

Monthly Noise Monitoring Assessment

Tomingley Gold Mine
March 2025



Prepared for: Tomingley Gold Operations Pty Ltd
April 2025
MAC160270-2025RP03



Document Information

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1 Introduction

Muller Acoustic Consulting Pty Ltd (MAC) has been commissioned by Tomingley Gold Operations Pty Ltd (TGO) to complete a Noise Monitoring Assessment (NMA) for Tomingley Gold Mine (the mine), Tomingley, NSW.

The NMA involved quantifying the noise contribution of the mine by direct attended measurements to determine mining noise emissions so that effective management and controls can be implemented where required. The monitoring has been conducted in accordance with the TGO Noise Management Plan and in general accordance with Conditions L4.2 to L4.7 of the EPL at six representative receiver locations. It is noted that this assessment has been completed as part of an internal noise management initiative and does not form part of the annual noise monitoring program to address conditions of the Environmental Protection License (EPL).

The assessment has been conducted in accordance with the following documents:

- NSW Environment Protection Authority (EPA), Noise Policy for Industry (NPI), 2017;
- NSW Environment Protection Authority (EPA), Approved Methods for the measurement and analysis of environmental noise in NSW, 2022;
- NSW Environment Protection Authority (EPA), Environment Protection Licence # 20169 (EPL);
- Standards Australia AS/NZS IEC 61672.1-2019-Electroacoustics - Sound level meters – Specifications; and
- Standards Australia AS 1055:2018 - Acoustics - Description and measurement of environmental noise - General Procedures.

A glossary of terms, definitions and abbreviations used in this report is provided in **Appendix A**.

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2 Environmental Protection License Noise Limits

Historic Noise Assessments for the mine categorise receivers into Noise Assessment Groups (NAGs). The NAGs were derived based on ambient noise data that controlled receiver RBLs.

Table 1 reproduces the operational and sleep disturbance noise limits for assessed receivers referenced from the EPL that have been adopted for this NMA and are consistent with historic EPL monitoring locations.

Table 1 Noise Limits, dBA					
Noise Assessment Group	Receivers	Day	Evening	Night	
		LAeq(15min)	LAeq(15min)	LAeq(15min)	LA1(1min)
NAG A	R4, R5, R6	35	35	35	45
NAG B	R2	36	35	35	45
NAG C	R3/29	45	35	35	45
NAG D	R23	43	38	36	45

Note: Refer to figure in Appendix 4 of Project Approval 09-0155 for noise locations. However, these criteria do not apply if the Proponent has an agreement with the relevant owner(s) of these residences / land to generate higher noise levels, and the Proponent has advised the Department of Planning and Infrastructure and EPA in writing of the terms of this agreement.

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3 Methodology

3.1 Locality

TGO is located to the south of the village of Tomingley, NSW. Receivers in the locality surrounding the mine are primarily rural/residential and for consistency the naming conventions for each receiver have been retained from historic Noise Assessments. The monitoring locations with respect to the mine are presented in the locality plan shown in **Figure 1**.

3.2 Assessment Methodology

The attended noise survey was conducted in general accordance with the procedures described in Standards Australia AS 1055:2018, "Acoustics - Description and Measurement of Environmental Noise" and the EPL. Measurements were carried out using a Svantek Type 1, 971 noise analyser between Tuesday 11 March 2025 and Thursday 13 March 2025. The acoustic instrumentation used carries appropriate and current NATA (or manufacturer) calibration certificates with records of all calibrations maintained by MAC as per Approved Methods for the measurement and analysis of environmental noise in NSW (EPA, 2022) and complies with AS/NZS IEC 61672.1-2019-Electroacoustics - Sound level meters - Specifications. Calibration of all instrumentation was checked prior to and following measurements. Drift in calibration did not exceed ± 0.5 dBA.

Both evening and night measurements were of 15-minutes in duration. Where possible, throughout each survey the operator quantified the contribution of each significant noise source. Extraneous noise sources were excluded from the analysis to calculate the $L_{Aeq}(15min)$ mine noise contribution for comparison against the relevant EPL limit.

