Northparkes Mines
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1 January to 31 March 2021 - Quarter 1

Environmental Monitoring Results Summary

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

Reviewed by	**Chris Higgins**
Title	Superintendent – Environment and Farms
Date	12 July 21
Signature	
Approved by	**Stacey Kelly**
Title	Manager – People, Safety and Environment
Date	12 July 2021
Signature	Stacey Kelly

1. SCOPE OF REPORT

This report provides a summary of monitoring results for the period from 1 January to 31 March 2021. This monitoring is undertaken in accordance with the Environmental Monitoring Program (available at www.northparkes.com.au). Details of air quality, noise and water monitoring locations are available in the Environmental Monitoring Program.

2. AIR QUALITY

The air quality monitoring program utilises PM_{10} (beta attenuated monitors), TSP's (high volume air samplers (HVAS)) and depositional dust gauges. Monitoring locations are strategically positioned around the mine lease and neighbouring properties. TSP and PM_{10} monitoring have been undertaken at three nearby farm residences Hubberstone, Milpose and Hillview. A summary of the monitoring results are provided below.

2.1 PM10

PM_{10} 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 >30 µg/m^3 for the annual average and >50 µg/m^3 for a 24-hour monitoring period. Refer to Appendix A for map of all PM_{10} monitoring locations.

During the reporting period there were two elevated 24hr readings recorded at Hubberstone, two at Hillview and one at Milpose monitoring locations. The elevated results triggered the internal investigation process and their likely causes are detailed below:

Hubberstone:

- 26 Jan 2021 (102.6 µg/m3) – following analysis of results, the elevated reading was caused by an instrument error, recording of 25,270 µg/ m^3 during a 10-minute averaged period. The 10-minute averaged periods prior to and post the extreme reading recorded 22 µg/ m^3 and 18 µg/ m^3 respectively. Excluding this extreme reading from the result, the PM_{10} 24 hour average would be 19.0 µg/ m^3. This result was deemed non-mine related and removed as an outlier.
- 2 Feb 2021 (118.5 µg/m3) - following analysis of results, the elevated reading was caused by an instrument error, recording of 25,250 µg/ m^3 during a 10-minute averaged period. The 10-minute averaged periods prior to and post the extreme reading recorded 0 µg/ m^3 and 4 µg/ m^3 respectively. Excluding this extreme reading from the result, the PM_{10} 24 hour average would be 9.5 µg/ m^3. This result was deemed non-mine related and removed as an outlier.

Hillview:

- 6 Jan 2021 (102.6 µg/m^3) – following analysis of results, the elevated reading was caused by an instrument error, recording of 14,240 µg/m^3 during a 10-minute averaged period. Five 10-minute averaged periods recorded 0 µg/m^3 prior to and post the extreme result. Excluding this extreme reading from the result, the PM_{10} 24 hour average would be 3.7 µg/m^3. This result was deemed non-mine related and removed as an outlier.
- 11 Feb 2021 (118.5 µg/m^3) - Analysis of PM10 data shows that periods recording high levels of particulate matter occur when the prevailing winds come from a Northerly and Northeasterly direction. As this is the opposing direction to the mine, it is highly unlikely that the elevated reading was caused by mining operations and has since been omitted from results.

Milpose:

- 10 Feb 2021 (59.0 µg/m³) – prevailing winds (NE) were experienced from the project area prior to PM_{10} readings becoming elevated. During the period of elevated results, wind speeds are weaker and from an ESE direction. If the project was generating airborne particulates, it would of more than likely been recorded during the stronger winds that were prevailing from the NE direction. It has also been noted that the resident has livestock in the surrounding paddock with their primary source of water to the ESE of the monitoring location. It has therefore been concluded that the elevated reading were not likely mine generated and therefore not reportable. The elevated reading has been omitted from the results.

Annual Averages:
Annual averages recorded at all monitoring locations are below the Consent criteria of 30 µg/m³, recording:

- 11.2 µg/m³ at Hubberstone
- 12.0 µg/m³ at Milpose, and
- 8.5 µg/m³ at Hillview.

Missing Data:
During the month of January, instrument error at Hubberstone and Hillview monitoring locations resulted in periods of data not being recorded or deemed invalid. Northparkes have rectified this issue to ensure these locations are now recording reliable and accurate data.

