

Tarrawonga Coal Mine Community Consultative Committee Meeting #20

Environmental Monitoring Report November 2010 – January 2011

Noise Monitoring

Noise monitoring was undertaken on Wednesday 15th and Thursday 16th December 2010 as per requirements under the consent. Results from the monitoring are outlined below:

Noise Monitoring Results – 15 th & 16 th December 2010 (Day) (Ambardo & Pine Grove on the 16 th)				
Location	Time	dB(A),Leq (15 min)	Wind speed/direction	Identified Noise Sources
Bollol Ck Station	11:09 pm	41	0.5-1 m/s NW	TCM (40) , birds (34)
Tarrawonga	11:36 pm	43	<0.5m/s NW	Birds and Insects (43), TCM (35)
Ambardo	7:03 am	57	<0.5m/s S	Birds (57), TCM (40)¹
Pine Grove	7:33 am	54	<0.5m/s S	Birds (54), TCM (40)¹

¹ Trucks on private section of haul road.

Noise Monitoring Results – 15 th December 2010 (evening)				
Location	Time	dB(A),Leq (15 min)	Wind speed/direction	Identified Noise Sources
Bollol Ck Station	8:21 pm	50	<0.5m/s NW	Birds and Insects (50), TCM (35)
Tarrawonga	9:18 pm	47	<0.5m/s NW	Insects (47), TCM (<25)
Ambardo	11:56 pm	51	<0.5m/s NW	Insects (51), TCM (39)¹

¹ Trucks on private section of haul road.

Noise Monitoring Results – 15 th December 2010 (night)				
Location	Time	dB(A),Leq (15 min)	Wind speed/direction	Identified Noise Sources
Bollol Ck Station	11:40 pm	44	Calm	Insects (44), TCM (32)
Tarrawonga	10:23 pm	45	<0.5m/s NW	Frogs and insects (45), TCM (30)
Ambardo	11:37 pm	41	Calm	Insects (41), TCM (29)

The results show that noise emissions from operations associated with the mine were higher than the operational noise criterion of 35 dB(A),L_{eq(15min)} at the monitoring locations of “Ambardo”, “Pine Grove” and “Bollol Ck Station” during the day survey and “Ambardo” during the evening survey. The noise at “Ambardo” and “Pine Grove” was due to emissions from trucks travelling on the private section of the haul road. On the basis of private agreements with the residents of the two properties, this is not considered a non-compliance. “Bollol Ck Station” is a mine owned property.

In addition to the operational noise, the noise from the mine must not exceed 45 dB(A),L_{1(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 the mine did not exceed 45 dB(A) at any monitoring location.

Blast Monitoring

Blasting Results

Since the first shot there have been 270 blasts (until 14th of January 2011).

All blasts during this report period have been compliant within the limits of 115dB_L and 5mm/s.

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

Air Quality

Air Quality (Dust Deposition) Results

MONTH	TEMPLEMORE (EB-4)	BOLLOL CREEK STN (EB-5)	AMBARD (EB-6)	TARRAWONGA (EB-7)	THUJIN (EB-8)	PINE GROVE (EB-9)	TARRAWONGA MINE (EB-10)	TARRAWONGA MINE (EB-11)	PINE GROVE (EB-12)
January 2010	3.3	8.8	3.3	1.4	1.2	1.7	2.0	3.3	2.7
February 2010	1.5	2.8	0.8	2.2	2.1	0.9	0.8	1.2	6.2
March 2010	0.9	1.4	1.2	1.0	1.3	0.7	1.7	3.5	5.6
April 2010	4.9	1.4	1.0	0.8	3.3	0.5	1.2	0.9	3.5
May 2010	3.3	2.9	1.2	0.7	1.8	0.5	0.8	0.9	0.6
June 2010	3.0	3.8	0.4	0.4	3.0	0.4	2.1	2.9	1.0
July 2010	1.2	1.5	0.3	0.4	0.3	1.9	0.8	1.3	0.5
August 2010	1.3	1.4	1.1	0.5	1.9	0.7	0.7	0.9	0.2
September 2010	0.9	2.1	0.7	0.8	1.5	0.6	3.6	2.1	0.7
October 2010	1.6	4.8	1.0	1.3	2.6	0.9	4.5	1.4	0.7
November 2010	0.9	1.7	0.8	1.0	3.0	0.7	28.3	2.3	1.2
December 2010	8.2	2.0	0.6	1.2	3.4	0.6	6.8	2.4	1.8
ANNUAL AVERAGE	2.6	2.9	1.0	1.0	2.1	0.8	4.5	2.0	2.1

