

LAND COURT OF QUEENSLAND

REGISTRY: Brisbane
NUMBER: EPA495-15
MRA496-15
MRA497-15

Applicant: New Acland Coal Pty Ltd ACN 081 022 380

AND

Respondents: Frank Ashman & Ors

AND

Statutory Party: Chief Executive, Department of Environment and Heritage
Protection

STATEMENT OF EVIDENCE TO THE LAND COURT BY SHANE ROBERT ELKIN

1. **Expert's details and qualifications**

1.1 **Name**

(a) My name is Shane Robert Elkin.

1.2 **Address**

(a) My business address is Level 2, 15 Astor Terrace, Spring Hill QLD 4000.

1.3 **Qualifications**

(a) I hold the following qualifications:

(i) Batchelor of Mechanical Engineering (UQ 1993).

(b) **Annexure A** to this statement is my curriculum vitae.

2. **Instructions**

2.1 I have been instructed by Clayton Utz on behalf of New Acland Coal Pty Ltd (**NAC**) to prepare a statement of evidence to the Land Court in relation to the objections lodged in opposition to NAC's New Acland Coal Mine Stage 3 Expansion project (**the Project**).

2.2 A copy of my letter of instructions from Clayton Utz dated 28th February 2016 is **Annexure B** to this statement.

2.3 In summary, my instructions are to prepare a statement of evidence to the Land Court addressing:

- (a) the issues of disagreement recorded in the joint expert report prepared by John Savery and me dated 22 February 2016 (**JER**);
- (b) the propositions identified in paragraphs 31, and 42 to 48 of Part 2 of the Applicant's Notice of Additional Issues, a copy of which is **Annexure C** to this statement, to the extent that these issues were not addressed in the JER; and
- (c) certain matters relevant my field of expertise that have been raised in lay witness statements filed by objectors in these proceedings.

3. **Facts and assumptions**

3.1 In producing this statement, I have relied on the following facts and assumptions:

- (a) The revised EIS submitted for the Project in January 2014 (**EIS**) and Additional Information to the New EIS (**AEIS**) documentation supplied as part of my brief,
- (b) Documents included in the reference list and/or included in footnotes throughout this Statement and the JER,
- (c) SoundPLAN modelling input and output files used in preparation of the New EIS and provided to me by NAC, and
- (d) Any additional assumptions relied on have been identified where relevant in my statement.

4. **Structure of statement**

4.1 In accordance with my instructions summarised in paragraph 2.3 above, my evidence comprises the following three parts:

- (a) Part A addresses the issues of disagreement recorded in the JER;
- (b) Part B addresses the propositions identified in in paragraphs 23 to 29, 31 and 42 to 48 of Part 2 of the Applicant's Notice of Additional Issues; and
- (c) Part C addresses certain matters relevant to my field of expertise that have been raised in lay witness statements filed by objectors in these proceedings.

5. **Opinion and findings**

Part A - Opinion and findings on points of disagreement in JER

- 1 For the historical background and project description of the NAC Stage 3 Project, see Sections 1 and 2 of the JER.

- 2 Sensitive receptors are shown in the 2014 EIS Chapter 11, Figure11-1.
- 3 Following are additional findings that support my opinions in relation to the matters of disagreement contained in Section 13 of the JER and issue numbers below reference the equivalent issue number in Section 13.

5.1 **Issues 1, 2, 3, 4, 5, 6, 8 and 9 – Noise Criteria**

- 4 These issues of disagreement between the experts all relate to the appropriate noise criteria that should be applied to the Stage 3 operations.
- 5 Fundamental to the selection of criteria is the need to protect the health and well-being of the surrounding community.
- 6 In the JER, Mr Savery relies on references that support the use of a “background plus” approach to protecting the health and well-being of the surrounding community.
- 7 The references I relied on in the JER and which all support maintaining the draft EA noise conditions (and are therefore in disagreement with Mr Savery’s approach) are identified below:
 - a. EPP(Noise) Acoustic Quality Objectives
 - b. World Health Organisation’s recommendations in relation to avoiding sleep disturbance
 - c. enHealth’s The Health Effects of Environmental Noise – Other than Hearing Loss
 - d. Australian Standard (AS) 2107:2000 Acoustics – Recommended design sound levels and reverberation times for building interiors
 - e. EHP’s Application Requirements for Activities with Noise Impacts Guideline
 - f. Wandoan Coal Mine Land Court Decision (along with evidence to support the use of 7 dBA instead of 5 dBA as the façade noise reduction)
- 8 The following paragraphs provide further comment on my reasoning in relation to the applicability of each of the above references, all of which individually, and as a collective, support the draft EA noise criteria.
- 9 EPP(Noise) Acoustic Quality Objectives – The Acoustic Quality Objectives are the most relevant legislative standards (which provides numerical limits) in Queensland and I note in this respect:
 - a. The purpose of the EPP(Noise) is to achieve the object of the Environmental Protection Act in relation to the acoustic environment,
 - b. That purpose is achieved by identifying environmental values which are to be enhanced or protected, including human health and wellbeing, and identifying acoustic quality objectives for enhancing or protecting those environmental values,
 - c. Part 3 of the EPP(Noise), which references the acoustic quality objectives, sets out the values and objectives that, if met, are conducive to protecting the acoustic amenity of the community,
 - d. Part 4 (Section 10) of the EPP(Noise), which references the

- “background creep” criteria, outlines the management intent for an activity involving noise and states that the “background creep” criteria must be achieved to the extent that it is reasonable to do so,
- e. It is my understanding that the EPP (Noise) objectives must be considered in decisions on whether to approve an environmental authority and the conditions of that environmental authority, and
 - f. The draft EA noise conditions are consistent with or lower than the EPP(Noise) acoustic quality objectives.
- 10 It is my opinion that it is not reasonable to apply “background creep” criterion, defined as a night-time 35 dBA Leq by Mr Savery in the JER, given:
- a. if the health and well-being of the surrounding community is protected at 37 dBA Leq, then it is my opinion that a lower limit should not be applied, and
 - b. noise levels will diminish for residences currently experiencing noise levels of up to 40dBA.
- 11 World Health Organisation’s (WHO) “Guidelines for Community Noise” (Guidelines) Sleep Disturbance Recommendations – A summary of my evidence/opinions put forward in the JER is as follows:
- 12 The WHO Guidelines are reflected in the acoustic quality objectives of the EPP (Noise).
- 13 The WHO Guidelines (health related) sleep disturbance recommendations are highly relevant to the New Acland mine as nearly all noise complaints relate to night-time noise levels.
- 14 Applying a 7 dB façade noise reduction, the draft EA night-time noise criteria are consistent with the WHO Guidelines’ sleep disturbance recommendations.
- 15 The draft EA noise conditions are also below the WHO Guidelines’ outdoor “moderately annoyed” findings of:
- a. Day - 50 dBA Leq (CG’s condition is 8 dB lower at 42 dBA Leq)
 - b. Evening – 45 dBA Leq (CG’s condition is 3 dB lower at 42 dBA Leq)¹
 - c. Night – 40 dBA Leq (CG’s condition is 3 dB lower at 37 dBA Leq)¹
- Thus, as the criteria proposed in the draft EA conditions are less than the WHO Guidelines’ criteria for moderate annoyance, it is my opinion that amenity will be protected.
- 16 For sleep disturbance to occur, maximum noise levels need to not only “emerge” above background noise levels, but they also need to be above certain “absolute” levels.
- 17 Some of the sleep disturbance studies used by WHO in determining their recommended levels were based on studies conducted in very low background noise environments (see the Horne et al and Griefahn et al papers).

¹ The 45 dBA evening and 40 dBA night criteria are calculated as described in paragraph 201 of the JER.

- 18 As such, I cannot support Mr Savery's position that maximum noise levels lower than those recommended by WHO are applicable to this Project.
- 19 In relation to Issue 2 (in the Summary of Areas of Disagreement in part 13 of the JER), I do not agree with Mr Savery that the WHO Guidelines' sleep disturbance recommendations are focussed on urban areas.

My reasons are as follows:

- 20 Paragraphs 206 to 209 of the JER highlight that WHO reviewed and analysed multiple sleep disturbance research papers (Horne et al, Pearsons et al, Griefahn et al) that were based on studies conducted in very low noise environments when they (WHO) determined their final recommendations.
- 21 In paragraph 98 of the JER, Mr Savery claims that the focus of the WHO guidelines is upon the urban environment. Mr Savery appears to base this claim on the following paragraph (which is also contained in paragraph 98 of the JER) contained in the Preface to the WHO Guidelines:

"Many countries have regulated community noise from road and rail traffic, construction machines and industrial plants by applying emission standards, and by regulating the acoustical properties of buildings. In contrast, few countries have regulations on community noise from the neighbourhood, probably due to the lack of methods to define and measure it, and the difficulty of controlling it. In large cities throughout the world, the general population is increasingly exposed to community noise due to the sources mentioned above and the health effects of these exposures are considered to be more and more an important public health problem"

- 22 In the full Preface, community noise is defined in the first sentence as noise emitted from all sources. There is also no distinction made between urban and rural settings, and the WHO Guidelines do not state one way or another which areas within our community the recommendations are applicable to.
- 23 As such, it is my opinion that the WHO recommendations in relation to sleep disturbance are applicable to this Project.
- 24 enHealth's The Health Effects of Environmental Noise – Other than Hearing Loss – This enHealth publication is currently available on the Federal Government's Department of Health website. As stated at paragraph 210 of the JER, this guideline states that "the WHO Guideline for Community Noise should be adopted as a primary reference level for environmental noise below which no health effects are expected".
- 25 The Preface to the document - stated below outlines the credibility of the subcommittee that authored this document in relation to "health" impacts on the Australian community.

"The enHealth Council, a subcommittee of the National Public Health Partnership, brings together top Environmental Health officials at the Federal and State/Territory level along with representation from the Australian Institute of Environmental Health, the environment and public health sectors, the

Indigenous community and the wider community. The Council has responsibility for providing national leadership, implementation of the National Environmental Health Strategy, forging partnerships with key players, and development and coordination of advice on environmental health matters at a national level. The advice development process is strongly based on collaboration and consultation.”

26 Mr Savery states in paragraphs 101 to 103 of the JER that he does not support the findings of the enHealth Council given 2 clauses.

27 The first clause is:

“Environmental noise is increasingly becoming a community concern both internationally and in Australia. Considerable efforts have been made over about the last four decades to reduce noise impacts from transportation sources such as road and rail traffic and aircraft. Nonetheless, many of the benefits of these efforts have been lost due to increased traffic volumes (by all modes) for longer periods of the day and evening. At the same time increases in urban population have resulted in greater exposure of a larger percentage of the population to increased noise levels.”

28 It is my opinion that this clause says nothing in relation to the recommendations only being applicable to urban environments.

29 The second clause is:

“This report examines the range of environmental sources that may affect communities, with a focus on the primary sources of such noise (road, rail and air traffic, and industry)”.

30 This clause is again repeated in the section titled “Adverse Health Effects of Noise” on page 13 of the enHealth report. This section of the report looks at the actual medical-related effects of noise and documents work done by the enHealth Council prior to setting their recommendations, which come later in the report on page 51.

31 It is my opinion that mining noise is an industry noise and therefore relevant to the research undertaken by the enHealth Council.

32 “Industrial” type noise is typically characterised by either constant or fluctuating mechanical plant noise (be it from stationary or mobile equipment) and this is just the same for open-cut mining operations.

33 Indeed, on page 47 of the enHealth guideline, the extractive and mining industries are discussed under the “Industry Noise” section.

34 As previously stated, the draft EA conditions achieve the WHO recommendations and as such the draft EA conditions will also achieve the recommendations of the enHealth Council.

- 35 Australian Standard (AS) 2107 – Contains recommended internal design sound levels for residences in the vicinity of different classes of transportation.
- 36 As I stated in paragraph 81 of the JER, taking into account a 7 dB façade noise reduction, the draft EA noise conditions sit within the acceptable range nominated in AS2107. These acceptable ranges are:
- a. 25 to 30 dBA Leq in sleeping areas for houses with negligible transportation (equivalent to 32 to 37 dBA Leq external assuming a 7 dB façade noise reduction for open windows), and
 - b. 30 to 40 dBA Leq in living areas for houses and apartments near minor roads (equivalent to 37 to 47 dBA Leq external).
- 37 In paragraph 87 of the JER, Mr Savery suggests that the “maximum” design level in AS2107 for bedrooms is not appropriate for this rural environment. My response to that statement is two-fold:
- a. as re-stated in **paragraph 36**, the quietest category has been chosen for this analysis, that being “houses with negligible transportation”, and
 - b. AS2107’s definition of the “maximum” design sound level is:

“The level of noise above which most people occupying the space start to become dissatisfied with the level of noise”.
- 38 Importantly:
- a. The draft EA conditions are not above the maximum design levels – they are either equal to or less than those maximum design levels, and
 - b. Once noise is experienced above the maximum design levels (which is not the case for this Project), is when most people start to become dissatisfied.
- 39 For these reasons, it is my opinion that the draft EA noise conditions are consistent with the AS2107 recommended design sound levels.
- 40 EHP’s Application Requirements for Activities with Noise Impacts Guideline – My opinion in relation to this guideline remains as per the JER (paragraphs 215 to 217).
- 41 Whilst the word “guidance” is contained in that document, the guideline provides no other numerical criteria.
- 42 Wandoan Coal Mine Land Court Decision – I have no further comments to make above and beyond those made in the JER (paragraphs 224 and 225).
- 43 In relation to AS 1055 (raised by Mr Savery in paragraphs 105 and 106 of the JER), (Part 1) Section 1 of that Standard states that “*(The scope of this standard) excludes the setting of environmental noise criteria. Such levels are set by regulations or organisational policy, not by Standards Australia*”.

44 In contrast, all 6 references identified by me, set or recommend numerical noise criteria.

5.2 7 dBA Façade Noise Correction – Issue 9

45 Given that all 6 of the references I have discussed are based on internal noise levels, it is important that the appropriate façade noise correction be applied such that the recommended internal noise level can be translated into an external noise level for ongoing compliance monitoring purposes.

46 Compliance monitoring is almost universally conducted external to properties given the logistical difficulties in arranging access to people's homes, along with any privacy concerns the residents may have.

47 As stated in paragraph 182 of the JER, it is my opinion that 7 dBA is the appropriate "open window" façade noise correction to apply for this Project.

48 A summary of the reasons I provided in the JER (see paragraphs 182 to 191 of the JER) to support my opinion of 7 dBA (open windows) are provided below:

- a. WHO – uses 15 dBA
- b. EPP(Noise) – uses 15 dBA
- c. AS3671 – uses 10 dBA (or 7.5 dBA as a free-field noise level)
- d. ASK's Noise Reduction through Facades with Open Windows research/paper – see Table 1 in **Annexure D**
- e. SLR's (then Heggies) Airport Link Tunnel façade noise reduction measurements – see Table 2 in **Annexure D**
- f. UK's DEFRA – minimum of 12 dBA
- g. EHP - general acceptance of 7 dBA (for many years)

49 The measurements undertaken by ASK and SLR (then Heggies) relate specifically to bedrooms. These results are important to this project because:

- a. sleep disturbance (at night when people are in their bedrooms) is one of the primary sources of historical complaints from the Acland community, and
- b. the noise correction performance of a particular façade is significantly influenced by the percentage of open area (e.g. open window or door) of that particular room. By reviewing the bedroom specific data, a more accurate result can be obtained for rooms with window sizes proportional to the typical size of bedrooms.

50 There were four measurements undertaken by ASK and SLR (then Heggies) for bedrooms. The façade noise correction results of these four measurements are provided below:

- a. ASK (Thirteenth residence) – 14.7 dBA
- b. ASK (Lynelle residence) – 10.8 dBA
- c. SLR (36 McGregor St) – 13 dBA
- d. SLR (35 McGregor St) – 12 dBA

51 All of these bedroom façade noise corrections are greater than the 7 dBA recommended by me for this Project. This supports the notion that a 7 dBA (open window) façade noise correction is somewhat conservative in nature (which is appropriate for the protection of the surrounding community).

5.3 **Issue 7 – Reduction in Currently Emitted Noise Level**

52 Mr Savery states in Section 13 “Summary of Areas of Disagreement” of the JER, without any other supporting information earlier in the document, that the minimum noise reduction he recommends from the existing night-time noise limit (of 40 dBA Leq) is 5 dBA.

53 The two primary reasons why I do not support this recommendation are stated below:

54 Firstly, there is no basis in Queensland legislation, guidelines or National standards to achieve a “clearly noticeable” noise reduction.

55 Secondly, Mr Savery has provided no evidence of a health and well-being justification for this recommendation.

5.4 **Issue 10 – Noise of Trains to be Assessed Using Mine Noise Limits Whilst Within the Mining Lease**

56 As stated in the JER, rail noise is somewhat unique in nature (being defined by a number of discrete passby events throughout the day, evening and night periods). This is recognised both in Queensland and other states in Australia in the rail noise criteria typically applied. The Environmental Protection Act deals with rail noise separately from other non-transportation noise sources.

57 The draft EA rail noise criteria are defined as per the normal (acoustic) descriptors, that is by assessing the 24 hour Leq value (which captures all the rail acoustic energy over a full day period) as well as assessing the LAmax (maximum) noise level to effectively place a “cap” on the highest noise levels experienced during these passby events.

58 For the reasons stated in **paragraphs 56** and **57**, it is my opinion that whenever rail noise is distinguishable from other noise sources, it should be assessed in accordance with the draft EA rail noise conditions. These conditions do not stipulate that they are not applicable within mining lease MLA50232.

59 In case rail noise is indistinguishable at the rail loadout facility during loading (due to the slow speed at which the train is travelling at this time), I have re-run the EIS SoundPLAN model for the night-time scenario to include all of following noise sources (which were not included in the EIS modelling):

- a. Double header current-generation (louder than new-generation) locomotive on notch setting 3 located at the closest point to the nearest residence in the area (Residence 34)
- b. Stockpile conveyors (100 dBA SWL)
- c. Conveyor drives (95 dBA SWL)
- d. Loadout bin (101 dBA SWL)

e. Side-tipper truck (112 dBA SWL)

60 This calculation is also in response to paragraph 265 in the JER where Mr Savery points out that the rail loadout facility was not included in the EIS modelling (I respond to other components not included in the modelling in the EIS in my response to **Issue 14**).

61 The results of this re-modelling are summarised as follows:

- a. For the nearest properties to the east (Residences 1 and 2), there was no increase in noise level at night. As such, compliance with the 37 dBA Leq criterion is predicted.
- b. For the nearest properties to the west / north-west (Residences 35 and 36), the highest increase in noise level was 0.9 and 0.4 dBA respectively (at residences 35 and 36).
- c. For residence 35 – this results in the 2019 night-time prediction increasing 1 dBA to 32 dBA Leq, with the 2023 and 2029 predictions not changing from that published in the EIS.
- d. For residence 36 (now owned by APC) - this results in the 2023 night-time increasing by 1 dBA to 36 dBA Leq, with the 2019 and 2029 predictions not changing from that published in the EIS.
- e. For the nearest residence to the south (Residence 34), the highest increase in noise level was 5 dBA.
- f. Despite this larger increase, total (mine proper plus rail loadout plus locomotive) predicted noise levels at Residence 34 do not exceed 27 dBA Leq at night for any of the three time horizons.

62 As such, I am satisfied that compliance with the draft EA noise conditions can be achieved at night when the rail loadout facility and locomotive noise is included in the modelling.

5.5 **Issue 11 – Low Frequency Noise**

63 The only mention of low frequency noise in Oakey Coal Action Alliance's Further Updated Notice of List of Issues (dated 9 December 2015) was in relation to rail locomotive noise (refer Section 12 (b) and (c)).

64 In response to this issue, and as documented in paragraphs 232 to 236 of the JER, I have undertaken specific low frequency noise modelling for locomotive noise at the nearest residence to the rail loop (residence 34) and the results were well below the "initial screening test" stipulated in EHP's Low Frequency Noise Guideline.

65 I do not agree with Mr Savery's list of potential sources of low frequency noise listed in paragraph 167 of the JER - noting this is far more extensive than OCAA's original list of "low frequency noise" issues (contained in Section 12

of Further Updated Notice of List of Issues (dated 9 December 2015)) which was limited train locomotive noise.

- 66 I am not aware that any legitimate low frequency noise concerns have ever been raised by the community in relation to these stated potential sources.
- 67 Low frequency noise for the entire mine was investigated as part of the 2014 EIS. The results are contained in Section 11.7.6 and Appendix G.7.4 of the Noise and Vibration Chapter and Appendix G.7.4.
- 68 The results of this investigation show that predicted noise levels are below the “initial screening test” at all residential locations for all time horizons for all weather conditions.
- 69 Given **paragraphs 64 to 68**, I do not support the recommendation to include a low frequency noise condition for the Stage 3 operations.

5.6 **Issue 12 – Overall Compliance with (Night-time) 37 dBA Leq Limit**

- 70 Mr Savery’s opinion is that the modelling does not indicate compliance with 37 dBA $L_{Aeq,adj,15min}$ at night for the following three reasons:
- a. The following aspects of the mine: basalt facility, construction of out-of-pit dumps and rail load-out facility (see paragraphs 258 to 269 of the JER) were not included
 - b. Compliance in the day/evening and night is only achieved with noise reduction of 2dB as a result of “utilisation”, (see paragraphs 248 to 257 of the JER) and
 - c. Noise modelling contains no noise character adjustments to account for possible tonality, impulsiveness or a safety factor for operational variations or uncertainty (see paragraph 271 of the JER).
- 71 I have already addressed the rail loadout facility for the night-time predictions in **paragraphs 59 to 62**.
- 72 My responses to the other areas of Mr Savery’s concern will follow in my responses to each relevant issue.
- 73 Before individually addressing each of Mr Savery’s concerns in relation to the modelling (as outlined in **paragraph 70**), it is useful to identify which residences in the Acland community are within the 4 dBA tolerance applicable to Mr Savery’s arguments on utilisation (2 dBA) and tonality/impulsivity (2 dBA).
- 74 **Section 5.9** of this statement documents the additional noise modelling I have conducted to account for the additional noise sources outlined in paragraph 70(a). The below analysis is based on the results of this additional modelling. As such, the below analysis accounts for all Stage 3 noise sources.
- 75 If Mr Savery’s more conservative approach of applying an additional 4dBA (based on utilisation and tonality/impulsivity) is applied, , the only residences

that are within 4 dBA of the draft EA noise conditions for the daytime/evening period are:

- Residence 1 (Beutel – Years 2019, 2023, 2029), and
- Residence 2 (Gorton (Beutel tenant) – not an objector – Years 2019, 2023, 2029).