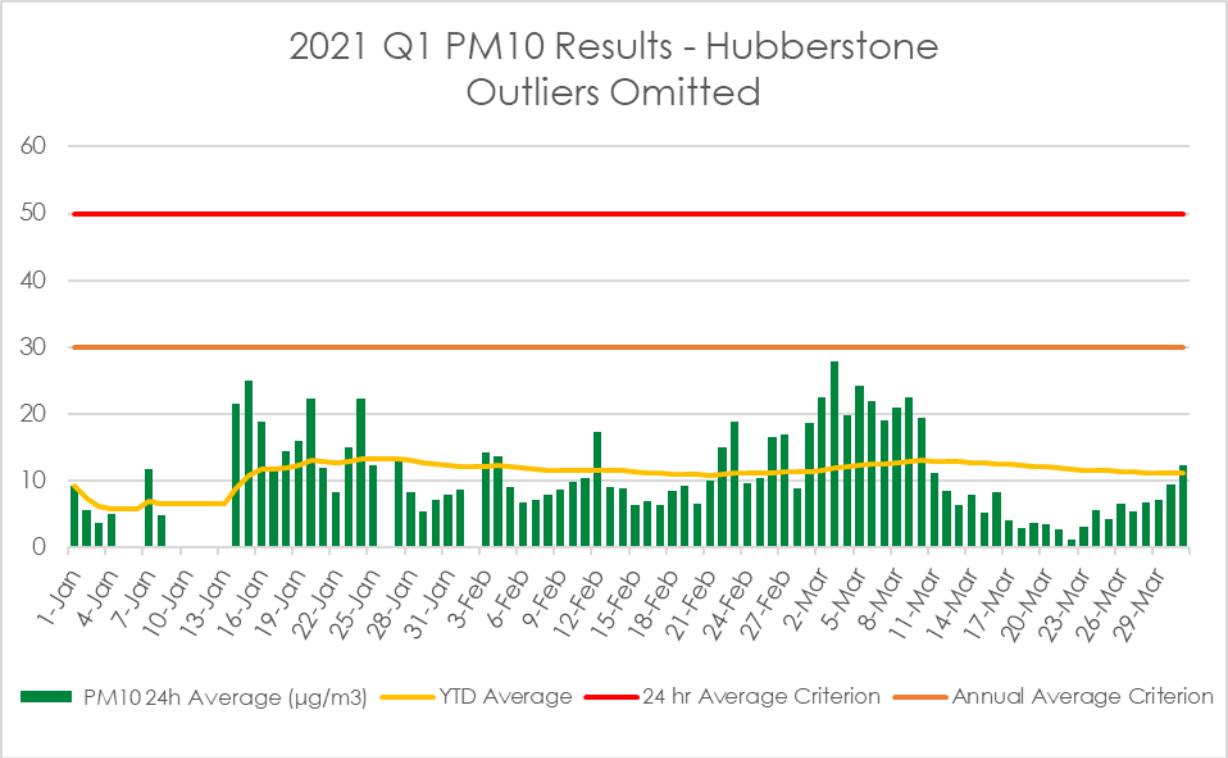


Figure 1: Hubberstone

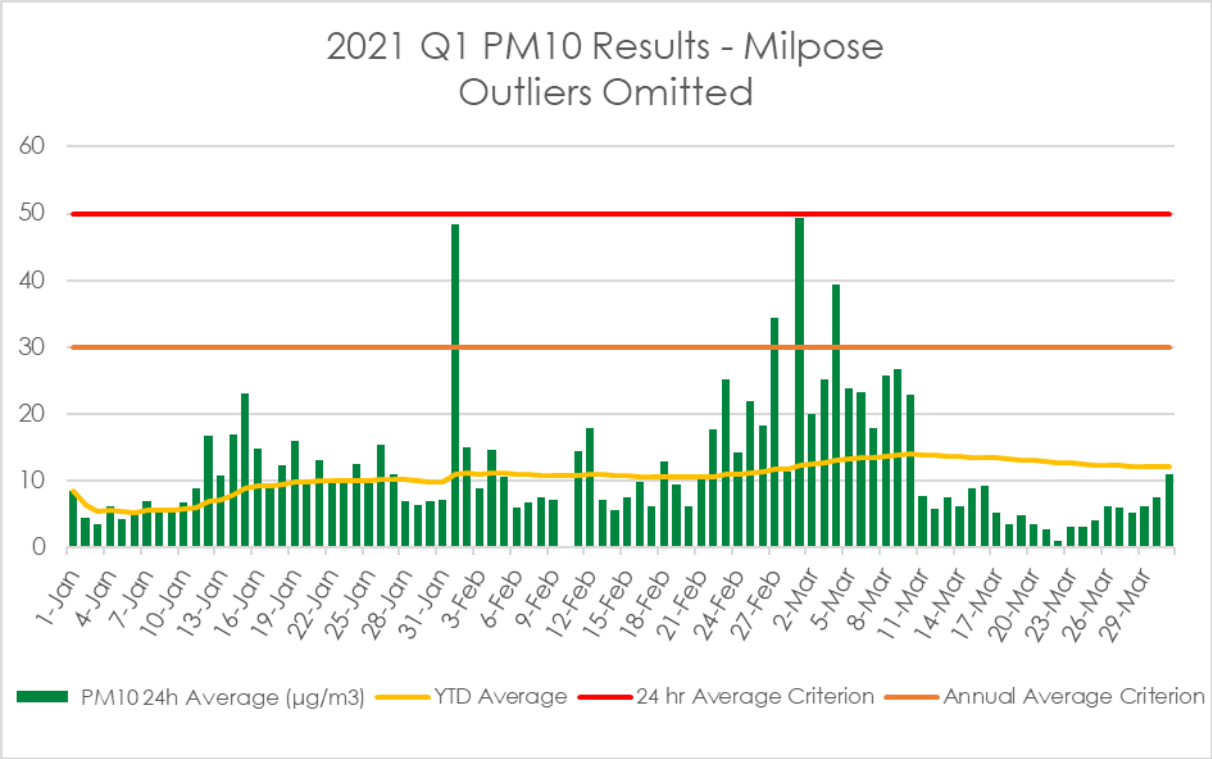


Figure 2: Milpose

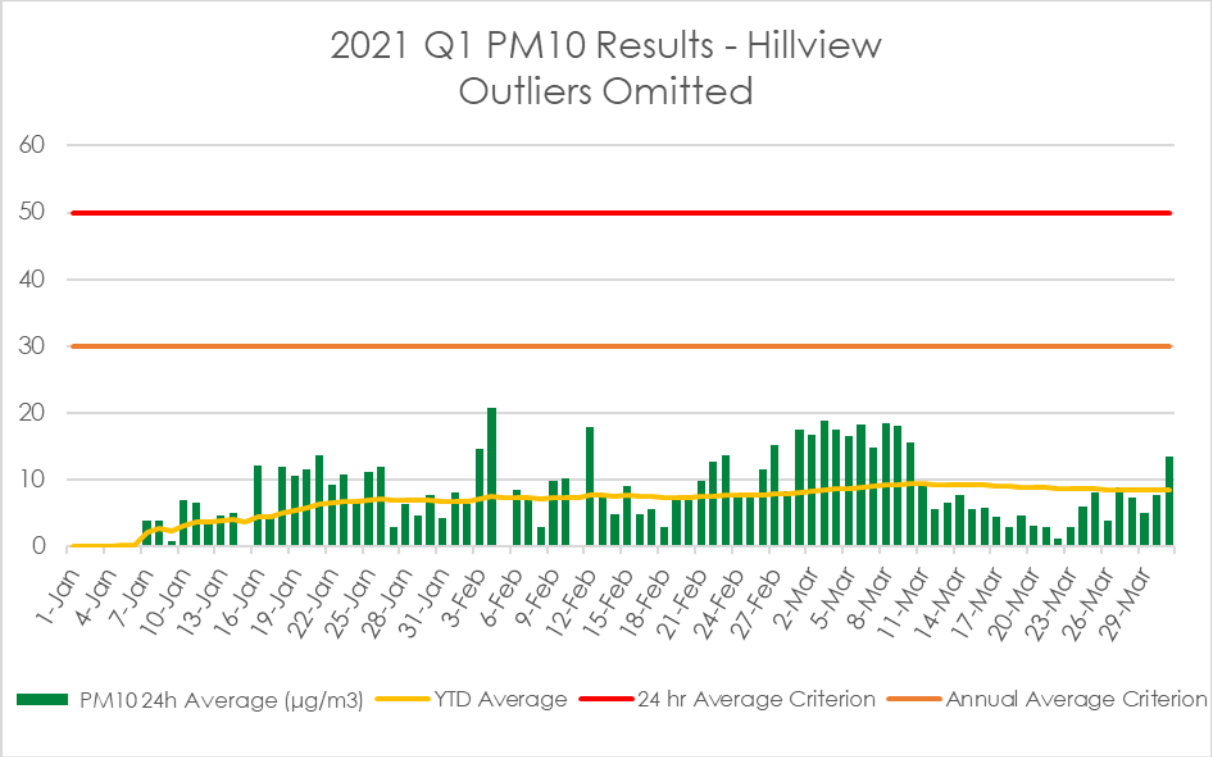


Figure 3: Hillview

2.2 TSP

Both Hubberstone and Hillview recorded dust levels at the TSP monitoring locations under the required average annual criteria set by the Consent (90 µg/m^3) for the quarter for the reporting period.

Milpose recorded one elevated result of 163 µg/m³ on 27 February. Low wind speeds (≤5 m/s) were experienced during 95% of the period, with the moderate to strong winds (>5 m/s) experienced from 1900 to 2000 hours. The stronger winds prevailed from the North, averaging 9 degrees during the hour period, suggesting the mine was an unlikely contributor to the elevated result. The result was removed as an outlier.

Annual Averages:
Annual averages recorded at all monitoring locations are significantly below the Consent criteria of 90 µg/m³, recording:

- 22.1 µg/m³ at Hubberstone
- 26.3 µg/m³ at Milpose, and
- 20.4 µg/m³ at Hillview.

Refer to Appendix A for map of all TSP monitoring locations.

