

Narrabri Coal Project Community Consultative Committee Meeting #3

Environmental Monitoring Report August – October 2008

Management Plan Development

Since site commencement, Narrabri Coal has developed and received Departmental Approval for a range of management plans. Since the previous meeting, approval has been obtained from the Department of Planning to the implementation of an Energy Savings Action Plan. The plan was developed by an energy consultant in conjunction with Narrabri Coal personnel and identifies energy saving measures for the site and reporting requirements.

Narrabri Coal is currently awaiting a project proposal from URS for the development of a Landscape Management Plan for the site as required under the project approval. It is expected that a draft of this plan will be completed by February 2009.

Noise Monitoring

Since the previous meeting, attended noise monitoring was undertaken on the 12th August to specifically address noise related complaints from the “Kurrajong” residence. Monitoring was undertaken over a 2 hour period during the morning to assess the strength of inversion over that period and its impact on noise propagation. Again, monitoring was confined to the Kurrajong/Claremont boundary as access to the Kurrajong property was denied. The results of the August monitoring are in the table below.

Noise monitoring results 12th August 2008

Location	Time	dB(A), Leq	Wind Speed / Direction	Noise Source
Kurrajong/Claremont	7:39am	47.1	Calm	NCM(47)
Kurrajong/Claremont	8:03am	44.1	Calm	Birds(<30), NCM(42)
Kurrajong/Claremont	8:18am	40.7	Calm	NCM(40.7)
Kurrajong/Claremont	8:31am	38.6	0.1m/s, NE	Birds(<30), NCM(38.4)
Kurrajong/Claremont	8:53am	35.3	0.5m/s, NE	Birds(34), NCM(27.6)

The above monitoring results demonstrate the impact of temperature inversion on sound propagation. The strength of inversion over the monitoring period was measured at up to 12°C/100m. The maximum strength of inversion for noise monitoring purposes is 3°C/100m thereby indicating that the inversion strength during monitoring was above the perceived “normal” atmospheric conditions and thereby the results are not applicable against compliance criteria. As can be seen, noise levels diminished significantly over the monitoring program, with noise levels well within compliance limits by the measurement at 8:53am. It should also be noted that the measured noise levels were as obtained at the Kurrajong/Claremont boundary. Application of the initial noise model for the project identifies that noise level at the Kurrajong residence would be some 8dB lower as compared to those levels at the boundary.

The above results confirmed that temperature inversion during the winter period have been of greater strength and impact than that predicted in the initial monitoring. This advice has been referred to the Dept of Planning and Department of Environment and Climate Change who have requested that modelling for stage 2 of the project incorporate the significant inversion strength to assess future noise impacts.

The quarterly round of attended noise monitoring as required under the noise monitoring program was undertaken on the 30th September 2008, with results presented below:

Noise Monitoring Results 30th September 2008

Location	Time	dB(A), Leq	Wind Speed/ Direction	Noise Source
Bow Hills	8:39am	35.7	1.5m/s, SSE	Traffic(35), NCM(26)
Westhaven	9:36am	38.5	1.0m/s, SSE	Birds & Cows(38), NCM inaudible
Naroo	8:20am	47.9	2-3m/s, SSE	Birds(47), NCM(<25)
Greylands	9:11am	45	1.0m/s, SSE	Traffic(40), Birds(43), NCM(22)
Kurrajong*	7:58am	36.2	3-4m/s, SSE	Farm animals(35), NCM(20)

*Kurrajong measurement taken from Claremont/Kurrajong boundary

The monitoring results confirm compliance at all receivers during this monitoring event. It is evident that the warmer weather has removed the incidence of inversion and associated impacts. The completion of the majority of surface construction and de-mobilisation of a range of plant and equipment has also reduced noise impact.

Unattended noise monitoring was also undertaken through July and October as required under the consent. Noise logs have been provided to Narrabri

Coal from the consultant as part of the background noise collation. This data does not distinguish between mine and other noise sources and as such the data is not presented in this report. It is anticipated that following the first 12 months of mining from the project site, the requirement for ongoing unattended noise monitoring will be removed.

