

# Tarrawonga Coal Mine Community Consultative Committee Meeting #23

## Environmental Monitoring Report August – October 2011

### Noise Monitoring

Noise monitoring was undertaken on the 13<sup>th</sup> and 14<sup>th</sup> September 2011 as per requirements under the consent. Results from the monitoring are outlined below:

Noise Monitoring Results – 13 September 2011 (Day) (Ambardo and Pine Grove on 14 September)				
Location	Time	dB(A),Leq (15 min)	Wind speed/ direction	Identified Noise Sources
N2 Bollol Ck Station	3:00 pm	39	2 m/s, W	Wind (36), birds (33), TCM (33)
N3 Tarrawonga	4:26 pm	36	1.5 m/s W	Wind in trees (36), birds (25), TCM (barely audible)
N4 Ambardo	7:05 am	49	Calm	Birds (48), TCM (42) <sup>1</sup> , traffic (35)
Pine Grove	7:05 am	44	Calm	Birds (42), TCM (39) <sup>1</sup>

<sup>1</sup> Trucks on private section of haul road (38), mine noise (34).

TCM Noise Monitoring Results – 13 September 2011 (evening)				
Location	Time	dB(A),Leq (15 min)	Wind speed/ direction	Identified Noise Sources
N2 Bollol Ck Station	8:10 pm	39	0.5 m/s, WNW	TCM (39), frogs (32)
N3 Tarrawonga	7:53 pm	32	0.8 m/s, WNW	TCM (32)
N4 Ambardo	7:23 pm	43	0.8 m/s, WNW	TCM (43) <sup>1</sup> , traffic (34)

<sup>1</sup> Trucks on private section of haul road (42), mine noise (35).

TCM Noise Monitoring Results – 13 September 2011 (night)				
Location	Time	dB(A),Leq (15 min)	Wind speed/ direction	Identified Noise Sources
N2 Bollol Ck Station	10:45 pm	43	0.5 m/s, NW	TCM (43)
N3 Tarrawonga	10:15 pm	33	0.5 m/s, NW	TCM (33)
N4 Ambardo	10:34 pm	32	0.5 m/s, NW	TCM (32)

The results show that noise emissions from the mine were below the operational noise criteria, or within prescribed agreement limits, at all privately owned residences during the monitoring event.

In addition to the operational noise, the noise from TCM must not exceed 45 dB(A) L1 (1min) between the hours of 10 pm and 7 am. This is to minimise the potential for sleep disturbance as a result of individual loud noises from the mine. During the night time measurement circuit the L1 (1min) noise from TCM did not exceed 45 dB(A) at any monitoring location.

## **Blast Monitoring**

### **Blasting Results**

Since the first shot there have been 327 blasts (until the end of October).

Three blasts during the last three months have exceeded 115dBL. All have remained below 5mm/s. Exceedances in the 115dBL airblast overpressure and 5mm/s ground vibration threshold are allowable under the consent for 5% of the total number of blasts over a period of 12 months at residences on privately-owned land. No blasts are allowed to exceed 120dBL or 10mm/s.

Templemore recorded 115.9dBL on the 19<sup>th</sup> October 2011 however this property is mine-owned. Tarrawonga recorded 115.9dBL on the 15<sup>th</sup> July 2011 and 115.3dBL on the 16<sup>th</sup> September 2011. Over the last 12 months (November 2010 – October 2011) there have been 70 blasts. Therefore the two elevated results at Tarrawonga only account for 2.85% of the total number of blasts in the last 12 months.

To date, the highest overpressure recorded remains at 117.0 dBL recorded at “Bollol Creek Station” on the 5<sup>th</sup> July 2007. The highest ground vibration recorded is 2.88 mm/s recorded at “Templemore” on the 25<sup>th</sup> October 2010.