Elevated deposited dust results occurred over October at EB-5 (4.8g/m²/month) and EB-10 (4.5 g/m²/month), November at EB-10 (28.3g/m²/month) and December at EB-4 (8.2 g/m²/month) and EB-10 (6.8 g/m²/month). Despite these elevated dust readings Tarrowonga Mine (EB-10) was the only monitoring point to exceed the annual average criteria of 4g/m²/month. This is due to the abnormally elevated result received during November 2010 which is most likely related to some form of contamination. Given the low results received at all other monitoring locations for that month it is expected that this reading is not caused from mine related activities.

PM₁₀ Results

The annual average for PM₁₀ readings is currently at 12.74µg/m³ (compared to 18.07µg/m³ 3 months ago), which is well below the annual average limit of 30µg/m³. PM₁₀ levels have remained compliant since the last CCC meeting.

The highest 24hr reading to date is 97µg/m³ which was recorded on the 8th December 2009.

Water Monitoring

Ground Water

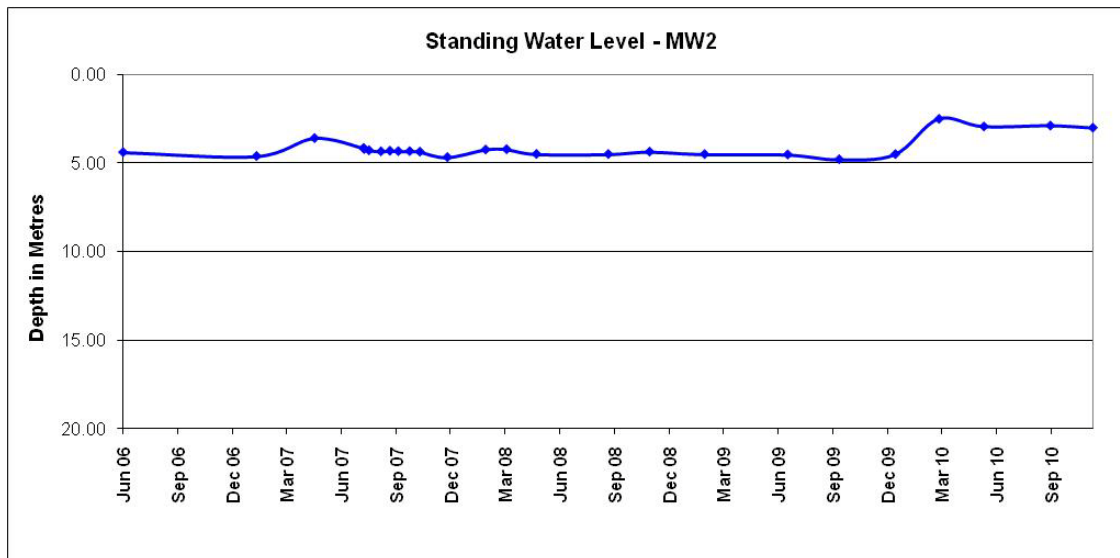
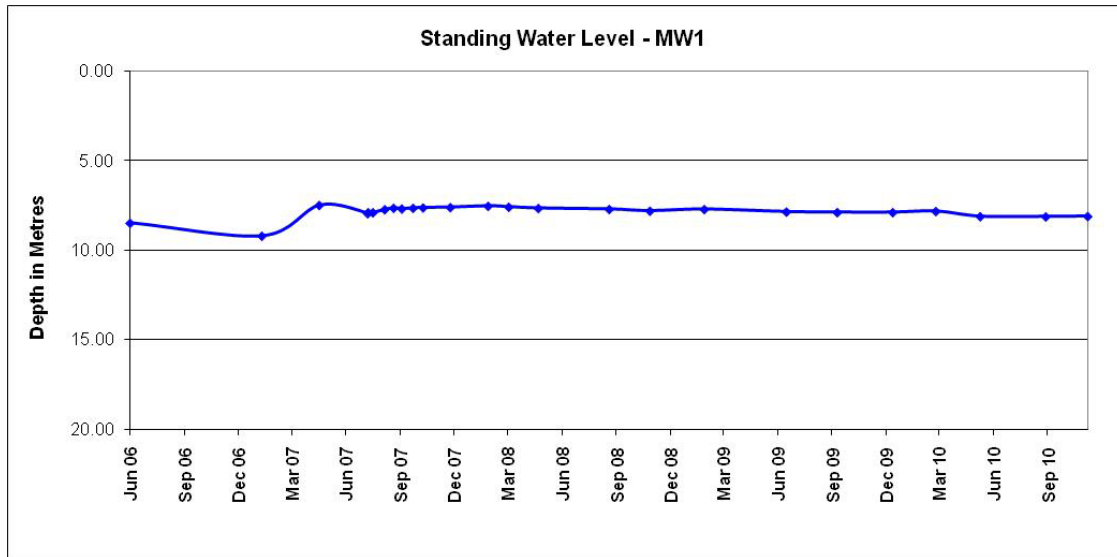
Groundwater monitoring data obtained to date, including the last round of SWL monitoring in November 2010, is presented in the following table. The next round of monitoring is scheduled for February 2011.

