WAMBO COAL PTY LIMITED

MONTHLY ENVIRONMENTAL MONITORING REPORT

January 2013

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1.0 Introduction

This report presents environmental monitoring results for the reporting period **Tuesday 1 January to Thursday 31 January 2013**. Monitoring during this period includes meteorological measurement, surface water sampling, depositional dust sampling, High Volume Air Sampling, blast events and PM10 real time air monitoring results. Real time noise monitoring results are reported in a quarterly format and can be found on the Peabody Wambo website at http://www.peabodyenergy.com/content/400/Australia-Mining/New-South-Wales

2.0 Meteorological Data

Results for reporting period are available in **Appendix A**.

3.0 Surface Water Sampling

Surface water samples are collected in accordance with **AS/NZS 5667.4:1998 – *Guidance on sampling from lakes, natural and man-made*** **and AS/NZS 5667.6:1998 – *Guidance on sampling of rivers and streams***. All samples collected were analysed in the field for **pH**, electrical conductivity (**EC**) and temperature. Selected sites were analysed in a **NATA**[1] accredited laboratory for total suspended solids (**TSS**) and total dissolved solids (**TDS**).

A significant rain event occurred prior to surface water sampling in January. As a result, TSS values were elevated during this time. Numerous other sites were also inaccessible due to flooding.

[1] *National Association of Testing Authorities - NATA is the authority that provides independent assurance of technical competence.

Table 1: Monthly Surface Water Results – January 2013

Sample Location	pH	EC (µS/cm)	TSS (mg/L)	TDS (mg/L)	Oil & Grease (mg/L)	Temp (°C)	Comments
WOLLOMBI BROOK							
Wollombi Brook							
SW01 - Wollombi Brook Up	7.50	160	**128**	190	-	-	-
SW03 - Wollombi Brook Pump Out	7.10	253	**144**	274	-	-	-
SW02 - Wollombi Brook Down	7.90	241	**308**	272	-	-	-
SW40 - Confluence with SWC	7.80	116	**152**	151	-	-	-
NORTH WAMBO CREEK							
North Wambo Creek							
SW04 - North Wambo Creek Up	-	-	-	-	-	-	No Access
SW27 - North Wambo Creek Middle Lower	-	-	-	-	-	-	No Access
SW32 - North Wambo Creek Pump	-	-	-	-	-	-	No Access
SW05 - North Wambo Creek Down	7.30	241	**456**	512	-	-	
SOUTH WAMBO/STONY CREEKS							
South Wambo/Stony Creek							
SW06 - South Wambo Creek	-	-	-	-	-	-	No Access
SW07 - South Wambo/Stony Creek	7.00	159	72	176	-	-	Creek dry
SW08 - Stony Creek	-	-	-	-	-		No Access
LONGFORD/DOCTOR'S CREEKS							
SW43 - Longford Creek Up	7.40	166	20	220	<2		-
SW44 – Longford Creek Down	7.80	**278**	**108**	**494**	<2		-
SW46 - Doctors Creek Up	7.80	349	93	301	<2		-
SW45 – Doctors Creek Down	7.80	383	88	320	<2		-
WATERFALL CREEK							
SW39 – Waterfall Creek Midstream	7.40	152	9	242			-
MINE WATER DAMS							
SW11 - West Cut Dam Pipe	-	-	-	-	-	-	Not Pumping
SW12 - West Cut Dam	9.20	9,400	-	-	-	-	-
SW14 - Box Cut Dam (Admin)	9.00	1,197	-	-	-	-	-
SW15 - Eagles Nest Dam	9.10	9,400	70	2,280	-	-	-
SW20 - Dam Adjacent to West Cut Dam	-	-	-	-	-	-	Dry
SW29 - SCB Dam	9.00	1,820	-	-	-	-	-
SW30 - Turkeys Nest	9.20	7,840	-	-	-	-	-
SW31 - Gordon Below Franklin	9.40	9,370	-	-	-	-	-
SW37 - Wollemi Sump	9.40	3,390	-	-	-	-	-
SW38 - Homestead Open Cut	8.90	7,990	-	-	-	-	-
SW47 - NWU Pumpout Water	-	-	-	-	-	-	No Water
SW48 - Inpit sample	8.20	7,780	-	-	-	-	-
SW49 - Bates Pit Pumpout	9.00	2,320	-	-	-	-	-
SW50 - Hunter River Water	-	-	-	-	-	-	Not Pumping
SW51 – South Dam	9.2	10140	-	-	-	-	-

4.0 Groundwater Sampling

Groundwater sampling completed on a bi-monthly schedule. The next event is to occur during February.

