DARTBROOK MINE

NOISE MANAGEMENT PLAN

for Tetra Resources

20 January 2023

DOCUMENT CONTROL

Document Status

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Distribution List

Copy No.	Distributed To
1.	Department of Planning and Environment
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1. INTRODUCTION

1.1 BACKGROUND

Dartbrook Mine is an unincorporated Joint Venture (Dartbrook Joint Venture) between Australian Pacific Coal (AQC), Trepang Services Pty Ltd (Trepang), M Resources Pty Ltd (MRes) and Tetra Resources Pty Ltd (Tetra). Dartbrook Operations Pty Ltd will be the appointed operating management company and the Mine Operator under Section 5 of the Work Health and Safety (Mines and Petroleum Sites) Regulation 2022 (NSW). The Dartbrook Joint Venture will acquire AQC Dartbrook Management Pty Ltd ABN 62 007 377 577 (holder of Development Consent and Environment Protection Licence) and AQC Dartbrook Pty Ltd ABN 46 000 012 813 (holder of mining and coal authorities).

Dartbrook is located approximately 10 kilometres (km) north-west of Muswellbrook and 4.5 km south-west of the village of Aberdeen in New South Wales (NSW) (see **Figure 1**). Dartbrook operated as an underground longwall coal mine from 1993 until December 2006, when it was placed in care and maintenance by the previous owner, Anglo Coal (Dartbrook Management) Pty Ltd (ACDM). The mine was acquired by Australian Pacific Coal (AQC) (ASX-AQC) in 2016 and the mine has remained in care and maintenance.

Dartbrook Mine is managed in accordance with Development Consent DA 231-7-2000 (Development Consent) granted on 28 August 2001 under the *Environmental Planning and Assessment Act 1979* (EP&A Act). DA 231-7-2000 originally allowed for underground longwall mining and associated surface activities to be carried out until 5 December 2022.

In February 2018, AQC lodged an application to modify DA 231-07-2000 (MOD7) to provide further operational options for Dartbrook (in addition to those already approved) including the recommencement of mining via limited bord and pillar methodology within the Kayuga Seam and to extend the approval period under DA 231-07-2000 by 5 years (i.e. to 5 December 2027).

DA 231-07-2000 (MOD7) was determined by the NSW Independent Planning Commission (IPCN) on 9 August 2019. The IPCN approved the proposed recommencement of mining activities but not the proposed five-year extension to the consent approval period. Without the extension to operate under DA 231-07-2000 for a further five years it was impractical to recommence mining at Dartbrook. In November 2019, an appeal was lodged against the IPCN determination of MOD7 in the NSW Land and Environment Court.

The MOD7 application was the subject of a conciliation conference conducted pursuant to Section 34 of the *Land and Environment Court Act 1979* (LEC Act). AQC entered into a Section 34 agreement with the Minister for Planning and Public Spaces on 21 December 2021. This agreement gave effect to MOD7 and extended the approved duration of mining operations until 5 December 2027.

Operations at Dartbrook are proposed to commence from 1 December 2022. Recommencement will involve a re-establishment period of up to 6 months followed by a ramp up of production to produce an initial target of approximately 3 million tonnes per annum (Mtpa) of Run of Mine (ROM) coal subject to receiving post approvals which are required prior to production.

The proposed reconstruction works will be in the approved disturbance boundary. All future mining as approved under DA 231-07-2000 (MOD7) will be within the approved underground mining footprint and will be designed to avoid mine subsidence.

1.2 SITE LAYOUT

During care and maintenance, all mining and coal production ceased, however the mine surface infrastructure and facilities were maintained to enable recommissioning of operations in the future.

The Dartbrook Mine generally consists of the following main components:

- West Site surface facilities including workshop and maintenance facilities, administration building and underground mine portals; the Kayuga Entry and Wynn Seam Portal;
- East Site surface facilities including the Coal Handling and Preparation Plant (CHPP), rail loop, train loading facilities and Rejects Emplacement Area (REA);
- Wynn Seam underground mine workings which are decommissioned and are used for tailings disposal and mine water storage;
- Kayuga Seam underground mine workings, where mining is proposed. This was the active workings up until the commencement of care and maintenance. The previously mined longwall panels in the Kayuga Seam (KA101-103) were sealed during care and maintenance; and
- Hunter Tunnel which connects the underground mine workings to the East Site surface facilities.

Figure 2 and **Figure 3** shows the location of these features of the Dartbrook Mine.

1.3 PURPOSE

The Noise Management Plan (NMP) documents noise management strategies for Dartbrook mining operations. The primary objective of the NMP is to manage and minimise the impact of noise from mining operations on the environment and nearby residences. These objectives will be met through the implementation of the management strategies specified in **Sections 3** and **5**.

1.4 MANAGEMENT PLAN REQUIREMENTS

The NMP has been developed in accordance with the conditions of the current Dartbrook Development Consent.

The specific requirements of the NMP are contained in Development Consent Condition 6.4.2. These requirements are listed in **Table 1** with a reference to where each specific requirement is addressed in the management plan.

Table 1 Noise Management Plan Requirements Checklist

Development Consent Condition		Status and Section of Document
2.3	**Limits on Production or Hours of Operation**	
(a)	Heavy earth moving equipment must not operate on the rejects emplacement area, and coal rejects must not be hauled to the rejects replacement area, between the hours of 6.00pm and 7.00am, except in an emergency, and as agreed by the Secretary.	**Section 4.2**
(b)	The Applicant may not use the existing Dartbrook coal washery for the purpose of washing ROM coal until the noise mitigation measures described in the report from Bridges Acoustics dated 20 July 2020 (RefJ0073-05-L1) have been completed to the satisfaction of the Secretary.	**Section 4.2.1**

Development Consent Condition			Status and Section of Document
3.2	**Environmental Management Strategies and Plans**		
Management Plan Requirements (f)	Management plans required under this consent must be prepared in accordance with relevant guidelines, and include:		**This Plan**
	(i)	A summary of relevant background or baseline data;	**Section 3**
	(ii)	Details of: • The relevant statutory requirements (including any relevant approval, licence or lease conditions); • Any relevant limits or performance measures and criteria; and • The specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures;	**Section 1.4 and 2**
	(iii)	Description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria;	**Section 4**
	(iv)	A program to monitor and report on the: • Impacts and environmental performance of the development; and • Effectiveness of the management measures set out pursuant to paragraph (iii);	**Section 5 and 7**
	(v)	A contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;	**Section 6**
	(vi)	A program to investigate and implement ways to improve the environmental performance of the development over time;	**Section 4.3**
	(vii)	A protocol for managing and reporting any: • Incident, non-compliance or exceedance of any impact assessment criterion or performance criterion); • Complaint; or • Failure to comply with other statutory requirements; and	**Section 6 and 7**
	(viii)	A protocol for periodic review of the plan. Note: The Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.	**Section 9**

<table>
<tr><th>Development Consent Condition</th><th>Status and Section of Document</th></tr>
<tr><td><u>Revision of Strategies, Plans and Programs</u>
(k) Within three months of:
(i) The notification of an incident under Condition 9.3 (a);
(ii) The submission of an Annual Review under Condition 9.2 (a);
(iii) The submission of an Independent Environmental Audit under Condition 8.1 (a); or
(iv) The approval of any modification of the conditions of this consent (unless the condition specifies otherwise), the suitability of existing strategies, plans and programs required under this consent must be reviewed by the Applicant.
(l) If necessary, to either improve the environmental performance of the development, cater for a modification or comply with a direction, the strategies, plans and programs required under this consent must be revised, to the satisfaction of the Secretary. Where revisions are required, the revised document must be submitted to the Secretary for approval within six weeks of the completion of the review on Condition 3.2 (j).
Note:
• This is to ensure strategies, plans and programs are updated on a regular basis and to incorporate any recommended measures to improve the environmental performance of the development.</td><td>Section 9</td></tr>
<tr><td>6.4.1 Noise Levels</td><td></td></tr>
<tr><td><u>Intrusive Noise Criteria</u>
(a) Except for the carrying out of construction works, the Applicant must ensure that the noise generated by the development does not exceed the criteria in Table 7 at any residence on privately- owned land.
Table 7: Operational noise criteria dB(A)
<table>
<tr><th>Noise Assessment Group</th><th>Day $L_{Aeq\ (15\ min)}$</th><th>Evening $L_{Aeq\ (15\ min)}$</th><th>Night $L_{Aeq\ (15\ min)}$</th><th>Night $L_{A1\ (1\ min)}$</th></tr>
<tr><td>Aberdeen</td><td>49</td><td>42</td><td>41</td><td>52</td></tr>
<tr><td>East Site Receivers (other than receivers 303 and 422)</td><td>50</td><td>50</td><td>41</td><td>52</td></tr>
<tr><td>Receivers 303 and 422</td><td>50</td><td>50</td><td>42</td><td>52</td></tr>
<tr><td>West Site Receivers</td><td>40</td><td>40</td><td>35</td><td>52</td></tr>
<tr><td>Other privately-owned residences</td><td>40</td><td>35</td><td>35</td><td>52</td></tr>
</table>
Notes:
• The Noise Assessment locations referred to in Table 7 are listed in Schedule 1 and shown in Appendix 4;
• Daytime (between the hours of 7am and 6pm); evening (between 6pm and 10pm) and night-time (between 10pm and 7am);</td><td>Section 2.1</td></tr>
<tr><td>Noise generated by the development must be monitored and measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Noise Policy for Industry (EPA, 2017).</td><td>Section 5</td></tr>
<tr><td>The noise criteria in Table 7 do not apply if the Applicant has an agreement with the owner/s of the relevant residence or land to exceed the noise criteria, and the Applicant has advised the Department in writing of the terms of this agreement.</td><td>Section 2</td></tr>
</table>

