500
2000
1500
1000
500
0
10.0
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
Apr-15
Jun-15
Sep-15
Oct-15
Dec-15
Dart Brook Downstream EC
Dart Brook Upstream EC
Dart Brook Upstream pH
Dart Brook Down stream pH


Mine Water Dams Electrical Conductivity and pH Results 2015
Electrical Conductivity (uS/cm)
12000
10000
8000
6000
4000
2000
0
10.0
8.0
6.0
4.0
2.0
0.0
pH
Jan-15
v-15
Eastern Holding Dam - EC
Western Holding Dam - EC
Staged Discharge Dam - EC
Eastern Holding Dam - pH
Western Holding Dam - pH
Staged Discharge Dam - pH


Long Term Electrical Conductivity Results for the Dart Brook, 1999 - 2015
Electrical Conductivity (uS/cm)
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
Jan-99 Jul-99 Jan-00 Jul-00 Jan-01 Jul-01 Jan-02 Jul-02 Jan-03 Jul-03 Jan-04 Jul-04 Jan-05 Jul-05 Jan-06 Jul-06 Jan-07 Jul-07 Jan-08 Jul-08 Jan-09 Jul-09 Jan-10 Jul-10 Jan-11 Jul-11 Jan-12 Jul-12 Jan-13 Jul-13 Jan-14 Jul-14 Jan-15 Jul-15
Dart Brook Downstream
Dart BrookUpstream


Long Term pH Results for the Dart Brook, 1999 - 2015
pH
9.5
9
8.5
8
7.5
7
6.5
Jan-99 Jul-99 Jan-00 Jul-00 Jan-01 Jul-01 Jan-02 Jul-02 Jan-03 Jul-03 Jan-04 Jul-04 Jan-05 Jul-05 Jan-06 Jul-06 Jan-07 Jul-07 Jan-08 Jul-08 Jan-09 Jul-09 Jan-10 Jul-10 Jan-11 Jul-11 Jan-12 Jul-12 Jan-13 Jul-13 Jan-14 Jul-14 Jan-15 Jul-15
Dart Brook Downstream
Dart Brook Upstream


Long Term Electrical Conductivity Results for the Hunter River, 1999 - 2015
Electrical Conductivity (uS/cm)
1200
1000
800
600
400
200
0
Jan-99
Sep-99
May-00
Jan-01
Sep-01
May-02
Jan-03
Sep-03
May-04
Jan-05
Sep-05
May-06
Jan-07
Sep-07
May-08
Jan-09
Sep-09
May-10
Jan-11
Sep-11
May-12
Jan-13
Sep-13
May-14
Jan-15
Sep-15
Hunter Upstream
Hunter Downstream


Long Term pH Results for the Hunter River, 1999- 2015
pH
9.5
9
8.5
8
7.5
7
6.5
Jan-99
Sep-99
May-00
Jan-01
Sep-01
May-02
Jan-03
Sep-03
May-04
Jan-05
Sep-05
May-06
Jan-07
Sep-07
May-08
Jan-09
Sep-09
May-10
Jan-11
Sep-11
May-12
Jan-13
Sep-13
May-14
Jan-15
Sep-15
Hunter Upstream
Hunter Downstream

Groundwater Monitoring Summary

Appendix

F

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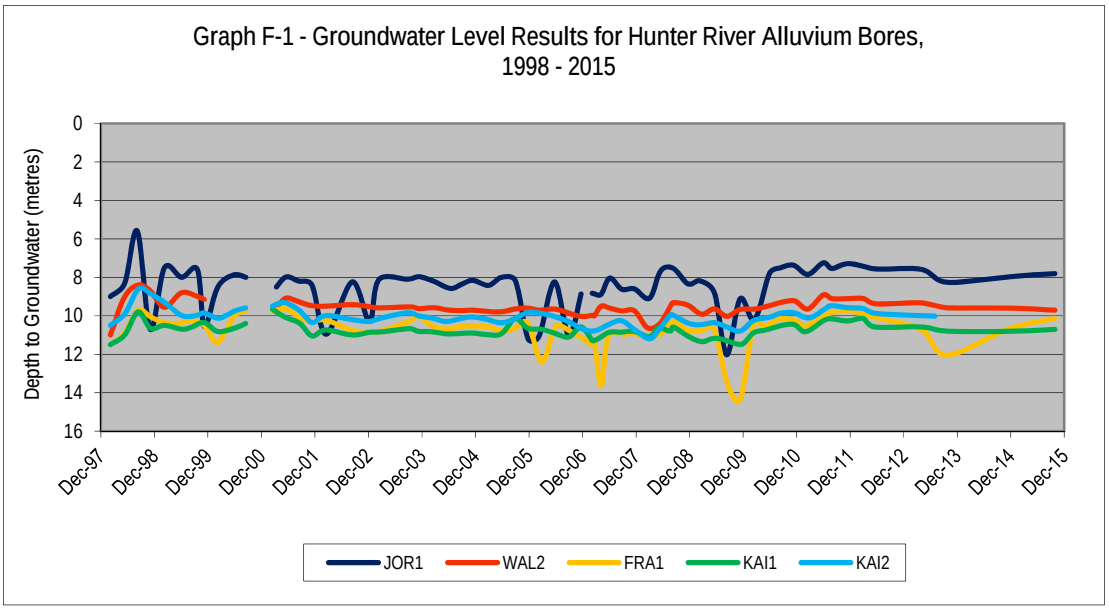
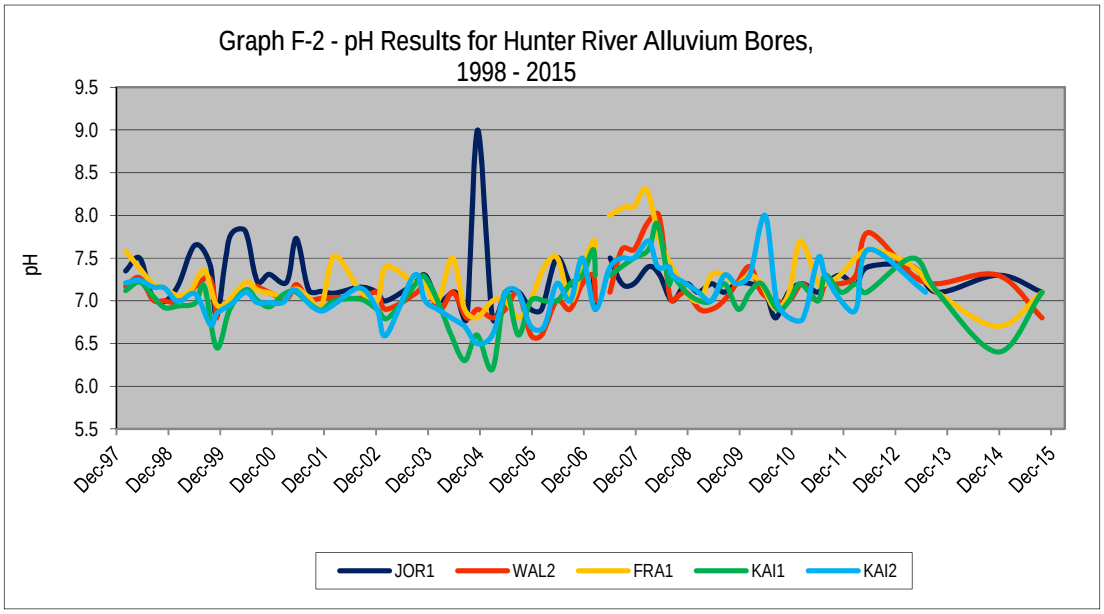
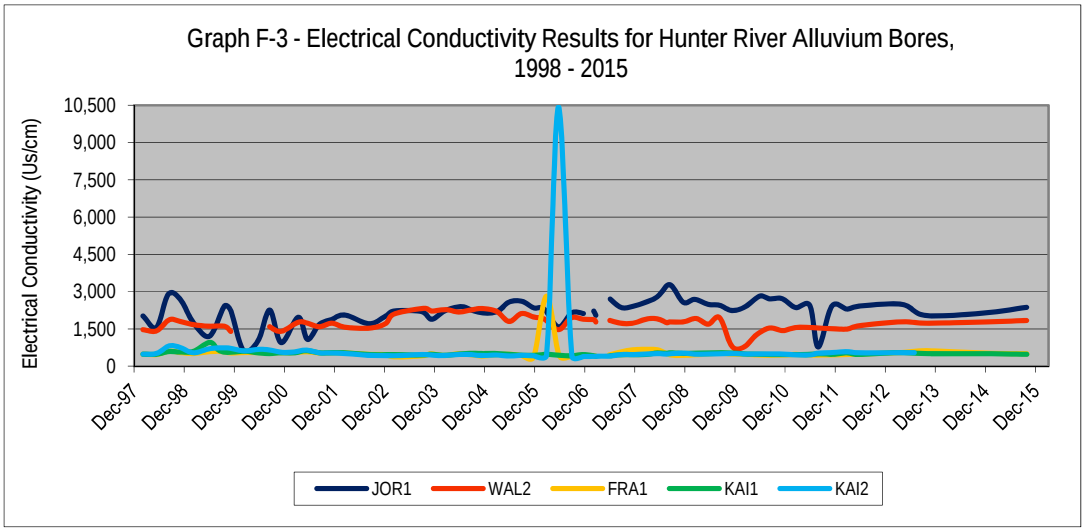
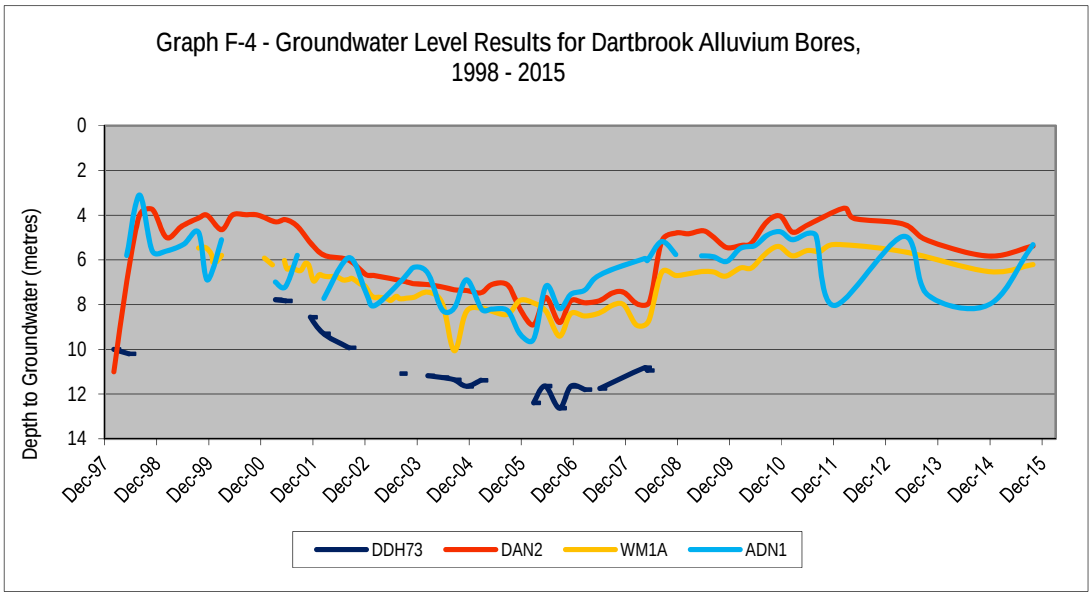
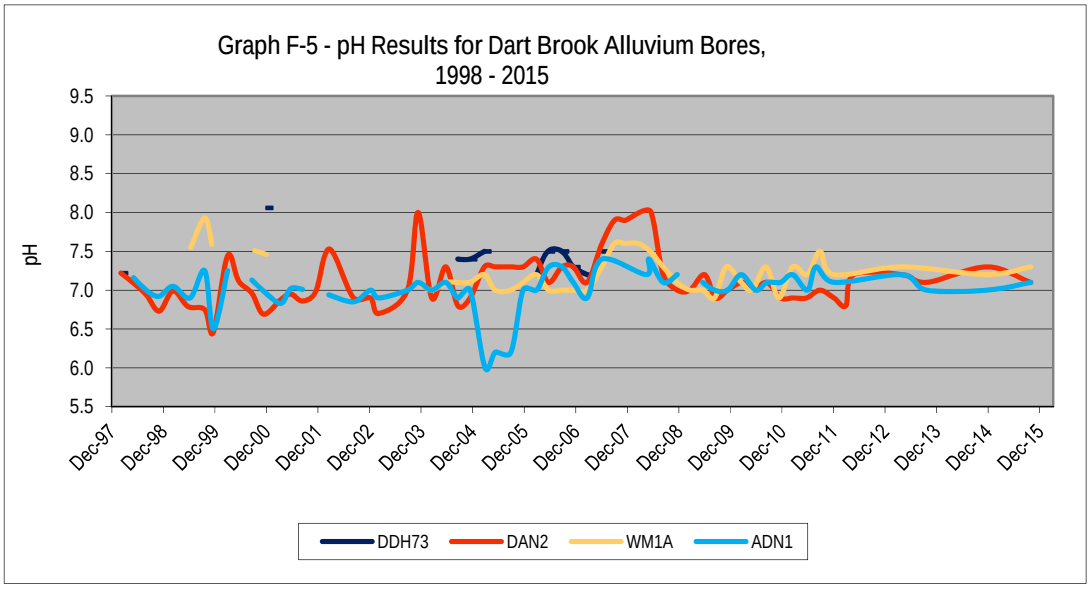
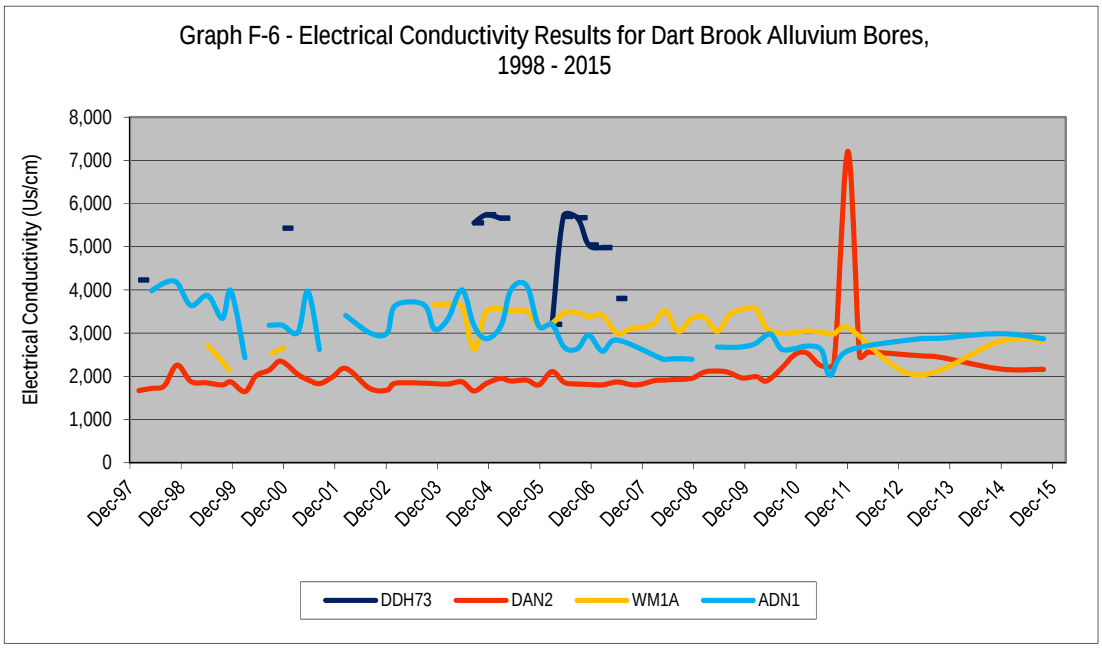

Graph F-1 - Groundwater Level Results for Hunter River Alluvium Bores, 1998 - 2015
Depth to Groundwater (metres)
0
2
4
6
8
10
12
14
16
Dec-97
Dec-98
Dec-99
Dec-00
Dec-01
Dec-02
Dec-03
Dec-04
Dec-05
Dec-06
Dec-07
Dec-08
Dec-09
Dec-10
Dec-11
Dec-12
Dec-13
Dec-14
Dec-15
JOR1
WAL2
FRA1
KAI1
KAI2

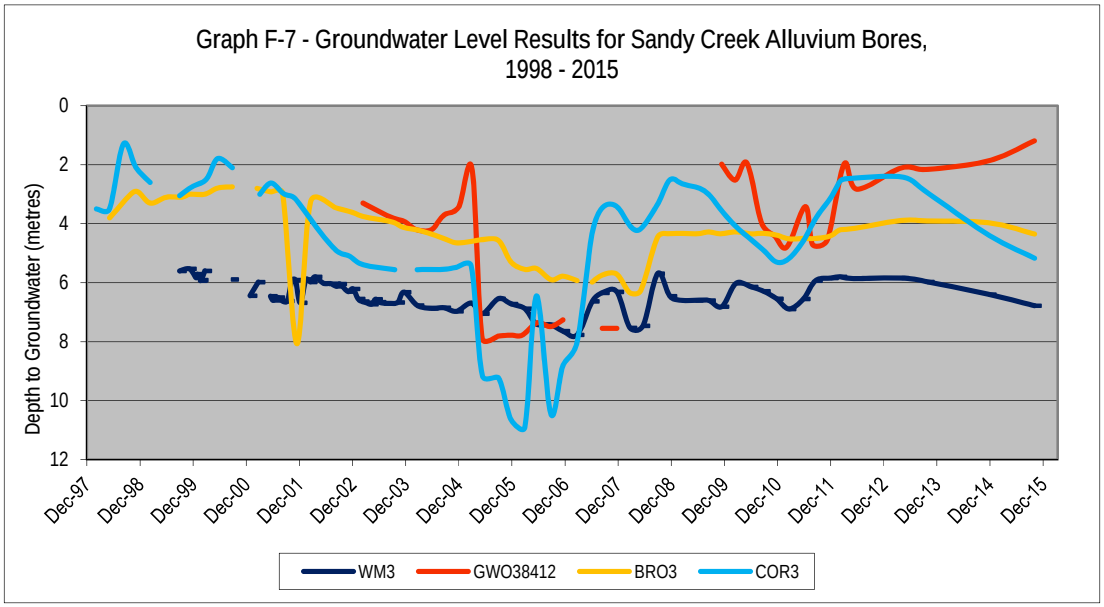

Graph F-2 - pH Results for Hunter River Alluvium Bores, 1998 - 2015
pH
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
Dec-97
Dec-98
Dec-99
Dec-00
Dec-01
Dec-02
Dec-03
Dec-04
Dec-05
Dec-06
Dec-07
Dec-08
Dec-09
Dec-10
Dec-11
Dec-12
Dec-13
Dec-14
Dec-15
JOR1
WAL2
FRA1
KAI1
KAI2

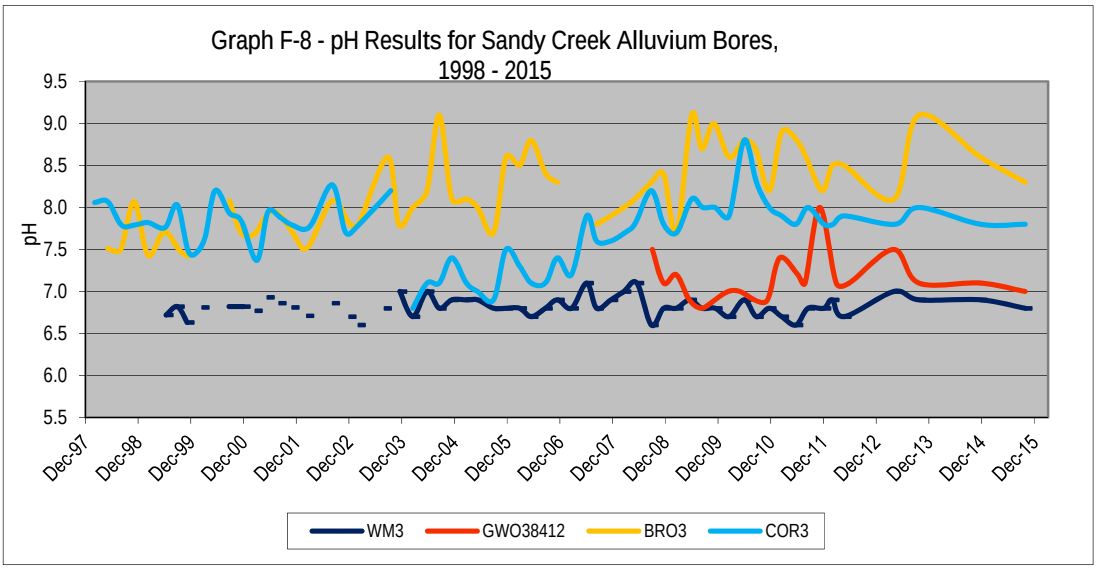

Graph F-3 - Electrical Conductivity Results for Hunter River Alluvium Bores, 1998 - 2015
Electrical Conductivity (Us/cm)
10,500
9,000
7,500
6,000
4,500
3,000
1,500
0
Dec-97
Dec-98
Dec-99
Dec-00
Dec-01
Dec-02
Dec-03
Dec-04
Dec-05
Dec-06
Dec-07
Dec-08
Dec-09
Dec-10
Dec-11
Dec-12
Dec-13
Dec-14
Dec-15
JOR1
WAL2
FRA1
KAI1
KAI2

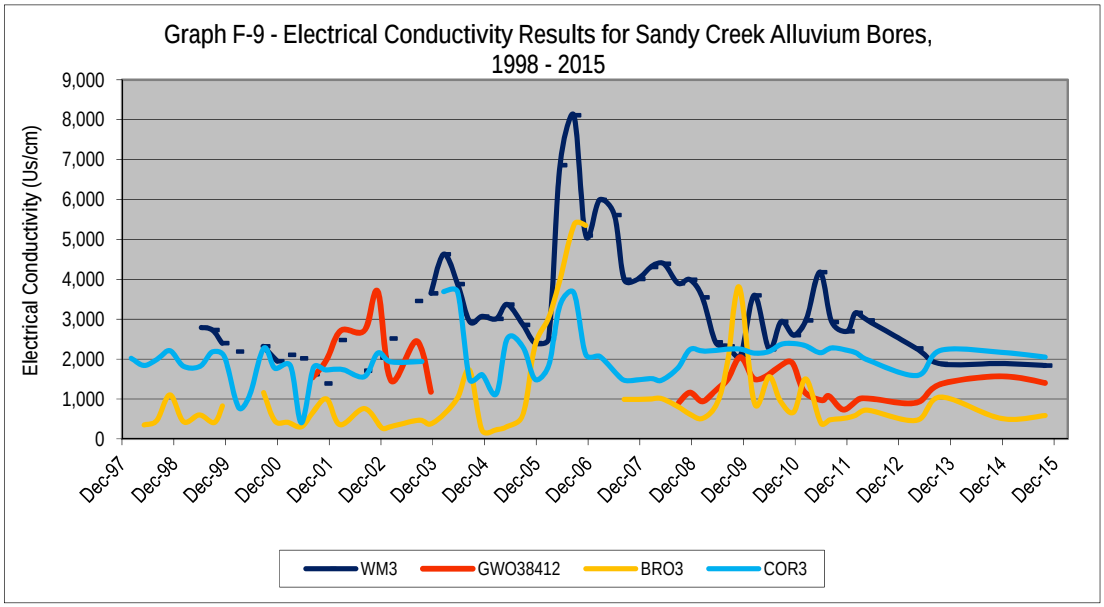

Graph F-4 - Groundwater Level Results for Dartbrook Alluvium Bores, 1998 - 2015
Depth to Groundwater (metres)
0
2
4
6
8
10
12
14
Dec-97
Dec-98
Dec-99
Dec-00
Dec-01
Dec-02
Dec-03
Dec-04
Dec-05
Dec-06
Dec-07
Dec-08
Dec-09
Dec-10
Dec-11
Dec-12
Dec-13
Dec-14
Dec-15
DDH73
DAN2
WM1A
ADN1

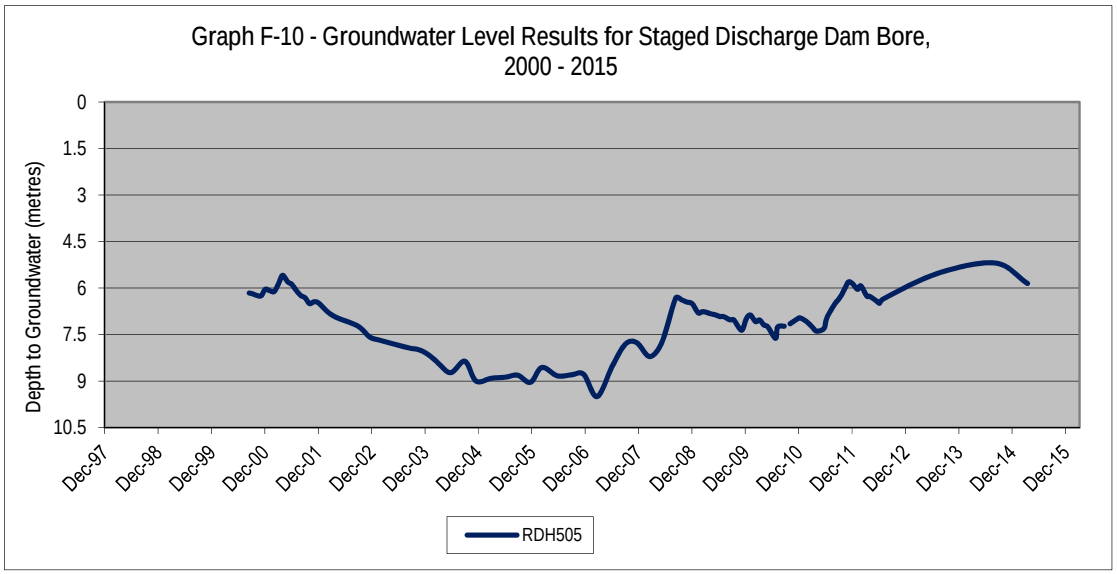

Graph F-5 - pH Results for Dart Brook Alluvium Bores, 1998 - 2015
pH
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
Dec-97
Dec-98
Dec-99
Dec-00
Dec-01
Dec-02
Dec-03
Dec-04
Dec-05
Dec-06
Dec-07
Dec-08
Dec-09
Dec-10
Dec-11
Dec-12
Dec-13
Dec-14
Dec-15
DDH73
DAN2
WM1A
ADN1

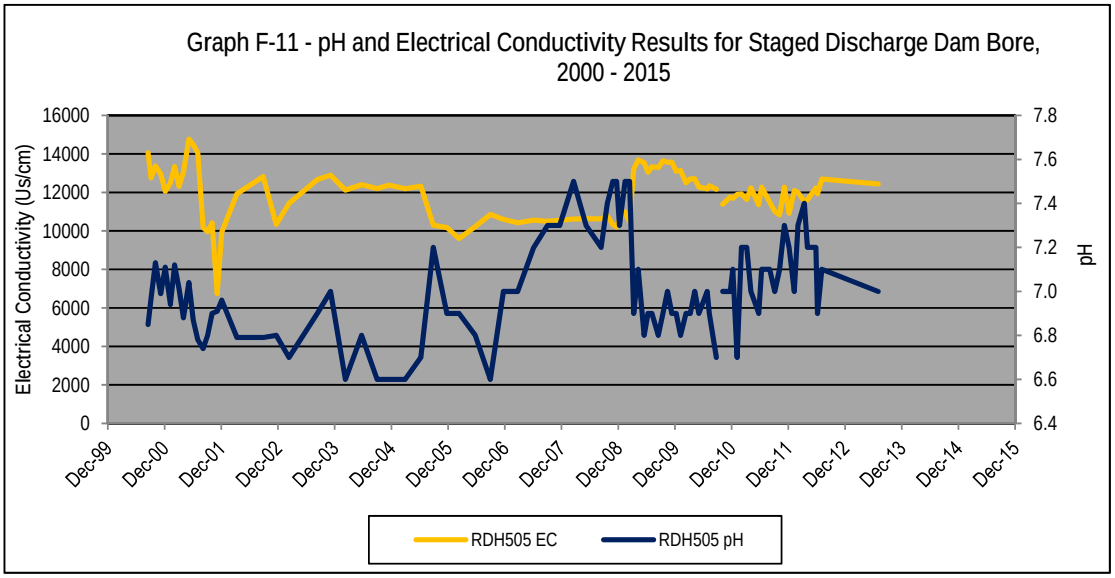

Graph F-6 - Electrical Conductivity Results for Dart Brook Alluvium Bores, 1998 - 2015
Electrical Conductivity (Us/cm)
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
Dec-97
Dec-98
Dec-99
Dec-00
Dec-01
Dec-02
Dec-03
Dec-04
Dec-05
Dec-06
Dec-07
Dec-08
Dec-09
Dec-10
Dec-11
Dec-12
Dec-13
Dec-14
Dec-15
DDH73
DAN2
WM1A
ADN1

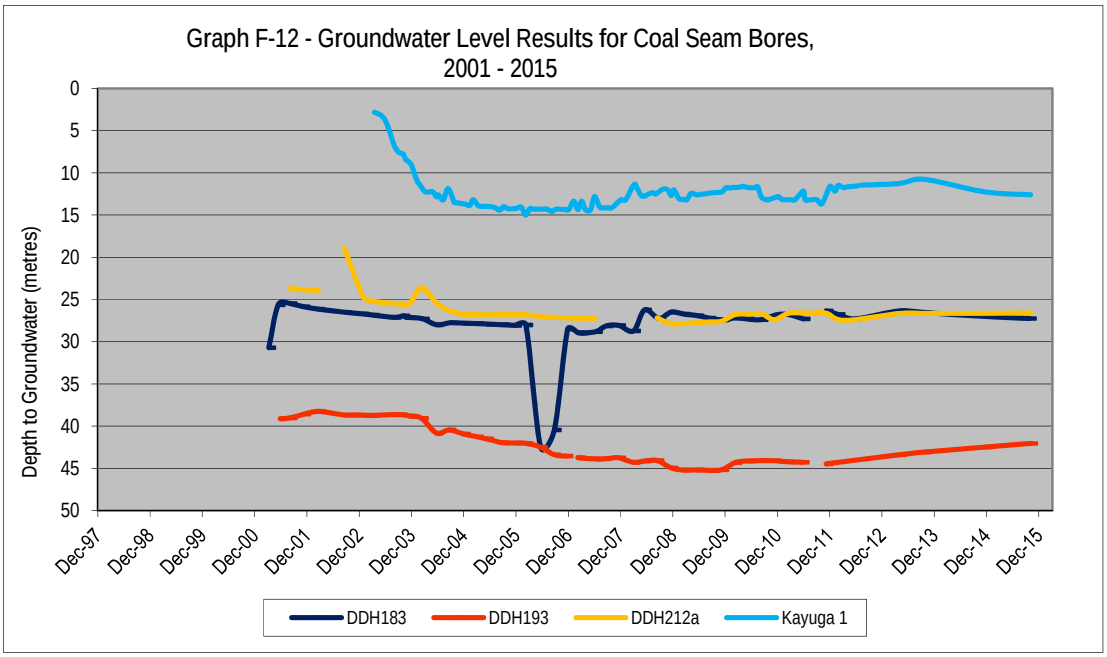

Graph F-7 - Groundwater Level Results for Sandy Creek Alluvium Bores, 1998 - 2015
Depth to Groundwater (metres)
0
2
4
6
8
10
12
Dec-97
Dec-98
Dec-99
Dec-00
Dec-01
Dec-02
Dec-03
Dec-04
Dec-05
Dec-06
Dec-07
Dec-08
Dec-09
Dec-10
Dec-11
Dec-12
Dec-13
Dec-14
Dec-15
WM3
GWO38412
BRO3
COR3

