



# 1 July to 30 September 2023

## Environmental Monitoring

## Results Summary

<b>Name of Mine</b>	Northparkes Mines
<b>Name of Leaseholder and Mine Operator</b>	CMOC Mining Pty Ltd
<b>Mining Leases</b>	ML1247, ML1367, ML1641 AND ML1743
<b>Environment Protection Licence</b>	EPL 4784
<b>Development Consent</b>	DC11_0060 (as modified)

<b>Reviewed by</b>	Chris Higgins
<b>Title</b>	Superintendent – Environment & Farms
<b>Date</b>	
<b>Signature</b>	
<b>Approved by</b>	Stacey Kelly
<b>Title</b>	Manager – People, Safety & Environment
<b>Date</b>	
<b>Signature</b>	

## 1. SCOPE OF REPORT

This report provides a summary of monitoring results for the period from 1 July to 30 September 2023. This monitoring is undertaken in accordance with the Environmental Monitoring Program (available at [www.northparkes.com.au](http://www.northparkes.com.au)). Details of air quality, noise, water and vibration monitoring locations are available in the Environmental Monitoring Program. Refer to appendix A for all monitoring location maps.

## 2. AIR QUALITY

During the quarter, the air quality monitoring program utilised PM<sub>10</sub> (beta attenuated monitors). Monitoring locations are strategically positioned around the mine lease and neighbouring properties. PM<sub>10</sub> monitoring is undertaken at three nearby farm residences Hubberstone, Milpose and Hillview. A summary of the monitoring results are provided below.

### 2.1 PM<sub>10</sub>

PM<sub>10</sub> monitoring results for the Hubberstone, Milpose and Hillview monitoring locations, for the reporting period, are displayed in Figure 1, Figure 2 and Figure 3 respectively. The criteria for exceedances (as nominated in the Development Consent DC11\_0060, known as the Consent), are >25 µg/m<sup>3</sup> for the annual average and >50 µg/m<sup>3</sup> for a 24-hour monitoring period.

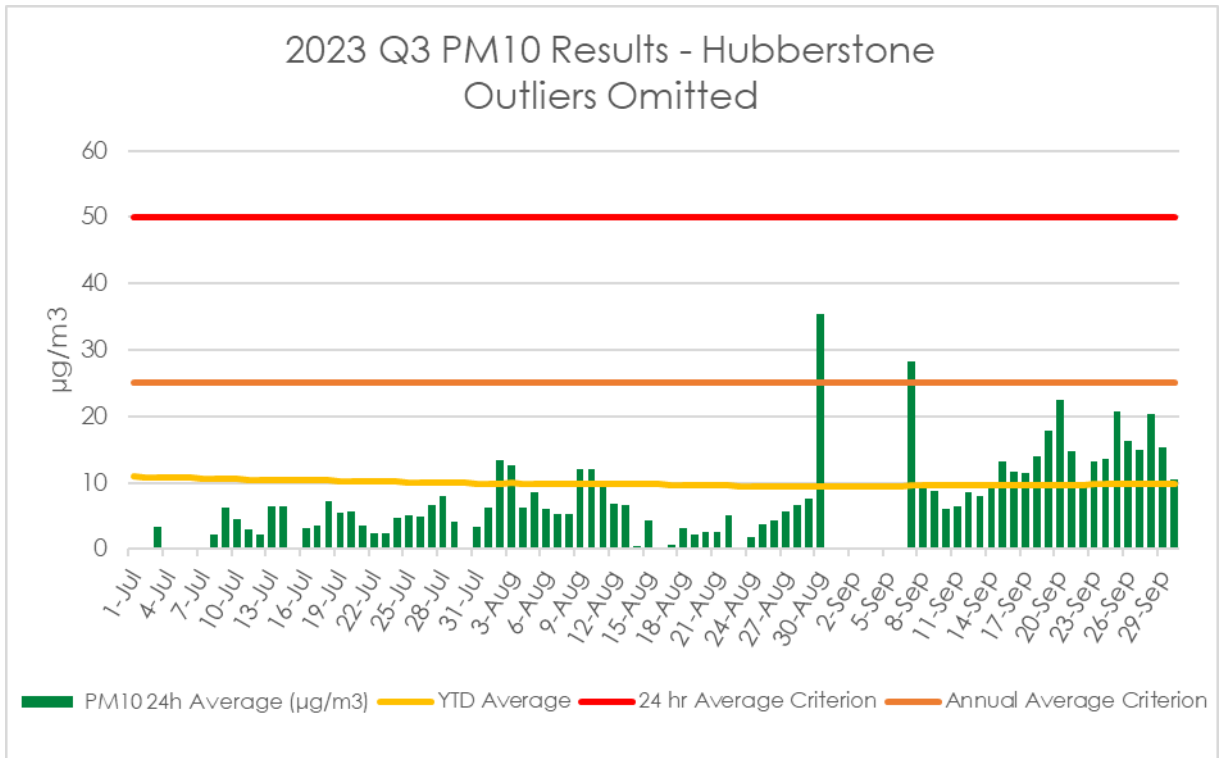
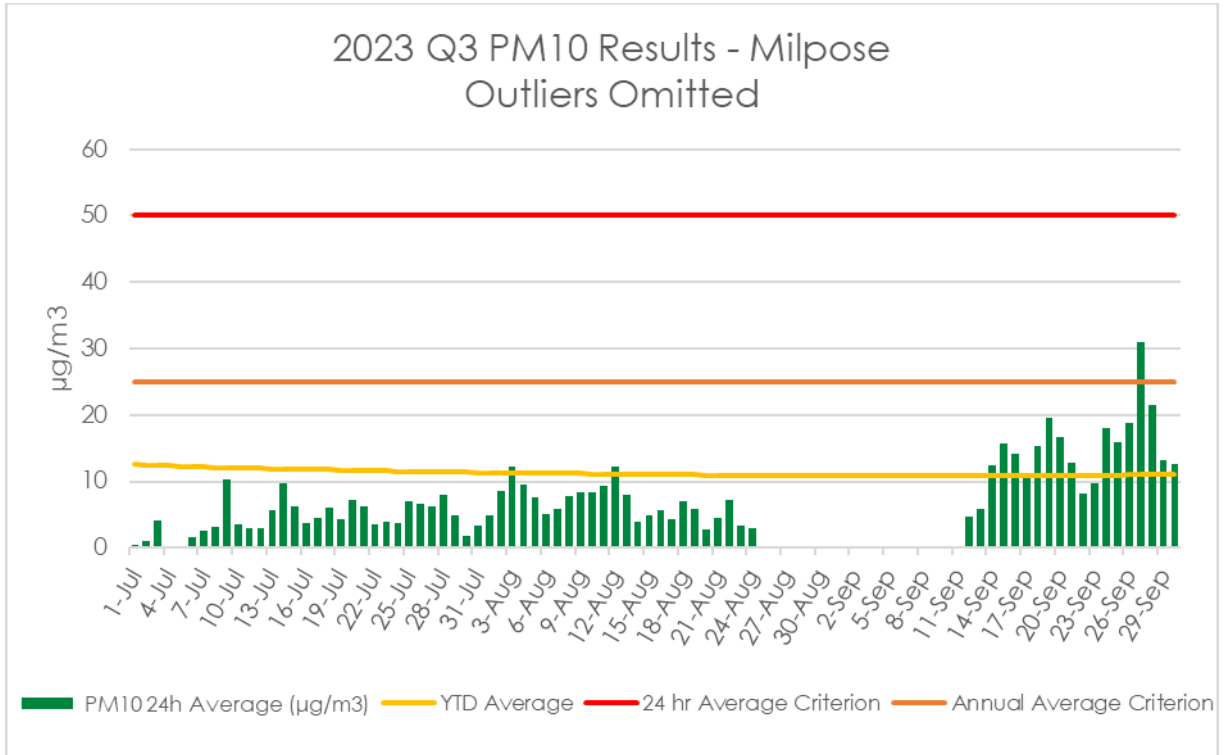
#### **24 hour average:**

