

WERRIS CREEK COAL COMMUNITY CONSULTATIVE COMMITTEE
55TH Meeting of the Committee held at the Werris Creek Bowling Club
Wednesday, 10 March 2021 at 9:30am

The normal four monthly meeting will begin at 9:30am - A site tour will not be available today due to COVID-19 restrictions.

Meeting opened at 9:35AM.

Record of attendance

Gae Swain	Independent Chairperson
Jane Bradford OAM	Independent Minute Taker
Matt Hollis	Werris Creek Coal - Environmental Superintendent
Kelsy Sammons	Whitehaven Coal - Environmental Officer
Andrew Garrett	Whitehaven Coal - General Manager Community Engagement

Clr Ian Lobsey	Councillor – Liverpool Shire Council
Lindsay Bridge	Community Representative – Phone No 0431 319 302
Mike Lomax	Community Representative
Col Stewart OAM	Community Representative arrived quite late

Apologies

Craig Sullivan	Werris Creek Coal - Operations Manager
James O'Brien	Community Representative
Noel Taylor	Community Representative

Note - Donna Ausling has resigned from the Liverpool Shire Council and a replacement has not yet been appointed.

Moved Gae Swain, **seconded** Lindsay Bridge, THAT the apologies be accepted. CARRIED

2 Declaration of Pecuniary or Other Interests –

Gae Swain has non-pecuniary interests – Son works at Whitehaven Administration Office, Gunnedah and Son-in-law at Narrabri Mine

3 New Matters for Discussion under General Business today

3.1 Updated declaration of Code of Conduct as per CCC Guidelines

3.2 Updated declaration of Pecuniary and Non-Pecuniary Interests

This information was sent out with the Notice of Meeting and each member of the Consultative Community Committee should have completed both forms to return today.

Most forms were completed and returned to Matt Hollis.

Not returned today were from James O'Brien, Noel Taylor and Col Stewart – understand that Matt will contact these three for the paper work to be returned to him at the Mine or alternatively at the next scheduled CCC meeting.

4 Minutes of the previous meeting held on 11 November 2020 were emailed / posted to the Committee members – no changes or queries were received within the required time-frame it was agreed that the Minutes covered the November Meeting accurately.

Moved Mike Lomax, **Seconded** Lindsay Bridge CARRIED

5 Matters Arising - Nil

6 Environmental Monitoring Report from 1 October 2020 to 31 January 2021

2.2.1 Monitoring Data Results

2..

“Woodlands” had high results in November – considered to be an anomalous result based on average results through the year and low levels captured by all other nearby gauges.

Kurrara Street – similar to “Woodlands”

“Cintra” had consistently high dust levels through first half of year with a lower reduction in the latter half of the year. Results are to be expected given “Cintra” gauge is inside the Mining Lease and immediately adjacent to an active mining area.

“Marengo” had an anomalous in January 2020, however with other low deposited dust levels indicated it was a localised source of dust. This high result affected the overall average throughout the year for this location.

2.3. Quirindi Train Dust Deposition

After the decision made at the November 2020 meeting that this Report was no longer required – can confirm that nothing changed over the past four months.

3.1 Noise levels – no issues for the four-month period

4.0 Blasting – No compliance issues

5.1 Water – Groundwater levels are continuing to recover across the entire monitoring network including the Quipolly alluvium. This correlates well with the increased rainfall and frequent running of streams and creeks in the local area.

6. Complaints

Two received relating to blast vibration but WCC confirmed blasts were well within the compliance limits.

Moved Mike Lomax, **seconded** Lindsay Bridge THAT the Environment Report be accepted.

CARRIED

7 General Business

7.1 New Dress Code has been introduced / enforced by Site management – High Viz Clothing must be worn on site, including long sleeve shirts, full length pants plus appropriate enclosed safety boots.

7.2 Meetings of WCCCCC will continue at the Werris Creek Bowling Club to ensure no dress code issues or COVID19 related impacts.

7.3 Soil conservation work Discussions have been carried out with Mike Lomax and Matt Hollis between Cintra and Mike Lomax’s property to the North.

7.4 Tree planting - Matt Hollis confirmed some 20 hectares with fresh top soil planted 8,500 native trees and grasses due to the great season – an additional 23 hectares hopes to have planted by end of this financial year.

7.5 Retirement – Gae Swain confirmed that she was retiring from the Committee effective immediately – new appointment will be announced before the next meeting in July 2021.

