Werris Creek Coal Community Consultative Committee

MINUTES

42nd Meeting of the Committee, 22nd February 2017.

Werris Creek Coal (WCC) Community Consultative Committee (CCC) met on site at Werris Creek Coal Mine from 9:30am for the quarterly meeting followed by a pit tour of the mine site, inspecting operations.

Meeting Opened at 10.00am.

1. Record of Attendance:

Present

Lindsay Bridge	Community Representative
Mike Lomax	Community Representative
James O'Brian	Community Representative
Rod Hicks	WCC Operations Manager
Shannon Reid	WCC Site Clerk and Minute Taker
Lynden Cini	WCC Environmental Officer
Col Stewart	Community Member – Temporary Chairperson given the current Chairperson was absent for the meeting.

Apologies

Cr Virginia Black	LPSC Councillor
Dave Goldman	Community Representative
Noel Taylor	Community Representative
Donna Ausling	LPSC Director Environmental & Economic Development Services
Gae Swain	Independent Chairperson

Note: The Committee waited 30 minutes prior to starting the meeting to give absent members time to attend, upon conformation the Chairperson could not attend the meeting, the Committee undertook a vote to determine if the meeting should proceed and to elect Col Stewart as a temporary Chairperson for the 42nd meeting. Majority agreed to proceed with the scheduled meeting and Col to manage the proceedings as a temporary Chairperson.

Moved: James. Seconded: Lindsay. Motion Carried.

1. Declaration of Pecuniary or Other Interests

None.

2. Minutes of Previous Meeting

Minutes of the previous meeting were reviewed by the committee. Motion moved to accept the meeting minutes as a true and accurate representation of business conducted on that day.

Moved: Lindsay. Seconded: Noel. Motion carried.

3. Matters Arising

a) Actions from Previous Meeting

As Donna was absent from the meeting, previous action to provide further information to the Committee on the volume of water released from Quipolly Dam during the localised flooding in September 2016, carried over.

b) Other Matters Arising

None

4. New Matters for Discussion under General Business

James – Correspondence from Bill Ryan to WHC, Bill requesting advice from WHC if a response will be forthcoming.

5. Environmental Monitoring Report

LC provided commentary on each aspect of the report.

Groundwater section of the document prompted discussion from various parties:

ML – General discussion regarding the Quipolly Alluvium. Specifically interested in groundwater monitoring result for MW29.
LC - Speaking specifically to MW29, it appears this bores rapped decline in November, then 53% recharge during December is a direct result of pumping activity during November from this domestic bore. This occurs occasionally and follow up monitoring confirms actual levels after recharge.
ML – What is the water level in the mine like currently?
LC – It is high in pit and low out of pit. Water from some out of pit storages has been pumped back to pit when the mining sequence is high within the pit.
JO – Do you test for salt levels?
LC – Yes
General discussion around salt levels being generally quite low at WCC and can salt levels increase through water movement around site.
ML – Can water be dumped outside of the aquatard to fill another aquifer if the quality is good?
RH – No we cannot do that currently.

Motion to accept the report. Moved: James. Seconded: Lindsay. Motion Carried.

6. General Business

a. New matters for Discussion

JO – Was there a blast the 3/2/2017? There was a big black cloud that went up. A community member from Werris Creek had contacted James in regards to this blast.
LC – Without the data in front of me I cannot say, however it is possible that we may have blasted on that day. I can say that from the blasts we have had there have been none out of compliance with blasting limits and none that are notably different from a typical blast at site.
JO – Can you review this blast and report back to the committee?
LC – absolutely.

Action: LC to review blast on the 3/2/2017 and discuss at the next meeting.

JO – Letter from Bill Ryan to WHC regarding their bore and its correlation to MW6 bore, among other items. Bill is waiting for a response and wanted it raised at this meeting, to confirm if WHC will respond.
LC – We will respond in due course.

Further general discussion around monitoring bores and the groundwater monitoring network.
Col calls the discussion to a close.

LB – Discussion on a dust cloud that was over the mine Tuesday 22nd, about 8.20am.
LC – No complaints were received at the mine relating to dust and I am not aware of any offsite impacts at this point.
LB – raising it as a general point, I noticed it.

Meeting Closed 11.14am.

Next Meeting scheduled for Wednesday 31st March 2017.

Site tour following the meeting was undertaken, focussing on water management and mining processes.

Copy to:

All Committee members

The minutes will also be posted on the Whitehaven Coal Website
http://www.whitehavencoal.com.au/environment/werris_creek_mine_environmental_management.cfm

WERRIS CREEK COAL PTY LTD

QUARTERLY ENVIRONMENTAL MONITORING REPORT

November, December 2016 and January 2017

This Environmental Monitoring Report covers the period 1st November to 31st January 2017 for the Werris Creek Coal Mine Community Consultative Committee.

The report includes environmental monitoring results from the on-site Weather Station, Air Quality, Noise, Blasting, Surface Water, Groundwater and Discharge Water Quality together with any community complaints received and general details on site environmental matters.

Note: Elevated monitoring results above the relevant monitoring criteria are highlighted in **yellow**.