Air Quality Monitoring

Deposited dust levels for the site to date are as presented in the tables below:

Narrabri Project 2007 Deposited Dust Annual Summary

Month	ND1 Turrabaa	ND2 Claremont	ND3 Bow Hills	ND4 Matoppo	ND5 Claremont	ND6 Willarah	ND7 Claremont	ND8 Claremont	Annual Average Limit
January 2007	0.8	1.1	0.8	2.1	1.2	1.2	2.3	1.3	4.0
February 2007	1.5	5.0	1.3	1.9	1.8	0.7	1.5	1.0	4.0
March 2007	2.3	0.9	0.8	1.0	0.5	0.4	2.5	0.5	4.0
April 2007	2.0	1.1	1.0	0.9	1.3	0.9	2.2	1.3	4.0
May 2007	1.0	1.0	0.5	0.5	0.5	0.6	0.5	0.4	4.0
June 2007	0.6	0.2	0.2	0.3	0.3	0.4	0.2	0.2	4.0
July 2007	0.8	0.4	0.5	0.9	0.7	0.5	0.4	0.4	4.0
August 2007	0.6	0.4	0.3	0.5	4.5	0.3	0.2	0.2	4.0
September 2007	1.4	0.5	0.5	0.6	0.5	0.6	0.6	0.1	4.0
October 2007	2.4	1.1	1.2	0.8	1.1	1.1	1.0	0.6	4.0
November 2007	1.4	0.9	0.6	1.2	1.0	1.4	0.8	0.2	4.0
December 2007	0.7	1.0	0.9	1.4	0.7	1.3	0.6	0.8	4.0
Annual Average	1.3	1.1	0.7	1.0	1.2	0.8	1.1	0.6	4.0

Values used are Total Insoluble Matter (g/m²/month)

Narrabri Project 2008 Deposited Dust Annual Summary

Month	ND1 Turrabaa	ND2 Claremont	ND3 Bow Hills	ND4 Matoppo	ND5 Claremont	ND6 Willarah	ND7 Claremont	ND8 Claremont	Annual Average Limit
January 2008	0.6	0.5	0.4	1.4	0.2	1.6	0.6	0.4	4.0
February 2008	0.9	0.8	0.5	1.0	2.3	6.2	1.3	0.6	4.0
March 2008	1.6	3.7	1.5	1.1	1.3	1.7	1.2	1.1	4.0
April 2008	2.5	1.1	0.9	1.2	1.7	1.0	1.0	0.6	4.0
May 2008	3.5	2.6	2.2	2.1	2.3	2.0	0.6	1.5	4.0
June 2008	4.2	1.7	3.5	0.9	1.7	0.4	1.3	0.6	4.0
July 2008	3.1	0.6	4.4	0.5	1.9	0.4	0.3	0.3	4.0
August 2008	1.2	0.5	3.6	1.6	3.3	0.4	0.5	0.5	4.0
September 2008									4.0
October 2008									4.0
November 2008									4.0
December 2008									4.0
Annual Average	2.2	1.4	2.1	1.2	1.8	1.7	0.8	0.7	4.0