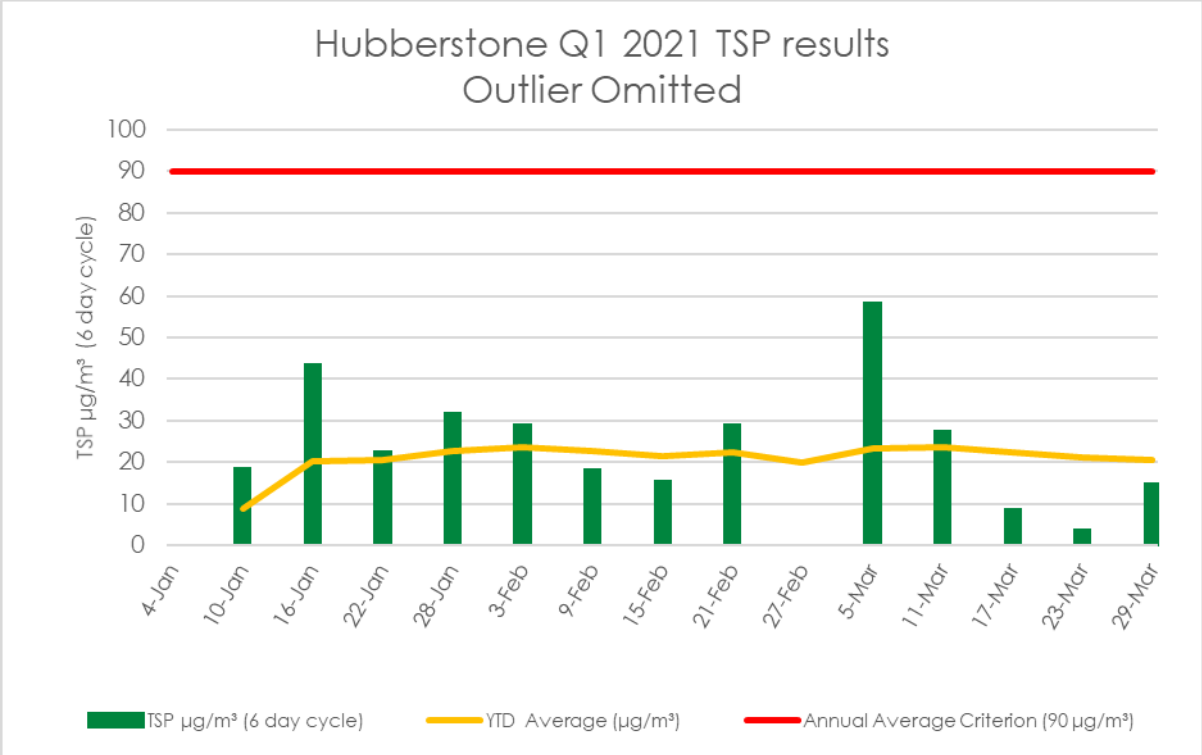


Figure 4: Hubberstone

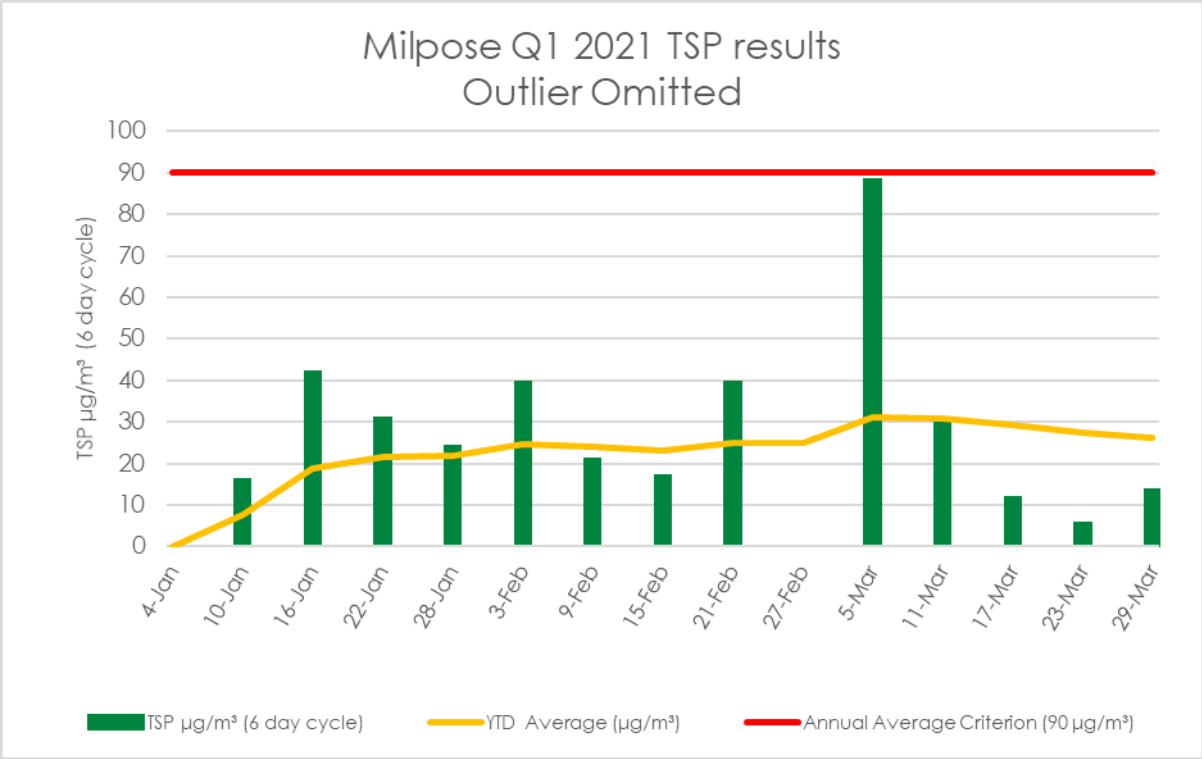


Figure 5: Milpose

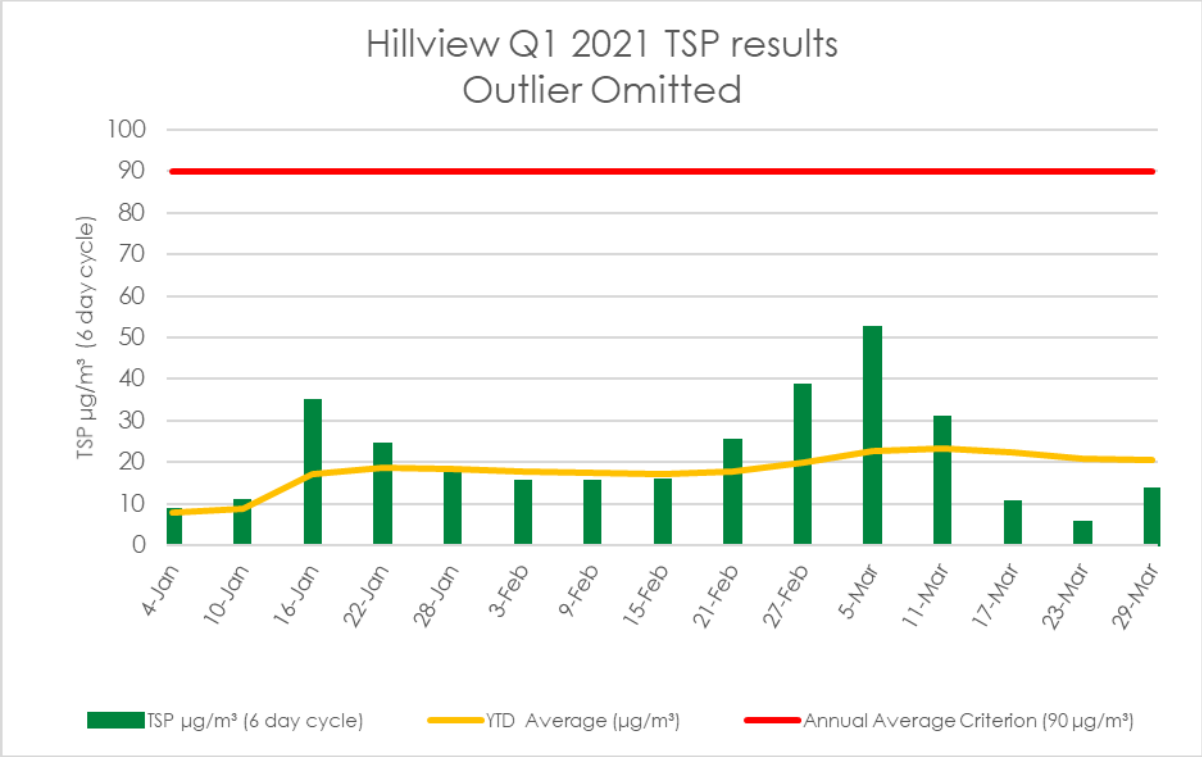


Figure 6: Hillview

2.3 Depositional Dust

Depositional dust gauges record the total of deposited dust for a month-long period and are a measure of broad scale changes to the local air quality.