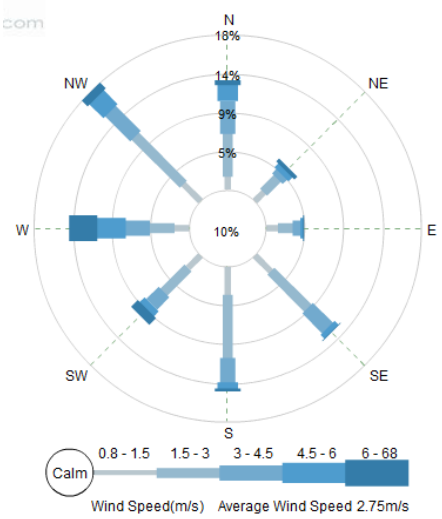
CONTENTS

1.0 METEOROLOGY

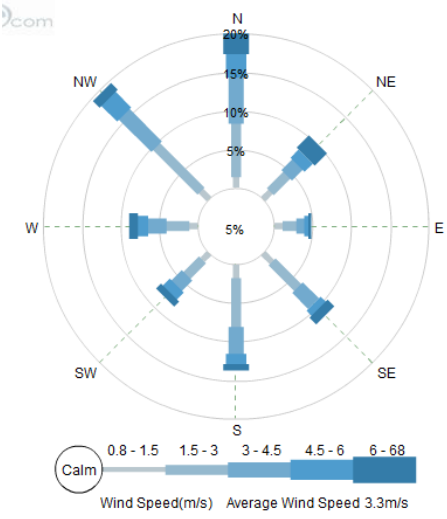
1.1 WEATHER STATION

Werris Creek Coal (WCC) collects meteorological data from the onsite weather station located on the top level of the overburden emplacement. The following table summarises rainfall data for the last three months. Monthly totals during the quarter were similar to the historical average in December and January however well below in November. Directional wind data, presented in the wind-rose figures below, indicate the prevailing wind direction was predominantly from the north to northwest.

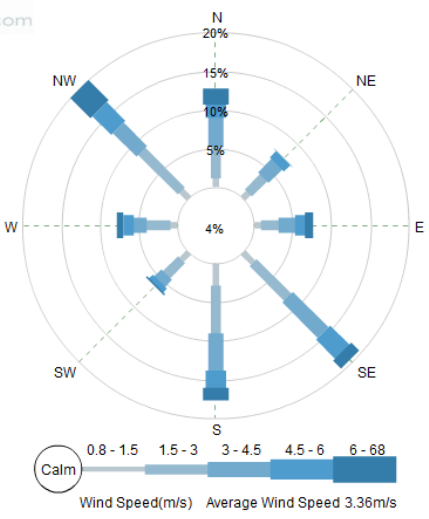
Month	Rainfall *(mm)*			
	Onsite	***Historical Average***	***Apr- Dec 2016 Total***	***2017 Total***
November 2016	27.2	86.6	607.8	NA
December 2016	99.6	98.0	707.4	NA
January 2017	65.0	66.8	NA	65.0



November 2016



December 2016



January 2017

2.0 AIR QUALITY

2.1 HVAS (PM_{10}) and TEOM (PM_{10} & $PM_{2.5}$)

WCC operates five High Volume Air Samplers (HVAS) measuring particulate matter less than 10 micron (PM_{10}) and total suspended particulate (TSP) matter at four sites. HVAS sampling is scheduled every 6 days for a 24-hour run period in accordance with Environment Protection Authority (EPA) guidelines. Results are reported in micro grams per cubic metre ($\mu g/m^3$) of air sampled. In addition, WCC operates a Tapered Element Oscillating Microbalance (TEOM) monitor in Werris Creek measuring real time PM_{10} and $PM_{2.5}$ (particulate matter less than 2.5 micron) dust levels. Dust monitoring locations are identified in **Figure 1**.

2.1.1 Monitoring Data Results

The average results for the last three months are provided in the table below.

Monitor Location	Daily Maximum *($\mu g/m^3$)*	November 2016 *($\mu g/m^3$)*	December 2016 *($\mu g/m^3$)*	January 2017 *($\mu g/m^3$)*	Apr- Dec 2016 Average *(g/m^2/month)*	2017 Average *(g/m^2/month)*	Criteria *($\mu g/m^3$)*	
							Annual	Daily
$PM_{2.5}$ – TEOM92 "Werris Creek"	12.1	7.0	8.6	6.4	4.7	6.4	8	25
PM_{10} – TEOM92 "Werris Creek"	23.8	13.9	14.9	10.8	9.3	10.8	30	50
PM_{10} – HVP20 "Tonsley Park"	25.9	19.9	19.2	17.9	13.0	17.9	30	50
PM_{10} - HVP1 "Escott"	30.2	12.0	12.1	16.9	7.5	16.9	30	50
PM_{10} – HVP11 "Glenara"	41.1	22.8	20.5	25.1	16.4	25.1	30	50
PM_{10} – HVP98 "Kyooma"	18.1	12.7	11.6	12.2	7.9	12.2	30	50
TSP – HVT98 "Kyooma"	50.6	40.5	22.6	25.2	16.8	25.2	90	-

Yellow Bold – Elevated dust level.

2.1.2 Discussion - Compliance / Non Compliance

All TSP, PM_{10} and $PM_{2.5}$ dust results were within criteria during the period.

2.2 WERRIS CREEK MINE DEPOSITED DUST

Deposited dust monitoring measures particulate matter greater than 30 microns in size that readily settles out of the air related to visual impact. Dust deposition is monitored at 20 locations around WCC. Sampling is scheduled monthly in accordance with EPA guidelines and results are reported as grams per square metre per month (g/m^2/month). Dust monitoring locations are identified in **Figure 1**.

2.2.1 Monitoring Data Results

The results for the last three months are provided in the table below.