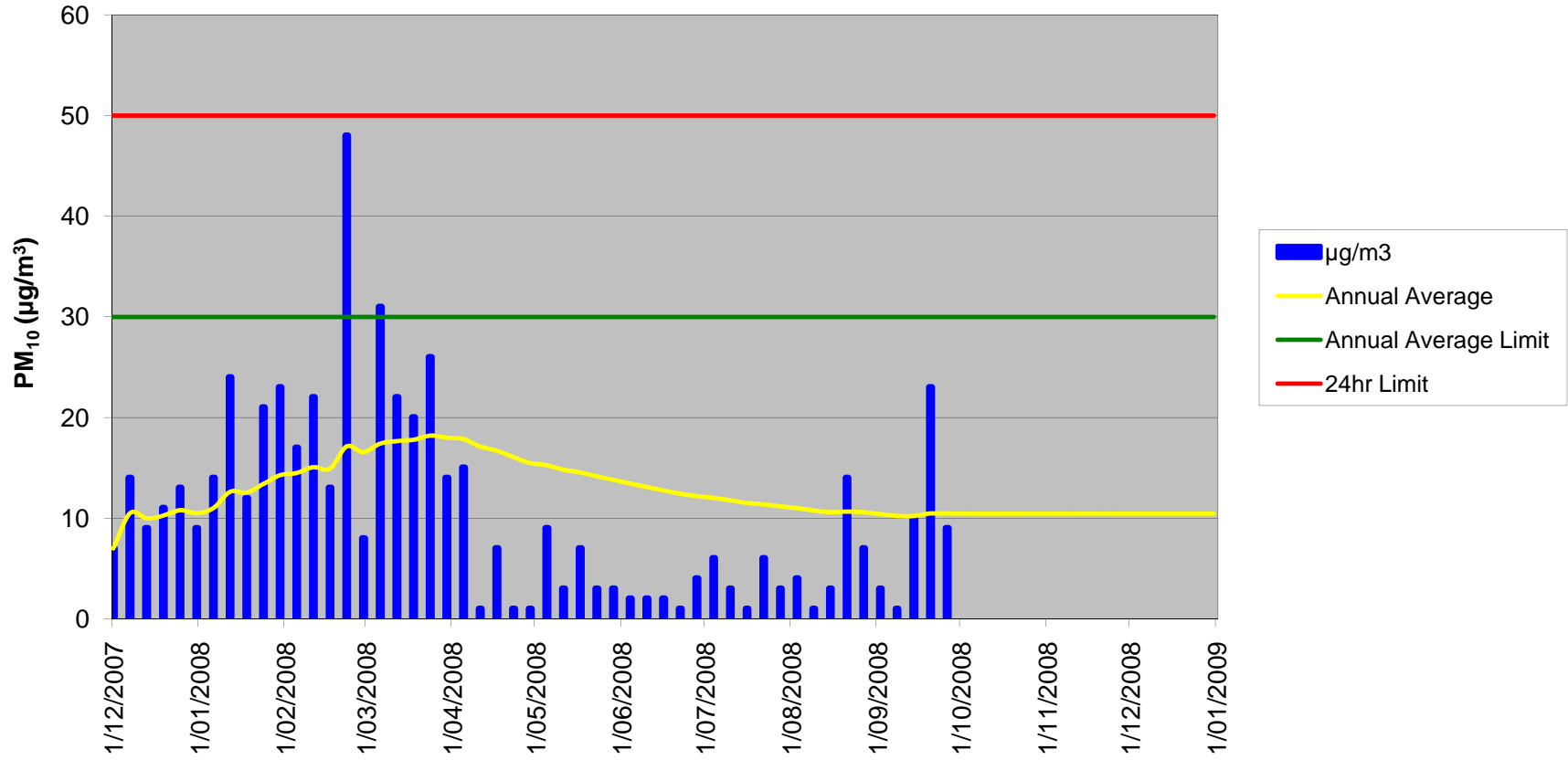
Values used are Total Insoluble Matter (g/m²/month)

The above results indicate that dust monitors surrounding the site remain within compliance levels and well below the annual average limit of 4g/m²/month. It is expected dust levels will dissipate further when results for the September and October period are released to coincide with a reduction in surface construction activity.