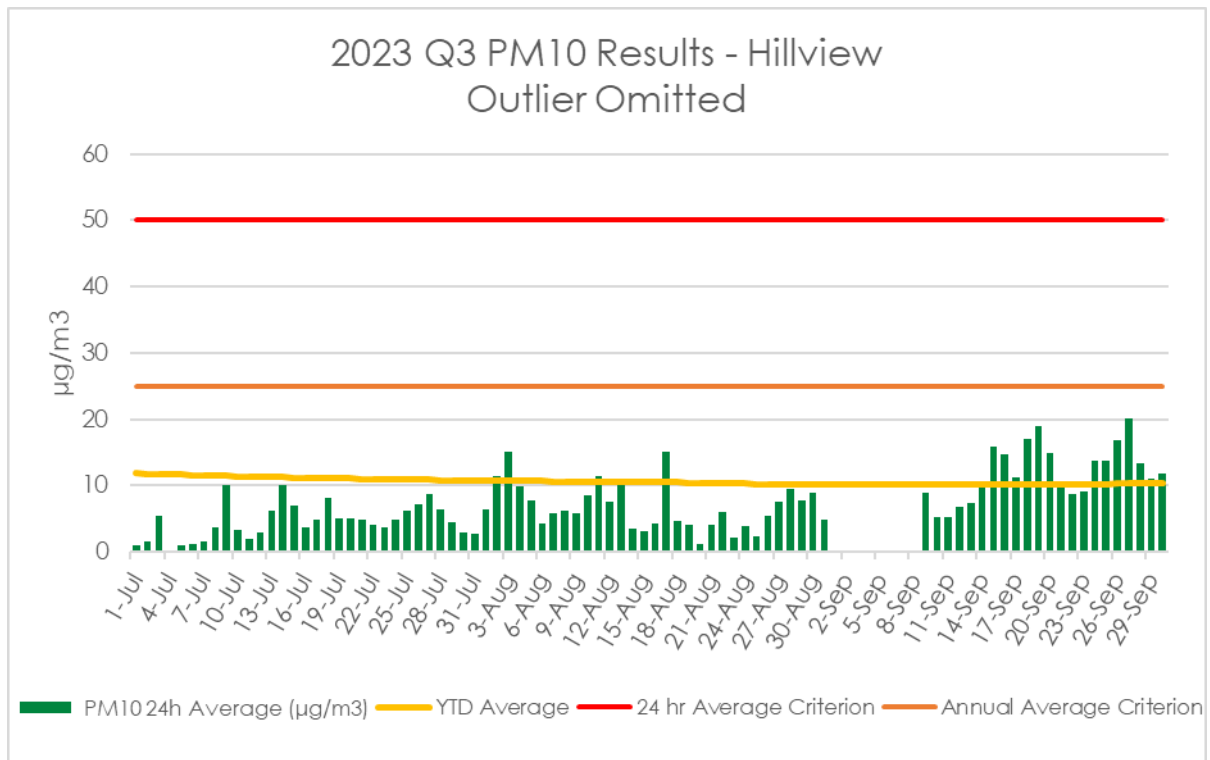
During the reporting period no exceedances were recorded. Missing data is the result of several instrumentation issues which have since been rectified.

#### **Annual Averages:**

Annual averages, recorded year to date, at all monitoring locations are below the Consent criteria of 25 µg/m<sup>3</sup>:

- 9.9 µg/m<sup>3</sup> at Hubberstone
- 11.1 µg/m<sup>3</sup> at Milpose, and
- 10.4 µg/m<sup>3</sup> at Hillview.

**Figure 1:** Hubberstone**Figure 2:** Milpose



**Figure 3:** Hillview

## 2.2 PM<sub>2.5</sub>

PM<sub>2.5</sub> monitoring results for the same three properties are displayed in Figures 4, 5 and 6 respectively. The development consent states that compliance with the assessment criteria for PM<sub>2.5</sub> may be calculated as a ratio of PM<sub>10</sub>. This ratio is calculated as 0.35.

The criteria for exceedances are >8 µg/m<sup>3</sup> for the annual average and >25 µg/m<sup>3</sup> for a 24-hour monitoring period.