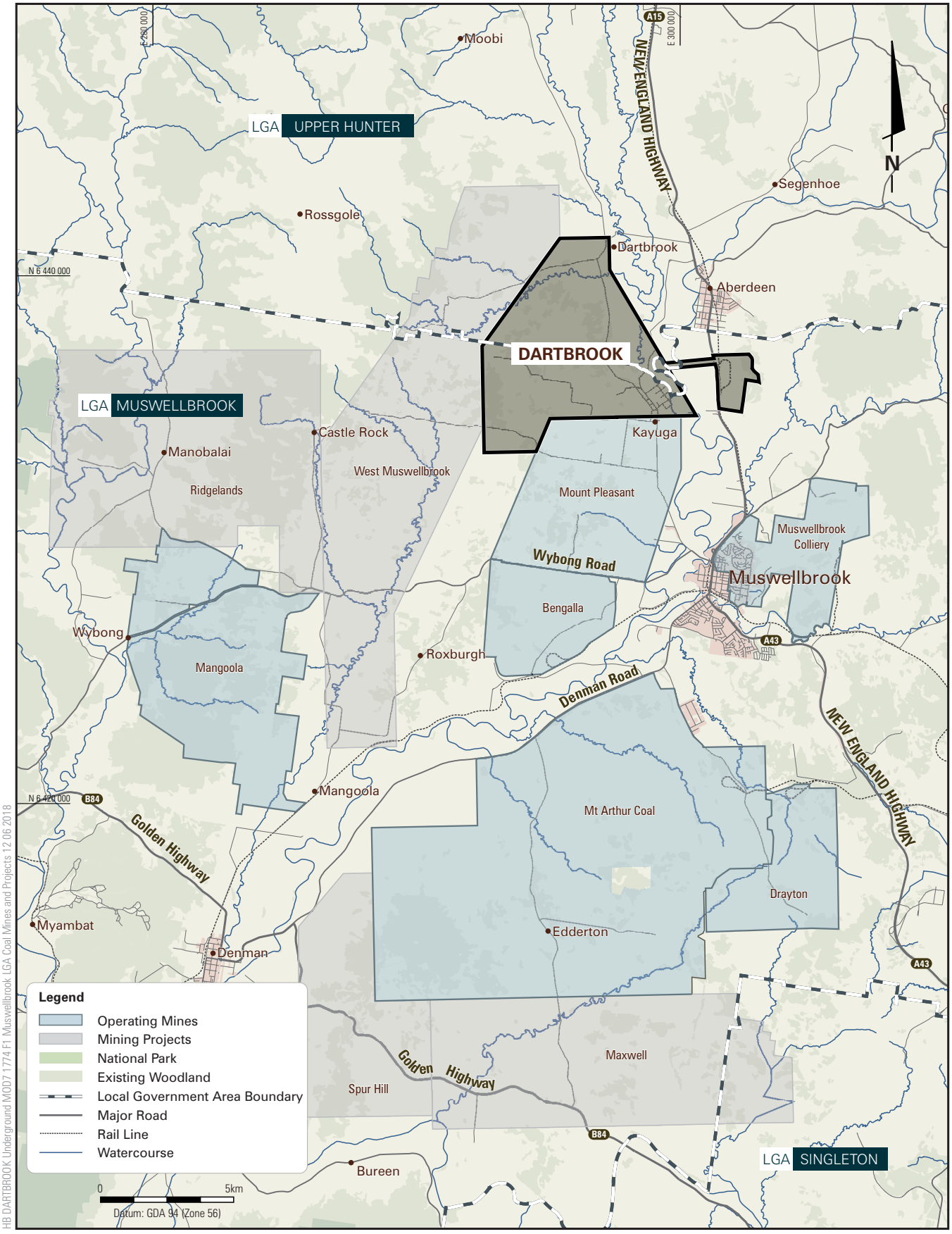
Development Consent Condition	Status and Section of Document
Sale of Mine-Owned Land If mine-owned land is sold within 6 months of approval of Mod 7 that will exceed the VLAMP acquisition criteria for noise (specifically receivers 299B, 301 and 69A) or the VLAMP mitigation criteria for noise (specifically receivers 300, 302 and 304) the Applicant must fully inform any purchaser of the acoustic impact of the development at the time of sale and the Applicant must negotiate an agreement to be entered into in accordance with the VLAMP as a condition of the sale.	**Section 2.1**
Noise Acquisition Criteria (c) Upon receiving a written request for acquisition from the owner of the land listed in Table 8, the Applicant must acquire the land in accordance with the procedures in Conditions 11.2 (C)-(D). *Table 8:Land subject to acquisition upon request* *Acquisition Basis* | *Land* Noise | Receiver 86 ***Notes:*** • *The location of the land referred to in Table 8 is shown on the figure in Appendix 4;* • *Land previously identified in the equivalent table to Table 8 prior to Modification 7 as 'Knight' and 'Gordon' are now mine-owned;*	**Section 2**
Noise Operating Conditions (d) The Applicant must:	-
(i) Take all reasonable steps to minimise all noise from construction and operational activities including low frequency noise and other audible characteristics, as well as road and rail noise associated with the development;	**Section 4.5**
(ii) Operate a comprehensive noise management system commensurate with the risk of impact to ensure compliance with the relevant conditions of this consent;	**Section 4.2.1**
(iii) Take all reasonable steps to minimise noise impacts of the development during noise-enhancing meteorological conditions;	**Section 4.2**
(iv) Only use locomotives and rolling stock that are approved to operate on the NSW rail network in accordance with the noise limits in ARTC's EPL and use reasonable endeavours to ensure that rolling stock is selected to minimise noise;	**Section 4.2**
(v) Carry out regular attended noise monitoring (at least once a month, unless otherwise agreed by the Secretary) to determine whether the development is complying with the relevant conditions of this consent; and	**Section 5**
(vi) Regularly assess the noise monitoring data and modify or stop operations on the site to ensure compliance with the relevant conditions of this consent.	**Section 4**

Development Consent Condition			Status and Section of Document
6.4.2 Noise Management Plan			
(a)	The Applicant must, prior to the recommencement of construction or mining operations, prepare a Noise Management Plan for the development to the satisfaction of the Secretary. This plan must:		**This Plan**
	(i)	Be prepared by a suitably qualified and experienced person/s;	**Section 1.5**
	(ii)	Describe the measures to be implemented to ensure: • Compliance with the noise criteria and operating conditions in this consent;	**Section 3**
		• Best practice management is being employed;	**Section 4**
		• Noise impacts of the development are minimised during noise enhancing meteorological conditions;	**Section 4.2**
	(iii)	Seek to minimise road traffic noise generated employee commuter vehicles on local public roads;	**Section 4**
	(iv)	Describe the noise management system in detail; and	**This Plan**
	(v)	Include a monitoring program that: • Uses a combination of real-time and supplementary attended monitoring to evaluate the performance of the development;	**Section 5**
		• Monitors noise at the nearest and/or most affected residences;	**Section 5.3**
		• Includes a program to calibrate and validate the real-time noise monitoring results with the attended monitoring results over time;	**Section 5**
		• Adequately supports the noise management system; and	**Section 5**
		• Includes a protocol for identifying noise-related exceedance, incident and non-compliance and for notifying the Department and relevant stakeholders of any such event.	**Section 6 and 7**
		• Includes a protocol for proactive management of noise emissions during adverse meteorological conditions.	**Section 4.2**

1.5 STAKEHOLDER CONSULTATION

Condition 6.4.2 (a) of the Development Consent requires that the NMP be prepared to the satisfaction of the Secretary of the Department of Planning and Environment (DPE). The plan must be prepared by a suitably qualified and experienced person/s. Correspondence with DPE during the preparation of this plan is reproduced in **Appendix A**.

The NMP was initially prepared and subsequently revised by Hansen Consulting on several occasions. This current revision of the NMP has been undertaken by duly qualified and experienced environmental consultants of James Bailey and Associates.



HB DARTBROOK Underground MOD7 1774 F1 Muswellbrook LGA Coal Mines and Projects 12 06 2018

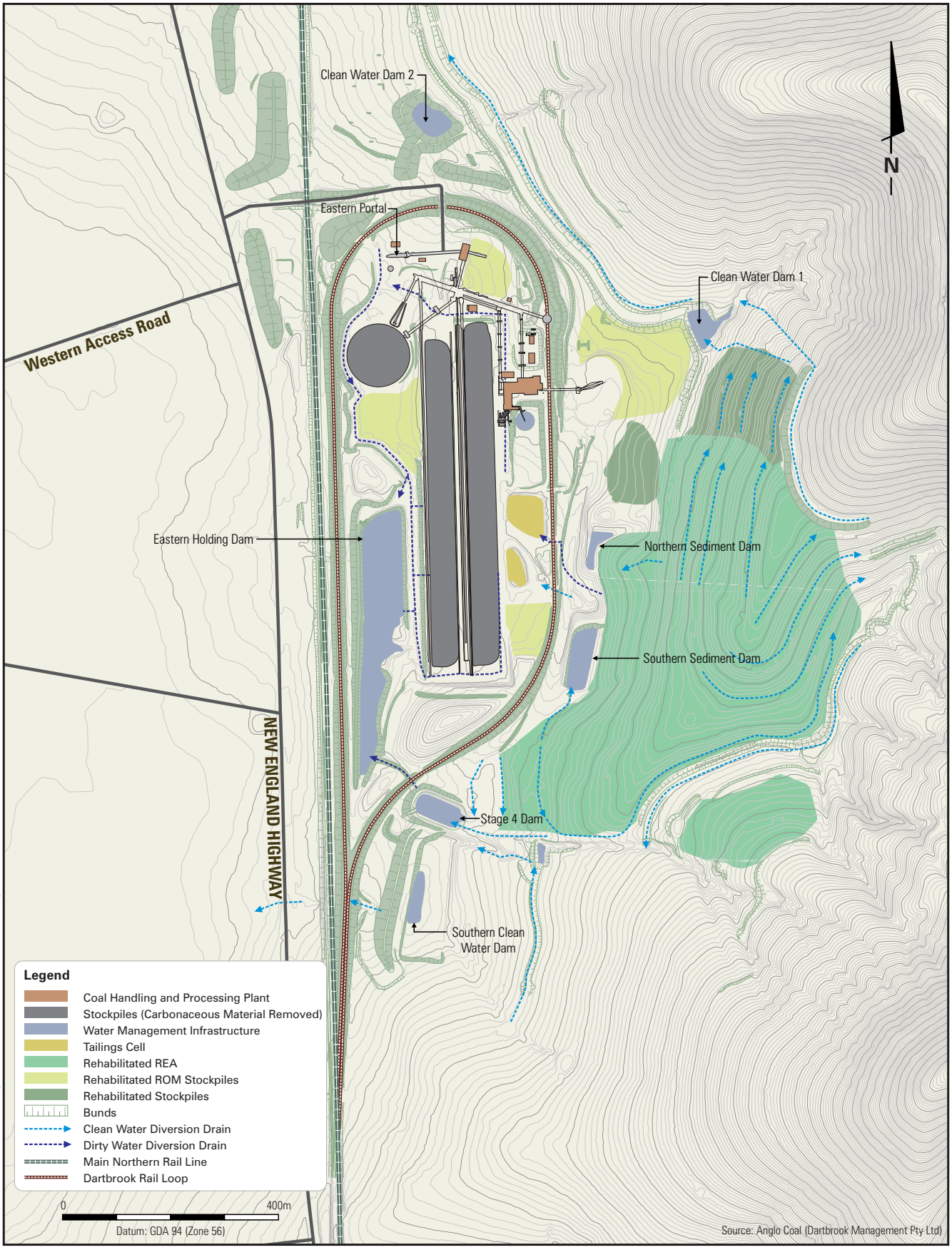
DARTBROOK MINE

Regional Locality

FIGURE 1

TETRA RESOURCES

JAMES BAILEY & ASSOCIATES
Environmental and Planning Consultants



HB DARTBROOK Surface Water Management Plan HB1804 F3 East Site Water Management Structures 111 07 2018

DARTBROOK MINE

East Site Water Management Structures

FIGURE 2

TETRA RESOURCES

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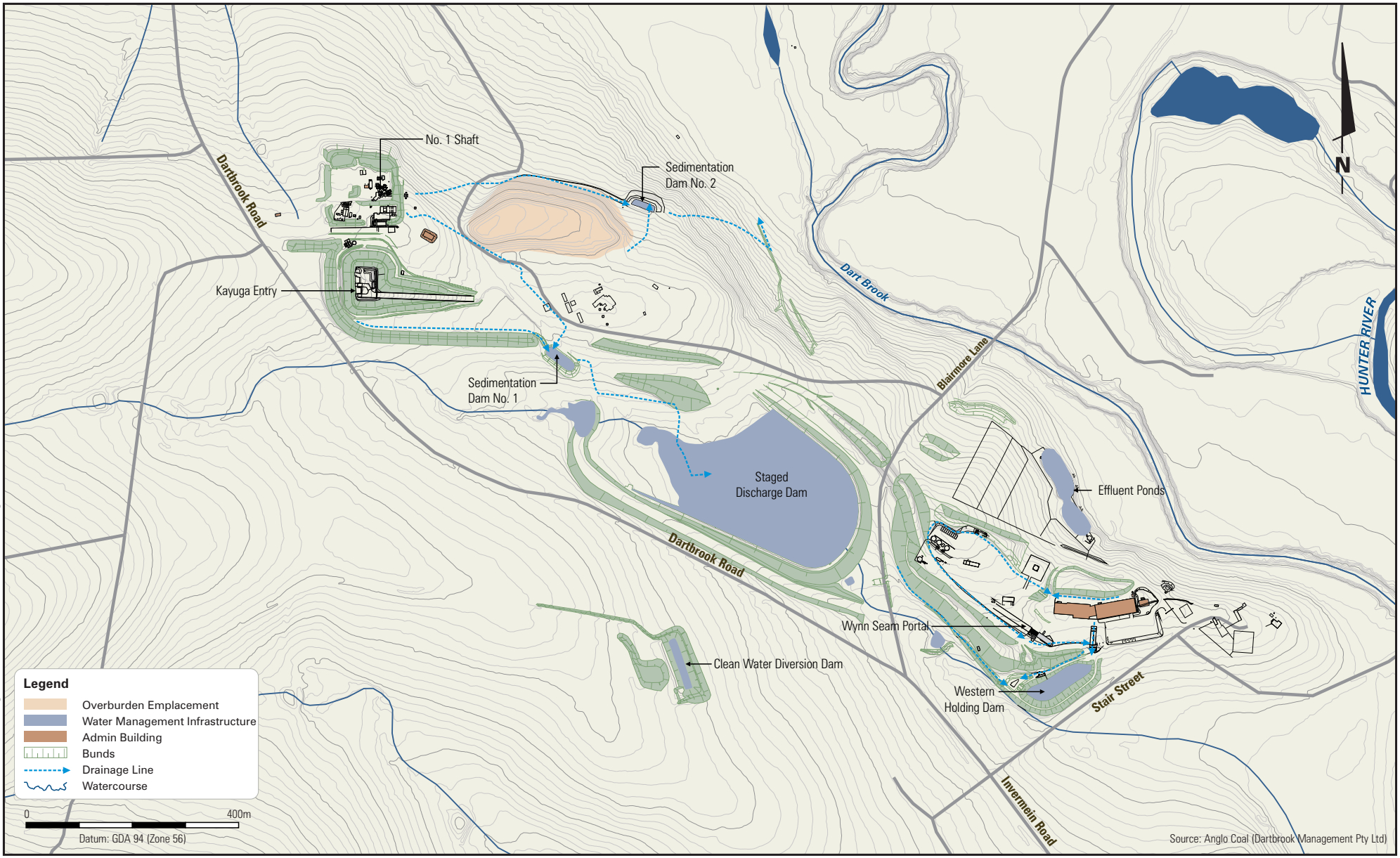
Environmental and Planning Consultants