Monitor Location	November 2016 *(g/m^2/month)*	December 2016 *(g/m^2/month)*	January 2017 *(g/m^2/month)*	Apr- Dec 2016 Average *(g/m^2/month)*	2017 Average *(g/m^2/month)*	Annual Criteria *(g/m^2/month)*
DG1 "Escott"	1.2	0.7	0.7	0.7	0.7	4.0
DG2 "Cintra"	3.3	3.8	4.2*	2.5	NA	4.0
DG3 "Eurunderee"	1.3	1.4	2.2	1.4	2.2	4.0
DG5 "Railway View"	2.2	2.7	2.5	1.8	2.5	4.0
DG9 "Marengo"	0.9	1.0	0.9	1.4	0.9	4.0
DG11 "Glenara"	1.2	1.6	1.6	1.1	1.6	4.0
DG14 "Greenslopes"	1.9	2.1	1.9	1.1	1.9	4.0
DG15 "Plain View"	1.4	0.8	1.0	0.8	1.0	4.0
DG17 "Woodlands"	1.0	0.9	0.7	0.9	0.7	4.0
DG20 "Tonsley Park"	1.1	1.0	1.3	1.6	1.3	4.0
DG22 "Mountain View"	2.0	1.1	1.2	1.2	1.2	4.0
DG24 "Hazeldene"	1.2	0.7	1.8	0.7	1.8	4.0
DG34 8 Kurrara St	0.8	0.8	19.5#	1.4	19.5	4.0
DG62 Werris Creek South	1.9	0.5	0.6	1.7	0.6	4.0
DG92 Werris Creek Centre	0.7	0.6	0.5	0.6	0.5	4.0
DG96 "Talavera"	NS	NS	NS	NA	NA	4.0
DG98 "Kyooma"	0.8	0.8	1.1	0.5	1.1	4.0
DG101 "Westfall"	2.2	2.5	2.6	1.7	2.6	4.0
DG103 West Street	0.8	1.2	0.8	1.3	0.8	4.0

* - sample contaminated with excessive organic matter (>50%) from non-mining source (i.e. bird droppings and insects); # - indicates sample is contaminated from a Non-Werris Creek Coal dust source; **Yellow Bold** – Elevated dust level; NS – Not Sampled.

2.2.2 Discussion - Compliance / Non Compliance

All monthly dust deposition gauge results were below the annual criteria of 4.0g/m^2/month throughout the period.

2.3 QUIRINDI TRAIN DUST DEPOSITION

2.3.1 Monitoring Data Results

The results for the last three months are provided in the table below.

Monitor Location	November 2016		December 2016		January 2017		Apr- Dec 2016 Average *(g/m^2/month)*	2017 Average *(g/m^2/month)*
	g/m^2/month	*% Coal*	*g/m^2/month*	*% Coal*	*g/m^2/month*	*% Coal*		
DDW30	1.6	<1%	1.8	5%	1.2	<5%	1.2	1.2
DDW20	1.2	10%	2.6	5%	1.0	<5%	1.1	1.0
DDW13	NS	NS	2.0	<1%	1.2	<5%	0.9	1.2
Train Line								
DDE13	1.3	10%	2.0	5%	1.1	<5%	1.1	1.1
DDE20	0.6	35%	1.0	5%	1.0	<5%	0.8	1.0
DDE30	1.5	15%	2.7	<1%	3.8*	<5%	1.9	NA

* - sample contaminated with excessive organic matter (>50%) from non-mining source (i.e. bird droppings and insects); NS – Not Sampled, bottle and funnel smashed. NA - DDE30 does not currently have a 2017 average as the gauge was deemed contaminated in January 2017.

2.3.2 Discussion - Compliance / Non Compliance

Overall, the dust fallout levels adjacent to the train line are low, well below the impact assessment criteria nominated by the EPA of 4.0 g/m^2/month for all samples and comparable to the levels monitored around Werris Creek Coal Mine. Coal contributions to the dust fraction remain generally low.

2.4 AIR QUALITY COMPLAINTS

There were three dust complaints recorded during the period**.**

3.0 NOISE

3.1 OPERATIONAL NOISE

Monthly attended noise monitoring is undertaken representative of the following 16 properties from 13 monitoring points below. Attended noise monitoring was undertaken twice for either 60 minutes at privately owned properties or 15 minutes at properties with private agreements; representative of the day period and the evening/night period.

3.1.1 Monitoring Data Results

The WCC operations only noise level (not ambient noise) results for the last three months are outlined in the table below. Noise monitoring locations are identified in **Figure 2**.

Monday 21st November 2016

Location		Day dB(A) $L_{eq\ 15min}$	Criteria dB(A) $L_{eq\ 15min}$	Evening/Night dB(A) $L_{eq\ 15min}$	Criteria dB(A) $L_{eq\ 15min}$
A	**"Rosehill"** R5	Inaudible	35	Inaudible#	35
B	**West Quipolly** (R7*, R8*,R9* & R22*)	Inaudible	40	Inaudible#	40
C	**Central Quipolly**(R10*,R11*)	Inaudible#	40	Inaudible#	40
D	**"Hazeldene"** R24	Inaudible	37	25	37
E	**"Railway Cottage"** R12	Inaudible	38	Inaudible	38
F	**"Talavera"** R96	Inaudible	38	Inaudible	37
H	**"Kyooma"** R98	Inaudible#	40	Inaudible	40
I	**Kurrara St, WC** R57	Inaudible	35	Inaudible#	35
J	**Coronation Ave, WC**	Inaudible	35	Inaudible#	35
K	**Alco Park** (R21*)	Inaudible	40	Inaudible#	40
L	**West St, WC** (R103)	Inaudible	35	Inaudible#	35

WC – Werris Creek; * - Private agreement in place with resident; **Yellow Bold** – Elevated noise; # Adverse weather with wind >3m/s, temperature inversions >+12°C/100m or >2m/s and >0°C/100m; 1 – R22 criteria is 36 dB(A) $L_{eq\ 15min}$ while R9 is 37 dB(A) $L_{eq\ 15min}$