## **Air Quality**

### **Air Quality (Dust Deposition) Results**

MONTH	TEMPLEMORE (EB-4)	BOLLOL CREEK STN (EB-5)	AMBARDO (EB-6)	TARRAWONGA (EB-7)	THUIN (EB-8)	PINE GROVE (EB-9)	TARRAWONGA MINE (EB-10)	TARRAWONGA MINE (EB-11)	PINE GROVE (EB-12)	BOLLOL CREEK (EB-13)	TARRAWONGA MINE (EB-14)	TARRAWONGA MINE (EB-15)	JERALONG NORTH (EB 16)
October 2010	1.6	4.8	1.0	1.3	2.6	0.9	4.5	1.4	0.7	0.9	9.1	3.2	2.0
November 2010	0.9	1.7	0.8	1.0	3.0	0.7	28.3	2.3	1.2	1.2	1.9	4.6	2.5
December 2010	8.2	2.0	0.6	1.2	3.4	0.6	6.8	2.4	1.8	23.7	1.9	1.5	1.5
January 2011	0.2	1.7	0.7	1.0	1.9	0.5	2.6	2.3	1.3	2.0	2.1	2.0	0.7
February 2011	13.1	4.3	1.2	1.1	6.6	1	2.6	2.7	1.3	3.3	1.6	7.2	2.1
March 2011	10.2	2.5	0.5	0.7	3.3	0.5	2.4	1.6	2.7	3.5	2.8	10.6	1.6
April 2011	10.7	1.6	0.5	0.4		0.5	0.9	2.8	0.4	2.1	1.1	3.5	1.8
May 2011	1.6	6.3	0.7	0.7	2.3	0.9	1.6	0.6	1.0	0.5	1.0	2.4	1.4
June 2011	0.9	5.8	0.5	0.5	6.5	0.5	0.6	1.0	1.3	2.5	1.2	2.6	2.2
July 2011	3.3	1.5	0.7	0.8	3.6	0.4	4.2	1.0	0.5	3.9	2.5	1.3	0.3
August 2011	2.0	2.5	0.5	1.8	6.1	0.8	4.0	1.2	0.5	1.8	2.0	4.3	3.0
September 2011	2.4	3.4	0.8	0.6	5.1	0.8	3.8	1.1	5.1	2.0	1.6	2.8	2.0
<b>Annual Average</b>	<b>4.6</b>	<b>3.2</b>	<b>0.7</b>	<b>0.9</b>	<b>4.0</b>	<b>0.7</b>	<b>5.2</b>	<b>1.7</b>	<b>1.5</b>	<b>4.0</b>	<b>2.4</b>	<b>3.8</b>	<b>1.8</b>

Dust levels have been relatively low at all monitoring locations over the last three months with the exception of EB-8 and EB-10. EB-8 is located in close proximity to soil stripping activities whilst EB-10 is adjacent to the new soil stockpile on the western side of the site access road. The annual average threshold of 4g/m<sup>2</sup>/month is currently being exceeded at EB-4 and EB-10, which are both on mine-owned land.

## PM<sub>10</sub> Results

The annual average for PM<sub>10</sub> readings is currently at 14.36µg/m<sup>3</sup> and remains well below the annual average limit of 30µg/m<sup>3</sup>. PM<sub>10</sub> levels have remained compliant since the last CCC meeting.

The highest 24hr reading to date is 97µg/m<sup>3</sup> which was recorded on the 8<sup>th</sup> December 2009.