Prevailing meteorological conditions for the monitoring period were sourced from TGO's on-site meteorological station and analysed in accordance with Appendix D1 of the NPI to determine the stability category present at the time of each measured sample. This was undertaken to determine applicability of results in accordance with Condition L4.3 of the EPL. Results obtained during non-prevailing meteorological conditions (ie F Class Stability in conjunction with a 2m/s drainage or G Class Stability) are considered not applicable against the EPL criteria.



FIGURE 1
 LOCALITY PLAN
 MAC160270
 Tomingley Gold Operations

KEY

- Receivers
- Brooklands
- TGO Boundary

0 300 600 900 1200 1500 m

4 Results

The monitoring and assessment results are presented in individual tables for each assessment location.

4.1 Meteorological Conditions

Weather data for the noise assessment was sourced from TGOs on-site meteorological station as well as operator measured conditions on site of EPL nominated receiver locations. The data was used to determine prevailing meteorological conditions at the time of the attended measurements, which are presented in **Table 2**.

Table 2 Prevailing Meteorological Conditions

Date & Time	TGO on-site Meteorological Station (10m AGL)		Operator Measured Weather Monitoring Location (1.8m AGL)	
	Wind Direction	Wind (m/s)	Wind Direction	Wind (m/s)
	19:44 11/03/2025	E	3.1	NE
20:13 11/03/2025	N	3.3	NE	0.5
20:36 11/03/2025	ENE	1.9	NE	0.1
20:57 11/03/2025	E	2.3	NE	0.1
21:14 11/03/2025	E	1.3	NE	0.1
21:45 11/03/2025	ENE	3.4	NE	0.1
22:00 11/03/2025	NE	3.1	NE	0.1
22:20 11/03/2025	NE	4.1	NE	0.1
22:38 11/03/2025	ENE	3.4	NE	0.1
22:59 11/03/2025	ENE	3.3	NE	1.5
23:22 11/03/2025	ENE	4.1	NE	0.1
23:43 11/03/2025	ENE	3.1	NE	0.1
19:45 12/03/2025	ENE	2.1	NE	0.1
20:06 12/03/2025	ENE	2.4	NE	0.1
20:30 12/03/2025	NE	2.2	NE	0.1
20:52 12/03/2025	ENE	2.0	NE	0.1
21:09 12/03/2025	ENE	2.6	NE	0.1
21:29 12/03/2025	ENE	2.6	NE	0.1
22:00 12/03/2025	ENE	2.5	NE	0.1
22:22 12/03/2025	ENE	2.0	NE	0.1
22:39 12/03/2025	NE	2.4	NE	0.1
23:00 12/03/2025	NE	2.4	NE	0.1
23:24 12/03/2025	ENE	1.8	NE	0.5
23:45 12/03/2025	ENE	1.9	NE	0.1
19:38 13/03/2025	NNE	1.0	S	0.1
19:58 13/03/2025	NNW	0.7	S	0.1
20:22 13/03/2025	N	0.6	S	0.1
20:43 13/03/2025	NE	0.9	S	0.1
21:01 13/03/2025	E	1.0	S	0.1
21:25 13/03/2025	SW	1.5	S	0.1
22:00 13/03/2025	E	1.8	S	0.1
22:19 13/03/2025	E	1.5	S	0.1
22:37 13/03/2025	ENE	1.5	S	0.1
22:57 13/03/2025	ENE	1.1	S	0.1
23:21 13/03/2025	ENE	1.3	S	0.1
23:41 13/03/2025	E	1.5	S	0.1

4.2 Assessment Results - Location R2

The results of the attended noise measurements at location R2 for the March 2025 survey are summarised in **Table 3** with the relevant EPL limits, the calculated mining noise contribution and prevailing meteorological conditions at the time of each measurement.