Eleven depositional dust gauges are located across the mining lease and neighbouring residential properties to monitor atmospheric dust. A summary of the monthly monitoring results at each monitoring location are presented the figures below. Please be advised that only monitoring locations ND19, ND20, ND21 & ND22 are regulated by the criteria stated in the Consent, as they are the only depositional dust gauges that are at a residence on privately-owned land. All other depositional dust gauges are used to inform operational activities. Refer to Appendix B for map of all depositional dust monitoring locations.

The indicative annual average for all locations are below the long-term impact assessment criteria (4 g/m^2/month), complying with the conditions of the Consent.

During the quarter, TDNE, TDE and ND22 recorded results above the internal trigger level of 4.0 g/m^2/month, with ND20 and ND22 and triggering the maximum increase of 2 g/m^2/month at a residence on privately owned land. An internal investigation was undertaken for all results and are detailed below.

ND20:

- March: 3.5 g/m^2/month – an increase of 2.5 g/m^2/month was recorded from the previous February monitoring period. Analysis of weather data from Northparkes onsite meteorological station showed that 27% of potential dust generating wind (>7 m/s) was from the project area. As the project contains a large amount of agricultural buffer area, further investigation found that only 5% of potential dust generating winds came from areas that had been disturbed by mining activities. 60% of strong prevailing winds occurred between a North and Easterly direction. During the monitoring period, several activities occurring within close proximity to the monitoring location and are most likely the source of increased particulates. These include a number of agricultural activities, animal husbandry and prescribed burning.

ND22:

- March: 6.7 g/m^2/month – an increase of 3.8 g/m^2/month was recorded from the previous February monitoring period. Investigation of the laboratory analysis showed that 4.9 g/m^2/month was attributed to combustible matter, suggesting that tree litter was the main contributng factor to the increased result. ND22 gauge location is within close proximity to visual mtigation tree screen and has previously reported high levels of combustible matter. Northparkes will look to relocate the gauge to a more appropriate location to ensure representative particulate data is captured.

TDE:

- March: 4.6 g/m^2/month – the elevated TDE result was noted to have potentially occurred from several activities occurring within close proximity to the monitoring location. These include a number of agricultural activities, animal husbandry, prescribed burning and mining. The result will be observed during the next monitoring periods for upward trending and possible causes.

TDNE:

- January: 36.3 g/m^2/month – Analysis of this result showed that 19.1 g/m^2/month was attributed to combustible matter and 17.2 g/m^2/month was attributed to ash content. Observations during the sampling activities noted that the bottle had a considerable amount of bird droppings in the funnel and large amounts of debris in the sample bottle. Northparkes will continue to monitor for trending results.
- February: 39.2 g/m^2/month – Analysis of this result showed that 25.7 g/m^2/month was attributed to combustible matter and 13.5 g/m^2/month was attributed to ash content. Observations during the sampling activities noted that the bottle had a considerable amount of bird droppings in the funnel and large amounts of debris in the sample bottle. Northparkes will continue to monitor for trending results.

- March: 40.9 g/m²/month – Analysis of this result showed that 25.7 g/m²/month was attributed to combustible matter and 13.5 g/m²/month was attributed to ash content. Observations during the sampling activities noted that the bottle had a considerable amount of bird droppings in the funnel and large amounts of debris in the sample bottle. Northparkes have actioned an investigative program to be undertaken during future monitoring periods to understand the cause of the increase particulate matter.