Next meeting Wednesday, 8 July 2021 at 9:30am – Venue - Werris Creek Bowling Club

Meeting closed at 9:40AM

Gae Swain
Independent Chairperson

16.03.2021

Copy to all Committee Members
The Minutes also posted on the Whitehaven Coal Website



WERRIS CREEK COAL PTY LTD

QUARTERLY ENVIRONMENTAL MONITORING REPORT

October-December 2020 and January 2021

This Environmental Monitoring Report covers the period 1st October 2020 to 31st January 2021 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

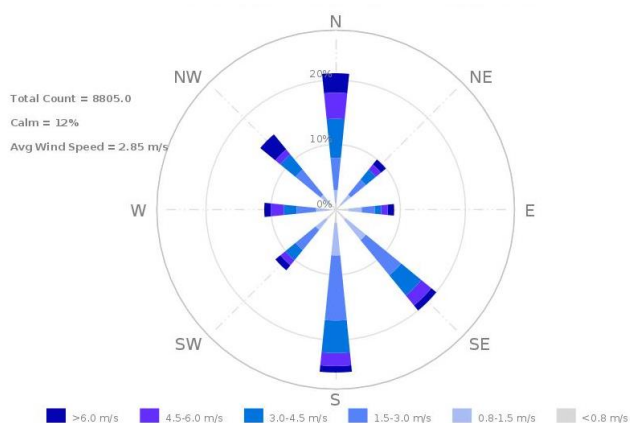
1.0	METEOROLOGY	5
1.1	WEATHER STATION.....	5
2.0	AIR QUALITY.....	6
2.1	HVAS (PM ₁₀) and TEOM (PM ₁₀ & PM _{2.5})	6
2.1.1	Monitoring Data Results	6
2.1.2	Discussion - Compliance / Non Compliance	6
2.2	WERRIS CREEK MINE DEPOSITED DUST	6
2.2.1	Monitoring Data Results	7
2.2.2	Discussion - Compliance / Non Compliance	7
2.3	QUIRINDI TRAIN DUST DEPOSITION	7
2.3.1	Monitoring Data Results	7
2.3.2	Discussion - Compliance / Non Compliance	8
2.4	AIR QUALITY COMPLAINTS	8
3.0	NOISE	8
3.1	OPERATIONAL NOISE.....	8
3.1.1	Monitoring Data Results	8
3.1.2	Discussion - Compliance / Non Compliance	9
3.2	Noise complaints.....	9
4.0	BLASTING	10
4.1	BLAST MONITORING	10
4.1.1	Monitoring Data Results	10
4.1.2	Discussion - Compliance / Non Compliance	11
4.2	BLAST COMPLAINTS	11
5.0	WATER	11
5.1	GROUND WATER	11
5.1.1	Monitoring Data Results	11
5.1.2	Discussion - Compliance / Non Compliance	12
5.2	SURFACE WATER	12
5.2.1	Monitoring Data Results	13
5.2.2	Discussion - Compliance / Non Compliance	13
5.3	SURFACE WATER DISCHARGES	13
5.3.1	Monitoring Data Results	13
5.3.2	Discussion - Compliance / Non Compliance	14
5.4	WATER COMPLAINTS.....	14
6.0	COMPLAINTS SUMMARY	15
7.0	GENERAL	15

1.0 METEOROLOGY

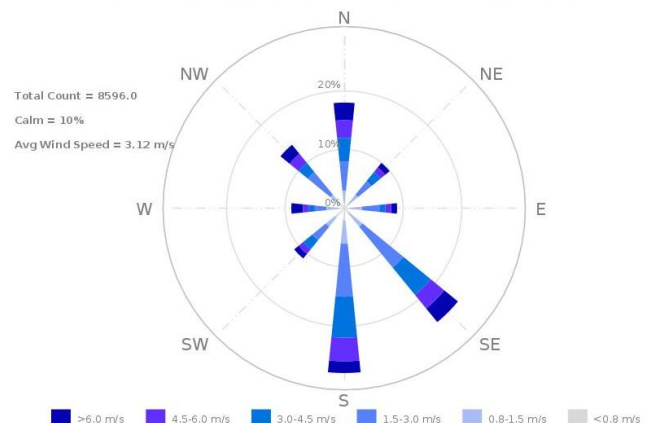
1.1 WEATHER STATION

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 four months. The monthly rainfall total in November 2020 and January 2021 was lower than the historical average, but higher in October and December 2020. Directional wind data, presented in the wind-rose figures below, indicate the prevailing wind direction was predominantly from the south in October and November 2020 and from the south-east in December 2020 and January 2021.