Monday 19th December 2016

Location		Day dB(A) $L_{eq\ 15min}$	Criteria dB(A) $L_{eq\ 15min}$	Evening/Night dB(A) $L_{eq\ 15min}$	Criteria dB(A) $L_{eq\ 15min}$
A	**"Rosehill"** R5	Inaudible#	35	Inaudible	35
B	**West Quipolly** (R7*, R8*,R9* & R22*)	Inaudible	40	Inaudible	40
C	**Central Quipolly**(R10*,R11*)	Inaudible	40	Inaudible	40
D	**"Hazeldene"** R24	Inaudible	37	Inaudible#	37
E	**"Railway Cottage"** R12	Inaudible	38	Inaudible#	38
F	**"Talavera"** R96	Inaudible#	38	Inaudible	37
H	**"Kyooma"** R98	Inaudible	40	Inaudible	40
I	**Kurrara St, WC** R57	Inaudible	35	Inaudible#	35
J	**Coronation Ave, WC**	Inaudible	35	Inaudible#	35
K	**Alco Park** (R21*)	Inaudible	40	Inaudible#	40
L	**West St, WC** (R103)	Inaudible#	35	Inaudible#	35

WC – Werris Creek; * - Private agreement in place with resident; **Yellow Bold** – Elevated noise; # Adverse weather with wind >3m/s, temperature inversions >+12°C/100m or >2m/s and >0°C/100m; 1 – R22 criteria is 36 dB(A) $L_{eq\ 15min}$ while R9 is 37 dB(A) $L_{eq\ 15min}$

Monday 30th January 2017

Location		Day dB(A) L_{eq} 15min	Criteria dB(A) L_{eq} 15min	Evening/Night dB(A) L_{eq} 15min	Criteria dB(A) L_{eq} 15min
A	**"Rosehill"** R5	Inaudible#	35	Inaudible#	35
B	**West Quipolly** (R7*, R8*,R9* & R22*)	Inaudible	40	Inaudible#	40
C	**Central Quipolly**(R10*,R11*)	20#	40	21#	40
D	**"Hazeldene"** R24	Inaudible#	37	27#	37
E	**"Railway Cottage"** R12	Inaudible	38	26#	38
F	**"Talavera"** R96	Inaudible	38	36#	37
H	**"Kyooma"** R98	23#	40	33#	40
I	**Kurrara St, WC** R57	Inaudible#	35	Inaudible#	35
J	**Coronation Ave, WC**	Inaudible#	35	Inaudible#	35
K	**Alco Park** (R21*)	Inaudible	40	23#	40
L	**West St, WC** (R103)	Inaudible	35	Inaudible#	35

WC – Werris Creek; * - Private agreement in place with resident; **Yellow Bold** – Elevated noise; # Adverse weather with wind >3m/s, temperature inversions >+12°C/100m or >2m/s and >0°C/100m; 1 – R22 criteria is 36 dB(A) $L_{eq\ 15min}$ while R9 is 37 dB(A) $L_{eq\ 15min}$

3.1.2 Discussion - Compliance / Non Compliance

Noise from Werris Creek Coal Mine was inaudible at a high percentage of the monitoring sites during the quarter. Throughout the period, Werris Creek Coal Mine adjusted mining operations and shut down equipment at various times to reduce noise generation potential in response to noise levels measured at the real time noise monitors.

3.2 Noise complaints

There was one noise complaint recorded during the period.

4.0 BLASTING

During the reporting period there was a total of thirty-four blasts fired by WCC with monitoring of each blast undertaken at "Glenara", "Kyooma", "Werris Creek South" and "Werris Creek Mid". Compliance limits for blasting overpressure is 115dBL (and up to 120dBL for only 5% of blasts) and vibration is 5mm/s (and up to 10mm/s for only 5% of blasts). Blast monitoring locations are identified in **Figure 3**.

4.1 BLAST MONITORING

4.1.1 Monitoring Data Results

The summary tables of blasting results over the last three months are provided below.

November 2017		"Glenara" R11		"Kyooma" R98		Werris Creek South R62		Werris Creek Mid R92	
		mm/s	*dB(L)*	*mm/s*	*dB(L)*	*mm/s*	*dB(L)*	*mm/s*	*dB(L)*
Monthly Average		0.14	101.0	0.59	103.1	0.25	100.5	0.22	98.5
Monthly Maximum		0.31	118.2	1.14	109.3	0.45	106.0	0.46	104.5
Annual Average		0.17	101.4	0.69	102.2	0.35	99.0	0.23	98.4
Criteria		**5**	**115**	**5**	**115**	**5**	**115**	**5**	**115**
% >115dB(L) or 5mm/s	**Rolling Ave**	0.0%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Reporting Year	0.0%	1.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

December 2016		"Glenara" R11		"Kyooma" R98		Werris Creek South R62		Werris Creek Mid R92	
		mm/s	*dB(L)*	*mm/s*	*dB(L)*	*mm/s*	*dB(L)*	*mm/s*	*dB(L)*
Monthly Average		0.17	100.6	0.68	101.6	0.33	99.9	0.19	98.6
Monthly Maximum		0.34	110.3	1.39	109.6	0.67	108.4	0.37	106.4
Annual Average		0.17	101.3	0.69	102.1	0.35	99.1	0.22	98.4
Criteria		**5**	**115**	**5**	**115**	**5**	**115**	**5**	**115**
% >115dB(L) or 5mm/s	**Rolling Ave**	0.0%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Reporting Year	0.0%	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

January 2017	"Glenara" R11		"Kyooma" R98		Werris Creek South R62		Werris Creek Mid R92	
	mm/s	*dB(L)*	*mm/s*	*dB(L)*	*mm/s*	*dB(L)*	*mm/s*	*dB(L)*
Monthly Average	0.15	98.3	0.62	100.3	0.41	100.7	0.20	99.8
Monthly Maximum	0.32	103.9	1.05	107.2	1.01	110.0	0.29	113.8

January 2017		"Glenara" R11		"Kyooma" R98		Werris Creek South R62		Werris Creek Mid R92	
		mm/s	*dB(L)*	*mm/s*	*dB(L)*	*mm/s*	*dB(L)*	*mm/s*	*dB(L)*
Annual Average		0.15	98.30	0.62	100.31	0.41	100.68	0.20	99.81
Criteria		**5**	**115**	**5**	**115**	**5**	**115**	**5**	**115**
% >115dB(L) or 5mm/s	**Rolling Ave**	0.0%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Reporting Year	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Yellow – overpressure >115dB(L) or Werris Creek vibration >5.0mm/s.