## Water Monitoring

### Ground Water

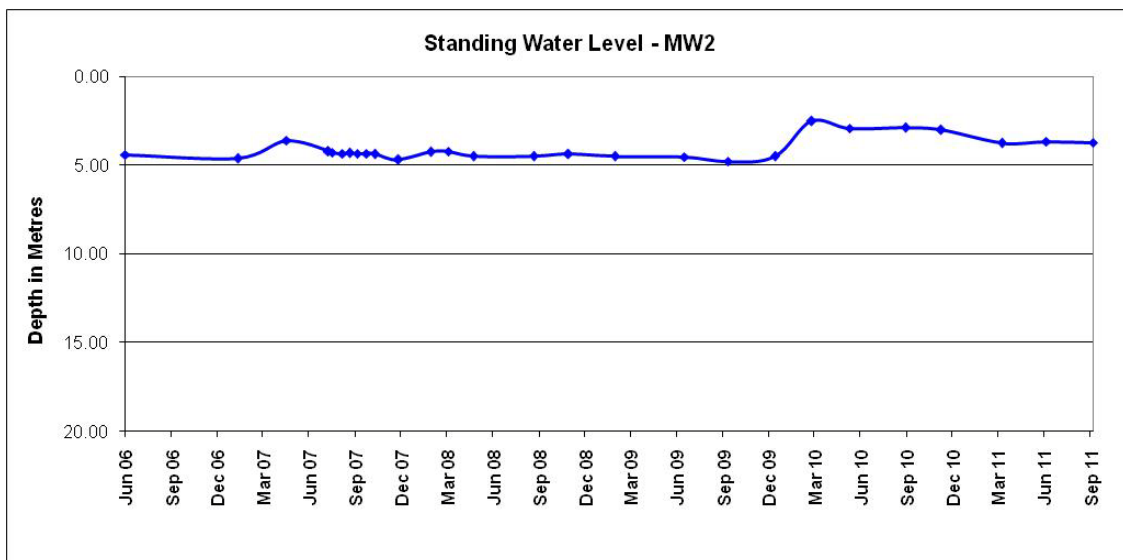
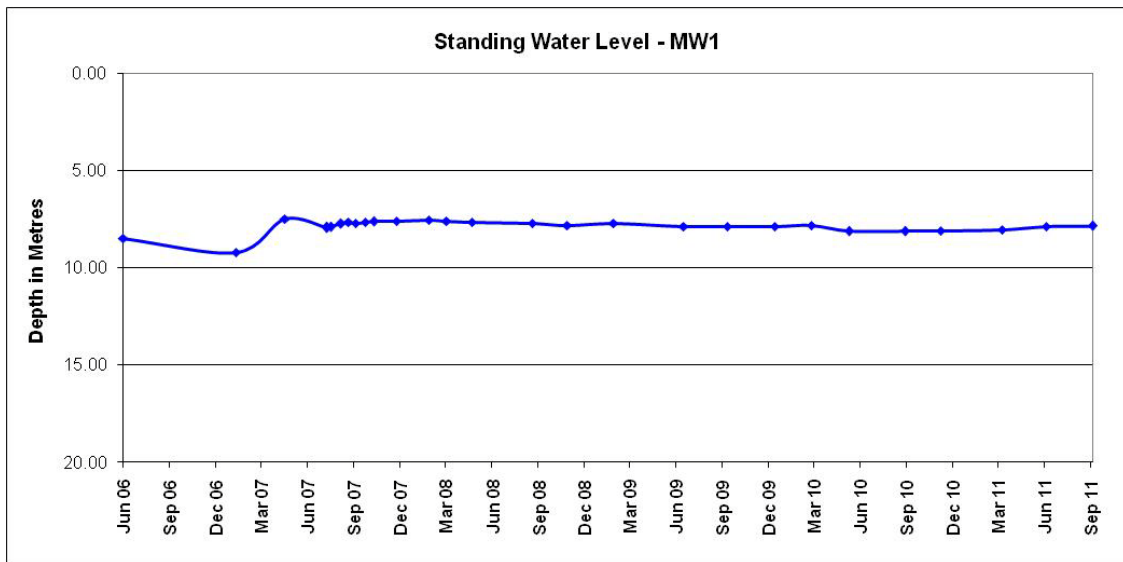
Groundwater monitoring data obtained to date, including the last round of SWL monitoring in September 2011, is presented in the following table. The next round of monitoring is scheduled for December 2011.

