

Narrabri Coal Mine Community Consultative Committee Meeting #15

Environmental Monitoring Report July 2011 – October 2011

Noise Monitoring

Attended noise monitoring was undertaken on 28th July, 25th August and 27th - 28th September 2011 to verify if noise levels were within compliance limits. The results from this monitoring are detailed in the tables below.

Table 1 NCM Noise Monitoring Results – 28 July 2011 (Day)					
Location	Time	dB(A), L _{eq} (15min)	Wind speed/ direction	Temp Grad (°C/100m)	Identified Noise Sources
Bow Hills	5:25 pm	51.3	0-1m/s, SSE	+2.3	Traffic (51), NCM (25)
Naroo	3:58 pm	44.6	0-1m/s, SSE	+0.8	Traffic (43), Dog (40), NCM inaudible
Claremont*	4:17 pm	34.6	0-1m/s, SSE	+0.4	Birds (38), NCM inaudible
Westhaven	4:36 pm	36.5	0-1m/s, SSE	+0.8	Birds (35), NCM¹ (31)
Greylands	5:04 pm	35.8	0-1m/s, SSE	+1.2	Traffic (34), NCM² (30) ,

Table 2 NCM Noise Monitoring Results – 28 July 2011 (Evening)					
Location	Time	dB(A), L _{eq} (15min)	Wind speed/ direction	Temp Grad (°C/100m)	Identified Noise Sources
Bow Hills	7:40 pm	53.2	0-1m/s, SSE	+12.2	Traffic (53), NCM (30)
Naroo	6:19 pm	36.5	0-1m/s, SSE	+6.6	Traffic (35), NCM (32)
Claremont	6:41 pm	32.1	0-1m/s, SSE	+8.6	NCM¹ (32)
Westhaven	7:01 pm	35.2	0-1m/s, SSE	+8.6	Birds (32), NCM (32)
Greylands	7:22 pm	36.3	0-1m/s, SSE	+11.4	Traffic (33), NCM (33)

Table 3 NCM Noise Monitoring Results – 28 July 2011 (Night)					
Location	Time	dB(A), L _{eq} (15min)	Wind speed/ direction	Temp Grad (°C/100m)	Identified Noise Sources
Bow Hills	10:11 pm	48.2	1-2m/s, SE	+11.6	Traffic (48), wind (33), NCM (27)
Naroo	10:29 pm	37.2	1-2m/s, SSE	+14.6	Traffic (36), NCM (28)
Claremont	10:47 pm	34.2	1-2m/s, SE	+14.0	Wind (33), NCM (30)
Westhaven	11:07 pm	35.1	1-2m/s, SE	+14.0	Wind (32), NCM (32)
Greylands	11:32 pm	35.5	1-2m/s, SE	+14.6	NCM (31) , Wind (30), Traffic (30)

* Correction of 4-8dB to be subtracted from the *mine noise component only* to estimate levels at "Kurrajong".

¹ Ventilation shaft drill site.

² Surface facilities.

Table 4 NCM Noise Monitoring Results – 25 August 2011 (Day)					
Location	Time	dB(A), Leq(15min)	Wind speed/ direction	Temp Grad (°C/100m)	Identified Noise Sources
Bow Hills	5:31 pm	50.5	0-1m/s, SSE	+0.5	Traffic (50), NCM inaudible
Naroo	4:04 pm	43.4	0-1m/s, SSE	-0.2	Traffic (43), NCM inaudible
Claremont*	4:26 pm	32.2	0-1m/s, SSE	0.0	Birds (32), NCM inaudible
Westhaven	4:47 pm	36.3	0-1m/s, SSE	+0.3	Birds (35), NCM¹ (30)
Greylands	5:08 pm	39.4	0-1m/s, SSE	+0.3	Traffic (38), NCM² (32) ,

* Correction of 4-8dB to be subtracted from the *mine noise component only* to estimate levels at "Kurrajong".

¹ Ventilation shaft drill site.

² Surface facilities.

Table 5 NCM Noise Monitoring Results – 25 August 2011 (Evening)					
Location	Time	dB(A), Leq(15min)	Wind speed/ direction	Temp Grad (°C/100m)	Identified Noise Sources
Bow Hills	7:36 pm	53.2	0-1m/s, SSE	+0.8	Traffic (53), NCM (30)
Naroo	6:09 pm	41.3	0-1m/s, SSE	+0.4	Birds (39), Traffic (37), NCM inaudible
Claremont	6:28 pm	32.4	0-1m/s, SSE	+0.4	Birds (31), NCM¹ (27)
Westhaven	6:55 pm	34.2	0-1m/s, SSE	+0.2	Birds (33), NCM (29)
Greylands	7:17 pm	41.2	0-1m/s, SSE	+0.6	Birds (40), Traffic (36), NCM (32)

Table 6 NCM Noise Monitoring Results – 25 August 2011 (Night)					
Location	Time	dB(A), Leq(15min)	Wind speed/ direction	Temp Grad (°C/100m)	Identified Noise Sources
Bow Hills	10:04 pm	49.8	0-1m/s, SSE	+0.6	Traffic (49), NCM (<25)
Naroo	10:23 pm	38.9	0-1m/s, SSE	+0.4	Traffic (38), NCM inaudible
Claremont	10:44 pm	28.8	0-1m/s, SSE	+0.4	Non-specific (26), NCM (<25)
Westhaven	11:02 pm	31.4	0-1m/s, SSE	+0.6	Frogs (31), NCM (<25)
Greylands	11:23 pm	37.5	0-1m/s, SSE	+0.8	Traffic (37), NCM (30)

Table 7: NCM Noise Monitoring Results – 27 September 2011 (Evening)					
Location	Time	dB(A), Leq(15min)	Wind speed/ direction	Temp Grad (°C/100m)	Identified Noise Sources
Bow Hills	7:29 pm	49	0.4 m/s, NNE	1.8	Traffic (49), NCM inaudible
Naroo	6:09 pm	41	0.4 m/s, NNE	-1.4	Traffic (39), birds (37), NCM inaudible
Claremont*	6:29 pm	35	Calm	-1.2	Sheep (32), NCM¹ (32)
Westhaven	6:45 pm	33	Calm	-1.8	Insects (33), NCM² (25)
Greylands	7:04 pm	37	Calm	1.2	Traffic (34), insects (34), NCM inaudible

* Correction of 4-8dB to be subtracted from the *mine noise component only* to estimate levels at "Kurrajong".

¹ Surface facilities.

² Gas plant.