4.1.2 Discussion - Compliance / Non Compliance

All blasts over the period complied with maximum licence limits (120dB(L) and 10mm/s) one blast was above the 95th percentile limits of 115dB(L) at Glenera "R11" on the 8 November 2016.

4.2 BLAST COMPLAINTS

There were four blast complaints during the period.

5.0 WATER

The groundwater monitoring program monitors groundwater levels bi-monthly and groundwater quality six monthly. Surface water monitoring is undertaken quarterly. There were four dirty water discharge events during the period.

5.1 GROUND WATER

Groundwater monitoring is undertaken to identify if there are any impacts on groundwater quality and water levels as a result of the mining operations. WCC monitors approximately 38 groundwater wells/bores and piezometers in the key aquifers surrounding WCC including Werrie Basalt (next to WCC and further afield) and Quipolly Creek Alluvium. Groundwater level surveys were completed on the 7th to 9th November 2016, 6th to 8th December 2016 and 4th to 6th January 2017. Groundwater monitoring locations are identified in **Figure 4**.

5.1.1 Monitoring Data Results

A summary of groundwater monitoring results has been provided below.

Site		November-16	
		mbgl	%
Werrie Basalt near WCC	**MW1**	Dry	
	MW2	33.84	10%
	MW3	19.27	1%
	MW4B	15.33	2%
	MW5	11.96	2%
	MW6	16.16	0%
	MW27*	55.59	1%
	MW36A	20.26	-1%
	MW36B	20.21	0%
Werrie Basalt	**MW8***	14.38	18%
	MW10	13.64	4%
	MW14	16.7	1%
	MW17B*	12.03	5%
	MW19A*	9.07	-8%
	MW20*	21.52	1%
	MW38A	11.54	-5%
	MW38B*	9.25	-1%
	MW38C*	21.72	1%
	MW38E*	No access	
#1	**MW24A***	14.02	8%
	MW29*	17.82	-34%
Quipolly Alluvium	**MW12***	8.59	3%
	MW13*	5.21	-10%
	MW13B*	3.42	-2%
	MW13D*	4.38	2%
	MW15*	5.05	-3%
	MW16*	5.88	7%
	MW17A*	5.13	10%
	MW18A*	4.92	11%
	MW21A*	8.72	10%
	MW22A*	6.01	8%
	MW22B*	6.10	8%
	MW23A*	3.58	-1%
	MW23B*	3.89	-1%
	MW26B*	7.53	13%
	MW28A*	7.94	16%
	MW32*	3.74	0%
#2	**MW34***	8.89	2%

Site		December-16	
		mbgl	%
Werrie Basalt near WCC	**MW1**	Dry	
	MW2	32.36	5%
	MW3	19.21	0%
	MW4B	14.80	4%
	MW5	11.91	0%
	MW6	16.19	0%
	MW27*	55.04	1%
	MW36A	20.76	-2%
	MW36B	20.73	-3%
Werrie Basalt	**MW8***	13.90	3%
	MW10	13.45	1%
	MW14	16.7	1%
	MW17B*	11.76	2%
	MW19A*	8.56	6%
	MW20*	21.23	1%
	MW38A	12.06	-4%
	MW38B*	9.36	-1%
	MW38C*	21.81	0%
	MW38E*	9.13	
#1	**MW24A***	14.12	-1%
	MW29*	11.63	53%
Quipolly Alluvium	**MW12***	9.21	-7%
	MW13*	5.55	-6%
	MW13B*	3.73	-8%
	MW13D*	4.47	-2%
	MW15*	5.18	-3%
	MW16*	5.95	-1%
	MW17A*	5.07	1%
	MW18A*	4.94	0%
	MW21A*	8.49	3%
	MW22A*	6.06	-1%
	MW22B*	6.22	-2%
	MW23A*	3.72	-4%
	MW23B*	3.99	-3%
	MW26B*	7.34	3%
	MW28A*	8.96	-11%
	MW32*	No access	
#2	**MW34***	9.27	-4%

Site		January-17	
		mbgl	%
Werrie Basalt near WCC	**MW1**	Dry	
	MW2	31.91	1%
	MW3	19.18	0%
	MW4B	14.67	1%
	MW5	11.89	0%
	MW6	16.2	0%
	MW27*	54.79	0%
	MW36A	21.14	-2%
	MW36B	21.12	-2%
Werrie Basalt	**MW8***	14.22	-2%
	MW10	13.35	1%
	MW14	16.88	-1%
	MW17B*	11.70	1%
	MW19A*	9.07	-6%
	MW20*	21.33	0%
	MW38A	12.43	-3%
	MW38B*	9.38	0%
	MW38C*	22.14	-1%
	MW38E*	9.15	0%
#1	**MW24A***	14.32	-1%
	MW29*	11.13	4%
Quipolly Alluvium	**MW12***	9.7	-5%
	MW13*	5.73	-3%
	MW13B*	3.95	-6%
	MW13D*	4.63	-3%
	MW15*	5.26	-2%
	MW16*	6.04	-1%
	MW17A*	5.34	-5%
	MW18A*	5.01	-1%
	MW21A*	8.6	-1%
	MW22A*	6.15	-1%
	MW22B*	6.32	-2%
	MW23A*	3.93	-5%
	MW23B*	4.02	-1%
	MW26B*	7.38	-1%
	MW28A*	9.97	-10%
	MW32*	3.92	-5%
#2	**MW34***	9.74	-5%

mbgl – meters below ground level is the distance in meters from top of bore to groundwater surface; Orange – Change decrease; Green – change increase or no change; * - Indicates bore is used for water extraction unrelated to WCC (i.e. stock and domestic or irrigation). #1 – Werrie Basalt in the Black Soil Gully valley to east of Werris Creek Mine. #2 - Werris Creek Alluvium.