Table 3 Operator-Attended Noise Survey Results - Location R2							
Date	Time (hrs)	Descriptor (dBA re 20µPa)			EPL Limit	Meteorology ¹	Description and SPL, dBA
		L _{Amax}	L _{Aeq}	L _{A90}			
11/03/2025	21:45 (Evening)	60	37	32	35	WD: NE	Insects 31-36
						WS: 0.1m/s	Aircraft 33-60
						Stab Class: D	TGO hum <32
						TGO Site L _{Aeq} (15min) Contribution	
11/03/2025	22:00 (Night)	70	44	32	35	WD: NE	Insects 30-35
						WS: 0.1m/s	Bats 35-44
						Stab Class: D	Traffic 32-70
						TGO Site L _{Aeq} (15min) Contribution	
12/03/2025	21:29 (Evening)	44	36	34	35	WD: NE	Insects 32-44
						WS: 0.1m/s	TGO hum <32
						Stab Class: E	
						TGO Site L _{Aeq} (15min) Contribution	
12/03/2025	22:00 (Night)	62	39	34	35	WD: NE	Insects 31-42
						WS: 0.1m/s	Traffic 34-62
						Stab Class: E	TGO hum <32
						TGO Site L _{Aeq} (15min) Contribution	
13/03/2025	21:25 (Evening)	70	46	36	35	WD: S	Insects 32-44
						WS: 0.1m/s	Birds 41-46
						Stab Class: F	Traffic 40-70
						TGO Site L _{Aeq} (15min) Contribution	
13/03/2025	22:00 (Night)	64	43	39	35	WD: S	Insects 37-44
						WS: 0.1m/s	Traffic 41-64
						Stab Class: F	TGO inaudible
						TGO Site L _{Aeq} (15min) Contribution	

Note 1: Meteorological data obtained from TGO's on-site weather station or by direct measurement by the operator.

4.3 Assessment Results - Location R3/29

The results of the attended noise measurements at location R3/29 for the March 2025 survey are summarised in **Table 4** with the relevant EPL limits, the calculated mining noise contribution and prevailing meteorological conditions at the time of each measurement.

Table 4 Operator-Attended Noise Survey Results - Location R3/29							
Date	Time (hrs)	Descriptor (dBA re 20µPa)			EPL Limit	Meteorology ¹	Description and SPL, dBA
		L _{Amax}	L _{Aeq}	L _{A90}			
11/03/2025	20:57 (Evening)	85	67	38	35	WD: NE WS: 0.1m/s Stab Class: D	Traffic 38-85
							Insects 34-39
							Birds 42-62
							TGO inaudible
TGO Site L _{Aeq} (15min) Contribution							<28
11/03/2025	22:38 (Night)	87	62	37	35	WD: NE WS: 0.1m/s Stab Class: D	Traffic 37-87
							Insects <35
							Dogs barking 39-49
							Birds 39-68
TGO Site L _{Aeq} (15min) Contribution							<27
12/03/2025	20:52 (Evening)	85	68	45	35	WD: NE WS: 0.1m/s Stab Class: E	Traffic 42-85
							Insects <37
							TGO inaudible
							TGO Site L _{Aeq} (15min) Contribution
12/03/2025	22:39 (Night)	83	60	42	35	WD: NE WS: 0.1m/s Stab Class: E	Traffic 41-83
							Insects <35
							TGO inaudible
							TGO Site L _{Aeq} (15min) Contribution
13/03/2025	20:43 (Evening)	85	67	50	35	WD: S WS: 0.1m/s Stab Class: D	Traffic 42-85
							Insects <40
							TGO inaudible
							TGO Site L _{Aeq} (15min) Contribution
13/03/2025	22:37 (Night)	81	60	33	35	WD: S WS: 0.1m/s Stab Class: E	Traffic 32-81
							Insects 31-34
							TGO Hum 31-34
							TGO Site L _{Aeq} (15min) Contribution

Note 1: Meteorological data obtained from TGO's on-site weather station or by direct measurement by the operator.

4.4 Assessment Results - Location R4

The results of the attended noise measurements at location R4 for the March 2025 survey are summarised in **Table 5** with the relevant EPL limits, the calculated mining noise contribution and prevailing meteorological conditions at the time of each measurement.