HB DARTBROOK Surface Water Management Plan HB1804 F2 West Site Water Management Structures 11 07 2018

DARTBROOK MINE

West Site Water Management Structures

FIGURE 3

TETRA RESOURCES

JAMES BAILEY & ASSOCIATES
Environmental and Planning Consultants

2. NOISE CRITERIA

Noise criteria for the mine are specified in Condition 6.4.1 of the Development Consent. These are presented in **Table 2** and **Table 3** and discussed in **Sections 2.1**

2.1 NOISE MANAGEMENT CRITERIA

The intrusive noise criteria (noise management criteria) are presented in **Table 2**. With the exception of construction works, noise generated by the Mine must not exceed the criteria in **Table 2** at any residences on privately owned land. The location of the closest private residences and noise receivers is illustrated in illustrated in **Figures B1 – B4** in **Appendix B**.

Management measures specified in this plan (**Section 5**) are required to be undertaken for privately owned dwellings where monitored noise levels from the Dartbrook mining operations exceed the noise management criteria.

Table 2 Operational Noise Criteria dB(A)

Noise Assessment Group	Day $L_{Aeq\,(15\,min)}$	Evening $L_{Aeq\,(15\,min)}$	Night $L_{Aeq\,(15\,min)}$	Night $L_{Aeq\,(1\,min)}$
Aberdeen	49	42	41	52
East Site Receivers (other than receivers 303 and 422)	50	50	41	52
Receivers 303 and 422	50	50	42	52
West Site Receivers	40	40	35	52
Other privately-owned residences	40	35	35	52

Notes:

- *The Noise Assessment locations referred to in Table 2 are listed in Schedule 1 and shown in Appendix 4 of the Development Consent (refer to **Appendix B**).*
- *Daytime (between the hours of 7am and 6pm), evening (between 6pm and 10pm) and night-time (between 10pm and 7am).*

The noise criteria in **Table 2** do not apply if Tetra has an agreement with the owner/s of the relevant residence or land to exceed the noise criteria, and the Department has been advised in writing of the terms of this agreement.

Table 3 Land Subject to Acquisition upon Request

Acquisition Basis	Land
Noise	Receiver 86

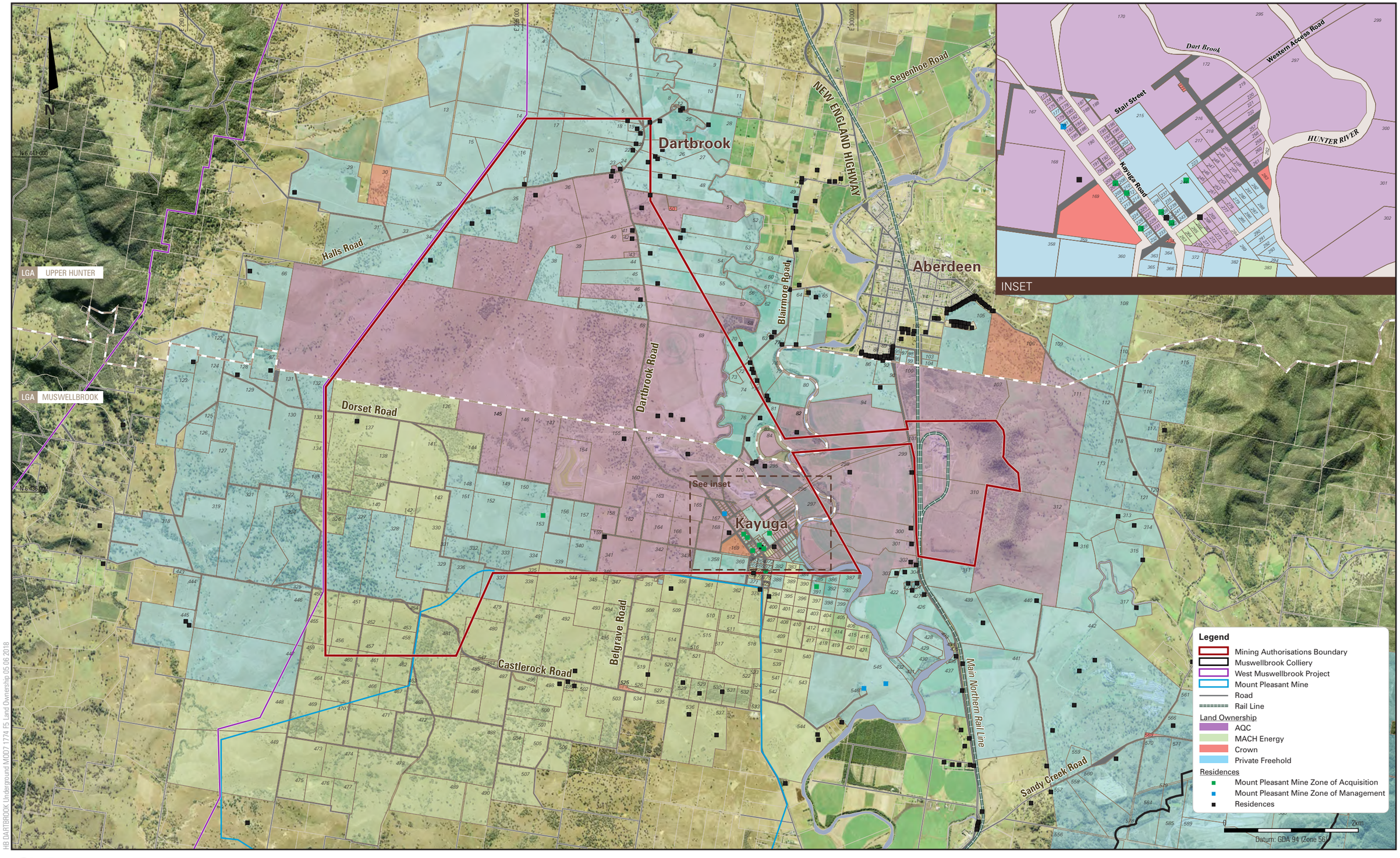
Notes:

- *The location of the land referred to in Table 8 is shown in Appendix 4 of the Development Consent (refer to **Appendix B**).*
- *Land previously identified in the equivalent table to **Table 3** prior to Modification 7 as 'Knight' and 'Gordon' are now mine-owned.*

Property acquisition, at the written request of the landowner, will be required for any private properties where monitored noise levels from the Dartbrook mining operations exceed the relevant noise acquisition criteria, and further noise control measures on the mine site are not feasible and reasonable. Any such acquisition is to be conducted in accordance with Condition 11.2 (C) of the Development Consent.

In accordance with Condition 6.4.1 (b)*:*

> *If mine-owned land is sold within 6 months of approval of Mod 7 that will exceed the VLAMP acquisition criteria for noise (specifically receivers 299B, 301 and 69A) or the VLAMP mitigation criteria for noise (specifically receivers 300, 302 and 304) the Applicant must fully inform any purchaser of the acoustic impact of the development at the time of sale and the Applicant must negotiate an agreement to be entered into in accordance with the VLAMP as a condition of the sale.*



H:\8 DARTBROOK Underground MOD7 1774 F5 Land Ownership 05 06 2018

TETRA RESOURCES

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DARTBROOK MINE

Land Ownership

FIGURE 4

3. NOISE ASSESSMENT

3.1 INTRODUCTION

The Dartbrook Extended EIS (2000) contains a detailed noise assessment of the Dartbrook mining operations, including construction and operation of the surface facilities and the REA. Modifications to the Dartbrook Development Consent were subsequently granted to allow for:

- The use of trucks to haul and dispose of rejects on the Dartbrook REA;
- New ROM coal stockpiles;
- Disposal of tailings underground in the Wynn Seam goaf; and
- Operation of a Nitrogen Injection Plant.

The modification applications were supported by Statement of Environmental Effects (SEE), which provides day-time (7 am to 6 pm) noise level predictions for Dartbrook operations (as modified).

The most recent modification (MOD7) allows for the operations as described above as well as bord and pillar mining up to a maximum of 10 Mt of ROM coal.

3.1.1 East Site Noise

The existing Dartbrook Mine has been operating for more than a decade. Sources of potential noise from the East Site include:

- Operation of the CHPP;
- Intermittent use of mobile equipment for construction, shaping and rehabilitation of the REA;
- Haulage of rejects to the REA;
- Haulage of ROM coal to or from stockpiles;
- Use of mobile equipment for shaping of, and loading at, stockpiles; and,
- Coal trains on the mining lease and associated train loading activities.

East Site operations are 24 hours (hrs) per day with the exceptions of REA operations and haulage of ROM coal to or from stockpiles which are restricted to day-time only.

The closest receivers to the East Site are shown in **Figure 4** and **Figures B1 – B4** in **Appendix B**.

3.1.2 West Site Noise

Noise from Dartbrook mining operations at the West Site will include ongoing operation of the existing Dartbrook Mine Surface Facilities, the Kayuga Seam Entry, and the Kayuga Seam Access Road **(Figure 3**). No new surface infrastructure is proposed to be constructed, including no new upcast ventilation shafts, goaf gas drainage plants or any and other minor surface infrastructure constructed above the Dartbrook underground mining areas.

The approved mining activities and the transport of ROM coal from the West Site to the East Site will take place underground, therefore these activities will not result in any noise at the surface.

The closest receivers to the West Site are illustrated in **Figure 4** and **Figures B1 – B4** in **Appendix B**.

3.2 MOD7 NOISE ASSESSMENT

An Acoustic Impact Assessment (AIA) was undertaken by Bridges Acoustics for MOD7 (Appendix C of the *Environmental Assessment, Modification 7, Kayuga Seam Bord and Pillar Mining Operations* (Hansen Bailey, 2018)). The AIA initially excluded noise from CHPP equipment including the preparation plant (washery) and reject handling infrastructure as the project at that time did not include washing the coal.

Operations, as currently approved includes washing coal for both the bord and pillar and longwall options up to a maximum production rate of 6 Mtpa of ROM coal. A revised Acoustic Assessment (Revised Assessment) was completed by Bridges Acoustics to predict the potential noise impacts of the approved operations (Appendix B of the *Modification 7 Updated Response to Contentions* (Hansen Bailey, 2021)).

The Revised Assessment considered noise levels from full operation of the Dartbrook CHPP as it operated up to the year 2006, before the extended period of care and maintenance. The approved mining activities and the transport of ROM coal from the West Site to The East Site will take place underground. These activities will not result in any noise at the surface. The noise model accounted for all approved surface activities at the East Site including coal handling and processing, train loading and disposal of reject materials. To ensure that the worst-case impacts were assessed, the model adopted the approved maximum production rate of 6 Mtpa of ROM coal.