Table 2: Ground Water Results – January 2013

Sample Location	pH	EC (µS/cm)	Depth to Water (m)	Temp (°C)	Comments
GW02	-	-	-	-	-
GW11	-	-	-	-	-
P106	-	-	-	-	-
P109	-	-	-	-	-
P110	-	-	-	-	-
P111	-	-	-	-	-
P114	-	-	-	-	-
P116	-	-	-	-	-
P202	-	-	-	-	-
P206	-	-	-	-	-
P301	-	-	-	-	-
P311	-	-	-	-	-
P315	-	-	-	-	-
GW12	-	-	-	-	-
GW13	-	-	-	-	-
GW14	-	-	-	-	-
GW15	-	-	-	-	-
GW16	-	-	-	-	-
GW17	-	-	-	-	-
GW18	-	-	-	-	-
GW19	-	-	-	-	-
GW20	-	-	-	-	-
GW21	-	-	-	-	-
GW22	-	-	-	-	-
P1	-	-	-	-	-
P5	-	-	-	-	-
P6	-	-	-	-	-
P11	-	-	-	-	-
P12	-	-	-	-	-
P13	-	-	-	-	-
P15	-	-	-	-	-
P16	-	-	-	-	-
P17	-	-	-	-	-
P18	-	-	-	-	-
P20	-	-	-	-	-

Note: all depths measured to top of casing, except United bores which are to ground. Figures in bold are outside trigger levels listed in Table 5 of the Ground Water Monitoring Programme (GWMP), which is part of the Site Water Management Plan.

5.0 Depositional Dust Sampling

Sixteen (**Table 3**) depositional dust gauges were collected for the reporting period. Sampling and analysis is conducted in accordance with **AS 3580.10.1 – 1991 – *Determination of particulates – Deposited matter – Gravimetric method*.** All gauges were analysed for insoluble solids (**IS**) and ash residue (**AS**). Field observations include water quantity and quality, and any visible contaminants in the sample.

Table 3: Dust Deposition Results – January 2013

Site	Insoluble Solids (IS) (g/m^2.month)	Ash Residue (AR) (g/m^2.month)	IS:AR Ratio	IS YTD Average (g/m^2.month)	AR YTD Average (g/m^2.month)
D01	6.9	4.9	71	7.8	3.8
D03	4.2	3.0	71	3.5	2.2
D07	7.3	4.3	59	6.3	3.2
D09	6.2	3.9	63	6.7	3.4
# D11	2.5	1.8	72	2.3	1.6
# D12	4.7	3.4	72	**4.2**	3.0
# D17	2.0	1.5	75	1.9	1.1
D19	5.8	4.0	69	3.8	2.7
D20	2.1	1.4	67	1.9	1.4
# D21	4.0	3.0	75	2.1	1.6
# D22	3.6	2.8	78	2.1	1.6
D23	1.7	1.3	76	1.6	1.2
# D24	1.2	1.0	83	1.0	0.8
# D25	4.7	3.7	79	2.4	1.9
D26	2.1	1.5	71	1.7	1.2

Note: Results in **bold** are YTD average above 4g/m^2/month
Results # are dust gauges not on WCPL owned land.
DD gauges on Wambo Coal land and above criteria level are not considered non-compliance.

A number of sites showed elevated values although were influenced by the presence of insects and bird droppings in the sample.

6.0 High Volume Air Sampling

Four high volume air sampler (**HVAS**) operated at locations surrounding Wambo during the reporting period (**Table 4**). All units sampled Total Suspended Particulates (**TSP**) over a 24-hour period on a six day cycle, in accordance with **AS 2724.3 – 1984 – *Determination of total suspended particulates (TSP) – High volume sampler gravimetric method*.**

Table 4: HVAS Results – January 2013

Date of Run	HV01 - Coralie TSP (µg/m^3)	HV02 - Caban TSP (µg/m^3)	HV03 - Thelander TSP (µg/m^3)	HV04 - Muller TSP (µg/m^3)
03/01/13	76.9	55	81.4	89.6
09/01/13	**171**	**128**	**129**	**116**
15/01/13	**97.6**	89.9	**118**	**106**
21/01/13	**121**	70.4	71.6	86
27/01/13	34.8	23.2	26.5	42.1
Monthly Mean	**100**	**73**	**85**	**88**
Yearly Mean	**79**	**72**	**50**	**67**

Wambo did not exceed the project criteria for the reporting period with all **annual averages** below **90 µg/m^3**.