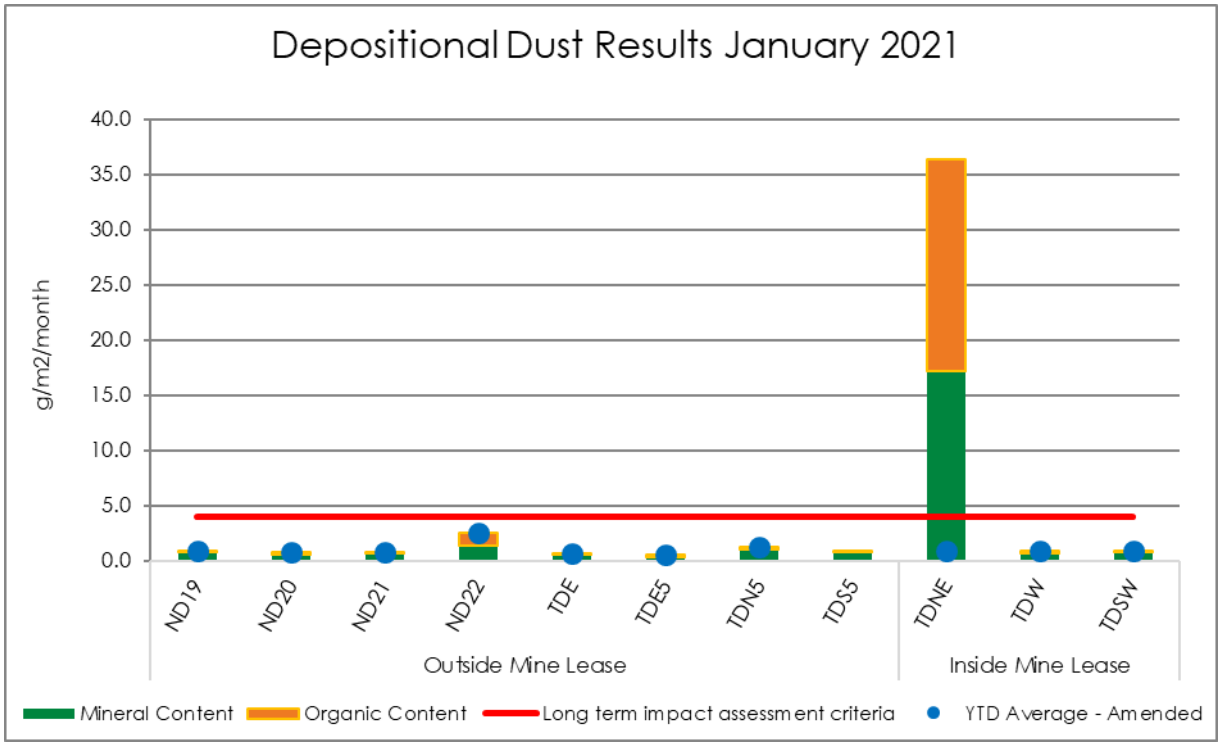


Figure 7: January depositional dust results for all locations

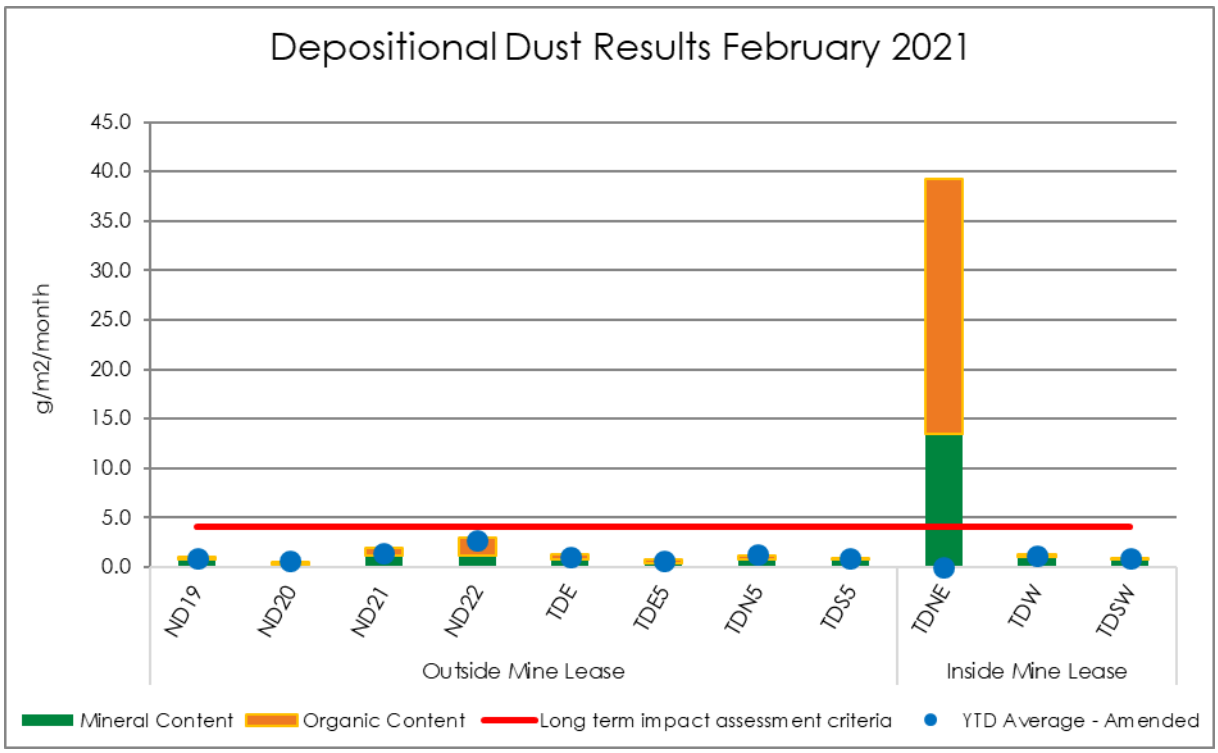


Figure 8: February depositional dust results for all locations

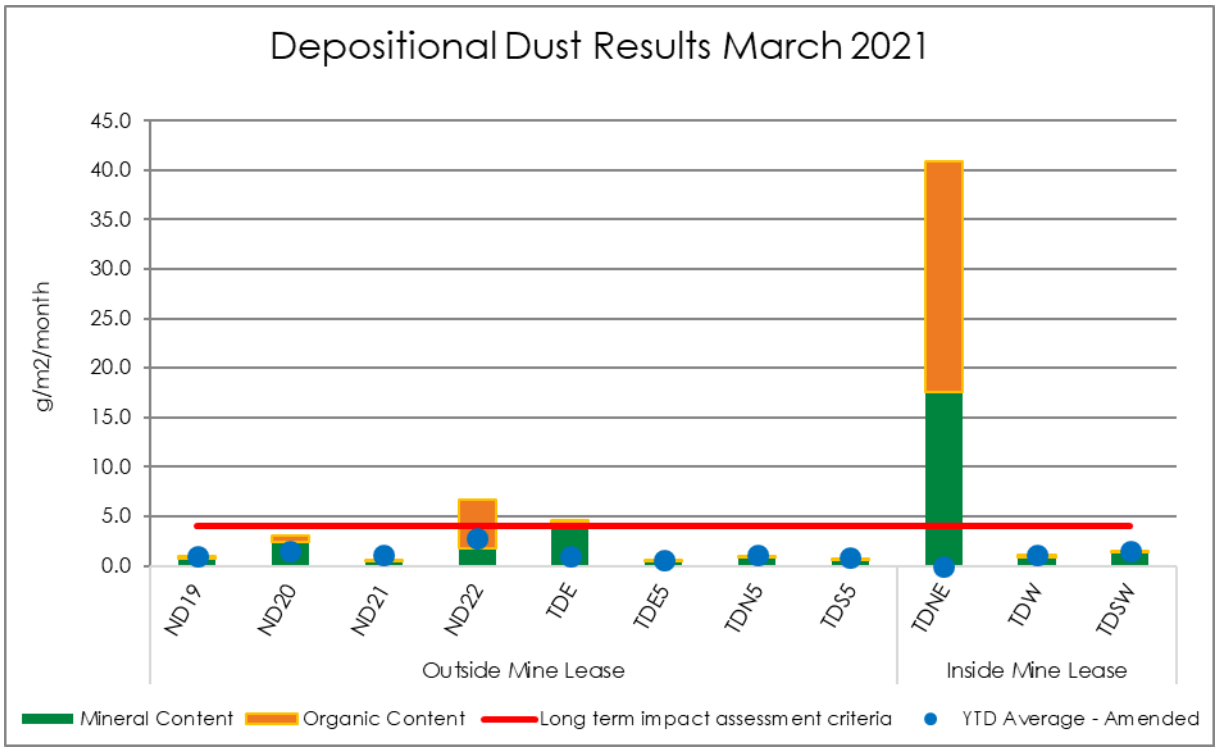


Figure 9: March depositional dust results for all locations

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. Refer to Appendix C & D for map of all surface and groundwater dust monitoring locations.

3.2 Quarterly Monitoring Analysis

Water quality monitoring was carried out generally in accordance with the Consent, with no significant changes to the pH, EC or copper concentrations for all locations. A summary of the monitoring results at each location sampled are presented in Tables 1-6 below.

Table 1: Process Water System

Location	RP01	RP02	RP03	RP04	RP05	RP06	RP07	RP08	RP09	RP12	RP15	RP19	RP20
pH	7.91	7.52	7.96	7.75	7.81	8.59	8.97	7.81	7.6	8.79	7.69	7.94	8.01
EC (uS/cm)	443.75	2714.3	2908.1	767.49	802.46	810.43	1146.8	3004.9	4163.3	436.32	25010	4334.5	7720
Cu (mg/L)	0.049	0.021	0.052	0.149	0.014	0.014	0.014	0.042	0.02	0.014	0.029	0.007	0.019

Table 1 continued: Process Water System

Location	RP21	RP23	RP25	RP26	RP32	RP33	GT02	PWD	Caloola
pH	7.3	8.25	8.18	8.95	8.44	8.37	8.96	8.18	7.97
EC (uS/cm)	2505.7	834.15	462.18	430.67	1691.3	233.94	1230.1	1626.1	5015.6
Cu (mg/L)	0.03	0.038	0.022	0.036	0.018	0.008	0.024	0.038	0.013

Table 2: Farm Dams

Location	FD04	FD05	FD06	FD07	FD11	FD16	FD18	FD25	FD26	FD27
pH	8.72	9.21	9.01	8.17	9.22	9.19	8.09	8.17	8.83	9.73
EC (uS/cm)	194.25	111.43	174.13	147.04	408.08	151.83	3467.4	207.69	480.88	361.66
Copper (mg/L)	0.014	0.011	0.007	0.008	0.025	0.024	0.009	0.014	0.019	0.014

Table 3: TSF Bores

Location	MB01	MB02	MB03	MB05	MB6B	W26	W27	W28	W29	W30	W31	W32
pH	7.11	6.95	6.22	6.58	6.49	7.19	11.35	7.55	12.55	7.59	8.1	11.7
EC (uS/cm)	4,247.9	7,039.1	16,092.0	17,954.0	12,394.0	9,605.4	12,881.0	11,630.0	14,899.0	1,834.8	497.6	1,537.9
Copper (mg/L)	0.005	0.005	0.018	0.003	0.012	0.014	0.007	0.01	0.047	0.008	0.018	0.004