Assessment noise level calculations were completed using RTA Technology's Environmental Noise Model (ENM) software, originally developed in conjunction with the NSW Environment Protection Authority (EPA) and used for projects of this nature for over 20 years. ENM is particularly suitable where a number of noise sources require assessment and the effects of various weather conditions on noise propagation are important. Input data to ENM include:

- Terrain data, which were reused from previous Dartbrook Mine assessments completed for the proponent as contours in 2 m vertical intervals;
- Noise source locations including source elevation, which are consistent with previous assessments and intended to include all potentially significant noise sources associated with the CHPP including mobile plant required to transport and place reject material;
- Source noise levels, which were based on on-site noise measurement data taken by Bridges Acoustics in December 2004 and March 2005 when the CHPP was operating. The data include 1/3 octave percentile noise levels at each of 61 separate locations around significant components of the CHPP. Notes for each noise measurement indicating distances from each significantly audible source allowed 1/3 octave source sound power levels to be determined with reasonable accuracy;
- Noise mitigation measures as described below; and
- Weather conditions for the day and the combined evening/night periods which were determined according to current EPA recommendations and are identical to the weather conditions considered in previous acoustic assessments

3.2.1 MOD7 Noise Impact

The Revised Assessment determined predicted noise levels from approved operations at Dartbrook. The noise model accounted for all approved surface activities at the East Site including coal handling and processing, train loading and disposal of reject materials. To ensure the worst-case impacts were assessed, the model adopted the approved maximum production rate of 6 Mtpa of ROM coal.

The calculated noise levels reflect full operation of the Dartbrook CHPP including mobile plant to transport and place reject material within the Browns Mountain REA. Noise mitigation measures applied to CHPP equipment as described in **Section 4.2.1** were included in the assessment.

Calculated noise levels predicted at the closest receivers are summarised in **Appendix B**. Noise levels at the closest receivers are predicted to meet the noise criteria in **Table 2** at all except for two privately owned receivers. Receivers 303 and 422, located west of the New England Highway south of Dartbrook Mine's East Site, are predicted to receive a noise level 1 dBA over the noise criteria during the night period under noise enhancing weather conditions. As the VLAMP regards a 1 dBA exceedance of a noise criterion to represent a negligible and not perceptible impact, and as these residences are subject to significant traffic noise from the adjacent New England Highway during all time periods, the predicted noise levels at these residences are considered acceptable.

The model predicts that MOD7 will comply with the intrusive noise criteria at all private residences during the day and evening periods.

MOD7 is predicted to comply with the night-time criterion at all residences except Receivers 303, 391 and 422. Receivers 303 and 422 are predicted to experience noise levels of up to 42 LAeq,15min, which is 1 dBA greater than the relevant criterion. These exceedances can be avoided by modifying operational activities during unfavourable weather conditions.

Receiver 391 is predicted to experience noise levels of up to 36 LAeq,15min, which is 1 dBA greater than the relevant criterion. This receiver is currently entitled to acquisition under the development consent for Mount Pleasant Mine.

The predicted cumulative noise levels, including noise from Dartbrook Mine and from other major sources of industrial noise in the area such as Mt Pleasant Mine are summarised in **Appendix B**. Cumulative noise levels are predicted to exceed relevant cumulative noise criteria at four residences within Kayuga Village. Cumulative noise levels at these receivers are primarily affected by Mt Pleasant Mine noise, and all are entitled to acquisition by Mt Pleasant Mine. No further mitigation or acquisition rights are required to be imposed on Dartbrook Mine.

Calculated noise levels for the proposed bord and pillar option are identical to the predicted noise levels for the longwall option, as both options include the same CHPP equipment. The lower production rate for the bord and pillar option would require CHPP operation for only part of an average week, however, would not change the noise levels from the CHPP while it is operating.

3.2.2 Low Frequency and Tonal Noise

The AIA included an assessment of predicted low frequency and tonal noise for the worst case situation, which was the night noise level from the East Site to Aberdeen receptors. Low frequency noise levels were calculated for this scenario to Receptor 92, which represents southern Aberdeen.

Results indicated levels well below the threshold spectrum recommended in Table C2 in the *Noise Policy for Industry* (NPI) (EPA, 2017). Low frequency noise levels are therefore expected to be acceptable and no corrections to received noise levels are required. The predicted noise level spectrum also indicated received noise levels to closest receptors will not be tonal as defined by the NPI.

3.2.3 Sleep Disturbance

The LA_{1min} noise criteria in **Table 2** are intended to minimise the potential for sleep disturbance to residential receptors during the night period. A detailed assessment of sleep disturbance was not undertaken for MOD7 as normal operation of the CHPP, whether at 1.4 Mtpa for the bord and pillar option or at 6 Mtpa for the longwall mining option, does not include any sources of noise with the potential to cause sleep disturbance at any privately owned residence.

3.2.4 Road and Rail Traffic Noise

MOD7 is expected to require fewer operations staff than are currently approved, given the significantly lower annual production. Traffic noise levels would therefore be lower than previous and currently approved levels.

Similarly, train movements associated with MOD7 would occur less often than currently approved, given the lower production rate than the approved longwall mine.

Both road and rail traffic noise levels are therefore expected to be within existing approved levels.

4. NOISE MITIGATION AND MANAGEMENT MEASURES

The acoustics management system for Dartbrook operations consists of a combination of design controls as well as both proactive and reactive noise control measures. Dartbrook will take all reasonable steps to minimise noise from construction and operational activities including low frequency noise and other audible characteristics, as well as road and rail noise associated with Dartbrook.

Design controls are aimed at minimising noise impacts through considered mine design and planning. Proactive control measures have been designed to minimise the generation of noise from mine and CHPP activities. Reactive control measures have been designed to enable effective control of any episodic noise events which may occur under adverse weather conditions.

Noise mitigation and management measures to be implemented for Dartbrook include:

- Personnel vehicles, equipment and trucks will be maintained in good condition, particularly the exhaust silencers and suspension components to minimise noise from the engine and body;
- Smart broadband reversing alarms such as 'quacker' reversing alarms will be fitted to equipment;
- Bunds have been constructed in strategic locations to assist in shielding potential noise from the mine access road, stockpile areas and the REA;
- The proposed dozer on the coal stockpile during train loading operations will be limited to slow speed operation in reverse during the evening and night to minimise track noise;
- Operational activities will be modified during unfavourable weather conditions;
- Noise management and awareness training will be undertaken for all employees and contractors as part of site inductions;
- The idle time of plant and equipment will be kept minimal to reduce to reduce noise impacts; and
- Dartbrook will include reasonable and feasible noise attenuation measures on any new plant and equipment that has the potential to contribute to noise levels.

Further to this, in accordance with Condition 6.4.1 (d), Dartbrook will only use locomotives and rolling stock that are approved to operate on the NSW rail network in accordance with the noise limits in ARTC's EPL and use reasonable endeavours to ensure that rolling stock is selected to minimise noise.

There will be lower employee and contractor workforce required for MOD7 than full production require for longwall mining. As such there will be less traffic noise generated by commuter vehicles. Notwithstanding this, in accordance with condition 6.4.2 (iii) of the Development Consent, Tetra will seek to further minimise road traffic noise generated by encouraging the car pooling of employees and contractors. This will be reiterated through employee inductions.

Additional specific noise control measures for the West and East Site are discussed in **Sections 4.1** and **4.2** respectively.

4.1 WEST SITE NOISE MITIGATION MEASURES

The overburden emplacement located to the north of the Kayuga Entry provides noise shielding for mine vehicles using the ramp to the base of the slot (**Figure 3**). A bund in this area was constructed to reduce night-time noise levels at nearby residences under worst case meteorological conditions.

4.2 EAST SITE NOISE MITIGATION MEASURES

Heavy earth moving equipment will not operate on the REA or haul ROM coal to stockpiles between the hours of 6.00 pm and 7.00 am, except in emergency situations and as agreed by the Secretary of DPE, in accordance with Development Consent Condition 2.3 (b). This will reduce night-time noise levels in the vicinity of the East Site. Any complaints in relation to noise will be addressed in accordance with the procedure described in **Section 6.1**.

Under adverse meteorological conditions (noise enhancing meteorological conditions), if real time monitoring indicates potential noise impacts, Dartbrook will also modify activities to reduce noise impacts. This will involve progressively shut down or relocation of equipment and machines located in elevated positions (such as product or ROM Coal stockpiles) or worse case ceasing activities until conditions improve.

Furthermore, the Dartbrook CHPP will not be utilised for the purpose of washing ROM Coal until the noise mitigation measures described in the report from Bridges Acoustics dated 20 July 2020 (RefJ0073-05-L1) have been completed to the satisfaction of the Secretary, in accordance with 2.3 (c) of the Development Consent. These are summarised below in **Section 4.2.1**.

4.2.1 MOD7 Additional CHPP Management and Mitigation Measures

Additional noise management and mitigation measures to be implemented at the East Site for MOD7 include the construction of:

- Fibre cement or equivalent sheet walls adjacent to the western side of unenclosed stockyard conveyors, to a height just above the top idlers;
- A large noise barrier/wall on the northern side of the train loadout conveyor (CV17/CV05) from its western end to the CHPP access road, to a height of 2 m above the conveyor which requires a variable height of 5 m at the western end to 18 m at the eastern end. This wall would be clad with a sheet of sandwich panel, fibre cement or similar material;
- Upgraded cladding for the preparation plant building including minimal openings on the northern and western faces, using sandwich panel or fibre cement for additional noise reduction;
- Upgraded cladding for the elevated section of the train loadout conveyor (CV05) east of the noise barrier, using sandwich panels for the roof, fibre cement sheeting for the northern walls and steel sheets for the floor;
- Upgraded cladding for elevated conveyors CV07, CV08, CV10 and CV14 generally as described for CV05;
- Cladding for CV12 including 0.6 mm corrugated steel sheeting or similar for the roof and northern side and steel sheet floor;
- Low noise conveyor idlers for all conveyors except those within the preparation plant building;
- An enclosure on the rear of the raw coal reclaimer consisting of reused conveyor belt or similar material; and
- Replacement bucket chains and sprockets for the two product coal reclaimers to minimise noise from these components.

4.3 LONG TERM NOISE MITIGATION STRATEGIES

Where necessary, Tetra will evaluate new technology and alternative operating methods that become available to reduce mine noise levels to below the target noise levels in **Table 2** at neighbouring private properties. Where necessary, any measures that are found to be feasible, reasonable and effective in the context of safe and economic mining operations, will be implemented.

4.4 CUMULATIVE MINE NOISE

Cumulative noise levels are predicted to exceed relevant cumulative noise criteria at four residences within Kayuga Village, primarily as a result of noise from Mt Pleasant Mine. These residences are all entitled to acquisition by Mt Pleasant Mine.

If the Dartbrook noise monitoring program detects any cumulative exceedances of noise criteria at private properties, as a result of another mine's noise, these would be managed in consultation with the landowner and the other mining company.

4.5 LOW FREQUENCY, INTERMITTENT, AND TONAL NOISE

Dartbrook mining operations do not contain any components that will potentially give rise to low frequency noise, over and above the potential sources of low frequency noise previously assessed. However, in accordance with Development Consent Condition 6.4.2(e), in the event that amenity problems associated with low frequency noise arise, Tetra will investigate the source of the low frequency noise, in consultation with EPA. Tetra will report to DPE on the result of any such investigation including any practical mitigation measures that can be implemented.

Dartbrook mining operations will not generally involve significant sources of intermittent noise. It has been identified that reversing alarms on equipment operating at night at the East site could potentially cause some intermittent noise, particularly during the night-time. To minimise this effect, all equipment that is to be operated at the east site during the night is required to be fitted with a broadband reversing alarm to reduce the intrusive nature of the alarm.

There are no residences in the vicinity of the Dartbrook expected to be subject to tonal noise, except for those listed as subject to acquisition on request in **Table 3**. The owners of these residences may request additional mitigation or acquisition of their property by Tetra in accordance with Development Consent Condition 11.3, as outlined in **Section 6**.

5. MONITORING

5.1 GENERAL PROCEDURE

In accordance with Development Consent Condition 6.4.1(i), noise monitoring at residences in the vicinity of the Dartbrook will be undertaken to determine mine noise levels and to identify any residences where mine noise levels exceed the noise management or acquisition criteria. The Noise monitoring program will utilise a combination of real-time and attended monitoring to evaluate the performance of the operation.