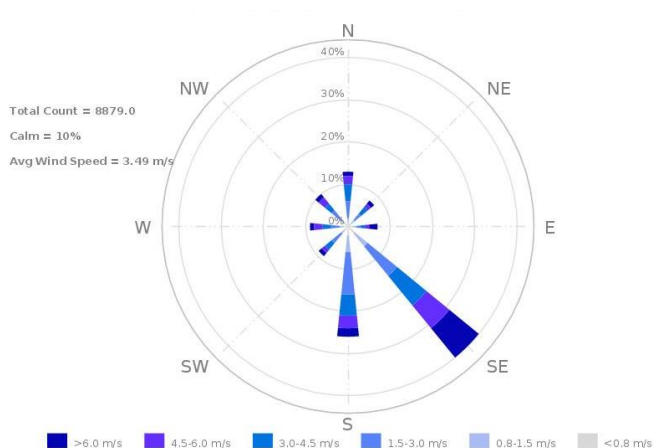
Month	Rainfall (mm)			
	Onsite	Historical Average	2020 Total	2021 Total
October 2020	193.8	58.2	738.2	
November 2020	19.4	79.3	757.6	
December 2020	128.2	88.9	885.8	
January 2021	40.2	65.5		40.2



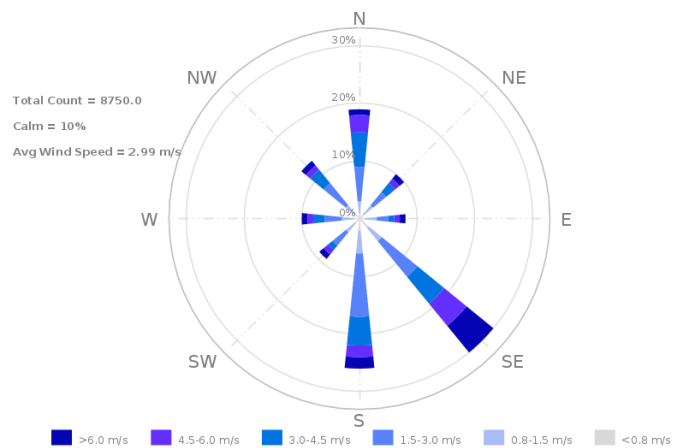
October 2020



November 2020



December 2020



January 2021

2.0 AIR QUALITY

2.1 HVAS (PM₁₀) and TEOM (PM₁₀ & PM_{2.5})

WCC operates five High Volume Air Samplers (HVAS), four sites measuring particulate matter less than 10 microns (PM₁₀) and one site measuring total suspended particulate (TSP) matter. 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 (µg/m³) of air sampled. In addition, WCC operates a Tapered Element Oscillating Microbalance (TEOM) monitor in Werris Creek measuring real time PM₁₀ and PM_{2.5} (particulate matter less than 2.5 microns) dust levels. Dust monitoring locations are identified in **Figure 1**.

2.1.1 Monitoring Data Results

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

MONITORING LOCATION	24Hr Maximum (µg/m ³)	OCT 2020 (µg/m ³)	NOV 2020 (µg/m ³)	DEC 2020 (µg/m ³)	2020 AVG (µg/m ³)	JAN 2021 (µg/m ³)	2021 AVG (µg/m ³)	CRITERIA (µg/m ³)	
								Annual	24hr
PM _{2.5} – TEOM92 “Werris Creek”	12.4	4.6	4.6	3.1	6.7	4.5	4.5	-	-
PM ₁₀ – TEOM92 “Werris Creek”	23.8	9.3	12.3	6.7	11.3	9.0	9.0	30	50
PM ₁₀ – HVP20 “Tonsley Park”	36.6	22	26.7	15.7	14.1	13.0	13.0	30	50
PM ₁₀ – HVP1 “Escott”	18.7	9.1	13.5	9.3	7.2	10.5	10.5	30	50
PM ₁₀ – HVP11 “Glenara”	26.2	17.0	16.8	7.2	11.7	10.1	10.1	30	50
PM ₁₀ – HVP98 “Kyooma”	17.3	8.9	8.4	9.2	6.5	8.0	8.0	30	50
TSP – HVT98 “Kyooma”	58.2	31.9	31.3	18.1	16.6	15.9	15.9	90	-

Yellow Bold – Elevated dust level.

2.1.2 Discussion - Compliance / Non Compliance

All TSP, PM₁₀ 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/m².month). Dust monitoring locations are identified in **Figure 1**.