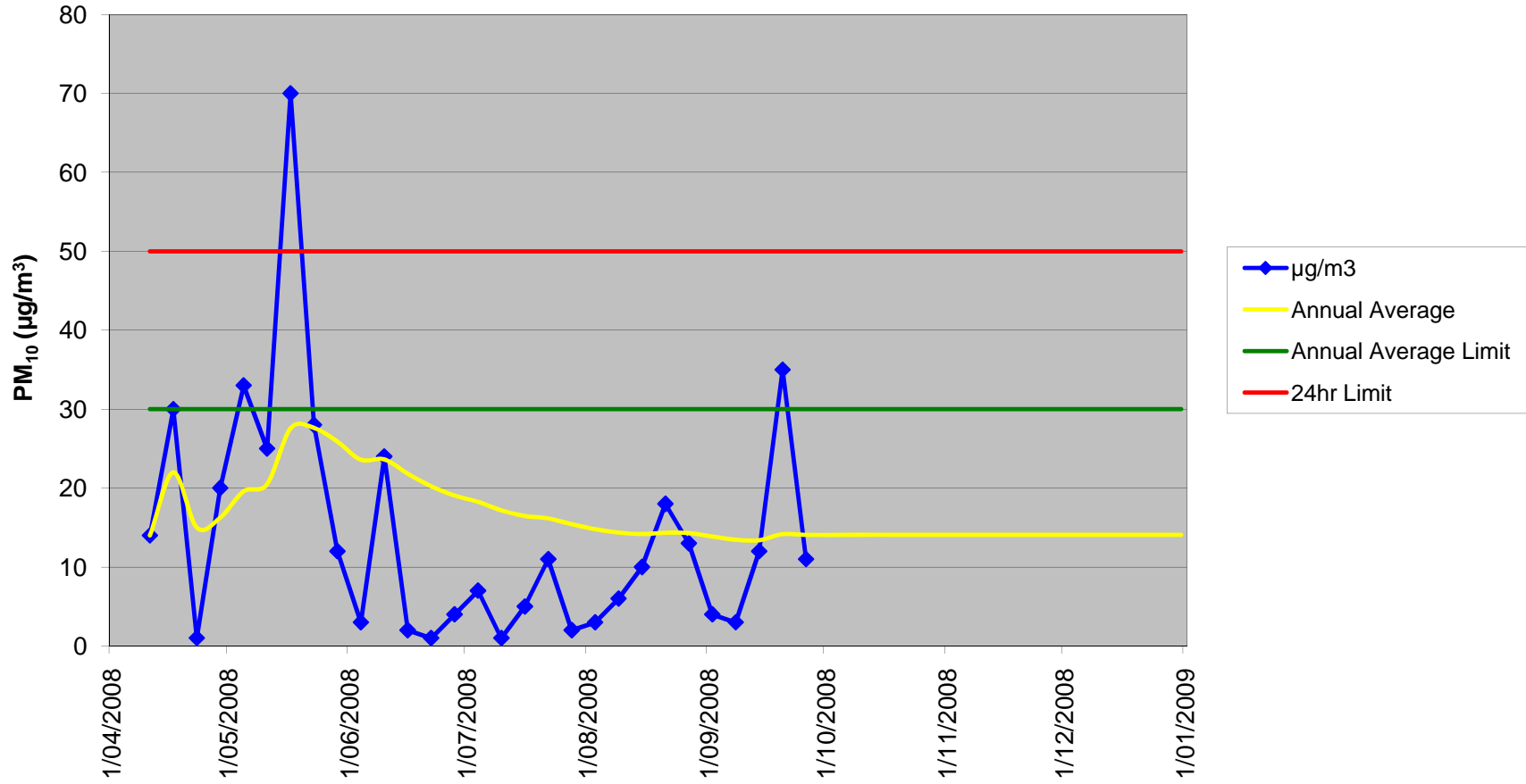
PM10 measurements taken to date for the Claremont High Velocity Air Sampler is returning a running annual average of 10.45ug/m³ which is well below the annual average limit of 30ug/m³. The highest reading from this sampler remains at 48ug/m³ as measured on 23rd February 2008.

PM10 measurements taken to date for the Turrabaa High Velocity Air Sampler is returning a running annual average of 14.40ug/m³ which is well below the annual average limit of 30ug/m³. The highest reading from this sampler remains at 70ug/m³ as measured on 17th May 2008.