Location	Time	dB(A), Leq(15min)	Wind speed/ direction	Temp Grad (°C/100m)	Identified Noise Sources
Bow Hills	6:31 am	50	0.4 m/s, S	-0.6	Traffic (50), NCM inaudible
Naroo	5:11 am	42	0.9 m/s, SSE	0	Birds (40), Traffic (37), NCM inaudible
Claremont	5:29 am	36	Calm	1.0	Birds (34), NCM¹ (31)
Westhaven	5:48 am	38	Calm	1.6	Birds (35), NCM^{1,2} (35)
Greylands	6:09 am	40	Calm	0.6	Birds (38), Traffic (34), NCM (31)

Location	Time	dB(A), Leq(15min)	Wind speed/ direction	Temp Grad (°C/100m)	Identified Noise Sources
Bow Hills	8:27 am	53	3.6 m/s, N	1.3	Traffic (53), NCM inaudible
Naroo	7:09 am	43	2.7 m/s, N	3.2	Traffic (41), NCM³ (38)
Claremont	7:27 am	38	2.2 m/s, NE	3.1	Traffic (35), NCM¹ (35)
Westhaven	7:44 am	34	3.1 m/s, NNE	2.2	Cattle (33), NCM² (<30)
Greylands	8:04 am	39	4 m/s, NE	2.0	Traffic (37), NCM (30)

³ Shift-change traffic.

The results indicate noise emissions from the mine did not exceed the criterion limit of 35 dB(A), Leq(15min) at any monitoring location during the monitoring period.

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

The July, August and September monitoring also assessed the incidence of temperature inversions by placing two temperature loggers, attached to stakes, at different elevations. At the time of measurement, some significant temperature inversions were present, but no impact on noise propagation was noted.

The real time noise monitor, located at the “Matilda” property, is reporting results to date indicating no noise exceedance events.

Deposited Dust Monitoring

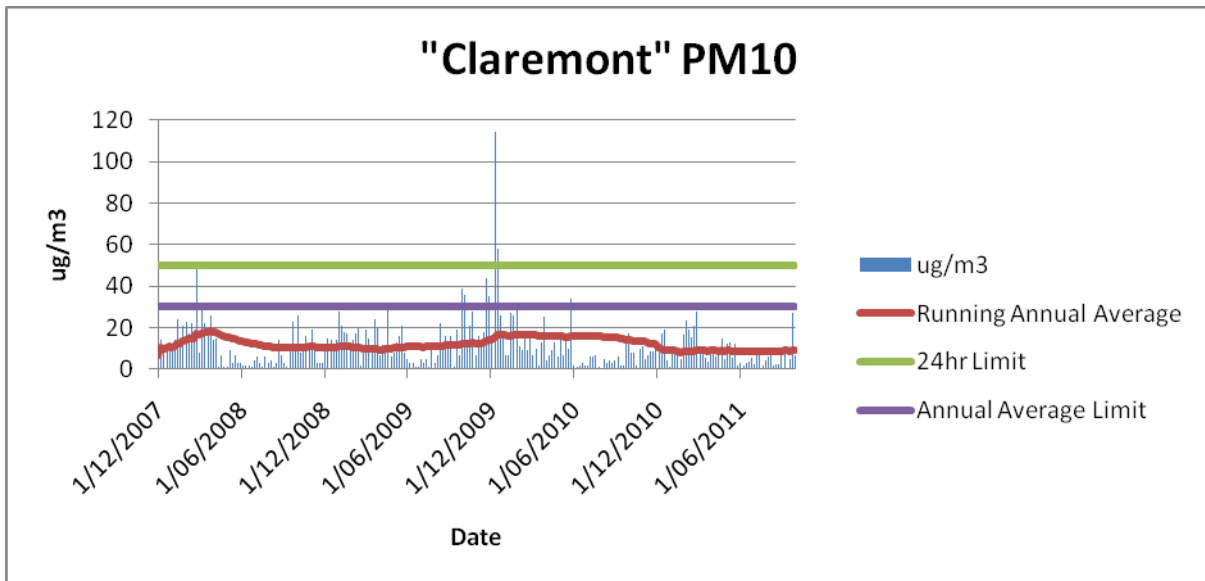
Month	ND1 Turrabaa	ND2 Claremont	ND3 Bow Hills	ND4 Matoppo	ND5 Claremont	ND6 Willarah	ND7 Claremont	ND8 Claremont	ND4a New Matoppo	ND9 Oakleigh
November 2010	1.1	2.3	0.3	28.1	3.6	4.1	2.2	0.5		
December 2010	1.5	4.4	3.2	8.3	4.1	0.8	3.1	1.4		
January 2011	1.1	4.4	0.7	0.1	2.1	7.1	3.7	0.9		
February 2011	1.1	2.5	0.5	1.5	4	2.1	2.3	2.6	3.6	
March 2011	1.4	1.6	2.5	3	46.6	5	1.6	2.1	3.2	
April 2011	0.6	1.8	3.6	5	3.8	0.8	1	0.7	1.8	
May 2011	0.1	0.4	1.8	7.8	3.3	0.8	0.8	0.4	1.1	
June 2011	0.8	0.9	2.2	48.1	4	1.5	1.3	3.1	4.3	0.8
July 2011	1.3	0.6	2.6	10.4	1.6		3.8	0.2	1.5	0.2
August 2011	0.4	2.3	1.8	12.2	12.4	1.9	1.5	1.2	0.6	0.5
September 2011	0.8	3.3	1.7	18.7	2.9	1.0	1.2	0.6	0.5	0.6
October 2011	1.0	1.5	2.1	4.9	7.5	1.0	2.0	0.7	0.7	0.4
Annual Average	0.9	2.2	1.9	12.3	8.0	2.4	2.0	1.2	1.9	0.5

Deposited dust results have remained at relatively low levels since the last meeting, with the exception of ND4 “Matoppo” and ND5 “Claremont”. ND4 returned results during July, August, September and October of 10.4, 12.2, 18.7 and 4.9 g/m²/month, respectively. This has again adversely affected the annual average. ND5 returned results during July, August, September and October of 1.6, 12.4, 2.9 and 7.5 g/m²/month, respectively. The high results in March and August at ND5 have adversely affected the annual average for this gauge. All other annual average results have generally declined.