2.2.1 Monitoring Data Results

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

MONITORING LOCATION	OCT 2020 (g/m ² /month)	NOV 2020 (g/m ² /month)	DEC 2020 (g/m ² /month)	2020 AVGERAGE (g/m ² /month)	JAN 2021 (g/m ² /month)	Annual Criteria (g/m ² /month)
DG1 "Escott"	0.5	2.5	1.2	1.4	7.8#	4.0
DG2 "Cintra"	2.9	3.8	2.7	5.4	2.1	4.0
DG3 "Eurunderee"	0.6	1.7	2.2	1.7	1.1	4.0
DG5 "Railway View"	0.8	2.3	1.4	1.6	0.7	4.0
DG9 "Marengo"	0.8	2.8	2.5	8.4	0.9	4.0
DG11 "Glenara"	1.4	2.6	1.4	1.3	0.6	4.0
DG14 "Greenslopes"	1.2	1.4	2.1	1.0	1.8	4.0
DG15 "Plain View"	0.9	1.5	1.6	1.5	0.8	4.0
DG17 "Woodlands"	0.5	6.4	1.7	2.0	1.6	4.0
DG20 "Tonsley Park"	1.2	2.0	3.2	2.1	1.0	4.0
DG22 "Mountain View"	0.9	1.8	0.8	1.4	4.2#	4.0
DG24 "Hazeldene"	1.0	1.1	1.8	1.6	1.1	4.0
DG34 8 Kurrara St	4.1	1.4	1.4	2.7	0.6	4.0
DG62 Werris Creek South	0.4	0.8	1.4	1.2	0.7	4.0
DG92 Werris Creek Centre	0.4	1.1	1.5	0.9	0.4	4.0
DG96 "Talavera"	NS	NS	NS	NS	NS	NA
DG98 "Kyooma"	1.7	1.0	2.3	1.3	0.6	4.0
DG101 "Westfall"	1.9	1.8	2.3	1.7	1.6	4.0
DG103 West Street	0.8	1.4	1.9	1.5	1.0	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; Broken- Dust bottle broken in transit

2.2.2 Discussion - Compliance / Non Compliance

All monthly dust deposition gauge results were below the annual criteria of 4.0 g/m²/month throughout the period with the exception of:

- DG17 (Woodlands) had high results in November 2020
- DG34 (8 Kurrara St) had a high result in October 2020

2020 Annual Average dust levels remained below the annual criteria of 4.0 g/m²/month with the exception of:

- DG2 (Cintra) had consistently high dust levels through the first half of the year, however low deposited dust levels at other nearby isolated gauges indicated a localised source of dust generation, unrelated to activities at Werris Creek Coal Mine.
- DG9 (Marengo) had an anomalous high dust result (82.5 g/m²/month) in January 2020, however low deposited dust levels at other nearby isolated gauges also indicated a localised source of dust, unrelated to activities at Werris Creek Coal Mine. This high result directly affecting the annual average throughout the year, even though dust levels remained low for the remainder of 2020.

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	OCT 2020		NOV 2020		DEC 2020		2020 Average (g/m ² /month)
	g/m ² /month	% Coal	g/m ² /month	% Coal	g/m ² /month	% Coal	
DDW30	1.4	20%	1.8	<10%	Site decommissioned		1.6
DDW20	0.5	20%	2.1	20%	Site decommissioned		1.3
DDW13	1.3	20%	2.8	<10%	Site decommissioned		1.8
Train Line							
DDE13	1.6	<10%	0.9	<10%	Site decommissioned		1.5
DDE20	2.5	10%	1.5	10%	Site decommissioned		2.0
DDE30	1.5	30%	0.7	10%	Site decommissioned		1.0

* - sample contaminated with excessive organic matter (>50%) from non-mining source (i.e. bird droppings and insects); NS – Not Sampled, bottle and funnel smashed. NR- change in service provider microscopic analysis not conducted as result <4

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/m²/month and comparable to the levels monitored around Werris Creek Coal Mine. Coal contributions to the dust fraction remain generally low. All sites were decommissioned in December 2020 so no further monitoring will be conducted.

2.4 AIR QUALITY COMPLAINTS

There was no 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 four months are outlined in the tables below. Noise monitoring locations are identified in **Figure 2**.

29th Thursday and 30th Friday October 2020

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	24	35	Inaudible	35
B	West Quipolly (R7*, R8*, R9* & R22*)	22	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	38
H	"Kyooma" R98	Inaudible#	38	Inaudible	38
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

NM- Denotes Not Measurable. If site only noise is noted as NM, this means some noise from the source of interest was audible at low-levels, but could not be quantified

24th Tuesday and 25th Wednesday November 2020

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	38
H	"Kyooma" R98	Inaudible#	38	Inaudible	38
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

NM- Denotes Not Measurable. If site only noise is noted as NM, this means some noise from the source of interest was audible at low-levels, but could not be quantified

28th Monday December 2020

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#	38
H	"Kyooma" R98	Inaudible	38	Inaudible#	38
I	Kurrara St, WC R57	Inaudible#	35	Inaudible	35
J	Coronation Ave, WC	Inaudible#	35	Inaudible#	35
K	Alco Park (R21*)	28#	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