6.0 Blast Events

Four monitoring sites measure ground vibration and air blast overpressure for blasts conducted at Wambo. Five blasts were conducted during the reporting period. Monitoring at all sites is conducted under the blast monitoring requirements set out in the **Wambo EPA licence (EPL 529) and DA 305-7-2003.**

All five of the blast events for the reporting period were all within the criteria limits for blast events at Wambo Coal.

Wambo continues to comply with the EPL condition that 95 per cent of all blasts (in a reporting year) shall have overpressure results less than 115dB (linear peak) and ground vibration results less than 5 mm/s.

Table 5: Blast Results – January 2013

Date	Time	Kelly Residence – A0728			Wambo Homestead – A0722			Harris Site – A6006			Muller Residence – A6005		
		Over Pressure (dB(L))	Vibration (mm/s)	Wave-form	Over Pressure (dB(L))	Vibration (mm/s)	Wave-form	Over Pressure (dB(L))	Vibration (mm/s)	Wave-form	Over Pressure (dB(L))	Vibration (mm/s)	Wave-form
15/01/2013	9:11:00	103.8	0.12	Yes	105	0.1	Yes	98.3	0.16	Yes	105	0.32	Yes
15/01/2013	9:16:00	98.8	0.1	Yes	102.7	0.15	Yes	97.6	0.12	Yes	113.1	0.53	Yes
25/01/2013	11:08:00	109.2	0.37	Yes	106.1	0.37	Yes	109	0.26	Yes	103.7	0.77	Yes

7.0 Real-Time Air Quality Monitoring

Four real time Tapered Element Oscillating Microbalance (**TEOM)** units were in operation during the reporting period. The sites are located at Coralie (**PM01**), the Caban residence (**PM02**), Thelander residence (**PM03**) and the Muller residence (**PM04**). These units measure particulate matter less than 10 microns in diameter (PM_{10}) on a continuous basis and provide a 24 hour average result. These units operated and sampled in accordance with **AS 3580.9.8 - 2002*, Method for Sampling and Analysis of Ambient Air - Determination of Suspended Particulate Matter - PM_{10} Continuous Direct Mass Method using a Tapered Element Oscillating Microbalance Analyser*.**

AQ01 and AQ02 collected values greater than 50 ug/m^3 for a single day on the 9th and 18th of January respectively.

Table 6 PM10 Results – January 2013

Date of Run	AQ01 (Coralie)		AQ02 (Wambo Road)		AQ03 (Thelander)		AQ04 (Muller)	
	PM10 24 Hour Result (ug/m^3)	YTD Average	PM10 24 Hour Result (ug/m^3)	YTD Average	PM10 24 Hour Result (ug/m^3)	YTD Average	PM10 24 Hour Result (ug/m^3)	YTD Average
01/01/13	28.0	23.72	25.5	25.52	13.1	18.69	20.4	19.93
02/01/13	**49.1**	23.85	**32.0**	25.55	**44.3**	18.83	**38.4**	20.03
03/01/13	28.1	23.88	22.4	25.54	28.7	18.88	25.5	20.06
04/01/13	**30.8**	23.92	24.7	25.53	28.9	18.94	**33.4**	20.14
05/01/13	**33.1**	23.96	**31.7**	25.56	**45.3**	19.08	**36.2**	20.22
06/01/13	**30.1**	24.00	23.8	25.55	**34.2**	19.16	28.2	20.27
07/01/13	20.1	23.98	19.8	25.52	20.0	19.16	16.1	20.24
08/01/13	25.1	23.98	**44.6**	25.62	16.4	19.15	17.7	20.23
09/01/13	**51.1**	24.12	**46.3**	25.73	**44.6**	19.28	**37.0**	20.32
10/01/13	**45.3**	24.23	**38.9**	25.80	**42.2**	19.40	**35.9**	20.40
11/01/13	**39.3**	24.31	**40.5**	25.88	**30.1**	19.46	**38.8**	20.50
12/01/13	**41.4**	24.40	**46.5**	25.98	**39.5**	19.56	27.0	20.53
13/01/13	**40.7**	24.48	**39.3**	26.05	**48.3**	19.71	**37.9**	20.62
14/01/13	29.2	24.51	13.2	25.99	24.1	19.73	14.5	20.59
15/01/13	25.1	24.51	24.2	25.98	26.0	19.76	21.4	20.59
16/01/13	**36.3**	24.57	**31.2**	26.00	28.2	19.81	**37.4**	20.68
17/01/13	**38.9**	24.64	**40.9**	26.08	**35.2**	19.88	**39.0**	20.77
18/01/13	**48.2**	24.76	**54.8**	26.22	28.0	19.93	**40.3**	20.87
19/01/13	**36.0**	24.82	**30.8**	26.25	**31.9**	19.99	**34.5**	20.94
20/01/13	14.7	24.77	13.2	26.18	13.1	19.95	14.4	20.91
21/01/13	**31.1**	24.80	22.3	26.16	27.0	19.99	21.3	20.91
22/01/13	21.8	24.78	17.3	26.12	17.5	19.97	18.0	20.89
23/01/13	10.3	24.71	16.2	26.07	23.1	19.99	16.3	20.87
24/01/13	21.7	24.70	20.0	26.04	21.7	20.00	22.6	20.88
25/01/13	16.2	24.66	13.6	25.98	16.0	19.98	14.8	20.85
26/01/13	24.6	24.66	16.4	25.93	16.8	19.96	19.7	20.84
27/01/13	14.4	24.61	13.1	25.87	8.6	19.91	12.1	20.80
28/01/13	6.7	24.52	4.8	25.77	4.0	19.83	6.0	20.73
29/01/13	12.0	24.46	8.0	25.69	9.9	19.78	8.0	20.67
30/01/13	26.5	24.47	21.1	25.67	22.9	19.80	21.2	20.67
31/01/13	24.7	24.47	**34.5**	25.71	22.0	19.81	24.8	20.69