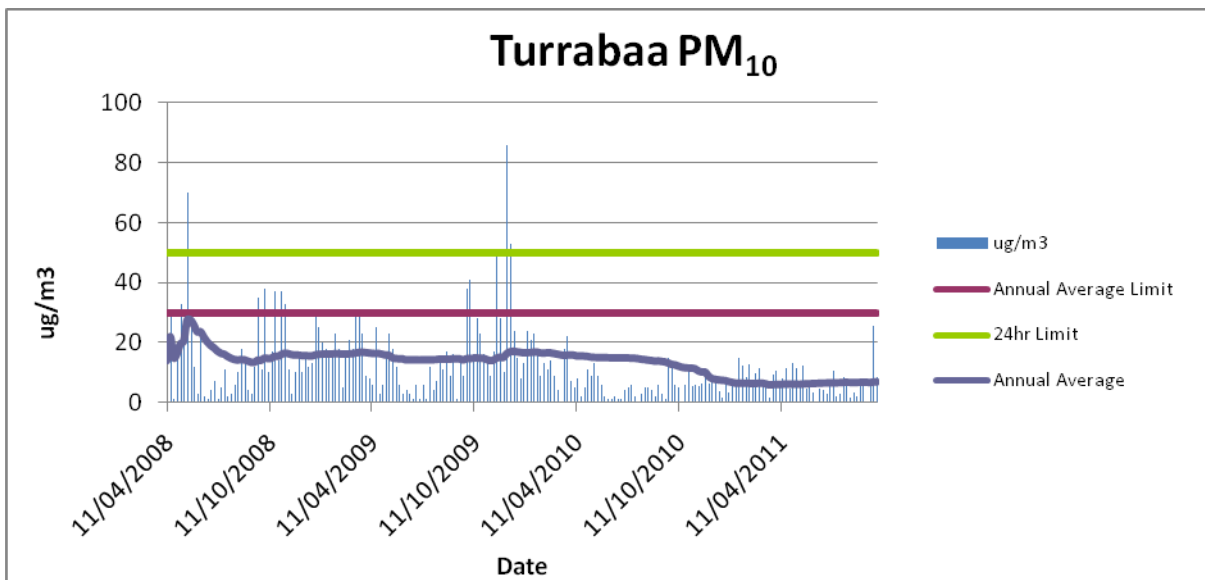
The new monitor at ND4a at “Matoppo” and in closer proximity to site operations continues to demonstrate consistently lower results as compared to ND4 indicative of other factors influencing the ND4 result. Monitor ND9 was also recently established at “Oakleigh” with the results indicating deposited dust levels well within compliance limits.

High Volume Air Sampling (PM₁₀)

PM₁₀ measurements taken to date for the “Claremont” High Volume Air Sampler are returning a running annual average of 9.07 µg/m³ which is well below the annual average limit of 30 µg/m³.



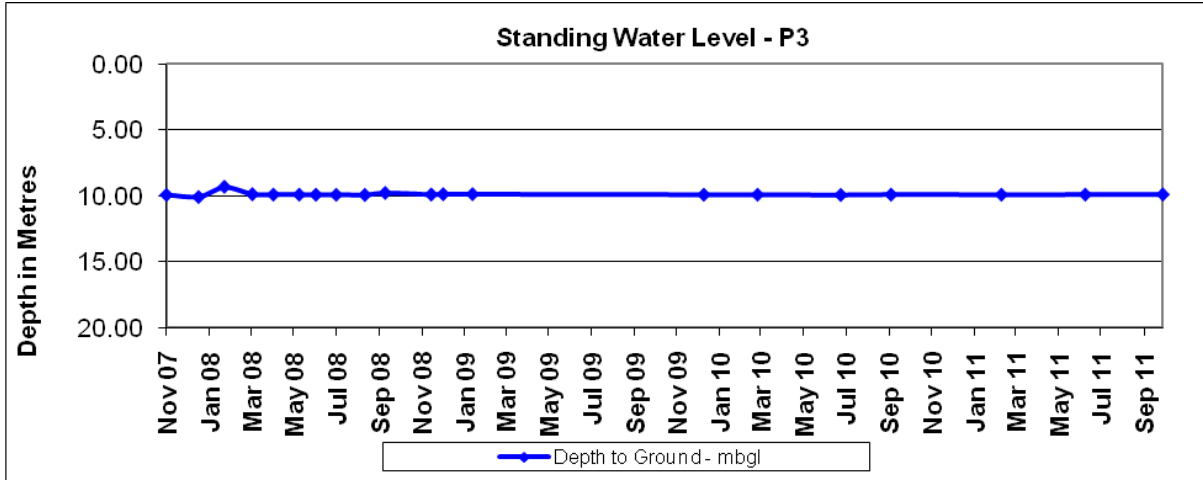
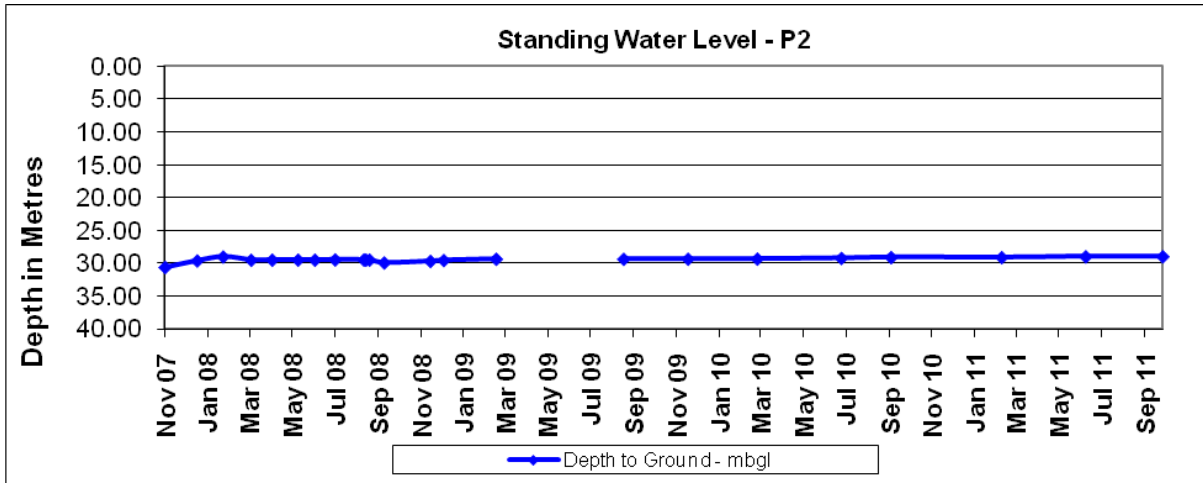
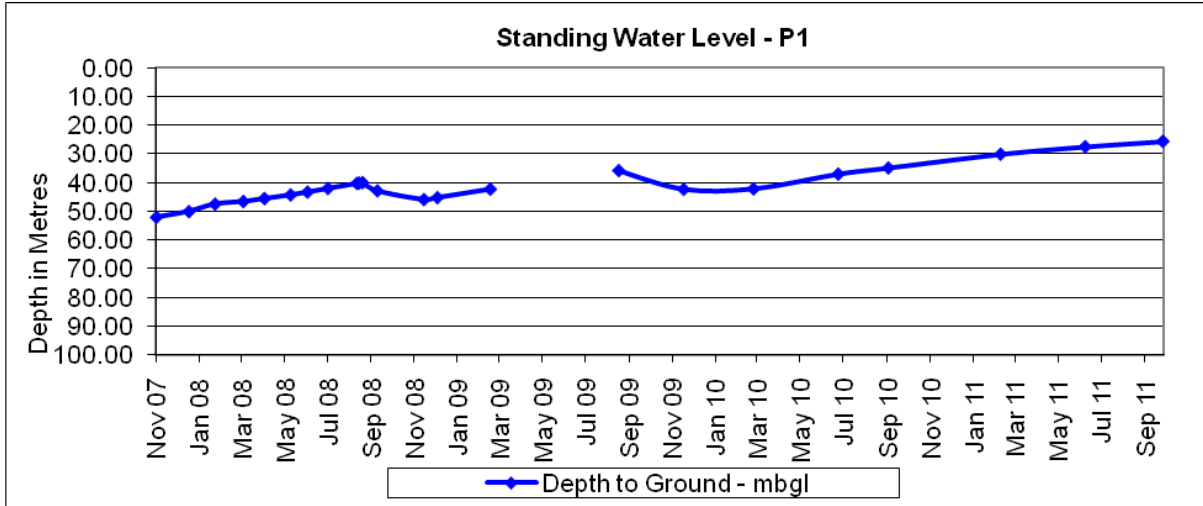
PM₁₀ measurements taken to date for the “Turrabaa” High Volume Air Sampler are returning a running annual average of 6.90 $\mu\text{g}/\text{m}^3$ which is also well below the annual average limit of 30 $\mu\text{g}/\text{m}^3$