Claremont PM₁₀ HVAS Monitoring Results 2008



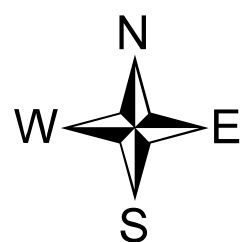
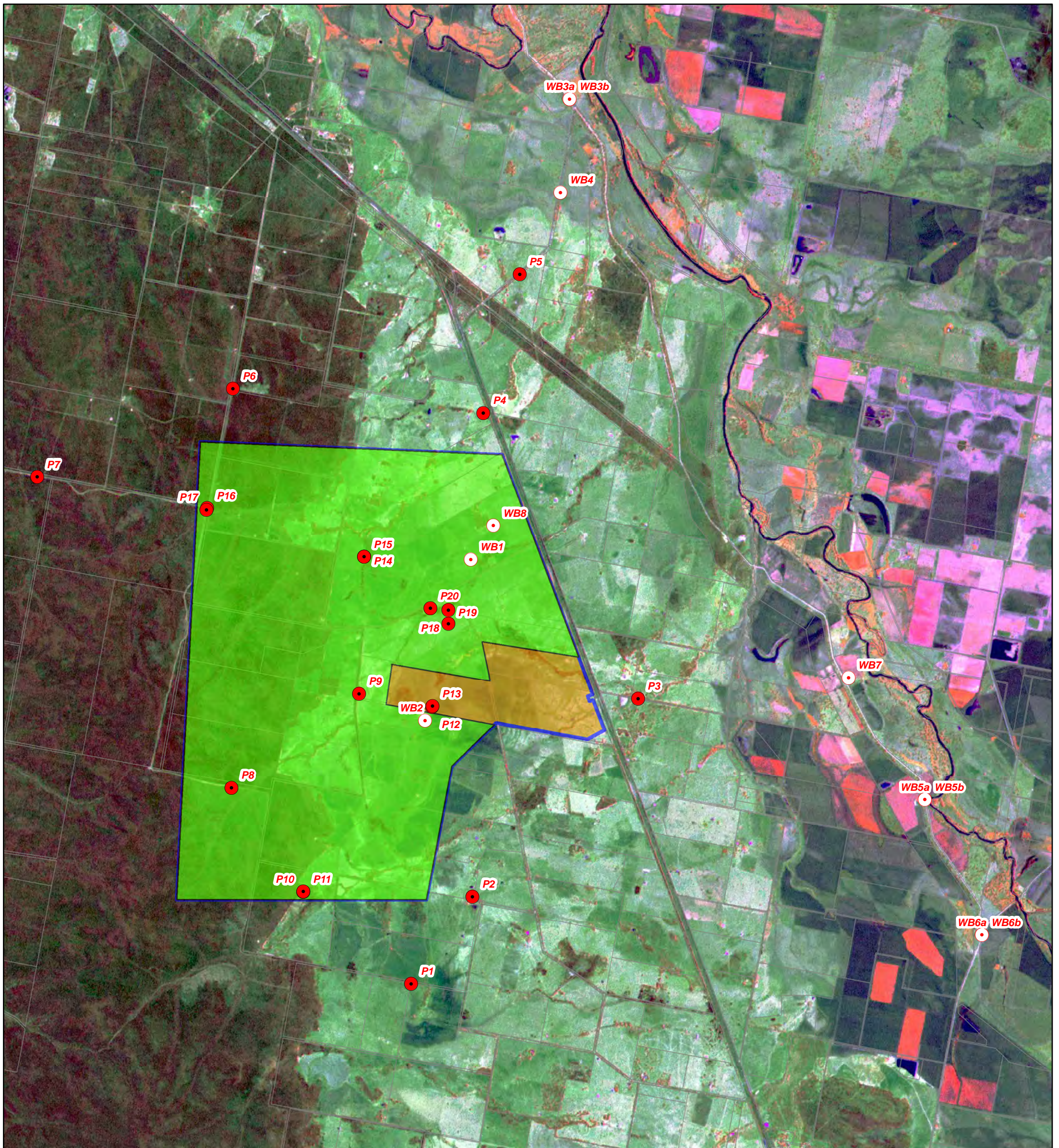
Turrabaa PM₁₀ HVAS Monitoring Results 2008