76 For the night-time period, the only residences that are within 4 dBA of the draft EA noise conditions (and therefore within the 4 dBA range applicable to Mr Savery's arguments on utilisation and tonality/impulsivity) are:

- Residence 1 (Beutel – Years 2019, 2023, 2029),
- Residence 2 (Gorton (Beutel landlord) – not an objector – Years 2019, 2023, 2029),
- Residence 4 (Plant – Year 2019),
- Residence 6 (Kuhl – not an objector – Years 2019, 2023, 2029),
- Residence 7 (Kuhl – not an objector – Years 2019, 2023),
- Residence 8 (Kuhl – not an objector – Years 2019, 2023, 2029),
- Residence 19 (Woodland – withdrew objection – Year 2029), and
- Residence 36 (Heilig – owned by APC – Years 2019, 2023, 2029).

77 If Mr Savery's more conservative approach of applying an additional 4dBA (based on utilisation and tonality/impulsivity) was applied, there are only 2 residences (#1 and #4) that potentially as modelled could exceed the draft night-time EA conditions under worst case circumstances (excluding those owned by NAC, with whom NAC have an agreement with or have not objected).

78 There are other reasonable and practicable measures that can be implemented to ensure noise levels are below the draft EA noise conditions (even under Mr Savery's analysis) such as shielding by noise walls or intervening structures on APC owned land. Alternate acoustic treatments by agreement to affected residences (e.g. air conditioning, improved glazing) could also be used to achieve the internal acoustic quality objectives.

5.7 **Issue 12 – Compliance is Only Achieved Using 2dB Utilisation Factor²**

79 Paragraphs 297 to 300 of the JER describe the utilisation justification that in my opinion is applicable to the Project. NAC has provided evidence via two different reports that not all mobile plant would operate at the same time, and this was the basis of the 2014 EIS SoundPLAN modelling.

80 Since completion of the JER, I have been provided with a further set of data, in the form of two nightly production reports (19 August 2015 and 28 January 2016) which show yet a third form of utilisation (in addition to the two forms of utilisation reviewed for the JER) in relation to mobile plant.

² Please note that this second Issue 12 was incorrectly numbered in Part 13 Summary of Areas of Disagreement of the JER but has been retained in the report for easy cross-referencing purposes with the table in Section 13 of the JER.

- 81 The production reports list the number of hours each night that each item of plant performed certain tasks or the number of hours that it was not operating for various reasons.
- 82 The production reports documented this information over a 14 hour period – from 4pm until 6am.
- 83 I have analysed the utilisation in two parts over this 14 hour period:
- a. Between 4pm and 1am - representing the second shift for the day, and
 - b. Between 1am and 6am - when the mine is typically operating on a skeleton crew until the first shift starts again as 6am
- 84 The utilisation of equipment contained in the two production reports which are specific to the nights of 19th August 2015 and 28th January 2016 are as follows:
- a. 19 August 2015 between 4pm and 1am – reduction of 3 dBA
 - b. 19 August 2015 between 1am and 6am – reduction of 10 dBA
 - c. 28 January 2016 between 4pm and 1am – reduction of 2 dBA
 - d. 28 January 2016 between 1am and 6am – reduction of 10 dBA
- 85 These specific utilisations are consistent with the other utilisation analysis undertaken for the JER. They indicate that even higher reductions in the overall acoustic energy (across the site) may be occurring due to plant not operating all the time.
- 86 Therefore, these two production reports further support the use of a -2 dBA utilisation correction factor.
- 87 The production reports are also a factor in my confidence in the success of and commitment of NAC to the TARP, as they show that for periods of the night, equipment was switched off for noise reduction purposes and consequently noise levels reduced.

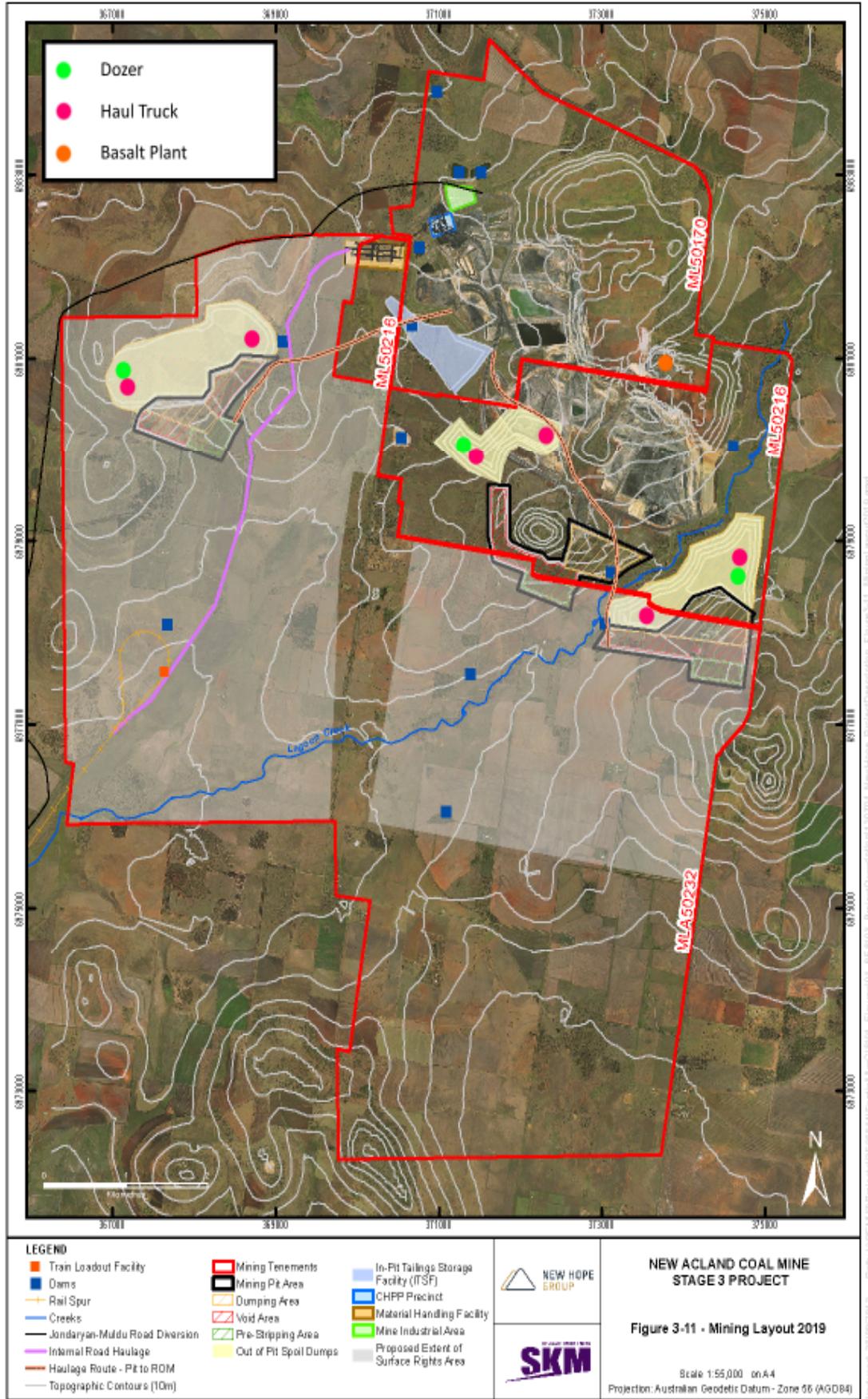
5.8 Issue 13 – Noise Modelling Must Demonstrate Compliance During the Day/Evening and Night Periods

- 88 Upon reflection, I am not sure that this point is a matter for disagreement necessarily.
- 89 I agree with Mr Savery that the noise modelling must be done for each of the day/evening and night periods given that different tasks may be occurring on site. This is in fact what was modelled in the 2014 EIS.
- 90 The two reasons why I have listed this as a matter of disagreement are:
- a. I believe the 2014 EIS modelling, supplemented by my additional modelling, shows compliance with the draft EA conditions can be achieved (whereas Mr Savery does not agree it can be achieved), and
 - b. I believe that it is far more relevant to focus on an enhanced “real time” monitoring system to provide actual evidence that the draft EA noise conditions can be achieved (whereas Mr Savery is recommending additional noise modelling).

Issue 14 – Noise Modelling has Omitted Potentially Significant Noise Sources

- 91 The noise modelling undertaken as part of the 2014 EIS is in line with typical practice, that being:
- a. Three time horizons have been modelled representing (approximately) the start, middle and end of the mine life,
 - b. The sound power levels used in the EIS are consistent with those that SLR would have used (indeed in paragraph 333 of the JER, Mr Savery agrees that the sound power levels used in the EIS are appropriate), and
 - c. Mobile plant items have been distributed across the mine in a reasonable fashion (e.g. some items of plant are down the pits whilst other items are operating at or near existing ground level).
- 92 However I agree with Mr Savery that the results of the modelling would have been more robust had the construction of the out-of-pit dumps, the basalt facility and the rail loadout facility been included in the modelling.
- 93 Given that the basalt facility is only operated during the day period (which I have been instructed will be the same for the Project) and that, when required in order to achieve the draft EAs night-time noise condition, out-of-pit dump construction will not take place at night, I have undertaken additional day/evening modelling utilising the EIS SoundPLAN model and including all three omitted activities being rail loadout, out-of-pit dumps and basalt facility to investigate the impacts on the surrounding community.
- 94 Three items of plant (1 dozer and 2 dump trucks) were relocated to the top of each of the three out-of-pit dumps for each of the three time horizons. In total, 9 items of plant (3 dozers and 6 dump trucks) were moved to the top of the dumps. The locations of these 9 items of plant are shown in **Figure 1**.
- 95 The items of plant modelled at the basalt facility as part of this investigation were:
- a. Volvo BM 4500 Front End Loader (104 dBA SWL)
 - b. Primary Crusher (113 dBA SWL)
 - c. Mobile Crusher & Screen (123 dBA SWL)
 - d. Tertiary Cone Crusher (102 dBA SWL)
 - e. EUC R-50 Water Truck (116 dBA SWL)

Figure 1 Locations of Out-Of-Dump and Basalt Facility Noise Sources



96 The results of this daytime investigation (where the worst-case daytime weather conditions were modelled) are summarised below:

97 For Year 2019:

- a. The average daytime increase in noise level across all residences was 3 dBA
- b. The highest increase was 9 dBA at residence 11 (to 38 dBA Leq) due to the basalt facility
- c. All residences still comply with the draft EA daytime criterion of 42 dBA Leq

98 For Year 2023:

- a. The average daytime increase in noise level across all residences was 3 dBA
- b. The highest increase was 9 dBA at residence 11 (to 38 dBA Leq) due to the basalt plant
- c. All residences still comply with the draft EA daytime criterion of 42 dBA Leq

99 For Year 2029:

- a. The average daytime increase in noise level across all residences was 3 dBA
- b. The highest increase was 11 dBA at residence 11 (to 38 dBA Leq) due to the basalt plant
- c. All residences still comply with the draft EA daytime criterion of 42 dBA Leq

100 The acceptability of noise from the rail loadout facility at night is detailed in **Section 5.4.**

5.10 **Issue 15 – Noise Modelling Already Incorporates “Averaging”**

101 The cross checking of EIS sound power levels that was undertaken by SLR was based on our database of ‘typical maximum’ sound power levels for that type of equipment, not ‘average’ levels.

102 Similarly, measurement standards that must be used by equipment manufacturers for product specifications (which were utilised for some of the EIS sound power levels) also require the engines to be under load.

103 Therefore, it remains my opinion that the utilisation factors adopted for the EIS are appropriate.

5.11 **Issue 16 – Timetable for NAC Noise Mitigation Commitments**

104 It is my opinion that once the enhanced “real time” noise monitoring system is in place (which needs to occur before Stage 3 mining commences), the timetable for NAC’s installation of noise mitigation treatments will be self-regulating.

105 For example, if NAC have only silenced 3 dump trucks by the time Stage 3 operations commence, then the enhanced noise monitoring system may dictate that these are the only 3 dump trucks that can be used on site in order to meet the EA conditions.

106 Another example may be that NAC plan on reducing their production rates at night and only need a portion of their fleet to operate during the more critical night period. As such, NAC may choose to only install noise reduction to a portion of their fleet (provided such treatments on all equipment are not required to achieve compliance with the daytime criterion of course).

107 It is my opinion that NAC should have flexibility to achieve the conditioned noise limits in whatever way it sees fit, knowing that compliance with the noise limits will need to be much more robust and transparent than it has been in the past (which is required for the community's ongoing protection into the future).

5.12 Issue 17 – Tonality and Impulsivity Corrections

108 As I stated in the JER, NAC Commitment No 301 contains the following clauses (amongst others):

- a. NAC will continue to utilise broad band alarms instead of reverse beepers on all mobile equipment, and
- b. Noise emissions with tonal, impulsive and/or intermittent characteristics will be targeted for noise attenuation.

109 NAC are committed to eliminating such adverse characteristics from their overall mine noise emissions.

110 There are a range of solutions available for the likely dominant tonal and impulsive sources at the mine described below. Having regard to these solutions, I am satisfied that this commitment can be fulfilled.

111 Dominant tonal noises are typically:

- a. Safety (on stationary equipment) and reversing (on mobile plant) beepers – the use of broad band (buzzer-type) alarms is now a proven technology in this area and NAC have already installed such alarms to their mobile fleet, and
- b. Fan noise from mobile plant – this tonal aspect can be controlled via engineering controls such as acoustic louvres or by the use of variable speed fans

112 Dominant impulsive noises are typically:

- a. Dozer track slap – controls include idle wheel modification, use of track slides and grousers and management controls including gear limitations (i.e. forward and reverse in 1st gear only), and
- b. Dumping of product – controls include engineering design such that product falls the least distance possible and lining of bins with rubber

113 It is my opinion that such adverse noise characteristics can be appropriately controlled through a process of design, specification, procurement, commissioning and ongoing verification (e.g. via monitoring, maintenance and

rectification as and when required) thus eliminating the need to apply either tonal or impulsive penalties to NAC's noise emissions.

5.13 **Issue 18 – Effectiveness of Current Real-Time Monitoring During the Day and Evening Periods**

114 Both experts agreed that modifications to the existing TARP process will be required in order to ensure the system can monitor for compliance during both the day and evening periods, along with the very end of the night period, when other extraneous (i.e. non-mining related) noise sources render the 2 dB separation (between overall and < 630Hz noise levels) rule ineffective.

115 It is important to note that the introduction of the TARP process was an important evolutionary step in terms of noise control at New Acland Mine. Albeit limited in its spatial extent during Stage 2 operations, it has provided an effective means of assessing and controlling night-time noise levels which is clearly the most sensitive time period based on the history of complaints from the surrounding community.

116 It is also important to note that both experts agree that the noise monitoring technology exists (in various forms) to enable monitoring of mine noise levels during all three (day, evening and night) time periods.

5.14 **Issue 19 – Attended Noise Monitoring**

117 Both experts agree that there is a place for attended noise monitoring during the Stage 3 operations. The area of disagreement between the experts is to what extent.

118 Mr Savery believes the monthly noise monitoring regime should be continued with improvements made to ensure the contribution of mine noise can be quantified (despite other extraneous noise sources such as insects) such that compliance or otherwise can be determined.

119 I believe that it is more appropriate to recommend a less intensive regime of attended monitoring given the significant enhancement already agreed to by the experts – that is to operate 3 real-time 24/7 noise monitors (at Acland, west of the mine and north of the mine), in conjunction with a modified TARP, throughout the life of Stage 3 operations.

120 Such a system (of 3 real-time 24/7 monitors) would offer the Acland community the highest level of protection I have witnessed in the state of Queensland for a mining proposal, or any other extractive or industrial facility. I am only aware of such high levels of on-going “real time” compliance monitoring in NSW (typically in the Hunter Valley region).

121 It is therefore my recommendation, as stated in the JER, that attended noise monitoring be limited to the following during Stage 3 operations:

- a. To address specific complaints,
- b. To confirm the relationship between the Leq and Lmax indices (to ensure both limits from the draft EA conditions are achieved), and

- c. For verification of the real-time monitoring system results (nominally on an annual basis).

5.15 **Issue 20 – Risk of Stage 3 Noise Criteria Being Achieved**

122 Mr Savery states in the Summary of Areas of Disagreement table in the JER that the risk of compliance rests with both NAC (in relation to mitigation costs) and the community (in relation to delays between determination and implementation of mitigation measures).

123 In my opinion there is little risk to the community in terms of a delay in the implementation of mitigation measures if/when an exceedence is detected given the real-time nature of the monitoring proposed for Project and the recognition that monitoring results are to be made available to the public.

124 The Stage 3 real-time monitoring program will be fundamentally the same as currently exists for Stage 2 operations (as has been the case since January 2014 albeit at just 1 monitoring location) in that if an exceedence looks like being registered, management measures such as switching off or relocating items of plant are implemented immediately.

125 The immediacy of such management measures further confirms my statement in **paragraph 120** that the Acland community will be afforded the highest level of acoustic protection (against nominated EA conditions) I believe exists in Queensland.

126 During the expert conclave, both experts requested that for the months of January 2016 and August 2015, the raw Sentinex monitoring results and TARP management measures implemented throughout each month be provided. David Moore's January 2016 report was also requested.

127 All of the raw monitoring data was provided as well as David Moore's January report.

128 In relation to the TARP management measures over these 2 months (August 2015 and January 2016), the following was provided:

- a. TARP Effectiveness Analysis spreadsheet covering the entirety of the 2 months (see Figure 5 of the JER for an explanation of the content contained in this spreadsheet),
- b. 14 Noise Dashboard Reports (which show the measured noise levels and the time and extent of management measures that were implemented as required to achieve the noise limit) for the nights of:
 - 18th & 20th August 2015
 - 1st, 7th, 8th, 11th, 12th, 13th, 14th, 18th, 19th, 20th, 26th & 29th January 2016
- c. 2 production reports (that show every hour that equipment was shutdown because of noise considerations however these reports do not document when these shutdowns occurred) for the nights of 19th August 2015 and 28th January 2016, and

- d. 2 daily noise charts (which are shared with NAC staff each morning to discuss how the preceding night went from a noise perspective) for the nights of 20th August 2015 and 14th January 2016

129 Noise levels were recorded on 2 nights for both months above 40 dBA Leq. These 4 instances are discussed in more detail below.

130 For the night of 19th / 20th August, a production report is available to highlight what management measures were implemented by NAC to control noise levels.

131 This production report shows that extensive noise management measures were implemented, as summarised below:

- a. 32 (of 49) items of mobile plant were shut down during the night,
- b. On average, these 32 items of mobile plant were shutdown for 2 ¼ hours.

132 For the night of 20th / 21st August, both a dashboard report and a daily noise chart are available to highlight what management measures were implemented by NAC to control noise levels.

133 These reports show that noise management measures were implemented, as summarised below:

- a. 7 different items of mobile plant were shut down around or just after 10pm
- b. These items of plant included excavators, loaders and dozers
- c. All shutdown equipment was re-started just after 11pm
- d. 3 items of plant (2 excavators and a loader) were shut down again just before midnight
- e. Dump trucks were re-routed to run coal out of Dump 5

134 For the night of 7th / 8th January, an incomplete dashboard report (due to a technical fault as noise data stopped flowing through to the live dashboard around 10:45pm) is available to highlight what management measures were implemented by NAC to control noise levels.

135 The incomplete report does show though that noise management measures were implemented, as summarised below:

- a. Just after 10pm, 1 excavator, 1 loader, 1 surface miner and all the north pit dozers were shut down
- b. All shutdown equipment was re-started just before 11pm

136 For the night of 28th / 29th January, a production report is available to highlight what management measures were implemented by NAC to control noise levels.

137 This production report shows that noise management measures were implemented, as summarised below:

- a. 2 items of mobile plant (an excavator and loader) were shut down during the night

- b. The excavator was shutdown for 1 hour and the loader was shutdown for 1 ¼ hours

138 There is considerable more evidence of the “live” nature and successful outcomes of management measures that NAC implemented over these 2 months contained in the 14 other noise dashboard reports which correspond to nights where noise levels did not exceed 40dBA.

139 **Paragraphs 130 to 138** provide significant proof of the “live” (night-time) noise management culture that I believe exists at the New Acland Mine and the corresponding ability that NAC has to ensure that it can comply with the noise limits contained in the draft EA, particularly with the enhancements which Mr Savery and I agree should be implemented.

5.16 **Issue 21 – Previous Complaints and Monitoring History**

140 Mr Savery states in the Summary of Areas of Disagreement table in the JER that the previous complaint and monitoring history does not always appear to fully support NAC’s commitments re sensitive receptors and noise emission levels, health, wellbeing and amenity for the Revised Expansion Project.

141 Further to the detailed information I provided in the JER and that which is contained in **Section 5.17** of this report, I have investigated the evolution of noise monitoring and management at the New Acland Mine.

Phase 1: Pre-January 2014 (Stages 1 and 2)

142 During this time, noise monitoring took one of two forms – David Moore’s monthly attended monitoring (which was not a requirement of the existing EA but was a voluntary undertaking by NAC) or complaints monitoring (either undertaken by NAC staff or David Moore). As agreed between both experts, improvements in the David Moore monthly monitoring are technically possible and indeed are required in order to be able to define the mine noise contribution at a particular site. Furthermore, the David Moore’s monitoring covered only 1 hour at each monitoring locations per month.

143 During this time, there was no TARP in place to enable real-time management measures to be implemented at night.

Phase 2: January 2014 until now (Stage 2)

144 A real-time, 1/3 octave band directional noise monitor was installed in Acland at the time the TARP was developed and implemented to monitor and assess night-time noise levels (which is clearly the most sensitive period of the day for the surrounding community).