5.1.2 Discussion - Compliance / Non Compliance

Measured groundwater levels in the Werrie Basalt and Quipolly Alluvium aquifer indicate general sustained or increased water levels during November, with levels falling slightly during January.

Monitoring bore MW29 recorded a deficit of -34% from October to November 2016 and a surplus of 53% from November to December 2016. Field notes indicated the windmill was pumping during November and was not running in December.

5.2 SURFACE WATER

Surface water monitoring is undertaken in local creeks offsite as well as from discharge point dirty water dams to monitor for potential water quality issues. Quarterly surface water monitoring was undertaken on the 2nd November 2016. Surface water monitoring locations are identified in **Figure 5**.

5.2.1 Monitoring Data Results

Summary of surface water quality monitoring results has been provided below.

Site	pH	EC	TSS	O&G	Change from Previous Quarter
ONSITE					
SB2	8.5	656	<5	7	pH slightly increased, EC decreased, TSS was unchanged and Oil & Grease increased.
SB9	TLTS	TLTS	TLTS	TLTS	Too low to sample. Mud and puddles at bottom
SB10	Dry	Dry	Dry	Dry	Dry
OFFSITE					
QCU	7.7	365	11	<5	Previous quarter this location was Dry. Field sheet water pools.
QCD	7.7	786	13	<5	pH and EC slightly decreased, TSS was stable and O&G unchanged.
WCU	8.3	817	<5	<5	pH and EC slightly increased, TSS decreased and O&G unchanged.
WCD	8.1	1094	20	<5	pH and EC slightly decreased, TSS decreased from 25 to 20 and O&G was unchanged. Field sheet notes water just flowing.

pH – measure of acidity/alkalinity; EC – Electrical Conductivity measures salinity; TSS – Total Suspended Solids is a measure of suspended sediment in water (i.e. similar to turbidity); O&G – Oil and Grease measures amount of hydrocarbons (oils and fuels) in water

5.2.2 Discussion - Compliance / Non Compliance

Quarterly surface water monitoring was undertaken on 2nd November 2016 with all onsite and offsite sampling undertaken in dry conditions represented by low or dry pools, which reflected on water quality. All water quality results were within long-term averages and the Site Water Management Plan trigger values.

5.3 SURFACE WATER DISCHARGES

There were no discharge events in November, December 2016 and January 2017.

5.3 WATER COMPLAINTS

There were no water release complaints during the period.

6.0 COMPLAINTS SUMMARY

There were eight complaints received during the period, which are summarised below.

#	Date	Issue	Complaint	Investigation	Action Taken
538	8/11/2016	Blast	Complainant advised the blast had vibrated their lounge roo floor and was very loud	WCC blast 117 fired at 1.04pm on the 8th November. Monitoring results were within compliance limits at all locations.	OM returned phone call to discuss the details of the blast and confirmed blast was within compliance limits.
539	19/12/2016	Blast	Complainant advised they felt the blast at their residence.	WCC blast 136 fired at 1.13pm on the 19th December. Monitoring results were within compliance limits at all locations.	EO advised blast was in compliance.
540	19/12/2016	Blast	Complainant advised they felt the blast at their residence.	WCC blast 136 fired at 1.13pm on the 19th December. Monitoring results were within compliance limits at all locations.	EO advised blast was in compliance.
541	29/12/2016	Dust	Complainant advised they had viewed dust lifting off operations on the eastern side of the WCC pit.	EO called OCE and advised complaint had been made. OCE ceased operations on the Eastern side of the pit until the water cart could make its way back to the area. Operations continued with ongoing cycling of water cart usage as normal.	EO advised the complainant of the steps undertaken to manage the dust lift off in the area.
542	12/1/2017	Dust	Complainant left a voice mail message on the EO phone advising they had viewed dust lifting off operations.	Due to service provider complications, the voice mail was not received until after the potential event. Dust levels were reviewed as was video images during the shift. Operations were undertaken with ongoing cycling of water cart usage as normal.	EO advised the complainant of the operational processes in place to manage the dust lift off in the area.
543	25/1/2017	Noise	Complainant advised that they could hear mining machinery through the night.	EO called the Noise Control Officer (NCO) at 9.46pm NCO indicated real-time noise levels were in compliance. EO called OCE 9.48pm, confirmed all operations within pit. Shutdown southern dam pump and ROM dozer as a precautionary measure.	Follow up call to complainant 26/1/2017. Voice mail left to advise measure taken to address.
544	27/1/2017	Blast	Complainant advised they felt the blast at their residence.	WCC blast 011 fired at 1.07pm on the 27th January. Monitoring results were within compliance limits at all locations.	EO advised blast was in compliance.
544	30/1/2017	Dust	Complainant spoke to the EO on the phone about other matters and advised he wished to make an additional complaint about dust.	EO advised that normal dust suppression techniques were in place and review of data and further visual monitoring would be undertaken as required.	None required.

7.0 GENERAL

Please feel free to ask any questions in relation to the information contained within this document during Item 7 of the meeting agenda.