NM- Denotes Not Measurable. If site only noise is noted as NM, this means some noise from the source of interest was audible at low-levels, but could not be quantified

29th Friday and 30th Saturday January 2021

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	22#	35	Inaudible#	35
B	West Quipolly (R7*, R8*, R9* & R22*)	23#	40	20#	40
C	Central Quipolly (R10*, R11*)	24#	40	Inaudible	40
D	"Hazeldene" R24	Inaudible#	37	Inaudible	37
E	"Railway Cottage" R12	23#	38	Inaudible#	38
F	"Talavera" R96	26#	38	Inaudible	38
H	"Kyooma" R98	24#	38	Inaudible	38
I	Kurrara St, WC R57	Inaudible	35	23	35
J	Coronation Ave, WC	Inaudible	35	Inaudible	35
K	Alco Park (R21*)	21#	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

NM- Denotes Not Measurable. If site only noise is noted as NM, this means some noise from the source of interest was audible at low-levels, but could not be quantified

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 were no noise complaints recorded during the period.

4.0 BLASTING

During the reporting period there was a total of twenty-one 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 115dB(L) (and up to 120dB(L) 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 four months are provided below.

OCT 2020		“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		0.13	98.3	0.86	98.9	0.48	98.6	0.29	100.3
Monthly Maximum		0.17	105.4	1.09	101.7	0.95	105.8	0.50	106.3
Annual Average		0.12	97.7	0.70	99.4	0.39	99.0	0.27	98.7
Criteria		5	115	5	115	5	115	5	115
% >115dB(L) or 5mm/s	Rolling Ave	0.00%	0.00%	0.00%	0.00%	0.00%	0.66%	0.00%	0.00%
	Reporting Year	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

NOV 2020		“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		0.13	98.3	0.86	98.9	0.48	98.6	0.29	100.3
Monthly Maximum		0.17	105.4	1.09	101.7	0.95	105.8	0.50	106.3
Annual Average		0.12	97.7	0.70	99.4	0.39	99.0	0.27	98.7
Criteria		5	115	5	115	5	115	5	115
% >115dB(L) or 5mm/s	Rolling Ave	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Reporting Year	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

DEC 2020		“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		0.10	99.6	0.62	101.0	0.42	100.0	0.25	100.4
Monthly Maximum		0.14	105.5	1.03	105.7	1.01	105.7	0.48	105.9
Annual Average		0.12	97.8	0.71	99.4	0.39	99.3	0.26	98.9
Criteria		5	115	5	115	5	115	5	115
% >115dB(L) or 5mm/s	Rolling Ave	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Reporting Year	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

JAN 2021		“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		0.08	97.3	0.55	99.4	0.44	101.0	0.27	99.1
Monthly Maximum		0.09	103.7	0.74	104.2	0.59	109.5	0.37	105.7
Annual Average		0.08	97.3	0.55	99.4	0.44	101.0	0.27	99.1
Criteria		5	5	115	5	115	5	115	5
% >115dB(L) or 5mm/s	Rolling Ave	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Reporting Year	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

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) as well as the 95th percentile limits (115dB(L) and 5mm/s).

4.2 BLAST COMPLAINTS

There were two blast complaints (December 2020, January 2021) during the period regarding vibration.

5.0 WATER

The groundwater monitoring program monitors groundwater levels bi-monthly and groundwater quality six monthly. Surface water monitoring is undertaken quarterly.

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 4, 6, 9 and 10 November 2020 and also 8, 11, 12 and 13 January 2021. 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-20	
		mbgl	%
Werrie Basalt near WCC	MW1	Dry	
	MW2	55.32	2%
	MW3	20.93	1%
	MW4B	20.17	0%
	MW5	13.30	5%
	MW6	16.32	0%
	MW27*	55.29	-3%
	MW36A	17.30	-4%
	MW36B	17.31	-4%
Werrie Basalt	MW8*	17.82	1%
	MW10	11.90	0%
	MW14	13.83	-7%
	MW17B*	13.74	7%
	MW19A*	Pump over bore	
	MW20*	23.52	0%
	MW38A	9.68	1%
	MW38B*	7.42	30%
	MW38C*	22.82	1%
	MW38E*	No access	
	MW41	9.18	8%
# ¹	MW24A*	15.10	9%
	MW29*	10.85	6%
Quipolly Alluvium	MW12*	Dry	
	MW13*	5.73	36%
	MW13B*	4.14	25%
	MW13D*	4.97	14%
	MW15*	No access	
	MW16*	7.83	-3%
	MW17A*	7.28	7%
	MW18A*	Dry	
	MW21A*	11.01	5%
	MW22A*	8.15	4%
	MW22B*	Dry	
	MW23A*	3.93	9%
	MW23B*	No access	
	MW26B*	9.55	8%
	MW28A*	14.41	6%
	MW32*	Pump over bore	
	MW40	9.20	8%
	MW42	7.39	12%
# ²	MW34*	10.12	3%