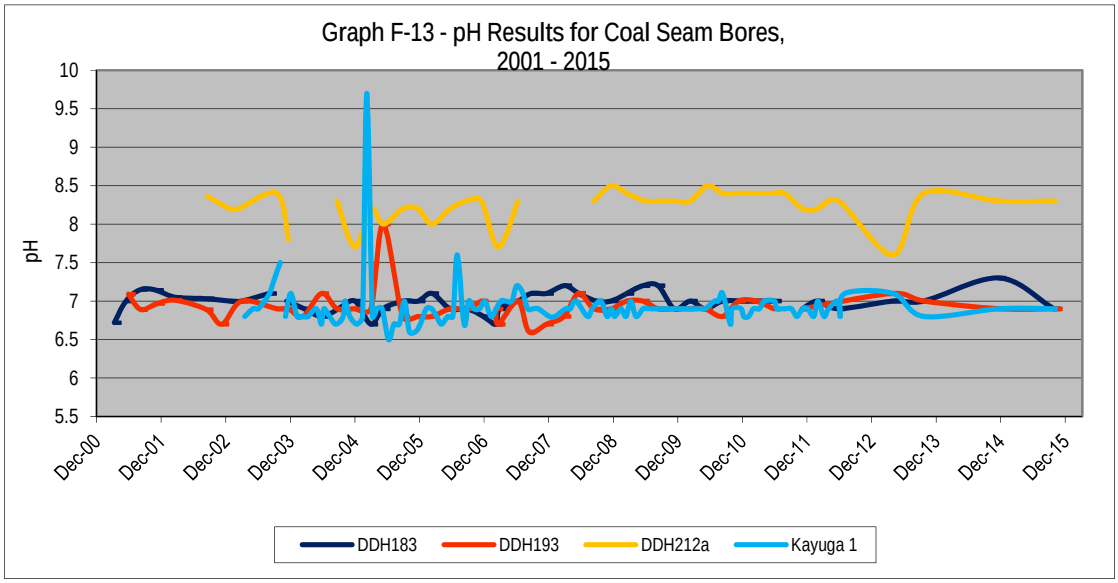

Graph F-8 - pH Results for Sandy Creek Alluvium Bores, 1998 - 2015
pH
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
Dec-97
Dec-98
Dec-99
Dec-00
Dec-01
Dec-02
Dec-03
Dec-04
Dec-05
Dec-06
Dec-07
Dec-08
Dec-09
Dec-10
Dec-11
Dec-12
Dec-13
Dec-14
Dec-15
WM3
GWO38412
BRO3
COR3

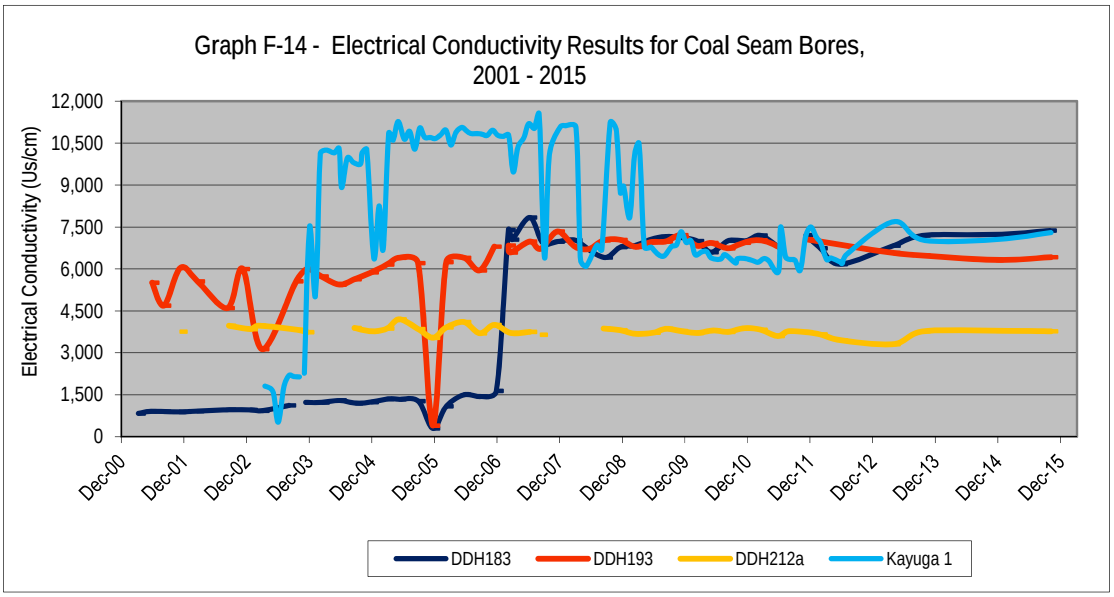

Graph F-9 - Electrical Conductivity Results for Sandy Creek Alluvium Bores, 1998 - 2015
Electrical Conductivity (Us/cm)
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
Dec-97
Dec-98
Dec-99
Dec-00
Dec-01
Dec-02
Dec-03
Dec-04
Dec-05
Dec-06
Dec-07
Dec-08
Dec-09
Dec-10
Dec-11
Dec-12
Dec-13
Dec-14
Dec-15
WM3
GWO38412
BRO3
COR3

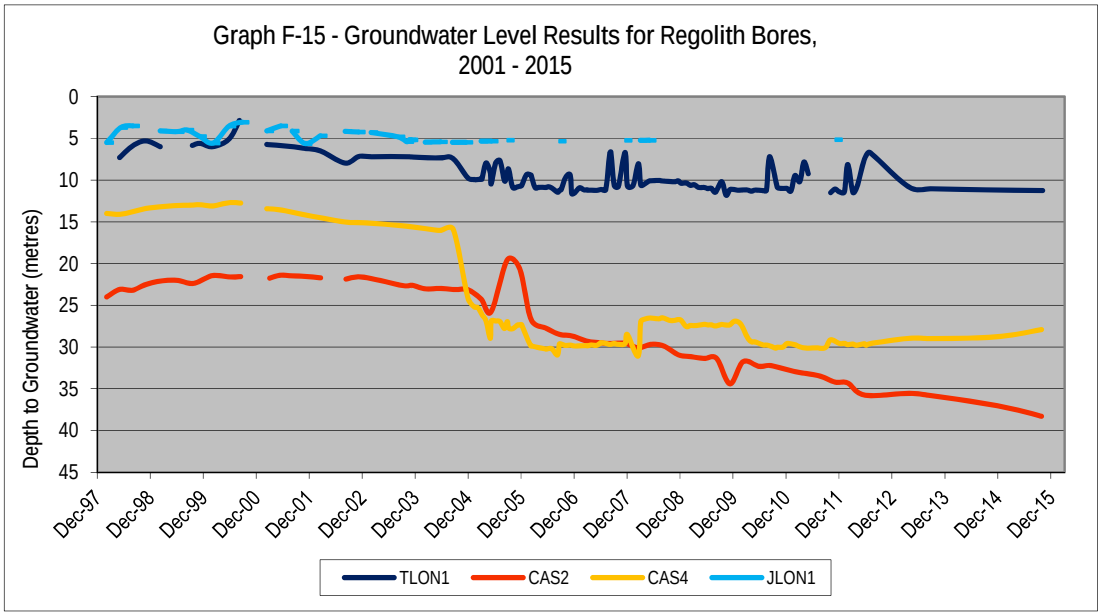

Graph F-10 - Groundwater Level Results for Staged Discharge Dam Bore, 2000 - 2015
Depth to Groundwater (metres)
0
1.5
3
4.5
6
7.5
9
10.5
Dec-97
Dec-98
Dec-99
Dec-00
Dec-01
Dec-02
Dec-03
Dec-04
Dec-05
Dec-06
Dec-07
Dec-08
Dec-09
Dec-10
Dec-11
Dec-12
Dec-13
Dec-14
Dec-15
RDH505


Graph F-11 - pH and Electrical Conductivity Results for Staged Discharge Dam Bore, 2000 - 2015
Electrical Conductivity (Us/cm)
16000
14000
12000
10000
8000
6000
4000
2000
0
pH
7.8
7.6
7.4
7.2
7.0
6.8
6.6
6.4
Dec-99
Dec-00
Dec-01
Dec-02
Dec-03
Dec-04
Dec-05
Dec-06
Dec-07
Dec-08
Dec-09
Dec-10
Dec-11
Dec-12
Dec-13
Dec-14
Dec-15
RDH505 EC
RDH505 pH


Graph F-12 - Groundwater Level Results for Coal Seam Bores, 2001 - 2015
Depth to Groundwater (metres)
0
5
10
15
20
25
30
35
40
45
50
Dec-97
Dec-98
Dec-99
Dec-00
Dec-01
Dec-02
Dec-03
Dec-04
Dec-05
Dec-06
Dec-07
Dec-08
Dec-09
Dec-10
Dec-11
Dec-12
Dec-13
Dec-14
Dec-15
DDH183
DDH193
DDH212a
Kayuga 1


Graph F-13 - pH Results for Coal Seam Bores, 2001 - 2015
pH
10
9.5
9
8.5
8
7.5
7
6.5
6
5.5
Dec-00
Dec-01
Dec-02
Dec-03
Dec-04
Dec-05
Dec-06
Dec-07
Dec-08
Dec-09
Dec-10
Dec-11
Dec-12
Dec-13
Dec-14
Dec-15
DDH183
DDH193
DDH212a
Kayuga 1


Graph F-14 - Electrical Conductivity Results for Coal Seam Bores, 2001 - 2015
Electrical Conductivity (Us/cm)
12,000
10,500
9,000
7,500
6,000
4,500
3,000
1,500
0
Dec-00
Dec-01
Dec-02
Dec-03
Dec-04
Dec-05
Dec-06
Dec-07
Dec-08
Dec-09
Dec-10
Dec-11
Dec-12
Dec-13
Dec-14
Dec-15
DDH183
DDH193
DDH212a
Kayuga 1


Graph F-15 - Groundwater Level Results for Regolith Bores, 2001 - 2015
Depth to Groundwater (metres)
0
5
10
15
20
25
30
35
40
45
Dec-97
Dec-98
Dec-99
Dec-00
Dec-01
Dec-02
Dec-03
Dec-04
Dec-05
Dec-06
Dec-07
Dec-08
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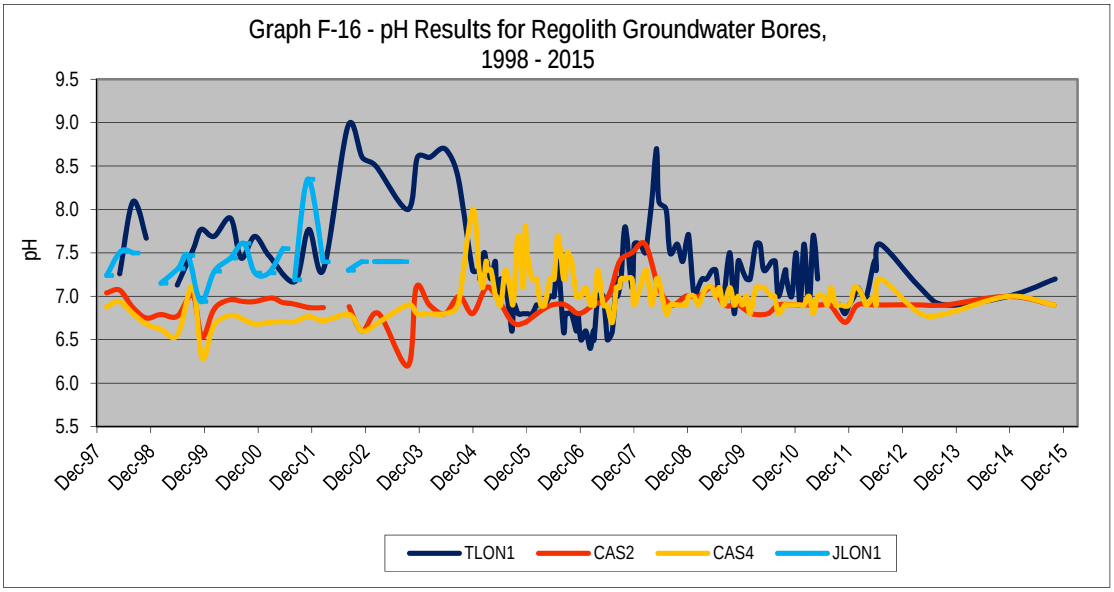
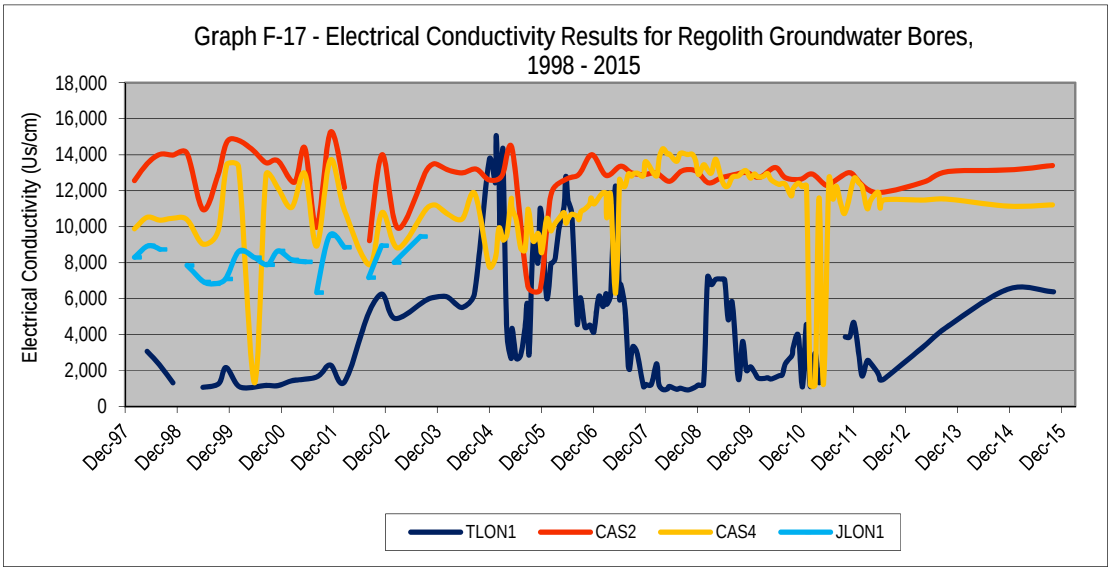
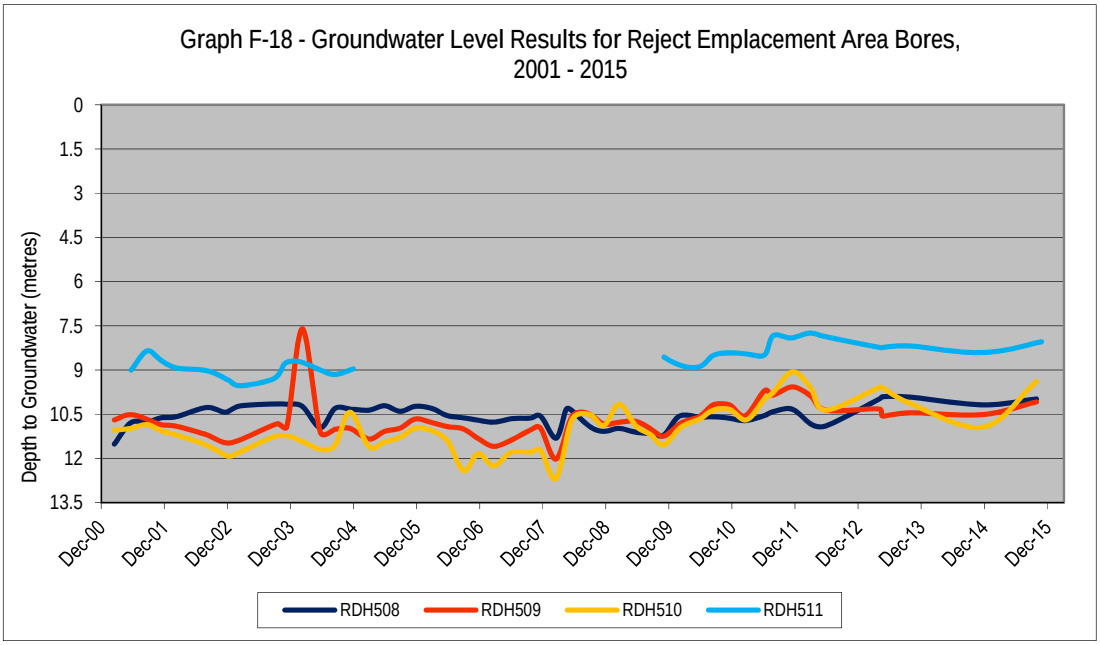
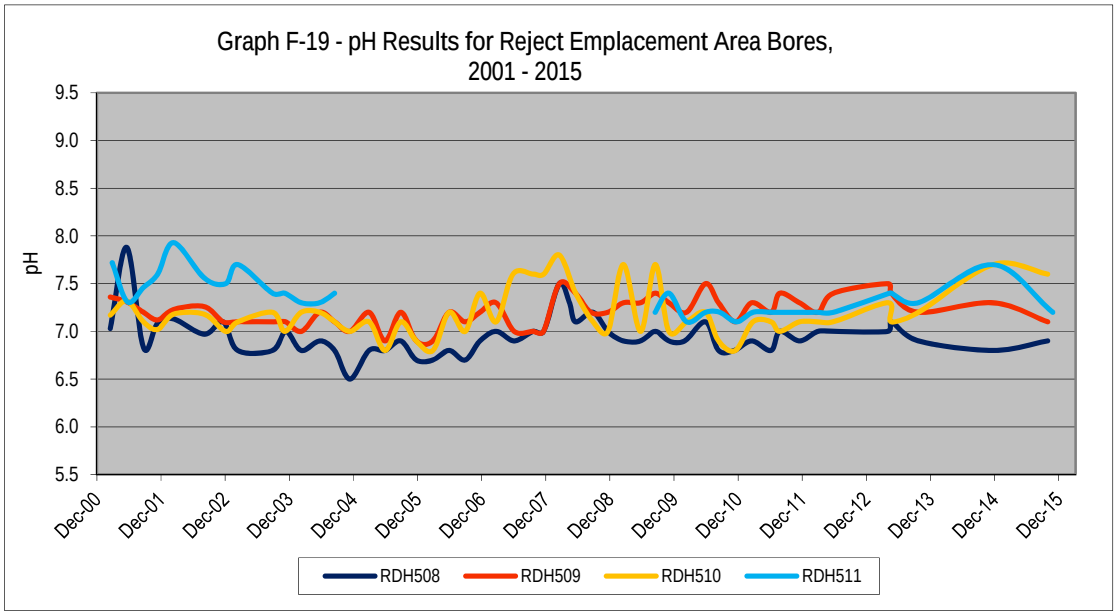
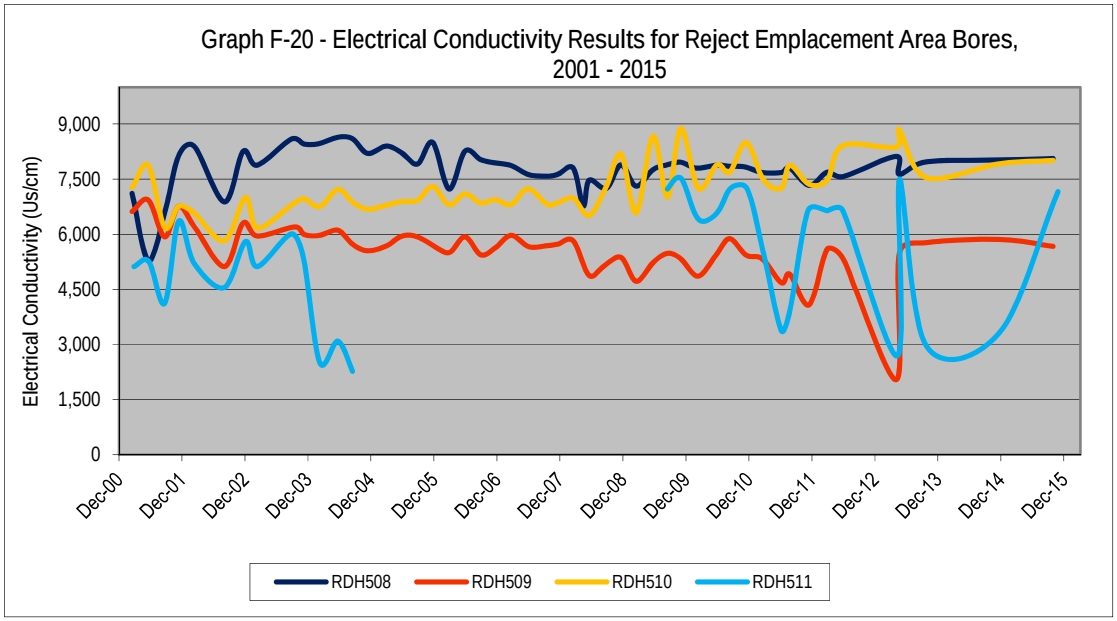
Dec-10
Dec-11
Dec-12
Dec-13
Dec-14
Dec-15
TLON1
CAS2
CAS4
JLON1

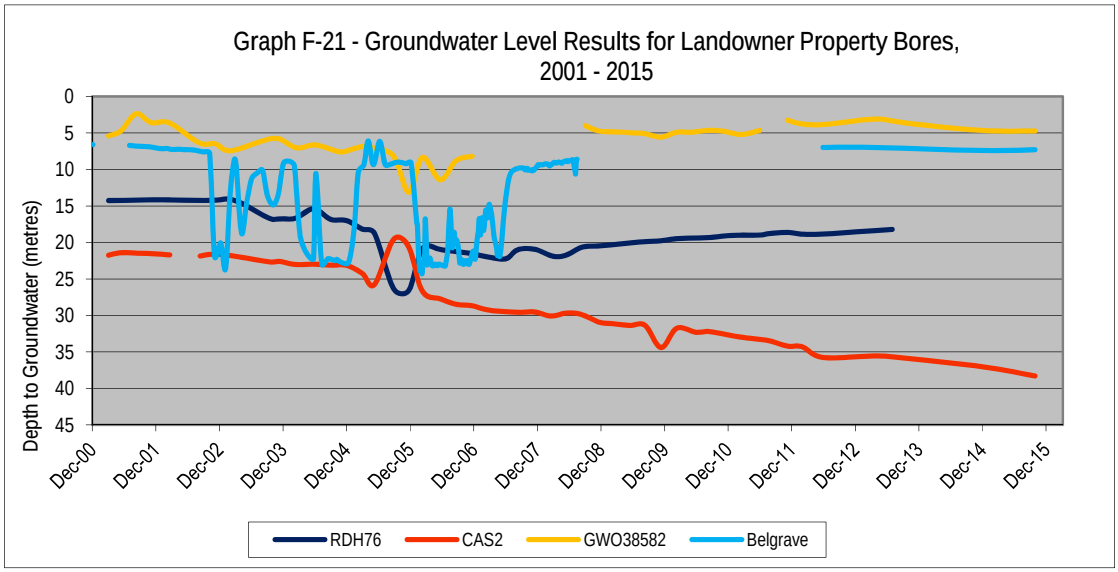

Graph F-16 - pH Results for Regolith Groundwater Bores, 1998 - 2015
pH
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
Dec-97
Dec-98
Dec-99
Dec-00
Dec-01
Dec-02
Dec-03
Dec-04
Dec-05
Dec-06
Dec-07
Dec-08
Dec-09
Dec-10
Dec-11
Dec-12
Dec-13
Dec-14
Dec-15
TLON1
CAS2
CAS4
JLON1

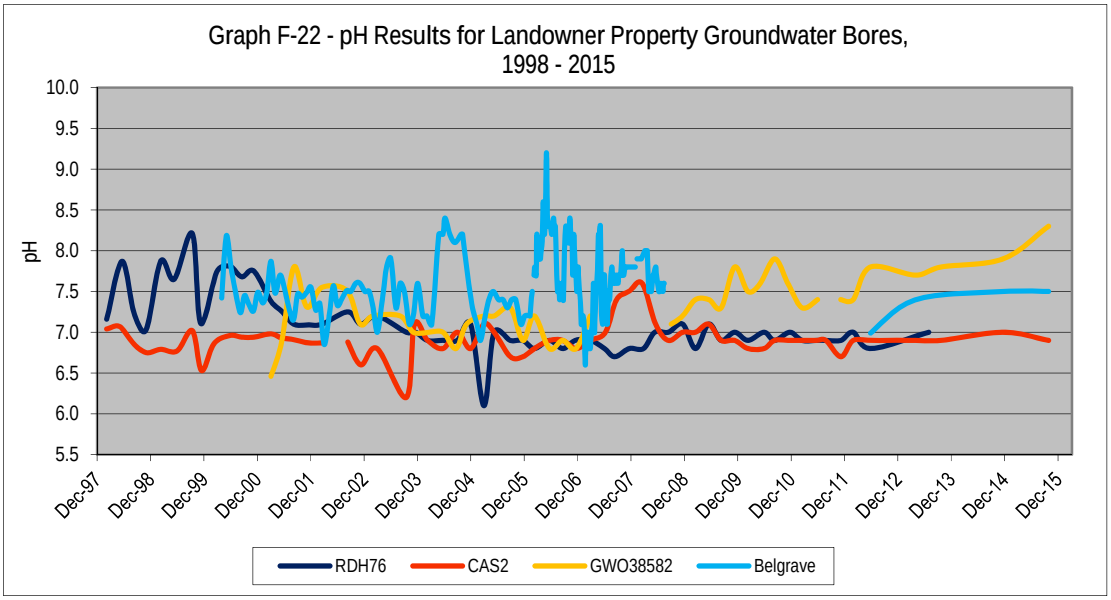

Graph F-17 - Electrical Conductivity Results for Regolith Groundwater Bores, 1998 - 2015
Electrical Conductivity (Us/cm)
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
Dec-97
Dec-98
Dec-99
Dec-00
Dec-01
Dec-02
Dec-03
Dec-04
Dec-05
Dec-06
Dec-07
Dec-08
Dec-09
Dec-10
Dec-11
Dec-12
Dec-13
Dec-14
Dec-15
TLON1
CAS2
CAS4
JLON1


Graph F-18 - Groundwater Level Results for Reject Emplacement Area Bores, 2001 - 2015
Depth to Groundwater (metres)
0
1.5
3
4.5
6
7.5
9
10.5
12
13.5
Dec-00
Dec-01
Dec-02
Dec-03
Dec-04
Dec-05
Dec-06
Dec-07
Dec-08
Dec-09
Dec-10
Dec-11
Dec-12
Dec-13
Dec-14
Dec-15
RDH508
RDH509
RDH510
RDH511


Graph F-19 - pH Results for Reject Emplacement Area Bores, 2001 - 2015
pH
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
Dec-00
Dec-01
Dec-02
Dec-03
Dec-04
Dec-05
Dec-06
Dec-07
Dec-08
Dec-09
Dec-10
Dec-11
Dec-12
Dec-13
Dec-14
Dec-15
RDH508
RDH509
RDH510
RDH511


Graph F-20 - Electrical Conductivity Results for Reject Emplacement Area Bores, 2001 - 2015
Electrical Conductivity (Us/cm)
9,000
7,500
6,000
4,500
3,000
1,500
0
Dec-00
Dec-01
Dec-02
Dec-03
Dec-04
Dec-05
Dec-06
Dec-07
Dec-08
Dec-09
Dec-10
Dec-11
Dec-12
Dec-13
Dec-14
Dec-15
RDH508
RDH509
RDH510
RDH511


Graph F-21 - Groundwater Level Results for Landowner Property Bores, 2001 - 2015
Depth to Groundwater (metres)
0
5
10
15
20
25
30
35
40
45
Dec-00
Dec-01
Dec-02
Dec-03
Dec-04
Dec-05
Dec-06
Dec-07
Dec-08
Dec-09
Dec-10
Dec-11
Dec-12
Dec-13
Dec-14
Dec-15
RDH76
CAS2
GWO38582
Belgrave


Graph F-22 - pH Results for Landowner Property Groundwater Bores, 1998 - 2015
pH
10.0
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
Dec-97
Dec-98
Dec-99
Dec-00
Dec-01
Dec-02
Dec-03
Dec-04
Dec-05
Dec-06
Dec-07
Dec-08
Dec-09
Dec-10
Dec-11
Dec-12
Dec-13
Dec-14
Dec-15
RDH76
CAS2
GWO38582
Belgrave

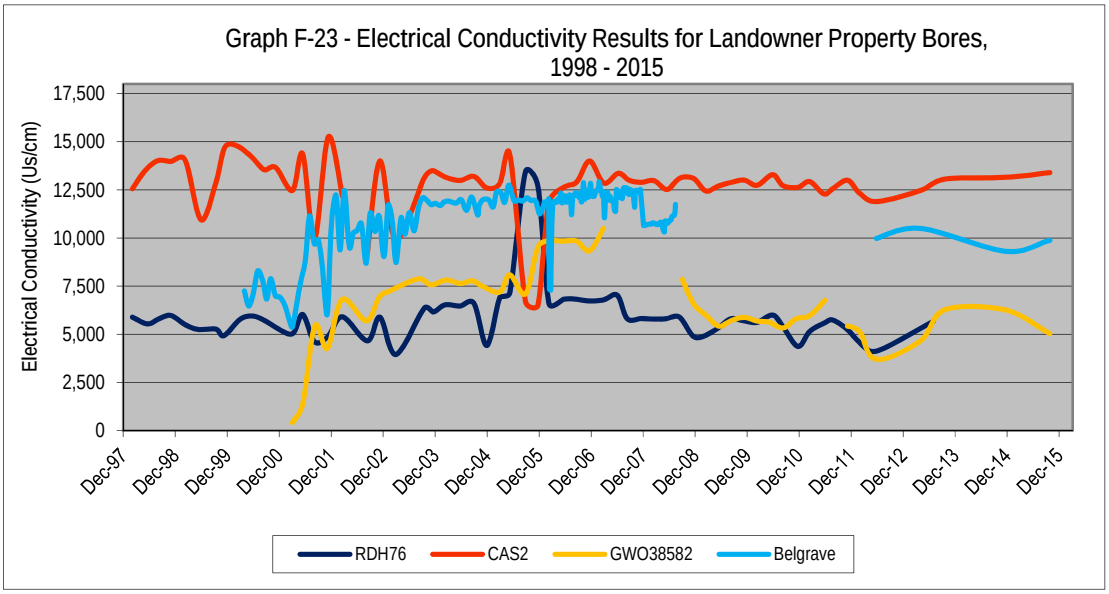

Graph F-23 - Electrical Conductivity Results for Landowner Property Bores, 1998 - 2015
Electrical Conductivity (Us/cm)
17,500
15,000
12,500
10,000
7,500
5,000
2,500
0
Dec-97
Dec-98
Dec-99
Dec-00
Dec-01
Dec-02
Dec-03
Dec-04
Dec-05
Dec-06
Dec-07
Dec-08
Dec-09
Dec-10
Dec-11
Dec-12
Dec-13
Dec-14
Dec-15
RDH76
CAS2
GWO38582
Belgrave

Table F-1 – 2015 Monitoring data for Groundwater bores

Sample Location	Sample Date	Electrical Conductivity µS/cm - field	Total Dissolved Solids - calculation mg/L	Total Suspended Solids @105C mg/L	pH - field	Alkalinity - Bicarbonate mg CaCO3/L	Alkalinity - Hydroxide mg CaCO3/L	Alkalinity - Total as CaCO3 mg CaCO3/L	Calcium - total mg/L	Chloride mg/L	Magnesium - total mg/L	Potassium - total mg/L	Sodium - total mg/L	Sulfates mg/L	Depth to Ground - metres	Depth to Standpipe - metres	NO SAMPLE / Comment
Hunter River Alluvium																	
FRA1	29-Oct-15	502			7.10										10.14	10.50	
JOR1	28-Oct-15	2370			7.10										7.81	8.42	
KAI1	29-Oct-15	479			7.10										10.71	11.27	
WAL2	28-Oct-15	2060			7.00										9.71	9.84	
Dart Brook Alluvium																	
ADN1	29-Oct-15	2870			7.10										5.32	5.94	
DAN2	29-Oct-15	2160			7.10										5.38	5.53	
WM1A	29-Oct-15	2830			7.30										6.21	6.75	
Sandy Creek Alluvium																	
BRO3	29-Oct-15	586			8.30										4.35	4.38	
COR3	29-Oct-15	2050			7.80										5.17	5.55	
GW038412	28-Oct-15	1402			7.00										3.35	3.35	
WM3	29-Oct-15	1840			6.80										6.78	7.47	
Sandy Creek South																	
GWO32889																	No access
Staged Discharge Dam																	
RDH505																	No access