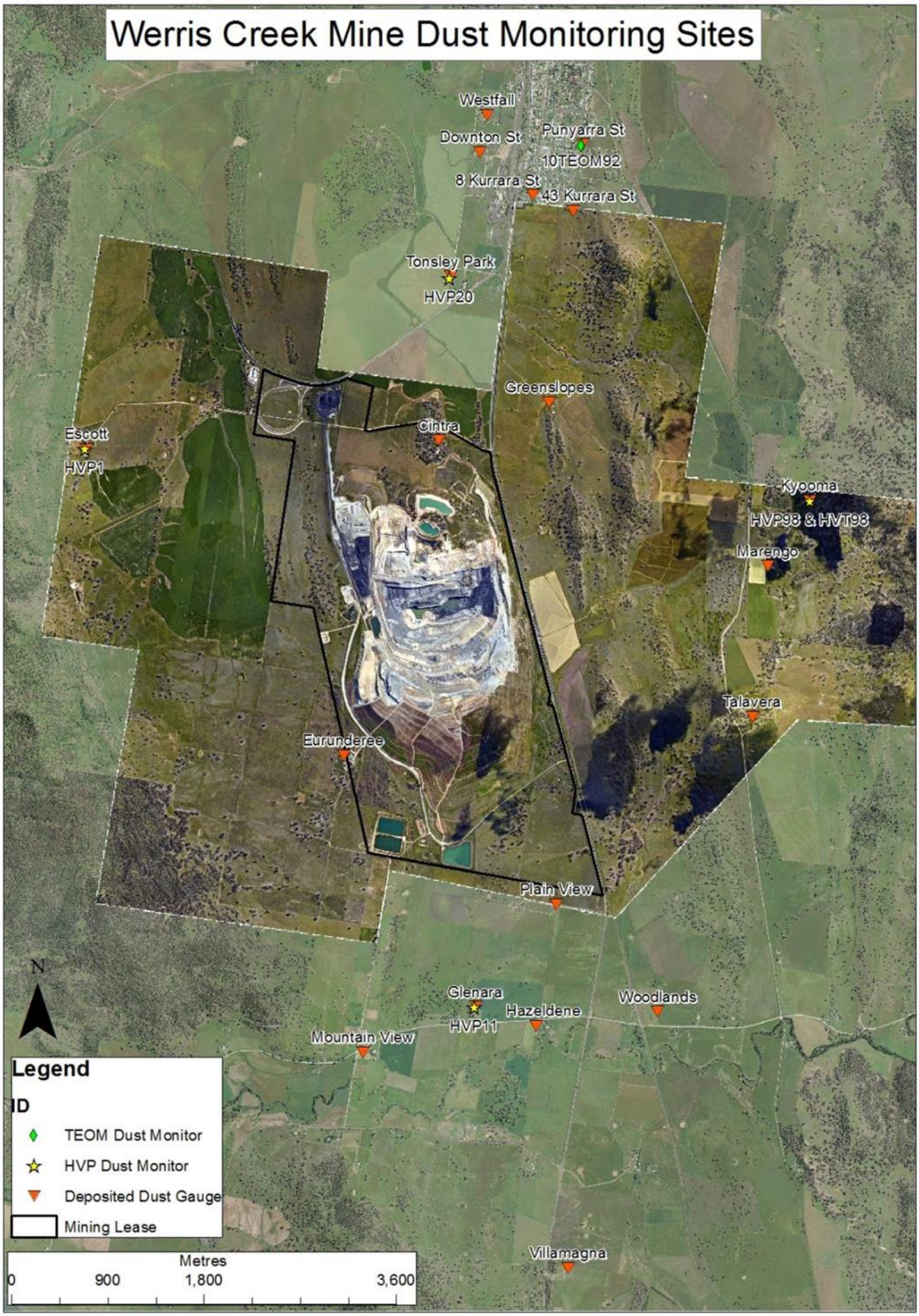


Figure 1 – WCC Dust Monitoring Locations

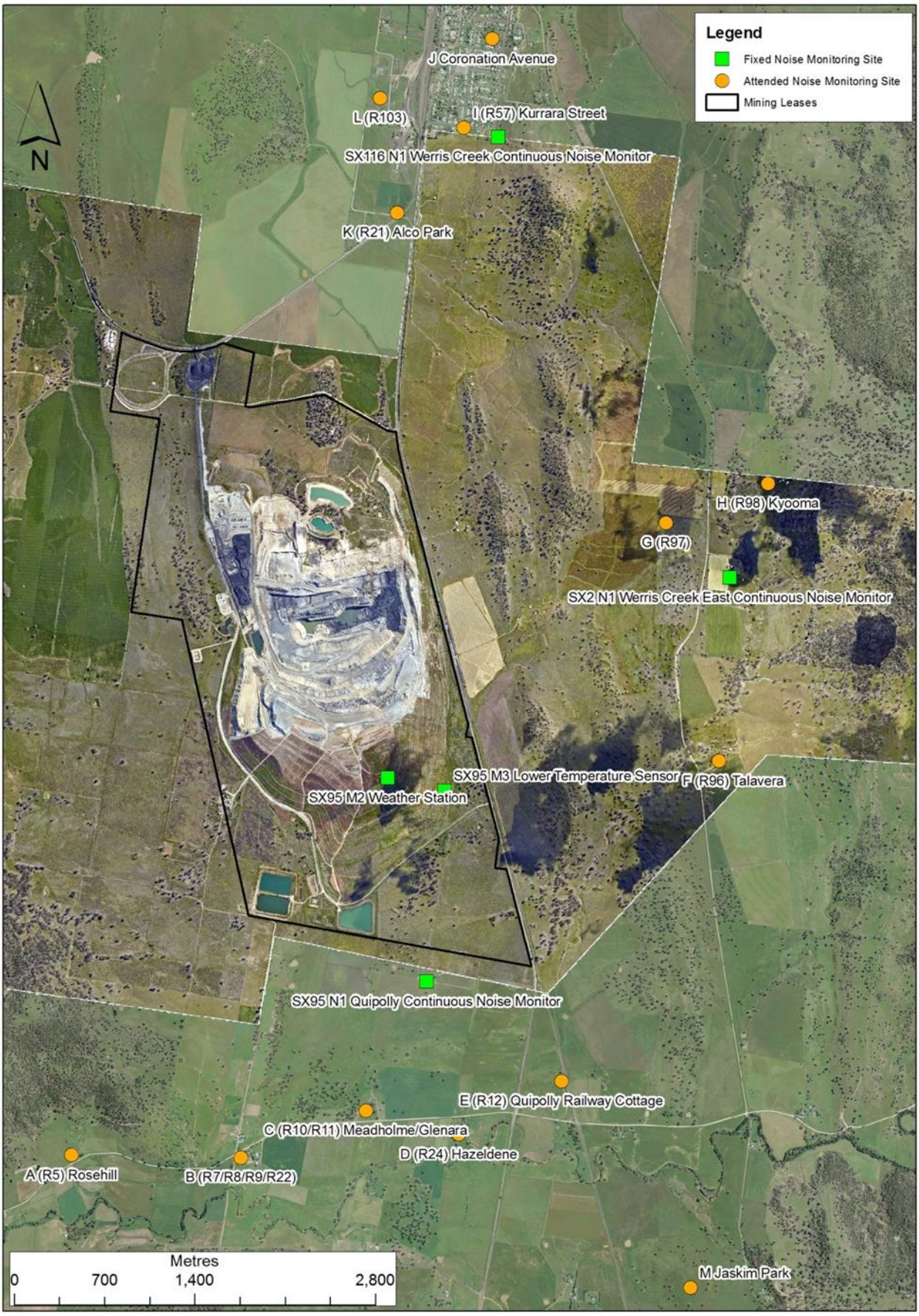


Figure 2 – WCC Noise Monitoring Locations