Refinement of the noise monitoring program, including monitoring locations, may be necessary over the life of the mine depending on the monitoring results and the source of any noise complaints. The monitoring data will be regularly assessed and operations modified or ceased to ensure compliance with the relevant conditions of this consent, as discussed in **Section 4**.

Noise generated from Dartbrook operations will be monitored and measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the *NSW Noise Policy for Industry* (EPA, 2017) and generally in accordance with the procedures outlined in *Australian Standard 1055 – 2018, Acoustics – Description and Measurement of Environmental Noise*.

5.2 METEOROLOGICAL MONITORING

Dartbrook has two operating meteorological stations, including:

- Met-01 which is located above the Kayuga underground mine area to the north-west of the West Site facilities; and
- Met-02, which is located located north of the CHPP at the East site.

Both meteorological Stations are maintained and operated in accordance with the requirements of *Approved Methods for Sampling and Analysis of Air Pollutants in NSW* (Department of Environment and Conservation (DEC), 2007), in accordance with Development Condition 8.2 (a) of the Development Consent.

Both meteorological monitoring sites are operated via real-time telemetry to assist with accurate data acquisition.

Meteorological data will be analysed and documented on a monthly basis to characterise the site meteorological conditions. Data will be summarised in the Annual Review, as discussed in **Section 7.1**.

5.3 WEST SITE NOISE MONITORING

Given the limited activities proposed as part of MOD7 at the West site, Dartbrook will conduct quarterly attended noise monitoring at the closest privately owned residences to the West Site mining operations (**Figure 5**). This will include monitoring at representative locations for Receivers 81B, 181, 212 & 228,238 ,242, 244 and 391.

Monitoring will be conducted during the night-time period only as the mine will operate 24 hours a day and the night-time criteria is the most stringent (**Section 2.1**). Monitoring on a quarterly basis will ensure that noise levels are monitored over the range of seasonal variations in weather conditions. Meteorological data for the monitoring periods will be obtained from the Dartbrook meteorological station to enable an assessment of the impact of weather conditions on mine noise levels. Additional monitoring may also be conducted at any time in response to a noise complaint (**Section 6**).

5.4 EAST SITE NOISE MONITORING

The noise monitoring procedure for the Dartbrook mining operations at the East Site has been designed to overcome difficulties associated with monitoring of mine noise from this site. All private properties in the vicinity of the East Site are subject to significant traffic noise from the New England Highway. Based on past experience of attended noise monitoring at these properties, it is not possible to monitor mine noise for 15 minute periods to determine $LAeq_{(15\ minute)}$ noise levels at these properties. During the day and evening periods mine noise can generally not be distinguished above highway traffic noise at any time. During the night-time period between 12 pm and 4 am it is only possible to monitor mine noise levels for periods of 1 minute, on average, in each 15 minute period during breaks in highway traffic noise.

A continuous noise monitoring system incorporating a calibrated noise monitoring/modelling procedure has been developed to predict mine noise levels at the closest private properties to the East Site. Receiver 86 (Day), Receivers 303 and 422 (O'Brien), and the "Southern Aberdeen residence" (**Figure 5**) are included in the monitoring system. No monitoring of the Knight and Gordon residences is required as they are now owned by Tetra. However, unattended monitoring is conducted at the Knight/O'Brien property boundary (U2- Knight, **Figure 5**) to provide continuous noise information representing Receiver 303 & 422.

The noise monitoring/modelling procedure is based on mine noise levels monitored continuously at the Dartbrook meteorological station (**Figure 5**). Unlike the closest residences, the meteorological station is located sufficiently far from the New England Highway and close enough to the CHPP that mine noise is the predominant source of monitored noise levels at this location. The monitored mine noise levels at the meteorological station will be used to predict mine noise levels at the monitoring locations where mine noise levels cannot be monitored because of highway traffic noise.

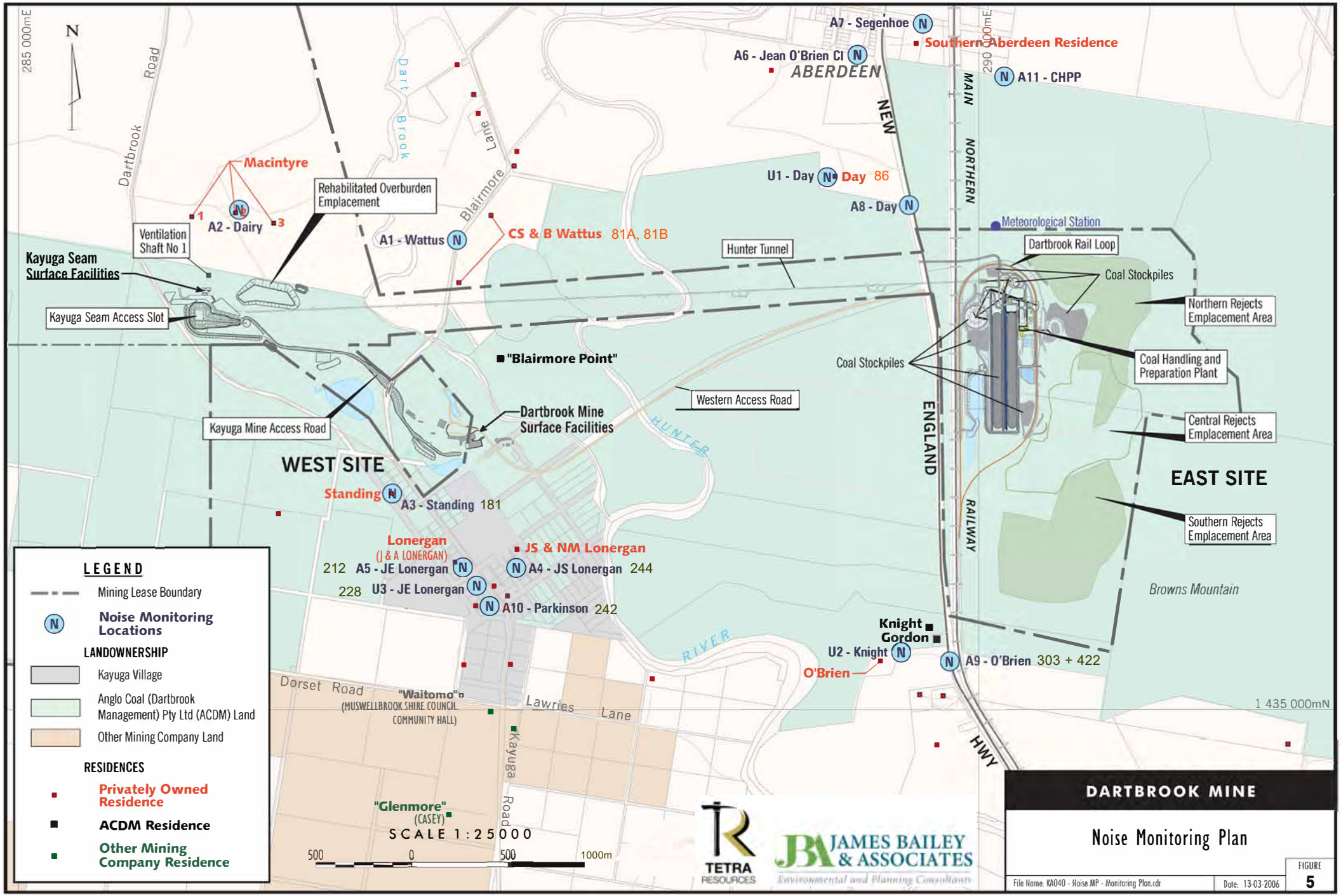
Mine noise levels will be predicted using an Environmental Noise Model (ENM) of the site and surrounding area. The ENM takes the following into account in calculating predicted noise levels:

- Actual monitored East Site noise levels at the Dartbrook Meteorological Station;
- Meteorological conditions including air temperature, wind speed and direction;
- Calculated temperature inversion strength using the sigma-theta method;
- Components of the CH&PP operating at the time; and
- Physical features including surface topography, and noise barriers.

Calculated mine noise levels at the monitoring locations are displayed continuously on a computer terminal in the CHPP control room. Noise levels are updated at least every minute, and as monitored meteorological conditions vary. $LAeq_{(15\ minute)}$ noise levels are calculated and updated every 15 minutes and displayed in comparison to noise criteria to alert CHPP controllers of any exceedances.

The noise monitoring system results will be stored by the CHPP control system and will be retrievable to enable review of historical performance.

During the first twelve months of operation of the noise monitoring system, monthly attended monitoring will also be conducted at representative noise monitoring locations at the East Site to confirm, as far as practicable, the accuracy of the noise prediction procedure. Monitored mine noise levels will be compared to predicted mine noise levels from the noise monitoring system. Monthly attended monitoring at the East site will be reduced to quarterly, once monitoring has confirmed that predicted mine noise levels are within an acceptable level of accuracy, and with the agreeance of the Secretary of DPE.


285 000mE
290 000mE
1 435 000mN
N
Dartbrook Road
Dart Brook
Lane
Blairmore
Macintyre
1
2
3
A2 - Dairy
Rehabilitated Overburden Emplacement
Ventilation Shaft No 1
Kayuga Seam Surface Facilities
Kayuga Seam Access Slot
A1 - Wattus
CS & B Wattus 81A, 81B
Hunter Tunnel
A7 - Segenhoe
Southern Aberdeen Residence
A6 - Jean O'Brien Cl
ABERDEEN
A11 - CHPP
NEW MAIN NORTHERN
U1 - Day
Day 86
A8 - Day
Meteorological Station
Dartbrook Rail Loop
Coal Stockpiles
Northern Rejects Emplacement Area
Coal Handling and Preparation Plant
Central Rejects Emplacement Area
Southern Rejects Emplacement Area
"Blairmore Point"
Western Access Road
Kayuga Mine Access Road
Dartbrook Mine Surface Facilities
HUNTER
ENGLAND RAILWAY
WEST SITE
EAST SITE
Standing
A3 - Standing 181
Lonergan
(J & A LONERGAN)
JS & NM Lonergan
212 A5 - JE Lonergan
A4 - JS Lonergan 244
228 U3 - JE Lonergan
A10 - Parkinson 242
Knight
Gordon
U2 - Knight
O'Brien
A9 - O'Brien 303 + 422
Browns Mountain
RIVER
Dorset Road
"Waitomo"
(MUSWELLBROOK SHIRE COUNCIL COMMUNITY HALL)
Lawries Lane
Kayuga Road
HWY
"Glenmore"
(CASEY)
SCALE 1:25000
500 0 500 1000m
LEGEND
Mining Lease Boundary
Noise Monitoring Locations
LANDOWNERSHIP
Kayuga Village
Anglo Coal (Dartbrook Management) Pty Ltd (ACDM) Land
Other Mining Company Land
RESIDENCES
Privately Owned Residence
ACDM Residence
Other Mining Company Residence
TETRA RESOURCES
JAMES BAILEY & ASSOCIATES
Environmental and Planning Consultants
DARTBROOK MINE
Noise Monitoring Plan
FIGURE 5
File Name: KA040 - Noise MP - Monitoring Plan.cdr
Date: 13-03-2006

6. RESPONSE PROCEDURES

6.1 GENERAL PROCEDURES

Response procedures will be activated by a community complaint or noise emissions resulting in adverse noise impacts at a neighbouring property. The knowledge of noise problems normally arises from three sources:

1. Community complaints from neighbouring landholders who contact the mine when a perception of high noise levels exists;
2. Noise monitoring results; and
3. Observations from mine Supervisor/s, plant operators or other mine personnel.

Tetra maintains a 24-hour response line. Any noise complaints received are managed in accordance with the Dartbrook Complaints Handling Protocol.

In situations where noise levels are perceived by neighbouring landholders or site personnel to be an issue, the following procedures will be undertaken:

1. The relevant mine Supervisor/s and/or the Environmental Officer will investigate the situation to determine any possible mine noise sources;
2. Where a problem mine noise source is found, the method of operation will be altered, or controlled, or if possible the source will be modified or relocated to reduce the impact;
3. Monitoring of noise levels at the residence may be required if a noise source cannot be readily identified, or if the resident is not satisfied with the corrective action;
4. Any corrective action will be reported to the Environmental Officer who will record all significant actions, in accordance with the Complaints Handling Protocol;
5. The Environmental Officer will be informed of any complaint and details will be recorded in the complaint register, in accordance with the Complaints Handling Protocol; and
6. The Environmental Officer will notify potentially affected residents if noise monitoring results indicate that the noise criteria in **Section 2** are being exceeded due to Dartbrook mining operations.