Table 4: Opencut Bores

Location	MB10	MB13	MB14	MB16	W14	W19	W20	W21	W22	W23	W24	W25
pH	6.8	6.68	7.3	6.62	7.06	6.92	6.7	8.87	6.89	6.62	6.94	6.89
EC (uS/cm)	10,102.0	17,193.0	1,904.5	12,448.0	5,029.0	4,268.3	9,497.2	18,544.0	10,825.0	12,277.0	1,573.6	1,708.1
Copper (mg/L)	0.005	0.016	0.008	0.014	0.015	0.005	0.015	0.009	0.011	0.024	0.009	0.028

Table 5: Underground Bores

Location	MB17	MB18	MB19	MB20	P101	P102	P139	P145	P149
pH	8.13	11.26	7.34	7.43	6.63	6.67	6.08	6.47	6.73
EC (uS/cm)	625.02	4,251.8	10,836.0	8,995.9	6,502.9	20,223.0	20,147.0	76.97	20,425.0
Copper (mg/L)	0.008	0.017	0.01	0.042	0.001	0.001	0.007	0.008	0.01

Table 6: Regional Bores

Location	Moss	Wright
pH	6.86	6.69
EC (uS/cm)	1,681.2	834.15
Copper (mg/L)	0.003	0.014

4. 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.

4.1 Overview

CMOC undertakes a noise monitoring program that consists of both operator-attended and unattended surveys at the five nearest occupied residences 'Hubberstone', 'Milpose', 'Lone Pine', 'Hillview' and 'Adavale'. Refer to Appendix E for map of all attended noise monitoring locations.

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.

4.2 Quarterly Monitoring Analysis

Attended noise monitoring was undertaken between 23 and 24 January 2021.

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 RNP and NMP.

Attended monitoring has identified that operational emissions generated by NPM 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 7-12 below.

Table 7: Attended noise monitoring results for Hubberstone

Table 3 Operator-Attended Noise Survey Results – Location NM1, Hubberstone					
Date/Time (hrs) Duration 15min	Noise Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA
	L_{Amax}	L_{Aeq}	L_{A90}		
Day					
24/02/2021 17:01	55	36	26	WD: NE WS: 1.0m/s Stab Class: D	Birds 20-56 Wind 22-46 Residential Noise 25-63 Traffic 25-45 Insects 20-48 NPM Not Audible
24/02/2021 17:16	56	34	24		
24/02/2021 17:31	63	38	25		
Site $L_{Aeq(15min)}$ Contribution					<25
Evening					
24/02/2021 20:12	63	43	38	WD: NE WS: 2.0m/s Stab Class: F	Insects 34-50 Dogs <40 Birds 30-50 Wind 31-68 Traffic 30-44 NPM Not Audible
24/02/2021 20:27	64	46	40		
24/02/2021 20:42	68	50	39		
Site $L_{Aeq(15min)}$ Contribution					<30
Night					
24/02/2021 01:03	48	30	26	WD: NE WS: 1.0m/s Stab Class: E	Insects 25-48 Livestock 21-30 Wind 21-33 NPM Not Audible
24/02/2021 01:18	46	30	26		
24/02/2021 01:33	48	30	25		
Site $L_{Aeq(15min)}$ Contribution					<25
Site $L_{A1(1min)}$ Contribution					<40

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 8: Attended noise monitoring results for Lone Pine

Table 4 Operator-Attended Noise Survey Results – Location NM2, Lone Pine					
Date/Time (hrs) Duration 15min	Noise Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA
	L_{Amax}	L_{Aeq}	L_{A90}		
Day					
24/02/2021 16:06	64	47	33	WD: N WS: 1.5m/s Stab Class: B	Wind 27-57 Insects 24-45 Birds 25-48 Traffic 30-64 NPM Not Audible
24/02/2021 16:21	64	44	31		
24/02/2021 16:36	61	42	31		
Site $L_{Aeq(15min)}$ Contribution					<25
Evening					
24/02/2021 19:13	68	51	48	WD: N WS: 1.5m/s Stab Class: E	Insects 47-56 Wind <45 Birds 45-68 Agricultural Noise <40 NPM Not Audible
24/02/2021 19:28	66	51	48		
24/02/2021 19:43	58	52	49		
Site $L_{Aeq(15min)}$ Contribution					<35
Night					
24/02/2021 00:06	59	50	47	WD:NE WS: 2.0m/s Stab Class: E	Insects 36-47 Wind 33-62 NPM Not Audible
24/02/2021 00:21	62	48	44		
24/02/2021 00:36	49	44	39		
Site $L_{Aeq(15min)}$ Contribution					<35
Site $L_{A1(1min)}$ Contribution					<40

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 9: Attended noise monitoring results for Milpose

Table 5 Operator-Attended Noise Survey Results – Location NM3, Milpose					
Date/Time (hrs) Duration 15min	Noise Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA
	L_{Amax}	L_{Aeq}	L_{A90}		
Day					
24/02/2021 14:06	57	37	25	WD: N WS: 1.0m/s Stab Class: A	Birds 20-57 Wind 20-45 Insects 21-35 Traffic 20-30 Aircraft 25-44 NPM Exhaust Fan <20 (7-8 minute total duration)
24/02/2021 14:21	54	35	23		
24/02/2021 14:36	53	34	23		
Site $L_{Aeq(15min)}$ Contribution					<25
Evening					
23/02/2021 21:10	62	41	29	WD: E WS: <0.5m/s Stab Class: E	Insects 25-41 Birds 30-62 Farm Noise 30-67 Aircraft 30-35 NPM Not Audible
23/02/2021 21:25	67	45	29		
23/02/2021 21:40	59	36	28		
Site $L_{Aeq(15min)}$ Contribution					<25
Night					
23/02/2021 22:06	55	35	29	WD: E WS: <0.1m/s Stab Class: E	Insects 23-41 Birds 25-56 Dogs 20-30 NPM Not Audible
23/02/2021 22:21	56	34	28		
23/02/2021 22:36	55	35	28		
Site $L_{Aeq(15min)}$ Contribution					<25
Site $L_{A1(1min)}$ Contribution					<40

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 10: Attended noise monitoring results for Hillview

Table 6 Operator-Attended Noise Survey Results – Location NM4, Hillview					
Date/Time (hrs) Duration 15min	Noise Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA
	L_{Amax}	L_{Aeq}	L_{A90}		
Day					
24/02/2021 12:50	55	33	28	WD: NE WS: 1.0m/s Stab Class: A	Birds 20-66 Insects 23-30 Traffic 25-55 Residential Noise 30-71 Wind 20-48 NPM Not Audible
24/02/2021 13:05	71	46	25		
24/02/2021 13:20	66	42	25		
Site $L_{Aeq(15min)}$ Contribution					<25
Evening					
24/02/2021 18:00	69	41	28	WD: N WS: 1.5m/s Stab Class: D	Traffic 29-53 Birds 22-47 Wind 25-69 Residential Noise 30-72 NPM Concentrate Truck 30-55 (Offisite) NPM Not Audible
24/02/2021 18:15	72	49	31		
24/02/2021 18:30	60	40	34		
Site $L_{Aeq(15min)}$ Contribution					<25
Night					
24/02/2021 01:58	48	29	27	WD: NE WS: 1.5m/s Stab Class: F	Insects 25-36 Wind 23-48 NPM Not Audible
24/02/2021 02:13	47	33	28		
24/02/2021 02:28	45	32	27		
Site $L_{Aeq(15min)}$ Contribution					<25
Site $L_{A1(1min)}$ Contribution					<40

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 11: Attended noise monitoring results for Adavale