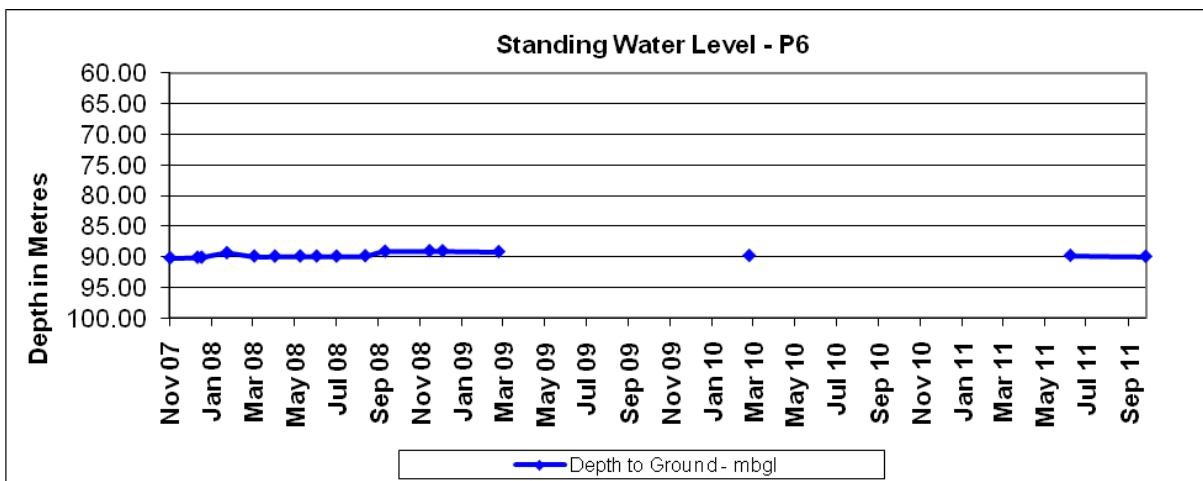
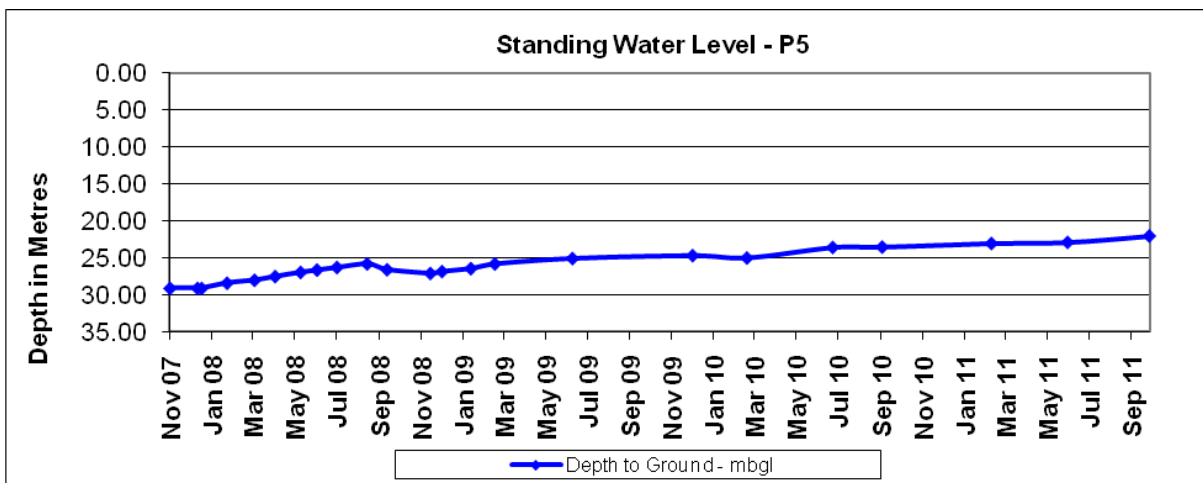
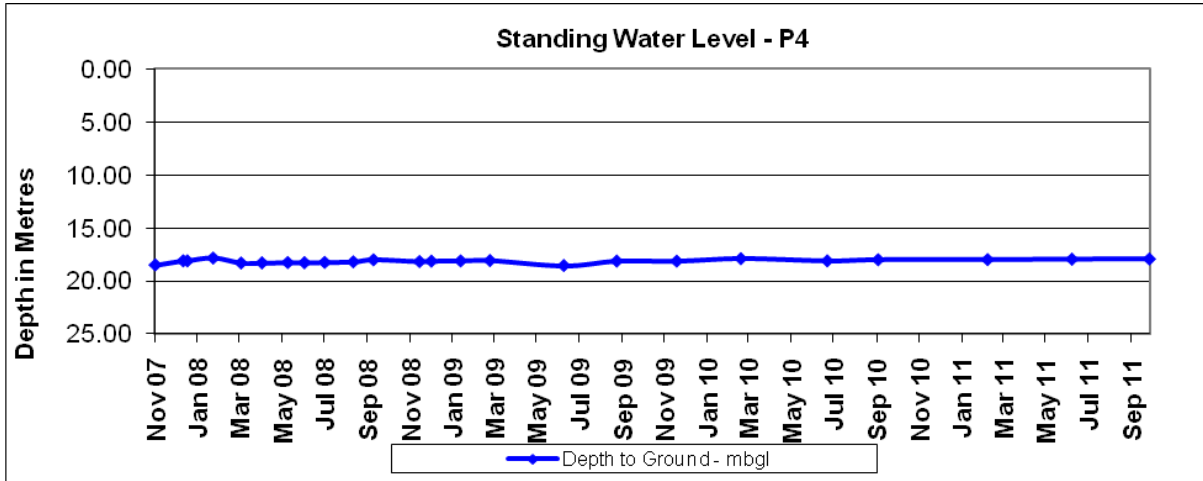