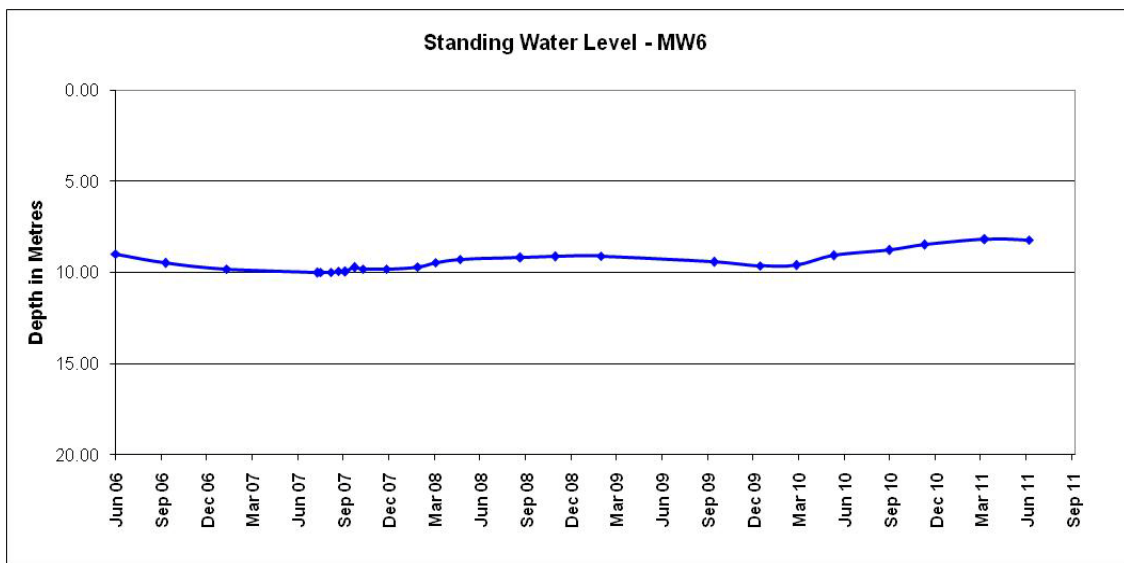
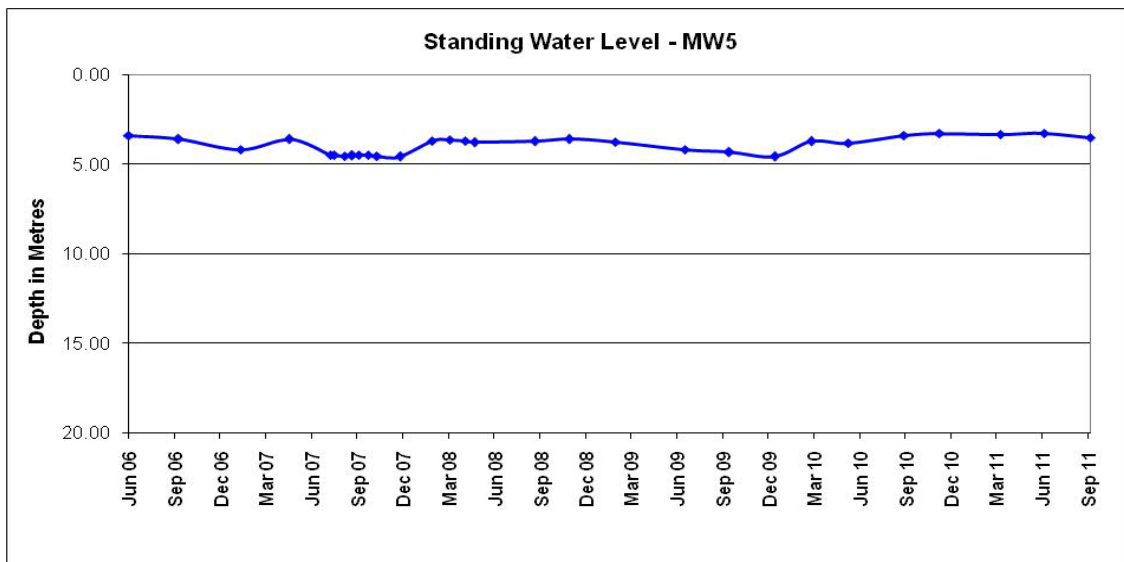
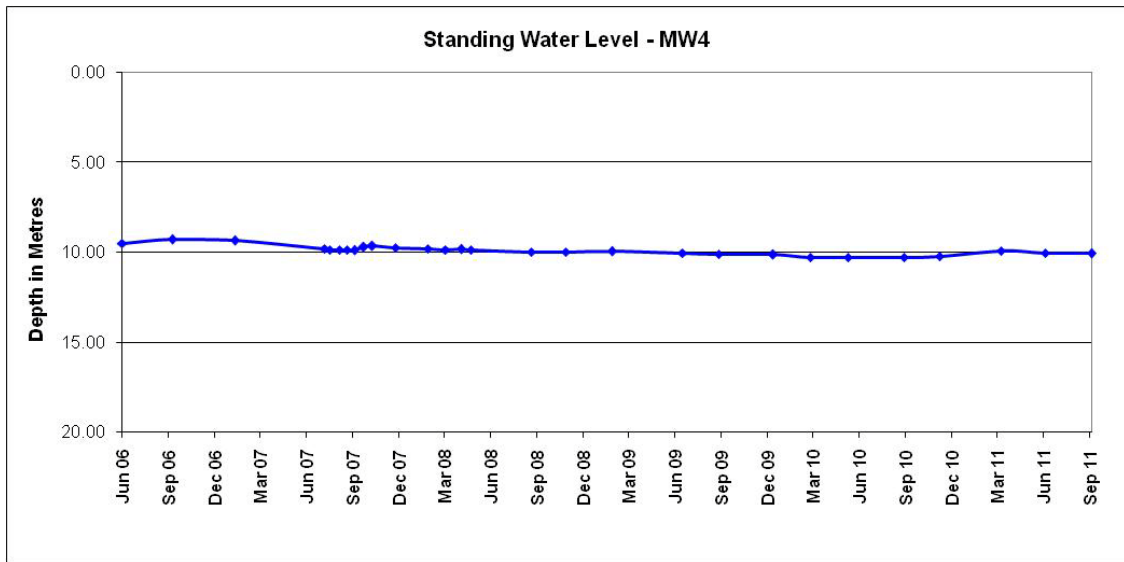
Site	Date	SWL (m)	pH	Elect. Conduct
MW1	January 07	9.22	7.1	2410
	April 07	7.49		
	July 07	7.91	7.3	2500
	August 07	7.66		
	September 07	7.66		
	October 07	7.64		
	November 07	7.62		
	January 08	7.55		
	March 08	7.60		
	April 08	7.67	7.3	3120
	August 08	7.73		
	September 08			
	October 08	7.82	7.8	3500
	November 08			
	December 08			
	January 09	7.73		
	June 09	7.87	7.2	5470
	September 09	7.9		
	December 09	7.9	7.83	4510
	February 10	7.84		
May 10	8.13			
August 10	8.14	7.47	3890	
November 10	8.12	7.06	3170	
March 11	8.05	7.1	3280	
June 11	7.87	7.2	3110	
September 11	7.19	7.09	3200	
MW2	January 07	4.62	6.8	511
	April 07	3.59		
	July 07	4.29	7.1	496
	August 07	4.32		
	September 07	4.34		
	October 07	4.37		
	November 07	4.68		
	January 08	4.25		
	March 08	4.23		
	April 08	4.50	7.3	440
	August 08	4.51		
	September 08			
	October 08	4.37	6.9	620
November 08				
December 08				
January 09	4.51			