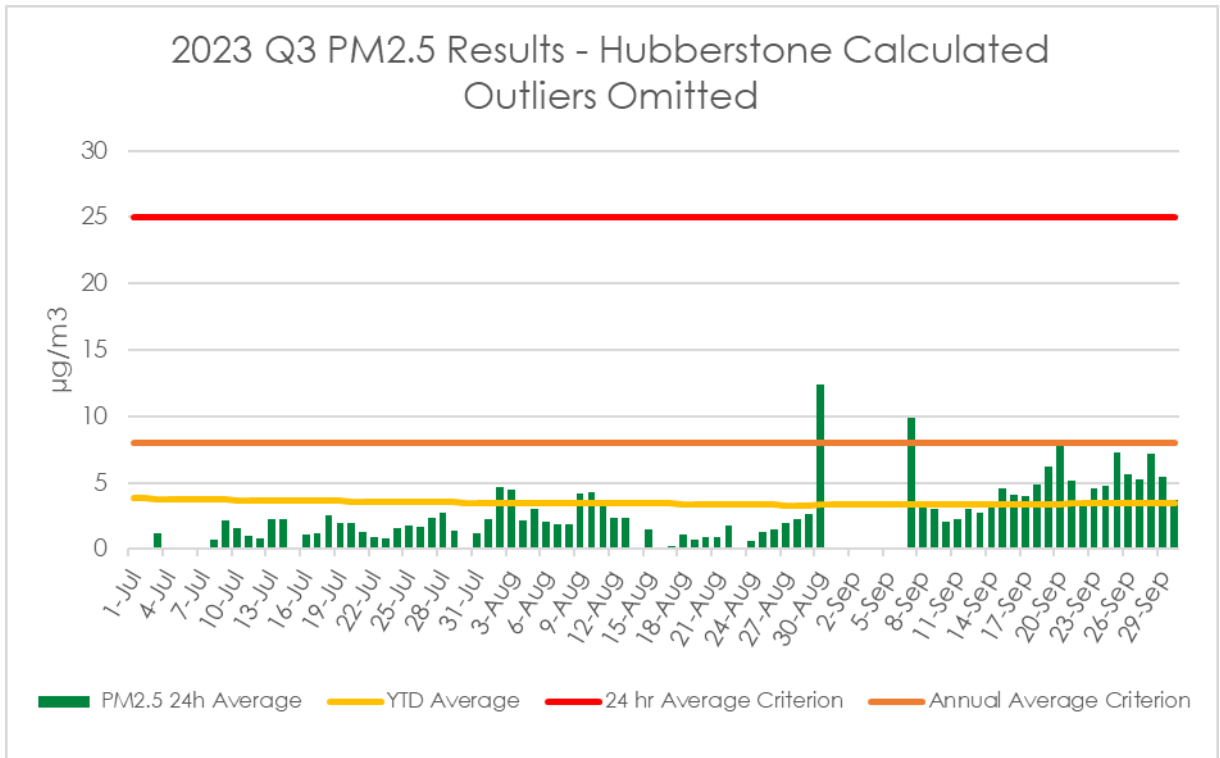
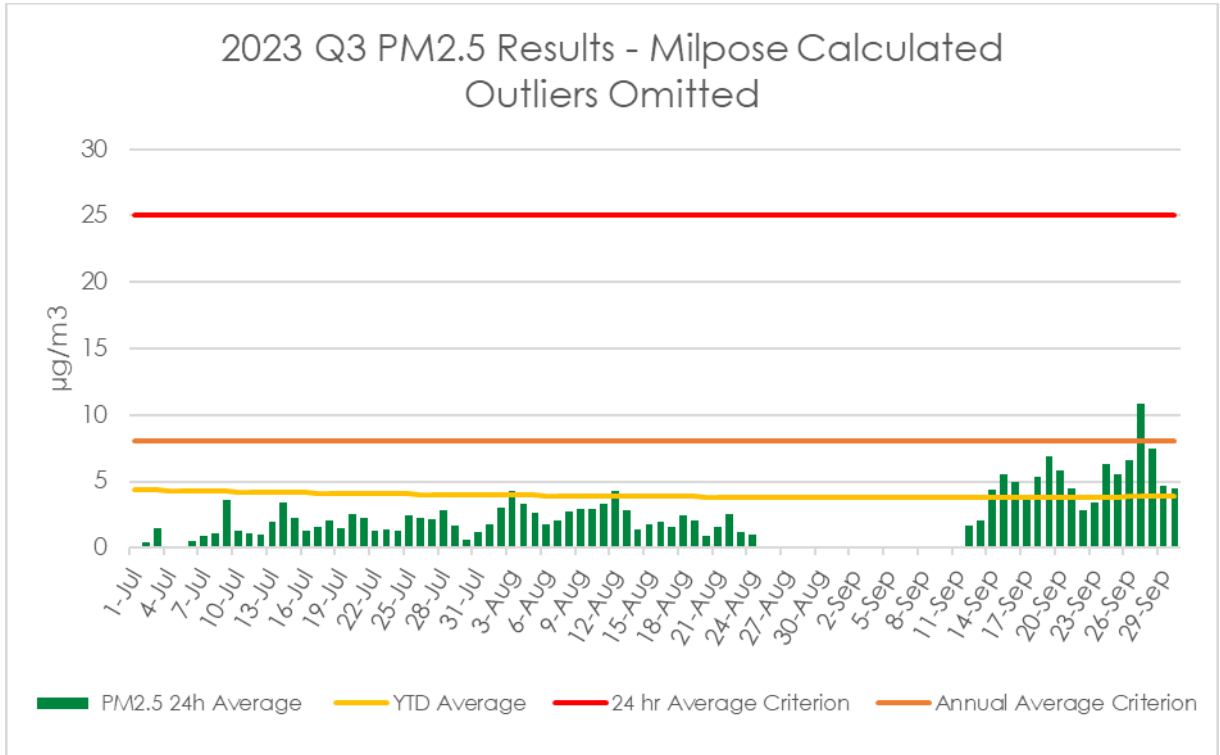
### 24 hour average:

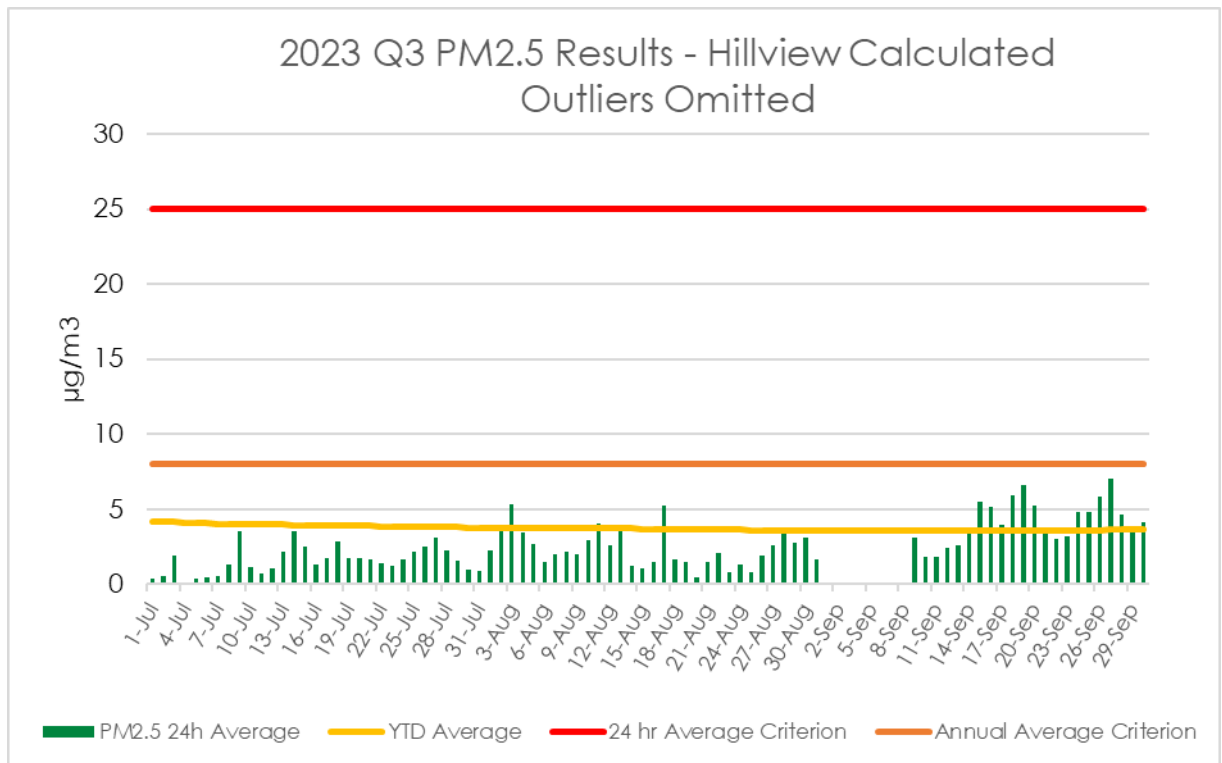
During the reporting period no exceedances were recorded. Missing data is the result of several instrumentation issues which have since been rectified.