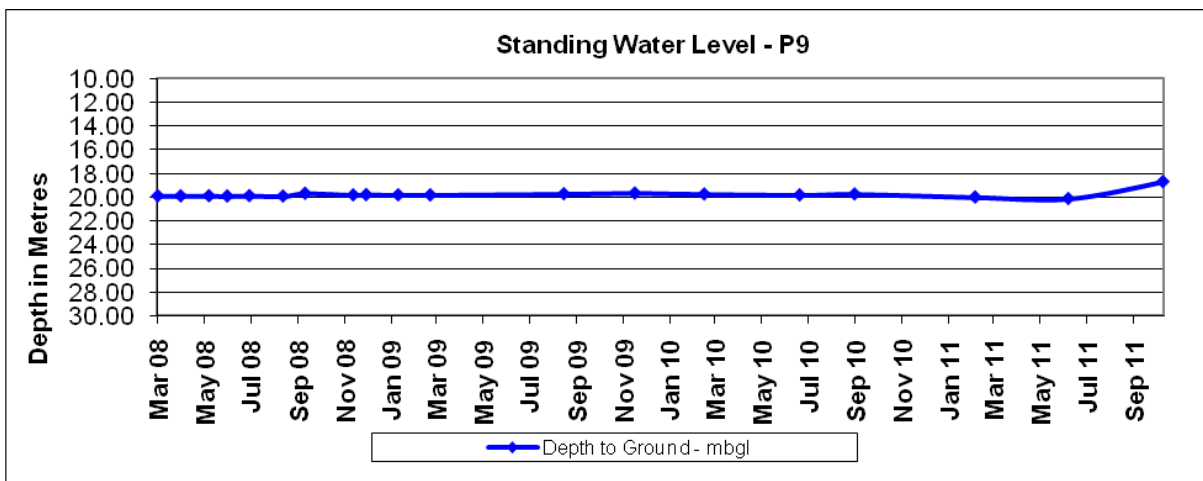
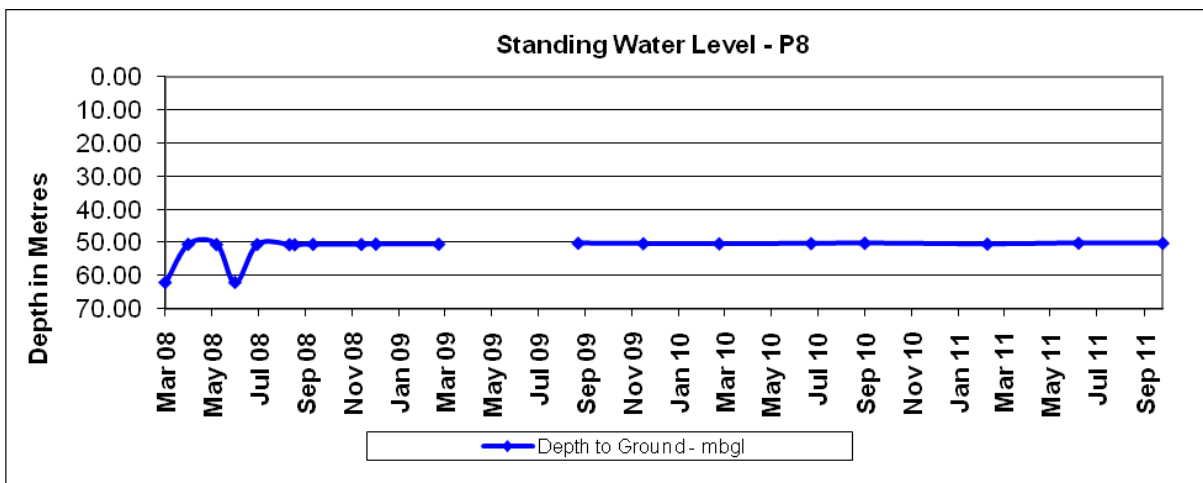
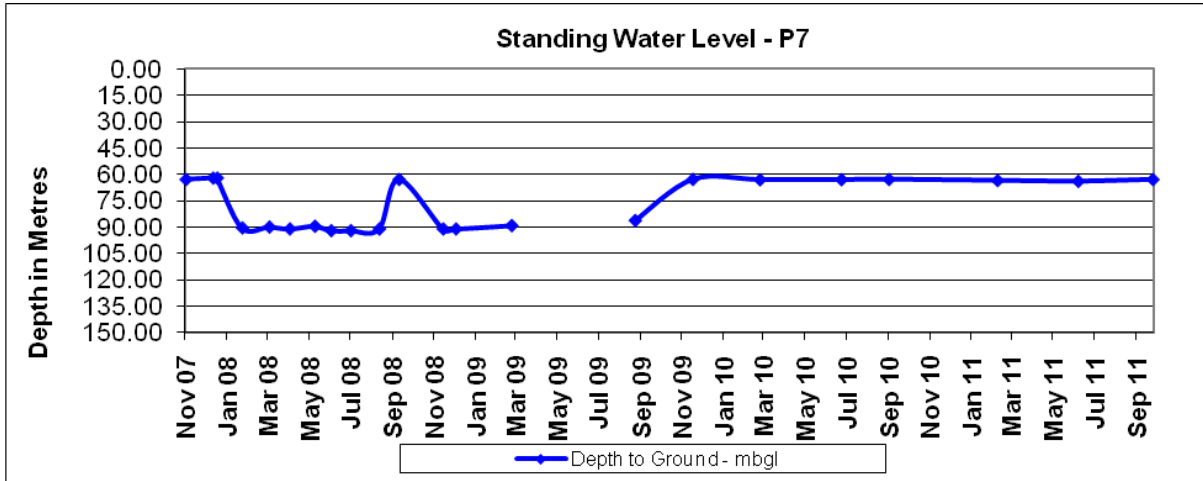
PM₁₀ levels have remained compliant since the last meeting with annual averages at both sites displaying a continued downward trend.