Table 5 Operator-Attended Noise Survey Results - Location R4							
Date	Time (hrs)	Descriptor (dBA re 20µPa)			EPL Limit	Meteorology ¹	Description and SPL, dBA
		L _{Amax}	L _{Aeq}	L _{A90}			
11/03/2025	20:13 (Evening)	77	48	27	35	WD: NE WS: 0.5m/s Stab Class: D	Thunder 34-49
							Traffic 28-77
							Insects 24-32
							TGO inaudible
TGO Site L _{Aeq} (15min) Contribution							<20
11/03/2025	23:22 (Night)	61	31	26	35	WD: NE WS: 0.1m/s Stab Class: D	Insects 25-32
							Wind in trees 27-37
							Operator 30-61
							TGO inaudible
TGO Site L _{Aeq} (15min) Contribution							<20
12/03/2025	20:06 (Evening)	55	31	25	35	WD: NE WS: 0.1m/s Stab Class: E	Traffic 26-32
							Birds 29-55
							Insects 22-33
							TGO inaudible
TGO Site L _{Aeq} (15min) Contribution							<20
12/03/2025	23:24 (Night)	62	30	26	35	WD: NE WS: 0.5m/s Stab Class: D	Insects 25-32
							Traffic 30-35
							Operator 30-62
							TGO inaudible
TGO Site L _{Aeq} (15min) Contribution							<30
13/03/2025	19:58 (Evening)	60	30	22	35	WD: S WS: 0.1m/s Stab Class: F	Birds 25-60
							Insects 20-27
							Traffic 24-32
							TGO inaudible
TGO Site L _{Aeq} (15min) Contribution							<20
13/03/2025	23:21 (Night)	61	32	28	35	WD: S WS: 0.1m/s Stab Class: D	Insects 27-31
							Birds 31-61
							Traffic 30-35
							Aircraft 30-43
							TGO inaudible
TGO Site L _{Aeq} (15min) Contribution							<20

Note 1: Meteorological data obtained from TGO's on-site weather station or by direct measurement by the operator.

4.5 Assessment Results - Location R5

The results of the attended noise measurements at location R5 for the March 2025 survey are summarised in **Table 6** with the relevant EPL limits, the calculated mining noise contribution and prevailing meteorological conditions at the time of each measurement.

Table 6 Operator-Attended Noise Survey Results - Location R5							
Date	Time (hrs)	Descriptor (dBA re 20µPa)			EPL Limit	Meteorology ¹	Description and SPL, dBA
		L _{Amax}	L _{Aeq}	L _{A90}			
11/03/2025	19:44 (Evening)	81	62	47	35	WD: NE WS: 2.5m/s Stab Class: E	Traffic 46-81
							Wind in trees 44-55
							Birds 47-70
							Offsite works 46-47
TGO inaudible							
TGO Site L _{Aeq} (15min) Contribution							<35
11/03/2025	23:43 (Night)	81	62	41	35	WD: NE WS: 0.5m/s Stab Class: D	Traffic 40-81
							Insects <34
							Offsite works 39-44
							TGO inaudible
TGO Site L _{Aeq} (15min) Contribution							<31
12/03/2025	19:45 (Evening)	82	64	42	35	WD: NE WS: 0.1m/s Stab Class: E	Traffic 42-82
							Birds 43-50
							Offsite works 40-43
							TGO inaudible
TGO Site L _{Aeq} (15min) Contribution							<32
12/03/2025	23:45 (Night)	81	62	42	35	WD: NE WS: 0.1m/s Stab Class: D	Traffic 40-44
							Offsite works 45-81
							TGO inaudible
							TGO Site L _{Aeq} (15min) Contribution
13/03/2025	19:38 (Evening)	85	63	41	35	WD: S WS: 0.1m/s Stab Class: G	Traffic 41-85
							Offsite works 38-44
							Birds 40-48
							Insects <40
TGO inaudible							
TGO Site L _{Aeq} (15min) Contribution							<31
13/03/2025	23:41 (Night)	80	59	42	35	WD: S WS: 0.1m/s Stab Class: E	Traffic 415-80
							Offsite works 41-51
							TGO inaudible
							TGO Site L _{Aeq} (15min) Contribution

Note 1: Meteorological data obtained from TGO's on-site weather station or by direct measurement by the operator.