### Annual Averages:

Annual averages recorded at all monitoring locations are below the Consent criteria of 8 µg/m<sup>3</sup>:

- 3.5 µg/m<sup>3</sup> at Hubberstone
- 4.0 µg/m<sup>3</sup> at Milpose, and
- 3.6 µg/m<sup>3</sup> at Hillview.

**Figure 4:** Hubberstone (Calculated)**Figure 5:** Milpose (Calculated)



**Figure 6:** Hillview (Calculated)

### **3. WATER**

#### **3.1 Overview**

Water management at Northparkes is undertaken in accordance with approved management plans, prepared in accordance with the Consent. All water samples are analysed at an independent National Association of Testing Authorities (NATA) accredited laboratory.

Surface water quality monitoring is undertaken at Northparkes specifically within the three defined water management systems of;

- Clean water management system, which includes farm dams and watercourses;
- Dirty water management system, which includes settlement ponds; and
- Contaminated water management system, which includes all aspects of ore processing, and retention ponds.

The groundwater monitoring program at Northparkes aims to identify any changes to the natural groundwater system as a result of mining operations and ensure compliance with the Consent. It focuses on potential impacts to environmental assets and groundwater users in the area surrounding Northparkes.

Monitoring results are assessed and interpreted utilising historical trend analysis and internal water quality criteria and trigger levels to identify potential changes.

### 3.2 Quarterly Monitoring Analysis

Water quality monitoring was carried out generally in accordance with the Consent, with no significant changes to the pH or EC for all locations. Copper concentrations increased at several locations, although results are still consistent with long term data. These locations will be closely monitored during the future reporting periods. A summary of the monitoring results at each location sampled are presented in Tables 1-7 below.

\* Sample not received at laboratory

**Table 1: Process Water System**

Location	RP01	RP02	RP03	RP04	RP05	RP06	RP07	RP08	RP09	RP12	RP13	RP15	RP16	RP19	RP20	RP21
EC (uS/cm)	467.0	472.0	3,288.0	1,677.0	506.0	1,756.0	614.0	1,519.0	5,201.0	264.0	666.0	Dry	4,739.0	2,573.0	6,721.0	Dry
Cu (mg/L)	0.139	*	0.048	0.405	0.014	0.008	0.012	0.02	0.017	0.015	0.031	Dry	0.004	*	0.04	Dry
pH	7.96	8.19	7.48	9.07	8.57	7.64	8.46	7.83	7.88	8.87	7.82	Dry	8.15	7.27	7.05	Dry

**Table 1 continued: Process Water System**

Location	RP22	RP23	RP24	RP25	RP26	RP27	RP28	RP32	PWD	Caloola North	Caloola South	GT02	SD1	SD2
EC (uS/cm)	Dry	Dry	Dry	357.0	433.0	3,586.0	4,589.0	606.0	4,604.0	1,934.0	3,262.0	1,516.0	Dry	Dry
Cu (mg/L)	Dry	Dry	Dry	0.02	0.013	0.039	0.009	0.048	0.03	0.006	0.007	0.089	Dry	Dry
pH	Dry	Dry	Dry	8.4	8.47	7.67	7.6	7.72	8.4	7.49	7.49	7.55	Dry	Dry

**Table 2: Sediment Ponds**

Location	SP03	SP10	SP15	SP33
EC (uS/cm)	2,929.0	260.0	Dry	249.0
Cu (mg/L)	0.009	0.008	Dry	0.011
pH	7.99	8.89	Dry	8.63

**Table 3: Farm Dams**

Location	FD04	FD05	FD06	FD07	FD11	FD12	FD16	FD18	FD25	FD26	FD27
EC (uS/cm)	1,207.0	103.4	86.9	131.0	321.0	Dry	358.0	1,995.0	149.0	506.0	177.0
Cu (mg/L)	0.006	0.008	0.006	0.008	0.005	Dry	0.019	0.015	0.021	0.005	0.004
pH	7.8	8.86	8.22	7.55	8.02	Dry	8.94	7.64	8.06	7.91	8.24



Table 4: Water Courses

Location	WC01	WC02	WC03	WC04	WC05	WC06	WC07	WC11	WC12	WC13	WC14	WC15	WC16
EC (uS/cm)	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	104.0	Dry	Dry	Dry	Dry
Cu (mg/L)	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	0.005	Dry	Dry	Dry	Dry
pH	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	8.63	Dry	Dry	Dry	Dry

Table 5: TSF Bores

Location	MB01	MB02	MB03	MB05	MB06B	W26	W27	W28	W29	W30	W31	W32
EC (uS/cm)	5,942	10,016	25,034	23,614	17,472	11,750	20,497	13,036	19,298	2,289	670	2,998
Cu (mg/L)	0.003	0.003	0.035	0.004	0.005	0.018	0.005	0.019	0.062	0.004	0.02	0.013
pH	7.1	7.11	5.04	6.58	6.91	7.03	11.63	10.25	12.42	7.57	8.32	11.72
SWL	248.4	239.2	246.6	246.6	281.2			261.1	257.6	246.5	267.9	262.8

Table 6: Opencut Bores

Location	MB10	MB11 (dry)	MB12	MB13	MB14	W14	W19	W20	W21	W22	W23	W24	W25
EC (uS/cm)	11,748	Dry	No sample	21,286	3,065	4,057	12,051	11,395	25,017	11,501	13,488	2,008	2,050
Cu (mg/L)	0.006	Dry	No sample	0.011	0.009	0.015	0.011	0.026	0.001	0.012	0.006	0.004	0.024
pH	6.89	Dry	No sample	6.61	7.07	7.56	7.04	7.07	7.32	7.2	7.02	7.73	7.57
SWL	252.3	Dry	235.7	247.3	262.2	270.1	255.2	268.9	270.9	269.0	264.2	283.9	283.8