145 The improved noise monitor enabled the contribution of mine noise to be more accurately determined when compared to pre-January 2014 monitoring.

146 The TARP acted as an administrative solution, directing production supervisors to respond to alarms (generated by the noise monitor) by

progressively shutting equipment in a pre-defined order to maintain compliance. Mine noise levels were defined by the measured low frequency (< 630 Hz) noise level.

147 In May 2014, the (operator-attended) live dashboard was introduced allowing NAC operators to more succinctly visualise and hear “real time” mining noise levels within Acland and proactively shut equipment to maintain noise levels below 40 dBA Leq.

148 Between July and September 2014, NAC had Advitech testing the directional noise monitoring capabilities of the Sentinex noise monitor positioned in Acland.

149 In October 2014, NAC commenced evaluating their mining noise emissions using combination of:

- a. the overall (A-weighted) noise level measured in the north-east quadrant which contains all of NAC’s on-lease activities,
- b. The differentiation between the low frequency (<630 Hz) spectrum and the overall spectrum to determine if extraneous noise resulted in non-determinable mine noise contribution, and
- c. The noise monitors meteorological station..

150 Throughout this whole process, the number of nights where monitoring detected noise levels above 40 dBA Leq have significantly reduced, culminating in February 2016 having no night-time noise above this level.

151 At present, this more sophisticated system monitors at only 1 location.

152 Monthly (David Moore) attended noise monitoring was not appropriate (for a lot of the time) for accurately defining what noise level was attributable to mining.

Phase 3: Stage 3 Operations

153 NAC will be operating 3 real-time 24/7 noise monitors which will provide much more appropriate spatial coverage of the surrounding community.

154 The TARP is established and mine management are familiar with how it works and what management measures are most effective when noise levels start approaching the criterion. It is noted that modifications will be required to the TARP to address compliance monitoring during the day and evening periods.

155 Modified attended noise monitoring will be implemented to enable the accurate determination of mine noise, even in the presence of other extraneous noise sources.

156 It is my opinion that **paragraphs 142 to 155** show a clear sign of evolution (in terms of monitoring sophistication, NAC staff’s skills and responsiveness in relation to management measures) in NAC’s monitoring and management of

noise levels - to a point where I am confident that Stage 3 mine noise can be appropriately monitored (in terms of both spatial coverage and technical competency) and managed (via the ongoing TARP) to provide a high level of protection for the surrounding community.

Part B - Opinion and findings on relevant propositions identified in Part 2 of Applicant's
Notice of Additional Issues

157 The public notices of NHG's applications for the Environmental Authority amendment and Mining Leases were issued on 27 April 2015, and the public notification period ended 2 July 2015. There were 20 objectors to the ML application and 27 objectors to the EA application, of whom 15 objected to both applications.

158 Objectors who live in the local area included:

- a. Mr. Beutel, who lives and owns property in Acland;

159 Objectors who live within approximately 5 kms to the north and north west of the proposed mining lease boundary:

- a. Mr. Plant
- b. Mrs. Plant
- c. Dr. Plant
- d. Dr. Ward
- e. Mr. S. Wieck
- f. Mr. and Mrs. N. and F. Wieck
- g. Mr. G. Wieck
- h. Mr. Byron
- i. Mr and Mrs. Vonhoff
- j. Mr. and Mrs. Ashman
- k. Mr and Mrs. Scholefield
- l. Mr. and Mrs. Mason

160 Objectors who live within approximately 10 kms to the north and north west of the proposed mining lease boundary:

- a. Mr. and Mrs. Cleary (to the west), and
- b. Mr. and Mrs. Spies, and Mr. and Mrs. Schick (to the north east);

161 Objectors who live within Oakey:

- a. Mr. Cook
- b. Mrs. Cook
- c. Ms. Green

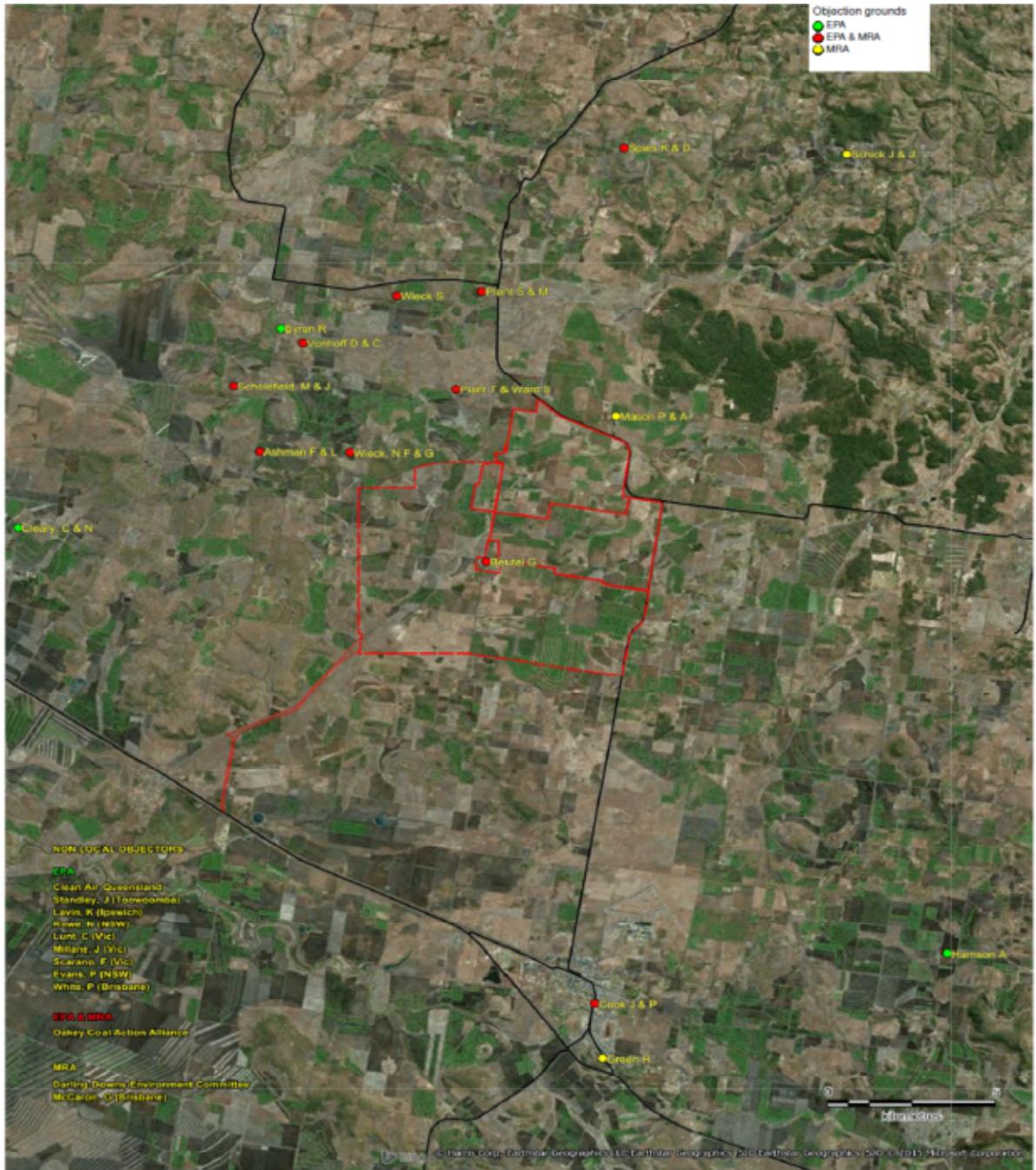
162 Objector Ms. Harrison, who lives approximately 15 kms southeast of the proposed mining lease boundary;

163 Objectors representing two local community and environmental organisations:

- a. Darling Downs Environmental Council;
- b. Oakey Coal Action Alliance.

164 The locations of the ML & EA objectors are shown in **Figure 2**.

Figure 2 New Acland Stage 3 – Location Of MLA & EA Objectors



**New Acland Stage 3
Location of MRA & EPA Objectors**

19 Oct 2015

165 Local objectors to the EA and ML applications raised concerns that the project would adversely impact on noise and/or vibration amenity, with their summary of issues being:

- a. unacceptable noise & vibration impacts on human health – covered in Part A;
- b. unacceptable noise impacts on wildlife and livestock;
- c. adequacy of the noise modelling – covered in Part A;
- d. adequacy of baseline (background) noise monitoring – covered in Part A;
- e. poor past performance by NAC in meeting existing noise limit;
- f. use of acoustic quality objectives (from EPP(Noise)) as noise limit for Stage 3 – covered in Part A;
- g. noise management and mitigation measures for Stage 3;
- h. adequacy of future noise monitoring to achieve compliance – covered in Part A,
- i. blasting (vibration and overpressure) impacts – existing & future,
- j. NAC's capacity (financially or technically) to deliver on noise agreements,
- k. basalt extraction noise impacts, and
- l. additional EA conditions.

166 The following sections of this statement provide the following in relation to each of the summary issues outlined in paragraph 165 that are not already covered in my responses in Part A of this statement:

167 See table at **Annexure G** to this statement for individual responses to each objection.

5.17 **UNACCEPTABLE NOISE IMPACTS ON WILDLIFE AND LIVESTOCK**

168 It is my opinion that if the Project proceeds, it will not have unacceptable noise impacts on wildlife and livestock.

Farm Animals (primarily cattle)

169 Much of the area surrounding the New Acland Coal Mine has been cleared for rural agricultural purposes, including cattle grazing. As an initial observation, in my experience it is common for quarries (another form of extractive industry) and mines to be located in rural areas. Despite that, it is also my experience that potential impacts of such activities upon cattle is not typically a matter considered by regulatory authorities for activities of that kind.

170 Similarly, a literature review indicates that the matter has not been widely considered.

171 The absence of any interest on the part of regulatory authorities, and of literature on the topic reinforces my opinion that the issue is not a matter of concern.

172 My literature review did reveal that the matter was the subject of consideration by the NSW Land and Environment Court for the Albion Park Quarry (NSW). In that case, the Blast Management Plan titled '*Albion Park Quarry Extension, Noise Monitoring Program/Blast Management Plan*' (dated 10 February 2006) and prepared by Heggies Australia Pty Ltd provided for peak particle component velocity levels for blasting at the development do not exceed 200 mm/s and airblast levels for blasting at the development do not exceed 135 dB Linear to protect livestock.

173 In support of the 200 mm/s vibration limit imposed on that project was Associate Professor Evan Hunt. A summary of Associate Professor Hunt's evidence during this trial is provided below (taken from Citation: *Figtree Hill v Cleary Bros and others* [2006] NSWLEC 9 – File Number: 10639 of 2005):

174 *Associate Professor Hunt maintains that the 20 mm/sec criterion is not a realistic level for cattle because of their different body design compared to humans. He advocates a 200 mm/sec criterion as an appropriate level that would not appear to adversely impact on cattle. He states that research indicates that cattle and sheep do not recognise vibration until it is well beyond the comfort zone for humans. As a basis for assessing vibration impact on cattle, a trial was undertaken by a measuring vibration and observing any reaction of cattle when being transported in trucks. The transportation trial Heggies Australia Pty Ltd (November 2005) Report on Vibration Effects in Transported Cattle (the Heggie report) found vibrations at levels above 200 mm/sec where not recognised as influencing general health in animals being transported. Associate Professor Hunt further states that in most livestock transport situations the animals are transported at much higher speeds over longer distances and the vibrations would be far greater.*

175 It is my opinion that blasting vibration is not an issue for this Project given that more stringent human-specific criteria need to be achieved at locations closer to the Stage 3 mining operations than the neighbouring dairy cattle properties.

176 One other older study (Casaday and Lehmann 1967) showed that the reactions of the sheep and horses to sonic booms were slight. Dairy cattle were little affected by sonic booms (125 dB to 136 dB). Only 19 of 104 booms produced even a mild reaction, as evidenced by a temporary cessation of eating, raising of heads, or slight startle effects in a few of those being milked. Milk production was not affected during the test period, as evidenced by total and individual milk yield.

177 I also refer to Mr Tom Newsome's report dated 19 February 2016 and note his observation that trial cattle grazing on rehabilitated land within 1 kilometre of blasting at the (current) mine are achieving comparable weight gain with cattle further removed from the mine. Mr Newsome therefore indicates that there are no adverse impacts on productivity of grazing animals due to proximity of blasting.

178 I was not able to find any information specifically in relation to the response of alpacas to blast noise or vibration.

179 It is my opinion that airblast over-pressures of less than 135 dB are unlikely to have adverse impacts on farm animals. The draft EA blast limits of 115 dB (90%) and 120 dB (maximum) are therefore appropriate to avoid adverse impact on farm animals.

Native Fauna

180 Following an extensive literature review, I have not been able to find any numerical noise limits in relation to adverse impacts on either koalas or painted honeyeaters. I refer to Adrian Carneris' report dated 25 February 2016 and note his observation that the fauna that is currently present within the Project Site is there despite the existing mining operations:

181 Measures of absolute auditory sensitivity in a wide variety of bird species show a region of maximum sensitivity between 1 kHz – 5 kHz, and between 2 and 5 kHz for passerines (US FHWA 2004). The painted honeyeater is a passerine species. The data suggest that in this frequency range, birds show a level of hearing sensitivity that is similar in most respects to that found for the most sensitive mammals, with avian performance clearly inferior above and below this range of frequencies (Manci et al 1988).

182 Dooling and Popper (2007) authored a paper for the California Department of Transportation titled 'The Effects of Highway Noise on Birds'. This paper documented that 'continuous noise of sufficient intensity in the frequency region of bird hearing can have a detrimental effect on the detection and discrimination of vocal signals by birds'. Dooling and Popper also comment that with respect to traffic noise, it "*will cause less masking than other environmental noises of equal overall level but that contain energy in a higher spectral region around 2/4 kHz (e.g., insects, vocalizations of other birds)*".

183 It is SLR's experience that mining related noise tends to be dominated by mid to low frequency components (i.e. less than 2000 Hz) when measured at distances of several 100 metres or more from the mine site. Therefore, the conclusion of Dooling and Popper (2007) with respect to road traffic noise causing less masking than other noise sources is likely to also apply to mining noise. Birds, particularly passerines, are thought to be more sensitive to noise at higher frequencies than the noise typically emitted by mines.

184 In conversation with Mr Adrian Caneris, he confirmed that painted honeyeaters were observed by him within approximately 400m of the existing Stage 2 pits where blasting is currently occurring. The proposed Stage 3 mining activities will be generating very similar noise levels (in terms of both loudness and frequency content).

185 He also observed painted honeyeaters living very close (within metres) to the Warrego Highway where traffic noise, particularly high speed trucks passbys, would be creating a very high noise environment.

186 Both of these observations indicate that the painted honeyeater is not overly sensitive to noise.

187 In conversation with Mr Adrian Caneris, he confirmed my own research that koalas are regularly found living around quarries that conduct blasting on a regular basis. As such, it would appear that koalas are not sensitive to extractive industry noise (of which blasting is the loudest). Mr Carneris notes in his report that the more noise sensitive species will avoid prolonged inhabitation of the areas in close proximity of the louder noise generating portions of the Project.

188 It is my opinion that there will be no adverse noise impacts to either wildlife or farm animals as a result of the Stage 3 mining operations.

5.18 **PAST PERFORMANCE BY NAC IN MEETING EXISTING NOISE LIMIT**

189 Both EHP's Assessment Report (see "Compliance History" on pages 4 and 5) and Bruce Denney's Affidavit dated 10 December 2015 (see Item Nos 4.1, 4.4 and 4.8 of Exhibit No BD27) indicate satisfactory past performance in relation to noise.

190 The TARP (including "live dashboard") has significantly improved the accuracy of NAC's noise monitoring and the responsiveness in terms of management controls. In relation to the responsiveness of management controls that result from the existing TARP, NAC have the highest standard (i.e. fastest) I have witnessed in the state of Queensland for a mining operation or any other extractive or industrial facility.

191 NAC initially implemented a Trigger Action Response Plan (TARP) on 13 January 2014 which was then subsequently upgraded to include the current Live Dashboard system in July 2014. This system provides "live" nightly audio and measured noise levels every 10 minutes and when there is potential for noise levels above 40 dBA Leq identified, mine management measures are implemented to achieve compliance with the existing EA noise limit. See SLR's "Overview of New Acland Coal Mine's Noise Live Dashboard" Report dated 2 July 2014 in **Annexure E** for more details.

192 A commitment has been made by NAC to make this TARP monitoring available to EHP and the public on a monthly basis for Stage 3 mining activities. Condition 3 of the Coordinator-General imposed conditions requires monthly reporting against noise limits to be published on a website.

193 There are no current EA conditions which limit the emission of noise to any specified levels. Under the current Environmental Authority, noise from the mine operations must not cause an environmental nuisance (Condition D1). The controls for nuisance are complaint based, such that in the event of a complaint DEHP can request monitoring. If monitoring exceeds Schedule D Table 1 levels then the complaint must be addressed and abatement measures implemented. Condition D3 deems there to be no noise nuisance, where monitoring demonstrates that noise does not exceed the levels in Schedule D Table 1, at a sensitive place.

194 I have reviewed the data from the continuous noise monitor since its inception. See below in **Table 1** a summary of how many nights each month the mine noise level went above 40 dBA Leq. This data shows that since the continuous noise monitor was installed and TARP implemented, there has been a distinct improvement in the management of mine noise and that NAC's "live dashboard" and associated management techniques is being actively implemented with support from NAC management. It should be noted that throughout 2015 and 2016, the majority of recorded noise levels above 40 dBA Leq are of a very minor nature (around 1 dB or less). In February 2016, there were no night-time noise levels above 40 dBA Leq. I have reviewed the intervention reports and these show that the mine has been actively shutting down equipment where mine noise approaches 39 dBA Leq.

Table 1- Summary of Night Time Measured Noise Levels At (Real-Time) Acland Monitoring Location Above 40 dBA Leq(1hr)

Month	2014		2015		2016	
	Number of Nights Above 40 dBA Leq	Range of Noise Levels (dBA Leq)	Number of Nights Above 40 dBA Leq	Range of Noise Levels (dBA Leq)	Number of Nights Above 40 dBA Leq	Range of Noise Levels (dBA Leq)
January	15	40.4 - 43.8	0	---	2	40.9 - 42.9
February	9	40.2 - 41.9	0	---	0	---
March	7	40.1 - 40.6	1	42.5	---	---
April	9	40.1 - 42.8	2	40.3 - 41.1	---	---
May	10	40.1 - 41.3	3	40.4 - 42.8	---	---
June	9	40.1 - 41.4	3	40.1 - 40.5	---	---
July	9	40.1 - 42.7	3	40.1 - 40.4	---	---
August	13	40.6 - 44.2	2	40.1 - 41.4	---	---
September	12	40.2 - 44.9	2	40.6 - 41.5	---	---
October	1	42.0	3	40.4 - 43.5	---	---
November	0	---	2	40.1 - 42.0	---	---
December	0	---	3	40.2 - 41.5	---	---

195 Not only have the number of nights when an noise level above 40 dBA Leq has been registered reduced, but the quantum of the noise level above 40 dBA Leq has also reduced. Analysing the maximum noise level above 40 dBA Leq each month (the right-hand number of the ranges shown above), the average of the maximum noise level above 40 dBA Leq in 2014 was 42.6 dBA whereas the average of the maximum noise level above 40 dBA Leq in 2015 was 41.4 dBA. The average of the maximum noise level above 40 dBA Leq for 2016 is 41.5 dBA.

196 Given the recorded noise levels are only marginally above 40 dBA Leq (within a range that would be imperceptible to the human ear) throughout the majority of 2015 and 2016, I am confident that noise levels from Stage 3 can be managed so that they are within limits. For Stage 3, the mine may need to shut down or relocate certain operations at certain times as required to meet the proposed noise limit.

197 Both experts have agreed in the JER that an expanded real-time monitoring regime utilising 3 noise monitors, supplemented by short-term measurements at other locations, would give appropriate spatial coverage throughout the surrounding community, and

198 With further mitigation (including engaging a reputable engineering firm in relation to installing noise reduction kits to their existing fleet of mobile plant) and management, it is my opinion that NAC will be able to meet their proposed Stage 3 noise limits on an on-going basis.

5.19 **NOISE MANAGEMENT AND MITIGATION MEASURES FOR STAGE 3**

199 The enhanced management and mitigation proposed for Stage 3 includes:

- a) NAC has committed to fully attenuate noisier mining equipment such as excavators, track dozers, loaders and rear dump trucks.
- b) NAC has committed to properly service and maintain attention devices on mobile fleet.
- c) NAC has committed to continue to utilise broad band (buzzer type) reversing alarms on all mobile plant.
- d) NAC has committed to target mobile and stationary plant for noise attenuation should emissions be tonal / impulsive / intermittent. To date this has included the installation of "buzzer-type" non-tonal reversing alarms on their mobile fleet as well as the replacement of air horns with electronic horns.
- e) NAC will schedule noisier operations in-pit at night or during daylight hours only. For example, dumping of overburden and dozer activity on overburden dumps at or above ground surface may be restricted during night periods (10pm to 7am), if noise forecasting identifies the potential for exceedences.
- f) Enhanced noise monitoring (3 Sentinex-type units) and monthly published noise monitoring data.

200 The management and/or mitigation measures committed to by NAC are both proven and employed on numerous other mine sites around Australia. There is evidence based on past measurements and product literature that the SWLs contained in the EIS are acceptable. Indeed, both experts agreed in the JER that the sound power levels are appropriate.

201 NAC also committed that if no suitable or acceptable noise amelioration solutions are available for a particular noise issue, NAC will negotiate in good faith with all affected property owners for property purchase or by agreement implement some other form of amicable arrangement (e.g. acoustic treatment of the dwelling. If an acceptable solution can be reached between both parties (as has been practised by NAC since the mine commenced operations) then in my view this would be a satisfactory response to a particular noise issue.