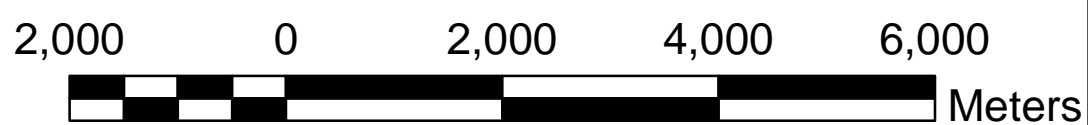
Groundwater Monitoring

EA Systems was contracted to provide a full water quality analysis from a range of monitoring piezometers and pumping bores surrounding the project site. The extent of monitoring locations is shown on the following plan. The purpose of this monitoring is to provide a baseline on water quality conditions to enable direct comparison with water quality monitoring upon commencement of mining. The range of parameters assessed is extensive and as such the full monitoring results are not included in this report. The results from Monitoring Piezometer 1 are provided to demonstrate the type of monitoring. Full monitoring results are available for review by CCC members on request. The full suite of analysis will continue to be undertaken on a 6 monthly basis.

Narrabri Coal Mine Groundwater Monitoring Network



1:700000



Legend

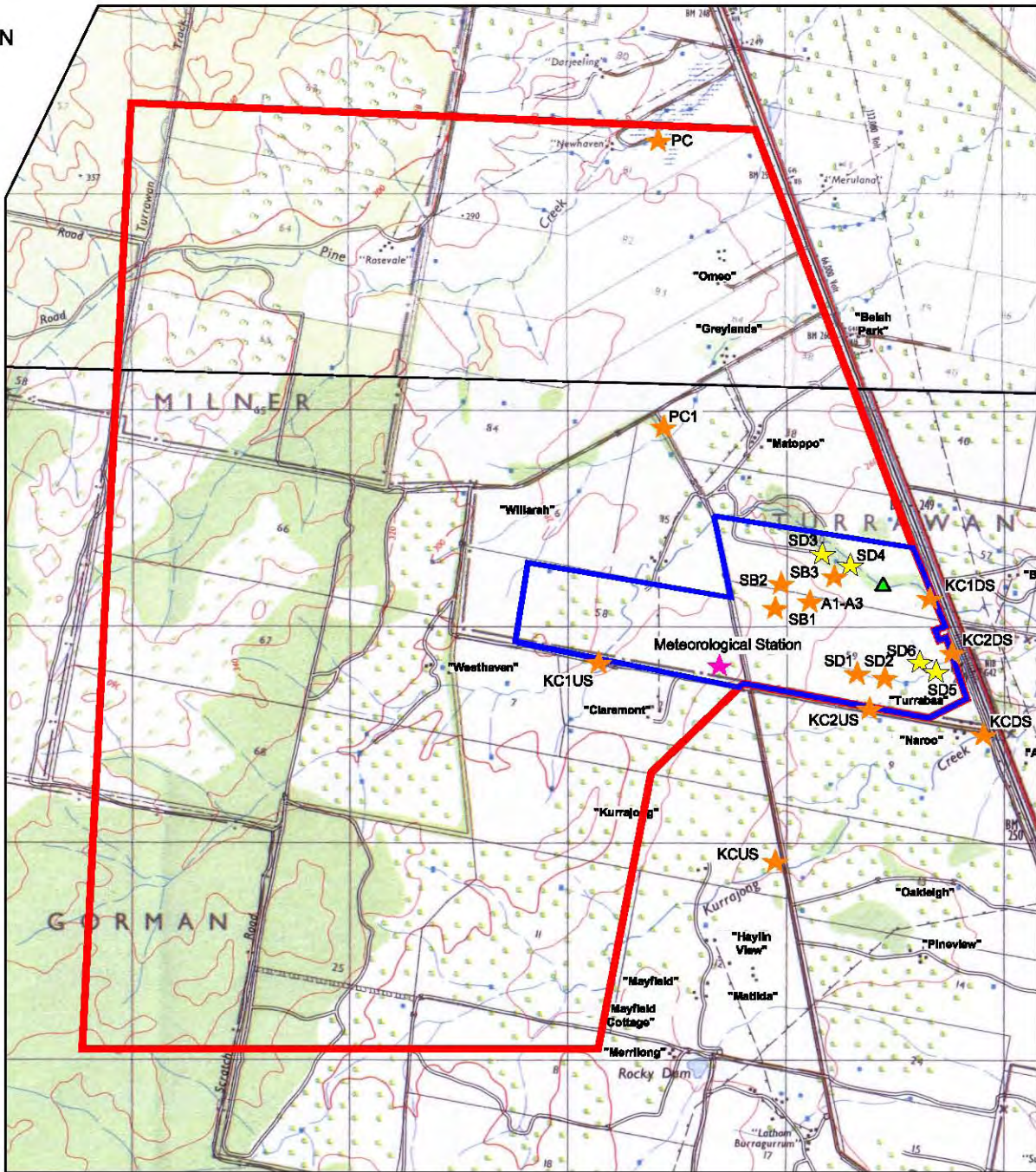
- Piezometer
- Water Bore
- Pit Top Area
- Site Boundary
- Undisturbed Surface Area