4.6 Assessment Results - Location R6

The results of the attended noise measurements at location R6 for the March 2025 survey are summarised in **Table 7** with the relevant EPL limits, the calculated mining noise contribution and prevailing meteorological conditions at the time of each measurement.

Table 7 Operator-Attended Noise Survey Results - Location R6							
Date	Time (hrs)	Descriptor (dBA re 20µPa)			EPL Limit	Meteorology ¹	Description and SPL, dBA
		L _{Amax}	L _{Aeq}	L _{A90}			
11/03/2025	20:36 (Evening)	61	36	30	35	WD: NE WS: 0.1m/s Stab Class: E	Birds 30-35
							Insects 28-31
							Livestock 29-38
							Thunder 38-61
TGO Site L _{Aeq} (15min) Contribution							33
11/03/2025	22:59 (Night)	58	40	34	35	WD: NE WS: 1.5m/s Stab Class: D	Insects 31-33
							Aircraft 30-58
							Wind in trees 33-46
							TGO inaudible
TGO Site L _{Aeq} (15min) Contribution							<24
12/03/2025	20:30 (Evening)	58	33	29	35	WD: NE WS: 0.1m/s Stab Class: E	Traffic 30-42
							Insects 27-32
							Birds 35-58
							Aircraft 30-41
TGO Site L _{Aeq} (15min) Contribution							31
12/03/2025	23:00 (Night)	58	35	32	35	WD: NE WS: 0.1m/s Stab Class: E	Insects <25
							Aircraft 30-58
							Birds 35-44
							TGO hum 30-37
TGO Site L _{Aeq} (15min) Contribution							32
13/03/2025	20:22 (Evening)	58	29	26	35	WD: S WS: 0.1m/s Stab Class: E	Insects 25-30
							Bats 29-58
							TGO inaudible
							TGO Site L _{Aeq} (15min) Contribution
13/03/2025	22:57 (Night)	62	31	24	35	WD: S WS: 0.1m/s Stab Class: E	Insects 23-29
							Bats 28-62
							TGO inaudible
							TGO Site L _{Aeq} (15min) Contribution

Note 1: Meteorological data obtained from TGO's on-site weather station or by direct measurement by the operator.

4.7 Assessment Results - Location R23

The results of the attended noise measurements at location R23 for the March 2025 survey are summarised in **Table 8** with the relevant EPL limits, the calculated mining noise contribution and prevailing meteorological conditions at the time of each measurement.

Table 8 Operator-Attended Noise Survey Results - Location R23							
Date	Time (hrs)	Descriptor (dBA re 20µPa)			EPL Limit	Meteorology ¹	Description and SPL, dBA
		L _{Amax}	L _{Aeq}	L _{A90}			
11/03/2025	21:14 (Evening)	57	46	39	38	WD: NE	Traffic 38-57
						WS: 0.1m/s	Insects 36-40
						Stab Class: E	TGO inaudible
TGO Site L _{Aeq} (15min) Contribution							<29
11/03/2025	22:20 (Night)	63	46	38	36	WD: NE	Traffic 36-63
						WS: 0.1m/s	Insects <36
						Stab Class: D	TGO inaudible
TGO Site L _{Aeq} (15min) Contribution							<28
12/03/2025	21:09 (Evening)	64	46	39	38	WD: NE	Traffic 39-64
						WS: 0.1m/s	Insects <38
						Stab Class: E	Dogs barking 40-48 TGO inaudible
TGO Site L _{Aeq} (15min) Contribution							<29
12/03/2025	22:22 (Night)	62	48	41	36	WD: NE	Traffic 38-62
						WS: 0.1m/s	Insects <38
						Stab Class: E	TGO inaudible
TGO Site L _{Aeq} (15min) Contribution							<31
13/03/2025	21:01 (Evening)	61	47	38	38	WD: S	Traffic 35-61
						WS: 0.1m/s	Insects 33-36
						Stab Class: E	Dogs barking 40-46 Local residential noise 40-52 TGO inaudible
TGO Site L _{Aeq} (15min) Contribution							<28
13/03/2025	22:19 (Night)	61	46	38	36	WD: S	Traffic 35-61
						WS: 0.1m/s	Insects <35
						Stab Class: D	Dogs barking 37-44 TGO inaudible
TGO Site L _{Aeq} (15min) Contribution							<28

Note 1: Meteorological data obtained from TGO's on-site weather station or by direct measurement by the operator.