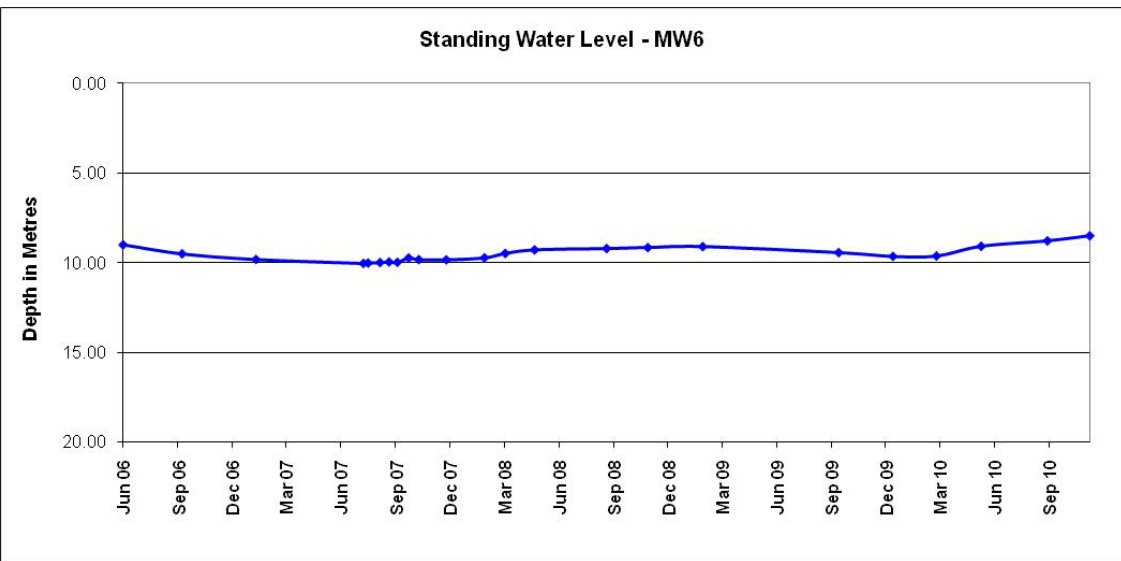
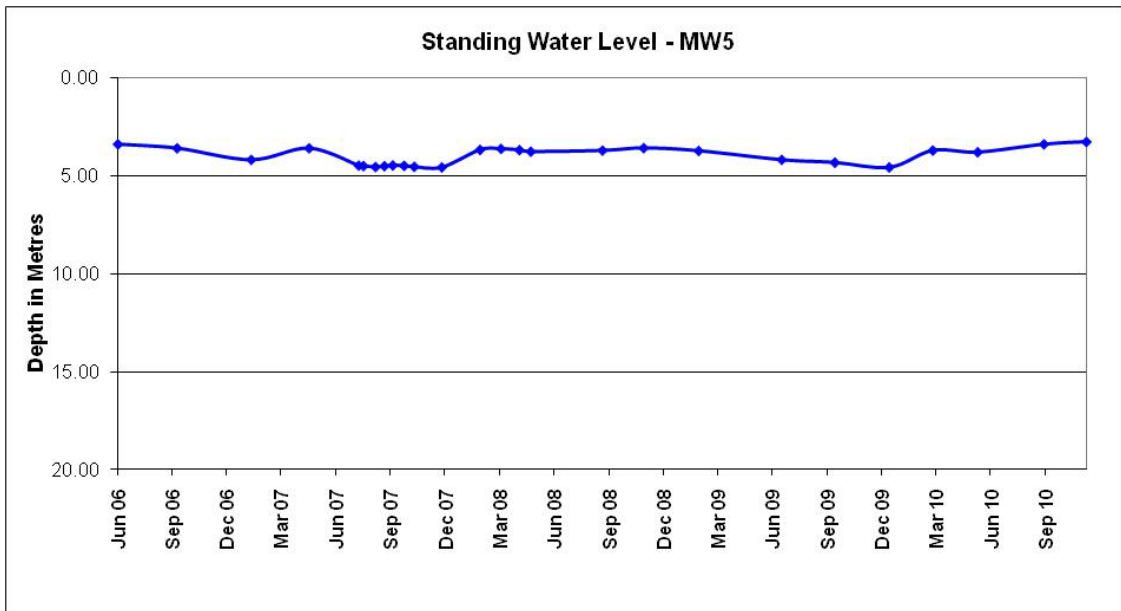
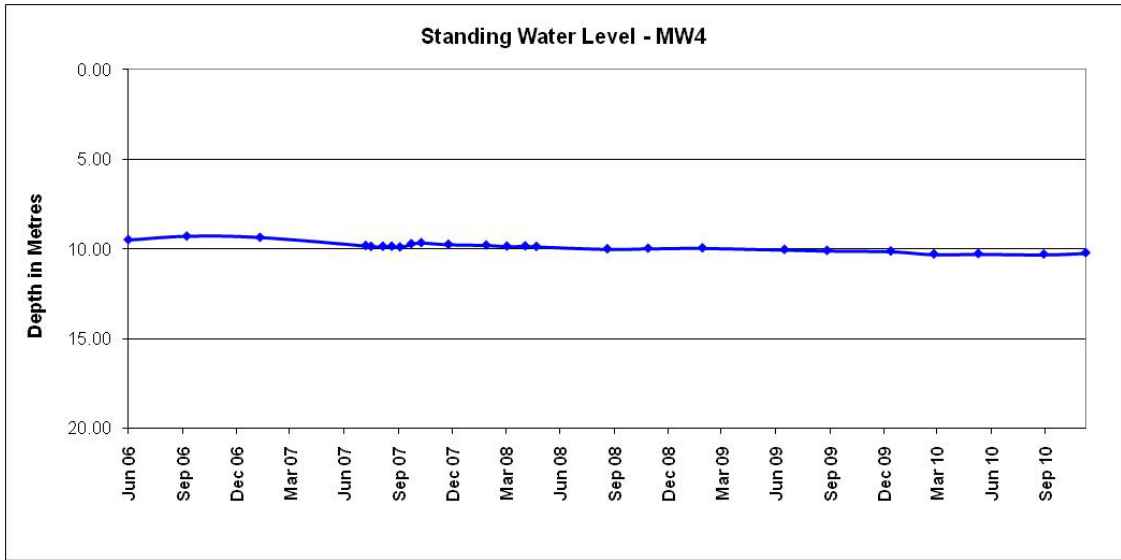
Site	Date	SWL (m)	pH	Elect. Conduct
MW1	January 07	9.22	7.1	2410
	April 07	7.49		
	July 07	7.91	7.3	2500
	August 07	7.66		
	September 07	7.66		
	October 07	7.64		
	November 07	7.62		
	January 08	7.55		
	March 08	7.60		
	April 08	7.67	7.3	3120
	August 08	7.73		
	September 08			
	October 08	7.82	7.8	3500
	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	
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			