In the event that monitoring demonstrates that the noise management criteria (**Table 2**) have been exceeded, the following noise management measures will be implemented:

1. An investigation will be conducted to confirm whether Dartbrook mining operations are the source of the noise;
2. If Dartbrook mining operations are determined to be the source of the noise, an investigation of feasible and reasonable mine site noise controls will be conducted;
3. If identified, feasible and reasonable noise controls will be implemented and monitoring will be conducted to confirm the effectiveness of the controls;
4. If no reasonable and feasible mine site noise controls are identified, the feasibility of acoustic treatment of the residence will be investigated in consultation with the landowner;

5. If feasible and agreeable to the landowner, acoustic treatment will be installed at the cost of Tetra; and

6. If no reasonable and feasible mine site noise controls are identified, and the mine noise levels are in excess of the noise acquisition criteria, the landowner will be able to request acquisition of the property in accordance with Development Consent Condition 11.2 (C) (see **Section 6.5**).

6.2 LANDOWNERS/ TENANT NOTIFICATION

In accordance with Condition 11.2 (f):

(a) Within one month of the approval of Modification 7, Tetra will:

(i) Notify in writing the owner of:

- *The land listed in Table 3 that they have the right to require Tetra to acquire their land at any stage during the development; and*
- *The residences on the land listed in Table 3 that they are also entitled to ask Tetra to install additional mitigation measures at the residence, as outlined in Condition 11.2(E) of the Development Consent; and*

(ii) Notify the tenants of any mine-owned land of their rights under this consent.....

(b) Prior to entering into any tenancy agreement for any land owned by Tetra that is predicted to experience exceedances of the recommended dust and/or noise criteria, Tetra will.....:

(ii) Advise the prospective tenants of the rights they would have under the Development Consent, to the satisfaction of the Secretary of DPE.

6.3 NOTIFICATION OF EXCEEDANCES

In accordance with Condition 11.2 Notification of Exceedance:

(a) As soon as practicable and no longer than 7 days after obtaining monitoring results showing an exceedance of any noise criterion in Table 2, *Tetra will:*

(i) Provide to any affected landowners and tenants; and

(ii) Publish on the Dartbrook Website, the full details of the exceedance.

6.4 ADDITIONAL MITIGATION UPON REQUEST

As outlined in Condition 11.2 (E):

Upon receiving a written request for mitigation from the owner of any residence on the land listed in ***Table 3****, Tetra must implement additional mitigation measures at or in the vicinity of the residence in consultation with the landowner.*

These measures must be consistent with the measures outlined in the Voluntary Land Acquisition and Mitigation Policy for State Significant Mining, Petroleum and Extractive Industry Development (2018). They must also be reasonable and feasible, proportionate to the level of predicted impact and directed towards reducing the noise and/or air quality impacts of the development. Tetra will also be responsible for the reasonable costs of ongoing maintenance of these additional mitigation measures until the cessation of mining operations.

If within 3 months of receiving this request from the owner, Tetra and the owner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution.

6.5 ACQUISITION PROCEDURE

In accordance with Condition 11.2 (c):

(a) Upon receipt of a written request to purchase property in accordance with any part of conditions 6.4.1(c) and 11.2 of the Development Consent, Tetra will offer in writing to acquire the whole of the property (unless the request specifically requests acquisition of only part of the property and subdivision has already been approved) within six months of receipt of the request. Tetra will pay the landowner an acquisition price resulting from proper consideration of:

(i) A sum not less than the current market value of the owner's interest in the land at the date of this consent, as if the land was unaffected by Dartbrook Mine, having regard to:

- *The existing use and permissible use of the land in accordance with the applicable planning instruments at the date of the written request; and*
- *The presence of improvements on the land and/or any Council approved building or structure which although substantially commenced at the date of the request is completed subsequent to that date.*

(ii) The owner's reasonable compensation for disturbance allowance and relocation within the Singleton, Upper Hunter or Muswellbrook Local Government Areas, or within such other location as may be determined by the Secretary in exceptional circumstances;

(iii) The owner's reasonable costs for obtaining legal advice and expert witnesses for the purposes of determining the acquisition price for the land and the terms upon which it is to be acquired; and

(iv) The purchase price determined by reference to points (i), (ii) and (iii) shall be reduced by the amount of any compensation awarded to a landowner pursuant to the Mining Act, 1992 or other legislation providing for compensation in relation to coal mining but limited to compensation for dwellings, structures and other fixed improvements on the land, unless otherwise determined by the Secretary in consultation with the Resources Regulator or SA NSW.

(b) An offer by Tetra to purchase a property under the conditions of this consent must remain open to the landowner for the following periods from the date of the offer:

(i) For damage to a dwelling beyond the safe, serviceable and repairable criteria (Condition 11.2(a)), three years after completion of mining of longwall panels that affect the property;

(ii) For land capability and/or agricultural productivity impacts (Condition 11.2(b)), five years after completion of mining of longwall panels that affect the property; and

(iii) For land listed in Table 3, for the life of the development.

(c) Notwithstanding any other Condition of the consent, the landowner and Tetra may enter into any other agreed arrangement regarding compensation; or Tetra may, upon request of the

landowner, acquire any property affected by the project during the course of this consent on terms agreed to between Tetra and the landowner.

6.6 INDEPENDENT NOISE INVESTIGATION PROCEDURE

The Independent Noise Investigation process is set out in Development Consent Condition 11.2 under the heading 'Independent Review'. The process will be triggered when a landowner/ occupier considers that noise from the Dartbrook operations is exceeding the noise criteria and submits a written request, the DPE must also be satisfied that an investigation is required.

The key steps in the process are described under Condition 11.2 as follows:

(a) If a landowner considers the development to be exceeding any noise relevant criterion, they may ask the Secretary in writing for an independent review of the impacts of the development on their residence or land.

(b) If the Secretary is not satisfied that an independent review is warranted, the Secretary will notify the landowner in writing of that decision, and the reasons for that decision, within 21 days of the request for a review.

(c) If the Secretary is satisfied that an independent review is warranted, within 3 months, or other timeframe agreed by the Secretary and the landowner, of the Secretary's decision, Tetra will:

(i) Commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Secretary, to:

- *Consult with the landowner to determine their concerns;*
- *Conduct monitoring to determine whether the development is complying with the relevant criteria in condition 6.4.1 (a); and*
- *If the development is not complying with the relevant criterion, identify measures that could be implemented to ensure compliance with the relevant criterion; and*

(ii) Give the Secretary and landowner a copy of the independent review; and

(iii) Comply with any written requests made by the Secretary to implement any findings of the review.

7. REPORTING

7.1 ANNUAL REPORTING

In accordance with Condition 9.2 of the Development Consent, an Annual Review will be prepared by the end of March, each year and submitted to the Secretary. This review will:

(i) Describe the development (including any rehabilitation) that was carried out in the previous calendar year, and the development that is proposed to be carried out over the current calendar year;

(ii) Include a comprehensive review of the monitoring results and complaints records of the development over the previous calendar year, including a comparison of these results against the:

- *Relevant statutory requirements, limits or performance measures/criteria;*
- *Requirements of any plan or program required under the Development Consent;*
- *Monitoring results of previous years; and*
- *Relevant predictions in the documents referred to in Condition 1.1(a) of the Development Consent;*

(iii) Identify any non-compliance or incident which occurred in the previous calendar year, and describe what actions were (or are being) taken to rectify the non-compliance or incident and avoid reoccurrence;

(iv) Evaluate and report on:

- *The effectiveness of the noise and air quality management systems;*
- *Socio-economic impact of the development including the workforce characteristics of the previous calendar year; and*
- *The surveillance of any prescribed dam on the site to the satisfaction of the DSC;*
- *The outcome of the water budget for the year, the quantity of water used from water storages and details of discharge of any water from the site; and*
- *Compliance with the performance measures, criteria and operating conditions in this consent;*

(v) Identify any trends in the monitoring data over the life of the development;

(vi) Identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and

(vii) Describe what measures will be implemented over the next calendar year to improve the environmental performance of the development.

Copies of the Annual Review will be submitted to DPE, MSC, UHSC and made available to the CCC and any interested person upon request.

A comprehensive summary of noise monitoring results and the Annual Review will also be made publicly available on the Dartbrook Website, in accordance with Condition 13 of the Development Consent.

Specific to noise, the Annual Review will include:

- Results of the noise monitoring program;
- An assessment of compliance comparing monitoring results against the noise criteria specified in **Section 2**;
- A review of the effectiveness of noise control measures, and any necessary noise management targets or strategies for the following year;
- Predicted noise levels for the following year, making use of monitoring results to redefine noise management and acquisition zones, if necessary; and
- A summary of any noise complaints from the public relating to the mine.

7.2 INCIDENT REPORTING

In the event that an incident occurs, Dartbrook will immediately notify DPE and other relevant authorities of the incident in accordance with Condition 9.3(a) of the Development Consent. An 'incident' is defined as:

> *"an occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance."*

'Material Harm' is harm that involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial, or results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000 (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment). This definition excludes 'harm' that is authorised under either the Development Consent or any other statutory approval.

In the event that a non-compliance occurs, Dartbrook will notify DPE in accordance with Condition 9.3 (b) of the Development Consent.

As per **Section 7.1** all incidents are also reported in the Annual Review.

8. RESPONSIBILITIES

The key personnel with responsibility for environmental management on the mine site will be the Environmental Officer, and the Senior Management/Supervisors.

The Environmental Officer will be responsible for ensuring that the requirements of this management plan are implemented while the Senior Management/Supervisor will be responsible for implementing noise control measures specified in this plan.

Environmental Officer

Specific responsibilities of the Environmental Officer will include:

- Ensuring that all personnel and contractors are given adequate training in environmental awareness, legal responsibilities, and noise control methods;
- Ensuring mine personnel are aware of appropriate noise control measures required to be implemented;
- Ensuring noise monitoring is conducted as described in **Section 5**; and
- Coordinating response procedures in accordance with **Section 6**.

Senior Management/Supervisors

Specific responsibilities of the Senior Management/Supervisors will include:

- Implementing noise control measures in accordance with the requirements of this management plan; and
- In the event that a noise complaint is received, investigating the source and undertaking the response procedures outlined in this plan.

9. REVIEW REQUIREMENTS

Condition 3.2(f)(viii) of the Development Consent requires that all management plans include a protocol for periodic review of the plan. Further to this, Condition 3.2 (k) requires:

> *... the suitability of existing strategies, plans and programs be reviewed within three months of:*
>
> - *The notification of an incident under Condition 9.3 (a);*
> - *The submission of an Annual Review under Condition 9.2 (a);*
> - *The submission of an Independent Environmental Audit (IEA) under Condition 8.1 (a); or*
> - *The approval of any modification of the conditions of this consent (unless the condition specifies otherwise), the suitability of existing strategies, plans and programs required under this consent must be reviewed by the Applicant.*

Condition 3.2 (l) of the Development Consent, also states:

> *... if necessary, to either improve the environmental performance of the development, cater for a modification or comply with a direction, the strategies, plans and programs required under this consent must be revised, to the satisfaction of the Secretary. Where revisions are required, the revised document must be submitted to the Secretary for approval within six weeks of the completion of the review on Condition 3.2 (j).*
>
> *This is to ensure strategies, plans and programs are updated on a regular basis and to incorporate any recommended measures to improve the environmental performance of the development.*

This NMP will be reviewed (and revised if necessary) in accordance with the above and/or prior to any changes in mining.

REFERENCES

- *Australian Standard 1055 – 2018, Acoustics – Description and Measurement of Environmental Noise.*
- EPA (2017). *NSW Noise Policy for Industry*.
- HLA-Envirosciences (2000). *Dartbrook Extended Environmental Impact Statement.*
- Hansen Bailey (2018). *Environmental Assessment, Modification 7, Kayuga Seam Bord and Pillar Mining Operations.*
- Hansen Bailey (2021). *Modification 7 Updated Response to Contentions*.