Sample Location	Sample Date	Electrical Conductivity µS/cm - field	Total Dissolved Solids - calculation mg/L	Total Suspended Solids @105C mg/L	pH - field	Alkalinity - Bicarbonate mg CaCO3/L	Alkalinity - Hydroxide mg CaCO3/L	Alkalinity - Total as CaCO3 mg CaCO3/L	Calcium - total mg/L	Chloride mg/L	Magnesium - total mg/L	Potassium - total mg/L	Sodium - total mg/L	Sulfates mg/L	Depth to Ground - metres	Depth to Standpipe - metres	NO SAMPLE / Comment
Coal Seams																	
DDH183	28-Oct-15	7370			6.90										27.25	27.77	
DDH193	05-Nov-15	6420			6.90										42.05	42.96	
DDH212a	05-Nov-15	3770			8.30										26.59	27.39	
Kayuga 1	05-Nov-15	7300			6.90										12.59	13.09	
Regolith over Kayuga LW																	
CAS2	28-Oct-15	13400			6.90										38.30	38.85	
CAS4	28-Oct-15	11210			6.90										27.91	28.13	
JLON1	05-Nov-15																
TLON1	05-Nov-15	6380			7.20										11.25	11.50	
Rejects Emplacement Area																	
RDH508	29-Oct-15	8060			6.90										9.98	10.53	
RDH508a	29-Oct-15	7070			7.00										17.64	18.12	
RDH509	29-Oct-15	5670			7.10										10.08	10.33	
RDH509a	29-Oct-15																
RDH510	29-Oct-15	8010			7.60										9.39	9.90	
RDH510a	29-Oct-15	8520			7.00										9.43	9.83	
RDH511	27-Nov-15	7160			7.20										7.20	7.20	
RDH511a	05-Nov-15	6220			7.40										8.11	8.11	
Property Subsidence Management Plans																	
Belgrave	28-Oct-15	9880			7.5										7.30	7.30	

Sample Location	Sample Date	Electrical Conductivity µS/cm - field	Total Dissolved Solids - calculation mg/L	Total Suspended Solids @105C mg/L	pH - field	Alkalinity - Bicarbonate mg CaCO3/L	Alkalinity - Hydroxide mg CaCO3/L	Alkalinity - Total as CaCO3 mg CaCO3/L	Calcium - total mg/L	Chloride mg/L	Magnesium - total mg/L	Potassium - total mg/L	Sodium - total mg/L	Sulfates mg/L	Depth to Ground - metres	Depth to Standpipe - metres	NO SAMPLE / Comment
GWO38582	28-Oct-15	5040			8.3										4.73	5.07	
Other Monitoring Bores																	
Athlone	28-Oct-15	10590			7.00										6.23	6.57	
Bel1	28-Oct-15	2940			7.40										3.24	3.24	
CAD2	29-Oct-15	4410			6.40										12.29	12.53	
DDH124	28-Oct-15														14.21	14.80	
DDH212b	05-Nov-15	3770			8.40										26.59	27.29	
DDH212c	05-Nov-15	3870			8.40										26.59	27.20	
RDH271	28-Oct-15	5880			7.40										82.07	82.46	

Table F-2 – Statistical Analysis of of Groundwater Bore Monitoring Data for 2015

Sample Location	Parameter	Mean	Standard Deviation	Variance	Minimum	Maximum
Hunter River Alluvium						
JOR1*	pH	7.3	0.212	0.045	7.1	7.1
JOR1*	EC	2265.0	318.198	101250.000	2370.0	2370.0
WAL2*	pH	7.3	0.071	0.005	7.0	7.0
WAL2*	EC	883.6	39.598	1568.000	2060.0	2060.0
KAI1*	pH	7.3	0.283	0.080	7.1	7.1
KAI1*	EC	527.5	30.406	924.500	479.0	479.0
KAI2#	pH	7.1	N/A	N/A	N/A	N/A
KAI2#	EC	546.0	N/A	N/A	N/A	N/A
FRA1*	pH	7.3	0.212	0.045	7.1	7.1
FRA1*	EC	487.0	50.912	2592.000	502.0	502.0
Dart Brook Alluvium						
DDH73#	pH	N/A	N/A	N/A	N/A	N/A
DDH73#	EC	N/A	N/A	N/A	N/A	N/A
DAN2*	pH	7.2	0.071	0.005	7.1	7.1
DAN2*	EC	2460.0	28.284	800.000	2160.0	2160.0
WM1A*	pH	7.3	N/A	N/A	7.3	7.3
WM1A*	EC	2030.0	N/A	N/A	2830.0	2830.0
ADN1*	pH	7.1	N/A	N/A	7.1	7.1
ADN1*	EC	2870.0	14.142	200.000	2870.0	2870.0
Sandy Creek						
GWO38412*	pH	7.3	0.283	0.080	7.0	7.0
GWO38412*	EC	1138.0	330.926	109512.000	1402.0	1402.0
BRO3*	pH	8.6	0.707	0.500	8.3	8.3
BRO3*	EC	755.5	413.657	171112.500	586.0	586.0
COR3*	pH	7.9	0.141	0.020	7.8	7.8
COR3*	EC	1904.5	446.184	199080.500	2050.0	2050.0
WM3*	pH	7.0	0.071	0.005	6.8	6.8
WM3*	EC	2075.0	275.772	76050.000	1840.0	1840.0
Sandy Creek South						
GWO32889#	pH	N/A	N/A	N/A	N/A	N/A
GWO32889#	EC	N/A	N/A	N/A	N/A	N/A
Staged Discharge Dam						
RDH505#	pH	7.0	N/A	N/A	N/A	N/A
RDH505#	EC	12430.0	N/A	N/A	N/A	N/A

Sample Location	Parameter	Mean	Standard Deviation	Variance	Minimum	Maximum
Coal Seams						
DDH183*	pH	7.0	0.000	0.000	6.9	6.9
DDH183*	EC	7015.0	16203.579	68450.000	7370.0	7370.0
DDH193*	pH	7.1	0.071	0.005	6.9	6.9
DDH193*	EC	6525.0	63.640	4050.000	6420.0	6240.0
Kayuga 1*	pH	7.0	0.212	0.045	6.9	6.9
Kayuga 1*	EC	7360.0	4253.827	217800.000	7300.0	7300.0
DDH212(a)*	pH	8.3	0.566	0.320	8.3	8.3
DDH212(a)*	EC	3540.0	325.269	105800.000	3770.0	3770.0
Regolith						
CAS2*	pH	6.9	0.000	0.000	6.9	6.9
CAS2*	EC	12760.0	424.264	180000.000	13400.0	13400.0
CAS4*	pH	6.8	0.000	0.000	6.9	6.9
CAS4*	EC	11505.0	35.355	1250.000	11210.0	11210.0
JLON1*	pH	N/A	N/A	N/A	N/A	N/A
JLON1*	EC	N/A	N/A	N/A	N/A	N/A
TLON1*	pH	7.0	0.141	0.020	7.2	7.2
TLON1*	EC	3870.0	820.244	672800.000	6380.0	6380.0
Rejects Emplacement Area						
RDH508*	pH	7.0	0.100	0.010	6.9	6.9
RDH508*	EC	7906.7	251.064	63033.333	8060.0	8060.0
RDH508(a)*	pH	7.2	0.153	0.023	7.0	7.0
RDH508(a)*	EC	7480.0	196.977	38800.000	7070.0	7070.0
RDH509*	pH	7.5	0.153	0.023	7.1	7.1
RDH509*	EC	4430.0	2074.873	4305100.000	5670.0	5670.0
RDH509(a)#	pH	N/A	N/A	N/A	N/A	N/A
RDH509(a)#	EC	N/A	N/A	N/A	N/A	N/A
RDH510*	pH	7.2	0.100	0.010	7.6	7.6
RDH510*	EC	8250.0	658.255	433300.000	8010.0	8010.0
RDH510(a)*	pH	7.1	0.200	0.040	7.0	7.0
RDH510(a)*	EC	7930.0	443.959	197100.000	8520.0	8520.0
RDH511*	pH	7.4	0.058	0.003	7.2	7.2
RDH511*	EC	4386.7	2388.780	7289233.333	7160.0	7160.0
RDH511(a)*	pH	7.3	0.153	0.023	7.4	7.4
RDH511(a)*	EC	7106.7	770.216	593233.333	6220.0	6220.0
Property Subsidence Management Plans						
RDH76#	pH	7.0	N/A	N/A	N/A	N/A
RDH76#	EC	5670.0	N/A	N/A	N/A	N/A
GWO38582*	pH	7.8	0.071	0.005	8.3	8.3

Sample Location	Parameter	Mean	Standard Deviation	Variance	Minimum	Maximum
GWO38582*	EC	5465.0	1152.584	1328450.000	5040.0	5040.0
Belgrave*	pH	7.4	N/A	N/A	7.5	7.5
Belgrave*	EC	10500.0	N/A	N/A	9880.0	9880.0
GWO33725#	pH	N/A	N/A	N/A	N/A	N/A
GWO33725#	EC	N/A	N/A	N/A	N/A	N/A

** One sample collected in 2015*

 # No sampling undertaken in 2015

Tree Screen Monitoring

Appendix

G

AngloAmerican

Hansen Bailey
ENVIRONMENTAL CONSULTANTS

EASTERN SIDE OF THE NEW ENGLAND HIGHWAY

Table 1: Results – Southern Section

Tree No	Tree Type	Height (m)				DBH (cm)				Leaf density (%)				Tree Health			
		Mar 2012	Apr 2013	Mar 2014	Mar 2015	Mar 2012	Apr 2013	Mar 2014	Mar 2015	Mar 2012	Apr 2013	Mar 2014	Mar 2015	Mar 2012	Apr 2013	Mar 2014	Mar 2015
1	*Casuarina*	-	-	-	-	-	-	-	-	-	-	-	-	*No longer present*	-	-	
2	*Casuarina*	6.5	6.5	6.5	**7.0**	18	18	18	**18**	55	55	50	**50**	Generally healthy	Generally healthy	Generally healthy	**Stressed**
3	*Casuarina*	-	-	-	-	-	-	-	-	-	-	-	-	*No longer present*	-	-	
4	*Casuarina*	5.5	5.5	5.5	**5.5**	15	15	15	**13**[1]	<40	<40	<40	**<40**	Stressed	Very Stressed	Very Stressed	**Very Stressed**
5	*Casuarina*	7.0	7.5	8.0	**9.0**	13	13	13	**13**	45	50	55	**50**	Stressed	Generally healthy	Generally healthy	**Generally healthy**
6	*Casuarina*	7.0	7.0	8.0	**9.0**	14	14	14	**14**	60	65	65	**65**	Generally healthy	Generally healthy	Healthy	**Healthy**
7	*Casuarina*	-	-	-	-	-	-	-	-	-	-	-	-	*No longer present*	-	-	-
8	*Eucalypt*	-	-	-	-	-	-	-	-	-	-	-	-	*No longer present*	-	-	-
9	*Eucalypt*	-	-	-	-	-	-	-	-	-	-	-	-	*No longer present*	-	-	-
10	*Eucalypt*	-	-	-	-	-	-	-	-	-	-	-	-	*No longer present*	-	-	-
11	*Casuarina*	10	10	10.5	**11**	14	14	14	**14**	55	60	60	**60**	Generally healthy	Generally healthy	Healthy	**Healthy**
12	*Casuarina*	10.5	11	11	**12**	15	15	15	**15**	45	50	50	**55**	Generally healthy	Generally healthy	Healthy	**Healthy**
13	*Casuarina*	10	10	10.5	**11**	12	12	12	**13**	50	55	55	**55**	Generally healthy	Generally healthy	Healthy	**Healthy**
14	*Casuarina*	10	10	10	**10.5**	21	21	21	**21**	45	55	60	**60**	Generally healthy	Generally healthy	Healthy	**Healthy**

Tree No	Tree Type	Height (m)				DBH (cm)				Leaf density (%)				Tree Health			
		Mar 2012	Apr 2013	Mar 2014	Mar 2015	Mar 2012	Apr 2013	Mar 2014	Mar 2015	Mar 2012	Apr 2013	Mar 2014	Mar 2015	Mar 2012	Apr 2013	Mar 2014	Mar 2015
15	*Casuarina*	8.5	9.0	10	**11**	10	10	11	**12**	45	60	60	**60**	Generally healthy	Generally healthy	Generally healthy	**Generally healthy**
16	*Casuarina*	8.5	8.5	8.5	**8.5**	16	16	16	**16**	45	40	<40	**<40**	Stressed	Stressed	Very stressed	**Very stressed**
17	*Casuarina*	8.5	9.0	9.0	**10.0**	14	14	15	**15**	50	50	55	**60**	Generally healthy	Generally healthy	Healthy	**Healthy**
18	*Eucalypt*	-	-	-	-	-	-	-	-	-	-	-	-	*No longer present*	-	-	-
19	*Eucalypt*	-	-	-	-	-	-	-	-	-	-	-	-	*No longer present*	-	-	-
20	*Eucalypt*	-	-	-	-	-	-	-	-	-	-	-	-	*No longer present*	-	-	-
21	*Casuarina*	8.0	9.0	10	**10**	13	13	14	**14**	40	55	60	**60**	Generally healthy	Generally healthy	Generally healthy	**Generally healthy**
22	*Casuarina*	5.5	6.0	7.0	**8.0**	9.5	9.5	11	**11**	45	55	55	**60**	Generally healthy	Generally healthy	Generally healthy	**Generally healthy**
23	*Casuarina*	7.5	8.0	9.5	**10.0**	11	11	12	**12**	50	60	60	**60**	Generally healthy	Generally healthy	Generally healthy	**Generally healthy**
24	*Casuarina*	5.0	5.0	6.0	**7.0**	10	10	11	**11**	50	60	70	**65**	Generally healthy	Generally healthy	Generally healthy	**Generally healthy**
25	*Casuarina*	6.5	6.5	7.0	**8.0**	8.5	10	11	**11**	45	50	65	**60**	Generally healthy	Generally healthy	Generally healthy	**Generally healthy**
26	*Casuarina*	-	-	-	-	-	-	-	-	-	-	-	-	*No longer present*	-	-	-
27	*Eucalypt*	-	-	-	-	-	-	-	-	-	-	-	-	*No longer present*	-	-	-
28	*Eucalypt*	-	-	-	-	-	-	-	-	-	-	-	-	*No longer present*	-	-	-
29	*Eucalypt*	-	-	-	-	-	-	-	-	-	-	-	-	*No longer present*	-	-	-

Tree No	Tree Type	Height (m)				DBH (cm)				Leaf density (%)				Tree Health			
		Mar 2012	Apr 2013	Mar 2014	Mar 2015	Mar 2012	Apr 2013	Mar 2014	Mar 2015	Mar 2012	Apr 2013	Mar 2014	Mar 2015	Mar 2012	Apr 2013	Mar 2014	Mar 2015
30	*Eucalypt*	-	-	-	-	-	-	-	-	-	-	-	-	*No longer present*	-	-	
1A	*Eucalypt*	9.0	9.0	9.5	**10.0**	18	20	22	**22**	40	50	55	**50**	Generally healthy	Generally healthy	Generally healthy	**Generally healthy**
2A	*Casuarina*	4.5	4.5	5.0	**6.0**	12	12	12	**13**	45	60	60	**65**	Stressed	Stressed	Stressed	**Generally healthy**
3A	*Eucalypt*	9.5	9.5	9.5	**10.0**	22	22	22	**22**	40	50	60	**55**	Generally healthy	Generally healthy	Healthy	**Generally healthy**
4A	*Casuarina*	7.0	7.5	7.5	**8.5**	10	10	11	**15**	50	55	55	**60**	Generally healthy	Generally healthy	Generally healthy	**Generally healthy**
5A	*Casuarina*	7.0	7.5	7.5	**8.5**	9.5	10	11	**12**	45	45	50	**50**	Generally healthy	Generally healthy	Generally healthy	**Generally healthy**
6A	*Eucalypt*	13	13	13	**14**	22	22	22	**22**	40	40	40	**40**	Generally healthy	Stressed	Stressed	**Generally healthy**
7A	*Casuarina*	4.0	4.0	4.0	**5.0**	3	3	4	**4**	45	45	50	**50**	Generally healthy	Generally healthy	Generally healthy	**Generally healthy**
8A	*Eucalypt*	15	15	15.5	**16**	18	18	18	**18**	40	45	45	**45**	Generally healthy	Generally healthy	Generally healthy	**Generally healthy**
9A	*Casuarina*	7.5	7.5	9.0	**10.5**	11	10	11	**13**	45	45	50	**50**	Generally healthy	Generally healthy	Generally healthy	**Generally healthy**
10A	*Casuarina*	6.0	6.0	7.0	**8.5**	9	9.5	10	**10**	45	45	50	**55**	Generally healthy	Stressed	Generally healthy	**Generally healthy**

1 – Diameter measurements completed during this monitoring event were inconsistent with measurements taken in previous years for this tree. The measurement was checked and confirmed at different heights and the tree location was also confirmed.

EASTERN SIDE OF THE NEW ENGLAND HIGHWAY

Table 2: Northern Section

Tree No	Tree Type	Height (m)				DBH (cm)				Leaf density (%)				Tree Health			
		Mar 2012	Apr 2013	Mar 2014	Mar 2015	Mar 2012	Apr 2013	Mar 2014	Mar 2015	Mar 2012	Apr 2013	Mar 2014	Mar 2015	Mar 2012	Apr 2013	Mar 2014	Mar 2015
1B	*Eucalypt*	12.0	12.0	12.5	**14.0**	17	17	17	**18**	50	55	55	**50**	Generally healthy	Generally healthy	Generally healthy	**Generally healthy**
2B	*Eucalypt*	9.5	10.0	11.5	**12.5**	11	11	11	**11**	45	45	55	**55**	Generally healthy	Generally healthy	Healthy	**Healthy**
3B	*Eucalypt*	12.5	12.5	12.5	**14.5**	20	21	21	**22**	60	60	60	**60**	Healthy	Healthy	Healthy	**Healthy**
4B	*Eucalypt*	6.0	6.5	7.0	**7.0**	8	8	8	**8**	40	40	<40	**<40**	Generally healthy	Generally healthy	Stressed	**Very Stressed**
5B	*Eucalypt*	11.0	11.5	11.5	**12.5**	15	15	15	**15**	50	50	50	**50**	Generally healthy	Generally healthy	Generally healthy	**Generally healthy**
6B	*Eucalypt*	2.5	3.0	3.5	**3.5**	2	2.5	3	**4**	40	40	40	**<40**	Very Stressed	Stunted	Stressed	**Stressed**
7B	-	-	-	-	-	-	-	-	-	-	-	-	-	*No longer present*	-	-	-
8B	*Eucalypt*	8.0	8.5	9.0	**10.5**	12	12	12	**12**	45	55	55	**50**	Generally healthy	Generally healthy	Generally healthy	**Generally healthy**
9B	*Eucalypt*	8.0	9.0	9.5	**10.5**	9	9.5	12	**12**	45	50	55	**50**	Generally healthy	Generally healthy	Generally healthy	**Generally healthy**
10B	*Eucalypt*	7.5	7.5	7.5	**8.0**	7	7	7	**7**	40	40	<40	**<40**	Stressed	Stunted	Very stressed	**Very Stressed**

WEST OF NEW ENGLAND HIGHWAY

Table 3 Species count results – Sector 1 Plot 1

Power pole ID & GPS		AJ60227 56 H 301416 6434948
Photo No.		1.10
Bearing		260°

Species ID	GPS	Photo no.	Alive or dead	Height (cm)			Comments
				Sep 13	Oct 14	Oct 15	
A. decora	56 H 301411 6434948	1.11	Alive	65	68	80	Row 1
A. decora	56 H 301410 6434951	-	Dead	-	54	-	Row 1
C. viminalis	56 H 301406 6434948	1.12	Alive	128	155	155	Row 2
C. viminalis	56 H 301407 6434946	1.13	Alive	90	110	125	Row 2
Eucalyptus (juvenile)	56 H 301403 6434946	1.14	Alive	70	16	47	Row 3
C. cunninghamiana	56 H 301402 6434950	-	Dead	150	60	-	Row 3
Eucalyptus (juvenile)	56 H 301399 6434946	1.15	Alive	230	295	340	Row 4
-	56 H 301394 6434942	-	Dead	-	-	-	Row 5
Eucalyptus (juvenile)	56 H 301392 6434948	1.16	Alive	155	160	155[1]	Row 5

1 – Some dieback apparent. Height measured to top of living branches which accounts for height decrease since last measurement in 2014.

WEST OF NEW ENGLAND HIGHWAY

Table 4 Species count results – Sector 1 Plot 2

Power pole ID & GPS		AJ60254 56 H 301408 6434987
Photo No.		Not taken
Bearing		260°

Species ID	GPS	Photo no.	Alive or dead	Height (cm)			Comments
				Sep 13	Oct 14	Oct 15	
-	56 H 301404 6434990	-	Dead	-	-	-	Row 1
-	56 H 301406 6434986	-	Dead	-	-	-	Row 1
C. viminalis	56 H 301403 6434987	-	Dead	143	-	-	Row 2
C. viminalis	56 H 301402 6434990	-	Dead	150	-	-	Row 2
C. cunninghamiana	56 H 301397 6434986	1.21	Alive	148	180	310	Row 3
C. cunninghamiana	56 H 301393 6434988	1.22	Alive	230	330	520	Row 4
Eucalyptus (juvenile)	56 H 301388 6434985	1.23	Alive	-	34	84	Row 5
Eucalyptus (juvenile)	56 H 301387 6434989	1.24	Alive	198	250	440	Row 5

WEST OF NEW ENGLAND HIGHWAY

Table 5 Species count results – Sector 3 plot 1

Power pole ID & GPS		AJ60250 56 H 301348 6435440
Photo No.		3.10
Bearing		270°

Species ID	GPS	Photo no.	Alive or dead	Height (cm)			Comments
				Sep 13	Oct 14	Oct 15	
C. viminalis	56 H 301368 6435439	3.11	Alive	60	105	133	Row 1
C. viminalis	56 H 301368 6435435	3.12	Alive	75	100	110	Row 1
C. viminalis	56 H 301365 6435436	3.13	Alive	146	150	150	Row 2
-	56 H 301360 6435437	-	Dead	-	-	-	Row 2
C. cunninghamiana	56 H 301360 6435437	3.14	Alive	350	450 (est)	530 (est)	Row 3
C. cunninghamiana	56 H 301355 6435439	3.15	Alive	380	450 (est)	580 (est)	Row 4
C. cunninghamiana	56 H 301350 6435440	3.16	Alive	215	300	480 (est)	Row 5

WEST OF NEW ENGLAND HIGHWAY

Table 6 Species count results – Sector 3 plot 2

Power pole ID & GPS		AJ60259 56 H 301354 6435632
Photo No.		3.20
Bearing		260°

Species ID	GPS	Photo no.	Alive or dead	Height (cm)			Comments
				Sep 13	Oct 14	Oct 15	
A. decora	56 H 301369 6435631	3.21	Alive	60	82	107	Row 1
A. decora	56 H 301367 6435628	3.22	Alive	68	70	108	Row 1
A. decora	56 H 301368 6435624	3.23	Alive	120	170	185	Row 1
C. viminalis	56 H 301365 6435626	3.24	Alive	197	200	210	Row 2
C. viminalis	56 H 301365 6435628	3.25	Alive	152	175	175	Row 2
C. viminalis	56 H 301366 6435631	3.26	Alive	200	260	280	Row 2
Eucalyptus (juvenile)	56 H 301359 6435629	3.27	Alive	240	380 (est)	460 (est)	Row 3
C. cunninghamiana	56 H 301354 6435627	3.28	Alive	350	400 (est)	560 (est)	Row 4
C. cunninghamiana	56 H 301349 6435628	3.29	Alive	121	170	215	Row 5

WEST OF NEW ENGLAND HIGHWAY

Table 7 Species count results – Sector 5 plot 1

Power pole ID & GPS		AJ60042 56 H 301345 6436281
Photo No.		5.10
Bearing		260°

Species ID	GPS	Photo no.	Alive or dead	Height (cm)			Comments
				Sep 13	Oct 14	Oct 15	
A. decora *	56 H 301340 6436278	-	Dead	50	-	-	Row 1
C. viminalis	56 H 301336 6436277	-	Dead	95	95	-	Row 2
C. viminalis *	56 H 301337 6436278	-	Dead	120	-	-	Row 2
Eucalyptus (juvenile)	56 H 301332 6436281	5.11	Alive	115	135	170	Row 3
C. cunninghamiana	56 H 301328 6436277	5.12	Alive	380	400 (est)	540 (est)	Row 4
C. cunninghamiana	56 H 301323 6436275	5.13	Alive	280	290	420 (est)	Row 5

WEST OF NEW ENGLAND HIGHWAY

Table 8 Species count results – Sector 5 plot 2

Power pole ID & GPS		AJ60040 56 H 301309 6436459
Photo No.		5.20
Bearing		260°

Species ID	GPS	Photo no.	Alive or dead	Height (cm)			Comments
				Sep 13	Oct 14	Oct 15	
C. viminalis	56 H 301306 6436459	5.21	Alive	173	190	220	Row 1
A. decora	56 H 301307 6436456	-	Dead	43	50	-	Row 1
C. viminalis	56 H 301303 6436456	5.22	Alive	180	220	275	Row 2
C. viminalis	56 H 301302 6436458	5.23	Alive	230	240	260	Row 2
C. viminalis	56 H 301299 6436456	5.24	Alive	190	230	240	Row 3
C. cunninghamiana	56 H 301294 6436453	5.25	Alive	450	600 (est)	900 (est)	Row 4
Eucalyptus (juvenile)	56 H 301293 6436458	5.26	Alive	240	380 (est)	580 (est)	Row 4
C. cunninghamiana	56 H 301289 6436454	5.27	Alive	480	600 (est)	1000 (est)	Row 5

REA Temperature Monitoring Summary

Appendix

H

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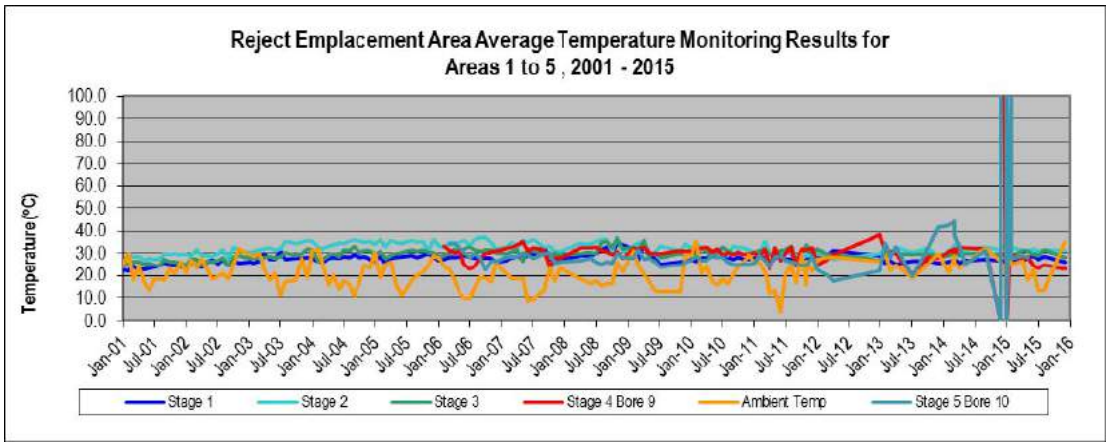
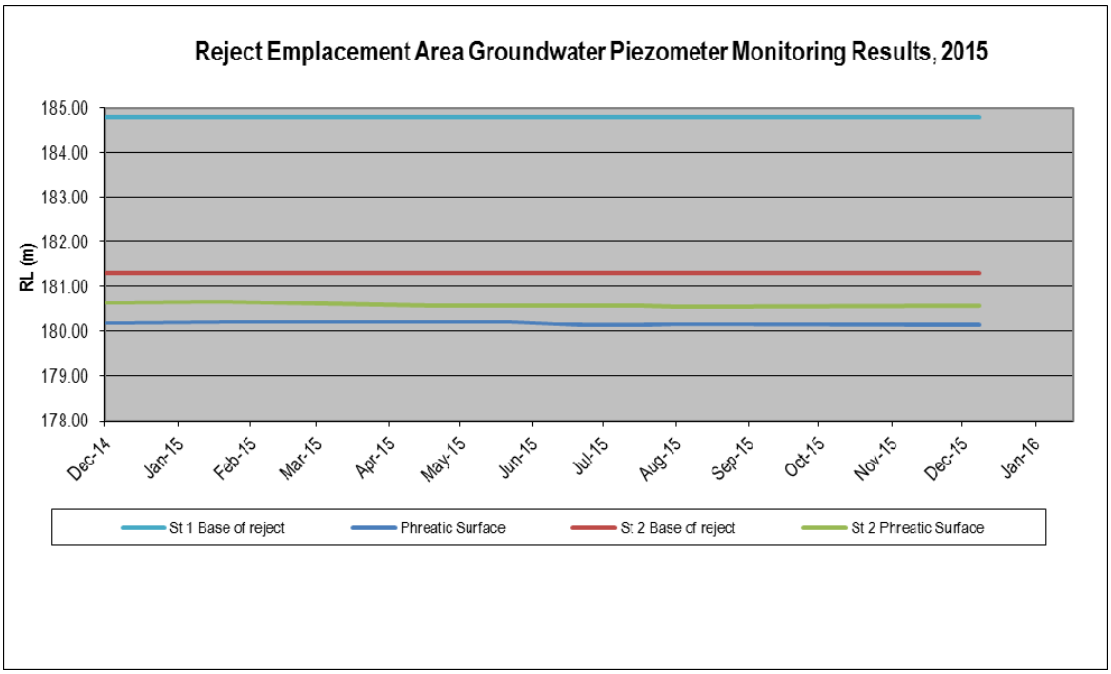

Reject Emplacement Area Average Temperature Monitoring Results for
Areas 1 to 5 , 2001 - 2015
Temperature (°C)
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Jan-01
Jul-01
Jan-02
Jul-02
Jan-03
Jul-03
Jan-04
Jul-04
Jan-05
Jul-05
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
Jul-11
Jan-12
Jul-12
Jan-13
Jul-13
Jan-14
Jul-14
Jan-15
Jul-15
Jan-16
Stage 1
Stage 2
Stage 3
Stage 4 Bore 9
Ambient Temp
Stage 5 Bore 10


Reject Emplacement Area Groundwater Piezometer Monitoring Results, 2015
RL (m)
185.00
184.00
183.00
182.00
181.00
180.00
179.00
178.00
Dec-14
Jan-15
Feb-15
Mar-15
Apr-15
May-15
Jun-15
Jul-15
Aug-15
Sep-15
Oct-15
Nov-15
Dec-15
Jan-16
St 1 Base of reject
Phreatic Surface
St 2 Base of reject
St 2 Phreatic Surface