5.20 **BLASTING (VIBRATION AND OVERPRESSURE) IMPACTS – EXISTING & FUTURE**

202 The blasting criteria documented in the draft EA are appropriate to protect resident's amenity and their homes.

203 The requirement to monitor for a minimum of 90% of blasts is an appropriate compromise between (a) capturing the vast majority of blasts to ensure the community is protected via compliance with the EA conditions, and (b) the practical aspects of long-term monitoring such as instruments needing to be calibrated and/or repaired off-site from time to time.

204 Furthermore, the draft EA conditions stipulate that NAC need to monitor for all blasts if requested by the administer authority. I believe this is a further reason why the draft EA conditions are acceptable in their current form.

205 A review of the blast emissions monitoring results since the beginning of 2013 indicates that NAC have complied 100% with their current blasting limits.

206 The blasting (ground vibration and airblast over-pressure) criteria adopted in the EIS (and consequently incorporated in the draft EA conditions) are:

- a) In accordance with EHP's Noise and Vibration from Blasting guideline,
- b) Mostly in accordance with AS2187.2-2006, and
- c) Are more stringent than the levels contained in Queensland's Environmental Protection Act 1994 (Section 440ZB).

207 All three (blasting) references above relate to protecting human comfort (minimising annoyance) which are set at lower levels than those relating to residential and commercial building damage.

208 As such, achieving compliance with the draft EA blasting criteria means that human health and wellbeing is preserved.

209 It should be noted however that blasting ground vibration and air-blast overpressure will likely be both feelable and audible at levels approaching, but not exceeding, the draft EA blasting criteria.

210 Blast monitoring results (ground vibration and air-blast overpressure) have been provided to me from 1 January 2013. From this data, SLR has developed site laws specific to New Acland Stage 2 blasting (which is expected to be representative of Stage 3 blasting). The individual overburden and interburden blasting site laws developed are shown in **Figure 3** to **Figure 6**.

Figure 3 – Ground Vibration - Overburden

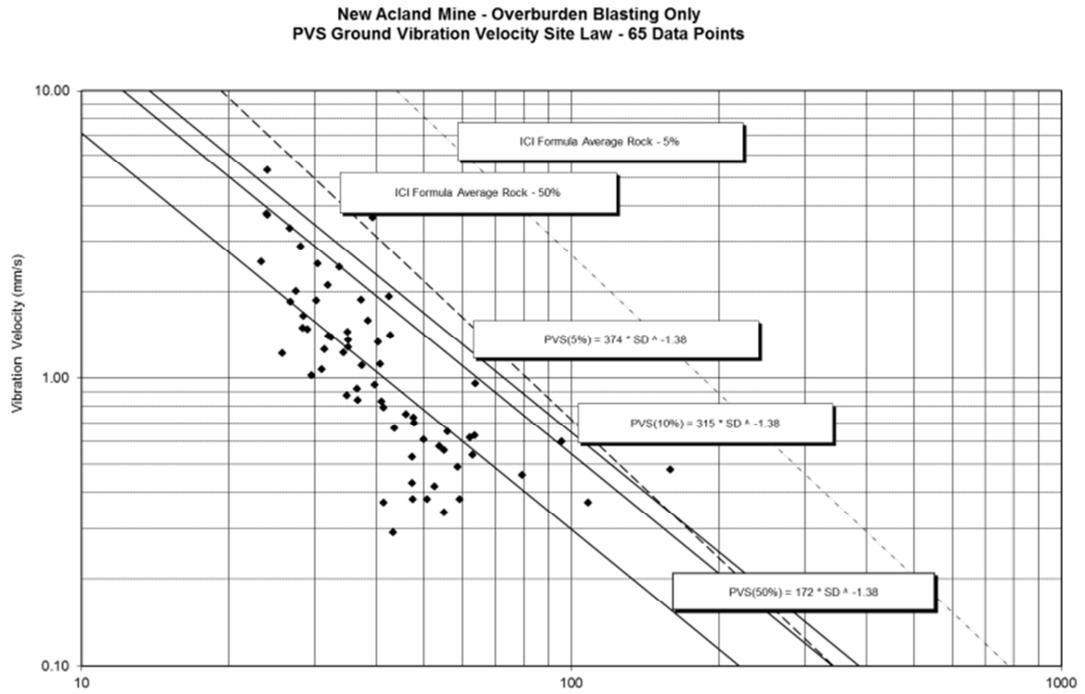


Figure 4 – Ground Vibration – Interburden

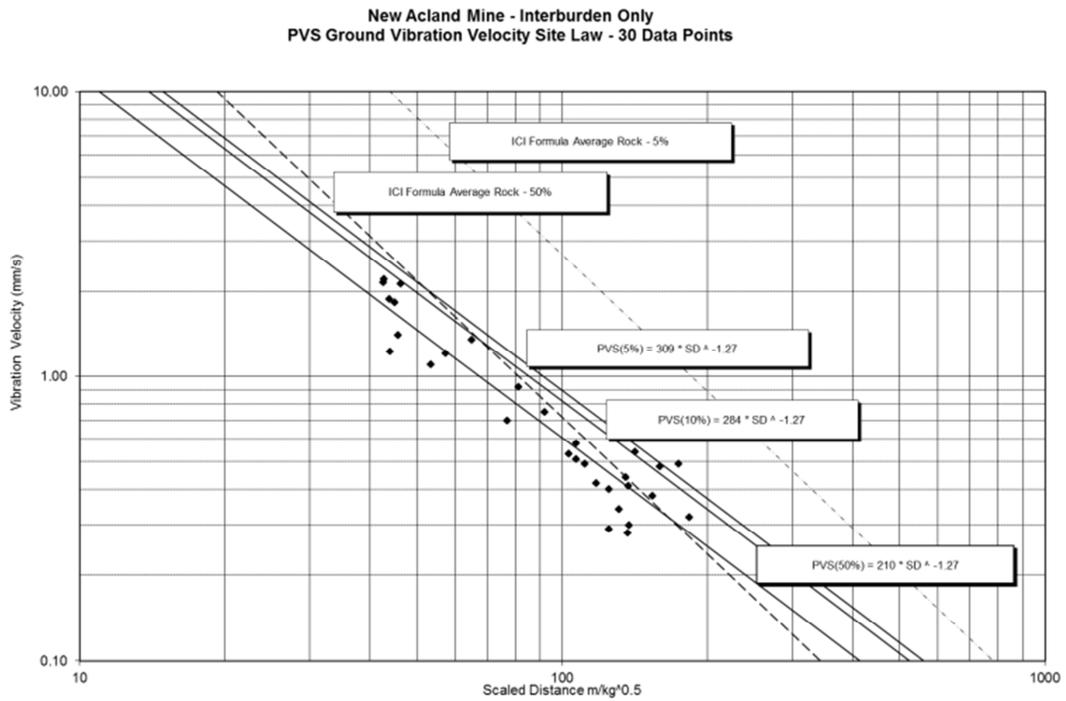


Figure 5 – Airblast – Overburden

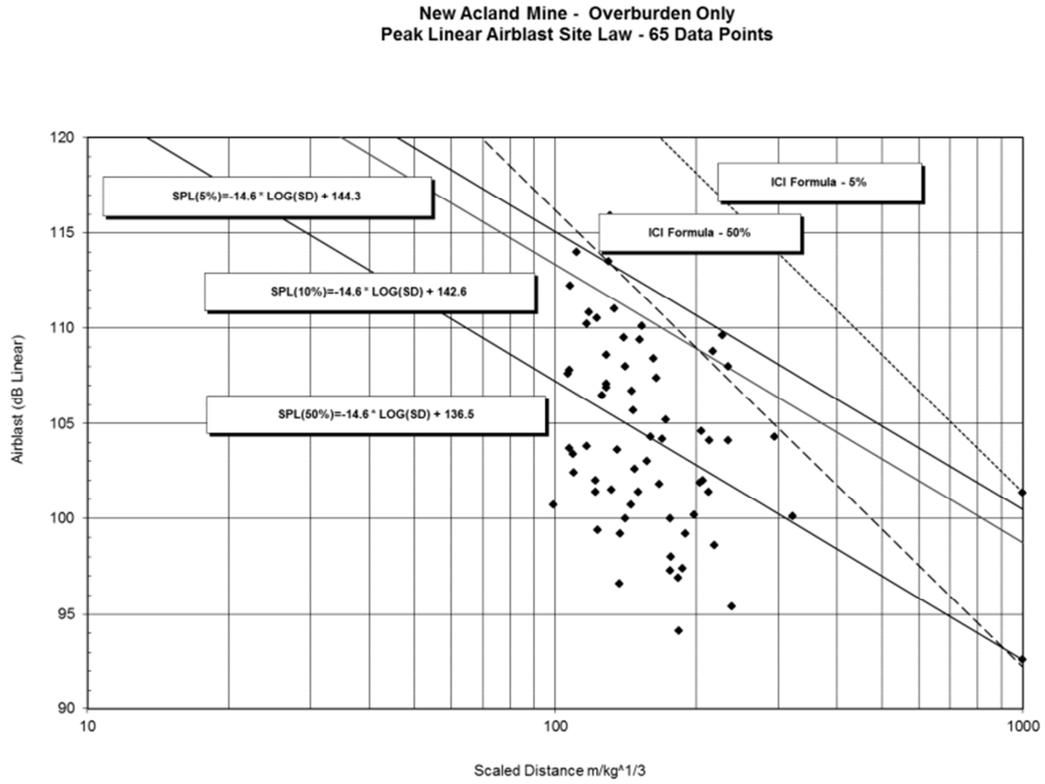
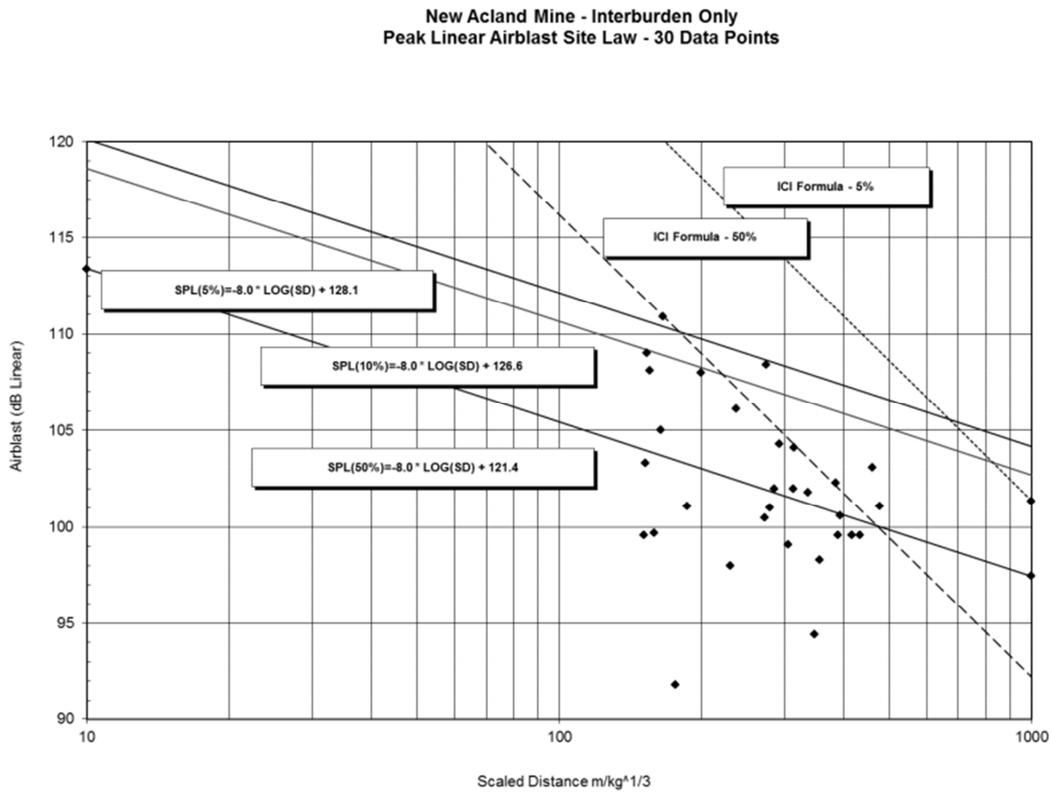


Figure 6 – Airblast – Interburden



211 It can be seen in the above site laws that ground vibration is not too dissimilar to the (generic) ICI formulas but that there is a greater variance (between NAC site law and (generic) ICI site law) for air-blast overpressure.

212 A summary of the key blasting issues, based on the site-specific site laws, is provided below:

- a) Stage 3 blasting may occur as close as 1km from the nearest residences and the No 2 Colliery.

213 At 1km, the Maximum Instantaneous Charges (MIC) to meet the draft EA conditions for residences are:

- a. 5mm/s ground vibration (90% of blasts) – Overburden 2,470 kg
Interburden 1,730 kg
- b. 115 dB airblast (90% of blasts) – Overburden 2,130 kg
Interburden 44,650 kg

214 To avoid the potential for damage to the (heritage listed) No 2 Colliery, the desirable MICs would be:

- a. 3 mm/s criterion – Overburden 918 kg
Interburden 675 kg
- b. 5 mm/s criterion – Overburden 1,924 kg
Interburden 1,510 kg

215 It is therefore recommended that the Noise and Vibration Management Plan (NVMP), already a commitment made by NAC, contain a requirement to monitor ground vibration and air-blast overpressure (which is also a requirement of the draft EA conditions) as mining activities move closer to sensitive sites.

216 The NVMP should also stipulate that the site law is continuously updated (nominally every 6 to 12 months) with the most recent blast monitoring results thereby enabling the most up-to-date predictions to be made in relation to allowable MICs.

217 Lastly, as the No 2 Colliery criteria above relate to potential building damage for a heritage listed structure (as opposed to human annoyance for the residences), the NVMP should also recommend that a condition survey be undertaken for the No 2 Colliery so that if damage was to occur, rectification work could be carried out to return the structure to its original state. This is a common requirement for structures adjacent to construction (or sometimes mining) projects where higher levels of vibration are generated.

5.21 **NAC'S CAPACITY (FINANCIALLY OR TECHNICALLY) TO DELIVER ON NOISE AGREEMENTS**

218 Technically:

- a. noise attention kits that NAC intends to install on existing equipment, and
- b. new quieter replacement equipment to progressively replace key mining equipment over the next 3 to 5 years

are available and proven. This has been outlined in other sections of this statement. Therefore, I believe NAC do have the technical capacity to deliver on the noise agreements.

219 **Table 2** shows there is general agreement between 3 different sources of fully attenuated sound power levels from acoustically significant items of mobile and stationary mining equipment.

220 **Table 2** is based on:

- a. EIS sound power levels which are based on a combination of measured and catalogue sound power levels as documented in SKM's report to EHP dated 30 April 2013,
- b. SLR's in-house database on noise reductions measured on other projects; and
- c. IEEP's published data on noise reductions they have achieved with their attenuation installations.

Table 2 – Mobile and Stationary Mining Equipment

Equipment	EIS Attenuated Sound Power Levels (dBA)	SLR Database Attenuated Sound Power levels (dBA)	IEEP Attenuated Sound Power Levels (dBA)
500t Excavator	118	111	117
350t Excavator	118	117	116
900 kW Loader	114	108	111
220t Rear Dump Truck	112	115	114
180t Rear Dump Truck	112	115	113
Side Tipping Truck	112		
100t Track Dozer	113	112-124	
65t Track Dozer	113	109-120	
50t Track Dozer	113	107-118	
100t Wheel Dozer	117	114	
50t Drilling Rig	118		
140kL Water Truck	115		
55kL Water Truck	115		
400kW Grader	110		
220 kW Grader	110	110	
CHPP including ROM hopper	119		
Conveyor system at MHF and between CHPP at MHF	78 per metre		
Scraper at MHF	104	113	
Reclaimer at MHF	109 incl. 5dBA impulsive correction		

221 Issues of financial capacity of the applicant are outside my field of expertise and I defer to Mr Jerome Fahrer and Mr Bruce Denney on this issue.

5.22 **BASALT EXTRACTION**

222 This application does not involve the commercial extraction of basalt.

223 Basalt extraction for the purposes of the mining lease already occurs on site. It involves less equipment than the main mining activities and is only undertaken during the day period. It is my opinion that on-going extraction of basalt for the purposes of the mining lease can be undertaken successfully and still meet the draft EA noise conditions.

224 Given that the basalt facility is only operated during the day period (which to my understanding will not be changed during Stage 3 operations), I have undertaken additional day/evening modelling utilising the EIS SoundPLAN model and including all three of the following activities (rail loadout, out-of-pit dumps and basalt facility – see **Section 5.9**) to investigate the impacts on the surrounding community.

225 The items of plant modelled at the basalt facility as part of this investigation were:

- a. Volvo BM 4500 FEL (104 dBA SWL)
- b. Primary Crusher (113 dBA SWL)
- c. Mobile Crusher & Screen (123 dBA SWL)
- d. Tertiary Cone Crusher (102 dBA SWL)
- e. EUC R-50 Water Truck (116 dBA SWL)

226 The results of this investigation are summarised below:

227 For Year 2019:

- a) The average daytime increase in noise level across all residences was 3 dBA
- b) The highest increase was 9 dBA at residence 11 (to 38 dBA Leq) due to the basalt plant
- c) All residences still comply with the draft EA daytime noise condition of 42 dBA Leq

228 For Year 2023:

- a) The average daytime increase in noise level across all residences was 3 dBA
- b) The highest increase was 9 dBA at residence 11 (to 38 dBA Leq) due to the basalt plant
- c) All residences still comply with the draft EA daytime noise condition of 42 dBA Leq

229 For Year 2029:

- a) The average daytime increase in noise level across all residences was 3 dBA
- b) The highest increase was 11 dBA at residence 11 (to 38 dBA Leq) due to the basalt plant
- c) All residences still comply with the draft EA daytime noise condition of 42 dBA Leq

ADDITIONAL EA CONDITIONS

- 230 It is not appropriate to set conditions associated with certification of noise levels from items of plant or prescribing specific management measures as the requirement to comply with the draft EA noise limits essentially cover both issues.
- 231 The objector suggests that NAC should be conditioned to apply "best practice". To condition "best practice" would be impractical - what is best practice one day might then not be "best practice" 6 months later.
- 232 NAC will need to implement whatever measures they need to in order to achieve their noise limits. As such, setting noise limits in the EA conditions is the appropriate way to condition this project, not by the use of additional subjective conditions.
- 233 NAC will likely need to utilise both "quiet" equipment and management measures (such as not operating certain items of plant at night in certain areas under certain weather conditions) in order to meet their noise limits. But it is my opinion that it should be left up to NAC as to which measures it implements, and when, rather than these auxiliary issues forming part of the conditions.
- 234 Prescribing specific management measures in the EA conditions is also inappropriate as NAC may well require a suite of measures to achieve their noise limits. There are so many variables (in relation to mitigation and management measures), it would be inappropriate to try and set conditions as to which ones should be imposed. For example, NAC may choose to work in a different part of the mine during certain weather conditions to reduce potential for mine noise impacts. It should be left up to NAC as to which measures it implements, and when.
- 235 Real-time compliance noise monitoring is a commitment by NAC for Stage 3 and the monitoring system has/will been independently calibrated (by a component firm) therefore the EA conditions do not need to be changed in this regard.
- 236 Please refer to **Section 9** of the JER for recommendations in relation to the Stage 3 noise monitoring requirements required to adequately monitor for compliance.
- 237 The existing conditions are considered appropriate as they already state that noise and blast monitoring needs to be undertaken.

Part C - Opinion and findings on matters raised in lay witness statements filed by objectors

238 See table at **Annexure F** to this statement which contains my responses to the noise or vibration related Lay Witness Affidavits.

6. **Summary of opinion and findings**

6.1 The following summarises my opinion and findings:

(a) CRITERIA - Based on the:

- (i) close alignment (i.e. convergence on 30 dBA Leq internal at night) of six different pieces of legislation, guidelines and standards focussed on protecting the health and well-being of people, and
- (ii) choice of 7 dBA as an appropriate façade noise correction (being conservative in relation to the combined data of seven difference references) for a residence with open windows,

it is my opinion that the draft EA noise conditions are appropriate to protect the health and well-being of the surrounding community during Stage 3 operations.

(b) MODELLING, MITIGATION and MANAGEMENT – Based on the:

- (i) typically conservative basis for EIS noise modelling including all equipment operating under load at the one time and worst-case weather conditions,
- (ii) further modelling I have undertaken for the purposes of the JER and this statement to supplement the EIS modelling,
- (iii) three different sources of equipment utilisation (production reports, equipment reliability report and utilisation report) supplied to me by NAC supporting the use of the – 2 dBA utilisation factor in the EIS,
- (iv) commitment by NAC to remove tonal or impulsive noise sources on site (already evidenced by the replacement of “beeper” reversing alarms with “buzzer” reversing alarms),
- (v) commitment by NAC to use “silenced” mobile plant (either in the form of existing mobile plant with retrofitted noise mitigation kits or through the purchase of quiet replacement equipment), and
- (vi) ongoing (current) evidence and future commitment by NAC to manage noise emissions by either relocating or switching off the noisiest items of mobile plant,

it is my opinion that compliance with the draft EA noise conditions can be achieved during Stage 3 operations.

(c) MONITORING – Based on the:

- (i) significant improvements achieved since the “real time” noise monitor (part of the TARP) was installed in Acland, which involved the introduction of the live dashboard and directional monitoring capabilities between January and October 2014,
- (ii) spatial expansion of the current “real time” (TARP) monitoring from 1 location (Acland) to 3 locations (Acland, west of mine and north of mine) which based on my knowledge would offer the Acland community the highest level of protection I have witnessed in the state of Queensland for a mining proposal, or any other extractive or industrial facility,
- (iii) agreement between the experts on the spatial expansion of the “real time” monitoring and that the capabilities of current noise monitoring instrumentation will allow for accurate determination of mine noise only (excluding other extraneous noise sources) during the day, evening and night periods (with the details of such still to be determined), and
- (iv) requirement to publically release measured noise levels on a monthly basis,

it is my opinion that on-going compliance monitoring can be competently achieved.

It is also my opinion that compliance can be further assured by finalisation of a technically robust Noise and Vibration Management Plan, inclusive of a “real time” monitoring regime agreed between both experts, given that a competent measurement system, in combination with “real time” management measures, will provide the best protection for the surrounding community.