5 Discussion

5.1 Discussion of Results - Location R2

Monitoring between Tuesday 11 March 2025 and Thursday 13 March 2025 identified that TGO activities were audible on four occasions during the assessment period at location R2. The estimated mining contributions were measured below 32dBA, therefore TGO emissions remained below the relevant noise limit of 35dB LAeq(15min). Extraneous sources such as traffic, wildlife, aircraft and insects were audible during the measurement period.

5.2 Discussion of Results - Location R3/29

Monitoring between Tuesday 11 March 2025 and Thursday 13 March 2025 identified that TGO activities were audible on one occasion during the assessment period at location R3/29. The estimated mining contributions were measured below 35dBA, therefore TGO emissions remained below the relevant noise limit of 35dB LAeq(15min). Extraneous sources such as traffic, birds, dogs barking and insects were audible during the measurement period.

5.3 Discussion of Results - Location R4

Monitoring between Tuesday 11 March 2025 and Thursday 13 March 2025 identified that TGO activities remained inaudible during the assessment period at location R4. The estimated mining contributions were measured below 30dBA, therefore TGO emissions remained below the relevant noise limit of 35dB LAeq(15min). Extraneous sources such as traffic, operator, aircraft, thunder, birds, wind in trees and insects were audible during the measurement period.

5.4 Discussion of Results - Location R5

Monitoring between Tuesday 11 March 2025 and Thursday 13 March 2025 identified that TGO activities remained inaudible during the assessment period at location R5. The estimated mining contributions were measured below 35dBA, therefore TGO emissions remained below the relevant noise limit of 35dB LAeq(15min). Extraneous sources such as traffic, birds, offsite works and insects were audible during the measurement period.

5.5 Discussion of Results - Location R6

Monitoring between Tuesday 11 March 2025 and Thursday 13 March 2025 identified that TGO activities were audible on three occasions during the assessment period at location R6. The estimated mining contributions were measured at 33dBA, therefore TGO emissions remained below the relevant noise limit of 35dB LAeq(15min). Extraneous sources such as livestock, birds, insects, wind in trees, thunder, aircraft and traffic were audible during the measurement period.

5.6 Discussion of Results - Location R23

Monitoring between Tuesday 11 March 2025 and Thursday 13 March 2025 identified that TGO activities remained inaudible during the assessment period at location R23. The estimated mining contributions were measured below 29dBA during the evening period and below 31dBA for the night period, therefore the noise limit of 38dB LAeq(15min) for evening and 36dB LAeq(15min) for night was satisfied. Extraneous sources such as traffic, insects, dogs barking and local residential noise were audible during the measurement period.

6 Comparison of Attended and Unattended Monitoring Results

To address Condition 6 of Schedule 3 of the Project Approval, a program to calibrate and validate the real-time noise monitoring results with the attended monitoring results has been completed.

The validation compares monthly attended monitoring results against the closest assessed unattended monitoring location. Currently, TGO has an unattended real-time monitoring terminal installed at the Brooklands property (nearest to R23). **Figure 1** identifies the location of the monitor with respect to the attended monitoring locations. It is noted that the Brooklands unattended monitor is situated 600m west of the attended noise monitoring location R23, therefore, background (LA90) noise levels are significantly lower due to offset distance to highway traffic.

Historically, a comparison of mine noise contributions between attended and unattended noise monitoring demonstrates a general consistency between attended and unattended results. It was noted that insects, and highway traffic noise influenced measured noise levels for this assessment. Furthermore, for March 2025, results remained below the relevant criteria for attended locations.

Table 9 provides a summary comparison of results between the attended and unattended noise surveys for R23.