Water Balance Schematic

Appendix I

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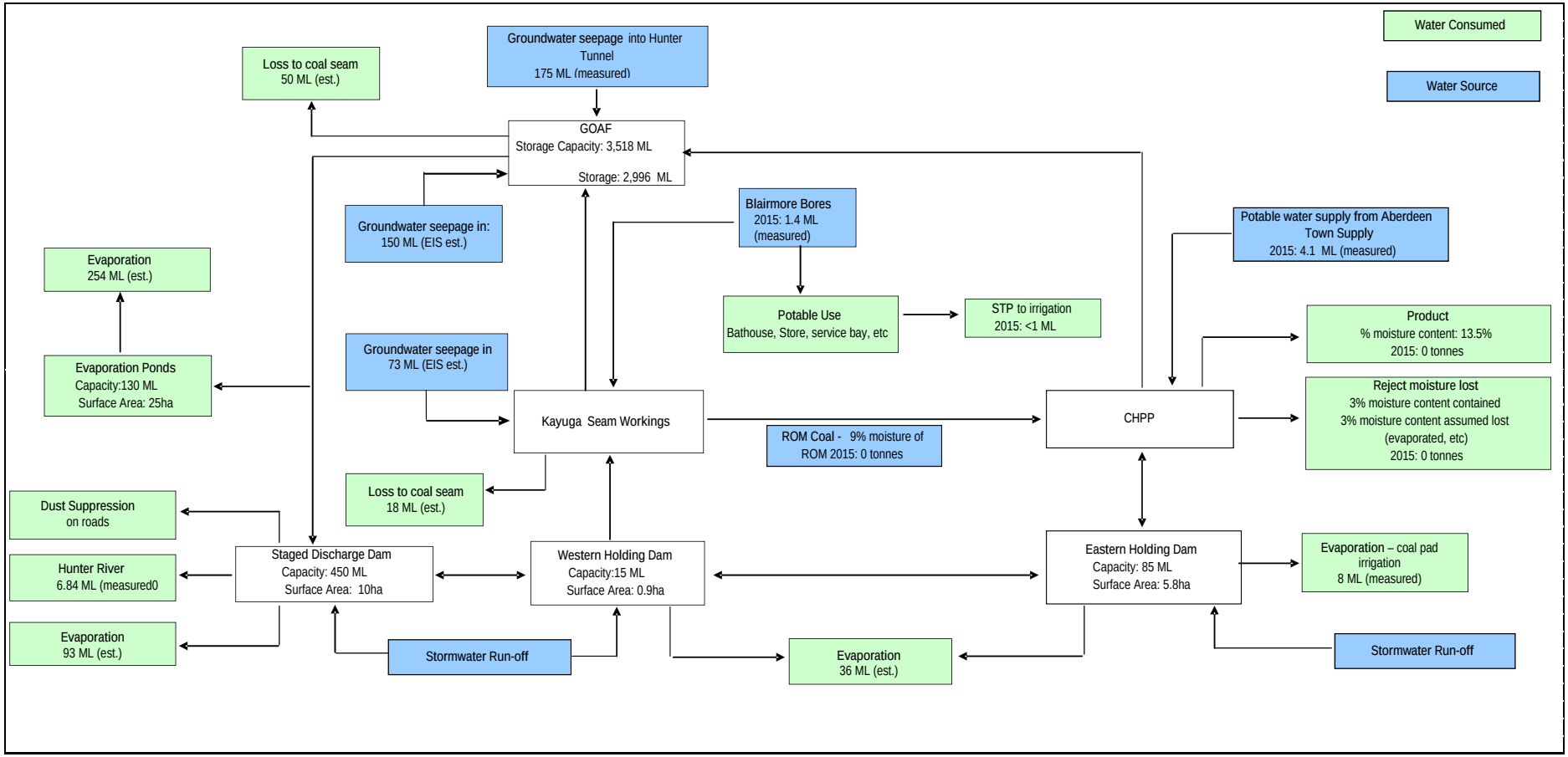
Water Balance Schematic



Compliance Against Regulatory Licences and Approvals

Appendix

J

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Table J-1 – Summary of Development Consent Compliance 2015

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
1	General		
1.1	Adherence to terms of DA, EIS, etc.		
(a)	The development is to be carried out generally in accordance with Development Application No. 231-07-2000, and the EIS dated June 2000, prepared by HLA EnviroSciences Pty Ltd and certified in accordance with Section 78A(8) of the Act, and the following documentation:	Compliant	2013 Independant Audit finding generally compliant following the rectification of the out of compliance issues.
(i)	The following documents supplied to the EPA in relation to the development:	Compliant	Noted.
	Odour Analysis of Ventilation Air from the No.1 Ventilation Shaft at Dartbrook Mine, Office Memorandum, David Rollings, HLA Envirosciences Pty Ltd to Colin Phillips, HLA Envirosciences Pty Ltd, (dated 11th May 2000);	Compliant	Noted.
	Laboratory Results from The Odour Unit Pty Ltd to HLA Envirosciences Pty Ltd, (dated 29th March 2000);	Compliant	Noted.
	Stack Emissions Testing Dartbrook Coal Pty Ltd, Dartbrook, NSW, April 2000, 1st May 2000. Prepared by HLA Envirosciences Pty Ltd on behalf of Dartbrook Coal Pty Ltd;	Compliant	Noted.
	Analysis of Gaseous Discharges from Dartbrook Mine Operations and additionally, Ambient Air Samples from Selected Background Sites, Office Memorandum from Ken Ferguson/Dr Jim Orr, HLA Envirosciences Pty Ltd to Colin Phillips, HLA Envirosciences Pty Ltd, (dated 3rd March 2000);	Compliant	Noted.
	Dartbrook Ventilation Odour, Facsimile from Nigel Holmes, Holmes Air Sciences to Andrew Kerr, Shell Coal, (dated 28th September 2000);	Compliant	Noted.
(ii)	Additional information provided by the Applicant to the NPWS in relation to archaeology and flora and fauna matters, during the assessment of DA 231-07-2000;	Compliant	Noted.
(iii)	Anglo Coal Dartbrook Extended Mine Project Commission of Inquiry, Primary Submission (Dartbrook Coal, dated March 2001);	Compliant	Noted.
(iv)	Anglo Coal Dartbrook Extended Mine Project Commission of Inquiry, Submission in Reply (Dartbrook Coal, dated May 2001); and	Compliant	Noted.
(v)	Dartbrook Underground Coal Mine Project Environmental Impact Statement, prepared by Envirosciences Pty Limited, November 1990; and	Compliant	Noted.
(vi)	Development Application No. 53-10-98, dated 12 October 1998, accompanying Statement of Environmental Effects dated October 1998 prepared by Dartbrook Coal Pty Limited and in accordance with the development consent to construct a 450ML Discharge Dam and Pipeline issued by the Minister of Urban Affairs and Planning to Dartbrook Coal Pty Limited on 5 March 1999.	Compliant	Noted.

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
(viii)	The information titled *'Dartbrook Extended Coal Project Development Consent Modification Application Supporting Information'* prepared in support of a Section 96(1A) application for the Dartbrook Coal Mine, dated 27 May 2002, prepared by Hansen Consulting. (Also refer Development Consent Modification DA No. 231-07-2000)	Compliant	Noted.
(ix)	The information on the emergency tailings storage cell in the document titled "Dartbrook Extended Coal Project Development Consent Modification Application Supporting Information", dated 10 April 2003, prepared by Hansen Consulting;	Compliant	Noted.
(x)	The information titled "Dartbrook Coal Mine: Statement of Environmental Effects for Modification to Rejects Disposal System", dated 9 March 2004, prepared by Hansen Consulting; and	Compliant	Noted.
	The information titled "Dartbrook Mine Statement of Environmental Effects for New ROM Coal Stockpiles, Underground Tailings Disposal and Nitrogen Injection Plant", dated 12 August 2005 and prepared by Hansen Consulting.	Compliant	Noted.
	If there is any inconsistency between the above, either the conditions of this consent or the most recent document shall prevail to the extent of the inconsistency.	Compliant	Noted.
(b)	In accordance with section 80A(5) of the Environmental Planning and Assessment Act 1979 and clause 97 of the Environmental Planning and Assessment Regulation 2000, the Applicant shall, surrender to the Minister of Urban Affairs and Planning, the development consent for the Dartbrook Underground Mine (Authorisation 256) issued by the then Minister for Planning to Shell Company of Australia Ltd and Austen & Butta Limited and Bellambi Coal Company Pty Ltd and Dartbrook Coal Pty Limited on 2 December 1991, and the following development consents for Dartbrook Mine issued by the Minister for Urban Affairs and Planning or Muswellbrook Council by the 30 June 2005, or such other later date agreed by the Director-General:	Compliant	Found compliant in 2010 Independent Compliance Audit.
(i)	Amendment of a Development Consent (issued on 2 December 1991 by the Minister for Planning), dated 9 July 1997; and	Compliant	As above
(ii)	Modification to a Development Consent (issued on 2 December 1991 by the Minister for Planning), dated 21 September 1999.	Compliant	As above
	This consent will apply to all facilities and activities subject to these previous consents from the date they are relinquished.	Compliant	As above
(c)	If, at any time, the Director-General is aware of environmental impacts from the proposal that pose serious environmental concerns due to the failure of environmental management measures in place to ameliorate the impacts, the Director-General may order the Applicant to cease the activities causing those impacts until those concerns have been addressed to the satisfaction of the Director-General.	Compliant	Noted. To date, no order by the Director- General to cease activities has been given. Nil activities have been undertaken in reporting year due to Dartbrook operating under Care and Maintenance.

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
(d)	If any licence conditions are breached the applicant shall comply with any modification to the work as specified by the relevant agency.	Compliant	Noted. No modifications directed by relevant agencies in reporting year. Nil non- compliances occurred during reporting year. Evidence from EPL Annual return (reporting period December 2010-November 2012)
	Note: Conditions of this consent relating to the matters of air quality, noise management and proponents obligations (Conditions 6.1, 6.4 and 11.1, 11.2, 11.3 respectively) shall prevail over the conditions related to these matters in the existing consents for Dartbrook Mine as listed under Condition 1.1(b).	Compliant	Noted and adhered to.
1.2	Period of Approval/Project Commencement		
(a)	This approval is for a period of 21 years from the date of granting of a mining lease pursuant to this consent.	Compliant	Noted
(b)	At least two weeks prior to the commencement of construction and Mining Operations respectively or within such period as agreed by the Director-General, the Applicant shall submit for the approval of the Director-General a compliance report detailing compliance with all the relevant conditions that apply prior to the commencement of construction and Mining Operations.	Compliant	Noted
(c)	Date of commencement of construction and Mining Operations is to be notified in writing to the Director-General, DMR, MSC and SSC at least two weeks prior to commencement of construction and Mining Operations respectively.	compliant	Noted
1.3	Dispute Resolution		
1.3	In the event that the Applicant, MSC, SSC or a Government agency, other than the Department of Urban Affairs and Planning, cannot agree on the specification or requirements applicable under this consent, the matter shall be referred by either party to the Director-General or if not resolved, to the Minister for Urban Affairs and Planning, whose determination of the disagreement shall be final and binding on the parties.	Compliant	Noted
1.4	Security Deposits and Bonds		
1.4	Security deposits and bonds will be paid as required by DMR under mining lease approval conditions.	Compliant	Noted
2	Mine Management		
2.1	Mine Management Plan, Operations and Methods		
(a)	No mining undertaken in accordance with this consent shall occur until the Applicant has submitted and had accepted by the DMR, a Mining Operations Plan (MOP) in accordance with current guidelines issued by DMR. The Plan covers mining operations for a period of up to seven years.	Compliant	MOP- Continuation of Care and Maintenance (January 2013- December 2017) was accepted by the DRE 18/12/2012
(b)	The MOP shall:		

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
(i)	be prepared in accordance with DMR Guidelines for the Preparation of Mining Operations Plans (Document 08060002.GUI or its most recent equivalent);	Compliant	MOP- Continuation of Care and Maintenance (January 2013- December 2017) was accepted by the DRE 18/12/2012 was prepared in accordance with relevant guidelines
(ii)	demonstrate consistency with the conditions of this consent and any other statutory approvals;	Compliant	MOP- Continuation of Care and Maintenance (January 2013- December 2017) was accepted by the DRE 18/12/2012 and is consistent with the conditions of this consent and other approvals (Section 1.3 of MOP)
(iii)	demonstrate consistency with the Environmental Management Plans for the project site;	Compliant	MOP- Continuation of Care and Maintenance (January 2013- December 2017) was accepted by the DRE 18/12/2012. Section 6.2.2, table 8 details risk control strategies and application of the Environmental Management Plans to Care and Maintenance. This is consistent with approval provided by DoP.
(iv)	provide the basis for implementing mining operations, environmental management, and ongoing monitoring;	Compliant	MOP- Continuation of Care and Maintenance (January 2013- December 2017) was accepted by the DRE 18/12/2012, Section 3.0 - Proposed Mining Activities, Section 4.0 - Proposed Rehabilitation Activities during the MOP Term
(v)	include a mine rehabilitation and land use management plan; and	Compliant	MOP- Continuation of Care and Maintenance (January 2013- December 2017) was accepted by the DRE 18/12/2012. Plans 4A, 4B, 4C- detail mining related activities and Plans 5A and 5B detail rehabilitation/ land management.
(vi)	identify a schedule of proposed mine development for the period covered by the plan and include: • the area proposed to be impacted by mining activity and resource recovery mining methods and remediation measures, • areas of environmental, heritage or archaeological sensitivity and mechanisms for appropriately minimising impact, • water management, and • proposals to appropriately minimise surface impacts.	Compliant	MOP- Continuation of Care and Maintenance (January 2013- December 2017) was accepted by the DRE 18/12/2012.
2.1 (c)	In preparing the Mine Operations Plan, the Applicant shall consult with affected service authorities and make arrangements satisfactory to those authorities for the protection or relocation of those services.	Compliant	Undertaken for the original MOP. There was no disturbance during 2012. Under Care and Maintenance.
2.1 (d)	A copy of the MOP, excluding commercial in confidence information, shall be forwarded to MSC, SSC and the Director-General within 14 days of acceptance by DMR.	Compliant	Undertaken in original MOP. Found compliant in 2010 Independent Compliance Audit.

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
2.1 (e)	At least two (2) years prior to the cessation of mining operations the Applicant shall investigate, determine and report, taking account of the potential community benefits, on a final strategy for the future use of the mine site, weirs, dams and any other infrastructure in consultation with DUAP, DLWC, MSC and SSC for approval of DMR and the Director-General.	Compliant	Correspondence between Dartbrook and DoP (now DP&E) regarding the mines program of Suspension of Mining Operations at Dartbrook Mine and the Proposed Care and Maintenance Status of the Mine which proposed to amend condition 2.1e such that a mine closure "decision and process to be managed through MOP". MOP- Continuation of Care and Maintenance (January 2011- December 2013) 28/06/2011 includes a Mine Closure Plan (Plan 6)
2.2	Spontaneous Combustion		
2.2	The Applicant shall prepare, prior to the commencement of mining operations, a Spontaneous Combustion Management Plan to the satisfaction of DMR.	Compliant	Spontaneous Combustion Management Plan (SCMP) last amended in 2006. Correspondence between Dartbrook and DoP (now DP&E) proposing and approving respectively, the mines program of "continuing to operate under existing management plans without reviewing. Propose to modify these Management Plans should any activities recommence."
2.3	Limits on Production or Hours of Operation		
(a)	Run of Mine coal production shall generally not exceed 6 Mtpa. The Applicant must notify the Director-General, MSC and SSC prior to any short term increase in production above this level.	Compliant	Refer to the Annual Review. No coal or waste production due to Care and Maintenance status.
(b)	Heavy earth moving equipment shall not operate on the rejects emplacement area, and coal rejects shall not be hauled to the rejects replacement area, between the hours of 6.00pm and 7.00am, except in an emergency, and as agreed by the Director-General.	Compliant	As above
(c)	The haulage of coal between stockpiles and the CHPP within the East Site shall be limited to the daytime period (7am-6pm Monday to Saturday and 8am-6pm on Sundays and Public Holidays) only.	Compliant	As above.
3	Land and Site Environmental Management		
3.1	Appointment of Environmental Officer		
(a)	The Environmental Officer employed by Dartbrook Mine shall:		
(i)	(i) be responsible for the preparation of the environmental management plans (refer Condition 3.2);	Compliant	Role undertaken by Carbon Based Environmental contractor
(ii)	be responsible for considering and advising on matters specified in the conditions of this consent and compliance with such matters;	Compliant	As above

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
(iii)	be responsible for receiving and responding to complaints in accordance with Condition 10.2(a);	Compliant	As above
(iv)	facilitate an environmental induction and training program for all persons involved with construction activities, mining and rehabilitation/remedial activities; and	Compliant	As above
(v)	have the authority to require reasonable steps to be taken to avoid or minimise unintended or adverse environmental impacts and failing the effectiveness of such steps, to stop work immediately if an adverse impact on the environment is likely to occur.	Compliant	As above
3.1 (b)	The Applicant shall notify the Director-General, DMR, EPA, NPWS, DLWC, MSC, SSC and CCC (refer condition 10.1) of the name and contact details of the Environmental Officer if it has not already done so and of any changes to that appointment. Any new appointment of the Environmental Officer is to receive prior approval by the Director-General. Such approval shall not be unreasonably withheld.	Compliant	Letter 10/06/09 to DoP regarding proposed appointment of Mr Doug Stewart to role of Env. Officer and relevant contact details. This letter was also cc to DMR, DWE, MSC, UHSC, CCC-Chairperson, DECC, NPWS. Sighted a responding letter 29/06/09 from DoP approving the appointment of Doug Stewart. No change in status during reporting year.
3.2	Environmental Management Strategies and Plans		
(a)	The Applicant shall prepare an Environmental Management Strategy providing a strategic context for the environmental management plans [refer condition 3.2(d)]. The Environmental Management Strategy shall be prepared in consultation with the EPA, DLWC, DUAP, NPWS, SSC, MSC, DMR and the Community Consultative Committee (refer condition 10.1) and to the satisfaction of the Director-General, prior to commencement of construction. The Strategy shall be provided to the Director-General no later than the time the first Environmental Management Plan under sub clause (d) below and MOP are submitted.	Compliant	Correspondence between Dartbrook and DoP (now DP&E) proposing and approving respectively, the mines program of "continuing to operate under existing management plans without reviewing. Propose to modify these Management Plans should any activities recommence." No changes during reporting year. EMS managed by Safety, Health, Environment and Community Management System which is based on Anglo American Environmental Standards.
(b)	The Environmental Management Strategy shall include, but not be limited to:		
(i)	statutory and other obligations which the Applicant is required to fulfil during construction and mining, including all approvals and consultations and agreements required from authorities and other stakeholders, and key legislation and policies;	Compliant	Compliant during independent compliance audit 2013. Environmental Management Strategy dated ... Nil changes in reporting year required or made.
(ii)	definition of the role, responsibility, authority, accountability and reporting of personnel relevant to environmental management, including the Environmental Officer;	Compliant	Compliant during independent compliance audit 2013. Nil changes in reporting year required or made.

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
(iii)	overall environmental management objectives and performance outcomes, during construction, mining and decommissioning of the mine, for each of the key environmental elements for which management plans are required under this consent;	Compliant	As above
(iv)	overall ecological and community objectives for the project, and a strategy for the restoration and management of the areas affected by mining operations, including elements such as wetlands and other habitat areas, creek lines and drainage channels, within the context of those objectives;	Compliant	As above
(v)	identification of cumulative environmental impacts and procedures for dealing with these at each stage of the development;	Compliant	As above
(vi)	overall objectives and strategies to protect economic productivity within the area affected by mining;	Compliant	As above
(vii)	Steps to be taken to ensure that all approvals, plans, and procedures are being complied with;	Compliant	Environmental Management System certified to ISO 14000. Compliant during independent compliance audit 2013. Nil changes in reporting year required or made.
(viii)	Processes for conflict resolution in relation to the environmental management of the project; and	Compliant	Compliant during independent compliance audit 2013. Nil changes in reporting year required or made.
(ix)	Documentation of the results of consultations undertaken in the development of the Environmental Management Strategy.	Compliant	As above
(c)	The Applicant shall make copies of the Environmental Management Strategy available to MSC, SSC, EPA, DLWC, NPWS, DMR, MSB and the CCC within fourteen days of approval by the Director-General.	Compliant	As above

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
(d)	The Applicant shall prepare the following environmental management plans: • Property Subsidence Management Plans (refer condition 3.3) • Archaeology and Cultural Management Plan (refer condition 3.4) • Flora and Fauna Management Plan (refer condition 3.5) • Erosion and Sediment Control Plan (refer condition 3.6(a)) • Soil Stripping Management Plan (refer condition 3.6(c)) • Landscape Management Plan (refer condition 3.8) • Bushfire Management Plan (refer condition 3.9) • Land Management Plan (refer condition 3.10(a)) • Site Water Management Plan (refer condition 4.1) • Waste Management Plan (refer condition 5.2(a)) • Dust Management Plan (refer condition 6.1(a)) • Blast Management Plan (refer condition 6.3(a)) • Road Closure Management Plan (refer to condition 6.3(j)) • Noise Management Plan (refer condition 6.4.2(a)) • Construction Noise Management Plan (refer condition 6.4.2(c)) • Lighting Management Plan (refer condition 6.5) (e) • Vibration Management Plan (refer to condition 6.6(b)) These environmental management plans may also form part of the overall Site Management Plan and/or Mining Operations Plan.	Compliant	All developed and lodged in a timely fashion. The following Management Plans were revised during 2011: Erosion and Sediment Control Plan (Rev 9, 17/03/2014) Water Management Plan Dust Management Plan
(e)	The Applicant shall make copies of the environmental management plans in sub-clause (d) above available to relevant government agencies, MSC, SSC and the CCC and ensure that the plans are made publicly available within 14 days of approval by the Director-General.	Compliant	Audit issues resolved following 2013 audit. Management plans revised during 2011 were sent to the relevant government authorities.
(f)	The management plans are to be revised, and updated as necessary, at least every 5 years or as otherwise directed by the Director-General in consultation with the relevant government agencies. They will reflect changing environmental requirements or changes in technology/operational practices. Changes shall be made and approved in the same manner as the initial environmental management plan. The plans shall also be made publicly available at MSC and SSC within two weeks of approval by DUAP.	Compliant	Correspondence between Dartbrook and DoP (now DP&E) proposing and approving respectively, the mines program of "continuing to operate under existing management plans without reviewing. Propose to modify these Management Plans should any activities recommence."
3.3	Property Subsidence Management Plans		
(a)	The Applicant shall prepare and implement a "Landowner Communication and Consultation Plan" relating to longwall extraction throughout the DA area, within six months of the date of this consent. The Plan shall be approved by the Director-General and the final approved plan made available for public inspection. The Plan shall include but be limited to the matters listed in Condition 3.3(n).	Compliant	Compliant during independent compliance audit 2013. Nil changes in reporting year required or made.
(b)	The Applicant shall prepare a Property Subsidence Management Plan to the satisfaction of the Director-General of DMR (or delegate) for each property title to be affected by subsidence from a longwall panel or groups of longwall panels, for which an application for secondary workings approval under s.138 of the Coal Mines Regulation Act 1982 is being prepared.	Compliant	Compliant during 2013 independent compliance audit. No changes in made in reporting year due to Care and Maintenance status with no active mining occurring.

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
(c)	At least two (2) years prior to the extraction of coal by longwall mining referred to in subclause (b) above or other mining methods requiring approval under s.138 of the Coal Mines Regulation Act, 1982, the Applicant will advise each landowners within the area covered by the s.138 application referred to in subclause (b) of:	Compliant	Compliant during 2013 independent compliance audit. Under Care and Maintenance activities, no active mining is being undertaken. Unlikely to be extraction of coal by longwall mining within the next two years due to exploration and assessment studies still being undertaken.
(i)	The plans for future mining activities and the specific impacts (based on best available information) affecting each property; and	Compliant	As above
(ii)	Requirements regarding landowner consultation arrangements and offers of assistance to meet landowner legal and associated costs for determining landowner rights under law and the conditions of consent and reaching property agreements and valuations, as detailed in Condition 3.3(g).	Compliant	As above
(d)	The relevant Property Subsidence Management Plans shall be completed prior to seeking approval under s.138 of the Coal Mines Regulation Act 1982 for the secondary workings referred to in subclause (b) above.	Compliant	Compliant during 2013 independent compliance audit. No changes in made in reporting year due to Care and Maintenance status remaining.
(e)	Each Property Subsidence Management Plan shall demonstrate consistency with the relevant MOP and the Environmental Management Strategy.	Compliant	As above
(f)	In preparing Property Subsidence Management Plans the Applicant shall:	Compliant	Compliant during 2013 independent compliance audit. No changes in made in reporting year due to Care and Maintenance status remaining and as per Table 8 of current MOP- Continuation of Care and Maintenance (January 2013- 2017).
(i)	Consult with each affected landowner throughout the preparation process and take their views into account. This consultation shall include discussions on integrating any proposed mitigation works with the management of the property as a whole;	Compliant	As above
(ii)	Update geological data (i.e. geological structures, seam thickness, coal quality) based on current knowledge;	Compliant	As above
(iii)	Review, and if necessary update, the mine plan based on current geological knowledge;	Compliant	As above
(iv)	Review and revise as necessary, subsidence predictions taking into account the results of any relevant subsidence monitoring that has been undertaken;	Compliant	As above

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
(v)	Ensure that, with the consent of the owner and in consultation with MSB, a structural inspection is conducted of each structure and a report prepared on the structural integrity of all buildings in their entirety (including roofs, ceilings, openings, foundations and household sewage treatment and disposal systems);	Compliant	As above
(vi)	Assess current agricultural utilisation, agricultural improvements and the underlying agricultural suitability of the relevant property;	Compliant	As above
(vii)	Review current utilisation of the land for business purposes (other than agriculture), including the value of improvements and the business;	Compliant	As above
(viii)	Ensure that inspections, surveys and assessments referred to in subclauses (v), (vi) and (vii) are carried out, at the expense of the Applicant, by an independent and technically qualified person, selected in consultation with the relevant property owner, and a copy of any report, certified by the person who undertook the work, supplied to the relevant property owner within fourteen days of receipt of same;	Compliant	As above
(ix)	Support the continuation of agricultural activities and where practicable, improve the opportunity for sustained agriculture where any surface remedial works can be used to improve such productivity.	Compliant	As above
(g)	In preparing the individual Property Subsidence Management Plans the Applicant shall also:	Compliant	Compliant during 2013 independent compliance audit.No changes in made in reporting year due to Care and Maintenance status remaining and as per Table 8 of current MOP- Continuation of Care and Maintenance (January 2013- 2017).
(i)	Advise affected landowners of any potential impacts of the proposed mining and review and discuss implementation procedures;	Compliant	As above
(ii)	Provide a copy of the draft Property Subsidence Management Plan to the relevant landowner;	Compliant	As above
(iii)	Identify dwellings that are likely to be subject to damage beyond safe, serviceable and repairable criteria as a result of the development;	Compliant	As above
(iv)	Identify structures and surface improvements that are likely to be subject to significant damage as a result of the development;	Compliant	As above
(v)	Identify agricultural or other business values that are likely to be affected by the development;	Compliant	As above
(vi)	Convene an on-site meeting with the landowner to review the draft Property Subsidence Management Plan including, where applicable, MSB technical officers with respect to dwellings that are predicted to be damaged beyond safe, serviceable and repairable criteria;	Compliant	As above
(vii)	Investigate feasible mitigation measures that can be implemented to reduce subsidence impacts to the satisfaction of the landowner and in consultation with MSB;	Compliant	As above

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
(viii)	Investigate other options if subsidence impacts cannot be reduced satisfactorily, such as compensation, acquisition, temporary relocation, or any other form of agreement with the landowner;	Compliant	As above
(ix)	Identify areas of likely compensable loss as defined by the Mining Act 1992, and either reach agreement with the landowner in regard to likely compensable loss, or determine suitable mitigation measures to minimise compensable loss; and	Compliant	As above
(x)	Provide a copy of each Property Subsidence Management Plan to the relevant landowner.	Compliant	As above
(h)	In implementing the terms of any Property Subsidence Management Plan the Applicant shall:		
(i)	Review, based on information available at the time, the potential impacts of the proposed mining on ecologically sensitive areas, archaeological resources and heritage resources and take these into consideration in any refinement of the mine plan and design of appropriate mitigation measures. Works should be designed where possible to avoid areas of ecological and archaeological sensitivity unless works are being specifically undertaken to conserve these areas; and	Compliant	Compliant during 2013 independent compliance audit. No changes in made in reporting year due to Care and Maintenance status remaining and as per Table 8 of current MOP (January 2013- December 2017) was accepted by the DRE 18/12/2012 "subsurface subsidence effects are not applicable as no subsidence impacts are anticipated".
(ii)	Determine in consultation with the landowner, DLWC, MSC and SSC, appropriate drainage mitigation measures and earthworks, consistent with the relevant environmental management plans. Where it is indicated that drainage works are required to be undertaken on other land to mitigate remnant ponding on the property which is the subject of the Property Subsidence Management Plan, the Applicant shall seek to reach an agreement with the owner(s) of that land prior to carrying out such works. In determining appropriate drainage mitigation works, the Applicant shall take into consideration environmental, archaeological and heritage aspects of areas where mitigation works are proposed. The Applicant shall pay any reasonable costs for landowners to obtain legal and other advice on Property Subsidence Management Plans.	Compliant	As above
	Longwall Subsidence Management Plans		
(i)	The Applicant shall prepare a Longwall Subsidence Management Plan to the satisfaction of the Director-General of DMR (or delegate) for each longwall panel or group of panels for which an application for secondary workings approval under s. 138 of the Coal Mines Regulation Act 1982 is being prepared.	Compliant	Compliant during 2013 independent compliance audit. No changes in made in reporting year due to Care and Maintenance status remaining and as per Table 8 of current MOP (January 2013- December 2017) was accepted by the DRE 18/12/2012"subsurface subsidence effects are not applicable as no subsidence impacts are anticipated".
(j)	The Longwall Subsidence Management Plan shall be completed prior to an approval under s.138 of the Coal Mine Regulation Act 1982 for secondary workings. Each Longwall Subsidence Management Plan shall be consistent with the conditions of this consent, the Environmental Management Strategy and any relevant management plans.	Compliant	As above

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
(k)	The Applicant shall ensure that the terms and details of each relevant Property Subsidence Management Plan are incorporated into any Longwall Subsidence Management Plan for that part of the development which may affect that property.	Compliant	As above
	Subsidence Monitoring		
(l)	The Applicant shall undertake a detailed and ongoing monitoring program of subsidence resulting from mining to the satisfaction of the Director-General and in consultation with DLWC and DMR throughout the life of the mine and for a period of at least five years after the completion of mining, or other such period as determined by the Director-General in consultation with DLWC and DMR. Monitoring shall include the following:	Compliant	Monitoring carried out as per the Subsidence Management Plan. Underground mining ceased December 2006. Reported on in the Annual Review.
(i)	A survey of affected stream channel systems;	Compliant	As above
(ii)	Monitoring of groundwater levels and quality;	Compliant	As above
(iii)	Monitoring of remedial measures; and	Compliant	As above
(iv)	A comparison of predicted impacts with actual impacts, including mapping of subsidence profiles.	Compliant	As above
	The Applicant shall include information on monitoring conducted and the interpreted results in the AEMR.	Compliant	As above
	Notification of Landowners		
(m)	The Applicant shall notify each relevant landowner in writing:		
(i)	Of its intention to commence header roads under a property. Such notification to be made at least 14 days prior to commencement of such works; and	Not Applicable for period of report	Not applicable due to Care and Maintenance status.
(ii)	Of its intention to proceed with an application in accordance with s138 of the Coal Mine Regulation Act, 1982. Such notification is to be made at least one month prior to an application under s138 of the Coal Mine Regulation Act 1982 for land within EL 4575 or EL 5525 or A256 not owned or under licence to the Applicant.	Not Applicable for period of report	As above
(n)	The notification referred to in subclause (m) shall provide a timetable and information on at least the following:		
(i)	Landowner consultation arrangements;	Not Applicable for period of report	Not applicable due to Care and Maintenance status.
(ii)	The proposed mine plan;	Not Applicable for period of report	As above
(iii)	Arrangements for consultation in preparing a Property Subsidence Management Plan;	Not Applicable for period of report	As above
(iv)	Landowner rights under law and the conditions of this development consent; and	Not Applicable for period of report	As above
(v)	Offers of assistance from the Applicant to meet reasonable landowner legal and associated costs for reaching property agreement and valuations (if required).	Not Applicable for period of report	As above