7. Definitions

In this statement, unless otherwise defined, capitalised terms have the meanings given to them in the Affidavit of Bruce Douglas Denney dated 10 December 2015, and:

AEIS means Additional Information to the New EIS.

APC means Acland Pastoral Company

AS2107 means Australia Standard 2107 *Acoustics – Recommended design sound levels and reverberation times for building interiors*.

AS3671 means *Acoustics – Road traffic noise intrusion – Building siting and construction*.

CG means Coordinator General.

CG's Report means the final report issued by the CG on the New EIS and AEIS.

dBA means A-weighted decibels.

DEFRA means UK Department of Environmental, Food and Rural Affairs.

EA means Environmental Authority.

EHP Assessment Report means the EHP Assessment Report dated 28 August 2015 for the EA Amendment Application.

enHealth means enHealth's The Health Effects of Environmental Noise.

EP Act means *Environmental Protection Act 1994* (Queensland).

EPP(Noise) *Environmental Protection (Noise) Policy 2008* (Queensland).

EIS means the revised EIS submitted for the Project in January 2014.

JER means Joint Report of Noise Experts dated 22 February 2016.

LAm_{ax} means A-weighted maximum sound level.

Leq means Equivalent Continuous Sound Level.

MLA means Mining Lease Application.

EIS means the revised EIS submitted for the Project in January 2014.

NAC means New Acland Coal Pty Ltd.

New Hope means New Hope Corporation Limited CAN 010 653 884.

Project Site means the site for the Revised Expansion Project, as defined in section 4.2 and 4.11 of the New EIS.

The Project means the current Stage 3 Project.

SWL means Sound Power Level.

WHO means World Health Organisation.

8. **Expert's statement**

8.1 I confirm that:

- (a) the factual matters stated in this statement are, as far as I know, true;
- (b) I have made all enquiries that I consider appropriate;
- (c) the opinions stated in this statement are genuinely held by me;
- (d) this statement contains reference to all matters I consider significant;
- (e) I understand I have a duty to assist the court and that duty overrides any obligation I may have to any party to these proceedings or any person who is liable for my fees or expenses and I have complied with that duty;
- (f) I have read and understand the rules contained in Part 5 of the Land Court Rules 2000, as far as they apply to me; and
- (g) I have not received or accepted instructions to adopt or reject a particular opinion in relation to an issue in dispute in these proceedings.



.....
Shane Robert Elkin 18th March 2016

9. References

Dooling, R.J. and Popper, A.N. (2007) *The Effects of Highway Noise on Birds* The California Department of Transportation, Division of Environmental Analysis, Sacramento, CA 94274

Manci, K.M., D.N. Gladwin, R. Villella, and M.G. Cavendish (1988) *Effects of aircraft noise and sonic booms on domestic animals and wildlife: a literature synthesis*. U.S. Fish and Wildlife Service. National Ecology Research Center, Ft. Collins, CO. NERC-88/29. 88 pp.

US Department of Transport, Federal Highways Administration, 2004. *Synthesis of Noise Effects on Wildlife Populations*.

Horne JA, Pankhurst FL, Reyner LA, Hume K, Diamond ID 1994. *A field study of sleep disturbance: Effects of aircraft noise and other factors on 5,742 nights of actimetrically monitored sleep in a large subject sample*. *Sleep* 17: 146-159.

Pearsons KS, Barber DA, Tabachnick BG, Fidell S 1995. *Predicting noise-induced sleep disturbance*. *Journal of the Acoustic Society of America* 97: 331-338.

Griefahn B, Deppe C, Mehnert P, Moog R, Moehler U, Schuemer R 1998. *What nighttimes are adequate to prevent noise effects on sleep?* In N.L. Carter and R.F.S. Job (eds.) *Noise as a Public Health Problem (Noise Effects '98)*, Vol. 2, pp 445-450. Noise Effects '98 PTY Ltd., Sydney, Australia.

Ryan M, Lanchester M, Pugh S 2011. *Noise reduction through facades through open windows*. Australian Acoustical Society Conference 2011, Gold Coast, Australia.

Queensland Government, 2008. *Queensland Environmental Protection (Noise) Policy 2008*.

Queensland Government, 1994. *Queensland Environmental Protection Act 1994 – Section 440ZB Blasting*.

World Health Organisation, 1999. *Guideline for Community Noise*.

The enHealth Council, May 2004. *The Health Effects of Environmental Noise – Other Than Hearing Loss*.

Standards Australia, 2000. *AS/NZS 2107:200 Acoustics – Recommended design sound levels and reverberation times for building interiors*.

Standards Australia, 1989. *AS 3671 Acoustics – Road traffic noise intrusion – Building siting and construction*.

Standards Australia 2006. *AS2187.2-2206 Explosives – Storage and use Part 2: Use of Explosives*.

Heggies Pty Ltd, *Airport Link Project Kalinga Park Construction Site Construction Noise Monitoring Report* dated 21 May 2010.

Queensland Department of Environment and Heritage Protection. *Guideline Environmental Protection Act 1994, Application requirements for activities with noise impacts (EM962, Version 2)*.

UK Department of Environmental, Food and Rural Affairs.

Annexure A - Curriculum Vitae

QUALIFICATIONS

BE Mechanical (UQ 1993)

MEMBERSHIP

Member Australian Acoustic Society

Member of Institution of Engineers Australia

Registered Professional Engineer of Qld

Past Vice Chairman & Secretary of the Association of Australian Acoustic Consultants (AAAC)

BACKGROUND

Shane Elkin is an acoustic consultant with experience in environmental, mining, transportation and industrial noise assessment and control. In his nineteen years with SLR Consulting, he has worked on a large number of environmental, mining and transportation related assessments.

These projects have included measurement and analysis of noise and vibration emissions from construction and manufacturing industries, materials handling, road/rail vehicles and investigation of effects on people and land uses.

He is competent in the use of the SoundPLAN noise prediction model and in developing noise mitigation strategies for proposed transportation systems and large mining and industrial developments.

Shane has been involved on a large number of projects requiring varying degrees of community consultation and has utilised a number of key consultation initiatives to facilitate amicable outcomes.

Shane has also presented as an expert witness in the Land and Environment Court.

SPECIAL EXPERTISE

- Mining Noise and Vibration Assessment
- Transportation Noise and Vibration Control
- Environmental Noise Assessment and Control
- Architectural Acoustics
- Engineering Noise and Vibration Control
- Community Consultation
- Expert Witness

SELECTED PROJECT EXPERIENCE**Mining, Quarries and Construction**

Mt Isa Mine Environmental Management Plans
Caval Ridge Coal Mine EIS
Saraji East Coal Mine EIS
BMA Bowen Basin Mine Noise Management Plans
Mt Isa Mine Site Wide Noise Models
Mt Isa Black Star Open Cut Deep MPV
Goonyella Riverside Mine Expansion
Ravenswood Gold Mine NIA
Blackwater South Coal Mine NIA
Duranbah Sand Quarry EIA

Major Rail Transportation Projects

Bus and Train (BaT) Tunnel EIS
Mayne to Virginia Track Quadruplication Upgrade
Virginia to Petrie Track Triplication Upgrade
Stuart Rail Yard Assessment
Moolabin Goods Yard Assessment
Implementation of NNMP for Cleveland Rail Line

Major Road Transportation Projects

Clem7, Airport Link and Legacy Way Road Tunnels
Gateway Upgrade Project
Northern Busway Project
South East Transit Project
Pacific Motorway Reassessment
Inner City Bypass NIA
Gladstone Port Access Road Noise Assessment
Toowoomba Range Crossing NIA

Industrial & Port Projects

Abbot Point Coal Terminal Cumulative Assessment
Review of CSG Noise Criteria Worldwide
Hay Point Coal Terminal Expansion
Aldoga Aluminium Smelter EIA
Mt Isa Sulphuric Acid Plant Assessment
Wiggins Island Coal Terminal EIS
Oakey Power Station NIA
Nickel/Cobalt Refinery, Calliope NIA
Kareeya Power Station Upgrade Works
SimsMetal Fragmentiser NIA

Training

DERM (EPA): Noise Office Training (2 days) 2005 & 2006 – Brisbane, Rockhampton and Cairns
DTMR: Noise Training (1 day) 2005 – Toowoomba,
Rail Noise Training (1 day) 2011 - Brisbane
QR: Noise Measurement, Modelling and Assessment Training (1 day) 2012

Legal

New Acland Coal Mine Expansion
South Walker Creek Mine (Kemmis II) Expansion
Composting Facility, Oakey
Woolworths Supermarket, Maleny
Twin Waters West Residential Development
Tropical Pet Resort, Townsville

Annexure B – Letter Of Instructions From Clayton Utz

Confidential**Email**

26 February 2016

Shane Elkin
SLR Consulting
Level 2, Astor Terrace
SPRING HILL QLD 4000
selkin@slrconsulting.com

Dear Shane

New Acland Coal Mine Stage 3 Project**1. Introduction**

- 1.1 We refer to our letter of engagement dated 1 October 2015. Capitalised terms in this letter have the same meaning as provided in the engagement letter, unless otherwise defined.
- 1.2 Pursuant to order 24 of the orders of the Land dated 9 November 2015 (as amended on 8 February 2016), NAC is required to file any further statements of evidence of its expert witnesses who participated in joint expert meetings.
- 1.3 Further, pursuant to order 23 of the Land Court orders dated 9 November 2015 (as amended on 8 February 2016), NAC is required to file any statements of evidence of its expert witnesses in relation to issues where there is no expert in that field of expertise nominated by the objectors.

2. Instructions

- 2.1 Accordingly, you are instructed to prepare a statement of evidence to the Land Court in relation to the following:
- (a) the issues of disagreement recorded in your joint expert report with John Savery dated 22 February 2016 (**JER**);
 - (b) the propositions identified in Part 2 of NAC's additional issues (**List of Issues**) (**enclosed**) at paragraphs 31 (under the heading Tanya Plant List of Issues) and 42 to 48, to the extent that these issues were not addressed in the JER; and
 - (c) certain matters relevant to your field of expertise that have been raised in the objections to the MLAs and EA Amendment Application, and the lay witness evidence filed in this matter, which we will send to you separately.
- 2.2 Your report must be limited to addressing issues to the extent they fall within your field of expertise.
- 2.3 You may also be required to appear in person as an expert witness in the Land Court proceedings.
- 2.4 Please see section 3 below regarding your duties as an expert witness.
- 2.5 You should confirm at the end of your report each of the following:

- (a) the factual matters stated in the statement are, as far as you are aware, true;
- (b) that you have made all enquiries that you consider are appropriate for the purpose of providing the opinions that you have expressed;
- (c) the opinions stated in the report are genuinely held by you;
- (d) the statement contains references to all matters you consider significant in reaching the conclusions that you have expressed;
- (e) that you understand your duty to the court and have complied with that duty;
- (f) that you have read and understand the rules contained in Part 5 of the Land Court Rules 2000 (Qld) (**Land Court Rules**), a copy of which is **enclosed**, as far as they apply to you; and
- (g) that you have not received or accepted instructions to adopt or reject a particular opinion in relation to an issue in dispute in the proceeding.

3. **Your responsibilities as an expert witness**

- 3.1 You are retained as an independent expert and may be required to assist the Land Court, to whom you have a duty.
- 3.2 Again, we draw your attention to Part 5 of the Land Court Rules, which set out the duties of expert witnesses. Specifically, under rule 24C of the Land Court Rules, you will be acting in these proceedings as an expert to assist the Land Court and this duty overrides any obligation you may have to NAC.
- 3.3 The Land Court expects you to be objective, professional and to form an independent view as to the matters in respect of which your opinion is sought.

Please do not hesitate to contact us should you have any questions or require any further information.

Yours sincerely



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Karen Trainor, Partner
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Our ref 12408/17428/80145086

Annexure C – Applicant’s Notice Of Additional Issues

LAND COURT OF QUEENSLAND

REGISTRY: Brisbane

NUMBER: EPA495-15

MRA496-15

MRA497-15

Applicant: New Acland Coal Pty Ltd ACN 081 022 380

AND

Respondents: Frank Ashman & Ors

AND

Statutory Party: Chief Executive, Department of Environment and Heritage
Protection

APPLICANT'S NOTICE OF ADDITIONAL ISSUES

PART 1: Additional issues that the Applicant's notified experts propose to seek agreement on at the joint expert meeting, where there is an expert proposed by the objectors relating to that issue

AGRICULTURAL ECONOMICS

OCAA LIST OF ISSUES

1. In relation to paragraph 24(a) of the OCAA List of Issues, if groundwater impacts occur and they are mitigated by the groundwater mitigation measures to be implemented for the Revised Expansion Project there will be no impacts on regional economic issues or agricultural production.
2. In relation to paragraph 24(c) of the OCAA List of Issues, the reduced output during the life of mine and post mining due to disturbance to SCL is not significant from a regional perspective and will be further ameliorated with increased productivity and increased intensity of operations of other cropping land in the region, as has occurred over the last 40 years.

APPLICANT'S NOTICE OF ADDITIONAL ISSUES

Filed on behalf of Applicant

Clayton Utz, Lawyers
Level 28, Riparian Plaza, 71 Eagle Street
Brisbane Qld 4000
GPO Box 55 Brisbane Qld 4001
Telephone: (07) 3292 7000
Facsimile: (07) 3221 9669

AIR QUALITY, DUST

OCAA LIST OF ISSUES

3. In relation to paragraphs 14(a) to 14(e), 14(g), 15 and 19 of the OCAA List of Issues:
 - (a) the methodology adopted for the air quality assessment is in accordance with industry accepted techniques and is appropriate;
 - (b) whilst in some instances alternative assumptions and factors might have been adopted to configure the meteorological model and the dispersion model, ultimately the same conclusion would be reached, that is the adoption of an Air Quality Management Plan with Adaptive Management will ensure that the Environment Protection (Air) Policy objectives will not be exceeded by the Revised Expansion Project;
 - (c) the horizontal resolution of the model is sufficient and is consistent with regulatory recommendations. The terrain is adequately addressed in both the meteorological model and the dispersion model. Terrain and land-use changes associated with mining are addressed through pit retention factors; and
 - (d) particulate emissions from the combustion of diesel in vehicles were included in the New EIS air quality assessment.
4. In relation to paragraphs 14(f) and 19 of the OCAA List of Issues, blasting at the Revised Expansion Project can be conducted and managed so that the Revised Expansion Project does not cause air quality objectives to be exceeded and does not adversely affect air quality or human health.
5. In relation to paragraph 14(g) of the OCAA List of Issues:
 - (a) the emission sources and meteorological conditions with potential to affect air quality at sensitive receptors is available in the dispersion modelling that was conducted; and
 - (b) in any event, is not critical to determining the suitability of the assessment in the New EIS.
6. In relation to paragraphs 14, 15, 16, 17(a) to 17(c), 18(a), 18(b) and 19 of the OCAA List of Issues, the Revised Expansion Project can be conducted and managed so as not to cause air quality objectives to be exceeded. Compliance with the CG's imposed conditions and Draft EA conditions and the adoption of the proposed Air Quality Management Plan with adaptive management are adequate to protect human health and amenity.
7. In relation to paragraphs 15 and 18 of the OCAA List of Issues, additional monitoring and reporting to that required by the CG's imposed conditions and the Draft EA conditions is not required.

8. In relation to paragraph 15(f) of the OCAA List of Issues:
- (a) the objector has misconstrued the Draft EA conditions referred to in paragraph 15(f)(i) of the OCAA List of Issues;
 - (b) the conditions of the Draft EA for the Revised Expansion Project are adequate and appropriate to manage air emissions;
 - (c) the compliance monitoring regime required in the Draft EA conditions is adequate to inform the operators of ongoing air quality impacts such that the mine operators can manage activities to not cause elevated levels of TSP, PM₁₀ and PM_{2.5}; and
 - (d) the PM₁₀ and PM_{2.5} objectives have been formulated such that if a mining activity achieves compliance with the objective for PM₁₀, compliance with the PM_{2.5} objective will also be achieved. Consequently, parallel monitoring requirements for PM₁₀ and PM_{2.5} are not necessary.

ECONOMICS

OCAA LIST OF ISSUES

9. The input/output modelling done in the New EIS:
- (a) was appropriately applied to measure the economic impact of the Revised Expansion Project and was appropriately undertaken for the purposes of the New EIS; and
 - (b) was not designed to measure whether the Revised Expansion Project will demonstrate a net economic benefit or whether the mine is economically viable.

FLOODING, SURFACE WATER QUALITY

OCAA LIST OF ISSUES

10. In relation to Dr Matthew Currell's (EDO) Groundwater Conceptualisation and paragraph 2(a)(ii) and 2(b)(ii) of the OCAA List of Issues, extensive baseline surface water monitoring data is available for the key parameters and given in the NEW EIS. The use of end of pipe release limits, receiving water flow criteria and trigger investigation levels in the Draft EA is appropriate to protect the environmental values of the receiving waters.
11. In relation to Dr Matthew Currell's (EDO) Groundwater Conceptualisation and paragraph 2(c)(ii) and 2(d) of the OCAA List of Issues any potential for impacts on water quality due to waste rock leachate can be managed.

12. In relation to Dr Matthew Currell's (EDO) Groundwater Conceptualisation and paragraph 2(c)(i) of the OCAA List of Issues, the drainage system will not be inadequate and will be designed to meet or exceed any relevant guideline criteria.

DR JOHN STANDLEY'S LIST OF ISSUES

13. Relevant details regarding surface flows and surface flow impacts of the existing operation and the Revised Expansion Project are contained in the New EIS.
14. Relevant details regarding surface water quality, including analyses, are contained in the New EIS.
15. The water management system and the Draft EA conditions are designed to protect the environmental values of surface waters. Monitoring water quality in pit is not required.
16. The flood assessment for the proposed rail line is given in Section 5.11 of the New EIS. The impact of a one in ten year AEP event, which is likely to occur over the life of the rail line is generally less than 0.2 m and at most 0.35 m.
17. There is no evidence of contaminated water seeping into the groundwater from surface waters. Water is released from the mine to surface waters in accordance with the EA conditions and these conditions are designed to protect the environmental values of surface waters, which would in turn protect the environmental values of groundwater if seepage occurred.

GROUNDWATER CONCEPTUALISATION

OCAA LIST OF ISSUES

18. In relation to paragraph 1 of the OCAA List of Issues:
 - (a) the groundwater impacts for the Revised Expansion Project were assessed at a regional scale, and were based on an appropriate conceptualisation of the hydrogeology of the area;
 - (b) there is sufficient data for the various aquifers to provide a suitable basis for assessing aquifer properties; and
 - (c) predicted impacts on the basalt aquifer are conservative as they do not take into consideration likely compartmentalisation through discrete fracturing that forms the aquifer.
19. In relation to paragraphs 1(c), 2(a), 2(b)(i) and 3 of the OCAA List of Issues, there is sufficient long term water level and groundwater quality data to provide a baseline for the

Revised Expansion Project and the Draft EA conditions and CG's imposed conditions are adequate to detect and assess any other impacts on groundwater.

20. In relation to paragraphs 2(c)(ii) and 2(d) of the OCAA List of Issues, there is minimal waste-rock-acid generating potential and there are mitigation measures proposed to minimise impact on the groundwater receiving environment.
21. In relation to paragraph 4 of the OCAA List of Issues:
 - (a) the impact and risks to groundwater from the Revised Expansion Project were defined, and were assessed to be manageable;
 - (b) the CG's conditions and Draft EA conditions provide for ongoing review and assessment and are adequate; and
 - (c) the potential impacts on groundwater and on water users will be addressed and managed through compliance with conditions 10, 11 and 12 of the CG's imposed conditions and Schedule D of the Draft EA and implementation of a Bore Baseline Assessment Program and Make Good Agreements.

GROUNDWATER MODELLING

OCAA LIST OF ISSUES

22. In relation to paragraphs 5 and 6 of the OCAA List of Issues:
 - (a) the predictive numerical model is 'fit for purpose' to undertake assessment of potential impacts resulting from the Revised Expansion Project; and
 - (b) there are no modelling deficiencies that detract from its fitness for purpose.

NOISE, VIBRATION

OCAA LIST OF ISSUES

23. In relation to paragraphs 7 and 9 of the OCAA List of Issues:
 - (a) assessment of health and wellbeing impacts of noise is not reliant on an assessment of "background plus" noise levels;
 - (b) it is not appropriate for the Revised Expansion Project to comply with the Planning for Noise Control Guideline as it is not relevant to mining projects; nor is AS 1055 appropriate as it states "[This Standard] excludes the setting of environmental noise criteria.";

- (c) the noise and vibration criteria nominated in the Draft EA noise conditions adequately deal with impacts on human health and wellbeing for neighbouring residences;
 - (d) compliance with the Draft EA noise conditions will ensure that the Revised Expansion Project will not have adverse impacts on human health and wellbeing; and
 - (e) corrections for tonality and impulsivity should be taken into account when assessing compliance with the Draft EA noise conditions.
24. In relation to paragraph 8 of the OCAA List of Issues:
- (a) the noise modelling undertaken for the Revised Expansion Project was adequate to appropriately determine the extent of the impacts and compliance with the Draft EA noise conditions can occur with mitigation and management measures in place;
 - (b) utilisations of mobile fleet justify the 2 dB noise reduction and also provide margin for the need to apply tonality or impulsivity (or both) penalty corrections (should such corrections be appropriate); and
 - (c) by limiting the Leq noise levels to the values stated in the Draft EA noise conditions, compliance with recognised sleep disturbance criteria for maximum noise levels (ie WHO, Environment Protection (Noise) Policy, L1 Acoustic Quality Objectives) will be achieved.
25. In relation to paragraphs 10 and 11 of the OCAA List of Issues, the TARP (including “live dashboard”) is an effective approach to manage noise impacts from the Revised Expansion Project due to its “live” assessment of noise levels in combination with real-time management interventions as required.
26. In relation to paragraph 10 of the OCAA List of Issues, the noise mitigation options (eg silencing of mobile plant, broad-band reversing alarms), which are detailed and modelled in the New EIS and are appropriate.
27. In relation to paragraph 11 of the OCAA List of Issues:
- (a) technical capabilities of commercially available directional noise loggers are satisfactory; and
 - (b) the noise monitoring system of the TARP and the proposed Noise and Vibration Management Plan will be adequate to monitor and manage noise from the Revised Expansion Project.
28. In relation to paragraph 12 of the OCAA List of Issues:
- (a) the operation of the rail loadout facility is expected to meet the Draft EA noise limits (as the EIS modelling has accounted for mobile plant at the rail loadout facility as well as

train movements along the spur itself) and therefore will not substantially impact on the surrounding sensitive receptors;

- (b) aside from a typographical error (in the last paragraph of Section 5.2.1 of the CG's Report) the recommended noise limits of the CG's Report are contained in the Draft EA; and
- (c) low frequency noise is not a phenomenon associated with train noise from a rail loadout facility.