Table 9 Comparison of Attended and Unattended Results								
Assessment Type	Time (hrs)	Descriptor (dBA re 20µPa)			Criteria	Mine Noise Contribution	Meteorology ¹	Description and SPL, dBA
		LA _{max}	LA _{eq}	LA ₉₀				
		Tuesday 11 March 2025						
Attended	21:14	57	46	39	38	<29	WD: NE WS: 0.1m/s Stab Class: E	Traffic 38-57 Insects 36-40 TGO inaudible
Unattended	21:15	55	43	35	38	<30		No audio trigger
Attended	22:20	63	46	38	36	<28	WD: NE WS: 0.1m/s Stab Class: D	Traffic 36-63 Insects <36 TGO inaudible
Unattended	22:15	55	43	33	36	<28		Insects TGO inaudible
Wednesday 12 March 2025								
Attended	21:09	64	46	39	38	<29	WD: NE WS: 0.1m/s Stab Class: E	Traffic 39-64 Insects <38 Dogs barking 40-48 TGO inaudible
Unattended	21:15	58	45	36	38	<31		No audio trigger
Attended	22:22	62	48	41	36	<31	WD: NE WS: 0.1m/s Stab Class: E	Traffic 38-62 Insects <38 TGO inaudible
Unattended	22:15	57	43	33	36	<28		Insects Traffic TGO inaudible
Thursday 13 March 2025								
Attended	21:01	61	47	38	38	<28	WD: S WS: 0.1m/s Stab Class: E	Traffic 35-61 Insects 33-36 Dogs barking 40-46 Local residential noise 40-52 TGO inaudible
Unattended	21:15	54	44	38	38	<33		No audio trigger
Attended	22:19	61	46	38	36	<28	WD: S WS: 0.1m/s Stab Class: D	Traffic 35-61 Insects <35 Dogs barking 37-44 TGO inaudible
Unattended	22:15	52	45	42	36	<35		Insects TGO inaudible

Note 1: Meteorological data obtained from TGO's on-site weather station or by direct measurement by the operator.

7 Conclusion

Muller Acoustic Consulting Pty Ltd (MAC) has completed a Noise Monitoring Assessment (NMA) on behalf of Tomingley Gold Operations Pty Ltd (TGO). The assessment was completed to provide monthly monitoring data so that TGO can actively quantify and manage site noise emissions.

Attended monitoring conducted between Tuesday 11 March 2025 and Thursday 13 March 2025 identified that TGO mine noise were audible on several occasions during the measurement period. A review of monitoring data and operator attended observations determined that TGO contributions remained below relevant limits.

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Appendix A – Glossary of Terms

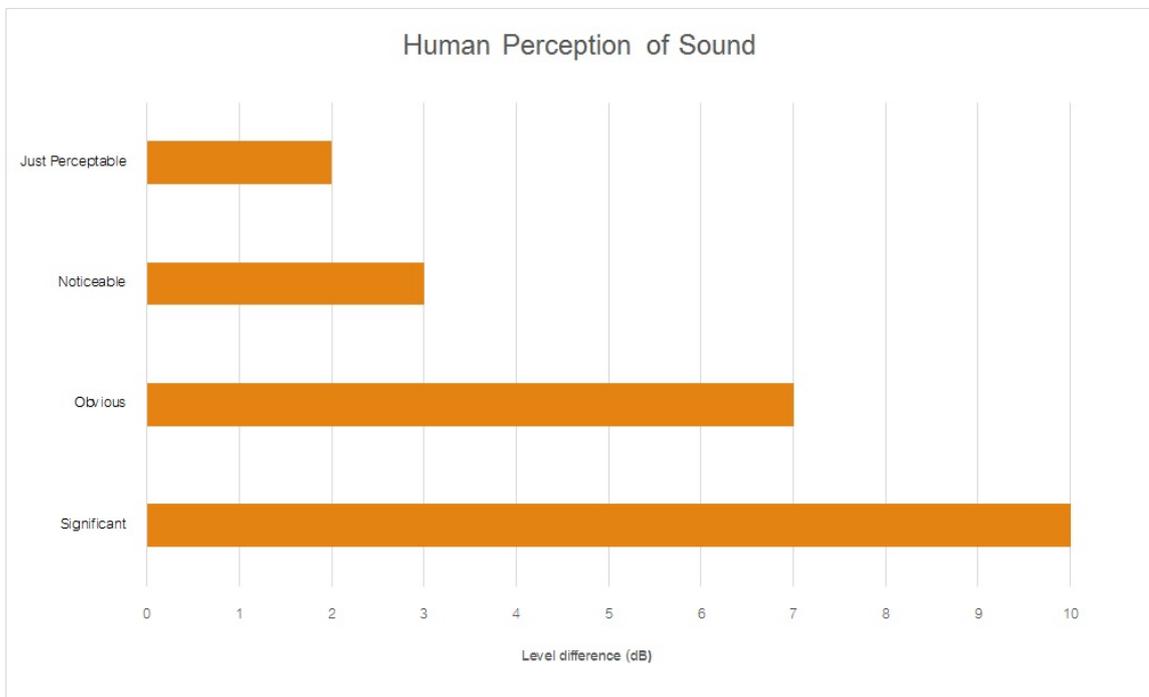
A number of technical terms have been used in this report and are explained in **Table A1**.