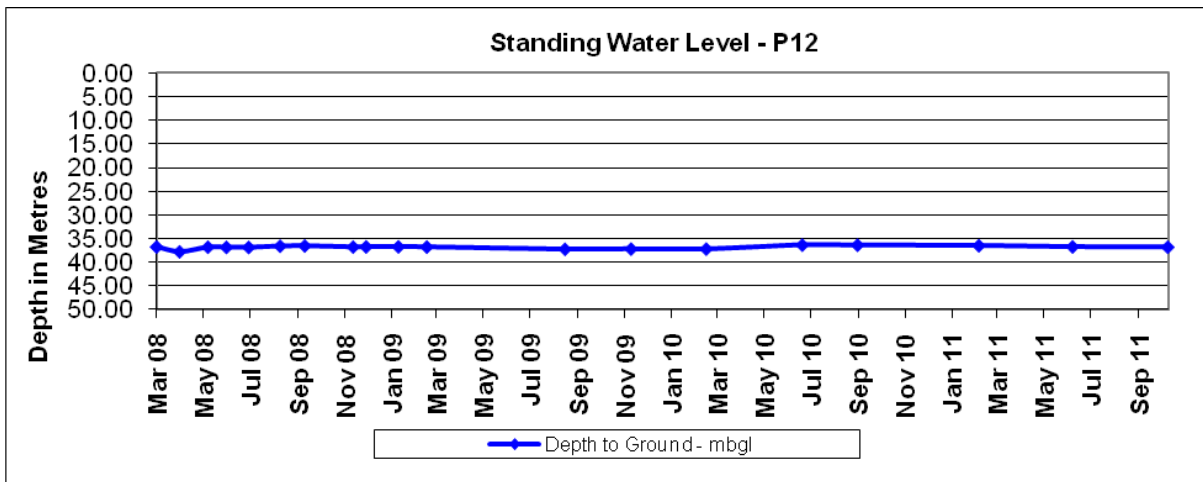
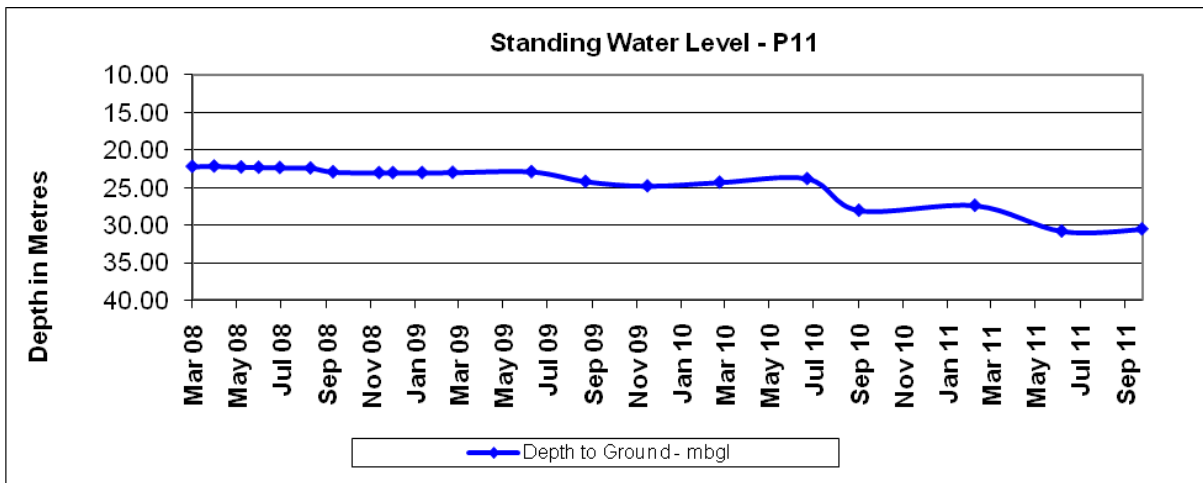
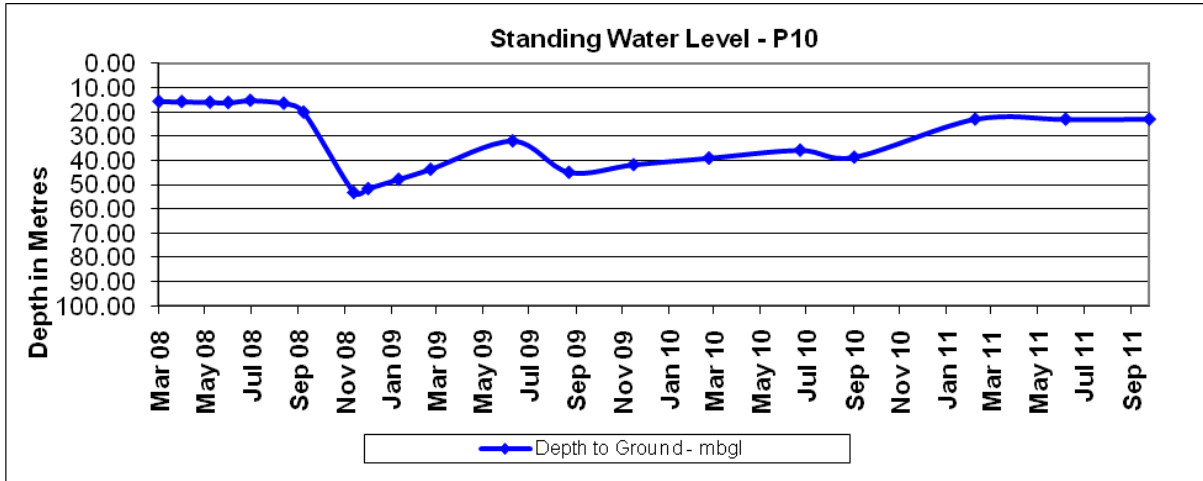
Groundwater Monitoring