Note: Results in **red** are greater that the 24hr period guidelines of 50ug/m^3
Results in **red** are greater than the annual average 24hr period guidelines of 30ug/m^3
Results in **bold** are between 30ug/m^3 and 50ug/m^3
- data unavailable due to instrument error

Appendix A

Wambo Weather Station

Meteorological Data

Meteorological Data January 2013

Date	Temp (2m)			Temp (10m)			Temp Inversion			Humidity			Solar Radiation			Rain mm	Wind Speed		
	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max		Min	Avg	Max
01/01/13	18.2	30.0	39.5	19.8	31.0	39.2	-6.4	13.2	48.8	16.5	42.3	90.6	-1.5	312.1	973.0	0.0	0.0	3.2	8.2
02/01/13	15.7	22.8	29.2	18.4	23.4	28.5	-10.3	7.3	53.5	48.3	63.1	76.8	-1.6	279.7	992.7	0.0	0.1	3.4	6.9
03/01/13	18.9	22.6	28.3	19.3	22.7	27.8	-9.0	1.6	9.9	47.3	63.5	80.0	-1.6	240.5	969.2	0.0	1.3	3.1	6.3
04/01/13	16.2	25.2	35.2	17.1	25.5	34.9	-6.6	3.7	17.8	23.3	58.8	92.4	-1.6	342.9	968.8	0.0	0.5	2.1	5.7
05/01/13	16.7	27.6	37.8	18.5	28.1	37.7	-8.6	6.0	22.1	21.1	54.5	89.8	-1.6	340.9	964.3	0.0	0.0	1.8	5.6
06/01/13	19.5	26.3	34.2	20.3	26.5	34.0	-7.8	2.6	12.3	29.5	59.8	86.0	-1.6	386.6	970.1	0.0	1.5	3.5	7.0
07/01/13	20.7	26.1	33.7	22.1	26.4	33.4	-9.2	3.1	20.6	34.0	58.6	77.6	-1.6	383.1	961.2	0.0	0.3	2.5	6.3
08/01/13	17.6	31.3	40.3	19.1	31.7	40.0	-6.8	5.8	30.3	18.5	40.4	88.7	-1.6	329.4	956.3	0.0	0.0	4.9	8.5
09/01/13	20.6	27.6	35.9	21.0	27.7	35.6	-10.9	2.1	10.1	21.7	44.4	65.7	-1.6	300.5	922.7	0.0	2.7	5.5	8.3
10/01/13	19.8	23.2	27.6	20.3	23.4	27.1	-6.4	2.5	12.2	49.8	61.9	76.6	-1.6	178.7	761.3	0.0	1.1	3.6	5.9
11/01/13	18.6	29.4	41.7	19.9	29.8	41.4	-11.9	4.7	34.1	19.6	52.7	84.5	-1.6	212.6	600.7	0.0	0.0	2.0	5.9
12/01/13	20.4	31.2	43.2	22.1	32.0	43.1	-5.7	9.7	38.4	19.2	49.2	86.2	-1.2	295.3	775.9	0.0	0.0	2.7	9.1
13/01/13	20.0	24.3	31.5	20.7	24.5	31.0	-8.9	2.6	9.0	49.2	71.8	94.2	132.2	429.1	764.4	0.5	0.6	2.8	7.0