Table A1 Glossary of Acoustical Terms	
Term	Description
1/3 Octave	Single octave bands divided into three parts
Octave	A division of the frequency range into bands, the upper frequency limit of each band being twice the lower frequency limit.
ABL	Assessment Background Level (ABL) is defined in the NPI as a single figure background level for each assessment period (day, evening and night). It is the tenth percentile of the measured L90 statistical noise levels.
Ambient Noise	The total noise associated with a given environment. Typically, a composite of sounds from all sources located both near and far where no particular sound is dominant.
A Weighting	A standard weighting of the audible frequencies designed to reflect the response of the human ear to sound.
Background Noise	The underlying level of noise present in the ambient noise, excluding the noise source under investigation, when extraneous noise is removed. This is usually represented by the LA90 descriptor
dBA	Noise is measured in units called decibels (dB). There are several scales for describing noise, the most common being the 'A-weighted' scale. This attempts to closely approximate the frequency response of the human ear.
dB(Z), dB(L)	Decibels Z-weighted or decibels Linear (unweighted).
Extraneous Noise	Sound resulting from activities that are not typical of the area.
Hertz (Hz)	The measure of frequency of sound wave oscillations per second - 1 oscillation per second equals 1 hertz.
LA10	A sound level which is exceeded 10% of the time.
LA90	Commonly referred to as the background noise, this is the level exceeded 90% of the time.
LAeq	Represents the average noise energy or equivalent sound pressure level over a given period.
LAm _{ax}	The maximum sound pressure level received at the microphone during a measuring interval.
Masking	The phenomenon of one sound interfering with the perception of another sound. For example, the interference of traffic noise with use of a public telephone on a busy street.
RBL	The Rating Background Level (RBL) as defined in the NPI, is an overall single figure representing the background level for each assessment period over the whole monitoring period. The RBL, as defined is the median of ABL values over the whole monitoring period.
Sound power level (L _w or SWL)	This is a measure of the total power radiated by a source in the form of sound and is given by $10 \cdot \log_{10} (W/W_0)$. Where W is the sound power in watts to the reference level of 10^{-12} watts.
Sound pressure level (L _p or SPL)	the level of sound pressure; as measured at a distance by a standard sound level meter. This differs from L _w in that it is the sound level at a receiver position as opposed to the sound 'intensity' of the source.

Table A2 provides a list of common noise sources and their typical sound level.

Table A2 Common Noise Sources and Their Typical Sound Pressure Levels (SPL), dBA	
Source	Typical Sound Pressure Level
Threshold of pain	140
Jet engine	130
Hydraulic hammer	120
Chainsaw	110
Industrial workshop	100
Lawn-mower (operator position)	90
Heavy traffic (footpath)	80
Elevated speech	70
Typical conversation	60
Ambient suburban environment	40
Ambient rural environment	30
Bedroom (night with windows closed)	20
Threshold of hearing	0

Figure A1 – Human Perception of Sound



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