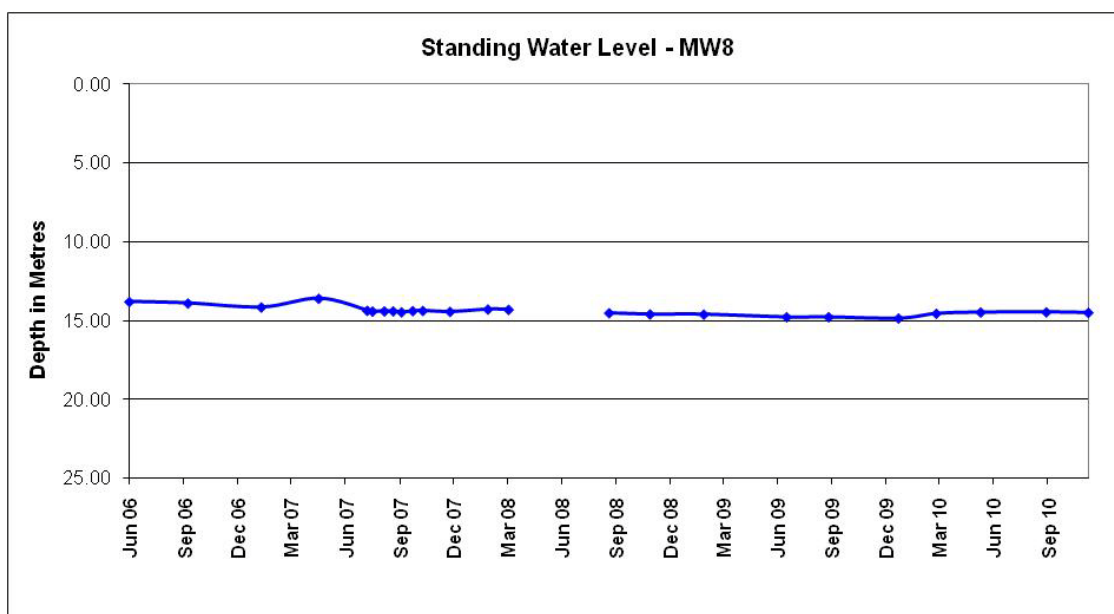
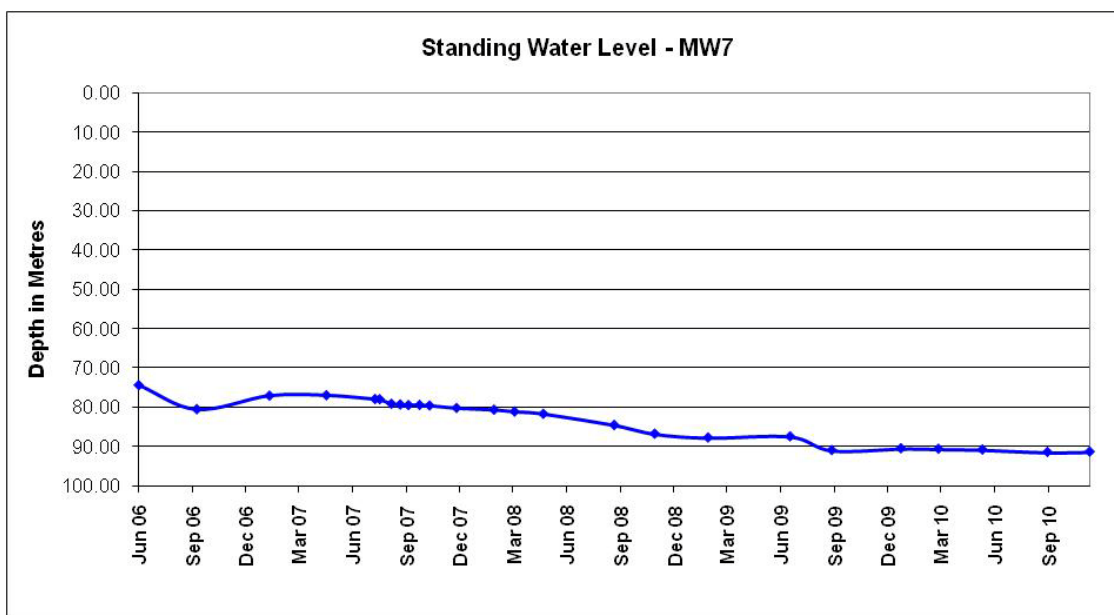
	August 10	2.89	7.4	590
	November 10	3.01	7.32	513
MW4	September 06	9.25		
	January 07	9.37	7.1	3430
	July 07	9.88	6.8	5400
	August 07	9.87		
	September 07	9.73		
	October 07	9.67		
	November 07	9.76		
	January 08	9.80		
	March 08	9.87		
	April 08	9.88	7.1	5160
	August 08	10.01		
	September 08			
	October 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
MW5	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
MW6	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
MW7	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
MW8	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	