Table 7: Underground Bores

Location	MB17	MB18	MB19	MB20	P101	P102	P103	P104	P139	P145	P149
EC (uS/cm)	737	8,862	14,863	11,745	10,591	28,087	no sample	no sample	27,791	189	23,949
Cu (mg/L)	0.004	0.017	0.004	0.033	0.002	0.001	no sample	no sample	0.002	0.007	0.018
pH	7.78	8.36	7.36	7.28	6.99	6.94	no sample	no sample	6.35	7.06	6.63
SWL	266.6	249.9	246.3	246.4	255.4	254.3	252.4	255.0	253.1	252.1	228.4

Table 8: Regional Bores

Location	Far Hilliers	Long Paddock	Moss #1	Wright
EC (uS/cm)	598	855	2,065	919
Cu (mg/L)	0.003	0.003	0.003	0.001
pH	7.12	8.37	7.12	8.76
SWL	264.0	240.2	287.4	288.3

## 4. VIBRATION

### 4.1 Overview

The assessment criteria for blast impacts at Northparkes are based on the ANZECC Guideline, aimed to minimise annoyance to human comfort levels. Table 8 below shows the blast impact criteria as set out in the Schedule 3 Conditions 6-13 of the Consent.

**Table 8:** Vibration and overpressure criteria of DC11\_0060.

<b>Location</b>	<b>Airblast overpressure (dB(Lin Peak))</b>	<b>Ground vibration (mm/s)</b>	<b>Allowable exceedance</b>
Residence on privately owned land	120	10	0%
	115	5	5% of the total number of blasts over a period of 12 months
All public infrastructure	-	50 (or a limit determined by the structural design methodology in AS 2187.2-2006, or its latest version, or other alternative limit for public infrastructure, to the satisfaction of the Secretary)	0%

The blast monitoring program uses blast units which measure ground vibration and air overpressure at the residences of the four closest privately owned properties, Adavale, Hillview, Hubberstone and Milpose. The program is designed to measure the effectiveness of control measures and ensure compliance with consent and licence conditions, relevant standards and corporate requirements. A summary of the monitoring results are provided below.

### 4.2 Quarterly Monitoring Analysis

During the reporting period, eight surface blasts were undertaken. Highlighted cells are those where an exceedance was identified.

**Table 9:** Overpressure results at monitoring locations

Monitor Location	Overpressure (dB) – 115 (dB)							
	18 Aug 23 E31S	25 Aug 23 E31S	31 Aug 23 E31S	7 Sep 23 E31S	15 Sep 23 E31S	15 Sep 23 E31N	21 Sep 23 E31S	29 Sep 23 E31N
Adavale	110.0	90.3	90.6	92.4	95.6	85.4	97.5	86.5
Hillview	113.5	97.8	103.5	101.6	102.1	97.5	108.4	86.1
Hubberstone	102.5	98.5	100.1	109.3	99.0	95.1	99.5	94.7
Milpose	92.1	90.3	91.4	110.3	102.2	98.8	106.3	89.5

**Table 10:** Vibration results at monitoring locations

Monitor Location	Vibration (mm/s) – 5 mm/s							
	18 Aug 23 E31S	25 Aug 23 E31S	31 Aug 23 E31S	7 Sep 23 E31S	15 Sep 23 E31S	15 Sep 23 E31N	21 Sep 23 E31S	29 Sep 23 E31N
Adavale	0.06	0.06	0.03	0.05	0.04	0.02	0.05	0.03
Hillview	0.18	0.06	0.06	0.09	0.10	0.01	0.08	0.02
Hubberstone	0.06	0.04	0.03	0.04	0.04	0.01	0.05	0.03
Milpose	0.04	0.04	0.04	0.04	0.07	0.03	0.05	0.03

## 5. NOISE

Operational noise is managed by CMOC in accordance with the approved Noise Management Plan (NMP). The NMP covers all operational activities with the potential to generate noise at Northparkes. It details specific noise management and mitigation measures, outlines monitoring and reporting requirements and provides clear definitions of the roles and responsibilities for noise management.

Property	Day	Evening	Night	
	<i>L<sub>Aeq</sub>(15min)</i>	<i>L<sub>Aeq</sub>(15min)</i>	<i>L<sub>Aeq</sub>(15min)</i>	<i>L<sub>A1</sub>(1min)</i>
All privately-owned land	35	35	35	45

### 5.1 Overview

CMOC undertakes a noise monitoring program that consists of both operator-attended and unattended surveys. This program includes four real time monitors at the nearest occupied residences of Hubberstone, Milpose, Hillview and Adavale. Lone Pine is included in the attended monitoring program along with the four listed previously.

Operator-attended noise measurements and recordings are undertaken outside the mining leases in order to quantify the intrusive noise emissions from construction and of general mine activity as well as the overall level of ambient noise. This noise monitoring was undertaken by an independent and suitably qualified noise professional.

### 5.2 Quarterly Monitoring Analysis

Attended noise monitoring was undertaken between Tuesday 15 to Wednesday 16 August 2023.

The assessment was completed to quantify site noise emissions against relevant noise criteria pertaining to Northparkes operations in accordance with Conditions 1 to 5 of Schedule 3 of the NSW Development Consent Conditions (DC11\_110060), Northparkes Noise Management Plan (NMP, 2019) and Traffic Management Plan (TMP, 2019).

Road noise monitoring identified that vehicle movements associated with shift change generated levels below the relevant road noise criteria specified in the TMP and NMP.

Attended monitoring has identified that operational emissions generated by Northparkes comply with relevant noise criteria at all monitoring locations for all assessment periods. Furthermore, project related noise emissions are generally barely audible at monitoring locations. Extraneous non-mining sources such as traffic, insects, wind in trees, birds, aircraft, residential and agricultural noise were audible during the monitoring period. A summary of the monitoring results at each monitoring location are presented in Tables 11-16 below.