Site		January-21	
		mbgl	%
Werrie Basalt near WCC	MW1	Dry	
	MW2	53.92	3%
	MW3	20.63	1%
	MW4B	20.03	1%
	MW5	13.25	0%
	MW6	16.34	0%
	MW27*	56.51	-2%
	MW36A	15.11	14%
	MW36B	15.10	15%
Werrie Basalt	MW8*	16.34	9%
	MW10	11.95	0%
	MW14	11.53	20%
	MW17B*	13.46	2%
	MW19A*	Pump over bore	
	MW20*	23.27	1%
	MW38A	9.17	6%
	MW38B*	9.08	-18%
	MW38C*	22.63	1%
	MW38E*	10.22	6%
	MW41	8.84	4%
# ¹	MW24A*	14.93	1%
	MW29*	10.79	1%
Quipolly Alluvium	MW12*	11.48	6%
	MW13*	6.88	-17%
	MW13B*	4.84	-14%
	MW13D*	5.19	-4%
	MW15*	No access	
	MW16*	7.76	1%
	MW17A*	6.73	8%
	MW18A*	6.70	5%
	MW21A*	10.74	3%
	MW22A*	7.72	6%
	MW22B*	8.05	-3%
	MW23A*	4.17	-6%
	MW23B*	No access	
	MW26B*	9.22	4%
	MW28A*	12.40	16%
	MW32*	Pump over bore	
	MW40	8.85	4%
	MW42	7.37	0%
# ²	MW34*	9.97	2%

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 Werri Creek Mine. #² - Werri Creek Alluvium.

5.1.2 Discussion - Compliance / Non Compliance

Measured groundwater levels in the Werrie Basalt and Quipolly Alluvium aquifer indicate a general increase in water levels during November 2020 and January 2021, although some locations were noted as having a significant decrease.

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 9th and 11th November 2020. 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.

9th - 11th November 2020

Site	pH	EC	TSS	O&G	Change from Previous Quarter or General Comments
ONSITE					
SB2	7.05	384	21	<5	Water level remained low
SB9	6.66	495	36	<5	Previously dry and now wet
SB10	NA	NA	NA	NA	Previously dry (August) and no access in November 2020
SB18	6.98	218	31	<5	Previously dry and now wet
OFFSITE					
QCU	Dry	Dry	Dry	Dry	Remained dry
QCD	7.93	643	15	<5	Previously only pools and now flowing
WCU	8.28	894	13	<5	Previously only pools and now flowing
WCD	8.22	991	27	6	Not previously flowing and now 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. NA – No Access

5.2.2 Discussion - Compliance / Non Compliance

Quarterly surface water monitoring was undertaken on 9th and 11th November 2020. All water quality results were within long-term averages and the Site Water Management Plan trigger values.

5.3 SURFACE WATER DISCHARGES

5.3.1 Monitoring Data Results

There was one discharge event during October 2020 following above average rainfall during the month. Sampling conducted within Quipolly and Werris Creek systems was also during the discharge in accordance with licence conditions.

There was also 2 controlled discharge events between October 2020 and January 2021.

Sample Date	Dam	pH	EC	TSS	O&G	Compliance	Type	5 Day Rain (mm)
26/10/2020	SB3 (EPA10)	7.9	330	2710	<5	Yes - TSS Ok because rainfall >39.2mm	Wet weather - uncontrolled	120.2
26/10/2020	SB10 (EPA14)	7.6	170	290	<5	Yes - TSS Ok because rainfall >39.2mm	Wet weather - uncontrolled	120.2
26/10/2020	QCU (EPA25)	8.1	320	38	<5	Yes	Wet weather - uncontrolled	120.2
26/10/2020	QCD (EPA26)	7.9	300	63	<5	Yes - TSS Ok because rainfall >39.2mm	Wet weather - uncontrolled	120.2
26/10/2020	WCU (WPA23)	8.0	230	119	<5	Yes - TSS Ok because rainfall >39.2mm	Wet weather - uncontrolled	120.2
26/10/2020	WCD (WPA24)	8.0	230	717	<5	Yes - TSS Ok because rainfall >39.2mm	Wet weather - uncontrolled	120.2
30/10/2020	SB3 (EPA10)	7.3	340	38	<5	Yes	Controlled	N/A
30/10/2020	SB11 (EPA12)	7.4	460	14	<5	Yes	Controlled	N/A
30/10/2020	QCU (EPA25)	8.4	330	10	<5	Yes	Controlled	N/A
30/10/2020	QCD (EPA26)	7.9	340	15	<5	Yes	Controlled	N/A
4/11/2020	SB10 (EPA14)	7.7	210	19	<5	Yes	Controlled	N/A
4/11/2020	WCU (WPA23)	8.4	680	10	<5	Yes	Controlled	N/A
4/11/2020	WCD (WPA24)	8.5	680	8	8	Yes	Controlled	N/A
Criteria		6.5 - 8.5	N/A	50	10			