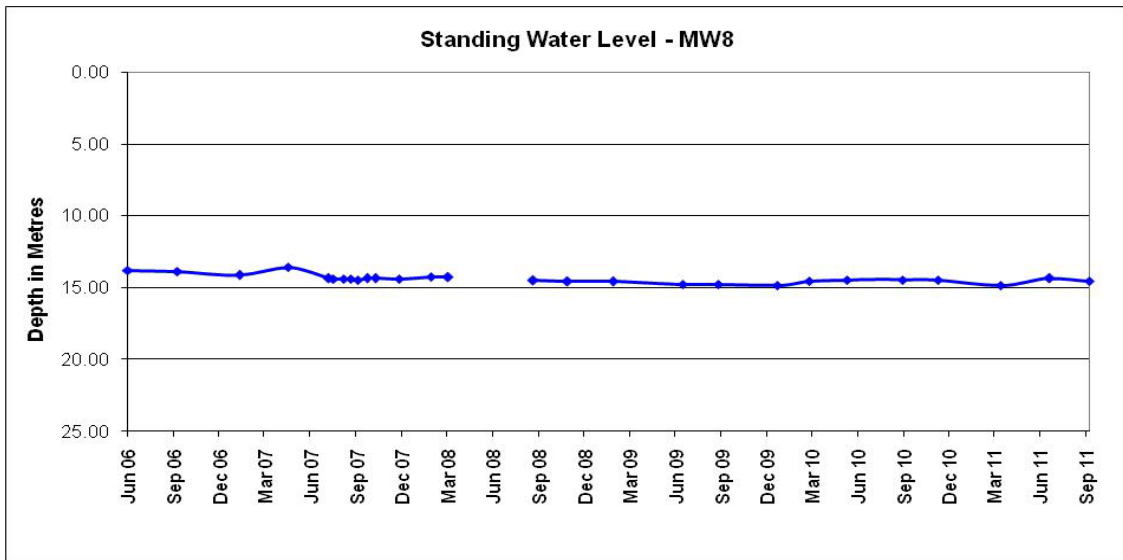
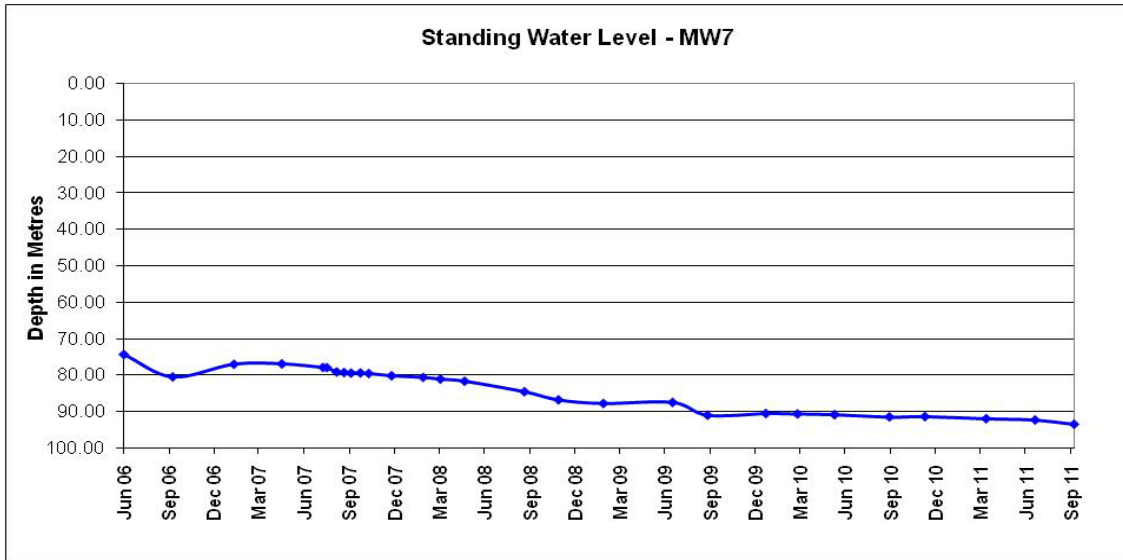
	June 09	4.53	7.7	660
	September 09	4.8		
	December 09	4.51	7.5	640
	February 10	2.51		
	May 10	2.94		
	August 10	2.89	7.4	590
	November 10	3.01	7.32	513
	March 11	3.75	7.31	566
	June 11	3.65	7.3	553
	September 11	2.95	6.9	585
<b>MW4</b>	September 06	9.25		
	January 07	9.37	7.1	3430
	July 07	9.88	6.8	5400
	August 07	9.87		
	September 07	9.73		
	October 07	9.67		
	November 07	9.76		
	January 08	9.80		
	March 08	9.87		
	April 08	9.88	7.1	5160
	August 08	10.01		
	September 08			
	October 08	9.98	7	5800
	November 08			
	December 08			
	January 09	9.96		
	June 09	10.05	6.8	5400
	August 09	10.10		
	December 09	10.14	7.35	5040
	February 10	10.30		
	May 10	10.28		
	August 10	10.31	7.33	4740
	November 10	10.23	6.9	3810
	March 11	9.93	7.18	3060
	June 11	10.04	7.25	3080
	September 11	9.46	7.12	3196
<b>MW5</b>	September 06	3.64		
	January 07	4.18		
	April 07	3.60		
	July 07	4.49	7.5	1930
	August 07	4.50		
	September 07	4.48		
	October 07	4.53		
	November 07	4.56		
	January 08	3.68		
	March 08	3.63		
	April 08	3.77	7.9	3260
	August 08	3.72		
	September 08			
	October 08	3.59	7.3	3400
	November 08			
	December 08			
	January 09	3.73		
	June 09	4.18	7.7	2390
	September 09	4.32		
	December 09	4.56	7.44	7460
	February 10	3.71		
	May 10	3.8		
	August 10	3.4	7.85	1740
	November 10	3.28	7.35	2620
	March 11	3.31	7.39	1917
	June 11	3.27	7.45	1032
	September 11	2.7	7.39	1910