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
	Compensation		
(o)	The Applicant shall compensate landowners for compensable loss in accordance with the provisions of the Mining Act, 1992. Compensable loss is defined in that Act.	Compliant	Compensation Agreements in place.
	Subsidence Effects		
(p)	The Applicant shall ensure that any impact due to surface subsidence within the Crown road system is restored and safeguarded to the extent that public access is not compromised.	Compliant	No damage. Mining ceased in December 2006. Refer to Annual Review.
(q)	The Applicant must monitor and remediate any erosion or provide stabilising structures in any areas that have significant risk of destabilisation occurring as a result of longwall panel mining, in accordance with DLWC guidelines, to the satisfaction of DLWC, for any streams that are affected by subsidence.	Compliant	Mining ceased in December 2006. Refer to Annual Review. Any repairs done on an as needs basis.
3.4	Heritage Assessment, Management and Monitoring		
	Assessment and Management		
	The Applicant shall prior to the commencement of construction or Mining Operations:		
(a)	Prepare an Archaeology and Cultural Management Plan to address Aboriginal and European cultural heritage issues. The Plan shall be prepared in consultation with the Upper Hunter Wonnarua Tribal Council, Wannaruah Local Aboriginal Land Council and NPWS, and to the satisfaction of the Director-General. The Plan shall include but not be limited to:	Compliant	Archaeology and Cultural Heritage Management Plan in place. Mining ceased in December 2006. Refer to Annual Review.
(i)	Provision of management strategies for known Aboriginal heritage sites for all parts of the DA area not affected by mining;	Compliant	As above
(ii)	Identification of any future salvage, excavation and monitoring programs for any known heritage/archaeological sites within the DA area, prior to and during construction;	Compliant	As above
(iii)	Set out management procedures and protocols for issues relating to Aboriginal heritage for all stages of the development (induction of employees on archaeological and heritage issues; training of field crews, Upper Hunter Wonnarua Tribal Council and Wannaruah Local Aboriginal Land Council participation; staging of works; salvage etc);	Compliant	As above
(iv)	details of a program for salvaging known Aboriginal sites;	Compliant	As above
(v)	details of consultation undertaken with the Upper Hunter Wonnarua Tribal Council and Wannaruah Local Aboriginal Land Council in the preparation of this Plan;	Compliant	As above
(vi)	details of the measures to fully document, in accordance with the NSW Heritage Council guidelines, any non-indigenous heritage sites that will be required to be removed as a result of the development;	Compliant	As above

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
(vii)	details of proposed monitoring that will be undertaken in the areas adjacent to the non-indigenous heritage sites identified within the DA area during their excavation and removal, to identify any further cultural material that may exist;	Compliant	As above
(viii)	details of the methods to dispose of the excavated non-indigenous heritage sites in a manner approved by the NSW Heritage Council, and following consultation with MSC and the Muswellbrook and Upper Hunter Historical Society;	Compliant	As above
(ix)	details of how public access to the Kayuga Cemetery shall be maintained at all times; and	Compliant	As above
(x)	details of the measures to mitigate any potential impacts resulting from the mine on the heritage homesteads Old Kayuga, New Kayuga, Riverview, the McIntyre family cemetery, Kayuga Cemetery and the Kayuga Estate and details of any maintenance procedures proposed to preserve their heritage value in accordance with the NSW Heritage Council requirements.	Compliant	As above
(b)	Within six months of the commencement of construction or Mining Operations, the Applicant shall make a $50,000 contribution towards the establishment of a trust fund set up by the Department of Urban Affairs and Planning through the Public Trustee. The funds are to be used for a regional study of Aboriginal sites and other cultural heritage projects as defined by the Trust Deed.	Compliant	Payment was made to the Upper Hunter Cultural Heritage Trust on the 3rd December 2007. Correspondence forwarded to the DoP on the 4th December 2007 notifying that the payment had been made.
(c)	If, during the course of construction of any surface facilities or mining activities, the Applicant becomes aware of any heritage or archaeological sites not previously identified, all work likely to affect the site shall cease immediately and the relevant authorities consulted about an appropriate course of action prior to recommencement of work. The relevant authorities may include NPWS, the NSW Heritage Office, the Upper Hunter Wonnarua Tribal Council and Wannaruah Local Aboriginal Land Council. Any necessary permits or consents shall be obtained and complied with prior to recommencement of work.	Not triggered	Noted. No new Aboriginal sites found in reporting year (refer to Annual Review)
(d)	The Applicant is to consult regularly with the Upper Hunter Wonnarua Tribal Council and Wannaruah Local Aboriginal Land Council using consultation principles and strategies consistent with those outlined in the "Guidelines for best practice community consultation in the NSW Mining and Extractive Industries". The results of these consultations shall be documented in the AEMR.	Compliant	Nil applications for Section 90 Consents to Destroy were applied for in reporting year (refer to Annual Review)
(e)	Any proposed works that will affect non-indigenous heritage items, (including the items listed in Section 3.9.2 of the EIS) including demolition of the items, will require an approval under section 139 of the Heritage Act 1977 and an application for an excavation permit under section 140 of the Heritage Act 1977 to disturb the relics will be required. This may also require additional approvals from MSC if the items are listed on the Heritage Schedule of the Local Environmental Plan.	Not triggered	Mining ceased in December 2006. Refer to Annual Review. Issue not triggered in reporting year.

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
(f)	The Applicant shall engage an appropriately qualified person to prepare an oral history of the mining lease prior to the dispersal of local residents. This will include an investigation of: • all buildings and sites within the lease area; • areas that will be affected by the mine; • the former Dartbrook authorisation area; and • the Kayuga cemetery. The investigation will be carried out in consultation with a member of the Muswellbrook and Upper Hunter Historical Society, who is to be allowed reasonable access to the Applicant's properties for the purposes of assessing European archaeological features. The report shall be made available to the Muswellbrook and Upper Hunter Historical Society, MSC and the Director-General.	Compliant	Oral History submitted to the DP&E in 2010. Copies distributed as per the Consent requirements.
	Monitoring		
(g)	The Applicant shall monitor the effectiveness of the measures outlined in the Archaeology and Cultural Management Plan [Condition 3.4(a)]. A summary of monitoring results shall be included in the AEMR.	Compliant	Archaeology and Cultural Heritage Management Plan in place. Mining ceased in December 2006. Refer to Annual Review
(h)	The Applicant shall prepare a monitoring program of known indigenous heritage sites identified within the DA area, during the period of construction and mining operations. The monitoring program shall be included in the Archaeology and Cultural Heritage Management Plan (Condition 3.4 (a)) and a summary of results will be included in the AEMR. The program shall:	Compliant	As above
(i)	monitor all known archaeological sites 12 months after undermining for the effects of subsidence and report on the results of these inspections in the Archaeology and Cultural Heritage Management Plan;	Compliant	As above
(ii)	monitor the construction of sediment and erosion control works to identify new archaeology sites;	Compliant	As above
(iii)	monitor locations in the subsidence area in order to assess the impacts of subsidence on the land surface, in areas that the Applicant has identified as being potentially affected by the following processes: • erosion; • rilling; • knickpoint initiation; and • areas prone to pooling.	Compliant	As above
	Note No Aboriginal archaeological sites, that have been identified, shall be destroyed without the approval of the Director-General of NPWS, under section 90 of the National Parks and Wildlife Act 1974, prior to any disturbance of the identified sites by Construction or Mining Operations.	Compliant	As above
3.5	Flora and Fauna Assessment, Management and Monitoring		
	Assessment and Management		

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
(a)	The Applicant shall prior to commencement of construction or Mining Operations prepare and implement a Flora and Fauna Management Plan for the management of flora and fauna issues for the DA area. The Plan is specifically required to outline procedures for clearing or disturbing vegetation and other habitat types, along with measures for habitat reinstatement and management.	Compliant	Flora and Fauna Management Plan reviewed in 2011. Accepted by the DP&E on 2/11/2011.
	The Plan shall be prepared in consultation with NPWS and to the satisfaction of the Director-General. The Plan shall be prepared by an appropriately qualified and experienced ecologist. The ecologist shall be responsible for providing advice to minimise potential impacts upon threatened and protected fauna species that may utilise the site and to provide expert advice on the regeneration and reconstruction of flora and fauna habitat on mined areas. The Plan shall include but not be limited to:	Compliant	As above
(i)	details of strategic vegetation management, outlining timeframes for clearing and re-vegetation activities and a map illustrating the Plan. The Plan should aim to maximise scope for new vegetation to establish and restore ecological integrity;	Compliant	As above
(ii)	details of the schedule for clearing activities incorporating seasonal habitat requirements for species such as bats and other mammals, with the objective of avoiding incidents during sensitive hibernation and breeding periods;	Compliant	As above
(iii)	details of methods of how medium to large tree hollows (defined as being greater than 20 centimetres in diameter) and nests removed during construction are salvaged and replaced in adjacent vegetation; and	Compliant	As above
(iv)	details of management measures to be applied if threatened species identified in the EIS are found on site.	Compliant	As above
(b)	If threatened species, not identified in the EIS, are identified on the site during construction or operation of the coal mine, the Applicant shall cease any work immediately which could adversely impact on the species, pending investigation and negotiation of ameliorative measures. The Applicant shall advise the NPWS and engage a suitable qualified person to investigate, and identify appropriate amelioration measures.	Not triggered	Noted. This condition has not been activated to date.
(c)	The Applicant shall ensure that the construction and operation of ventilation shafts shall not require the clearing of trees, where practicable.	Compliant	Under Care and Maintenance activities, no new ventilation shafts have been commissioned to be applicable.
(e)	The Applicant shall ensure that any vegetated areas cleared for construction purposes and not utilised in the Mining Operations are restored at least to its original condition.	Compliant	Noted. Minimal construction and clearing activities were undertaken in reporting year.
(f)	The Applicant shall use locally endemic species for revegetation purposes.	Compliant	Local seed mix used when rehabilitating exploration sites.
(g)	The Applicant shall during the life of the mine and until the revegetated areas are established to the satisfaction of the DMR, maintain revegetated areas. Maintenance shall include, where necessary, but not be limited to:		

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
	• replanting failed or unsatisfactory areas	Compliant	Refer to Annual Review
	• repairing erosion problems	Compliant	As above
	• fire management – fire suppression or fire encouragement	Compliant	As above
	• pest and weed control	Compliant	As above
	• control of feral animal populations	Compliant	Refer to Annual Review. In reporting year control of wild dogs, foxes, pigs and rabbits was undertaken in 2015
	• maintain and repair fencing	Compliant	Fencing repairs carried out when and where required as property management or as part of a license agreement
	• fertiliser application	Compliant	Undertaken with new rehabilitation. Currently under Care and Maintenance.
	• application of lime or gypsum to control pH and improve soil structure.	Compliant	As above
(h)	As well as the requirements under subclause (g), the efforts and progress of the Flora and Fauna Management Plan shall be documented in the Annual Environmental Management Report in accordance with the Department of Mineral Resource's Guidelines to the Mining, Rehabilitation and Environmental Management Process (March 1998) or its latest version.	Compliant	Refer to Annual Review
(i)	Measures to control invasion of weeds as a result of construction activities shall be addressed and managed.	Compliant	Nil construction occurred during reporting year. Maintenance weed management programme ongoing.
(j)	The Applicant shall not clear vegetation in advance of the immediate area required for use during construction or operation of the rejects emplacement area.	Not Applicable for period of audit	Nil construction occurred during reporting year.
	Monitoring		
(k)	The restoration works shall be monitored by the environmental officer. The results of the monitoring and the effectiveness of the restoration shall be reported as part of the Annual Environmental Management Report.	Compliant	Monthly rehabilitation monitoring conducted in reporting year. Results provided in report undertaken by Umwelt.
(l)	The Applicant shall prepare a detailed monitoring program for habitat areas within the DA area, including any wetlands and aquatic habitats, during the development and for a period after the completion of the development to be determined by the Director-General in consultation with NPWS. The monitoring program shall be included in the Flora and Fauna Management Plan (Condition 3.5(a)) and a summary of the results shall be provided in the AEMR. The program shall:	Compliant	Monitoring programme submitted, accepted and is ongoing

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
(i)	monitor impacts attributable to the development and include monitoring of the success of any restoration or reconstruction works. The Applicant shall carry out any further works required by the Director-General and DMR as a result of the monitoring;	Compliant	As above
(ii)	establish an ongoing monitoring program of the existing and proposed revegetated areas to assess their floristic and structure and to propose contingency measures for improvements to revegetation if required; and	Compliant	As above
(iii)	establish an ongoing monitoring program in the rejects emplacement area, of fauna species diversity and abundance and the effectiveness of reconstructed ecosystems in providing fauna habitat and contingency measures should impacts be identified as occurring.	Compliant	As above
	Note: The information obtained from the monitoring shall be used to guide future revegetation efforts on the mine site.		Ongoing
3.6	Prevention of Soil Erosion		
(a)	The Applicant shall prepare an Erosion and Sediment Control Plan for the surface facilities and extension to the rejects emplacement area in consultation with the DLWC, taking account of the DLWC "Draft Guideline for Establishment of Stable Drainage Areas on Rehabilitated Mine sites" or its latest version, and to the satisfaction of DLWC and the Director-General. The Plan shall be prepared and implemented prior to the commencement of construction and/or the expansion of the rejects emplacement area.	Compliant	Nil changes to Dartbrook's Erosion and Sediment Control Plan in reporting year. Correspondence between Dartbrook and DoP (now DP&E) proposing and approving respectively, the mines program of "continuing to operate under existing management plans without reviewing. Propose to modify these Management Plans should any activities recommence."
(b)	The Erosion and Sediment Control Plan shall include but not be limited to:		
(i)	details of temporary and permanent erosion and sediment control systems to be used during both construction and/or the expansion of the rejects emplacement area, including earthworks associated with landscaping;	Compliant	Compliant during 2013 independent compliance audit. Accepted by DP&E on 12/11/2014. No changes in made in reporting year due to Care and Maintenance status remaining.
(ii)	details of soil salinity management where relevant;	Compliant	As above
(iii)	measures that will be employed to minimise soil erosion and the discharge of sediment and other pollutants to lands and/or waters during construction and/or the expansion of the rejects emplacement area. The Plan should be prepared in accordance with the requirements for such plans outlined in Managing Urban Stormwater: Soils and Construction (available from the Department of Housing) or its latest version;	Compliant	As above
(iv)	the consideration of the location and purpose of structures in the erosion and sediment control plan to maximise similarities between pre-development and post-development drainage networks with reference to catchment areas, drainage densities and discharge characteristics;	Compliant	As above

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
(v)	consideration and management of erosion and sedimentation of affected surface watercourses/water bodies, including creek lines within the DA areas;	Compliant	As above
(vi)	measures to construct banks, channels and similar works to divert stormwater away from disturbed and contaminated land surfaces such as mine workings, coal handling areas and wastewater treatment facilities. All diversion banks, channels and points of discharge must be constructed or stabilised so as to minimise erosion and scouring; and	Compliant	As above
(vii)	a program for reporting on the effectiveness of the erosion and sediment control systems and performance against objectives contained in the approved Erosion and Sediment Control Management Plan, and EIS.	Compliant	As above.
(c)	The Applicant shall also prepare a Soil Stripping Management Plan for the expansion of the rejects emplacement area, prior to the commencement of construction of the reject emplacement area, to the requirements of DMR and DLWC that shall include, but not be limited to:	Not triggered REA not expanded	Noted. Not required during Care and Maintenance operations.
(i)	details to ensure the maximum retrieval of suitable topdressing material and appropriate management of topsoil stockpiles including immediate revegetation to protect from soil erosion and to control potential weed problems;	Not triggered	As above
(ii)	details of the management of soil stockpiles, soil stripping techniques and scheduling;	Not triggered	As above
(iii)	control of weed infestation on topsoil stockpile material;	Not triggered	As above
(iii)	details of estimated quantities of suitable topdressing material required for subsequent respreading on rehabilitated land; and	Not triggered	As above
(iv)	a program for reporting on the effectiveness of the soil stripping methods and performance against objectives contained in the soil stripping management plan, and EIS.	Not triggered	As above
(d)	The company is to re-establish a post-mining drainage system which is comparable to the drainage density and discharge characteristics of the pre-mining land for each affected drainage line discharging from the area of the mining development. The design and implementation of the post-mining drainage system is to be prepared prior to the cessation of mining and to the satisfaction of DLWC.	Compliant	Historical works, and MOP, accepted by relevant statutory authorities. Not required during Care and Maintenance operations.
(e)	The Applicant shall install a flexible drop structure in Sandy Creek or its tributaries and undertake such other measures as required by DLWC when headward erosion of the creek bed becomes evident.	Not triggered	Inspected annually - no action required. Underground mining was not carried out under this creek.
(f)	The Applicant shall implement soil erosion mitigation measures at ventilation shafts to the satisfaction of DLWC, including a sedimentation structure to collect runoff from disturbed areas.	Compliant	Works completed. No2 Shaft now capped and not in use.
3.7	Site Rehabilitation Management		

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
3.7	The Applicant shall carry out rehabilitation of all mine areas, including decommissioned gas and water substation sites, in accordance with the requirements of any Mining Lease granted by the Minister for Mineral Resources and ensure the progressive rehabilitation of the area is also to the satisfaction of DMR and DLWC. The rehabilitation shall also have regard to the latest version of the Synoptic Plan: – Integrated Landscapes for Coal Mine Rehabilitation in the Hunter Valley of NSW.	Compliant	Works as per the latest MOP and current Annual Review. No additional areas required rehabilitation in reporting year due to mine status.
3.8	Visual Amenity and Landscaping		
(a)	A Landscape Management Plan shall be prepared by the Applicant and approved by the Director-General prior to commencement of construction. The Plan shall be prepared in consultation with DMR, MSC and SSC. In preparation of the plan, regard shall be given to the Aberdeen Sheet of DMR's Synoptic Plan: Integrated Landscapes for Coal Mine Rehabilitation in the Hunter Valley of NSW. The Landscape Management Plan shall be appended to the Mining Operations Plan (Condition 2.1) and shall include, but not be limited to, the following:	Compliant	Landscape and Lighting Management Plan reviewed in 2011 and accepted by DP&E on 2/11/2011
(i)	An on-site landscaping strategy detailing design and proposed planting of trees and shrubs and/or the construction of mounding or bunding:	Compliant	Landscape and Lighting Management Plan reviewed in 2011 and accepted by DP&E on 2/11/2011. Landscape Plans included as Figure 2 and 3, West and East site respectively.
1)	adjacent to the Dam and Ventilation Shaft No.1 where screening of new infrastructure is required from Dartbrook Road.	Compliant	No changes to the area in reporting year.
2)	screening of new infrastructure, where required, from other public roads including Kayuga, and Dartbrook and Coal Creek Roads;	Compliant	No new infrastructure installed in reporting year.
3)	around the Drift Access to reduce lighting effects;	Compliant	No changes to the area in reporting year. Minimal night activities occurring on Care and Maintenance.
4)	in areas of the eastern facilities site where replanting of existing screening is required. This shall include, where necessary, the construction of a suitably screened bund wall on the northern and southern ends of the CHPP to reduce visual effects on nearby residences at Aberdeen and nearby rural properties;	Compliant	Compliant in 2013 audit. Additional tree screen planting undertaken in early 2014.
5)	as part of the rehabilitation of the Rejects Emplacement Area;	Compliant	REA fully rehabilitated in 2007.
6)	along sections of the new access road to the mine site;	Compliant	Tree screens planted along access road in 2012. Includes infill planting
7)	along sections of the New England Highway; and	Compliant	Tree screen planted along New England Highway in 2012. Includes infill planting. Refer to Annual Review Appendix G.
8)	at any other areas identified as necessary by MSC or SSC for the maintenance of satisfactory visual amenity, and as agreed by the Director-General.	Not triggered	Noted.

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
ii)	Appropriate erosion control and sediment control practices for earthworks associated with the landscaping.	Compliant	Noted. Not applicable in reporting year due to Care and Maintenance Operations.
iii)	Details of visual appearance of new buildings, structures, facilities or works (including paint colours, screenings and specifications). New buildings and structures (including the Nitrogen Injection Plant) shall be designed and constructed so as to present a neat and orderly appearance and to blend as far as practicable with the surrounding landscape.	Compliant	Compliant during 2013 independent compliance audit. No changes in made in reporting year due to Care and Maintenance status.
iv)	Details, specifications and staged work programs to be undertaken, maintenance and monitoring of all landscape works and maintenance of building materials and cladding.	Compliant	Compliant during 2013 independent compliance audit. No changes in made in reporting year due to Care and Maintenance status. Refer to Annual Review Appendix G.
v)	Details of a monitoring program to assess the effectiveness of visual impact mitigation measures. The program will be developed in consultation with MSC and SSC and be prepared to the satisfaction of the Director-General;	Compliant	Refer to Annual Review.
vi)	Reporting of monitoring results in the AEMR and to MSC, SSC and the CCC. Monitoring results would specifically identify any remedial works required;	Compliant	Refer to Annual Review
vii)	Details of contingency measures to be applied in the case that proposed visual mitigation measures are not successful;	Compliant	Included in the Landscape and Lighting Management Plan, which was reviewed in 2011 and accepted by DP&E on 2/11/2011
viii)	the process of incorporating vegetation screening and fauna protection corridors into the proposed visual and landscaping works, where practicable;	Compliant	Landscape and Lighting Management Plan reviewed in 2011 and accepted by DP&E on 2/11/2011. "Due to the relatively limited extent of vegetation screening necessary and the lack of any significant habitat areas in the immediate vicinity of these works, incorporation of flora and fauna protection corridors is not practicable."
ix)	use of indigenous species;	Compliant	Refer to Annual Review. Also included in Landscape and Lighting MP, Appendix A.
x)	details of predicted visual impacts from the proposed rejects emplacement area on residences not owned by the Applicant, SSC land and Aberdeen. The predicted visual impacts shall be in the form of a montage and transects showing clear sightlines from the viewer to the proposed rejects emplacement area;	Compliant	No modification of the REA was made in reporting year due to Care and Maintenance activities.
xi)	details of an off-site landscape strategy which will detail proposed off-site mitigation measures and include the:	Compliant	Compliant during 2013 independent compliance audit. No modifications made in reporting year due to Care and Maintenance status.

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
1)	identification of those properties to be offered off-site visual enhancement works, in accordance with predicted adverse visual impacts;	Compliant	As above
2)	details of consultation with the relevant landowners; and	Compliant	As above
3)	details of the procedure to be followed to design and implement appropriate off-site vegetation screening if requested by landowners identified under 1 above; and	Compliant	As above
xi)	consideration of the visual impact and adequacy of associated mitigating measures on the Aberdeen property of SCC, with recommendations for any additional measures including consideration of buffer land, as applicable. This consideration shall be undertaken by an independent qualified person(s) appointed by the Director-General, in consultation with SCC and Applicant, and paid for by the Applicant.	Compliant	Included in the Landscape and Lighting Management Plan, which was reviewed and accepted by the DP&E on 2/11/2011. No changes to the area have occurred in reporting year.
(b)	In the event that a landowner other than those identified in subclause (a)(xi) above, considers that his/her residence is visually impacted by the proposal, greater than predicted in the Landscape Management Plan once the proposal is operational, the Applicant shall, upon the receipt of a written request, consult the landowner, discuss their concerns and, if necessary, possible mitigation.	Not triggered	Noted. This condition has not been activated in reporting year.
(c)	Should the Applicant and/or landowner dispute the level of adverse impact or any proposed mitigation measures from subclause (a)(xi) or (b) above, then either party may refer the matter to the Director-General in consultation with MSC and/or SSC. If the matter cannot be resolved within 21 days, the matter shall be referred to the Independent Dispute Resolution Process. The decision of the Independent Dispute Resolution Process shall be final, as agreed by the Director-General.	Not triggered	Noted. This condition has not been activated in reporting year.
(d)	Notwithstanding subclauses (b) and (c) above, the Applicant shall fund and undertake an independent review of the visual impact of the proposed rejects emplacement area on SSC's land, every five years from the commencement of mining operations, unless otherwise agreed by the Director-General. The independent review shall be undertaken by an independent Landscape Expert appointed by the Director-General in consultation with SSC and the Applicant. The independent Landscape Expert shall determine whether the actual visual impact of the rejects emplacement area on SSC's land is greater than that predicted in the Landscape Management Plan. If the independent Landscape Expert determines that the impact on SSC's land is greater than that predicted in the Landscape Management Plan, the independent Landscape Expert shall make recommendations to mitigate the impact.	Compliant	Suspended by DP&E while on Care and Maintenance. DP&E email 01/12/2005.
(e)	If either party disputes the determination and recommendations of the independent Landscape Expert in subclause (d) above, either party may refer the matter to the Director-General for final determination.	Not triggered	Noted. This condition has not been activated in reporting year.
3.9	Bushfire and other Fire Controls		
3.9	The Applicant shall:		

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
(a)	provide adequate fire protection works, fire fighting equipment and hazard reduction measures with particular attention to boundaries of adjoining landholdings;	Compliant	No fires reported in reporting year. Firebreaks maintained in reporting year. Areas around buildings and infrastructure are maintained to reduce the fuel source for bushfires. Roads, slashed on a regular basis provide the main fire-break network. Fire fighting equipment and water mains are in place in Care and Maintenance stage. Fire systems audits are undertaken 6 monthly to check underground mains, CHPP and fan sites to verify fire protection works and equipment - contractor Total Fire (via UGM).
(b)	submit an annual report on fire management activities to the Muswellbrook Fire Management Committee; and	Compliant	Included in the Annual Review. Distributed to the MSC, FRS and MFMC.
(c)	(c) prepare a Bushfire Management Plan for all its holdings contained in the DA area, prior to commencement of mining operations, to the satisfaction of MSC, SSC and the Rural Fire Service.	Compliant	Bushfire Management Plan reviewed in 2011 and sent to the relevant government authorities.
3.10	Land Management		
(a)	The Applicant shall, prior to commencement of construction or Mining Operations update the current Dartbrook Mine Land Management Plan for the areas of the proposed surface facilities, and its holdings in the DA area, to provide for proper land management in consultation with DLWC, MSC, and to the satisfaction of the Director-General. The plan shall include, but not be limited to:	Compliant	Dartbrook Mine Land Management Plan submitted 2002. Currently under Care and Maintenance.
(i)	pastures and remnant vegetation management;		as above
(ii)	prevention and rehabilitation of land degradation;		as above
(iii)	assessment of the potential for commercial harvesting of standing timber removed from the site;		as above
(iv)	eradication of vermin and noxious weeds as required by the Rural Lands Protection Board, the Upper Hunter Weeds Authority, the Prickly Pear Authority and other relevant authorities; and,		as above
(v)	feral animal control.		as above
(b)	The Applicant shall minimise the removal of trees and other vegetation from the proposed surface facilities area, and restrict any clearance to the areas occupied by mine activity, buildings and paved surfaces, and those areas necessary for fire control in accordance with MSC requirements.	Compliant	as above

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
(c)	The Applicant shall ensure that the agricultural capability of lands under its control within the mining lease area are at a level not less than the level at the date of this consent.	Compliant	Noted. Land not used for mining purposes is leased allowing agricultural practices to continue.
(d)	The Applicant shall maintain a minimum 50 metre wide buffer strip between the southern rejects emplacement area and the adjacent land owned by Mr and Mrs L Wilkinson. Surface drains and an access road may be constructed within the 50 metre wide strip.	Compliant	Noted. The land is now owned by Dartbrook. No change to the area was required or made during reporting year due to Care and Maintenance activities.
4	Water Management and Monitoring		
4.1	Surface and Ground Water Management Plans		
	The Applicant shall:		
(a)	prior to the commencement of Mining Operations, prepare a Site Water Management Plan for the DA area, in consultation with DLWC, MSC and to the satisfaction of the Director-General, which shall include, but not be limited to, the following matters:	Compliant	Dartbrook Mine Care and Maintenance Site Water Management Plan (Rev 5. 20/04/2015).
(i)	management of the quality and quantity of surface and ground water within the areas covered by the water management plans;	Compliant	Noted. Monitoring is undertaken by AECOM. See Annual Review
(ii)	management of stormwater and general surface runoff diversion to ensure separate effective management of clean and dirty water; including details of temporary surface drainage works to minimise the flow of surface water onto the rejects emplacement area and details of drainage works to direct runoff from the active rejects emplacement areas to onsite storage dams;	Compliant	Covered in Section 2.2 of the Dartbrook Mine Care and Maintenance Site Water Management Plan (Rev 5. 20/04/2015)
(iii)	measures to prevent the degradation of downstream surface water quality below the pre-mining ANZECC beneficial water use classification due to mining operations, particularly in the Hunter River;	Compliant	Covered in Section 2.2 of the Dartbrook Mine Care and Maintenance Site Water Management Plan.
(iv)	measures to determine whether any groundwater from the Hunter River alluvium aquifers is captured by the mine including a response plan in the event that monitoring shows evidence of a dilution of salinity or change in water chemistry, or increase in inflow rate that may indicate leakage from the alluvium to the Hunter Tunnel;	Compliant	Covered in Sections 2.2.3 and 5.2 of the Dartbrook Mine Care and Maintenance Site Water Management Plan.
(v)	measures to be implemented in the event that the continued operation of the Hunter Tunnel leads to a significant increase in groundwater salinity in the alluvial aquifer system;	Compliant	As above
(vi)	contingency plans for managing adverse impacts of the development on surface and groundwater quality which shall include: 1) contingency arrangements to manage excess saline water if the storage of the mine water management system is exceeded; and 2) contingency measures to manage any impacts identified by monitoring that the management strategies have failed to predict or control, particularly relating to groundwaters associated with the alluvial aquifer of the Hunter River, in consultation with DLWC.	Compliant	Covered in Sections 5.1 of the Dartbrook Mine Care and Maintenance Site Water Management Plan.

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
(vii)	details of a dispute resolution process to resolve issues where deepening and/or increased operational costs of licensed bores where the water table has been lowered by mining activities, is disputed between the Applicant and affected landowner;	Compliant	Covered in Sections 5.3 of the Dartbrook Mine Care and Maintenance Site Water Management Plan.
(viii)	measures to ensure that waters of poorer quality are effectively segregated and reused on the site.	Compliant	Covered in Section 2.2 of the Dartbrook Mine Care and Maintenance Site Water Management Plan and Dartbrook Mine Erosion and Sediment Control Plan (Rev 10. 20/10/2015)
(ix)	details of a strategy for the decommissioning of water management structures, including dirty water dams and clean water diversion dams;	Compliant	Noted. Included in the Mine Closure Plan.
(x)	measures to isolate heavily contaminated waters, including waters containing oil and grease, or other pollutants, operation chemical residues or other criteria, to avoid mixing with reuse or discharge waters;	Compliant	Covered in Section 2.2 of the Dartbrook Mine Care and Maintenance Site Water Management Plan (Rev 5. 20/04/2015)
(xi)	measures for assessing chemical water quality impacts of the mining operation above and below the mine site;	Compliant	Covered in Section 4.0 of the Dartbrook Mine Care and Maintenance Site Water Management Plan (Rev 3. 20/04/2015)
(xii)	projection of potential groundwater changes during mining (short term) and post-mining (long term) with particular attention given to the affect of changes to groundwater quality and mobilisation of salts including down gradient of the rejects emplacement area;	Compliant	Covered in Section 2.2 of the Dartbrook Mine Care and Maintenance Site Water Management Plan.
(xiii)	details of consultation with landholders who use water from the proposed longwall mining area and adjacent area and those parts of Dart Brook and Sandy Creek alluvia immediately adjacent to the mining areas, in relation to their requirements for and the availability of, water and shall consider those water uses in the formulation of the management plan;	Compliant	Covered in Section 5.3 of the Dartbrook Mine Care and Maintenance Site Water Management Plan.
(xiv)	details of a surface water and groundwater monitoring program (refer to clause 4.2(a)(ii); and	Compliant	Covered in Section 4.0 of the Dartbrook Mine Care and Maintenance Site Water Management Plan.
(xv)	a program for reporting on the effectiveness of the water management systems and performance against objectives contained in the approved site water management plans, and EIS.	Compliant	Covered in Section 6.0 of the Dartbrook Mine Care and Maintenance Site Water Management Plan.
(b)	The Applicant shall undertake annual assessments of the accuracy of the groundwater model predictions outlined in the EIS compared with monitored groundwater impacts in consultation with DLWC. Details of the assessments shall be reported in the AEMR and the scope of the assessment shall be determined in consultation with DLWC. Should the assessment identify significant differences between the EIS model predictions and monitored impacts, the Applicant shall revise the assessment of the potential impacts on groundwater systems in consultation with DLWC and implement any further mitigation measures in consultation with DLWC.	Compliant	Refer to Annual Review
(c)	In the event that the development adversely affects groundwater users, the Applicant shall in consultation with DLWC, liaise with the users to provide a replacement water supply of similar quality and quantity to that affected, until such time as the development ceases to impact on the users' water supply.	Compliant	Note. Condition has not been activated in 2015.