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; **Bold** – indicates results outside criteria due to 5 day rain trigger >39.2mm.

5.3.2 Discussion - Compliance / Non Compliance

Sampling results were in compliance with WCC's Environmental Protection Licence.

5.4 WATER COMPLAINTS

There were no water release complaints during the period.

6.0 COMPLAINTS SUMMARY

There was one complaint received during the period, which is summarised below.

#	Date	Issue	Complaint	Investigation	Action Taken
623	1/12/2021	Vibration	Complainant advised they were concerned by the vibration from the blast	EO confirmed blast was within compliance limits.	No further follow-up actions

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.

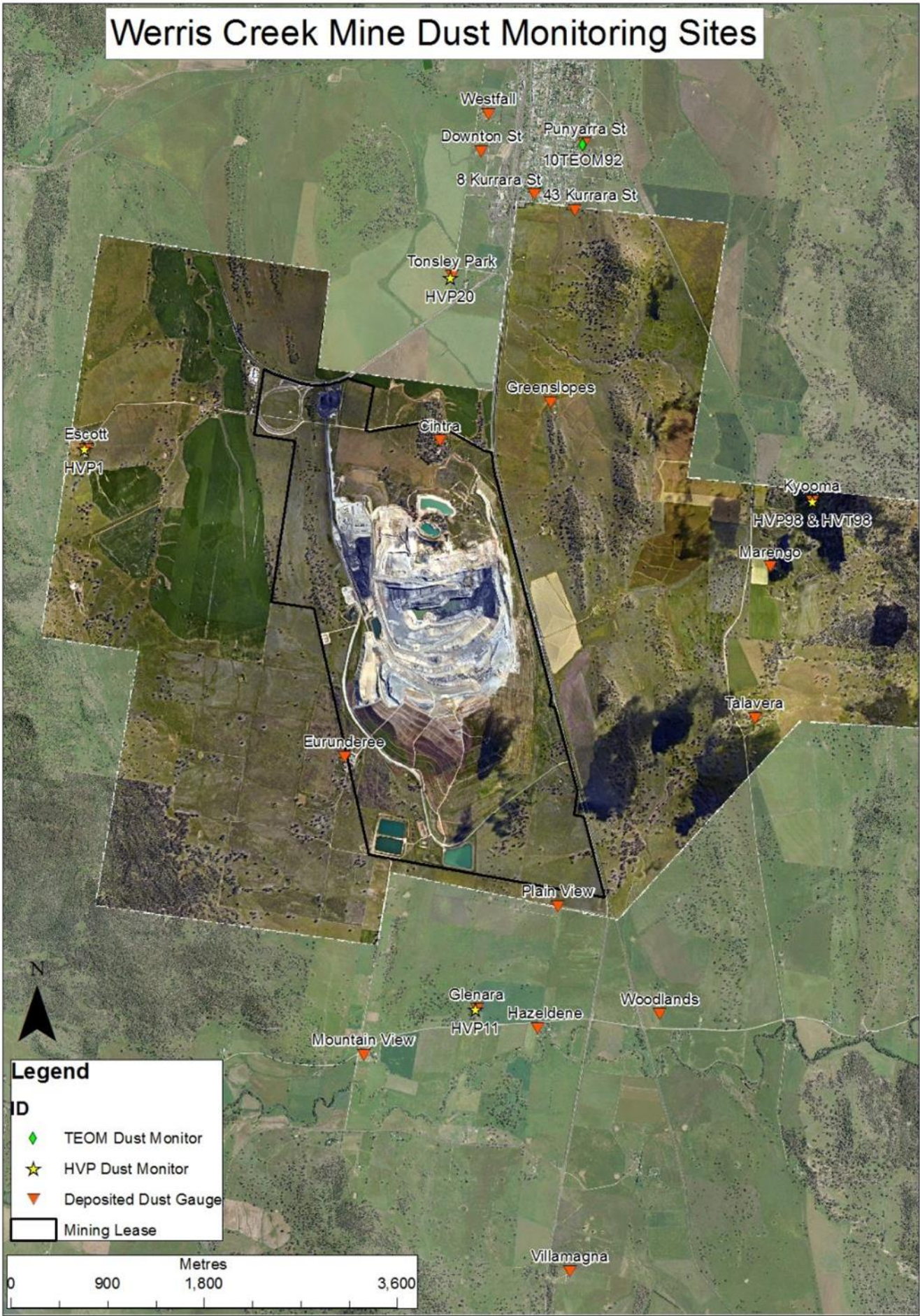


Figure 1 – WCC Dust Monitoring Locations



Figure 2– WCC Noise Monitoring Locations

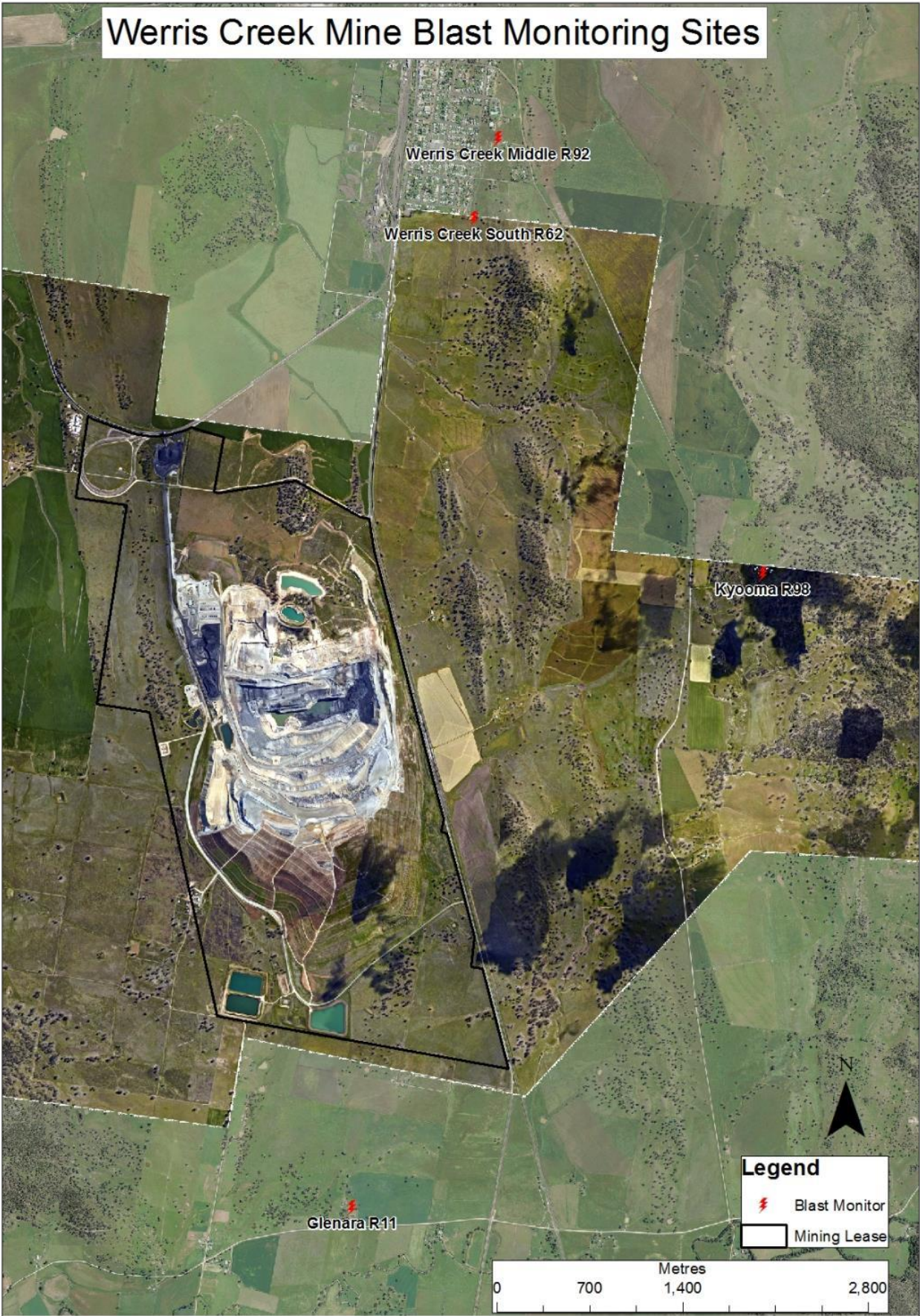


Figure 3 – WCC Blast Monitoring Locations



Figure 4 – WCC Groundwater Monitoring Locations



Figure 5 – WCC Surface Water Monitoring Locations