<b>MW6</b>	September 06	9.54		
	January 07	9.81	6.9	2030
	July 07	10.01	7.5	2060
	August 07	9.95		
	September 07	9.73		
	October 07	9.82		
	November 07	9.83		
	January 08	9.72		
	March 08	9.48		
	April 08	9.28	7.1	2120
	August 08	9.21		
	September 08			
	October 08	9.15	7.1	2100
	November 08			
	December 08			
	January 09	9.10		
	June 09	No sample		
	September 09	9.43		
	December 09	9.64	7.3	2100
	February 10	9.62		
	May 10	9.08		
	August 10	8.78	7.2	1927
	November 10	8.5	7.03	1835
	March 11	8.19	7.08	1783
	June 11	8.22	7.15	1670
	September 11	-	-	-
<b>MW7</b>	September 06	80.52		
	January 07	77.0	7.3	1960
	April 07	76.9		
	July 07	77.93	7.2	2250
	August 07	79.28		
	September 07	79.39		
	October 07	79.55		
	November 07	80.17		
	January 08	80.63		
	March 08	81.10		
	April 08	81.68	7.6	2370
	August 08	84.57		
	September 08			
	October 08	86.81	7.4	2300
	November 08			
	December 08			
	January 09	87.80		
	June 09	87.50	7.4	2440
	August 09	91.04		
	December 09	90.58	7.49	2240
	February 10	90.69		
	May 10	90.90		
	August 10	91.53	7.52	2385
	November 10	91.43	7.47	2010
	March 11	92.00	7.24	2075
	June 11	92.36	7.55	2180
	September 11	92.49	7.35	2160
<b>MW8</b>	September 06	13.9		
	January 07	14.1	6.7	2260
	April 07	13.6		
	July 07	14.41	6.8	2530
	August 07	14.40		
	September 07	14.38		
	October 07	14.37		
	November 07	14.43		
	January 08	14.28		