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
(d) (i)	The Applicant shall obtain a licence from DLWC under: Part 2 of the Water Act 1912, for the drainage diversion channels (Changing the course of a river);	Compliant	Licences obtained
(ii)	The Applicant shall obtain a licence from DLWC under: Part 5 of the Water Act 1912 for the bores and wells which intersect the groundwater table, including monitoring bores and the excavations which intersect the groundwater table.	Compliant	As above
(e)	The construction or mining operations shall not damage or interfere with: • vegetation outside the area of operation; • the stability of adjacent or nearby streams; or • the quality of water in the stream or watercourse except as authorised by the EPA.	Not Applicable for period of audit	Noted. Not applicable in reporting year due to Care and Maintenance Operations.
(f)	The Applicant shall ensure that soil and/or vegetation material to be removed from the area of operations shall be disposed of to an appropriate site where it will not re-enter the watercourses or drainage systems.	Not Applicable for period of audit	As above
(g)	The Applicant shall be responsible for any excavation or soil removal undertaken by any other person at the mine site.	Not Applicable for period of audit	As above
(h)	The Applicant shall ensure that all drainage diversion works at the mine site shall minimise adverse impacts, in consultation with DLWC. This shall include:		
(i)	sufficient flow detention measures to provide flow rates at non-erosive velocities prior to re-entry into the natural drainage system;	Compliant	Noted. Not applicable in reporting year due to Care and Maintenance Operations.
(ii)	provision of adequate scour protection to ensure that where flows re-enter natural drainage lines from the diversion drains, adverse erosion impacts do not occur;	Compliant	As above
(iii)	designing all diversion systems to provide stability for the long-term for permanent diversions or for the designed life for temporary diversions;	Compliant	As above
(iv)	undertaking a pre-construction survey, by a suitably qualified person, of the channel site and adjacent banks showing design channel profile on cross-sections;	Compliant	As above
(v)	undertaking engineering hydraulic calculations by a suitably qualified person and assessment of scour potential of the channel to meet design flood capacity. This should be related to flow velocities, stability of design bed material type and bed slopes and profiles;	Compliant	As above
(vi)	revegetating the banks of the new channel using suitable species immediately following excavation;	Compliant	As above
(vii)	rehabilitating using locally grown species transplanted and embedded into erosion matting where required in areas of high scour rates. The diversion system may require time for appropriate revegetation prior to its connection to divert water;	Compliant	REA fully rehabilitated in 2007.
(viii)	ensuring the sizes of any culverts are determined by a suitably qualified person;	Not triggered	Noted. Noted applicable in reporting year.

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
(ix)	ensuring the flows or hydraulic levels upstream and downstream of any culverts shall not hinder the passage of fish and aquatic animals where appropriate. Any culverts must be constructed so that they comply with NSW Fisheries Policy and Guidelines for culvert construction.	Not triggered	As above
(x)	preventing erosion of the bed and banks upstream and downstream of any culvert with suitable scour protection as recommended by a suitably qualified person.	Not triggered	As above
4.2	Surface and Groundwater Monitoring		
(a)	The Applicant shall:		
(i)	construct and locate surface and groundwater monitoring positions, as identified in the Site Water Management Plan (Condition 4.1(a)) in consultation with DLWC, and to the satisfaction of the Director-General, at least three months prior to the commencement of mining operations;	Compliant	Covered in Section 4.0 of the Dartbrook Mine Care and Maintenance Site Water Management Plan (Rev 5. 20/04/2015). No changes in reporting year.
(ii)	prepare a detailed monitoring program in respect of ground and surface water quality and quantity, including water in and around the DA area during mining works and post mine operations in consultation with DLWC which shall form part of the Site Water Management Plan. The monitoring program shall have the capacity to collect sufficient data to adequately assess:	Compliant	Covered in Section 4.0 of the Dartbrook Mine Care and Maintenance Site Water Management Plan. No changes in reporting year.
1)	the impact on groundwater levels on neighbouring properties and in the locality, and to identify any water quality impacts;	Compliant	As above
2)	the impact of the development on groundwaters associated with the alluvial aquifer of the Hunter River including the ongoing monitoring of the volume and quality of water inflows into the Hunter Tunnel;	Compliant	As above
3)	regional groundwater levels and water quality including the extension of the regional groundwater monitoring network to include bores RDH508-511; and	Compliant	As above
4)	any concerns or complaints from surrounding landholders on groundwater matters, and any ensuing actions, which shall be recorded and be available to DLWC.	Compliant	As above
(iii)	report on the monitoring results and raw data in the AEMR on the following matters:	Compliant	As above
1)	a basic statistical analysis (mean, range, variance, standard deviation) of the results for the parameters measured in individual bores / wells and as a subset of the aquifer;	Compliant	As above
2)	an interpretation of the water quality results and changes in time for water quality and water levels (supported with graphs, contour plots showing changes in aquifer pressure levels);	Compliant	As above
3)	an interpretation of the water balance identifying the volume of water and comparing this to predictions made in the EIS or the previous AEMR; and	Compliant	As above
4)	provide an electronic copy of the data forwarded to DLWC.	Compliant	As above

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
(iv)	The Applicant must consult with the DLWC and submit the Groundwater and Surface Water Monitoring Program in subclause (a)(ii) to the EPA when an application for a licence variation is submitted.	Not triggered	Noted. No license variations have been sought during reporting year.
5	Rejects Emplacement Area and Waste Management		
5.1	Rejects Emplacement Area		
(a) (i)	Ensure the construction, operation and decommissioning of the rejects replacement area meets relevant geotechnical factors of safety and long-term stability criteria, suitable for a permanent feature of the landscape;	Compliant	Originally undertaken. No changes in reporting year.
(ii)	Unless otherwise agreed to by the Department of Primary Industries, ensure the design of the rejects emplacement area addresses: * the need for subsurface drainage * compaction of rejects within the emplacement to achieve a target of 95 percent standard compaction, and at all times achieve a 90 percent standard compaction * temperature control and monitoring using thermo-couples within the emplacement; and	Compliant	Originally undertaken. No changes in reporting year.
(iii)	Prepare and implement a surveillance program to monitor the geotechnical stability of the rejects emplacement area, including periodic geotechnical analysis of the reject material to ensure it continues to meet relevant design criteria, to the satisfaction of the Department of Primary Industries	Compliant	Ongoing. See the Annual Review regarding temperature and water level and quality.
(b)	Prior to the emplacement of rejects in the southern and northern rejects emplacement areas, and for any subsequent modifications to the design of these emplacement areas, the Applicant shall:	Not triggered	
(i)	Commission a suitably qualified, experienced and independent geotechnical expert, whose appointment has been approved by the Director-General, to review the detailed design (and surveillance program) for the southern and northern rejects emplacement areas to verify each design meets relevant geotechnical factors of safety and long-term stability criteria;	Not triggered	Noted. Not applicable in reporting year due to Care and Maintenance Operations. REA Extensions were not commenced.
(ii)	Implement all reasonable and feasible recommendations made by the independent geotechnical expert to improve the detailed design or the surveillance program for the southern and northern rejects emplacement areas; and	Not triggered	As above
(iii)	Provide a copy of the independent geotechnical expert's report to the Department of Primary Industries and the Director-General, to the satisfaction of the Department of Primary Industries	Not triggered	As above
(c)	Prior to emplacement of rejects in the southern rejects emplacement area, the Applicant shall prepare and implement a revised Rehabilitation Strategy for all rejects emplacement areas at the mine, to the satisfaction of the Department of Primary Industries	Not triggered	As above
5.2	Waste		

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
(a)	Prior to the commencement of construction or Mining Operations, the Applicant shall prepare and implement a Waste Management Plan for the DA area in consultation with MSC and to the satisfaction of the Director-General. The Plan shall include, but not be limited to:	Compliant	Waste reported in the Annual Review.Dartbrook Extended Coal Project Waste Management Plan (rev 4. 10/12/02).Correspondence between Dartbrook and DoP (now DP&E) proposing and approving respectively, the mines program of "continuing to operate under existing management plans without reviewing. Propose to modify these Management Plans should any activities recommence."
(i)	details of measures to facilitate waste management on site;	Compliant	Waste reported in the Annual Review
(i)	details of compliance with the Applicant's obligations under the Protection of the Environment Operations Act (1997);	Compliant	As above
(ii)	identification of all types and quantities of waste materials produced at the mine site during construction, commissioning and operation;	Compliant	As above
(iii)	programs aimed at minimising the production of waste at the mine site through the implementation of operational and management measures;	Compliant	As above
(iv)	details of the potential reuse and recycling avenues for waste materials produced at the mine site, including collection and handling procedures;	Compliant	As above
(v)	details of appropriate disposal routes in the event that reuse and recycling avenues are not available or are not practicable; and	Compliant	As above
(vi)	programs for involving and encouraging employees and contractors to minimise waste production at the mine site and reuse / recycling where appropriate.	Compliant	As above
(b)	The Applicant shall dispose of all solid waste and putrescibles matter from the site to the satisfaction of MSC or EPA, as relevant.	Compliant	Noted. Remondis have undertaken Dartbrook waste management throughout reporting year.
(c)	The Applicant shall dispose of all treated sewage and sullage to the satisfaction of MSC and in accordance with the EPA Licence.	Compliant	Noted. Sewage treated in the Sewage Treatment Plant with treated liquids irrigated as approved by the EPL. Monitoring as per the EPL.
5.3	Tailings Disposal		
(a)	The Applicant shall not use tailing dams for the disposal of fine coal rejects, other than in emergency situations when the ratio of fine to coarse rejects are not within the specifications for the waste plant.	Not Applicable for period of audit	Noted. Not applicable in reporting year due to Care and Maintenance status.

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
(b)	The Applicant shall prepare a report to the Director-General every five years, or as otherwise agreed by the Director-General, reporting on the feasibility of using goaf areas of the Dartbrook Extended Mine, other than that described in the "Dartbrook Mine Statement of Environmental Effects for New ROM Coal Stockpiles, Underground Tailings Disposal and Nitrogen Injection Plant", dated 12 August 2005 and prepared by Hansen Consulting, for rejects disposal.	Not triggered	Noted. Not applicable in reporting year due to Care and Maintenance status.
6	Air Quality, Noise and Light Management and Monitoring		
6.1	Air Quality Management and Monitoring		
	Air Quality Standards/Goals		
(a1)	The Applicant shall comply with the air quality standards/goals listed in Tables 1 and 2:	Compliant	Refer to Annual Review
	Dust Management Plan		
(a)	The Applicant shall, prior to the commencement of construction or Mining Operations, prepare a Dust Management Plan detailing air quality safeguards and procedures for dealing with dust emissions from the Dartbrook Underground Mine Extension to the satisfaction of the Director-General. The Dust Management Plan shall be prepared in consultation with the EPA, MSC and SSC. The Plan shall include, but not be limited to, details of:	Compliant	Dartbrook Mine Dust Management Plan (Rev 9. 16/06/2015). Correspondence between Dartbrook and DoP (now DP&E) proposing and approving respectively, the mines program of "continuing to operate under existing management plans without reviewing. Propose to modify these Management Plans should any activities recommence." Refer to the Annual Review.
(i)	the identification of dust affected properties in accordance with the relevant air quality standards/goals in Tables 1 and 2;	Compliant	As above
(ii)	reporting of the dust emissions from the Mine in comparison to all of the air quality standards and goals provided in Tables 1 and 2.	Compliant	As above
(iii)	specification of the procedures for the dust monitoring program for the purpose of undertaking independent dust investigations;	Compliant	As above
(iv)	outline the procedure to notify property owners and occupiers likely to be affected by dust from the mine in excess of standards/goals detailed in Tables 1 and 2;	Compliant	As above
(v)	measures to reduce the potential for wind erosion from exposed surfaces.	Compliant	As above
(vi)	methods for making dust monitoring data publicly available, such as the placement of monitoring details and results on the internet;	Compliant	As above
(vii)	measures to manage and mitigate short term episodic events including investigations into the relationships between short-term variations in dust levels (particularly TSP and dust deposition) and levels of complaints and annoyance, with a view to reviewing the monitoring approaches and criteria for acceptable levels of impact;	Compliant	As above

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
(viii)	the establishment of a protocol for handling dust complaints that include recording, investigating, reporting and acting on complaints, including where complaints are received and it is demonstrated dust levels are below the criteria contained in this consent;	Compliant	As above
(ix)	appropriate mechanisms for community consultation;	Compliant	As above
(x)	outlining proactive/predictive and reactive mitigation measures to be employed to minimise dust emissions;	Compliant	As above
(xi)	outlining mitigation measures to be employed to minimise dust emissions including dust from rejects emplacement area in dry and windy conditions	Compliant	As above
(xii)	equipment to be available and used to control dust generation;	Compliant	As above
(xiii)	methods to determine when and how the mine operation is to be modified to minimise the potential for dust emissions, particularly from surface activities if the relevant criteria are exceeded;	Compliant	As above
(xiv)	identification of longer term strategies directed towards mitigating dust levels that exceed the air quality standards/goals in Tables 1 and 2;	Compliant	As above
(xv)	details of locations for dust monitoring and deposition gauges at the residential areas and frequency of monitoring, as agreed with the EPA;	Compliant	As above
(xvi)	a program to continue baseline monitoring undertaken prior to development consent; and	Compliant	As above
(xvii)	Monitoring and reporting protocol for PM10 (particulate matter less than 10 microns) and a comparison with the: • National Environment Protection Council PM10 goal of 50 µg/m3 (24 hour average); and • EPA PM10 goal of 50 µg/m3 (annual average).	Compliant	As above
	Air Quality and Dust Monitoring		
(b)	The Applicant shall:		
(i)	undertake monitoring at locations described in the Dust Management Plan (Condition 6.1(a));	Compliant	Monitoring locations included in the Dust Management Plan (Rev 9. 16/06/2015). Results reported in the Annual Review.
(ii)	establish dust deposition, total suspended particulate (TSP) and PM10 monitoring locations for the mine operations, including sites for monitoring impacts of dust at the nearest non-mined owned residences, and locations as may be determined to be necessary by the Director-General and in accordance with the Dust Management Plan referred to in Condition 6.1(a);	Compliant	Monitoring locations included in the Dust Management Plan (Rev 8. 8/11/07). DoP (now DP&E) approved monitoring sites in Rev 7 of the Management Plan on 7/06/06.
(iii)	provide quarterly reporting on the performance of the control measures and of the monitoring system detailed in the EIS and conditions of this consent, unless otherwise agreed by the Director-General. The reports shall be provided to the Director-General, CCC and MSC; and	Compliant	Under Care and Maintenance with annual reporting see Annual Review

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
(iv)	provide all results and analysis of air quality monitoring in the AEMR including a determination of the dust deposition rate in g/m2/month, which shall be plotted in the AEMR.	Compliant	Refer to Annual Review.
(c)	In the event that a landowner or occupier considers that dust from the project at their dwelling or over more than 25% of their vacant land is in excess of the criteria in Tables 1 and 2, and the Director-General is satisfied that an investigation is required, the Applicant shall upon the receipt of a written request:	Compliant	Noted. No complaints or request from landholders in reporting year.
(i)	consult with the landowner or occupants affected to determine their concerns;	Compliant	As above
(ii)	make arrangements for, and bear the costs of appropriate independent dust investigations in accordance with the Dust Management Plan, (which may involve an audit of the mine's monitoring program) and to the satisfaction of the Director-General, to quantify the impact and determine the source of any effect of Dartbrook Mine;	Compliant	As above
(iii)	modify the mining activity or take other steps in accordance with the Dust Management Plan if exceedances are demonstrated to result from the mine related activity. This shall include:	Compliant	As above
1)	introduction of additional controls, either of dust generation from individual sources on the site or on site operations or modify operations to ensure that the dust criteria are achieved; and/or,	Compliant	As above
2)	enter into an agreement with the landowner or provide such forms of benefit or amelioration of the impact of dust as may be agreed between the parties as providing acceptable compensation for the dust levels experienced.	Compliant	As above
(iv)	conduct follow up investigations to the satisfaction of the Director-General, where necessary.	Compliant	As above
	Note: Vacant land in this condition means the whole of the lot in a current plan registered at the Land Titles Office as at the date of this consent that does not have a dwelling situated on the lot and is permitted to have a dwelling on that lot.		
(d)	If the independent dust investigations in sub-clause (c) above confirm that dust levels are in excess of the criteria in Tables 1 and 2 above, and if the measures in sub-clause (c)(iii) (1) above do not reduce the dust levels below the criteria in Tables 1 and 2, or if agreement in accordance with sub-clause (c)(iii) (2) above cannot be reached, the Applicant shall at the written request of the owner acquire the relevant property. Acquisition shall be in accordance with the procedures set out in Condition 11.3.	Compliant	Noted. Condition has not been activated in reporting year.
(e)	If a landowner disputes any dust mitigation or other measures proposed by the Applicant in accordance with subclause (c)(iii)(2), the matter shall be referred by either the Applicant or landowner to the Director-General in consultation with MSC and SSC. If the matter cannot be resolved within 21 days, the matter shall be referred to the Independent Dispute Resolution Process.	Compliant	See above
(f)	Further independent investigations shall cease if the Director-General is satisfied that the criteria in Tables 1 and 2 are not being exceeded and are unlikely to be exceeded in the future.	Compliant	See above

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
	Odour Monitoring		
(g)	The Applicant must not cause or permit the emission of offensive odours from the premises and must comply with section 129 of the Protection of the Environment Operations Act 1997.	Compliant	Refer to the Gas Drainage and Ventilation section of the Annual Review. All gas drainage boreholes and plants that were previously utilised during operation have been decommissioned during Care and Maintenance. No blasting under Care and Maintenance operations.
(h)	Prior to construction of each ventilation air discharge vent (ventilation shaft), the Applicant must submit a report to the EPA, which demonstrates, to the satisfaction of the EPA, that the new ventilation air discharge vents are located and designed in a manner that will not cause offensive odour impacts.	Not Applicable for period of audit	As above
(i)	Within 90 days of commissioning each new ventilation air discharge vent (ventilation shaft), the Applicant must submit a report to the EPA, which includes the following site specific source emission test results: • Concentration of odour (OU/m3); • Emission rate of odour (OU/s); • Concentrations and emission rates of all other relevant air pollutants; • Volumetric flow rate (m3/s); • Discharge velocity (m/s); and • Temperature (°C). If the above parameters are outside the range used in the dispersion modelling study of each ventilation air discharge vent (ventilation shaft), then the odour impacts must be assessed once more and the results submitted to the EPA.	Not applicable	Not applicable. Under Care and Maintenance operations, no new ventilation air discharge vents were commissioned in reporting year.
(j)	The location of sampling points and source emissions sampling and analysis must be conducted strictly in accordance with the "Approved Methods for Sampling and Analysis of Air Pollutants in New South Wales", NSW EPA, December 1999.	Not applicable	Ventilation Shaft No. 1 is the only site still emitting. Tube bundles are used for monitoring. Management and performance is reported in the Annual Review.
6.2	Dust Suppression and Control		
(a)	The Applicant shall ensure the prompt and effective rehabilitation of all disturbed areas of the mine site to minimise the generation of wind erosion dust.	Compliant	The disturbed area has remained rehabilitated and unchanged during reporting year and represents largely infrastructure areas.Evaporation ponds were recommissioned in Q4 of 2011, which has reduced a potential dust contributor.

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
(b)	The Applicant shall keep the surface of the coal stockpiles and any unsealed roads sufficiently damp to minimise the emission of wind blown or traffic generated dust.	Compliant	Stockpiles no longer in use whilst under Care and Maintenance. Some vegetation covering stockpile emplacement area. Stockpile sprays still in working order to be ultilised if required. Minimal light vehicle traffic along unsealed roads in reporting year due to limited activities and personnel working on site.
6.3	Blast Management and Monitoring		
	Blasting Overpressure		
(a)	The overpressure level from blasting operations on the premises must not: • exceed 115dB (Linear Peak) for more than 5% of the total number of blasts over a period of 12 months; and • exceed 120dB (Linear Peak) at any time, at any residence or noise sensitive location (such as a school or hospital) that is not owned by the Applicant or subject to a private agreement between the owner of the residence or noise sensitive location and the Applicant as to an alternative overpressure level.	Compliant	No blasting required under Care and Maintenance operations.
(b)	Ground vibration peak particle velocity from the blasting operations must not: • exceed 5mm/s for more than 5% of the total number of blasts over a period of 12 months; and • exceed 10mm/s at any time, at any residence or noise sensitive location (such as a school or hospital) that is not owned by the Applicant, or subject to a private agreement between the owner of the residence, or noise sensitive location and the Applicant, as to an alternative vibration level.	Compliant	See above
	Time and Frequency of Blasting		
(c)	Blasting operations may only take place between 9 am and 5 pm Monday to Friday inclusive;	Compliant	No blasting required under Care and Maintenance operations.
(d)	Blasting at the premises is limited to 1 blast on each day on which blasting is permitted; and	Compliant	See above
(e)	The hours of operation for blasting operations specified in this condition may be varied if the EPA, having regard to the effect that the proposed variation would have on the amenity of the residents in the locality, gives written consent to the variation.	Compliant	See above
	Blast Management Plan		

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
(f)	The Applicant shall prepare and implement a Blast Management Plan to the satisfaction of the Director-General, prior to the commencement of any blasting. The Plan must include, but need not be limited to, the following matters:	Compliant	Dartbrook Extended Coal Project Blast Management Plan (Rev 5, 10/12/2002). Correspondence between Dartbrook and DoP (now DP&E) proposing and approving respectively, the mines program of "continuing to operate under existing management plans without reviewing. Propose to modify these Management Plans should any activities recommence." No blasting required during Care and Maintenance operations.
	• compliance standards;	Compliant	As above
	• mitigation measures;	Compliant	As above
	• remedial action;	Compliant	As above
	• monitoring methods and program;	Compliant	As above
	• monitoring program for flyrock distribution;	Compliant	As above
	• measures to be undertaken to demonstrate that Dartbrook Mine is achieving best practice in minimising both air blast overpressure and ground vibration levels;	Compliant	As above
	• measures to protect underground utilities (e.g.: rising mains, subsurface telecommunication and electric cables), native fauna and livestock nearby;	Compliant	As above
	• procedures for the notification of neighbours prior to detonation of each blast; and	Compliant	As above
	• measures to ensure no damage by flyrock to people, property, livestock and powerlines.	Compliant	As above
(g)	The Applicant shall as a minimum for large-scale blasts (with a maximum instantaneous charge greater than 20kg), advise residents within three (3) kilometres of blasting locations on a monthly basis and of any changes to monthly programs. For small-scale construction blasts (with a maximum instantaneous charge not greater than 20kg), the Applicant shall as a minimum advise residents within one (1) kilometre of blasting locations.	Compliant	Noted. Not applicable under Care and Maintenance status.
(h)	Upon written request of the owner of any dwelling located within three (3) kilometres of large-scale blasting locations (with a maximum instantaneous charge greater than 20kg), or within one (1) kilometre of small-scale construction blasting locations (with a maximum instantaneous charge not greater than 20 kg), the Applicant shall arrange at its own costs, for the inspection by a technically qualified person agreed to by both parties, to record the material condition of any structure on such a property within 14 days of receipt of the request. The Applicant shall supply a copy of any inspection report, certified by the person who undertook the inspection, to the relevant property owner within fourteen (14) days of receipt of the report.	Not triggered	As above

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
(i)	The Applicant shall ensure that blasting shall not take place within 500 metres of a public road while such road is open to traffic. Roads shall not be closed for blasting purposes during the times that school buses use the road.	Compliant	As above
(j)	The Applicant shall prepare a Road Closure Management Plan to the satisfaction of the Director-General, and in consultation with MSC and SSC prior to the commencement of any blasting within 500 metres of a public road. The Plan shall include, but not be limited to, the following matters:	Compliant	As above
(i)	Details of the proposed safety management measures during the period of the road closure and blast;	Compliant	As above
(ii)	Details of the procedures for closing Dartbrook Road and the period which the road will be closed during blasting activities;	Compliant	As above
(iii)	Methods for ensuring the safety of road users and the general public during the blast period;	Compliant	As above
(iv)	Strategies for informing road users and the local community of the proposed road closure;	Compliant	As above
(v)	Details of the procedures for permitting the passage of emergency vehicles during the road closure. This shall also include details of the proposed methods for sufficiently notifying emergency service providers of the proposed times and period of the road closures;	Compliant	As above
(vi)	Methods for clearing the road of any debris resulting from a blast; and	Compliant	As above
(vii)	Details of the disruptions that are likely to occur during the closure period.	Compliant	As above
(k)	Notwithstanding subclause (j) above, if blasting is proposed within 500 metres of the New England Highway, The Applicant shall prepare a Road Closure Management Plan to the satisfaction of the Director-General, and in consultation with RTA, MSC and SSC, prior to the commencement of any blasting within 500 metres of the New England Highway. The Plan shall include, but not be limited to, the matters in subclause(j) above.	Compliant	As above
	Blast Monitoring		
(l)	The applicant must monitor ground vibration and overpressure of all blasts.	Compliant	Noted. Not applicable under Care and Maintenance activities.
(m)	Ground vibration or the overpressure must be measured at noise sensitive sites (e.g.. residences, hospitals, schools etc), selected in consultation with the EPA.	Compliant	As above
6.4	Noise Control		
6.4.1	Noise Levels		

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
	Intrusive Noise Criteria		
(a)	The Applicant shall undertake management measures as outlined in the Noise Management Plan at dwellings where the noise target criteria in Table 3 below is predicted to be exceeded, or is exceeded during mining operations.	Compliant	Correspondence between Dartbrook and DP&E suspended noise monitoring under Care and Maintenance.
	Noise Acquisition Criteria		
(b)	The acquisition zone for Dartbrook Mine is defined by predicted or demonstrated exceedance of noise levels (caused by Dartbrook Mine) at any non-mined owned dwellings of the dB(A) (Leq (15 minute)) noise limits shown in Table 4 below.	Noted	Noted. Monitoring not required.
(c)	The properties in Table 5 are predicted to experience noise levels greater than the acquisition levels identified in Table 4 from Dartbrook Mine, and shall be acquired by the Applicant if requested by the landowner in accordance with Condition 11.3.	Not triggered	As above
(d)	In the event that a landowner or occupier of a non-mine owned property, excluding those properties listed in Table 5 (refer also sub clause (l) below), considers that noise from the project once operational at their dwelling is in excess of: • the noise levels depicted in Tables 3 or 4 above; or • that a landowner considers that the noise levels depicted in Table 4 is being exceeded over more than 25% of their vacant land, and the Director-General is satisfied that an investigation is required, the Applicant shall upon the receipt of a written request:	Not triggered	As above
(i)	Consult with the landowner or occupants affected to determine their concerns;	Not triggered	As above
(ii)	Make arrangements for, and bear the costs of, in consultation with the owners of other mine operations in the vicinity where necessary, appropriate independent noise investigations in accordance with the noise management plan, and to the satisfaction of the Director-General, to quantify the impact and determine the source of the effect;	Not triggered	As above
(iii)	Modify the Dartbrook Mine operations or take other steps in accordance with a noise reduction plan prepared as part of the noise management plan, if exceedences are demonstrated to result from Dartbrook Mine. This shall include: • introduction of feasible and reasonable additional controls, either on noise emission from individual sources on the site or on site operations or modify operations, to ensure that the criteria in Table 3 are achieved, as far as possible; and/or • with the agreement of the landowner, undertaking of noise control at the dwelling to achieve acceptable internal noise levels; and/or • entering into an agreement with the landowner or provide such other forms of benefit or amelioration of the impact of noise as may be agreed between the parties, as providing acceptable compensation for the noise levels experienced;	Not triggered	As above
(iv)	conduct follow up investigations to the satisfaction of the Director-General, where necessary.	Not triggered	As above

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
	Note: Vacant land in this condition means the whole of the lot in a current plan registered at the Land Titles Office as at the date of this consent that does not have a dwelling situated on the lot and is permitted to have a dwelling on that lot.	Not triggered	As above
(e)	If the independent noise investigations in sub-clause (d) above confirm that noise limits in Table 4 are being exceeded by Dartbrook Mine and the measures in Condition 6.4.1 (d) (iii) do not reduce the noise levels below the criteria in Table 4, the Applicant shall at the written request of the landowner acquire the relevant property. Acquisition shall be in accordance with the procedures set out in Condition 11.3.	Not triggered	As above
(f)	If continued complaints and noise investigations confirm that noise limits in Table 3 are being exceeded, but are less than the noise levels in Table 4, the Applicant shall continue to negotiate with the landowner until a resolution to the satisfaction of the Director-General is reached.	Not triggered	As above
(g)	If a landowner disputes any noise mitigation or other measures proposed by the Applicant in accordance with sub-clause (d) above, the matter shall be referred by either the Applicant or landowner to the Director-General in consultation with MSC and SSC. If the matter cannot be resolved within 21 days, the matter shall be referred to the Independent Dispute Resolution Process.	Not triggered	As above
(h)	Further independent investigations shall cease if the Director-General is satisfied that the relevant criteria in Tables 3 and 4 are not being exceeded and are unlikely to be exceeded in the future.	Not triggered	As above
(i)	The Applicant shall, after commencement of the mine extensions, undertake monitoring of affected residences to verify noise predictions, including management and acquisition zones to the requirements of the Director-General. Any alterations to predictions, management and acquisition zones, shall be provided to the affected resident(s) and to the Community Consultative Committee together with necessary action in accordance with this Condition.	Compliant	As above
(j)	EPA Applicable Noise Limits for EPA licence purposes (refer to Schedule B)	Noted	As above
(k)	For the purpose of noise measurement for subclause (j) above and this consent in general, the LAeq noise level must be measured or computed at the most affected area within 30 metres of the residence or at the boundary, if the boundary is closer than 30 metres to the residence, over a period/s of 15 minutes using “FAST” response on the sound level meter.	Compliant	As above
(l)	In the event a resident is identified in the acquisition zone by either subclause (c) or (e) above and does not wish to request acquisition, the Applicant shall:	Not triggered	As above
(a)	Take feasible and reasonable measures to minimise noise levels in the event of complaints from the resident in the acquisition zone; and	Not triggered	As above
(b)	If requested to instigate noise mitigation measures in lieu of acquisition, shall consider the feasibility of such measures and instigate those measures at its discretion in consultation with the resident, unless otherwise agreed by the Director-General.	Not triggered	As above

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
	Note: Vacant land in this condition means the whole of the lot in a current plan registered at the Land Titles Office as at the date of this consent that does not have a dwelling situated on the lot and is permitted to have a dwelling on that lot.	Not triggered	As above
6.4.2	Noise Management Plan		
(a)	The Applicant shall prior to commencement of mining operations, prepare and implement a Noise Management Plan for Dartbrook Mine, to the satisfaction of the Director-General. The EPA, MSC and SSC should also be consulted prior to the finalisation of the Management Plan. The Plan shall:	Compliant	Dartbrook Mine Noise Management Plan (Rev 8, 08/11/07). Correspondence between Dartbrook and DP&E suspended noise monitoring under Care and Maintenance. No changes in reporting year.
(i)	Include details of the conduct of noise investigations at three monthly intervals, unless otherwise agreed by the Director-General, to evaluate, assess and report the L eq (15 minute) noise emission levels due to the normal operations of Dartbrook Mine;	Compliant	Noted. Monitoring not required.
(ii)	Detail proposed methodologies including determining survey intervals; weather conditions and seasonal variations; selecting variations, locations, periods and times of measurements;	Compliant	As above
(iii)	Detail management measures where the Intrusive criteria in Table 3 of this consent is predicted to be exceeded, or is exceeded during mining operations;	Compliant	As above
(iv)	Outline the design of any noise monitoring and modelling or other studies including the means for determining the noise levels emitted by the Dartbrook Mine operations;	Compliant	As above
(v)	Detail a monitoring program, mitigation measures, remedial action and measures demonstrating that Dartbrook Mine is achieving best practice in minimising low frequency noise, irrespective of set standards;	Compliant	As above
(vi)	Particularly focus on the management of night time noise (10.00pm – 7.00am) for each year of operation;	Compliant	As above
(vii)	Redefine both the noise acquisition and management zones for Dartbrook Mine on a yearly basis, unless otherwise agreed by the Director-General. This review shall draw upon the noise monitoring results obtained during the previous year and incorporate noise modelling to provide a forward plan of predicted noise levels for the year ahead to the satisfaction of the Director-General, and as otherwise agreed by the Director General;	Compliant	As above
(viii)	Specify the procedures for a noise monitoring program for the purpose of undertaking independent noise investigations;	Compliant	As above
(ix)	Outline the procedure to notify property owners and occupiers likely to be affected by noise from the operations;	Compliant	As above

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
(x)	Establish a protocol for handling noise complaints that includes recording, investigating, reporting and acting on complaints, including where complaints are received and it is demonstrated that noise levels are below the criteria contained in this consent;	Compliant	As above
(xi)	Record appropriate mechanisms for community consultation;	Compliant	As above
(xii)	Outline proactive/predictive and reactive mitigation measures to be employed on the site to limit noise emissions;	Compliant	As above
(xiii)	Identify longer term strategies directed towards mitigating noise levels that exceed the noise target levels in Table 3;	Compliant	As above
(xiv)	Outline measures to be used to reduce the impact of intermittent, low frequency and tonal noise (including truck reversing alarms);	Compliant	As above
(xv)	Specify measures to be taken to document any higher level of impacts or patterns of temperature inversions, and detail actions to quantify and ameliorate enhanced impacts if they lead to exceedence of the relevant noise criteria; and	Compliant	As above
(xvi)	Survey and investigate noise reduction measures from plant and equipment at the conclusion of the first 12 months of coal processing operations and set targets for noise reduction taking into consideration valid noise complaints in the previous year. The Report shall also include remedial measures, to achieve compliance with the noise criteria in this consent.	Compliant	As above
(b)	The night-time section of the Noise Management Plan shall be prepared prior to the commencement of any night-time operations.	Not applicable	Operating hours are between 7:00am and 5:00pm whilst under Care and Maintenance.
(c)	Prior to the commencement of construction, the Applicant must prepare, and subsequently implement, a Construction Noise Management Plan to the satisfaction of the Director-General. The Plan must include, but need not be limited to, the following matters: • compliance standards; • community consultation; • complaints handling monitoring/system; • site contact person to follow up complaints; • mitigation measures; • the design/orientation of the proposed mitigation methods demonstrating best practice; • construction times; • contingency measures where noise complaints are received; • monitoring methods and program.	Not applicable	Noted. Original Plan submitted. Not applicable as no construction was undertaken in reporting year due to Care and Maintenance status.
(d)	The Applicant shall also:		
(i)	Make copies of the Noise Management and Construction Noise Management Plans available to the EPA, MSC, SSC and CCC within fourteen days of approval by DUAP, or as otherwise agreed to by the Director-General; and	Compliant	Original Plan submitted. Not applicable in reporting year due to approval to continue with existing management plans whilst under Care and Maintenance.