**Table 11:** Attended noise monitoring results for Hubberstone

Table 3 Operator-Attended Noise Survey Results – Location NM1, Hubberstone					
Time(hrs)/Date	Noise Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA
Duration 15min	L <sub>A</sub> max	L <sub>A</sub> eq	L <sub>A</sub> 90		
Day					
16:51 16/08/2023	56	37	19	WD: N WS: 0.5m/s Stab Class: C	Traffic 20-56 Birds 20-70 Livestock 20-38 Residential Noise 25-63 Site Inaudible
17:06 16/08/2023	70	44	19		
17:21 16/08/2023	68	47	24		
Site L <sub>A</sub> eq(15min) Contribution			<30		
Evening					
21:12 15/08/2023	51	38	26	WD: SE WS: 0.1m/s Stab Class: F	Livestock 20-55 Traffic 20-51 Aircraft 25-38 NPM – Production Hum <20-28 (Just audible throughout)
21:27 15/08/2023	55	37	25		
21:42 15/08/2023	52	39	24		
Site L <sub>A</sub> eq(15min) Contribution			<30		
Night					
22:10 15/08/2023	43	30	27	WD: SE WS: 0.1m/s Stab Class: E	Livestock 25-49 Aircraft 30-45 NPM - Production 25-32 (Just audible to audible throughout)
22:25 15/08/2023	48	31	29		
22:40 15/08/2023	49	33	28		
Site L <sub>A</sub> eq(15min) Contribution			<30		
Site L <sub>A</sub> 1(1min) Contribution			<45		
Note: NPM denotes Northparkes Mines.					
Note: Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.					

**Table 12:** Attended noise monitoring results for Lone Pine

Table 4 Operator-Attended Noise Survey Results – Location NM2, Lone Pine						
Time(hrs)/Date Duration 15min	Noise Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA	
	L <sub>Amax</sub>	L <sub>Aeq</sub>	L <sub>A90</sub>			
Day						
15:49 16/08/2023	71	49	27	WD: NW WS: 1.0m/s Stab Class: A	Wind In Trees 25-42 Birds 25-80	
16:04 16/08/2023	78	56	33		Aircraft 30-61 Traffic 30-68	
16:19 16/08/2023	80	53	29		Residential Noise 25-53 Site Inaudible	
Site L <sub>Aeq</sub> (15min) Contribution					<30	
Evening						
20:11 15/08/2023	53	21	16	WD: SE WS: 0.1m/s Stab Class: F	Birds 15-25	
20:26 15/08/2023	35	17	15		Aircraft 20-45 MAC Operator 53	
20:41 15/08/2023	45	24	13		Site Inaudible	
Site L <sub>Aeq</sub> (15min) Contribution					<30	
Night						
02:01 16/08/2023	37	21	19	WD: SE WS: 0.1m/s Stab Class: E	Wildlife 20-28	
02:16 16/08/2023	48	23	21		MAC Operator 48 NPM – Site Hum 17-23	
02:31 16/08/2023	48	23	21		(Just audible throughout)	
Site L <sub>Aeq</sub> (15min) Contribution					<30	
Site L <sub>A1</sub> (1min) Contribution					<45	
Note: NPM denotes Northparkes Mines.						
Note: Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.						

**Table 13:** Attended noise monitoring results for Milpose

Table 5 Operator-Attended Noise Survey Results – Location NM3, Milpose					
Time(hrs)/Date	Noise Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA
Duration 15min	L <sub>Amax</sub>	L <sub>Aeq</sub>	L <sub>A90</sub>		
Day					
13:57 16/08/2023	71	44	23	WD: NE WS: 1.5m/s Stab Class: A	Birds 25-41 Wind in Trees 20-51 Traffic 25-37 Residential Noise 25-77 NPM – Site Hum 19-23 (Barely audible throughout)
14:12 16/08/2023	51	34	23		
14:27 16/08/2023	77	47	23		
Site L <sub>Aeq</sub> (15min) Contribution			<30		
Evening					
20:11 16/08/2023	53	34	15	WD: N WS: 0.1m/s Stab Class: E	Dogs Barking 20-34 Residential Noise 20-53 Aircraft 25-41 Site Inaudible
20:26 16/08/2023	42	23	15		
20:41 16/08/2023	45	29	15		
Site L <sub>Aeq</sub> (15min) Contribution			<30		
Night					
00:07 16/08/2023	48	23	21	WD: SE WS: 0.1m/s Stab Class: F	MAC Operator 48 NPM – Exhaust Fan 18-28 (Just audible to audible throughout)
00:22 16/08/2023	36	24	22		
00:37 16/08/2023	36	24	21		
Site L <sub>Aeq</sub> (15min) Contribution			<30		
Site L <sub>A1</sub> (1min) Contribution			<45		
Note: NPM denotes Northparkes Mines.					
Note: Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining period.					

**Table 14:** Attended noise monitoring results for Hillview

Table 6 Operator-Attended Noise Survey Results – Location NM4, Hillview					
Time(hrs)/Date	Noise Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA
Duration 15min	L <sub>A</sub> max	L <sub>A</sub> eq	L <sub>A</sub> 90		
Day					
12:44 16/08/2023	58	45	34	WD: NE WS: 1.0m/s Stab Class: A	Traffic 30-56 Birds 25-58 Wind in Trees 27-48 Residential Noise 35-66 Site Inaudible
12:59 16/08/2023	53	42	35		
13:14 16/08/2023	66	42	31		
Site L <sub>A</sub> eq(15min) Contribution					<30
Evening					
18:00 16/08/2023	59	48	39	WD: N WS: <0.5m/s Stab Class: F	Agricultural Noise 36-51 Traffic 31-59 Birds 35-48 Residential Noise 35-73 Site Inaudible
18:15 16/08/2023	73	49	40		
18:30 16/08/2023	59	47	37		
Site L <sub>A</sub> eq(15min) Contribution					<30
Night					
23:07 15/08/2023	60	41	16	WD: SE WS: 0.1m/s Stab Class: F	Traffic 30-60 Dogs Barking 20-39 Site Inaudible
23:22 15/08/2023	48	27	14		
23:37 15/08/2023	48	23	13		
Site L <sub>A</sub> eq(15min) Contribution					<30
Site L <sub>A</sub> 1(1min) Contribution					<45
Note: NPM denotes Northparkes Mines.					
Note: Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.					

**Table 15:** Attended noise monitoring results for Adavale

Table 7 Operator-Attended Noise Survey Results – Location NM5, Adavale						
Time(hrs)/Date	Noise Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA	
Duration 15min	L <sub>Amax</sub>	L <sub>Aeq</sub>	L <sub>A90</sub>			
Day						
14:53 16/08/2023	61	38	29	WD: NW WS: 1.5m/s Stab Class: A	Wind In Trees 20-61 Birds 20-47 Site Inaudible	
15:08 16/08/2023	55	32	26			
15:23 16/08/2023	45	34	25			
Site L <sub>Aeq</sub> (15min) Contribution					<30	
Evening						
19:16 16/08/2023	50	17	13	WD: N WS: 0.1m/s Stab Class: E	MAC Operator 50 Site Inaudible	
19:31 16/08/2023	40	15	13			
19:46 16/08/2023	47	18	13			
Site L <sub>Aeq</sub> (15min) Contribution					<30	
Night						
01:06 16/08/2023	33	26	24	WD: SE WS: 0.1m/s Stab Class: F	Wildlife 20-33 MAC Operator 49 NPM – Exhaust Fan 22-28 (Audible throughout)	
01:21 16/08/2023	49	25	24			
01:36 16/08/2023	46	26	24			
Site L <sub>Aeq</sub> (15min) Contribution					<30	
Site L <sub>A1</sub> (1min) Contribution					<45	
Note: NPM denotes Northparkes Mines.						
Note: Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.						