	March 08	14.30		
	April 08	N/S		
	August 08	14.52		
	September 08			
	October 08	14.59	NA	NA
	November 08			
	December 08			
	January 09	14.60		
	June 09		Unable to sample	
	August 09	14.77		
	December 09	14.85	Casing blocked	
	February 10	14.55		
	May 10	14.47		
	August 10	14.46	Casing blocked	
	November 10	14.49	Casing blocked	
	March 11	14.87	Casing blocked	
	June 11	14.37	Casing blocked	
	September 11	13.8	Casing blocked	







The results indicate very consistent SWL at all monitoring sites since the last round of monitoring. The SWL at MW7, which is located at the north-eastern corner of the mine lease on mine-owned land, continues to drop as a result of depressurisation from a reduction in groundwater pressures due to mining both the Tarrawonga and Boggabri Coal pits.

**Surface Water**

Routine surface water monitoring was conducted in August 2011. Total suspended solids results were generally low in all storages indicating compliant sediment loads if discharge were to occur.

Two wet weather discharge events occurred in September 2011.

Discharge occurred from both SB14 and SD9 on the 9<sup>th</sup> September 2011 following 39.2mm of rainfall. The TSS level in SB14 was 131mg/L, thereby exceeding the threshold of 50mg/L. SD9 was compliant at 50mg/L.

SB14 and SD9 also discharged on the 29<sup>th</sup> September 2011 after 38.6mm of rainfall. Both exceeded the TSS threshold with results of 414mg/L and 228mg/L.

Tarrawonga submitted a licence variation application to OEHL in August 2011 for, among other things, inclusion of a condition that allows for exceedance of TSS concentration limits for discharge points during rainfall events that exceed 38.4mm (5 day 90<sup>th</sup> percentile rainfall depth). This condition is already in EPLs for other Whitehaven mines and is considered on the basis that discharge dams have sufficient storage to contain 5 day 90<sup>th</sup> percentile rainfall events. Whilst the variation has not been finalised it is noteworthy that had the condition been in place at the time both discharges would have been within the allowable exceedance for TSS.

### **Complaints**

Since the last meeting, there have been eight complaints in relation to operations at Tarrawonga as detailed below.

#### **25<sup>th</sup> July 2011**

A complaint was lodged via the Tarrawonga Complaints Line in relation to a blast at Tarrawonga which shook the complainant's windows and house, and the extent of yellow plume drifting to the property following the blast.

The complainant was contacted by the Environmental Manager to discuss the investigation being undertaken, and a message to this effect was left on the answering machine. It was identified that upon availability of the blast results, and receipt of the video for the blast, a report would be issued to the complainant outlining the results.

A letter response was issued on 29<sup>th</sup> July 2011 identifying blast within compliance limits.

The Environmental Manager was also contacted by OEHL in relation to the same complaint. OEHL were advised that Whitehaven would obtain the blast monitor results to identify vibration and overpressure results. The matter was also discussed with Orica who advised that the fume generation rated a 2 on their scale (up to 5).

A letter was issued to OEHL as per the advice issued to the complainant.

#### **28<sup>th</sup> July 2011**

A complaint was received by the Environmental Manager in relation to Toll Truck T19 spilling a piece of coal from the rear trailer onto windscreen of the complainant's wife's vehicle, causing windscreen to crack. The incident occurred south of the Rocglen turn off at around 10:55am with truck T19 travelling towards Gunnedah and his wife travelling back to their property. The coal piece was retrieved at the time of the incident and the truck number identified.