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
(ii)	Include a summary of noise monitoring results in the AEMR.	Compliant	Noted. Monitoring not required.
(e)	The Applicant shall ensure that the design, construction and operation of Dartbrook Extended shall not create amenity problem(s) associated with low frequency noise. The Applicant shall, in consultation with the EPA, investigate the cause of any low frequency noise causing amenity problems associated with Dartbrook and report to the Director-General the result of any such investigation and practical mitigation measures that can be adopted to eliminate such problem.	Not triggered	No complaints in 2015.
(f)	The Applicant shall ensure that construction activity does not result in noise emissions likely, in the opinion of the EPA, to cause annoyance at residences not owned by the Applicant, having regard to the volume, impact or tone of the noise.	Not applicable	Noted. Monitoring not required.
6.5	Lighting Emissions		
(a)	The Applicant shall, prior to commencement of construction, prepare a Lighting Management Plan in consultation with MSC, SSC and to the satisfaction of the Director-General. The Plan shall include details of the implementation of visual controls to screen, direct or manage all on-site lighting from mine related activities in respect of residences and roadways. The Plan shall include, but not be limited to:	Compliant	Landscape and Lighting Management Plan reviewed in 2011 and accepted by DP&E on 2/11/2011
(i)	Details of the planting of vegetation screens along Dartbrook Road, to screen potential lighting impacts;	Compliant	As above
(ii)	Details of the tree screen on the north side of the access road at the corner north of the Dam to screen potential lighting impacts;	Compliant	As above
(iii)	Details of the tree and shrub screening around the Drift Access to reduce potential lighting impacts;	Compliant	As above
(iv)	Details of technical measures and work practices necessary to minimise the spillage of light from areas to be illuminated, and to minimise the total night time glow from the mine;	Compliant	As above
(v)	Details of the construction or placement of visual screens to screen lighting impacts;'	Compliant	As above
(vi)	Details of the proposed process and measures to address complaints that may be received from residents or road users impacted by lighting from the mine site; and	Compliant	As above
(vii)	Details of any other effective operating practices to manage potential lighting impacts.	Compliant	As above
(b)	The Applicant shall report on the effectiveness of the lighting emission controls in the AEMR.	Compliant	Refer to Annual Review. No night time operations.

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
(c)	The Applicant shall ensure that on-site lighting does not directly emit light into the line of sight of nearby dwellings. The light emitted from any direct flood lighting and any vehicle headlights shall be directed away from dwellings and public roads.	Compliant	Noted. Tree screens and visual bunds in place. Care and Maintenance activities limited to between 7:00am and 5:00pm.
(d)	The Applicant shall ensure that light emitted from locomotive headlights whilst a locomotive is on or moving off the rail loop shall be screened from dwellings to the satisfaction of MSC or as otherwise agreed by the Director-General.	Not applicable	Noted. Tree screens and visual bunds in place. Care and Maintenance activities limited to between 7:00am and 5:00pm. Minimal vehicle usage during night time (security patrols)
6.6	Vibration from Mine Operations		
(a)	Ground vibration peak particle velocity from the rail loop and/or CHPP facility must not: • exceed 2.82 mm/s at any time, at any residence or noise sensitive location (such as a school or hospital) that is not owned by the Applicant, or subject to a private agreement between the owner of the residence, or noise sensitive location and the Applicant, as to an alternative vibration level.	Not applicable	Not applicable due to Care and Maintenance activities.
(b)	Prior to the commencement of mining operations, the Applicant shall prepare and implement a Vibration Management Plan to the satisfaction of the Director-General which will include, but need not be limited to, the following matters: • compliance standards; • monitoring program; • mitigation measures; • remedial action in an event of exceedance of criteria in subclause 6.6(a) above; • monitoring methods and program; and • measures to be undertaken to demonstrate that Dartbrook Mine is achieving best practice in minimising vibration levels from the rail loop and/or CHPP, irrespective of set standards.	Compliant	Submitted Dartbrook Extended Coal Project Vibration Management Plan (Rev 3, 10/12/02). Correspondence between Dartbrook and DoP (now DP&E) proposing and approving respectively, the mines program of "continuing to operate under existing management plans without reviewing. Propose to modify these Management Plans should any activities recommence."
(c) (i)	The Applicant shall also: make copies of the Vibration Management Plan available to the EPA, MSC, SSC and CCC within fourteen days of approval, or as otherwise agreed to be the Director-General; and	Compliant	As above
(ii)	The Applicant shall also: include a summary of vibration monitoring results in the AEMR.	Not applicable	Dartbrook Extended Coal Project Vibration Management Plan (Rev 3, 10/12/02) section 4.2 states that "due to the absence of any detectable ground vibration from Dartbrook CHPP and Rail Loop at the closest residences, a regular ground vibration monitoring program is not proposed. Monitoring will be undertaken if necessary in response to complaints." The Management Plan was approved by DOP 9/12/02. No changes in reporting year.
7	Transport and Utilities		
7.1	Rail Transport		

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
(a)	All coal shall be transported from the CHPP by rail unless otherwise agreed by the Director-General and MSC	Not applicable	Noted. Not applicable in reporting year due to Care and Maintenance status.
7.2	Road Transport		
(a)	(a) The Applicant shall give prior written notice to MSC and SSC of the date of the commencement of the haulage of coal from the western site to the eastern site.	Not applicable	Noted. Not applicable in reporting year due to Care and Maintenance status.
(b)	No coal shall be transported from the western site facilities to the CHPP by road haulage after twenty-one months from the start of mining operations.	Not applicable	As above
(c)	(c) The Applicant shall restrict road haulage of coal from the western site to the eastern site, to the hours of 7.00 am and 6.00 pm, Mondays to Fridays inclusive	Not applicable	As above
(d)	(d) The Applicant shall not road haul coal on Saturday, Sunday and Public Holidays.	Not applicable	As above
(e)	(e) The Applicant shall not load coal onto trucks before 7.00 am on any day, except under emergency circumstances when short haulage to the emergency stockpile at the access slot is necessary and with notification of MSC and the Director-General as soon as practicable.	Not applicable	As above
(f) (i)	The Applicant shall ensure that: All traffic associated with the construction of the Kayuga Mine, with the exception of employees approved by the Dartbrook General Manager and living in the local area most directly accessed by local roads; access the Kayuga Mine surface facilities via the New England Highway, Western Access Road, Stair Street, Kayuga Road and Dartbrook Road, until the completion of contract mine construction activities when all portable construction workers' amenities, workshop and store shall be removed. Approved employees may access the mine via local public roads and Stair Street;	Compliant	Under Care and Maintenance. Construction is complete.
(ii)	All mine personnel (including contractors) access the Dartbrook Mine facilities via the New England Highway and the Western Access Road, with the exception of employees approved by the Dartbrook General Manager and living in the local area most directly accessed by local roads. These employees can access the mine via local public roads and Stair Street;	Compliant	Under Care and Maintenance. Operations are in abeyance.
(iii)	A list of approved employees under Conditions 7.2(f)(i) and (ii) be maintained by the Applicant, and made available to the Department upon request;	Not applicable	As above
(iv)	Kayuga Road, from the Hunter River bridge to the Castlerock Road intersection, is not used to access the mine or mine satellite surface facilities. Limited use of local roads by mine related traffic for access to mine satellite surface facilities is permitted, with internal access roads to be utilised where practicable; and	Compliant	As above
(v)	The section of Kayuga Road between Stair Street and Dartbrook Road, and the section of Dartbrook Road between Kayuga Road and the entrance to the Kayuga Mine surface facilities, be maintained in consultation with MSC and to the satisfaction of the Director-General.	Not applicable	Under Care and Maintenance. Repairs are carried out as required.

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
(g)	The Applicant shall submit all designs and specifications associated with the proposed access road and Blairmore Lane Underpass to MSC or SSC for approval, prior to the commencement of work. The proposed western access road shall be sealed in accordance with the requirements of MSC or SSC.	Not applicable	Submitted. Blairmore lane underpass is constructed.
(h)	The Applicant shall provide advance signposting indicating "Trucks Turning" on the New England Highway, in both directions and shall be displayed during the eighteen month period of coal haulage activities across the New England Highway.	Not applicable	Noted. Not applicable during Care and Maintenance due to no road haulage.
(i)	The Applicant shall ensure that no coal spillage associated with the road haulage of coal occurs on the New England Highway. In the case that coal is spilled onto the Highway, the Applicant shall bear all costs and liability associated with any incident or related clean up activities associated with the spill.	Not applicable	As above
(j)	The Applicant shall ensure that any damage beyond normal wear and tear to the New England Highway, associated with the movement of coal from the mining operations to the CHPP, is repaired at the Applicant's expense and to the satisfaction of the RTA.	Not applicable	As above
7.5	Road Closures	Not applicable	
	The Applicant shall maintain signs and give at least 24 hours notice of temporary road closures during construction. The location and wording of the signs are to be approved by MSC. A protocol is to be established in consultation with the emergency services during road closures. Notification shall also be provided to relevant emergency services via fax seven (7) days prior to the road closure.	Not applicable	Noted. Signs updated as required. No road closures in reporting year due to no construction/ blasting.
7.6	Provision of Utility Services		
7.7	Road and Rail Works		
(a)	Install the pipeline crossings of Ely and Heir Streets (both undeveloped roads) to the satisfaction of Muswellbrook Council;	Compliant	Compliant in 2013 independent compliance audit No modifications made in reporting year due to Care and Maintenance status.
(b)	Install pipelines under the Main Northern Rail Line to the satisfaction of the Australian Rail Track Corporation; and	Compliant	As above.
(c)	Prior to the commencement of any construction within the road reserve of the New England Highway the Applicant shall prepare and subsequently implement a Traffic Management Plan in accordance with the RTA's Traffic Control at Worksites guidelines, to the satisfaction of Muswellbrook Council and the RTA. The Plan must:	Not triggered in 2012.	Noted. Condition has not been activated in reporting year.
(i)	(i) describes the schedule of the proposed road works;	Not triggered in 2012.	As above
(ii)	(ii) describe the measures that would be implemented to minimise traffic impacts associated with the construction of the proposed development; and	Not triggered in 2012.	As above

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
(iii)	(iii) include a Traffic Control Plan that describes the measures that would be implemented to control construction traffic access to the classified road network.	Not triggered in 2012.	As above
(d)	Bore pipelines under the New England Highway to the satisfaction of the RTA.	Compliant	Compliant in 2013 independent compliance audit No modifications made in reporting year under Care and Maintenance status.
	Notes:		
(a)	there will be no access from the New England Highway to the work site;	Compliant	Compliant in 2013 independent compliance audit. No modifications made in reporting year under Care and Maintenance status.
	the boring/ crossing locations shall be perpendicular to the New England Highway road reserve at a location which offers the shortest length possible, unless otherwise approved by the RTA;	Compliant	As above
(b)	the location of the pipeline crossing shall be in accordance with the RTA guideline and take into account the location of utilities another infrastructure;	Compliant	As above
(c)	the crossing shall be constructed to Australian Standards and allow for future widening requirements of the New England Highway;	Compliant	As above
(d)	the crossing shall be installed through trenchless technology unless otherwise approved by the RTA;	Compliant	As above
(e)	the crossings shall maintain a minimum vertical buffer of 1.5 metres between the pipeline and the highway within the road reserve;	Compliant	As above
(f)	where steel casings are not used a trace wire shall be provided to assist with the future location of the pipeline;	Compliant	As above
(g)	pipes installed under the road shall be sleeved and grouted;	Compliant	As above
(h)	permanent markers shall be provided at the entry and exist point of the road reserve;	Compliant	As above
(i)	any access points and values shall be located outside of the road reserve; and	Compliant	As above
(j)	all areas within the road reserve that are disturbed by the development shall be restored to their original condition to the satisfaction of the RTA.	Compliant	As above

8	Monitoring/Auditing		
(a)	In addition to the requirements contained elsewhere in this consent, the Director-General may, at any time in consultation with the relevant government authorities and Applicant, require the monitoring programs in Conditions 3, 4 and 6 to be revised/updated to reflect changing environmental circumstances or changes in technology/operational practices. Changes shall be made and approved in the same manner as the initial monitoring programs. All monitoring programs shall also be made publicly available at MSC within two weeks of approval by the Director-General.	Compliant	Noted. Under Care and maintenance. No requirements in reporting year.
(b)	All sampling strategies and protocols undertaken as part of any monitoring program shall include a quality assurance/quality control plan and shall be included in the relevant environmental management plan.	Compliant	Required as part of the Environmental Monitoring Contract with AECOM. Included in the Water Management Plan.
(c)	Only accredited laboratories shall be used for laboratory analysis.	Compliant	Results from samples taken by AECOM are analysed by ALS, which is a NATA Accredited Laboratory 825.
8.1	Third Party Monitoring / Auditing		
	Independent Environmental Audit		
(a)	Every three years from the date of this consent until completion of mining in the DA area, or as otherwise directed by the Director-General, the Applicant shall conduct an environmental audit of the mining and infrastructure areas of the development in accordance with ISO 14010 - Guidelines and General Principles for Environmental Auditing, and ISO 14011 - Procedures for Environmental Auditing (or the current versions), and in accordance with any specifications required by the Director-General. Copies of the report shall be submitted by the Applicant to the Director-General, MSC, SSC, EPA, DLWC, DMR, NPWS and CCC within two weeks of the report's completion for comment.	Compliant	Last compliance audit was undertaken in 2013 by Glade Consulting. Next due in 2016.
(b)	The audit shall:		
(i)	Assess compliance with the requirements of this consent, licences and approvals;	Compliant	Completed by Parsons Brinkerhoff in 2013
(ii)	Assess the development against the predictions made in the EIS;	Compliant	As above
(iii)	Review the effectiveness of the environmental management of the mine, including any mitigation works;	Compliant	As above
(iv)	Be carried out at the Applicant's expense; and	Compliant	Noted and adhered to.
(v)	Be conducted by a duly qualified independent person or team approved by the Director-General in consultation with MSC and SSC. Such approval shall not be unreasonably withheld.	Compliant	DP&E approved Parsons Brinkerhoff for Regulatory Audit in a letter dated 18/07/2013.
(c)	The Director-General may, after considering any submission made by the relevant government agencies, MSC, SSC and CCC on the report, notify the Applicant of any requirements with regard to any recommendations in the report. The Applicant shall comply with those reasonable requirements within such time as the Director-General may require.	Compliant	DP&E approved Parsons Brinkerhoff for Regulatory Audit in a letter dated 18/07/2013. No further conditions were imposed.

8.2	Meteorological Station(s)		
(a)	The Applicant shall continue to maintain and operate a meteorological station in accordance with the requirements of AS 2922 1987 "Ambient Air Guide for Siting of Sampling Units" or its updated version or as directed by the EPA. The Meteorological station(s) must be capable of recording wind direction and speed, temperature and sigma theta and be operated in accordance with the requirements of AS 2923-1987 "Ambient Air Guide Horizontal Wind for Air Quality Application", or subsequent relevant standards. The Applicant shall analyse and document the meteorological data on a monthly basis to adequately characterise the site.	Compliant	Two Meteorological sites currently exist at Dartbrook (Met01 and Met02). Meteorological reports are compiled by Carbon Based Environmental on a monthly basis.
9	Reporting		
9.1	Reports on Operations		
(a)	The Applicant shall report on mine operations in accordance with the mine operations plan (refer to Condition 2.1).	Compliant	MOP - Continuation of Care and Maintenance (January 2013 - December 2017), which was accepted by the DPI-Minerals 18/12/2012; which describes the activities and risk mitigation measures while the operation is on Care and Maintenance. Refer to the Annual Review for actions carried out each reporting year.
9.2	Environmental Reporting		
	Annual Environmental Management Report (AEMR)		
(a)	The Applicant shall, throughout the life of the mine and for a period of at least three years after the completion of mining in the DA area, prepare and submit an Annual Environmental Management Report (AEMR) to the satisfaction of the Director-General and DMR. The AEMR shall review the performance of the mine against the Environmental Management Strategy and the relevant Mining Operations Plans, the conditions of this consent, and other licences and approvals relating to the mine. To enable ready comparison with the predictions made in the EIS, diagrams and tables, the report shall include, but not be limited to, the following matters:	Compliant	Refer to Annual Review.
(i)	An annual compliance audit of the performance of the project against conditions of this consent and statutory approvals;	Compliant	Refer to Annual Review.
(ii)	A review of the effectiveness of the environmental management of the mine in terms of EPA, DLWC, DMR, MSC and SSC requirements;	Compliant	As above
(iii)	Results of all environmental monitoring required under this consent or other approvals, including interpretations and discussion by a suitably qualified person;	Compliant	As above
(iv)	Identify trends in monitoring results over the life of the mine;	Compliant	As above
(v)	An assessment of any changes to agricultural land suitability resulting from the mining operations;	Compliant	As above
(vi)	A listing of any variations obtained to approvals applicable to the subject area during the previous year;	Compliant	As above
(vii)	Subsidence during the preceding twelve months;	Compliant	As above

(viii)	Socio-economic impact of the development including the workforce characteristics of the previous year;	Compliant	Refer to Annual Review. Under Care and Maintenance.
(ix)	The outcome of the water budget for the year, the quantity of water used from water storages and details of discharge of any water from the site;	Compliant	Refer to Annual Review.
(x)	Rehabilitation report;	Compliant	As above
(xi)	Environmental management targets and strategies for the next year, taking into account identified trends in monitoring results; and	Compliant	As above
(xii)	a report on the surveillance of any prescribed dam on the site to the satisfaction of the DSC.	Compliant	See latest report submitted in December 2014.
(b)	In preparing the AEMR, the Applicant shall:		
(i)	Consult with the Director-General and DMR during preparation of each report for any additional requirements;	Compliant	See Annual Review.
(ii)	Comply with any requirements of the Director-General or other relevant government agency; and	Compliant	Noted. See above.
(iii)	Ensure that the first report is completed and submitted within twelve months of this consent, or at a date determined by the Director-General in consultation with the DMR and the EPA. Reporting on the Dartbrook Extended Project may be included with the AEMR for the existing Dartbrook development consent.	No longer Applicable	Submitted. Not applicable anymore.
(c)	The Applicant shall ensure that copies of each AEMR are submitted at the same time to the Director-General, DMR, EPA, DLWC, NPWS, MSC, SSC and CCC, and made available for public information at MSC within fourteen days of submission to these authorities and made available to any landowner within the vicinity of the development upon request.	Compliant	Noted and adhered to.
10	Community Consultation/Obligations		
10.1	Community Consultative Committee		
	The Applicant shall:		
(i)	Ensure the continuation of the existing Dartbrook Mine Community Consultative Committee and ensure that a meeting is held prior to the submission of the Environmental Management Strategy (Condition 3.2). The Committee shall continue to be chaired by MSC and shall have regard to MSCs Code of Conduct for CCCs. Representatives from relevant government agencies or other individuals may be invited to attend meetings as required by the Chairperson. The Committee may make comments and recommendations about the implementation of the development and environmental management plans, monitor compliance with conditions of this consent and other matters relevant to the operation of the mine during the term of the consent. The Applicant shall ensure that the Committee has reasonable access to the necessary plans for such purposes. The Applicant shall consider the recommendations and comments of the Committee and provide a response to the Committee and Director-General.	Compliant	Dartbrook Community Consultative Committee meetings were undertaken in April, August and December 2015. See Annual Review
(ii)	The Applicant shall, at its own expense:		
1)	Ensure two (2) representatives attend all meetings of the Committee;	Compliant	Two (2) company representatives were present at each of the meetings in 2015.

2)	Provide to the Committee regular information on the progress of work and monitoring results;	Compliant	Noted and adhered to.
3)	Promptly provide to the Committee such other information as the Chair of the Committee may reasonably request concerning the environmental performance of the development;	Compliant	As above
4)	Provide access for site inspections by the Committee following reasonable prior notice; and	Compliant	As above
5)	Provide meeting facilities for the Committee, and take minutes of Committee meetings. These minutes shall be available for public inspection at MSC and SSC within 14 days of the meeting.	Compliant	In 2015 meetings were undertaken at the Dartbrook offices. Meeting minutes were sent to members following the meeting.
iii)	If required by the Committee, the Applicant shall establish a trust fund or other funding arrangement that may be agreed between the Applicant and Committee, to be managed by the Chair of the Committee to facilitate the functioning of the Committee, and pay $2000 per annum to the fund or other arrangement, for the duration of mining in the DA area, or as otherwise directed by the Director-General. The monies are to be used only if required for the engagement of consultants to interpret technical information and the like. The annual payment shall be indexed according to the Consumer Price Index (CPI) at the time of payment. The first payment shall be made by the date of the first Committee meeting. A record of the finances of the trust fund during each year shall be provided to the Director-General and Applicant by the Chair on each anniversary of the first payment. Any unspent monies shall be returned to the Applicant each year.	Compliant	Noted.
10.2	Community Consultation		
	Complaints		
(a)	The Environmental Officer employed by the mine (refer condition 3.1) shall be responsible:		
(i)	For establishing and maintaining a system for recording complaints received with respect to construction works and mine operations on a dedicated and publicly advertised telephone line, 24 hours per day 7 days per week, entering complaints or comments in an up to date log book, or other suitable data base, and ensuring that an initial response is provided to the complainant within 24 hours. The complaints protocol shall be prepared and implemented to the satisfaction of the Director-General prior to commencement of construction or Mining Operations; and	Compliant	A complaints phone is kept by the Environmental Officer. No complaints were lodged in 2015.
(ii)	For providing a report of complaints received with respect to the construction and operation of the mine, every six months throughout the life of the project to the Director-General, MSC, SSC, EPA, DMR, and CCC, or as otherwise agreed by the Director-General. A summary of this report shall be included in the AEMR (condition 9.2(a)).	Compliant	Complaints are reported annually in the Annual Review since Dartbrook changed to Care and Maintenance. Refer to Appendix J.
(b)	The Applicant must nominate at least two persons (and their telephone numbers) who will be available to the EPA on a 24 hours basis, and who have authority to provide information and to implement such measures as may be necessary from time to time to address a pollution incident or to prevent pollution from continuing as directed by an authorised officer of the EPA.	Compliant	EPA advised of contacts.

11	Proponents Obligations		
11.1	Cumulative Impact Management		
(a)	In the event that the cumulative impact of noise or dust contributed by the operation of the Dartbrook Mine and any future mining activities, at dwellings, or vacant land (as described in Condition 6.1 and 6.4), in the vicinity of the operation, is in excess of the noise or dust acquisition criteria contained in these conditions of consent, the Applicant shall negotiate with the other companies and landowner to determine appropriate arrangements to reasonably contribute to the management of the identified cumulative impacts to the satisfaction of the Director-General in proportion to their contributions to the impact.	Not triggered	Noted. Currently under Care and Maintenance Management this condition has yet to be activated in reporting year.
(b)	If agreement on appropriate contributions towards mitigation measures/acquisition cannot be reached from negotiations undertaken in accordance with subclause (a), then the matter is to be referred to the Director-General in consultation with MSC and SSC by either the Applicant or landowner. If the matter is not resolved within 21 days of the referral, the matter will be referred to an Independent Dispute Resolution Process as determined by the Director-General, and resolved as determined by the Director-General. The Independent Dispute Resolution Process shall determine the responsibilities of each of the mining companies in accordance with subclause (a) above and actions to be undertaken. The decision of the Independent Dispute Resolution Process shall be final, as determined by the Director-General.	Not triggered	Noted. This condition has yet to be activated in the reporting year.
11.2	Compensation and Land Acquisition and as a Result of Subsidence		
(a)	Compensation and Acquisition – Significant Structural Damage to Dwellings Where a dwelling within the DA area is, or is likely to be (as identified in the Property Subsidence Management Plan referred to in Condition 3.3(g)(iii)), subject to damage beyond the safe, serviceable and repairable criteria as a result of the development, the landowner, after receiving notification from the Applicant in accordance with Condition 3.3(m)(ii), may request the Applicant in writing to: *see full consolidated conditions*	Not triggered	As above
(b)	Compensation and Acquisition – Land Capability Impacts Where a landowner suffers, or is likely to suffer a loss of land capability or agricultural productivity (as identified in the Property Subsidence Management Plan referred to in Condition 3.3(g)), as a result of the development, the landowner, after receiving notification from the Applicant in accordance with Condition 3.3(m)(ii), may request the Applicant in writing to: *see full consolidated conditions*	Not triggered	As above
(c)	(C) Acquisition – Procedure Upon receipt of a written request to purchase property in accordance with any part of condition 11.2, the Applicant shall negotiate and purchase the whole of the property (unless the request specifically requests acquisition of only part of the property and subdivision has already been approved) within six months of receipt of the request. The Applicant shall pay the landowner an acquisition price resulting from proper consideration of: *see full consolidated conditions*	Not triggered	As above
(d)	Independent Valuation - *see full consolidated conditions*	Not triggered	As above

11.3	Land Acquisition as a Result of Excessive Noise and/or Dust		
(a)	The owner of any dwelling, or vacant land (as described in Condition 6.1 and 6.4) located in areas that exceed noise and/or air quality acquisition criteria established in accordance with conditions 6.1 and 6.4 of this consent, may request the Applicant in writing to purchase the whole of that property	Not triggered	As above
(b)	The Applicant shall negotiate and purchase a property, as identified in sub-clause (a) above, within six (6) months of a written request from the affected land owner.	Not triggered	As above
(c)	In respect of a request to purchase land arising under this condition, the Applicant shall pay the landowners an acquisition price which shall take into account and provide payment for:	Not triggered	As above
(i)	A sum not less than the current market value of the owner's interest in the land at the date of this consent, as if the land was unaffected by Dartbrook Mine, having regard to: * the existing use and permissible use of the land in accordance with the applicable planning instruments at the date of the written request; and *the presence of improvements on the land and/or any Council approved building or structure which although substantially commenced at the date of request is completed subsequent to that date.	Not triggered	As above
(ii)	The owner's reasonable compensation for disturbance allowance and relocation costs within the Singleton, Scone or Muswellbrook Local Government Area, or within such other location as may be determined by the Director-General in exceptional circumstances;	Not triggered	As above
(iii)	The owner's reasonable costs for obtaining legal advice and expert witnesses for the purposes of determining the acquisition price of the land and the terms upon which it is to be acquired.	Not triggered	As above
	Notwithstanding any other condition of this consent, the landowner and the Applicant may, upon request of the landowner, acquire any property affected by the project during the course of this consent on terms agreed to between the Applicant and the landowner.	Not triggered	As above
(d)	In the event that the Applicant and any owner referred to in this condition cannot agree within the time limit upon the acquisition price of the land and/or the terms upon which it is to be acquired, then	Not triggered	As above
(e)	The Applicant shall bear the costs of any valuation or survey assessment requested by the independent valuer, panel, or the Director-General and the costs of determination referred to in sub clauses (b) and (c).	Not triggered	As above
(f)	Upon receipt of a determination pursuant to sub-clauses (b) and (c), the Applicant shall, within 14 days, offer in writing to acquire the relevant land at a price not less than the determination. Should the Applicant's offer to acquire not be accepted by the owner within six (6) months of the date of such offer, the Applicant's obligations to purchase the property shall cease, unless otherwise agreed by the Director-General.	Not triggered	As above
(g)	In the event that the Applicant and the landowner agree that only part of the land is to be transferred to the Applicant, the Applicant shall pay all reasonable costs associated with obtaining Council approval to any plan of subdivision and registration of the plan at the Office of the Registrar-General	Not triggered	As above
(h)	The provisions of this condition do not apply to a landowner who is the holder of an authority under the Mining Act, 1992	Not triggered	As above

11.4	Contributions to Council		
(a)	Community Enhancement – MSC Prior to the commencement of mining operations or within such other time as agreed by the Director-General, the Applicant shall negotiate an agreed outcome with MSC for an appropriate level of contribution (financial or in-kind) and as applicable, towards mitigating any cumulative social and/or community impacts as the result of the proposed development.	Compliant	Financial contribution paid.
(b)	S.94 Contribution – SSC Unless otherwise agreed between the Applicant and SSC, the Applicant shall comply with the reasonable requirements of the Director-General for an appropriate contribution (financial or in kind) under S.94 of the Environmental Planning and Assessment Act (EP&A Act) as the result of the proposed development.	Compliant	As above
12	Further Approvals and Agreements		
12.1	Statutory Requirements		
(a)	The Applicant shall ensure that all statutory requirements including but not restricted to those set down by the Local Government Act 1993, Protection of the Environment Administration Act 1991, Protection of the Environment Operations Act 1997, Rivers and Foreshores Improvement Act 1948, Water Act 1912, National Parks and Wildlife Act 1974, and all other relevant legislation, Regulations, Australian Standards, Codes, Guidelines and Notices, Conditions, Directions, Notices and Requirements issued pursuant to statutory powers by the MSC, EPA, DMR, NPWS, DLWC, RTA, NSW Agriculture, and NSW Fisheries, are fully met.	Compliant as far as it can be determined.	Originally carried out now on Care and Maintenance.
(b)	Structural Adequacy Detailed plans and specifications relating to the design and construction of each structural element associated with the proposed development are to be submitted to the Principal Certifying Authority prior to the construction of each particular building or structure. Such plans and specifications must be accompanied by certification provided by a practicing professional structural engineer or an accredited certifier certifying the structural adequacy of the proposed building design and compliance with the Building Code of Australia	Compliant	As above
(c)	Verification of Construction Upon completion of building works and prior to the issue of an occupation certificate, a certificate/s prepared by a suitably qualified person or a compliance certificate/s issued by an accredited certifier, is to be submitted to the Principal Certifying Authority certifying that the following building components, where relevant, have been completed in accordance with approved plans and specifications:	Compliant	As above
12.2	Approvals within a Mine Subsidence District		
13	Revision of Management Plans		
(a)	Prior to the commencement of any construction associated with the development described in the "Dartbrook Mine Statement of Environmental Effects for New ROM Coal Stockpiles, Underground Tailings Disposal and Nitrogen Injection Plant", dated 12 August 2005, the Applicant shall update its Erosion and Sediment Control Plan to take into account that development.	Compliant	Compliant in 2013 independent compliance audit. No changes made or required in reporting year.