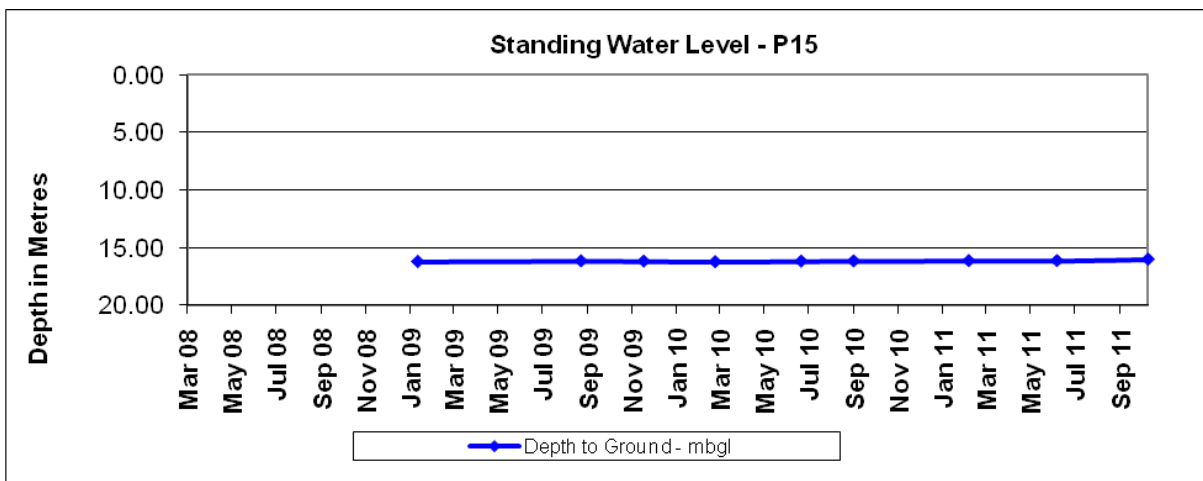
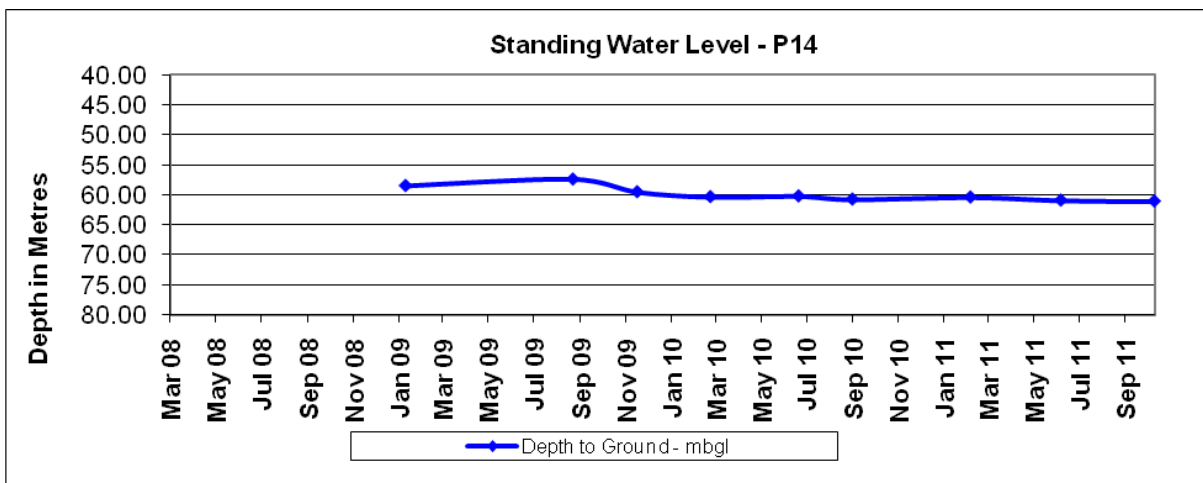
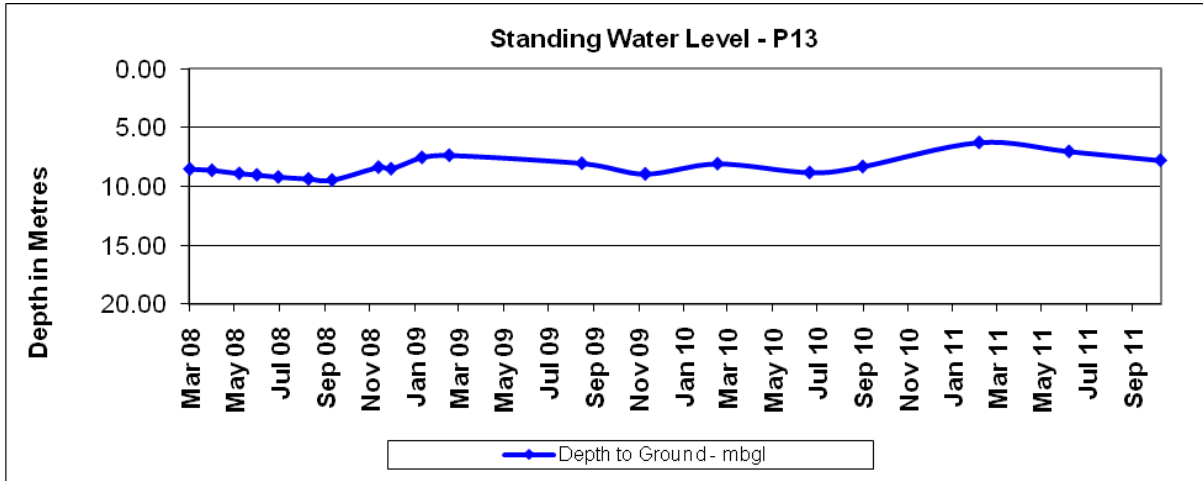
Groundwater monitoring was completed during September and October. Results indicate that groundwater levels are remaining relatively consistent with prior measurements. P11, located at “Mayfield”, was noted as dropping over 3m during the previous sampling period, however the level now appears to be stabilising. In addition, this piezometer is located immediately adjacent to P10 which also appears to be stabilising after recently recharging. The results for this piezometer will continued to be monitored.