The matter was discussed with Toll's Project Manager, John Molloy, and the Environmental Manager met with the complainant at their residence and viewed the damaged windscreen and the nominated coal piece which caused the damage. The complainants were advised that the matter would be discussed between Toll and Whitehaven for resolution and advice would issue back to them as soon as possible.

Whilst Toll generally has a policy not to replace windscreens, on this occasion the cost of replacement was covered by Toll.

## **2<sup>nd</sup> August 2011**

The Environmental Manager received a complaint in relation to extent of dust in the area during the morning, which seemed to be travelling east from the direction of the mines. It was acknowledged that conditions were very dry and prevailing winds determined how dust dispersed however it was requested that more be done to control dust from off the mine sites.

Both Boggabri and Tarrawonga mines acknowledged dust generation from their operations, however, a significant proportion of dust is also generated from traffic on the nearby unsealed roads including Manilla Road, Wean Road, Goonbri Road, Dripping Rock Road and Leard Forest Road. This road dust, combined with dust generation from the mine sites is creating a cumulative dust impact that is most visible in the early morning due to temperature inversions preventing the dust from dispersing.

Visual observations of the mine sites during the day generally confirm a reduced dust impact once the inversion layer has dispersed. Actions under consideration at the time of the complaint included consideration to ongoing gravel collection by Narrabri Shire Council requiring Council to water the affected roads to reduce dust impact; review of water cart operations on both day and night shift to confirm adequate dust suppression is being implemented; and consideration to the use of a surfactant to further reduce dust lift off from haul roads on the mine site.

A meeting was held on the 22<sup>nd</sup> August 2011 between the complainants and representatives from Boggabri Coal and Whitehaven to discuss cumulative impacts.

## **29<sup>th</sup> September 2011**

The complainant contacted the Environmental Manager in relation to a truck exiting the Tarrawonga private section of the haul route onto Manilla Road and crossing the centre line of the road into the incorrect lane. This caused the complainant to brake in order to allow the truck to enter the correct lane.

Immediately following the complaint, the Environmental Manager contacted the Co-ordinator for Domestic Coal Sales at Tarrawonga site to verify if a domestic coal truck had recently departed site. It was confirmed a truck matching the description provided by the complainant had departed site at approximately 1:20pm, carting coal to Blush Tomatoes in Guyra. On the 30<sup>th</sup> September 2011, contact was made with the haulage contractor who agreed to raise the matter with the driver of the truck. It was reiterated to the haulage contractor that any trucks undertaking haulage to and from the Tarrawonga site must be compliant with all rules and regulations or face the prospect of being banned from entering site.

## **25<sup>th</sup> October 2011**

Two complaints were made to the Environmental Manager between 8:30am and 9:30am in relation to the extent of dust in the area during the morning, particularly relating to dust from the Tarrawonga site and dust from gravel trucks departing site for Narrabri Shire Council.

Upon receipt of the complaints, the Environmental Manager travelled to site to review the extent of dust in the area. It was clearly dusty and hazy across the valley. On discussion with the Project Manager at Tarrawonga, he confirmed that dusty/hazy conditions were prevalent early in the morning even prior to Tarrawonga site commencing production. It was commented that gravel trucks departing site along Goonbri Road and then Manilla

Road were creating significant dust lift off, with Council not providing any dust suppression on the Council roads.

Following discussions, it was agreed that scraper operations be suspended at Tarrawonga site until dust levels cleared. It was also agreed that discussions should be held with Council on the basis that Tarrawonga would no longer supply gravel unless Council undertook to provide a water cart for dust suppression of its roads during gravel cartage. Contact was made with Council in relation to this and it was agreed they supply a water cart for this purpose.

A third complaint was received at 12:30pm from OEH in relation to dust from the site and gravel trucks travelling along unsealed roads. The Environmental Manager advised OEH of the actions that had been taken prior in the day. It was also advised that Tarrawonga now also utilises a dust suppressant (surfactant) for spraying on its haul roads as a further means of reducing dust lift off from site.

### **Rehabilitation**

Shaping and topsoiling on the lower batter of the southern emplacement has commenced in recent weeks. This area will not be disturbed by the proposed life-of-mine project.

### **Independent Environmental Audit**

An Independent Environmental Audit was undertaken on the 3<sup>rd</sup> November 2011, as required by DA 88-4-2005 MOD 1. The audit report is expected to be finalised in December 2011 with the report and an action plan to be submitted to the Department of Planning and Infrastructure within 6 weeks of completion of the report.