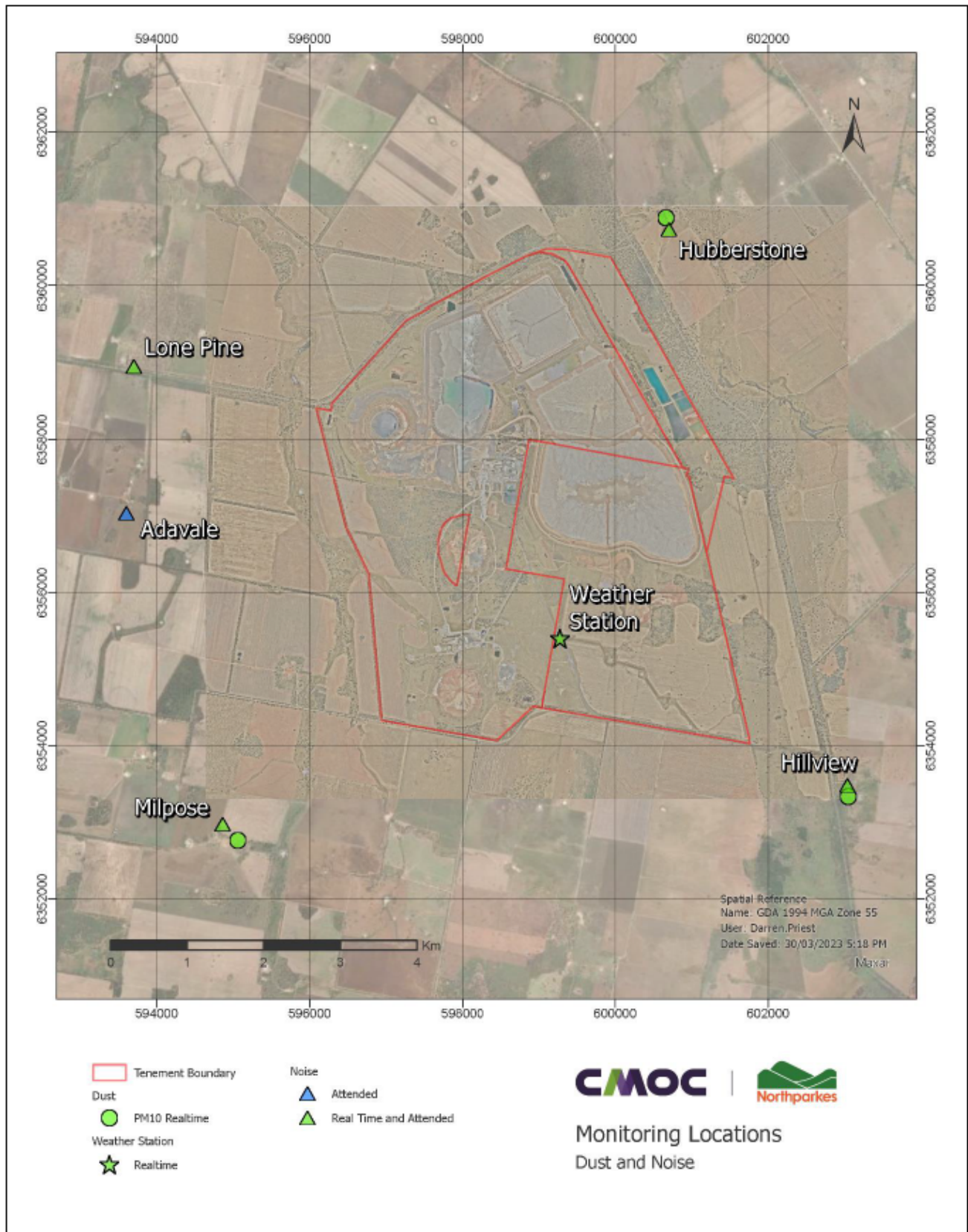


**Table 16:** Attended road noise survey results

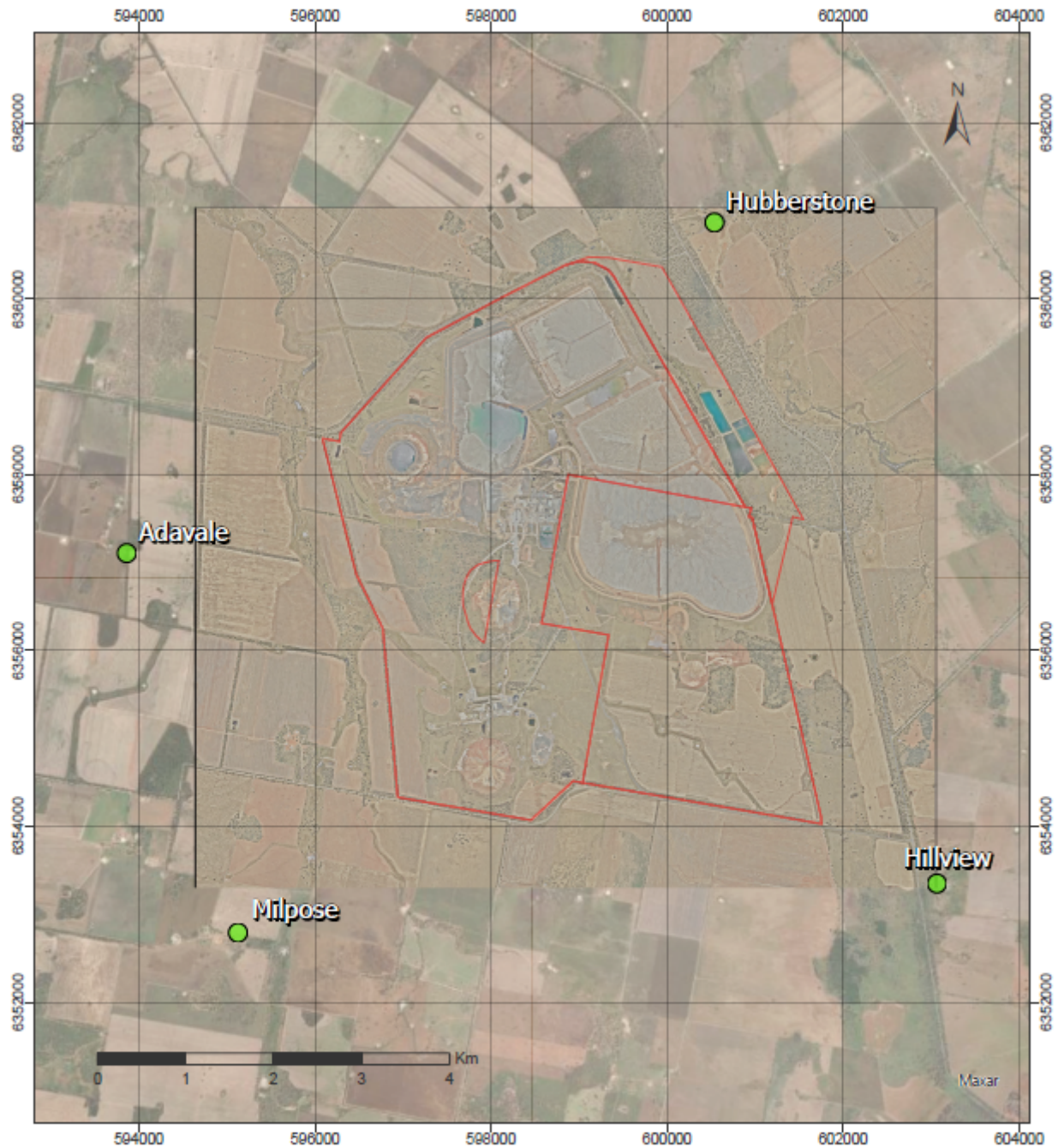
Table 8 Operator-Attended Road Noise Survey Results – Location NM4, Hillview				
Time(hrs)/Date	Measured Noise Level	Meteorology	Criteria	Description and SPL dBA
Duration 1 hour	dB LAeq(1hr)		dB LAeq(1hr)	
12:44 16/08/2023	42	WD: NE WS: 1.0m/s Stab Class: A	55	Traffic 30-56 Birds 25-58 Wind in Trees 27-48 Residential Noise 35-66 NPM Concentrate Truck (offsite) 30-54 (2 Passes) (Approx. 20 vehicles Enter/Exit NPM Site)