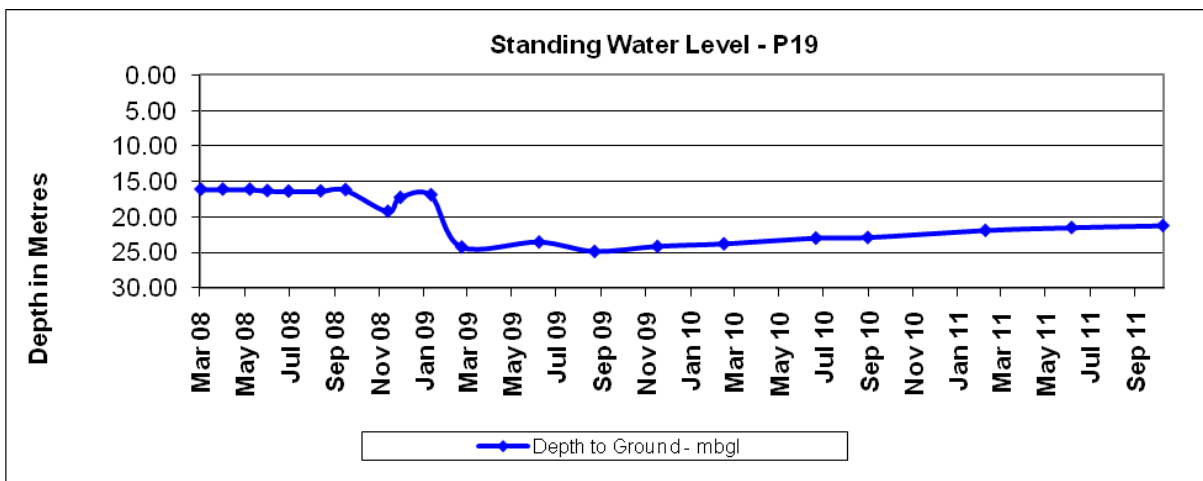
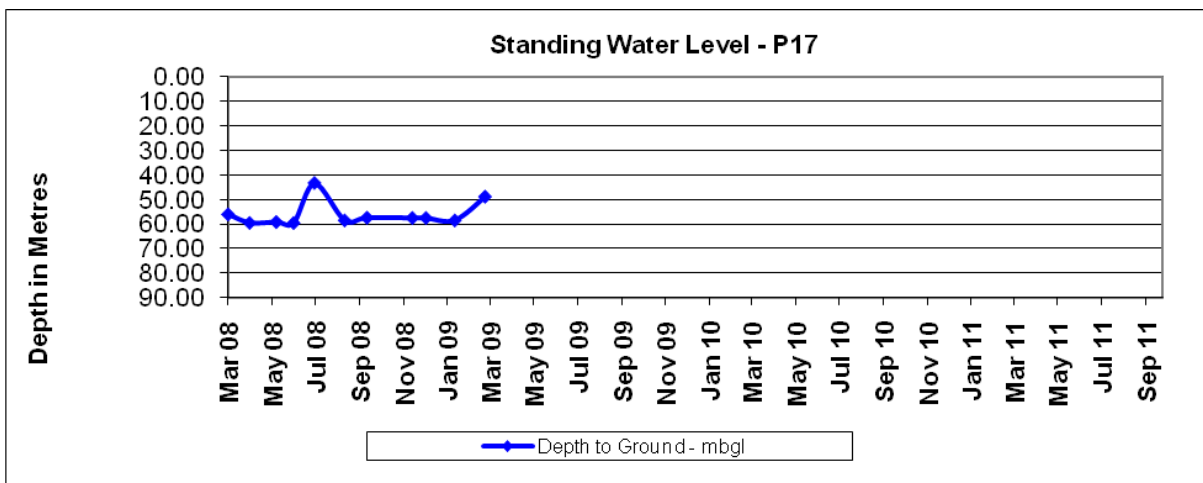
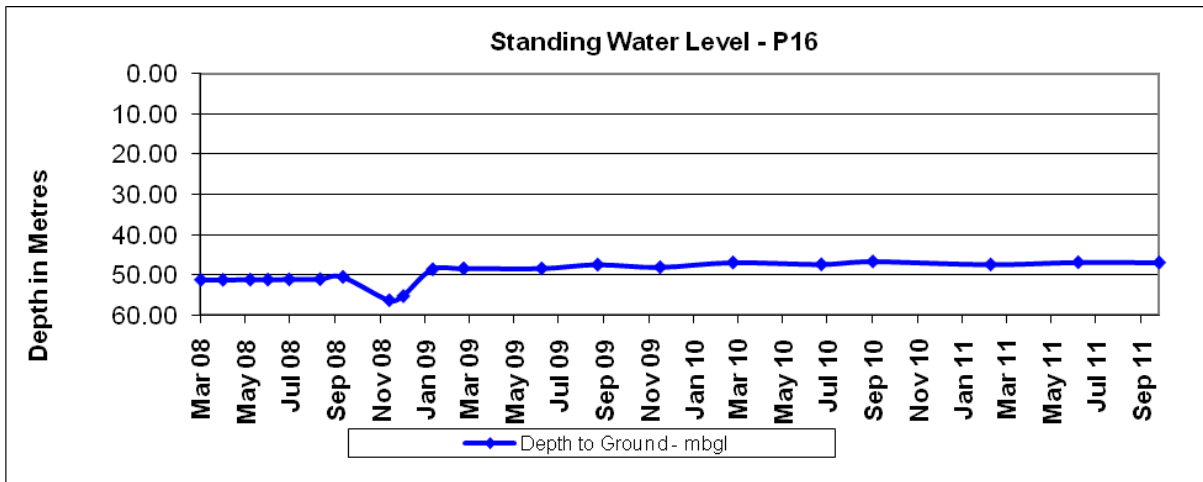












Surface Water Monitoring

No wet weather discharges have occurred during July to October. Flows were monitored in surrounding creek points on the 9th and 29th September 2011.

Complaints

Three formal complaints have been received since July 2011. For the first two complaints (same complainant), meetings were held with the complainant and a number of actions have been committed to which include: tree planting for visual screening; relocation of the noise monitor; safety briefs to be issued in relation to traffic and flashing lights; and upgrading dust suppression equipment at the CHPP and product coal stockpiles (issue raised and actioned onsite separate to the complaint).

For the third complaint, a meeting was held with the resident and options discussed for ongoing monitoring and management. However, since this meeting Narrabri Mine has entered into a contract to purchase this property following a recent auction.

Independent Environmental Audit

The Action Plan relevant to the Independent Environmental Audit has been approved by the Department of Planning and Infrastructure and is available on Whitehaven's website. The Action Plan and Audit document will be made available to the CCC for their information.