The results indicate relatively consistent SWL at all monitoring sites since the last round of monitoring. Sites MW5 and MW6 are beginning to show slight instances of groundwater recharge. Monitoring will continue on a quarterly basis to generate additional data over time in order to establish ongoing trends in groundwater levels at our monitoring sites.

Surface Water

Routine surface water monitoring was conducted in August 2010. The results indicated a high pH reading at SB16 (9.19) and SD16 (9.49). This could be a result of drainage from the southern waste emplacement which contains alkaline material. Later samples of SD16 during a discharge event in December 2010 indicated the pH had dropped to 8.03. Results of ongoing surface water sampling will be closely monitored to track future pH movements. Apart from this there were no results that indicated any change in water quality since mine commencement. The next round of surface water monitoring will be conducted in February 2011.

Four wet weather discharge events have occurred since the last CCC meeting

12th November 2010

Discharge occurred at SB14 after 46.2mm of rainfall over the preceding 5 days. In the previous month 99.2mm of rainfall was recorded on site which saturated the soil and filled storages. With ground conditions at saturation, surface flows into SB14 had insufficient settling time before discharge, and the site did not have the capacity to utilise the volume of water required to empty SB14 prior to additional rainfall events. A Total Suspended Solids (TSS) reading of 58 mg/L was recorded at SB14, which slightly exceeds the concentration threshold of 50mg/L, however the threshold does not apply as the rainfall quantity was greater than the 5 day 90% design criteria of 38.4mm for Gunnedah. The high TSS is thought to be associated with the waste emplacement and pre-strip area which is in close proximity and provides a large catchment to SB14.

Downstream flows occurred at Nagero Creek and Bollol Creek which were sampled and recorded no significant change in water quality.

1st December 2010

Discharge occurred at SD16 following 39mm of rain over the previous 5 days. All results from the discharge sample indicated no exceedance of EPL criteria.

3rd December 2010

Discharge occurred from SB14 after 40.6mm of rain over the previous 5 days and 140mm over the previous month. The rainfall was greater than the 5 day 90% design criteria of 38.4mm for Gunnedah. The results indicated a TSS reading of 122mg/L, which exceeds the EPL threshold of 50mg/L. As the amount of rainfall was greater than the 5 day 90% design criteria of 38.4mm for Gunnedah the concentration threshold does not apply.

Downstream flows occurred at Bollol Creek which were sampled with results indicating no change in water quality, apart from the TSS dropping to 46 mg/L. This indicates that the sediment in the discharge water was able to settle out prior to entering the downstream waterways.

10th December 2010

Discharge occurred from points SD-17, SD-16, SD-9 & SB-14 after 50mm of rainfall on that day and a total of 160mm over the previous month. Given the volume of water delivered over such a short time, all storage capacities had insufficient settling time before discharge. The extent of rainfall over the previous month had also made any efforts to reduce volumes of water storage impractical.

The 50mg/L TSS threshold was exceeded at SD-17 (152mg/L), SD-9 (66mg/L) and SB-14 (156mg/L). As the rainfall was substantially greater than the 5 day 90% design criteria of 38.4mm for Gunnedah the concentration threshold does not apply. No exceedance of EPL criteria occurred at SD-16. Monitoring was also conducted upstream and downstream at Nagero Creek and downstream at Bollol Creek. The results from upstream Nagero Creek show a TSS of 181mg/L, whilst downstream Nagero Creek only recorded a TSS of 79mg/L and downstream Bollol Creek recorded a TSS of 65mg/L. With the downstream TSS levels being lower than those from upstream, it is likely that the water discharged from site had minimal impact on the TSS levels of surrounding waterways.

Complaints

Since the last meeting there has been one complaint lodged directly to the Environmental Manager.

17th January 2011

The complaint was made to Danny Young (Environmental Manager), in relation to the amount of litter and rubbish along the Manilla Road section of the haul route. Arrangements were made for a team of Whitehaven staff to view the area and clean any rubbish lying on either side of the haul road. The matter of throwing rubbish from vehicles has also been discussed with the Tarrawonga Project Manager to raise with staff, as well as with Toll to ensure drivers are not throwing rubbish from their windows. Whitehaven will endeavor to keep this section of the road clean on a regular basis in the future.

Rehabilitation

No rehabilitation has occurred since the last CCC meeting.

As the modification approval has now been granted, and the western emplacement is extending to top height, rehabilitation activities will recommence when profiling of the dump allows.