Table 7 Operator-Attended Noise Survey Results – Location NM5, Adavale					
Date/Time (hrs) Duration 15min	Noise Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA
	L_{Amax}	L_{Aeq}	L_{A90}		
Day					
24/02/2021 15:09	55	36	24	WD: NE WS: 1.5m/s Stab Class: C	Wind 22-55 Insects 20-30 Birds 20-37 NPM Ventilation Fan <20-25 (constant duration)
24/02/2021 15:24	52	35	24		
24/02/2021 15:39	54	32	23		
Site $L_{Aeq(15min)}$ Contribution					24
Evening					
23/02/2021 20:15	46	33	22	WD: SE WS: <0.5m/s Stab Class: E	Insects 20-51 Birds 20-35 Dogs Barking 20-25 NPM Not Audible
23/02/2021 20:30	47	37	25		
23/02/2021 20:45	51	40	26		
Site $L_{Aeq(15min)}$ Contribution					<25
Night					
23/02/2021 23:05	43	32	25	WD: SE WS: 0.5m/s Stab Class: E	Insects 23-43 Dogs Barking 23-28 Animals 30-53 NPM Site Alarms <25 (infrequent 3-5 second durations) NPM Ventilation Fan 20-33 (constant duration)
23/02/2021 23:20	43	35	28		
23/02/2021 23:35	53	36	29		
Site $L_{Aeq(15min)}$ Contribution					27
Site $L_{A1(1min)}$ Contribution					<40

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 road noise survey results

Table 8 Operator-Attended Road Noise Survey Results – Location NM4, Hillview				
Date/Time (hrs) Duration 1 hour	Measured Noise Level dB $LA_{eq(1hr)}$	Meteorology	Criteria dB $LA_{eq(1hr)}$	Description and SPL dBA
24/02/2021 12:50	42	WD: NE WS: 1.0m/s Stab Class: A	55	Birds 20-66 Insects 23-30 Traffic 25-55 Residential Noise 30-71 Wind 20-48 Approx. 14 Vehicles Enter/Exit Site
24/02/2021 18:00	45	WD: N WS: 1.5m/s Stab Class: D	55	Traffic 29-53 Birds 22-47 Wind 25-69 Residential Noise 30-72 NPM Concentrate Truck 30-55 (Offsite) Approx. 72 Vehicles Enter/Exit 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 A - PM10/TSP Monitoring Locations

Dust,PM10 Realtime

Dust,TSP

Tenement Boundary

0 1 2 3 Km

CMOC Northparkes

Monitoring Locations

March 2019

Spatial Reference
Name: GDA 1994 MGA Zone 55
User: darren.priest
Date Saved: 6/03/2019 11:57 AM

Appendix B – Depositional Dust Monitoring Locations

Depositional Dust

Tenement Boundary

0 1 2 3 Km

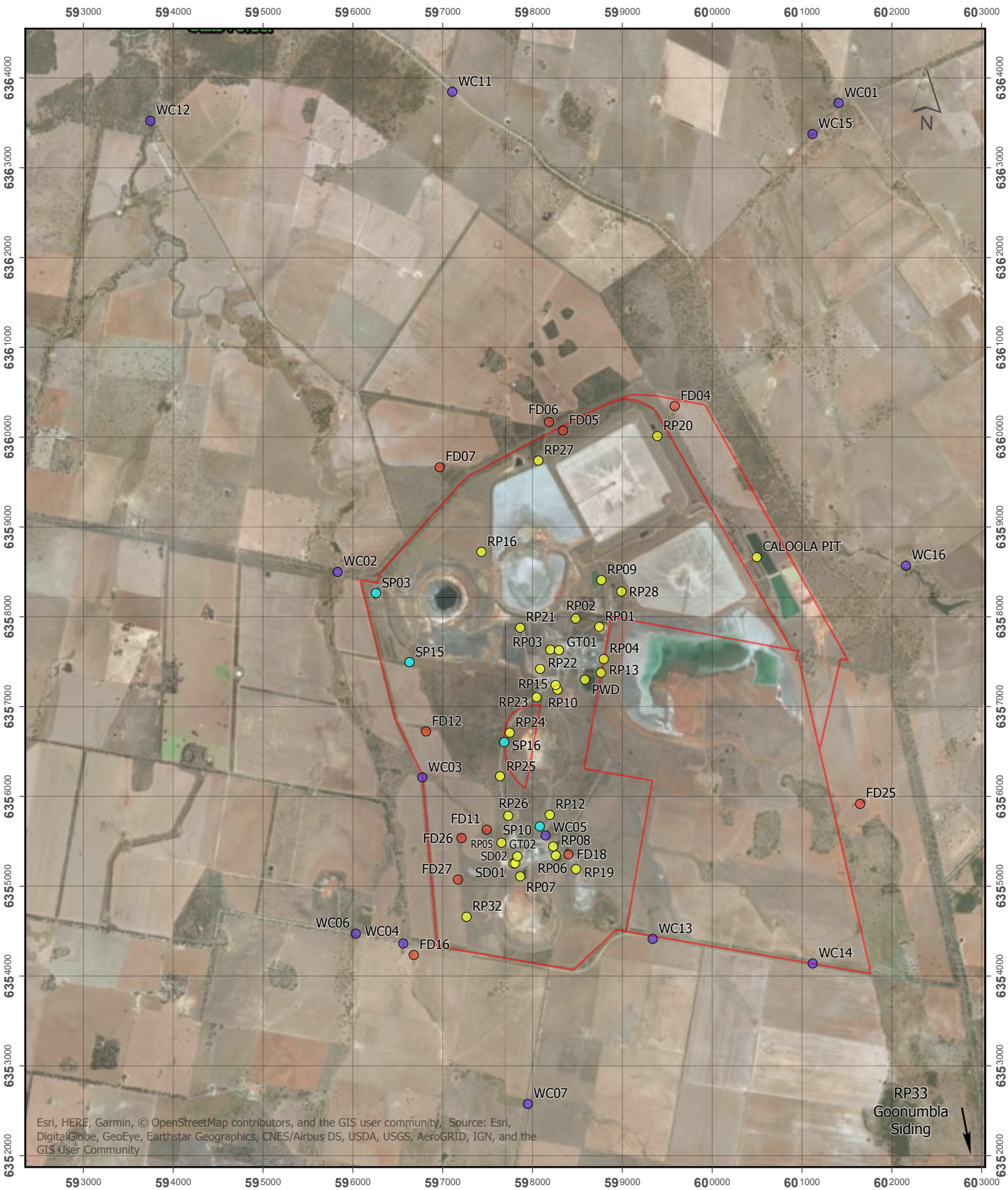
CMOC Northparkes

Monitoring Locations

March 2019

Spatial Reference
Name: GDA 1994 MGA Zone 55
User: darren.priest
Date Saved: 6/03/2019 11:56 AM