(b)	By the end of February 2006, the Applicant shall review, and if necessary update its:		
	Site Water Management Plan; Site Water Balance.	Compliant	Dartbrook Mine Care and Maintenance Site Water Management Plan (Rev54. 20/04/2015). Letter submitted to the DP&E on 05/05/2014. Approved by DP&E 15/09/2015
	Dust Management Plan; and	Compliant	Dartbrook Mine Dust Management Plan (Rev 9. 16/06/2015). Approved by DP&E 24/11/2015
	Noise Management Plan,	Not applicable	Compliant in 2013 independent compliance audit. No changes made or required in 2015.
	to take into account the development described in the "Dartbrook Mine Statement of Environmental Effects for New ROM Coal Stockpiles, Underground Tailings Disposal and Nitrogen Injection Plant", dated 12 August 2005, to the satisfaction of the Director-General.	Not applicable	As above

Table J-2 – Summary of EPL 4885 Compliance 2015

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
1	Administrative conditions		
A1	What the licence authorises and regulates		
A1.1	This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee based activity classification and the scale of the operation. Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition. Mining for coal 0 - 500000 T produced	Compliant	The *Anglo Coal (Dartbrook Management) Pty Ltd, 2015 Annual Review* (Annual Review) states that Dartbrook has been on Care and Maintenance for the duration of this return with 0Tof coal produced.
A2	Premises to which this licence applies		Noted
A3	Other activities		
A3.1	This licence applies to all other activities carried on at the premises, including: - Coal Works - Reject disposal (bi-product of coal processing) into designated reject area - Sewage Treatment Systems	Compliant	Dartbrook is on Care and Maintenance there are no further activities outside the scope of this licence.
A4	Information supplied to the EPA		
A4.1	Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence. In this condition the reference to "the licence application" includes a reference to:	Compliant	Dartbrook is on Care and Maintenance there are no further activities outside the scope of this licence.
A4.1 a)	the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and		
A4.1 b)	the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.		
2	Discharges to air and water and applications to land		
P1	Location of monitoring/discharge points and areas		
P1.1	See table - Not applicable.		Noted
P1.2	The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.		Noted
P1.3	The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.		Noted

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
3	Limit conditions		
L1	Pollution of waters		
L1.1	Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.	Compliant	Dartbrook's *Annual Return for 01/12/14 - 30/11/15* states that there were no incidents or non-compliances reported. As does the *Anglo Coal (Dartbrook Management) Pty Ltd, 2014 Annual Environmental Management Reports* (AEMR)
L2	Load Limits		
L2.1	Concerntration limit – see table. Not applicable.		Noted
L2.2	pH quality limit – see table. Not applicable.		Noted
L2.3	Cannot pollute except as specified in the table..		Noted
L2.4	Concentration limits For each monitoring/discharge point or utilisation area specified in the table\s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table. Point 4(In the bypass line from the 1200mm concrete main line as shown on diagram titled "Dartbrook Mine Plan showing location of monitoring points along the Discharge Pipeline" Dated 27/3/03): pH 6.5 -9.5 Total suspended solids 120 milligrams per litre	Compliant	Dartbrook's Annual Return for 01/12/14 - 30/11/15 states that there were discharges on 22 /23/04/2015 for which there were no exceedances.
L3	Volume and mass limits		
L3.1	For each discharge point or utilisation area specified below (by a point number), the volume/mass of:	Compliant	Dartbrook's Annual Return for 01/12/14 - 30/11/15 and pers. Comm. - Environmental Coordinator, there were no discharges during the audit period.
L3.1 (a)	liquids discharged to water; or;	Compliant	As above
L3.1 (b)	solids or liquids applied to the area; must not exceed the volume/mass limit specified for that discharge point or area. Point Unit of measure Volume/Mass Limit 4 kilolitres per day 17000		
L4	Blasting Limits		
L4.1	The air blast overpressure level from blasting operations in or on the premises must not exceed:	Compliant	Anglo Coal (Dartbrook Management) Pty Ltd, 2015 Annual Review reports no blasting. Current *MOP - Continuation of Care and Maintenance (January 2013 - December 2017*), states that there will be no blasting
L4.1 (a)	115 dB (Lin Peak) for more than 5% of the total number of blasts during each reporting period; and		

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
L4.1 (b)	120 dB (Lin Peak) at any time. At any residence or noise sensitive location that is not owned by the licensee or subject of a private agreement between the owner of the residence or noise sensitive location and the licensee as to an alternative overpressure level.		during the MOP term.
L4.2	The ground vibration peak particle velocity from blasting operations carried out in or on the premises must not exceed:		
L4.2(a)	5mm/s for more than 5% of the total number of blasts carried out on the premises during each reporting period; and		
L4.2 (b)	10 mm/s at any time. At any residence or noise sensitive location that is not owned by the licensee or subject of a private agreement between the owner of the residence or noise sensitive location and the licensee as to an alternative ground vibration level.		
L4.3	Blasting in or on the premises must only be carried out between 0900 hours and 1700 hours, Monday to Saturday. Blasting in or on the premises must not take place on Sundays or Public Holidays without the prior approval of the EPA.		
L4.4	Blasting at the premises is limited to 1 blast on each day on which blasting is permitted.		
L5	Potentially offensive odour		
L5.1	The licensee must not cause or permit the emission of offensive odour beyond the boundary of the premises. Note: Section 129 of the Protection of the Environment Operations Act 1997, provides that the licensee must not cause or permit the emission of any offensive odour from the premises but provides a defence if the emission is identified in the relevant environment protection licence as a potentially offensive odour and the odour was emitted in accordance with the conditions of a licence directed at minimising odour.	Compliant	Odour monitoring has ceased under Care and Maintenance phase of operations. All gas drainage boreholes and plants that were previously utilised to extract gas from the mine goaf have been decommissioned. Gas drainage and ventilation (potential odour sources) management is reported in the Annual Review (Section 6.17). There was no blasting in 2015 There were no offensive odours during 2015.
4	Operating Conditions		
01	Activities must be carried out in a competent manner		
O1.1	Licensed activities must be carried out in a competent manner. This includes:	Compliant	Noted
O1.1 (a)	the processing, handling, movement and storage of materials and substances used to carry out the activity; and	Compliant	Noted
01.1(b)	the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.	Compliant	The Annual Review reports that Remondis has undertaken waste management at Dartbrook for the entire reporting period. Remondis (Thornton) are licensed for Non-thermal treatment of general waste, Recovery of general waste, Waste storage – Hazardous, restricted solid, liquid, clinical and related waste and Asbestos waste and Other types of waste (EPL 12297).
O2	Maintenance of plant and equipment		

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
O2.1	All plant and equipment installed at the premises or used in connection with the licensed activity:		
O2.1 a)	must be maintained in a proper and efficient condition; and	Compliant	Noted
O2.1 b)	must be operated in a proper and efficient manner.	Compliant	Noted
O3	Dust		
O3.1	The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.	Compliant	Noted. No coal mining carried out.
O3.2	All trafficable areas, coal storage areas and vehicle manoeuvring areas in or on the premises must be maintained, at all times, in a condition that will minimise the generation, or emission from the premises, of wind-blown or traffic generated dust.	Compliant	There is no heavy traffic or coal storage occurring on-site.
O3.3	Activities occurring in or on the premises must be carried out in a manner that will minimise the generation, or emission from the premises, of wind-blown or traffic generated dust.	Compliant	Dartbrook is on Care and Maintenance and there are limited activities being undertaken (e.g. exploration, maintenance).
O3.4	Trucks transporting coal from the premises must be covered immediately after loading to prevent wind blown emissions and spillage. The covering must be maintained until immediately before unloading the trucks.	Compliant	Dartbrook is on Care and Maintenance and there has been no truck haulage during the reporting period.
O3.5	The tailgates of all haulage trucks leaving the premises must be securely fixed prior to loading or immediately after unloading to prevent loss of material.	Compliant	Dartbrook is on Care and Maintenance and there has been no truck haulage during the reporting period.
O4	Processes and management		
O4.1	Irrigation of wastewater must not be carried out if soil moisture conditions are such that surface runoff or ponding is likely to occur.	Compliant	Due to reduced manning levels (Care and Maintenance) there is insufficient liquid generation to require irrigation. (previously controlled automatically by CiTect system and system functionality maintained).
O4.2	No irrigation, application or storage of sewage effluent or sludge must be undertaken within 50 metres of any water course, or on any other area except the defined irrigation area.	Compliant	As above
O4.3	All runoff from the stockpiles and tailings cells and the area utilised for the operation of the stockpiles and tailings cells must be directed to the saline water management system.	Compliant	As controlled by Dartbrook's Mine Care and Maintenance Site Water Management Plan (Rev 5. 20/04/2015), Section 2.2.2 describes the East Site surface runoff.
05	Monitoring and Recording Conditions		
M1	Monitoring records		
M1.1	The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.		Noted
M1.2	All records required to be kept by this licence must be:	Compliant	Records kept on Anglo Coal computer server system for at least 4 years then archived.
a)	in a legible form, or in a form that can readily be reduced to a legible form;		

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
b)	kept for at least 4 years after the monitoring or event to which they relate took place; and		
c)	produced in a legible form to any authorised officer of the EPA who asks to see them.		
M1.3	The following records must be kept in respect of any samples required to be collected for the purposes of this licence:	Compliant	See all AECOM monitoring records foe 2015.
M1.3 a)	the date(s) on which the sample was taken;		
M1.3 b)	the time(s) at which the sample was collected;		
M1.3 c)	the point at which the sample was taken; and		
M1.3 d)	the name of the person who collected the sample.		
M2	Requirement to monitor concentration of pollutants discharged		
M2.1	For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:	Compliant	Noted in Dartbrook's Annual Return for 01/12/14 - 30/11/15 - there were discharges during 22/23/04/2015.
M3	Testing methods - concentration limits		
M3.1	Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.		Noted
M3.2	The location of sampling points and source emissions sampling and analysis must be conducted strictly in accordance with the "Approved Methods for Sampling and Analysis of Air Pollutants in New South Wales" (EPA, December 1999).	Compliant	Noted. Monitoring carried out by AECOM.
M4	Recording of pollution complaints		
M4.1	The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.	Compliant	No complaints received in 2015. Records kept for in excess of four (4) years
M4.2	The record must include details of the following:		
M4.2 a)	the date and time of the complaint;		
M4.2 b)	the method by which the complaint was made;		
M4.2 c)	any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;		
M4.2 d)	the nature of the complaint;		

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
M4.2 e)	the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and		
M4.2 f)	if no action was taken by the licensee, the reasons why no action was taken.		
M4.3	The record of a complaint must be kept for at least 4 years after the complaint was made.		
M4.4	The record must be produced to any authorised officer of the EPA who asks to see them.		
M5	Telephone complaints line		
M5.1	The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.	Compliant	Letter (06/07/06) from Dartbrook to the DoP regarding Suspension of Mining Operations at Dartbrook Mine and the Proposed Care and maintenance Status of the Mine proposed "A pager system responded to on week days." Responding letter (07/09/06) from DoP stating that the department has approved the mine's program of proposed actions regarding Care and maintenance Dartbrook Extended Coal Project Complaints Handling Protocol (Rev. 4, 29/01/02) includes a complaints registration form
M5.2	The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.	Compliant	Sighted advertisements in the Aberdeen Whisper.
M5.3	Conditions M5.1 and M5.2 do not apply until 3 months after:		Noted
M5.3 a)	the date of the issue of this licence or		
M5.3 b)	if this licence is a replacement licence within the meaning of the Protection of the Environment Operations (Savings and Transitional) Regulation 1998, the date on which a copy of the licence was served on the licensee under clause 10 of that regulation.		
M6	Requirement to monitor volume or mass		
M6.1	For each discharge point or utilisation area specified below, the licensee must monitor:	Compliant	Noted Dartbrook's Annual Return for 01/12/2014 – 30/11/2015 reported discharges for 22-23/04/2015.
M6.1 a)	the volume of liquids discharged to water or applied to the area;	Compliant	As per Annual Return
M6.1 b)	the mass of solids applied to the area;		Not applicable
M6.1 c)	the mass of pollutants emitted to the air;		Not applicable
	at the frequency and using the method and units of measure, specified below.	Compliant	Dartbrook's Annual Return for 01/12/14 - 30/11/15 - there were no discharges during the reporting period.
M7	Blasting		
M7.1	To determine compliance with condition(s) L5.1 and L5.2:	Compliant	There were no blasts during the reporting period.

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
M7.1 a)	Airblast overpressure and ground vibration levels must be measured at the nearest residence or noise sensitive location that is most likely to be most affected by the blast and that is not owned by the licensee or subject of a private agreement between the owner of the residence or noise sensitive location and the licensee - for all blasts carried out in or on the premises; and		
M7.1 b)	Instrumentation used to measure the air blast overpressure and ground vibration levels must meet the requirements of Australian Standard 2187.2 of 1993.		
M8	Other monitoring and recording conditions		
M8.1	The licensee must continuously operate and maintain communication equipment which makes the conductivity and flow measurements, taken at Point 4 available to the Department of Land and Water Conservation within one hour of those measurements being taken and makes them available in the format specified in the "Hunter River Salinity Trading Scheme Discharge Point Site Equipment" as published by the Department of Land and Water Conservation on 7 May 2002.	Compliant	Reported during 2015 discharge events.
M8.2	The licensee must ensure that all monitoring data is within a margin of error of 5% for conductivity measurements and 10% for discharge flow measurement.	Compliant	Annual calibration of the discharge equipment to allow accurate monitoring (as per the condition of this licence) by Endress Hauser.
M8.3	The licensee must mark monitoring point(s) 2 , with a sign which clearly indicates the name of the licensee, whether the monitoring point is up or down stream of the discharge point(s) and that it is a monitoring point for the Hunter River Salinity Trading Scheme.	Compliant	Signage for point 2 and 4 with required information in place.
06	Reporting Conditions		
R1	Annual return documents		
R1.1	The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:	Compliant	Submitted Dartbrook's Annual Return for 01/12/14 - 30/11/15, included monitoring data for points 3 and 5. There were no complaints received during the return periods. A Statement of Compliance is included and the Annual Return is signed off by the Project Manager, Legal Manager, Taxation Manager and Board Director.
R1.1 a)	a Statement of Compliance; and		
R1.1 b)	a Monitoring and Complaints Summary.		
	At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.		Review
R1.2	An Annual Return must be prepared in respect of each reporting period, except as provided below. Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.	Compliant	The anniversary date is the 1 December. Annual Return for 1/12/14 - 30/11/15 lodged.
R1.3	Where this licence is transferred from the licensee to a new licensee,	Not triggered	There has been no transfer of licence during the audit period.
R1.3 a)	the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the		

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
	licence to the new licensee is granted; and		
R1.3 b)	the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period. Note: An application to transfer a licence must be made in the approved form for this purpose.		
R1.4	Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on	Not triggered	There has been no surrender or revoke of licence
R1.4 a)	in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or		
R1.4 b)	in relation to the revocation of the licence - the date from which notice revoking the licence operates.		
R1.5	The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').	Compliant	As submitted
R1.6	The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.		Retained
R1.7	Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:	Compliant	Noted
R1.7 a)	the licence holder; or	Compliant	As above
R1.7 b)	by a person approved in writing by the EPA to sign on behalf of the licence holder.		
R1.8	A person who has been given written approval to certify a certificate of compliance under a licence issued under the Pollution Control Act 1970 is taken to be approved for the purpose of this condition until the date of first review of this licence.		
R1.9	The licensee must report any exceedance of the licence blasting limits	Not triggered	Care and Maintenance
R2	Notification of environmental harm		
R2.1	Notifications must be made by telephoning the EPA's Pollution Line service on 131 555.	Not triggered	As above
R2.2	The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.		
R3	Written report		
R3.1	Where an authorised officer of the EPA suspects on reasonable grounds that:	Compliant	There have been no environmental non-conformances/incidents during the period and consequently there had not been any
R3.1 a)	where this licence applies to premises, an event has occurred at the premises; or		

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
R3.1 b)	where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence, and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.		requests from an EPA Officer.
R3.2	The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.		
R3.3	The request may require a report which includes any or all of the following information:		
R3.3 a)	the cause, time and duration of the event;		
R3.3 b)	the type, volume and concentration of every pollutant discharged as a result of the event;		
R3.3 c)	the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event; and		
R3.3 d)	the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;		
R3.3 e)	action taken by the licensee in relation to the event, including any follow-up contact with any complainants;		
R3.3 f)	details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event;		
R3.3 g)	any other relevant matters.		
R3.4	The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.		
R3.5	Reporting of Exceedences of Blasting Limits		
	The licensee must report any exceedence of the licence blasting limits to the regional office of the EPA as soon as practicable after the exceedence becomes known to the licensee or to one of the licensee's employees or agents.	Compliant	There were no blasts during the reporting period as under Care and Maintenance.
R3.6	HRSTS Reporting		
	The licensee must compile a written report of the activities under the Scheme for each scheme year. The scheme year shall run from 1 July to 30 June each year. The written report must be submitted to the EPA's regional office within 60 days after the end of each scheme year and be in a form and manner approved by the EPA. The information will be used by the EPA to compile an annual scheme report.	Compliant	HRSTS Report lodged in July 2015. There were nil discharges under HRSTS during the reporting period.
07	General Conditions		

CONDITION	SUMMARY OF CONTENT/REQUIREMENT OF CONDITION	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
G1	Copy of licence kept at the premises		
G1.1	A copy of this licence must be kept at the premises to which the licence applies.	Compliant	Noted. The EPL is also accessible on the EPA website (http://www.environment.nsw.gov.au/prpoeo/licences/L4885.pdf)
G1.2	The licence must be produced to any authorised officer of the EPA who asks to see it.	Not triggered	No requests by an authorised officer during the reporting period.
G1.3	The licence must be available for inspection by any employee or agent of the licensee working at the premises.	Compliant	Noted. The EPL is also accessible on the EPA website (http://www.environment.nsw.gov.au/prpoeo/licences/L4885.pdf)
08	Special Conditions		
E1	Hunter River Salinity Trading Scheme		
E1.1	This licence authorises the discharge of saline water into the Hunter River Catchment from an authorised discharge point (or points), in accordance with the Protection of the Environment Operations (Hunter River Salinity Trading Scheme) Regulation 2002.	Compliant	There were tow (2) HRSTS discharges on 22-23/04/2015
E1.2	For the purposes of Clauses 23 and 29 of the Protection of the Environment Operations (Hunter River Salinity Trading Scheme) Regulation 2002 the licensee must apply the conversion factor of 0.6.	Compliant	Noted
E1.3	Saline water, as defined in the Regulation, must not be discharged from the premises except through Discharge Point 2.	Compliant	Noted
E1.4	During the licensee's next discharge under the rules of the Hunter River Salinity Trading Scheme (the scheme) the licensee must monitor salinity levels at least at the following location, provided it is safe to do so: at the nearest downstream irrigation offtake point. As far as practicable it should be timed to coincide with the peak flow of discharge water. The results of this monitoring must be reported to the Regional Manager within 30 days of being collected. The report should detail the exact location, time and method of monitoring. Note: a handheld salinity probe is considered an adequate method of undertaking the monitoring, this monitoring can be carried out in conjunction with other discharging participants in the Scheme.	Compliant	Undertaken
		Compliant	Undertaken by email.
E2	Discontinuation of Mining		
	Note: The EPA understands that the licensee has currently ceased mining activates at the premises. It is the EPA's intention to include a Pollution Reduction Program requiring the licensee to conduct a site specific determination of best management practices to reduce particulate emissions from coal mining activities, if coal mining activities recommence.	Not triggered	Noted
E2.1	The licensee must notify the EPA's Regional Manager, Hunter Region in writing prior to mining or handling any coal on the premises.	Noted	Noted

Table J-3 – Summary of Coal Lease 386 Compliance 2015

CONDITION	COAL LEASE 386 (Act 1974)	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
1	Notice to Landholders		Remarks
	(a) Within a period of three (3) months from the date of renewal of this mining lease the lease holder must serve on each landholder a notice in writing indicating that this mining lease has beed renewed and whether the lease includes the surface. A plan identifying each landholder and individual land parcel subject to the lease area, and a description of the lease area must accompany the notice. (b) If there are ten or more landholders, the lease holder may serve the notice by publication in a newspaper circulating in the region where the lease area is situated. The notice must indicate that this mining lease has been renewed; state whether the lease includes the surface and must contain a plan and description of the lease area. If a notice is made under condition 1(b), complaiance with condition 1(a) is not required.	Compliant	Original lease granted 1991
2	Rehabilitation		
	Any disturbance as a result of activities under this mining lease must be rehabilitated to the satisfaction of the Minister.	Compliant	No disturbance in 2015.
3	Mining Operations Plan and Annual Rehabilitation Report		
	(a) The lease holder must comply with an approved Mining Operations Plan (MOP) in carrying out any significant surface disturbing activities, including mining operations, mining purposes and prospecting. The lease holder must apply to the Minister for approval of a MOP. An approved MOP must be in place prior to commencing any significant surface disturbing activities, including mining operations mining purposes and prospecting. (b) The MOP must identify the post mining land use and set out a detailed rehabilitation strategy which: (i) identifies areas the will be disturbed; (ii) details the staging of specific mining operations, mining purposes and prospecting; (iii) identifies how the mine will be managed and rehabilitated to achieve the post mining land use; (iv) identifies how mining operations, mining purposes and prospecting will be carried out in order to prevent and or minimise harm to the environment; ans (v) reflects theconditions of approval under: • the Environmental Planning and Assessment Act 1979; • the Protection of the Environment Operations Act 1997; and • any other approvals relevant to the development including the conditions of this mining lease. (c) The Mop must be prepared in accordance with the *ESG3: Mining Operations Plan (MOP) Guidelines September 2013* published on the Department's web site	Compliant	No mining carried out in 2015. There has been approved MOP for the full duration of the mine, valid to 31/12/2017.

CONDITION	COAL LEASE 386 (Act 1974)	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
	at www.resources.nsw.gov.au/environment (d) The lease holder may apply to the Minster to amend an approved MOP at any time. (e) It is not a breach of this condition if: (i) the operations which, but for this condition 3(e) would be a breach of condition 3(a), were necessary to comply with a lawful order or direction given under the *Environmental Planning and Assessment Act 1979,* the *Protection of the Environment Operations Act 1997,* the *Mine Health and Safety Act 2004 / Coal Mine Health and Safety Act 2002* and *Mine Health and Safety Regulation 2006* or the *Work Health and Safety Act 2011*; and (ii) the Minster had been notified in writing of the terms of the order or direction prior to the operations constituting the breach being carried out. (f) The lease holder must prepare a Rehabilitation Report to the satisfaction of the Minister. The report must. (i) provide a detailed review of the progress of rehabilitation against the performance measures and criteria established in the approved MOP; (ii) be submitted annually on the grant anniversary date (or at such other times as agreed by the Minsster); and (iii) be prepared in accordance with any relevant annual reporting guidelines published on the Department's website at www.resources.nsw.gov.au/environment. Note: *The Rehabilitation Report replaces the Annual Environmental Management Report.*		
4	Compliance Report		
	(a) The lease holder must submit a Compliance Report to the satisfaction of the Minister. The report must be prepared in accordance with any relevant guidelines or requirements published by the Minister for compliance reporting. (b) The compliance Report must include: (i) the extent to which the conditions of this mining lease or any provisions of the Act or the regulations applicable to activites under this mining lease, have or have not been complied with; (ii) particulars of any non-compliance with any such conditions or provisions, (iii) the reasons for any such non-compliance; (iv) any action taken, or to be taken, to prevent any recurrence, or to mitligate to effects, of that non-compliance. (c) The Compliance Report must be lodged with the Department annually on the grant anniversary date for the life of this mining lease. (d) In addition to annual lodgement under condition 4(c) above, a Compliance Report: (i) must accompany any application to renew this mining lease under the Act; (ii) must accompany any application to transfer this mining lease under the Act ; and (iii) must accompany any application to cancel, or to partially cancel, this mining lease under the Act. (e) Despite the submission of any Compliance Report under (c) or (d) above, the titleholder must lodge a Compliance Report with the Department at any date or dates	Compliant	No mining carried out since 2007 There has been approved MOP for the full duration of the mine, valid to 31/12/2017.

CONDITION	COAL LEASE 386 (Act 1974)	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
	otherwise required by the Minister. (f) A Compliacne Report must be submitted one month prior to the expiry of this lease, where the licence holder is not seeking to renew or cancel this mining lease.		
5	Environmental Incident Report		
	(a) The lease holder must notify the Department of all; (i) breaches of the conditions of this mining lease or breaches of the Act causing or threatening material harm to the environment; and (ii) breaches of environmental protection legislation causing or threatening material harm to the environment (as defined in the *Protection of the Environment Administration Act 1991).* arising in connection with significant surface disturbing activities, including mining operations, mining purposes and prospecting operations, under this mining lease. The notification must be given immediately after lease holder becomes aware of the breache. Note: *Refer to www.resources.nsw.gov.au/environment for notification contract details.* (b) The lease holder must submit an Environmental Incident report to the Department within seven (7) days of all breaches referred to in condition 5(a)(i) and (ii). The Environmental Incident Report must include. (i) the details of the mining lease; (ii) contact details for the lease holder; (iii) a map identifying the location of the incident and where material harm to the environment has or is likely to occur; (iv) a description of the nature of the incident or breach, likely causes and consequences; (v) a timetable showing actions taken or planned to address the incident and to prevent future incidents or breaches referred to in 5(a). (vi) a summary of all previous incidents or breaches which have occurred in the previous 12 months relating to significant surface disturbing activities, including mining operations, mining purposes and prospecting operations under this mining lease. Note: The lease holder should have regard to any relevant Director General;s guidelines in the preparation of an Environmental Incident Report Refer to *www.resources.nsw.gov.au/environment for further details.* (c) In addition to the requirements set out in conditions 5(a) and (b), the lease holder must immediately advise the Department of any notification made under section 148 of the *Protection of the Environment Operations Act 1997* arising in connection with significant surface disturbing activities including maning operations, mining purposes and prospecting operations, under this mining lease.	Compliant	Ther were no incidents or complaints in 2015.
6	Subsidence Management		

CONDITION	COAL LEASE 386 (Act 1974)	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
	The lease holder must not commence or undertake underground mining operations that may cause subsidence of the surface other than in accordance with an Eligible Subsidence Management Plan approved by the Director-General. For the purpose of this condition, an 'Eligible Subsidence Management Plan' menas: (i) A Subsidence Management Plan prepared in accordance with current government guidelines for the preparation of Subsidence Management Plans; or (ii) Those parts of an Extraction Plan or another type of plan: • prepared, either in whole or in part, with reference to current government guidelines for the preparation of a Subsidence Management Plan; and • approved for the ourposes of the *Environment Planning and Assessment Act 1979* (or any planning legislation which replaces that Act) by the Minister or Director-General of the Department of Planning & Infrastruture, or another officer of that Department authorized to approve such a plan, which relate to issues of subsidence.	Compliant	No mining in 2015 – under Care and Maintenance management since 2007.
8	Resource Recovery		
	The lease holder must optimise recovery of the minerals that are the subject of this mining lease to the extent economically feasible.	Compliant	No mining in 2015 – under Care and Maintenance management since 2007.
8	Group Security		
	The lease holder is required to provide and maintain a security deposit to secure funding for the fulfilment of obligations of all or any kind under the mining lease, including obligations of all or any kind under the mining lease that may arise in the future. The amount of the security deposit to be provided as a group security has been assessed by the Minister at $9,195,001. The leases covered by the group security include: Coal Lease (Act 1973) and Mining Lease No's 1381, 1456 & 1497 (Act 1992)	Compliant	Secuiry lodged.
9	Cooperation Agreement		
	The lease holder must make every reasonable attempt, and be able to demonstrate its attempts, to enter into a cooperation agreement with the holder(s) of any overlapping title(s). The cooperation agreement should address but not be limited to issues such as: • access arrangements • operational interaction procedures • dispute resolution • information exchange • well location • timing of drilling • potential resource extraction conflicts; and	Compliant	No mining in 2015 – Appropriate Agreements in place with neighbours.

CONDITION	COAL LEASE 386 (Act 1974)	STATUS OF COMPLIANCE AT THE END OF 2015	COMMENTS
	• rehabilitation issues.		
	SPECIAL CONDITIONS		
	Note: *The standard conditions apply to all mining leases. The Division of Resources & Energy (DRE) reserves the right to impose special conditions, based on individual circumstances, where appropriate.*		
10	Barriers		
	Unless with the consent of the Minister first had and obtained and subject to such conditions as he may impose the registered holder shall not work or cause to be worked any seam of coal by underground methods within the subject area within the barrier defined as follows:- The land within the zone beneath and adjacent to The Main Northern Railway enclosed by an angle of draw od 35 degrees from the vertical plane of the boundary parallel to and thirty (30) metres horizointally distant from either side of the railway lands, such angle of draw being measured outwards from the point on the vertical plane of athe railway track, whichever may be the higher, to the floor of the coal seam in which mining operations are being carried out.	Compliant	No mining in 2015 – under Care and Maintenance management since 2007.
	Exploration Reporting *Note : Exploration Reports (Geological and Geophysical)* *The lease holder must lodge reports to the satisfaction of the Minister in accordance with section 163C of the Mining Act 1992 and in accordance with clause 57 of the Mining Regulation 2010.* *Reports must be prepared in accordance with Exploration Reporting: A guide for reporting on exploration and prospecting in New South Wales (Department of Trade and Investment; Regional Infastructure and Service 2010)*	Compliant	Appropriate Reports lodged.