Surface Water Monitoring

A number of rainfall events have provided the opportunity for baseline water sampling upstream and downstream of the project site in Kurrajong Creek and Pine Creek. With surface water storage construction within the pit top area now complete, Narrabri Coal will be identifying discharge points for surface water flows from site which will become licensed under the Environment Protection Licence for the site, and will require water sampling during discharge events to assess water quality against compliance criteria. On this basis, the baseline water quality parameters surrounding the site are of significance for future comparison.

Date	Time	Sample Location	pH	Electrical Conductivity ($\mu\text{S}/\text{cm}$)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)
23 September 2008	950	KC2US	6.5	65	35	<2
23 September 2008	1015	KC1US	8	65	320	<2
23 September 2008	1030	KCUS	7.7	315	168	<2
23 September 2008	1040	KCDS	7.2	230	150	<2
23 September 2008	1100	PC1	7.2	90	294	<2
23 September 2008	1113	PC1	7	90	62	<2
23 September 2008	1130	KC1DS	7.1	220	1280	<2
23 September 2008	1135	KC2DS	2.1	165	444	<2

The location of these monitoring points is shown on the attached diagram.



LEGEND

- ▬ Mine Site Boundary
- ▬ Pit Top Area Boundary
- ★ Meteorological Station
- ★ Surface Water Monitoring Location
- ★ Surface Water Monitoring Location & Licensed Discharge Points
- ▲ Licensed Discharge Point
- KC Kurrabung Creek
- KC1 Kurrabung Creek Tributary 1
- KC2 Kurrabung Creek Tributary 2
- US Upstream
- DS Downstream
- PC Pine Creek
- PC1 Pine Creek Tributary 1
- SB Sediment Basin
- SD Storage Dam
- A1-A3 Evaporation Ponds

SCALE 1:60 000



Source: WRM (2007) - Figure 11-1

drawn	CDC/AW
approved	PT
date	14/07/08
scale	AS SHOWN
original size	A4



client:	WHITEHAVEN COAL MINING PTY LTD	
project:	NARRABRI COAL PROJECT SURFACE WATER MANAGEMENT PLAN NARRABRI, NSW	
title:	SURFACE WATER MONITORING LOCATIONS	
project no:	GEOTLCOV23394AA	figure no: FIGURE 5