HEALTH

TANYA PLANT LIST OF ISSUES

29. In relation to the issues notified by Tanya Plant on 27 November 2015 and 15 December 2015:

- (a) the Revised Expansion Project will not cause unacceptable adverse health effects associated with:
 - (i) fine particulates PM₁₀ and PM_{2.5};
 - (ii) blast fumes;
 - (iii) diesel fumes;
 - (iv) water quality; and
 - (v) noise;
- (b) the proposed transport of coal from the proposed mine will not cause unacceptable adverse health effects associated with:
 - (i) particle pollution; and
 - (ii) diesel combustion.

MENTAL HEALTH

TANYA PLANT LIST OF ISSUES

30. In relation to the issues notified by Tanya Plant on 27 November 2015 and 15 December 2015:
- (a) there is no reliable evidence that there will likely be any increase in mental health illness as a consequence of the Revised Expansion Project;
 - (b) solastalgia is not a recognised psychiatric condition;
 - (c) mental illness is a multi-faceted condition and highly unlikely to be caused by a single specific factor such as the development or expansion of a mine;
 - (d) complaints of stress, anxiety or unhappiness do not fulfil the Diagnostic and Statistical Manual of Mental Disorders DSM-V criteria for a mental illness.

PART 2: Additional issues that the notified experts of the applicant will address, where there is no expert proposed by the objectors relating to that issue

ECONOMICS

1. CGE modelling calculates the direct and indirect impact over time on the regional, Queensland and Australian economies of the construction and operation of a project and is the most comprehensive assessment that can be made of a project on an economy.
2. A CGE analysis, unlike an input/output analysis:
 - (a) does take account of the fact that there are limited productive resources in the economy;
 - (b) does not ignore the opportunity costs associated with using resources from one project rather than another;
 - (c) does not assume fixed prices; and
 - (d) does include substitution between goods in consumption and inputs to the production of goods and services, as relative prices change.
3. A CGE analysis comprehensively accounts for the indirect impact on other industries.
4. A CGE analysis takes into account the impact on the economy of the project relative to a scenario where the mine does not go ahead.
5. CGE modelling undertaken for the Revised Expansion Project shows that the impact on the State and local economies will be positive.
6. A CBA estimates the net social benefits for the community as a whole that result from a project.
7. A CBA for the Revised Expansion Project shows that the benefits of the project will greatly exceed its costs.
8. This CBA analysis for the Revised Expansion Project takes account of the mine's costs including environmental and social costs.
9. Even when adopting assumptions that make the benefits unrealistically small and the costs unrealistically large, the CBA for the Revised Expansion Project shows that the benefits greatly exceed its costs.
10. Even on a very unrealistic assumption that all agricultural land upon which there is drawdown of one metre or more will be rendered immediately worthless for agricultural

production, the CBA analysis for the revised Expansion Project shows the benefits of the Revised Expansion Project far outweighs its costs.

11. The CGE and CBA modelling shows that the value of the coal mined over the mine's life far exceeds the value of agriculture in the district into the indefinite (indeed, infinite) future.
12. The environmental effects of burning thermal coal are properly considered in CBAs of coal fired power plants, not coal mines.

TERRESTRIAL FAUNA

13. There have been database reviews and sufficient survey effort, utilising appropriate methodology, conducted to understand fauna habitats and species.
14. There are no conservation significant fauna present or likely to be present in the area of the Revised Expansion Project that have not been considered or for which there is no appropriate management response in the approval conditions (the CG's imposed conditions and Draft EA).
15. The site provides habitats for a range of common wildlife. The Revised Expansion Project will not result in the loss of any common species or reduce their long term security in the local landscape.
16. Taking into consideration the current and prospective uses of the area of the Revised Expansion Project, the proposed mining operation and associated habitat restoration will provide commensurate and strategically placed fauna movement options with increased management, such as to provide improved habitat connectivity and safe movement options.
17. Appropriate management responses can and will be adopted to mitigate potential impacts on fauna and fauna habitats.
18. Appropriate management of pest species for the Revised Expansion Project will be provided through an integrated Pest Management Plan.
19. The Revised Expansion Project will not result in the loss of any fauna species in the local landscape due to traffic.

TERRESTRIAL FLORA

20. The occurrence of threatened flora species have been identified and will be further assessed through pre-clearance surveys and any impacts will be offset through the environmental offset strategy prepared in accordance with the CG's imposed conditions, leading to no net loss of threatened species.

21. The type, extent and condition of threatened vegetation communities were identified and will be further assessed through pre-clearance surveys and any impacts will be offset through the environmental offset strategy prepared in accordance with the CG's imposed conditions and the Draft EA conditions. It is not expected that there will be any additional significant impacts not subject to management conditions in place under the CG's imposed conditions and the Draft EA conditions.
22. The upgrade of the local electricity grid with new powerlines is located outside the MLAs, other than the connection from the rail loop, and will be subject to a separate approvals. In any event, the design and upgrade to the electricity grid can be managed to ensure retention of most of the verge vegetation and requires clearing of only a small amount of native vegetation.
23. The implementation of the Pest and Weed Management Plan will avoid significant impacts from listed weed species.
24. Given:
 - (a) much of the native vegetation that will be removed by the proposed mine extension occurs on areas previously cleared for agriculture; and
 - (b) vegetation communities that are MSES will be offset on land that similarly has been previously cleared for agriculture,rehabilitation is considered to be an adequate response to the loss of any native vegetation communities.
25. The Draft EA conditions are adequate to protect significant flora and vegetation communities within the footprint of the Revised Expansion Project.
26. In relation to paragraph 1(e)(v) of the OCAA List of Issues based on vegetation community composition it is unlikely that any of the relevant communities mapped are groundwater dependant. Regardless of whether or not drawdown will impact mapped vegetation communities, it is unlikely to impact vegetation that is otherwise mapped as MSES.

COAL MARKETS AND CLIMATE CHANGE

27. In absolute terms, during the life of the Revised Expansion Project, demand for thermal coal is forecast to grow, particularly in India and South East Asia.
28. Thermal coal is a vital component of the global energy mix during the life of the Revised Expansion Project.
29. Uncertainties over domestic and international energy policies have been taken into account in forecasts undertaken by reputable agencies such as the International Energy Agency.

30. There are many good reasons as to why the Revised Expansion Project is economically viable.
31. The incremental tonnes that will be produced because of the Revised Expansion Project are negligible additions from the perspective of global volumes. Should the Revised Expansion Project not produce and supply its customers the additional volume, the coal will be supplied from another source. The consequence of this is that CO₂ emissions will not vary materially. Furthermore, as the New Acland Mine produces high-energy thermal coal, which compares favourably to lower quality coals from Indonesia and domestic Chinese and India coals, if the Revised Expansion Project does not proceed global CO₂ emissions may increase depending upon the country involved and the quality of the coal.

VISUAL AMENITY AND LIGHTING

32. Lighting for the Revised Expansion Project can be managed to avoid unacceptable impacts.
33. There will be no unacceptable visual or character impacts on the receiving environment, including those from lighting that cannot be adequately managed using standard measures.

GROUNDWATER

34. The Applicant's current mining impacts to groundwater have been restricted to immediately adjacent to the active mining area, with minimal impact observed on the surrounding groundwater environment.
35. The predicted water usage is within the New Acland Mine's allocation under existing authorisations to take water.

FLOODING, SURFACE WATER QUALITY

36. The water balance modelling for the Revised Expansion Project water management system is sufficient to demonstrate the operation of the water management system and the indicative sizes of the water management infrastructure. The Draft EA release limits have been developed to limit the extent of the impact of the mine regardless of the water balance assessment.
37. The New EIS demonstrates that the levee banks and rail line will impact on flood levels but the impacts are acceptable. The impact of the levee banks are all located on the mine lease and the impact of the rail line is mostly confined to land owned by the Applicant.

38. The flood modelling of the New EIS has fully considered the catchment upstream of the mine. The models were prepared in accordance with best practice commensurate with a concept level assessment. Additional modelling will be undertaken during the detailed design phase to minimise any impacts identified in this study.
39. The adopted monitoring program covers both end of pipe water quality investigation limits and receiving water triggers. The monitoring program is both practical and reasonable given the low potential risk of impacts on surface water quality of the Revised Expansion Project
40. The issues that caused the elevated historical releases have been identified and rectified on site. The Draft EA also requires separation of mine affected and sediment affected water, which will further reduce the potential for elevated releases.
41. The assessment of impacts of the Revised Expansion Project on surface water and water quality is appropriate.

NOISE AND VIBRATION

TANYA PLANT LIST OF ISSUES

31. In relation to the issues raised by Tanya Plant notified on 27 November 2015 and 15 December 2015, compliance with the Draft EA noise conditions will ensure that the Revised Expansion Project will not have adverse impacts on human health and wellbeing. The proposed Draft EA conditions are adequate to protect human health.

OTHER

42. The noise and vibration criteria nominated in the Draft EA noise conditions in conjunction with the Noise and Vibration Management Plan will adequately manage the impacts on wildlife from the Revised Expansion Project.
43. The blasting criteria documented in the Draft EA are appropriate to protect the amenity of residents and their homes from the Revised Expansion Project.
44. The extraction of basalt already occurs on the mining lease and will not result in additional (measurable) noise.
45. The Revised Expansion Project does not rely on untypical and unproven measures to manage noise.
46. With regard to the suggestion by one objector that mine noise was measured at 40.1 dB LAeq at a property 8 kilometres from the existing New Acland Mine, it is not possible for mine noise to be dominant at this distance.

47. It is not appropriate to set environmental authority conditions for certification of noise levels from items of plant or prescribing specific noise management measures.
48. Inaudibility is both an unreasonable and unfeasible condition.

LAND USE, SOILS

49. The offset areas identified for priority agricultural land use and the rehabilitation proposed and required by the CG's imposed conditions and the Draft EA will be more than sufficient to compensate for any loss of cropping land disturbed by the Revised Expansion Project.
50. The Revised Expansion Project will not reduce productivity or alienate areas outside of the mined areas from cropping use.
51. There will be no indirect impacts (such as through land fragmentation, flooding or adverse impacts on water supplies) on the cropping capacity of non-disturbed areas arising from the Revised Expansion Project that cannot be mitigated.
52. Apart from the lands of SCL status that will be in the depressed landform all other lands of SCL status will be rehabilitated to SCL compliant conditions as required by the CG's imposed conditions.
53. Adequate offset arrangements are in place to mitigate the impact on land within the depressed landform that cannot be returned to SCL compliant status.
54. Good Quality Agricultural Land designation is irrelevant as the State Planning Policy SPP1/92 lapsed in Dec 2012.
55. The impact of the Revised Expansion Project on the extent of regional cropping soils is insignificant.
56. The conclusions reached in relation to the Revised Expansion Project areas with respect to the quality of land and subsequent rehabilitation are valid for the land located inside ML50216 that will be impacted for the Revised Expansion Project.

COMMUNITY, SOCIAL

57. The Applicant has made significant efforts to engage with landholders and other community members. The stakeholder engagement program for the Revised Expansion Project is equal to or better than industry best practice.

58. The Revised Expansion Project was revised to address community concerns and avoid direct impacts on Acland and the Applicant has committed to the Acland Management Plan, which will conserve existing values.
59. Tom Doherty Park will be retained by the State and will not be directly impacted by the Revised Expansion Project.
60. The Revised Expansion Project is likely to have a positive effect on a number of Acland sites that have cultural heritage values through the Acland Management Plan.
61. Whilst some people will see the Revised Expansion Project as a detraction from sense of place, others value the New Acland Mine as an important part of the area's social and economic fabric.
62. A population decline was already being experienced in Acland before the Applicant began property acquisitions.
63. The Applicant has made significant contributions to supporting community cohesion through its community investment fund, sponsorships and donations.
64. Community members hold differences of opinion about the Revised Expansion Project and divisions are likely to continue whether the Revised Expansion Project is approved or not.
65. Failure of the Revised Expansion Project to proceed is likely to have negative impacts on community cohesion through loss of mining families from the area.
66. The New EIS including the SIA and SIMP was reviewed by Government agencies and approved in December 2014 after a lengthy process of consideration. The additional information and clarifications provided as part of the AEIS addressed the substantive issues raised by submitters in relation to the SIA and SIMP.
67. The Applicant consulted with Traditional Owners about their values relating to the Revised Expansion Project area, employment opportunities and cultural awareness and is involved in a range of activities with the Western Wakka Wakka people (eg social investment, engagement and CHMP implementation). The outcomes of this consultation are represented in the CHMP developed for the Revised Expansion Project.
68. The Revised Expansion Project would provide significant benefits for employees, families, community organisations and regional economic outcomes, as documented in the New EIS. The Revised Expansion Project offers security of employment and additional employment at a time when mining industry employment opportunities are very limited.
69. The numbers of registered businesses (including agricultural businesses) in Oakey and Toowoomba have remained stable during the past three years. The Revised Expansion Project also offers benefits for businesses in Oakey and the Toowoomba region. There is no evidence that the Revised Expansion Project would cause negative impacts on businesses.

70. Both families and the local community are likely to experience negative social impacts if the Revised Expansion Project does not proceed.
71. There is evidence of strong community support for the Revised Expansion Project to proceed.
72. An independent mental health study is beyond the usual scope for an SIA.
73. The New EIS adequately addresses the impact of the Revised Expansion Project on the amenity experienced by people who live in the affected area.
74. The social impacts of the Revised Expansion Project will be managed effectively by the SIMP and the CG's imposed conditions.

AIR QUALITY AND GREENHOUSE EMISSIONS

TANYA PLANT LIST OF ISSUES

75. In relation to the issues raised by Tanya Plant as notified on 27 November 2015 and 15 December 2015, the Revised Expansion Project can be conducted and managed so as not to cause air quality objectives to be exceeded. Compliance with the CG's imposed conditions and Draft EA conditions and the adoption of the proposed Air Quality Management Plan with adaptive management are adequate to protect human health.

OTHER

76. The Revised Expansion Project can be conducted and managed so that dust emissions do not adversely affect flora and fauna.
77. The Revised Expansion Project can be conducted and managed so that dust emissions do not adversely affect agriculture.
78. Air quality associated with the existing mine has been consistently shown to be within the objectives of the Environment Protection (Air) Policy and the existing Environmental Authority.
79. The appropriate air quality assessment criteria are the air quality objectives that are specified in the Environment Protection (Air) Policy. The New EIS assessed impacts against these objectives and demonstrated that compliance could be achieved.
80. The measures under the proposed Air Quality Management Plan for the materials handling facility and associated infrastructure are appropriate to minimise dust emissions from that infrastructure.

81. A number of studies in Queensland and New South Wales, including studies conducted on the South West System have demonstrated that coal dust emissions from coal carrying trains and empty coal trains do not cause exceedances of air quality objectives for PM10 and PM2.5. A dispersion modelling study of coal dust from trains therefore provides no practical benefit to demonstrating the appropriateness of the Revised Expansion Project.
82. Coal dust emissions from trains can be adequately and reliably managed through the use of the measures proposed in the New EIS. The Revised Expansion Project will implement strategies consistent with the South West System Coal Dust Management Plan which has been adopted by Aurizon to manage the impact of coal dust emissions from trains.
83. The Revised Expansion Project is not responsible for nor in control of the emissions from diesel locomotives, which are owned and operated by Aurizon. Notwithstanding this, a number of studies in Queensland and New South Wales, including studies conducted on the South West System, have demonstrated that particulate levels in the vicinity of coal rail networks with diesel locomotives do not exceed of air quality objectives for PM₁₀ and PM_{2.5}.
84. Scope 1 and 2 emissions have been calculated in accordance with relevant regulatory requirements at the time of the New EIS. Greenhouse gas emission estimates included the key greenhouse gases: carbon dioxide, methane and nitrous oxide.
85. Scope 3 emissions from the Revised Expansion Project are likely to be 198,485 kt CO₂-e for the Revised Expansion Project life. This equates to an annual average Scope 3 emission rate of 15,268 kt CO₂-e, which is a very small percentage of Australia's emission reduction target for 2020. The Revised Expansion Project's Scope 3 emissions are almost entirely generated offshore and therefore fall under the control, and emissions target, of another jurisdiction.

AGRICULTURAL ECONOMICS

86. The Revised Expansion Project will not cause significant displacement or loss of agricultural enterprises.
87. The Revised Expansion Project will not cause significant loss of business or jobs for lost agricultural enterprises.
88. The Revised Expansion Project is not inconsistent with the expansion of rural tourism.
89. Draw-down of groundwater levels will not adversely affect regional economics due to the resulting impacts on agriculture.
90. The Revised Expansion Project will not significantly restrict the use of land for alternative uses.

91. The claim that agriculture brings \$155 billion to the Australian economy and creates 1.6 million jobs is incorrect.

LIVESTOCK, REHABILITATION

92. The impact of the Revised Expansion Project on cropping land will not reduce grazing land to marginal, low intensity grazing.
93. The Revised Expansion Project will not adversely affect the health of livestock.
94. The performance of livestock and pasture on rehabilitated soils is currently comparable to livestock and pasture on unmined soils.

TRAFFIC, TRANSPORT, ROADS

95. The closure and/or diversion of public roads, whilst being acknowledged as having an impact, has been considered in the context of the small number of road users impacted by the closure and/or diversion and such impacts are small and are manageable.
96. There are no significant matters of road safety that are not capable of being addressed and if necessary improved by the road upgrading conditions imposed upon the Revised Expansion Project by the CG's imposed conditions.
97. Additional road usage created by the expansion will be appropriately managed by a Road Impact Assessment and a Road Use Impact Management Plan.
98. The impacts of additional traffic at the materials handling facility were appropriately considered in the EIS process and such impacts are satisfactorily addressed in the CG's imposed conditions.
99. Any perceived or real errors or inadequacies in the New EIS or AEIS raised by objectors regarding roads, traffic, bus routes or transport do not undermine the integrity of the EIS process or its findings and the resulting conditions issued by the CG are appropriate.
100. Upgrading of the surrounding road network in the vicinity of the Revised Expansion Project as proposed by the Applicant is appropriate to address the impacts of the Revised Expansion Project.
101. The necessary road closures for blasting will be of a short duration and infrequent, such that impacts on Oakey-Cooyar Road are reasonable and acceptable.

102. The impacts on traffic generated by the Revised Expansion Project have been considered and determined to be reasonable, acceptable and manageable and are satisfactorily addressed in the CG's imposed conditions.

VALUATION

103. There is no evidence of diminution in property values in the Acland area.

Definitions used in this document

In this document, unless otherwise defined, capitalised terms in this document have the meanings given to them in the Affidavit of Bruce Douglas Denney sworn 10 December 2015 and filed with the Court on 11 December 2015, and:

AEP means annual exceedance probability.

CBA means cost benefit analysis.

CGE means Computable General Equilibrium.

Draft EA means the draft EA issued by the Department of Environment and Heritage Protection dated 28 August 2015.

ha means hectare.

MNES means Matters of National Environmental Significance under the *Environment Protection and Biodiversity Conservation Act 1999*.

MR Regulations means the Mineral Resources Regulation 2013.

MSES means matters of State Environmental Significance.

New Hope Group means the New Hope group of companies.

OCAA List of Issues means the Updated Notice of Issues by Oakey Coal Action Alliance Inc (undated).

SCL means strategic cropping land.

SIA means Social Impact Assessment.

SIMP means Social Impact Management Plan.

Annexure D – Façade Noise Corrections

Table 1 ASK Façade Noise Corrections

Dwelling Façade	Dwelling Room	Reduction LAeq - dB
Living Room	Timber	8.0
	Timber/Concrete	13.8
	Brick Veneer	6.1
	Double Brick	14.7
	Double Brick	12.4
Bedroom	Brick Veneer	10.8
	Brick Veneer	14.7
Nursery	Double Brick	12.3
Games Room	Timber	12.2
Bathroom	Timber	7.5
Empty Room	Timber	5.4 ¹

Table 2 SLR Façade Noise Corrections

No.	House Type	Controlling Element Description	Measured Noise Reduction, dB	
			Element Open	Element Closed
1	Type 1 ¹	Window 1: Small timber double-hung windows to bedroom, no seals	13	23
		Window 1: Small aluminium double-hung windows to study, no seals	15	27
2	Type 2 ²	Large timber folding doors to living area, acoustic seals to perimeters	6	24
3	Type 1	Queenslander, timber, split-double leaf door with mid-size glass inserts to bedroom, large perimeter gaps, no seals	12	22
4	Type 2	Large aluminium-framed sliding doors to living room, weather seals	8	22
5	Type 1	Window 1: Queenslander, timber-framed hinged windows to living area, no seals	7 ³	18 ⁴
		Door 1: Timber double doors to rumpus, timber frame, no seals, large glazing area	11	25

Annexure E – SLR’s Overview of New Acland Coal Mine's Noise Live Dashboard Report



global environmental solutions

Overview of New Acland Coal Mine's Noise "Live Dashboard"

Report Number 620.10963

2 July 2014

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Version: Draft 1

Overview of New Acland Coal Mine's Noise "Live Dashboard"

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DOCUMENT CONTROL

Reference	Status	Date	Prepared	Checked	Authorised
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APPENDICES

Appendix A	Example Sentinex Daily Noise Monitoring Plots
Appendix B	Example Sentinex (Future) Directional Noise Monitoring Plot
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1 INTRODUCTION

New Acland Coal (NAC) commenced implementation of a Noise Trigger Action Response Plan (TARP) on 13 January 2014 in order to be pro-active in achieving "real time" compliance with their Environmental Authority (EPML00335713) noise conditions, being:

- Monday to Saturday:
 - 7am to 6pm: 50 dBA L_{Ar,1hr}
 - 6pm to 10pm: 45 dBA L_{Ar,1hr}
 - 10pm to 7am: 40 dBA L_{Ar,1hr}
- Sunday and Public Holiday:
 - 9am to 6pm: 50 dBA L_{Ar,1hr}
 - 6pm to 10pm: 45 dBA L_{Ar,1hr}
 - 10pm to 9am: 40 dBA L_{Ar,1hr}

where L_{Ar,1hr} is the L_{Aeq,1hr} adjusted for tonality or impulsiveness for a 1 hour period.