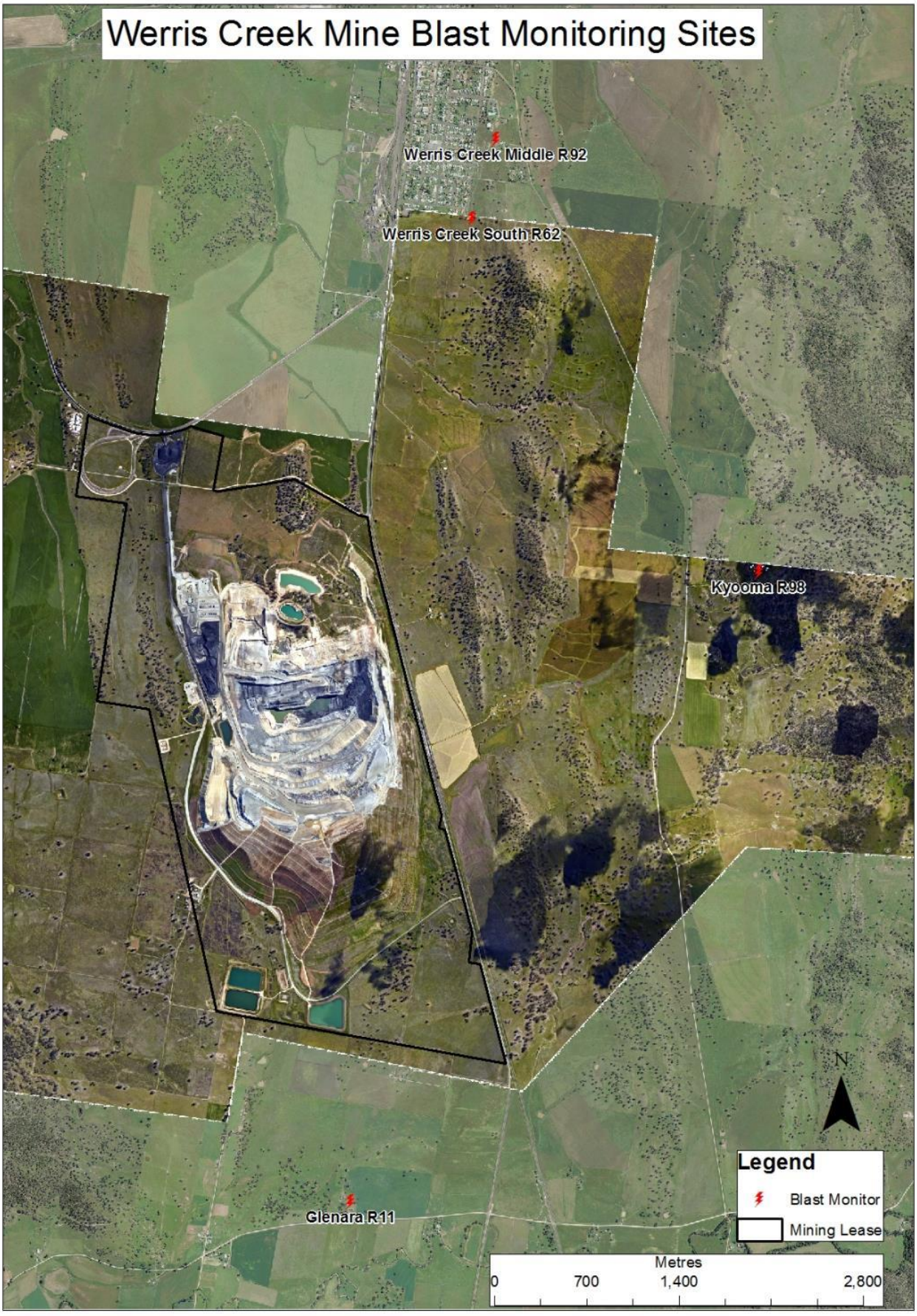


Figure 3 – WCC Blast Monitoring Locations

Figure 4 – WCC Groundwater Monitoring Locations

Figure 5 – WCC Surface Water Monitoring Locations