ABBREVIATIONS

Abbreviation	Meaning
ARTC	Australian Rail Track Corporation
CCC	Community Consultative Committee
CHPP	Coal Handling and Preparation Plant
DA	Development Application
dB(A)	A-weighted decibels
DPE	Department of Planning & Environment
DRG	Department of Planning, Industry and Environment – Division of Resources and Geoscience (now Mining Exploration and Geosciences (MEG) under Department of Regional NSW)
EESD	Environment Energy & Science Division of Department of Planning & Environment
EIS	Environmental Impact Statement
EP&A Act	*Environmental Planning & Assessment Act 1979*
EP&A Regulation	*Environmental Planning & Assessment Regulations 2021* (repealed EP&A Regulation 2000 on 1 Mach 2022)
EPA Savings Regulation	*Environmental Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017*
EPBC Act	Commonwealth *Environment Protection & Biodiversity Conservation Act 1999*
EPI	Environmental Planning Instrument
EPL	Environment Protection Licence
GIS	Geographic Information System
GPS	Geographical Positioning System
ha	Hectare
Heritage Act	*Heritage Act 1977*
ICNG	*Interim Construction Noise Guideline*
IPCN	Independent Planning Commission NSW
LEP	Local Environmental Plan
LGA	Local Government Area
M	metres
MAP	Management Action Plan
Mbcm	Million bank cubic metres
Mining Act	*Mining Act 1992*
Mining SEPP	*State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007*
Mt	Million tonnes
Mtpa	Million tonnes per annum

Abbreviation	Meaning
NGER Act	*National Greenhouse and Energy Reporting Act 2007*
RBL	Rating Background Level
RL	Reduced Level
RMS	Roads and Maritime Services
ROM	Run of Mine
SEE	Statement of Environmental Effects, now called a Modification Report for State Significant Development Modification Applications.
SEPP 33	*State Environmental Planning Policy 33 – Hazardous and Offensive Development*
SEPPs	State Environmental Planning Policies
SPLs	Sound Power Levels
SSD	State Significant Development
WM Act	*Water Management Act 2000*

APPENDIX A
STAKEHOLDER CONSULTATION

Department of Planning and Environment

Our ref: DA231-07-2000-PA-12

Jeff Beatty
General Manager
AQC Dartbrook Management Pty Ltd
6 Stair Street
Kayuga NSW 2333

18/01/2023

Subject: Approval of Noise Management Plan

Dear Mr Beatty

I refer to the Dartbrook Noise Management Plan (Version 8, dated October 2022), which has been prepared in accordance with condition 6.4.2 of DA231-07-2000.

The Department has carefully reviewed the Noise Management Plan and is satisfied that it addresses the relevant requirements of the development consent.

Accordingly, the Planning Secretary has approved the Noise Management Plan (Version 8, dated October 2022).

You are reminded that if there are any inconsistencies between the Noise Management Plan and the conditions of approval, the conditions prevail.

Please ensure you make the document publicly available on the project website at the earliest convenience.

If you wish to discuss the matter further, please contact Joe Fittell on 02 4908 6896.

Yours sincerely

Stephen O'Donoghue
Director
Resource Assessments

As nominee of the Planning Secretary

APPENDIX B

PREDICTED NOISE LEVELS

Table B-1 Calculated Noise Levels, MOD7 & Longwall Mining Up to 6 Mtpa of ROM Coal

Receiver ID	Calculated Noise Level, LAeq, 15min				Noise Criteria Day/Evening/Night
	Day Neutral	Day Wind	Evening/Night Wind/Inversion	Evening/Night (excluding SW REA)	
Privately Owned East Site Receivers					
303	30	31	42	42	50/50/41
422	31	31	44	42	50/50/41
423	26	26	40	40	50/50/41
424	25	25	40	40	50/50/41
427	23	23	40	40	50/50/41
436	16	17	36	32	50/50/41
437	15	15	36	32	50/50/41
438	16	17	35	32	50/50/41
545	21	21	34	33	50/50/41
546	20	20	32	32	50/50/41
Privately Owned West Site Receivers					
62	19	28	31	30	40/40/35
63	19	28	31	30	40/40/35
64	19	28	31	31	40/40/35
65	18	29	32	32	40/40/35
72	20	28	30	30	40/40/35
74A	21	28	31	31	40/40/35
74B	21	28	31	31	40/40/35
75	22	29	32	32	40/40/35
77	19	29	31	31	40/40/35
80A	23	30	33	33	40/40/35
80B	24	31	34	33	40/40/35
81A	23	30	33	32	40/40/35
81B	22	30	33	32	40/40/35
181	23	28	32	31	40/40/35
212	24	28	33	32	40/40/35
228	24	28	34	32	40/40/35
238	24	29	34	33	40/40/35
242	24	29	35	33	40/40/35
244	25	30	35	34	40/40/35
391	27	28	37	36	40/40/35

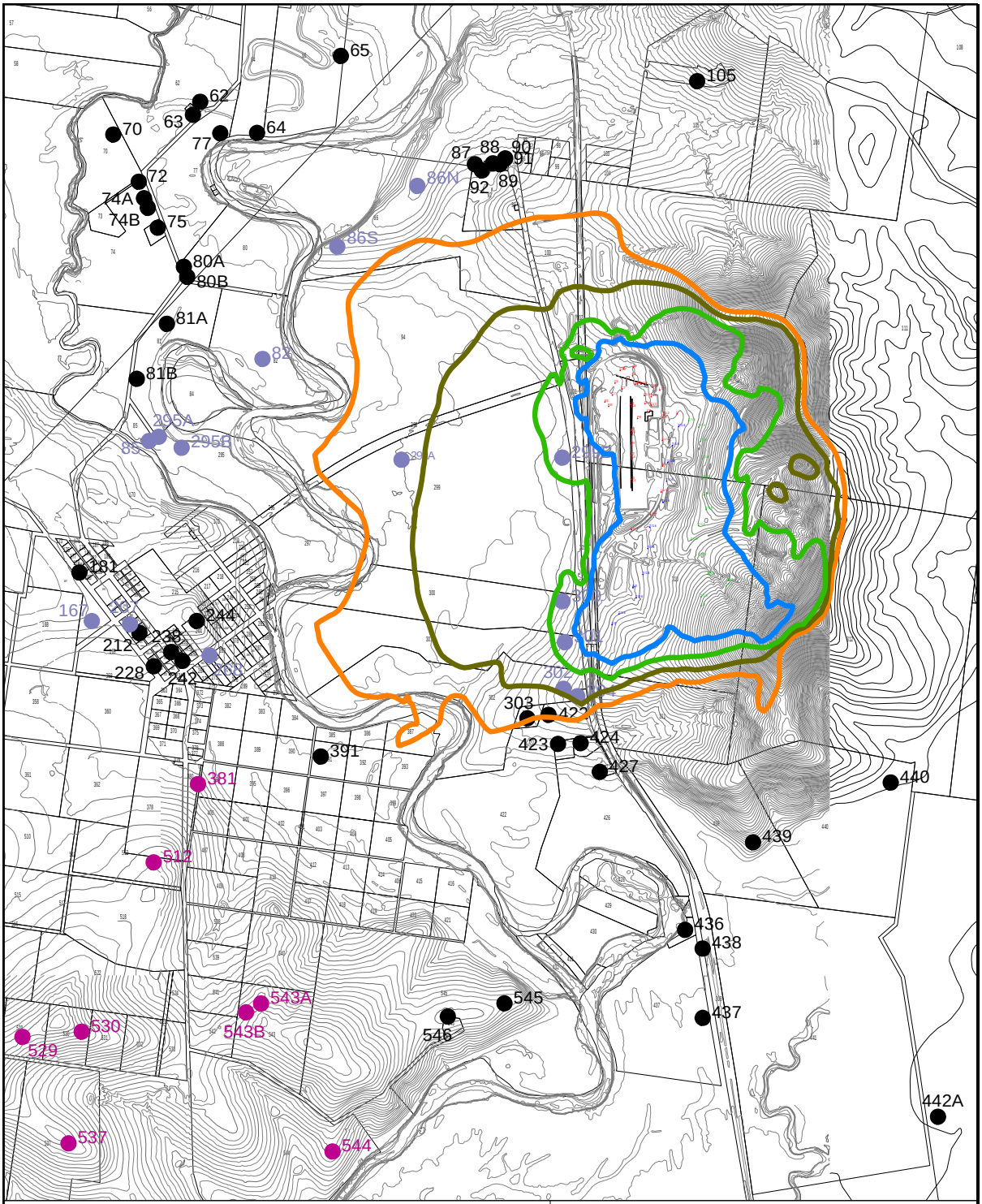
Receiver ID	Calculated Noise Level, LAeq, 15min				Noise Criteria Day/Evening/Night
	Day Neutral	Day Wind	Evening/Night Wind/Inversion	Evening/Night (excluding SW REA)	
Privately Owned Aberdeen Receivers					
87	25	35	37	37	49/42/40
88	24	34	37	37	49/42/40
89	24	34	37	37	49/42/40
90	24	34	36	36	49/42/40
91	24	34	37	37	49/42/40
92	25	35	37	37	49/42/40
105	17	31	34	34	49/42/40
Mine-Owned East Site Receivers					
86N	26	34	36	36	N/A
86S	25	32	35	34	N/A
299A	34	39	42	41	N/A
299B	41	45	49	49	N/A
300	41	45	48	46	N/A
301	42	43	50	47	N/A
302	36	36	46	45	N/A
304	36	36	46	44	N/A
Mine-Owned West Site Receivers					
82	26	34	36	35	N/A
85	23	30	34	32	N/A
167	23	28	32	31	N/A
207	24	28	33	32	N/A
268	25	30	36	34	N/A
295A	23	30	34	33	N/A
295B	24	31	35	33	N/A
381	24	26	34	32	N/A
543A	20	20	31	30	N/A
543B	19	19	31	29	N/A
Reference	Figure B1	Figure B2	Figure B3	Figure B4	-

Source: Revised Acoustics Assessment, Hansen Bailey 2021

Table B-2 Cumulative Noise Levels, MOD 7 and Longwall Mining Up to 6 Mtpa of ROM Coal, Night

Dartbrook Mine		Mt Pleasant Mine		Cumulative Level, LAeq	Cumulative Noise Criteria, Night
Receiver ID	Night LAeq, 15min	Receiver ID	Night LAeq, 15min		
Privately Owned East Site Receivers					
303	42	190	36	43	44
422	42	189	35	43	44
423	40	192	35	41	44
424	40	191	35	**41**	**44**
427	40	193	35	41	44
436	32	194	34	36	44
437	32	195	36	37	44
438	32	547	35	37	44
545	33	140	36	38	44
546	32	139	36	37	44
Privately Owned West Site Receivers					
62	30	180	30	33	40
63	30	179	30	33	40
64	31	180b	30	34	40
72	30	173	31	34	40
74A	31	174	32	35	40
74B	31	175	32	35	40
75	32	176	32	35	40
77	31	178	31	34	40
80A	33	310	33	36	40
81A	32	172	33	36	40
81B	32	171	33	36	40
181	31	169	33	36	40
212	32	156	39	40	40
228	32	157	41	42	40
238	33	158	40	41	40
242	33	159	40	41	40
244	34	161	39	40	40
391	36	143	40	41	40