The TARP has recently been superseded by a more flexible "live dashboard" approach to noise control. The "live dashboard" can be summarised as follows:

1. Real-time noise levels are monitored by trained NAC staff within the Township of Acland every night-time period (10pm to 7am/9am).
2. Noise monitoring data (from the Township of Acland) is analysed every 10 minutes to provide the "overall" and "low frequency (20Hz to 630Hz)" Leq noise levels (amongst other acoustic parameters).
3. The noise monitoring data, along with weather data, is reviewed to ensure:
 - a. that the noise being measured is attributable to NAC, and
 - b. that no adverse (rain or wind speeds > 3m/s) weather conditions existed at the time of the measurement.
4. If the "low frequency" Leq noise level (hereafter referred to as L_{AeqLF}) exceeds the 40 dBA (night) limit for any 10 minute intervals, the NAC staff member monitoring noise levels starts communicating with on-site staff to shut-down, re-locate or modify the operating conditions of plant and equipment until such time as noise levels from NAC drop below 40 dBA L_{AeqLF} again.

The following sections of this report explain the above (summarised) process in detail.

2 NOISE MONITORING METHODOLOGY AND EQUIPMENT

NAC's continuous real-time noise monitor with integrated weather station is located as shown in **Figure 1**.

Since the commencement of the TARP, monitoring has been performed by a SentineX continuous monitoring system which includes a Type 1 sound level meter (S/N: 27180). The SentineX system records the following parameters:

- 10 minute statistical data (LA1, LA10, LA90)
- L_{Aeq,10min} and L_{Aeq}, period noise levels
- L_{Aeq,1min} in 1/3 octave bands
- Digital audio recording 24 hours per day, and
- Wind direction, wind speed, temperature, humidity and rainfall.

Figure 1 Location of Real-Time Noise Logger and Weather Station



In a report (dated 14 January 2014) prepared by Advitech Environmental (the operator of the SentinelX system), it was established that the LAeqLF noise level was an accurate means of establishing the noise contribution from NAC at the monitoring location. An extract from the Advitech report is as follows:

The LAeq descriptor describes the energy equivalent average noise level and represents the total noise level from all mining, environmental and transportation sources: hence Leq results may

overestimate the contribution from mining operations. The low frequency noise component (LAeqLF) comprises noise in the 20Hz to 630Hz range, and is considered representative of the contribution associated with typical mining activities. The LAeqLF descriptor is typically applied to the analysis of continuous noise monitoring data as a means of excluding extraneous influences on the data set (such as high frequency bird noise or insect noise) to evaluate the contribution from mining operations.

As a result of this analysis, compliance (or otherwise) with EA noise conditions is assessed using the measured LAeqLF noise levels.

It has also been established (by NAC and their acoustic consultants) through on-going analysis of the noise monitoring results that when the difference between the (overall) LAeq value and the (low frequency) LAeqLF values is greater than 2 dBA, it can no longer be assumed that the LAeqLF is attributable to the mine. In other words, when the difference between the 2 values (LAeq and LAeqLF) is less than 2 dBA, it can reliably be assumed that mine noise dominates the LAeqLF value.

Appendix A shows the typical output of the SentineX system. Of note, the system outputs the:

- LAeq (overall) noise level every 10 minutes
- LAeqLF (low frequency) noise level every 10 minutes
- Difference between the LAeq and LAeqLF values
- Weather parameters (at the bottom of the graph)
- Day, evening and night limits

It can also be seen in **Appendix 1** the divergence of the LAeq and LAeqLF values after around 5am in the morning. SLR has been advised that this occurs on a daily basis as other non-mine noises start to occur each day (e.g. birds, vehicles on roads etc).

The SentineX system's microphone array is currently being validated to determine which direction the noise comes from. As is evident in **Figure 1**, all noise from the New Acland mine will come from the north-east quadrant. The ability to focus on noise levels coming from this specific quadrant will allow for added accuracy in specifically determining NAC's noise emissions. **Appendix B** contains an example of how the SentineX system may output the directional information.

3 SUPERSEDED TARP PROCESS

The (superseded) TARP process aimed at sending automatic alarms to mine management to communicate conditions indicative of potential exceedance of NAC's EA noise limits.

Alarms were set to trigger when noise levels exceeded 40 dBA LAeqLF as follows:

- Alarm 1: 2 x 10 (20 minute)
- Alarm 2: 3 x 10 (30 minute)
- Alarm 3: 4 x 10 (40 minute)
- Alarm 4: 5 x 10 (50 minute)

Alarms were reset if the followings conditions were observed:

- 1 x 10 minute samples < 39.5 dBA LAeqLF

The alarming system had integrated rules to prevent alarming if meteorological conditions and/or non-mine noise contributions affected the results. The integrated rules were:

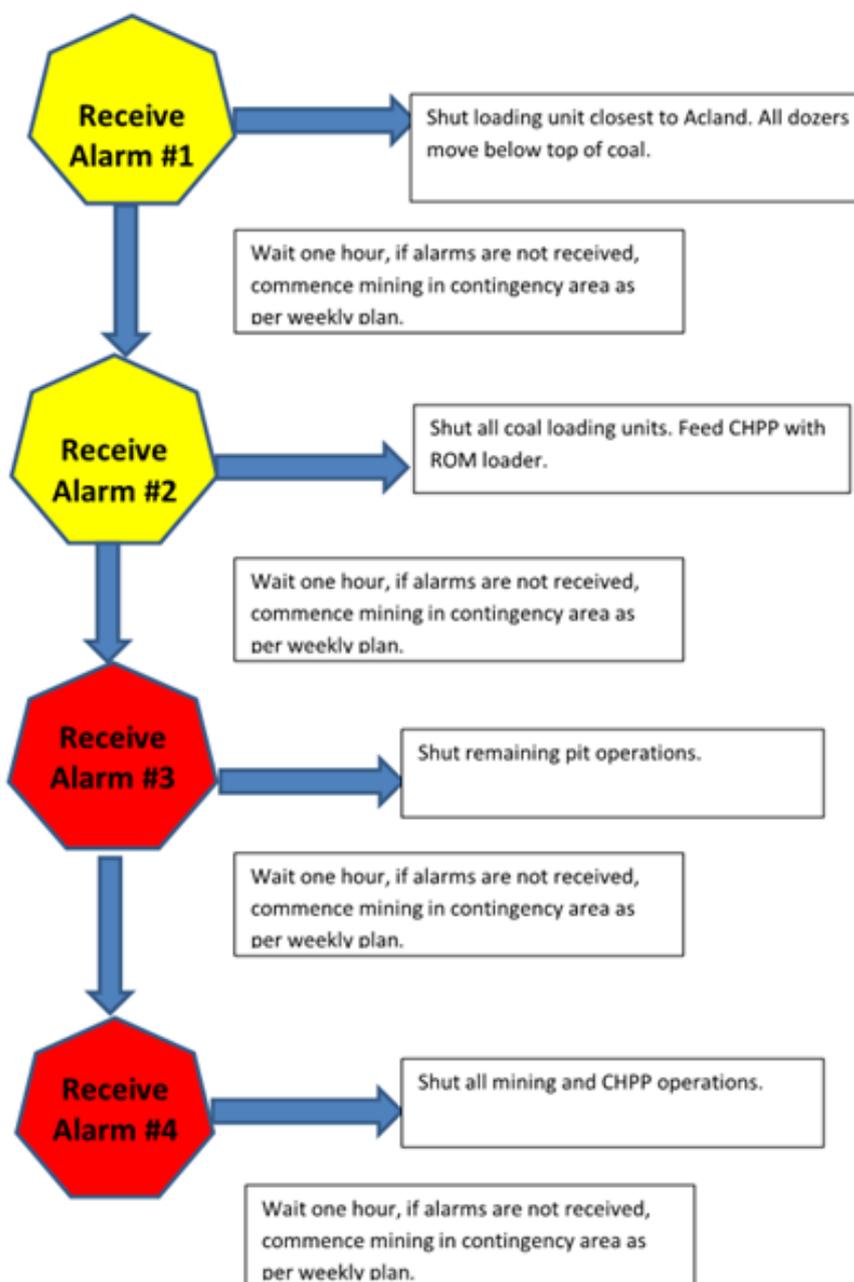
- Wind speed >3m/s
- Presence of precipitation
- Full frequency spectrum (LAeq) and low frequency spectrum (LAeqLF) separation >2dB(A)

The alarm notification was sent by:

- SMS to relevant personnel's mobile phones,
- Email notification to relevant personal,
- The mine UHF radio network on channel 50, or
- Any combination of the above

Figure 2 below shows the (superseded) TARP process diagrammatically along with the actions that were required to be taken once an alarm was activated.

Figure 2 Superseded TARP Process



4 "LIVE DASHBOARD" METHODOLOGY

The "live dashboard" adopts much of the TARP process with the following exceptions:

- A trained NAC operator listens to the noise throughout the night-time period (starting at 9:30pm in order to be ready for 10pm and finishing either at 7am or early if the measurement results start to be adversely impacted by extraneous noise sources),
- Mitigation actions are started after only one 10-minute LAeqLF noise level exceedence (not two as for the TARP process),
- The actions taken to reduce noise levels are determined in consultation between the "live dashboard" operator and mine management – in this way, the dominant noise source audible at the monitoring location can be shut-down or its operations modified accordingly rather than following a prescribed process (**Figure 2**)

A further explanation how the "live dashboard" works each night is provided below.

EACH NIGHT PERIOD

The measured noise levels every 10 minutes are fed into a working spreadsheet each night as shown in **Figure 3**.

As is evident from **Figure 3**, actions are taken throughout the night to manage noise levels below the EA noise limits.

THE FOLLOWING DAY

The following day, the monitoring results and actions of the preceding night are captured in another spreadsheet. **Figure 4**, **Figure 5** and **Figure 6** are taken from this spreadsheet.

Figure 4 shows those periods in the preceding night where noise levels were exceeded, what actions were taken and what was the resulting reduction in noise level.

Figure 5 keeps a log of all noise levels throughout the night-time period as well as documenting whether compliance with the EA noise limits was achieved.

Figure 6 estimates the costs to NAC from the noise mitigation actions taken the preceding night.

Figure 3 Working "Live Dashboard" Spreadsheet

A Crew Noise Monitoring			20-06-2014				
Rolling Average			Name	D.Gordon			
Time	Reading	Rolling Av	Comments				
9							
9.1							
9.2							
9.3							
9.4							
9.5	42	34.2199					
10	44	38.3433					
10.1	40.6	39.4161					
10.2	40.6	40.2757	Noise Alarm 1. Stopped 106 and trucks.				
10.3	39.5	40.8424					
10.4	39.3	41.3223					
10.5	40.2	41.0253	Stopped Drill for 10 minutes.				
11	38.9	39.899					
11.1	41.1	40.0016	Pulled centre pit dozers and drill up.				
11.2	40.1	39.9103	Noise Alarm 1. Swapped 214 out for 211 at 11.25.				
11.3	37.3	39.6403	11.35 started drill and 612 and 610 back up.				
11.4	40	39.7558	Pulled 104 and trucks up.				
11.5	40.2	39.7558	Stopped drill and 612 and 610.		Stopped the most s uthern Legra.		
12	38.3	39.6784	Started 104 and trucks up again.				
12.1	37	39.0171	Started 612 and 610 up again.				
12.2	37.1	38.5271	12.28 walking 214 to south pit.				
12.3	37.2	38.5147					
12.4	38.7	38.2428	Started drill back up.				
12.5	38.8	37.9179					
1	38.6	37.974					
1.1	39.1	38.3196					
1.2	38.9	38.5916	214 Started loading from south pit sending coal to the rom.		in 89's.		
1.3	38.3	38.7405					
1.4	37.1	38.5136					
1.5	38.2	38.4127					
2	38.9	38.4664					
2.1	38	38.2749					
2.2	38.2	38.1486					
2.3	39	38.2778	2.25 Car went past 2.5dba seperation.				
2.4	37.9	38.388					
2.5	38	38.3567					
3	37.1	38.069					
3.1	38	38.069					
3.2	38.7	38.1531	3.1dba Separation.				
3.3	36.5	37.7565					
3.4	37.1	37.6288					
3.5	38	37.6288					
4	38	37.7739					
4.1	36.6	37.5586	3.3dba Separation Car went past.				
4.2	37.6	37.3426	4.15 Started legra.				
4.3	38.9	37.7616					
4.4	38.8	38.0496	2.1dba Separation. Roosters started up.				
4.5	41.8	38.9504	4.45 106 started back up.	2.1dba Separation	Car went past. Roosters still goin!		
5	43.4	40.1902	Cars goin pas 2dba seperation.				
			Greater than 2 db Separation				

Figure 4 "Live Dashboard" Interventions

Date	Time	Mine Activity Prior to Alarm	Action	Machinery observed in audio following Action	Laeq dB(A)	Laeq 1Hr dB(A)	LF dB(A)	LF 1Hr dB(A)	Noise Reduction as a result of Action dB(A)	Wind Speed (m/s)	Wind Direction
02-03-2014	1:00:00 AM	104 shut. 106 was loading A3 in 23/08 to IPT 3 ramp with 3 x 793 trucks. 208 shut. 209 shut. 211 was loading A8-B6 coal in 9/2 with 6 x 785 trucks, reject to Dump 10. 214 was loading D5 I/B in 20/01 to dump 10 with 3 x 789 trucks.		Truck & digger noise most prevalent. Some dozer tracks and a number of occurrences of loads being dumped in the back of trucks.	41.7	40.4	40.7	39.4		0.4	ESE
02-03-2014	1:10:00 AM	104 shut. 106 was loading A3 in 23/08 to IPT 3 ramp with 3 x 793 trucks. 208 shut. 209 shut. 211 was loading A8-B6 coal in 9/2 with 6 x 785 trucks, reject to Dump 10. 214 was loading D5 I/B in 20/01 to dump 10 with 3 x 789 trucks.	Shut down 106 and 607 in 23/07 and 622 in pit tailings. Also put 214 on idle in 20/05 for 10 minutes then went back to work. 104 was fired up at 1:15am and loading 106 trucks.	Distant truck noise and dozer tracks.	42.2	40.9	41.2	39.9	2	0.4	ESE
02-03-2014	1:20:00 AM	104 was loading E3 in 7/4 to dump 7. 106 shut. 208 shut. 209 shut. 211 was loading A8-B6 coal in 9/2 with 6 x 785 trucks, reject to Dump 10. 214 shut.		Truck and dozer track noise.	40.1	40.9	39.2	39.9		0.4	ESE
02-03-2014	2:20:00 AM	104 was loading E3 in 7/4 to dump 7. 106 shut. 208 shut. 209 shut. 211 was loading A8-B6 coal in 9/2 with 6 x 785 trucks, reject to Dump 10. 214 was loading D5 I/B in 20/01 to dump 10 with 3 x 789 trucks.		Truck noise with consistent dozer track noise and the occasional occurrence of a load being dumped in the back of a truck.	41.1	40.1	40	39		0.4	ESE
02-03-2014	2:30:00 AM	104 was loading E3 in 7/4 to dump 7. 106 shut. 208 shut. 209 shut. 211 was loading A8-B6 coal in 9/2 with 6 x 785 trucks, reject to Dump 10. 214 was loading D5 I/B in 20/01 to dump 10 with 3 x 789 trucks.	Shut down 214 and 2 dozers in 20/01, operators were sent to smoko.	Truck and dozer track noise.	41.1	40.4	40	39.3	1.3	0.4	ESE
02-03-2014	2:40:00 AM	104 was loading E3 in 7/4 to dump 7. 106 shut. 208 shut. 209 shut. 211 was loading A8-B6 coal in 9/2 with 6 x 785 trucks, reject to Dump 10. 214 shut.		Truck and dozer track noise with the occasional occurrence of a load being dumped in the back of a truck.	39.4	40.2	38.7	39.2		0.4	ESE

Figure 5 Ongoing Compliance Assessment

Date	Time	Laeq dB(A)	Laeq 1Hr dB(A)	LF dB(A)	LF 1Hr dB(A)	Laeq - LF Separation	Wind Speed (m/s)	Rain (mm)		LF 1Hr Max dB(A)
02-03-2014	12:00:00 AM	39.2	39.4	37.8	37.5	1.4	0.4	0	ND	
02-03-2014	12:10:00 AM	39.3	39.3	38.2	37.6	1.1	0.4	0	ND	
02-03-2014	12:20:00 AM	40.3	39.5	39.5	38.1	0.8	0.4	0	ND	
02-03-2014	12:30:00 AM	40.1	39.7	39.1	38.3	1	0.4	0	ND	
02-03-2014	12:40:00 AM	40.1	39.8	39.1	38.6	1	0.4	0	ND	
02-03-2014	12:50:00 AM	40.4	39.9	39.3	38.9	1.1	0.4	0	C	
02-03-2014	1:00:00 AM	41.7	40.4	40.7	39.4	1	0.4	0	C	
02-03-2014	1:10:00 AM	42.2	40.9	41.2	39.9	1	0.4	0	C	39.9
02-03-2014	1:20:00 AM	40.1	40.9	39.2	39.9	0.9	0.4	0	C	
02-03-2014	1:30:00 AM	39.1	40.7	38.2	39.8	0.9	0	0	C	
02-03-2014	1:40:00 AM	40.4	40.8	39.5	39.8	0.9	0.4	0	C	
02-03-2014	1:50:00 AM	40	40.7	39	39.8	1	0.4	0	C	
02-03-2014	2:00:00 AM	40.2	40.4	39.2	39.5	1	0.4	0	C	
02-03-2014	2:10:00 AM	39.2	39.9	37.9	38.9	1.3	0.4	0	C	
02-03-2014	2:20:00 AM	41.1	40.1	40	39	1.1	0.4	0	C	
02-03-2014	2:30:00 AM	41.1	40.4	40	39.3	1.1	0.4	0	C	
02-03-2014	2:40:00 AM	39.4	40.2	38.7	39.2	0.7	0.4	0	C	
02-03-2014	2:50:00 AM	38.5	40	37.8	39	0.7	0.4	0	C	
02-03-2014	3:00:00 AM	37.9	39.7	37.1	38.7	0.8	0	0	C	
02-03-2014	3:10:00 AM	39.5	39.7	38.9	38.9	0.6	0.4	0	C	
02-03-2014	3:20:00 AM	37.9	39.2	37.1	38.4	0.8	0.4	0	C	
02-03-2014	3:30:00 AM	38.6	38.7	37.8	38	0.8	0.4	0	C	

Figure 6 "Live Dashboard" Downtime Financial Analysis

Date				
01-03-2014				
Unit	Minutes	Rate (bcm/min)	\$/bcm	Total Cost (\$)
214	10	15.5	3.26	505.30
992	0	11.66	3.26	-
106	34	29.5	3.26	3,269.78
Total Cost Impact for Shift (\$)				3,775.08

By way of example, **Figure 4**, **Figure 5** and **Figure 6** reveal 2 interventions (on 2 March 2014) where direct action was taken by NAC to control noise emissions:

Intervention 1

- At 1:00am, a minor exceedence of the 40 dBA LAeqLF,10minute noise limit was registered (40.7 dBA)
- At 1:10am, a second minor exceedence was recorded (41.2 dBA) and corrective action was undertaken as seen in the "Action" column in Figure 4.
- As a result of these actions, the LAeqLF,10minute noise level dropped by 2 dBA at 1:20am to be below the 40 dBA limit.

Intervention 2

- At 2:20am, noise levels reached the 40 dBA LAeqLF,10minute noise limit.
- At 2:30am, the noise level again reached 40 dBA LAeqLF,10minute and corrective action was undertaken as seen in the "Action" column in Figure 4.
- As a result of these actions, the LAeqLF,10minute noise level dropped by 1.3 dBA at 2:40am to be below the 40 dBA limit.

NAC are also using the results of the "live dashboard" to educate other staff of the ongoing requirement to meet the EA noise limits. Charts like those shown in **Appendix C** are used in this process.

5 CONCLUSIONS

Throughout 2014, NAC have developed and implemented an effective management tool to monitor and, where required, mitigate noise emissions from the New Acland mine.

This development:

- started with the TARP where "live" noise levels were measured and when exceedences of the noise limit (over a 10 minute interval, not the 1 hour interval applicable to the EA noise limits) were recorded over 2 or more consecutive (10 minute) periods, a series of pre-determined noise controls were implemented until compliance with the 40 dBA night-time noise limit was achieved,
- is now operating as a "live dashboard" where trained NAC staff listen to live audio throughout the night-time period so that noise controls can be more accurately tailored to the noise levels being measured (via a similar process of evaluating each 10 minute noise level), and
- may in the future include directional analysis (via a yet to be verified microphone array) such that further confidence can be provided that the "low frequency" noise levels measured are emanating from the New Acland Coal Mine (and not from other extraneous noise sources).

It is recommended that NAC continue to develop this system in order to improve its accuracy in terms of identifying noise emissions from New Acland Coal Mine only and implement it each night in order to achieve compliance with the New Acland Coal Mine EA noise limits.

Please note that the "live dashboard" should not be considered the only solution to mitigating noise emissions from New Acland Coal Mine. Other measures, primarily engineering noise controls at dominant noise sources (e.g. implementing a "buy quiet" policy for new equipment purchases or retrofitting acoustic treatments to existing equipment), are also recommended in combination with the "live dashboard" initiative where the need is required.