14/01/13	17.5	20.5	24.8	18.2	20.8	24.4	-7.6	3.1	11.9	36.1	66.5	91.8	119.7	530.0	807.0	0.0	0.3	3.1	6.8
15/01/13	16.6	22.1	28.2	17.1	22.3	27.7	-10.4	1.8	13.9	39.8	61.5	84.3	116.6	1520.0	99999.9	0.0	0.0	2.8	6.4
16/01/13	14.9	26.2	36.8	16.3	26.5	36.0	-11.3	4.6	24.6	29.9	57.6	94.3	122.0	435.7	779.6	0.0	0.0	2.2	6.9
17/01/13	21.2	29.4	40.6	21.9	29.6	40.2	-13.7	2.6	15.3	22.4	52.4	77.3	123.0	492.5	835.4	0.0	0.5	2.3	5.7
18/01/13	21.6	33.5	45.1	22.6	34.0	44.8	-7.0	6.6	37.2	16.9	47.3	87.7	126.5	455.8	792.5	1.4	0.0	3.4	7.4
19/01/13	18.5	22.7	26.1	19.0	23.0	25.7	-5.3	4.1	7.4	52.7	66.8	88.8	135.4	536.5	701.5	0.0	1.6	2.9	6.8
20/01/13	18.5	20.1	22.3	19.1	20.5	22.4	-0.8	4.9	7.9	78.5	88.9	95.7	181.4	541.4	700.2	4.8	0.0	1.6	2.7
21/01/13	20.2	23.8	28.6	20.6	24.1	28.1	-6.3	4.1	14.3	56.4	75.6	94.0	132.5	377.5	533.2	0.0	0.8	2.5	5.7
22/01/13	17.4	23.6	35.3	18.5	24.2	34.2	-13.3	6.7	20.4	38.3	77.6	96.8	139.8	367.3	504.1	9.0	0.0	1.8	9.7
23/01/13	18.7	22.6	26.6	19.4	23.0	26.6	-3.6	5.3	10.8	61.2	77.1	94.4	71.1	335.7	482.5	0.0	0.1	2.2	4.5
24/01/13	20.3	23.8	28.7	20.8	24.2	28.6	-6.4	4.4	11.3	57.7	73.1	90.4	153.2	322.3	475.0	1.8	0.9	2.8	6.0
25/01/13	19.2	26.2	33.0	20.7	26.6	32.8	-5.5	6.0	19.0	42.2	69.8	95.0	132.2	398.3	887.5	0.0	0.2	2.3	5.6
26/01/13	21.0	26.8	33.0	22.3	27.2	32.6	-8.2	4.1	18.5	41.4	66.8	92.1	141.8	328.6	529.2	0.0	0.0	3.2	8.5
27/01/13	20.1	22.0	24.2	20.5	22.5	24.7	3.3	6.1	11.3	78.4	91.2	96.4	131.3	369.1	478.3	21.0	0.2	1.6	3.5
28/01/13	20.6	21.2	21.8	21.0	21.7	22.1	2.8	6.1	7.4	94.4	95.7	96.3	273.5	424.4	457.1	53.3	1.4	2.6	4.5
29/01/13	19.9	24.7	30.4	20.5	24.3	30.7	-66.5	-5.8	8.6	52.2	80.8	97.6	-1.6	249.5	733.6	21.5	0.0	2.3	5.1
30/01/13	19.7	23.0	27.7	20.2	23.4	27.8	-1.4	5.2	9.5	60.5	78.1	90.4	58.5	277.4	437.2	0.0	0.8	2.3	6.1
31/01/13	21.3	27.1	35.1	22.0	27.4	35.0	-10.7	4.1	30.2	35.6	67.8	89.5	99.0	290.7	421.1	0.0	0.2	2.0	5.6
MONTH	14.9	25.4	45.1	16.3	25.7	44.8	-66.5	4.5	53.5	16.5	65.0	97.6	-1.6	396.3	99,999.9	113.3	0.0	2.7	9.7