Appendix C – Surface Water Monitoring Locations



Farm Dams
Process Water
Surface Water
Water Course
Tenement Boundary

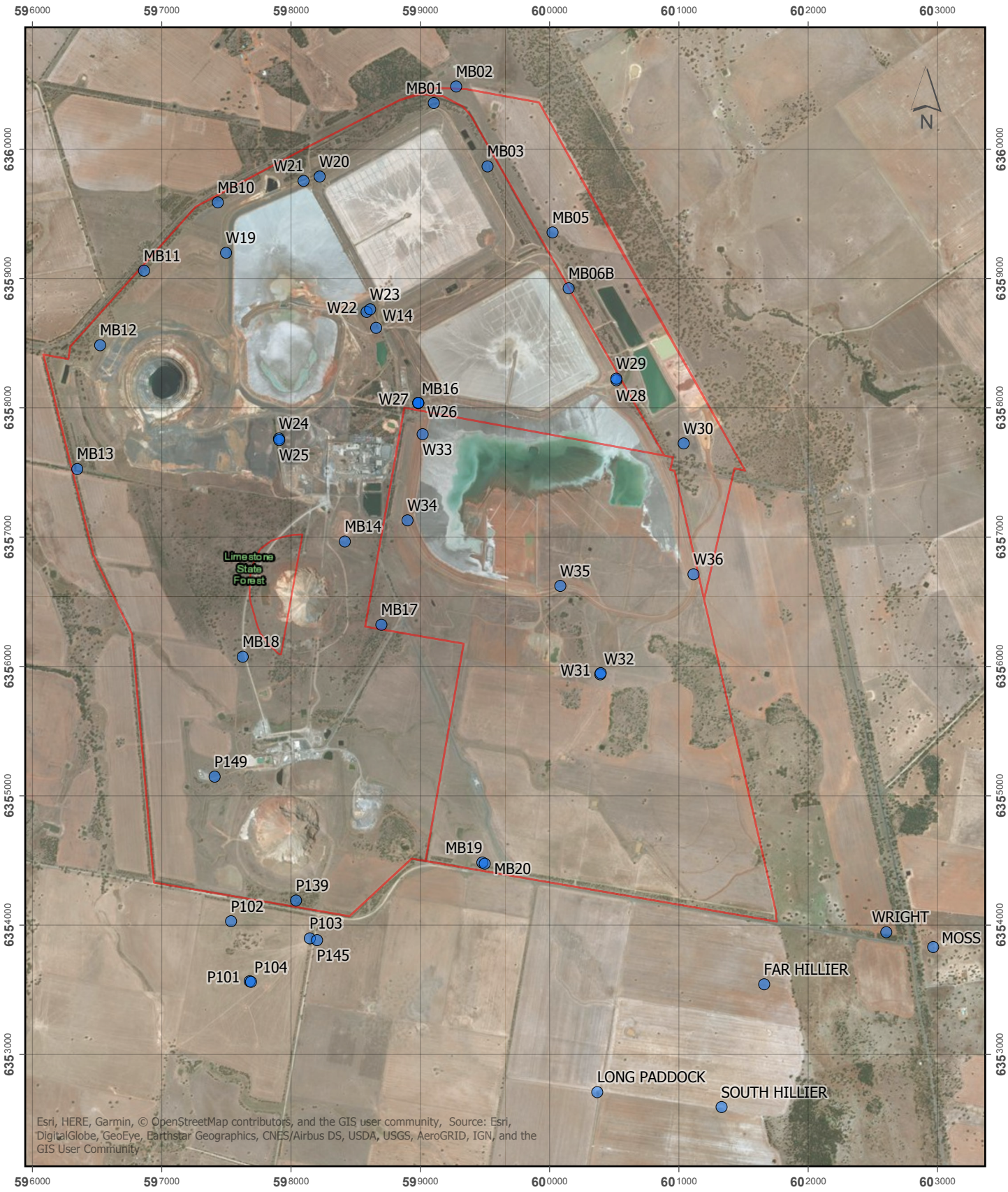
0 1 2 3 Km

CMOC Northparkes

Monitoring Locations
March 2019

Spatial Reference
Name: GDA 1994 MGA Zone 55
User: darren.priest
Date Saved: 14/03/2019 8:44 AM

Appendix D - Groundwater Monitoring Locations



GroundWater

Tenement Boundary

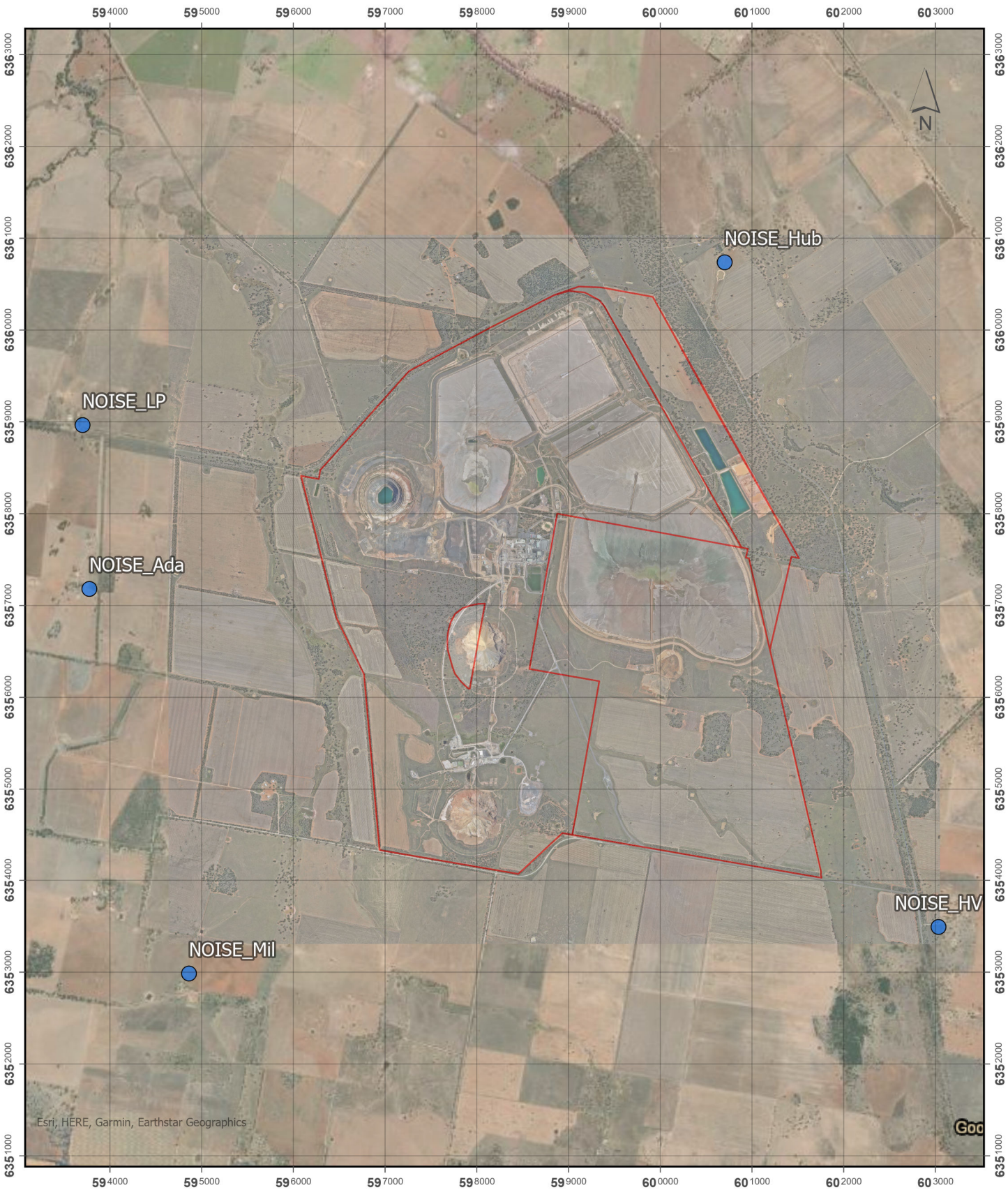
0 1 2 Km

CMOC Northparkes

Monitoring Locations
March 2019

Spatial Reference
Name: GDA 1994 MGA Zone 55
User: darren.priest
Date Saved: 6/03/2019 12:01 PM

Appendix E – Attended Noise Monitoring Locations



Noise

Tenement Boundary

0 1 2 3 Km

CMOC Northparkes

Monitoring Locations
March 2021

Spatial Reference
Name: GDA 1994 MGA Zone 55
User: darren.priest
Date Saved: 30/03/2021 1:30 PM