Source: Revised Acoustics Assessment, Hansen Bailey 2021



30 dBA
35 dBA
40 dBA
45 dBA

- Private Residence
- AQC Residence
- Other Mining Company Residence

Noise source - CHPP
Noise source - south-west REA
Noise source - southern REA

N

BRIDGES Acoustics

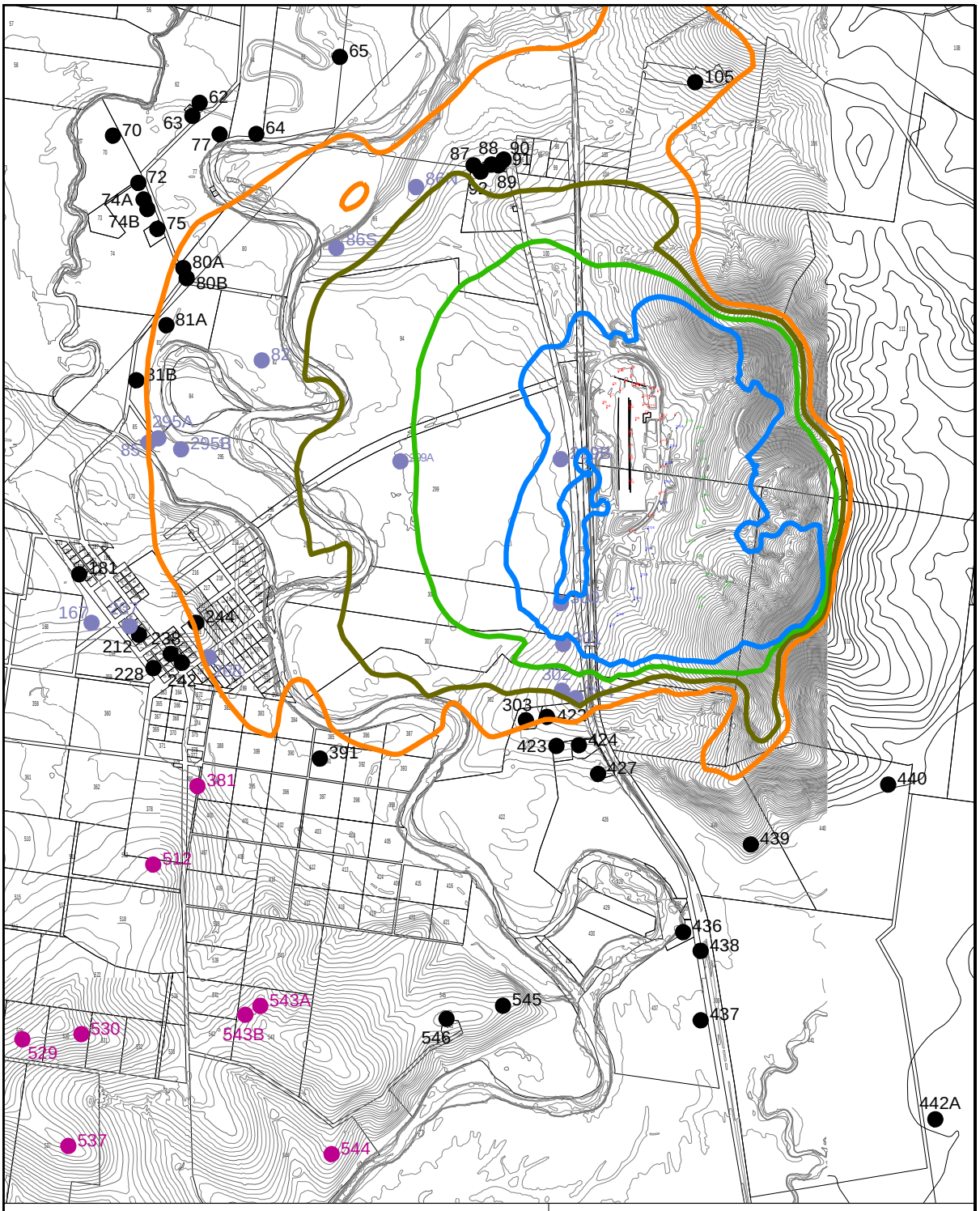
30 June 2020

DARTBROOK PROJECT

Year: All
Time Period: Day
Atmosphere: Neutral
Scenario: Noise Contours LAeq,15min

Figure

B1



30 dBA
35 dBA
40 dBA
45 dBA

- Private Residence
- AQC Residence
- Other Mining Company Residence

Noise source - CHPP
Noise source - south-west REA
Noise source - southern REA

N

BRIDGES Acoustics

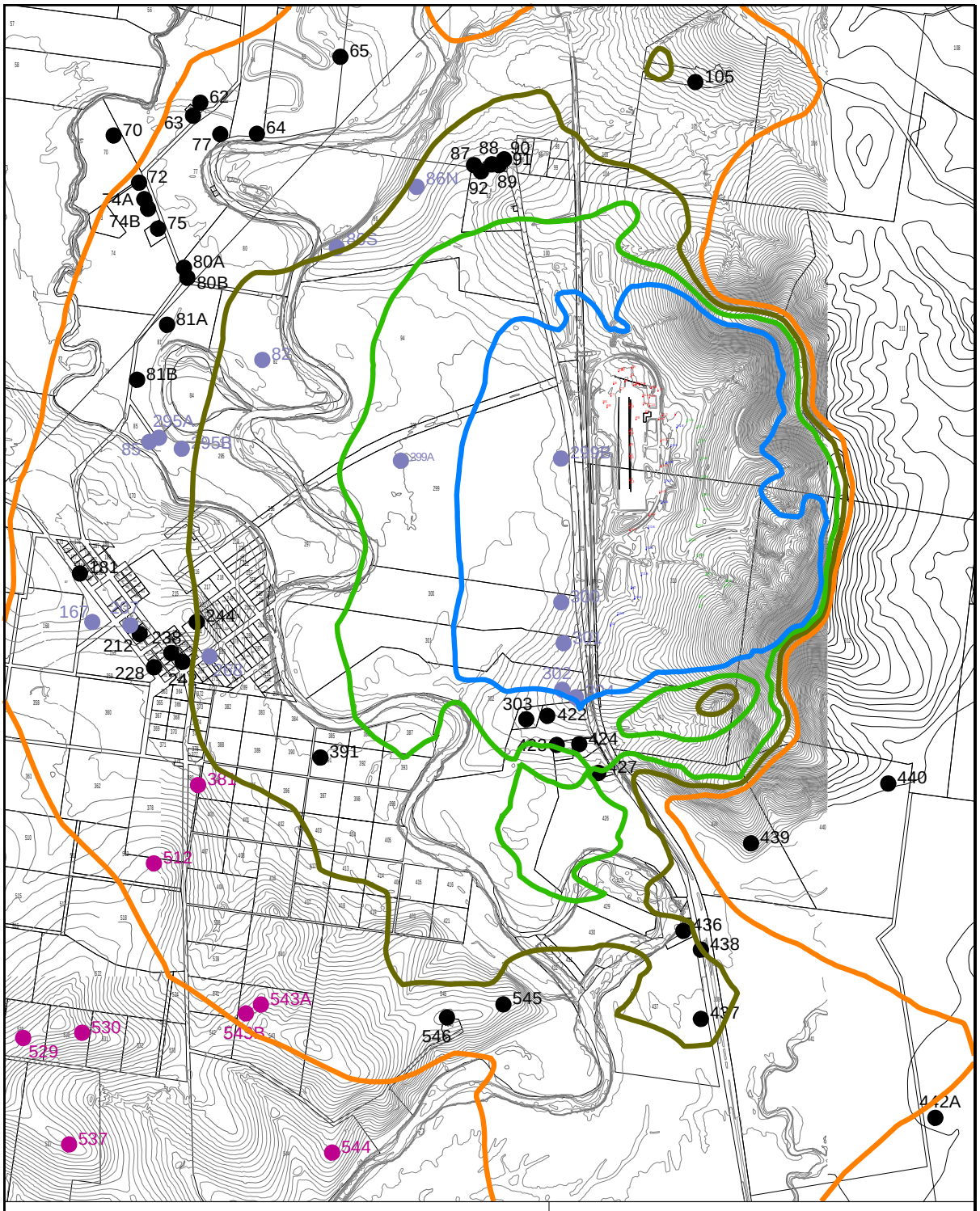
30 June 2020

DARTBROOK PROJECT

Year: All
Time Period: Day
Atmosphere: Prevailing
Scenario: Noise Contours LAeq,15min

Figure

B2



30 dBA
35 dBA
40 dBA
45 dBA

- Private Residence
- AQC Residence
- Other Mining Company Residence

Noise source - CHPP
Noise source - south-west REA
Noise source - southern REA

N

BRIDGES Acoustics

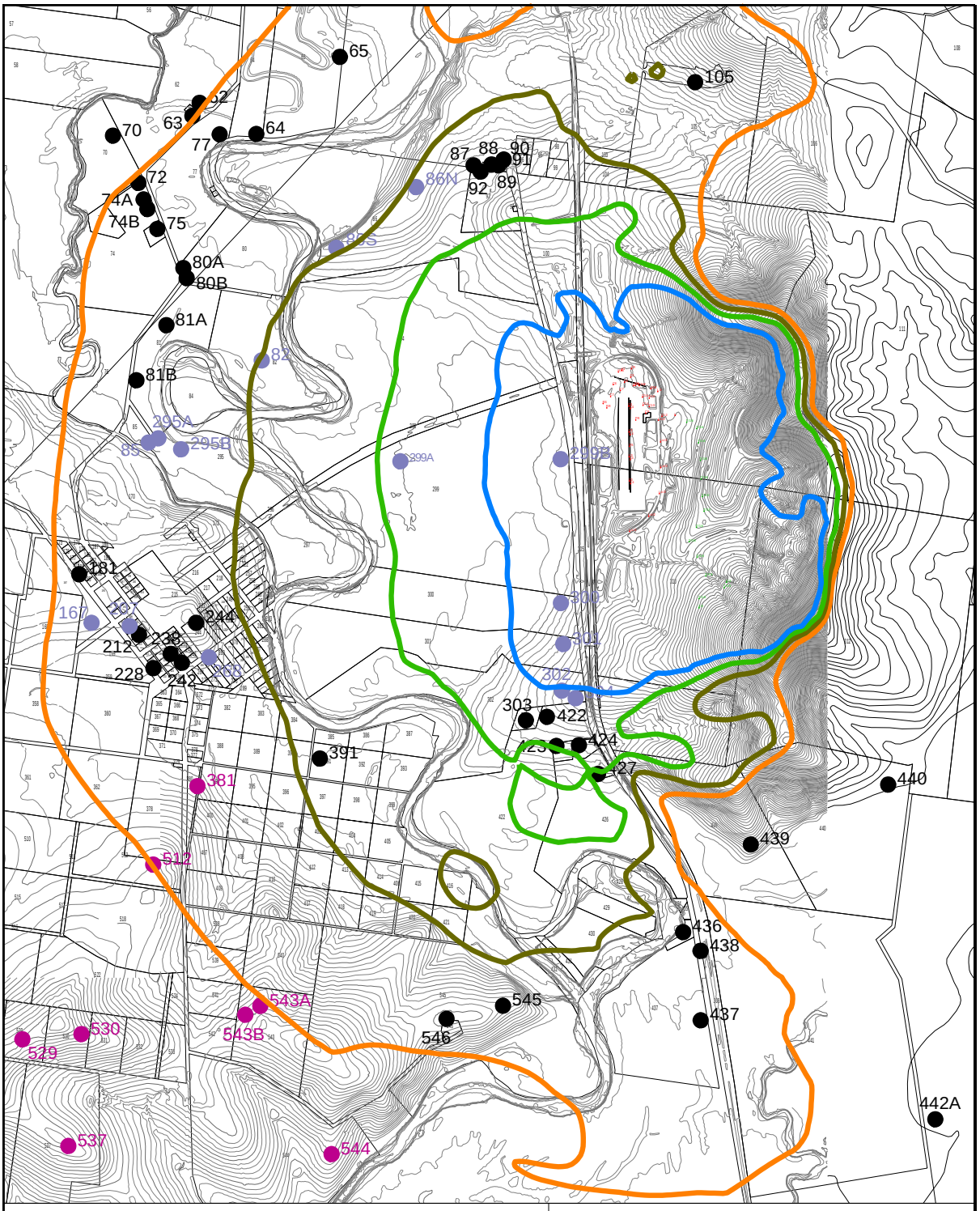
30 June 2020

DARTBROOK PROJECT

Year: All
Time Period: Evening/night
Atmosphere: Prevailing
Scenario: Noise Contours LAeq,15min

Figure

B3



30 dBA
35 dBA
40 dBA
45 dBA

- Private Residence
- AQC Residence
- Other Mining Company Residence

Noise source - CHPP

South-west REA reject handling plant excluded

Noise source - southern REA

N

BRIDGES Acoustics

30 June 2020

DARTBROOK PROJECT

Year: All

Time Period: Evening/night

Atmosphere: Prevailing

Scenario: Noise Contours LAeq,15min

Figure

B4