18:00 16/08/2023	48	WD: N WS: <0.5m/s Stab Class: F	55	Agricultural Noise 36-51 Traffic 31-59 Birds 35-48 Residential Noise 35-73 NPM Concentrate Truck (offsite) 30-53 (1 Pass) (Approx. 79 vehicles Enter/Exit NPM Site)
Note: NPM denotes Northparkes Mines.				
Note: Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.				

## Appendix 1 - Monitoring Locations

### Dust & Noise



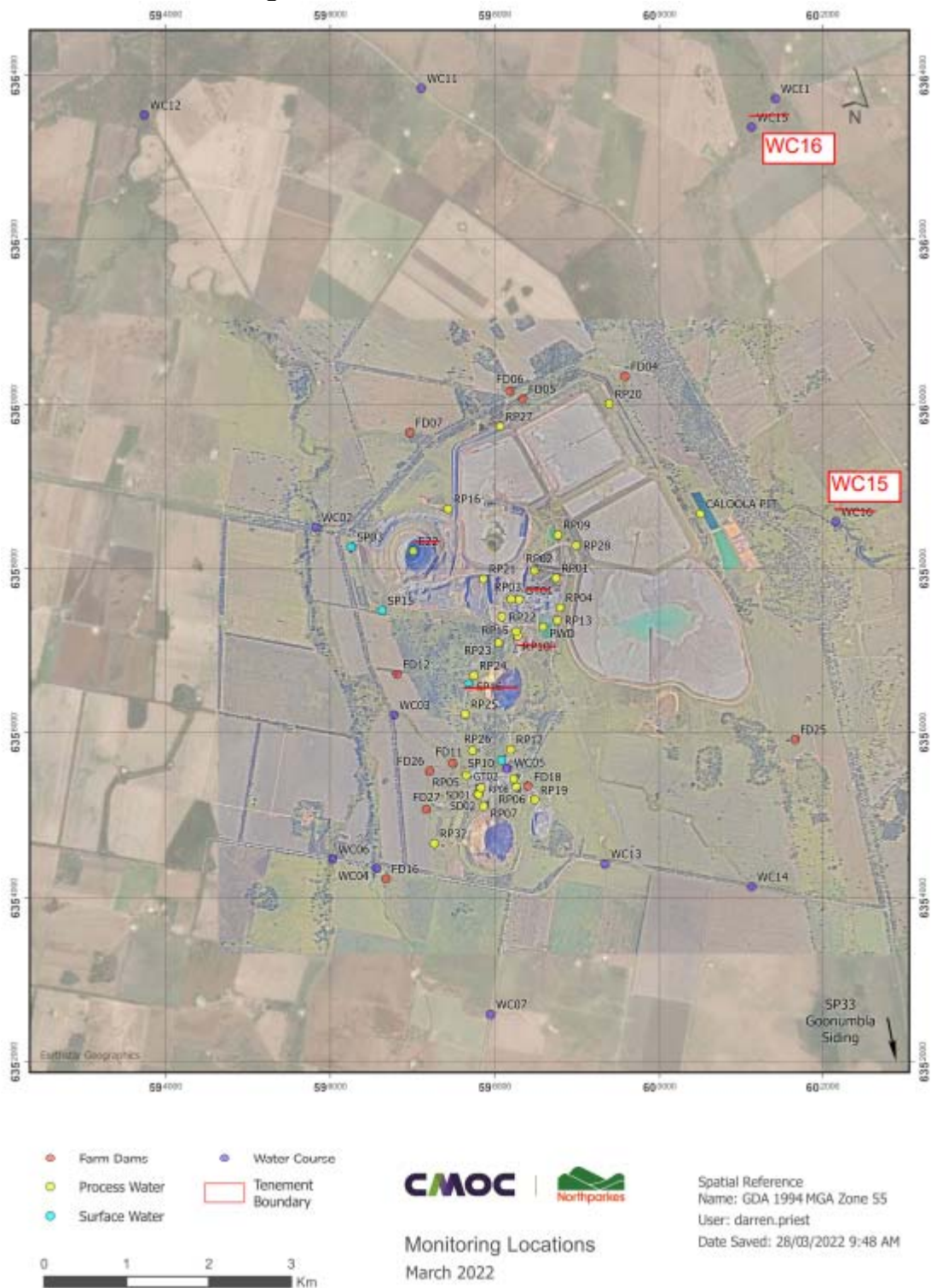
## Appendix 2 - Vibration & Overpressure



- Vibration and Overpressure
- Tenement Boundary



### Appendix 3 – Water monitoring Surface water monitoring locations



## Groundwater locations