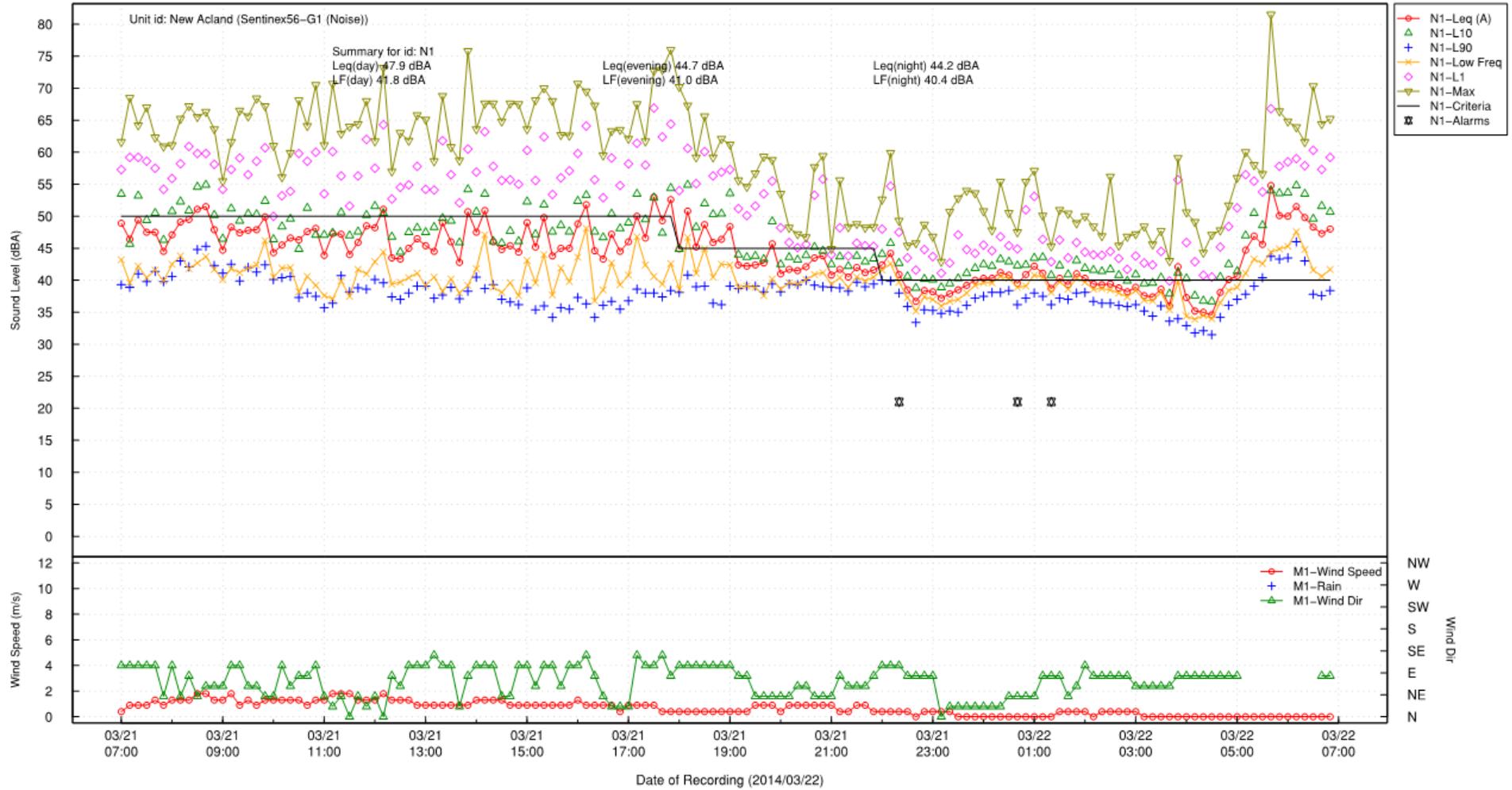
EXAMPLE SENTINEX DAILY NOISE MONITORING PLOTS

Daily Noise Monitoring Summary

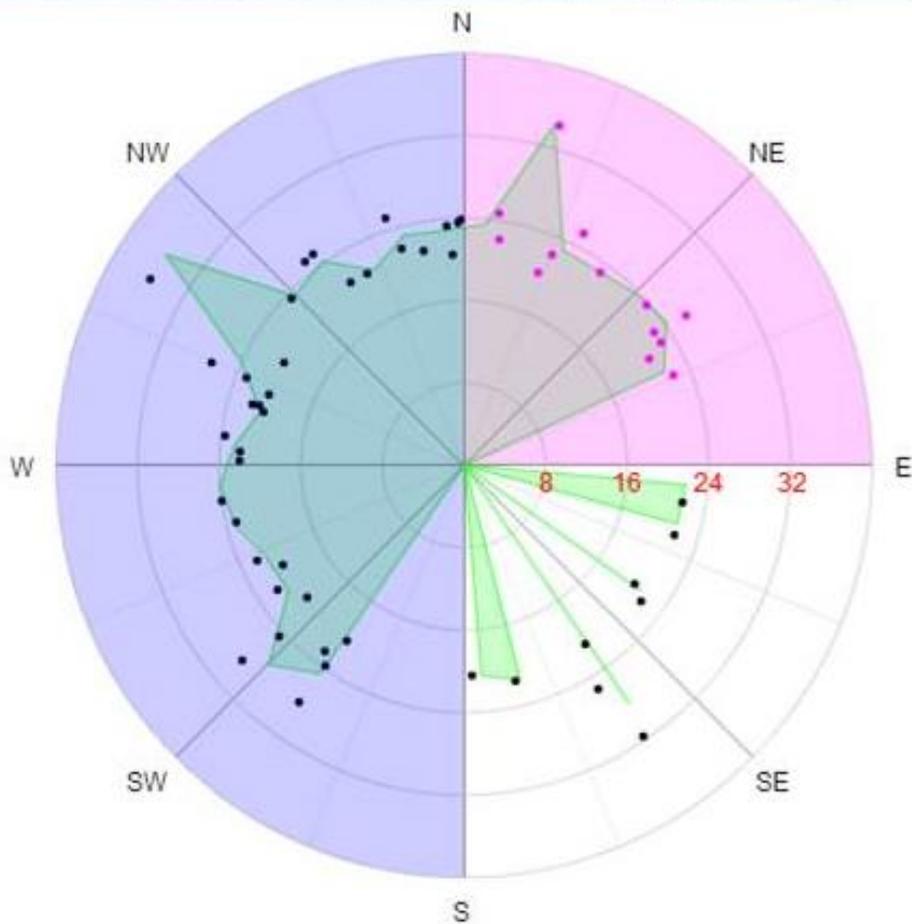


Daily Noise Monitoring Summary

Chart Modules
N1: SVAN979
M1: Vantage Pro



EXAMPLE SENTINEX (FUTURE) DIRECTIONAL NOISE MONITORING PLOT



*Hover over a point to see details

Sentinex56, New Acland - Noise Rose: 20140625-13:32 till 20140626-13:32

Sound Pressure Level dB(A)

Total SPL: 42
 AOI 1 SPL: 36
 AOI 2 SPL: 40

Legend

- Ten Degree Averages
- ✕ Excluded Noise
- Other Noise
- AOI 1
- AOI 2

- Area Of Interest 1
- Area Of Interest 2

Controls

1 Day up to

2014-06-26 13:32



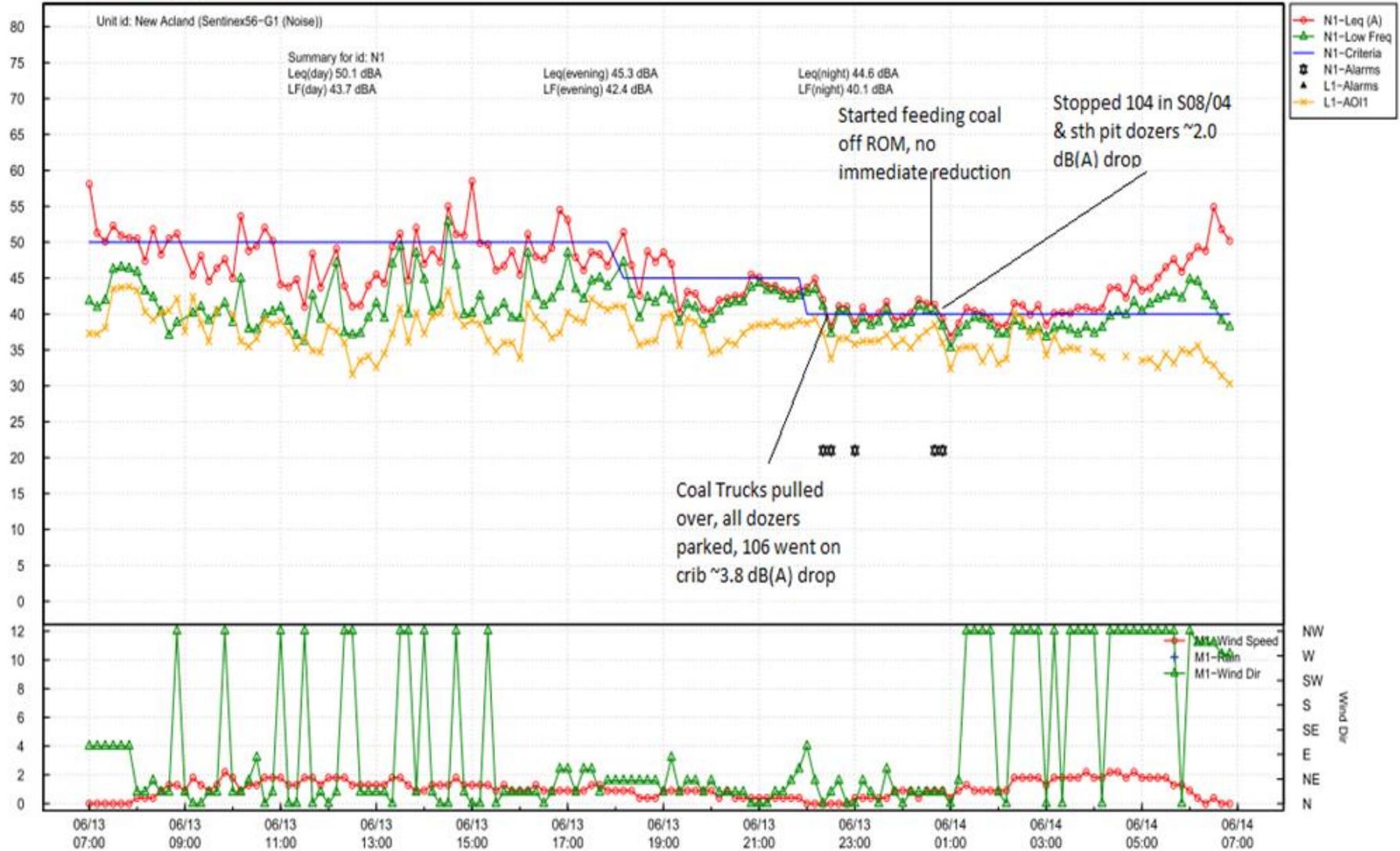
Enable Zooming -
 Yes No

Auto Refresh
 (on every fifth minute interval)

EXAMPLE SENTINEX PLOT USED FOR EDUCATING NAC STAFF ON NOISE OBLIGATIONS

Noise Chart Friday Night 13/6/14

Daily Noise Monitoring Summary



Annexure F- Opinion and Findings On Matters Raised In Lay Witness Statements Filed By Objectors

No.	Objectors' issues to be addressed	Paragraph reference	Response
1.	ANGELA MASON		
1.1.	<p>At this time one of our direct next door neighbours was bought out and the other was paid rent for a number of years as their home was classified 'uninhabitable'. The uninhabitable home is only approximately 600 metres from our home. It beggars belief that nuisance emissions would not be over the limit at our house and we believe that they have regularly been so since the inception of Stage 1. We base this judgement on the experience of listening to many years of noise emissions from NAC and have been able to confirm our understanding through written materials such as Reports from NAC detailing results of noise monitoring undertaken.</p> <p>Once night time operations commenced our family quickly descended into a living hell. Night after night we were blasted with incredibly loud noise and showered with dirt. The noise came through the windows, the doors, the floor and the ceiling of our wooden farm house. Because we have lived at 'Home-lea' for a long time we know that winds can blow from the south and south west anywhere from late March to early October each year, here and there at other times of the year and after almost every summer storm. Since mining began these winds cause loud mine noise at our house. Also, prior to mining if the wind wasn't blowing it was so quiet we could 'hear a pin drop' outside at night. Since mining began, if the wind wasn't blowing a constant loud roar from mining operations next door radiated out in all directions. This started in the</p>	13 - 20	<p>It is my understanding that blasting at the mine site has never occurred at night.</p> <p>I cannot comment on the historical issues raised. In relation to Stage 3, winds from the south – south-west would enhance noise propagation towards the Mason property noting that wind in this direction has been modelled for both the day/evening and night periods in the 2014 EIS. It is common practice to model for such "worst conditions" and under these worst case conditions the 2014 EIS has predicted compliance with the CG's nominated criteria.</p> <p>The CG's criteria are consistent with recognised sleep disturbance criteria and as such, for stage 3 operations, provided the CG's criteria are met, sleep disturbance is not predicted to occur.</p>

No.	Objectors' issues to be addressed	Paragraph reference	Response
	<p>afternoon, would go all night and not die down until around 9 o'clock the following morning. These wind patterns have been ongoing since mining began 13 years ago. The noise we experience during these winds and still conditions has made living in our house almost impossible to tolerate at times.</p> <p>We have experienced many sleep deprived or sleep disturbed nights because of NAC and I recall doing the ironing in the middle of the night because the noise was so loud sleep was impossible..</p>		
1.2.	<p>By this time we felt demoralised by NAC's lack of response to our ongoing issues. NAC continued to emit nuisance emissions. Pretty early on we formed the opinion NAC believed they were complying with stated maximum emission levels unless someone rang and complained. So essentially it was up to the neighbours to police compliance.</p> <p>By December 2002 noise monitoring had begun and during a phone call I made to David Moore he confirmed the reading taken the night before on 10 December 2002 was "way over" the limit. To this day noise monitoring records only 12 hours of noise each year at 'Home-Lea'. This leaves 99.9987% of noise unmonitored and allows me to conclude it is impossible for NAC to claim compliance at our farm with maximum noise emission levels.</p> <p>The mine progressed to Stage 2. In <i>'Assessment Report under the Environmental Protection Act 1994 about the Environmental Impact Statement for the New Ac/and Coal Mine Stage 2 Expansion Project proposed by New Ac/and Coal Pty Ltd'</i>2 dated August 2006, Dean Ellwood, Director, Integrated Assessment Branch, Environmental</p>	24 - 27	<p>NAC's existing EA Conditions do not require proactive noise monitoring as part of on-going operations. Monitoring is only required if requested by EHP following a complaint. The CG's conditions for the Stage 3 operations require that monthly noise monitoring reports be publically released therefore ensuring a much higher level of transparency in relation to mining operations during Stage 3 as opposed to past/existing operations.</p> <p>In the JER, both experts have agreed that a real time 24/7 noise logger be located to the north of the mine (as well as to the west of the mine and in the Acland Township) in order to provide better special coverage for the surrounding community. Such a (more sophisticated monitoring station) to the north of the mine will provide much accurate and on-going results for the Mason (and other) properties north of the mine.</p> <p>It is my opinion that the CG's requirements will require the Stage 3 operations to be monitored, assessed and reported to a satisfactory standard. The sophistication of the monitoring recommended by both experts, in combination with the "real-time" nature of the monitoring results and the need to publically release monthly monitoring reports will provide a robust plan for protecting the surrounding community from noise emissions exceeding the limits set in the draft EA conditions.</p>

No.	Objectors' issues to be addressed	Paragraph reference	Response
	<p>Operations, Environmental Protection Agency supported our negative experience of and ongoing problems with mine noise emitted during Stage 1 when he acknowledged on page 22 'current noise levels are causing a continuing nuisance to some nearby residents' Further, on page 21, 'night-time background noise levels monitored subsequent to the commencement of mining in the north pit as part of Stage 1 operations have periodically exceeded 40dB(A) at most noise sensitive receptors', and, 'on some occasions mining operations have been the dominant noise source.' He goes on to further confirm during Stage 2 'additional noise impact will occur at sensitive receptors as mining operations expand into MLAS0216', and, 'night-time noise limit of 40dB(A) may sometimes be exceeded at noise sensitive receptors during Stage 2.' Noise has continued to be an ongoing issue at our farm for the duration of Stage 2.</p>		
1.3.	<p>We remain extremely upset at the prospect of another 15 years of constant interference that will be caused by NAC's proposed Stage 3 activities. The unsatisfactory resolution of our issues by NAC management and nuisance emissions we have experienced in the past and continue to experience allow us a window into the future of how things will be once NAC greatly expands its permanent processing, maintenance and administration facilities near us, hauls coal uphill from 3 active pits to one of the highest points on site, directs all light mine traffic (and some heavy) passed our home and then back across their own site to the carpark at the administration centre, and, arranges for thousands of truckloads of basalt to be trucked out</p>	36	<p>The expanded ROM and stock piling operations at the northern end of the mine have all been modelled in the 2014 EIS and the joint experts have agreed that the sound power levels associated with such activities are appropriate. This modelling has shown that the CG's noise limits are achievable.</p> <p>2014 EIS modelling also accounts for coal haulage from 3 active pits during the stage 3 operations.</p> <p>As agreed by both experts, alternative noise criteria to those contained in Transport and Main Roads (TMR) Code of Practice are not able to be set for public roads - fundamentally because roads (along with rail and airports) are beneficial assets to the community. (JER, paragraph 164 and 230)</p>

No.	Objectors' issues to be addressed	Paragraph reference	Response
	of Gate 9 (just around the corner from our farm) by a successful tenderer.		<p>Driver behaviour into and out of the mine site by staff will be a regular feature of toolbox talks (Commitment No. 691) in order to ensure that impacts are kept to a minimum for the surrounding community.</p> <p>The proposed mine expansion does not involve the commercial production of basalt. Rather basalt will be utilised at the mine</p>
1.4.	<p>An example of this inequity can be found where in a letter to the <i>Highfield Country Herald</i> 8 - August 12, 2014 COO Bruce Denney states when discussing relocating the JRLF "New Hope has listened to the (Jondaryan) community and has acted to minimise impacts from mining activities on the local area and its residents." In the <i>Toowoomba Chronicle</i>9, Thursday May 29th, 2014 a New Hope Group Spokesman said "the company did not believe it had exceeded limits for air quality associated with its rail loading facility near Jondaryan." If this is true why has NAC agreed to spend around \$60 million dollars to relocate this facility? I asked Mr Randell how relocating up to 200,000 tonnes of coal directly to the south west of my house would minimise dust and noise impacts for my family. He remained silent which we take as confirmation that the impacts will in fact be much worse for us.</p>	40	<p>The haulage, processing and stockpiling of the increased mining production for Stage 3 operations has been modelled from a noise perspective and compliance with the CG's conditions is predicted.</p> <p>The recommendation by both Joint Experts to place a real-time 24/7 noise logger to the north of the mine site will provide on-going assurance to the community that noise emissions are in compliance with the draft EA noise conditions.</p>
2.	GERALYN MCCARRON		
2.1.	<p>They have related to me their physical health problems from the dust and the fumes: the constant sore eyes, intermittent difficulty breathing, headaches and at it's worse, even collapse. They have told me about the insomnia, severe fatigue and unremitting stress. Unfortunately for them,</p>	11	<p>The draft EA noise conditions for Stage 3 operations are in my opinion appropriate to protect the health and wellbeing of the surrounding community. These conditions, in combination with the enhanced monitoring regime recommended for Stage 3 operations, should protect the community from legitimate health concerns such as sleep disturbance.</p>

No.	Objectors' issues to be addressed	Paragraph reference	Response
	<p>unlike the proponents in this case, and even the legal teams, this is not their day job. They have had to find time out of their normal lives caring for their country, stock, crops, homes, children, grandchildren or paid employment to read EISs, EAs and write endless submissions and objections. For many years the worry and stress has been unremitting and has consumed endless (unpaid) hours during day and night, which would have been more happily dedicated to family or sleep.</p>		
2.2.	<p>My introduction and first understanding of the impact of noise from the coal mines came during my initial visit to the Darling Downs when I spoke with a retired air traffic controller whose experience was with, not the New Acland mine, but Yancoal at Cameby Downs. This man was an air traffic controller who had retired to the peace and tranquillity of the bush in 2006, only to find that in 2009 Yancoal opened a huge open cut mine 9km from his property. He told me he was unable to sleep. There were two times in the day when it was quiet - from 5.50 in the morning until 6.15 and the same time in the evening at change of shift. The rest was a constant noise from the crushing plant, the coal trains loading and going out 4 times per day, manual shunting, loaded trucks accelerating up the pit, travelling 9km and going back, dozers, diggers, other machinery. The changes in tones were such that he could accurately pinpoint when specific machinery was not working properly or had broken down, as was often confirmed by passing workers in the morning. Once a week there was a blast that would shake the house. At the time I spoke with him there had been 57 blasts. His wife who held a very responsible role at the local</p>	12	<p>These observations relate to a neighbour of a different mine. I cannot provide further comment as I have no information in relation to either modelled or measured noise/vibration levels experienced at the residence 9 kms from this different mine.</p>

No.	Objectors' issues to be addressed	Paragraph reference	Response
	hospital was similarly sleep deprived.		
3.	FRANK ASHMAN		
3.1.	<p>70. I have purchased a Bruel arid Kjaer Type 2250 calibrated noise meter, serial number 2506824 along with Type 4189 microphone serial number 02534266 and a sound calibrator Type 231 serial number 2528492. I understand these to be industry best practice noise metering devices and I have been trained for their operation by Bruel and Kjaer. These devices were calibrated with the National Association of Testing Authorities, Australia on 10 July 2015.</p> <p>71. On about ten occasions over the last 6 months, when I can hear noise from the mine I use the above sound equipment in the manner in which I was trained to determine the objective sound level for my information and interest.</p> <p>72. On at least two of those occasions I made diary notes of the measured sound levels along with the time and wind. On 26 April 2015, the mine noise was 40dBA at approximately 7:30am with no breeze. On 3 December 2015, the mine noise was 39dBA at approximately 7:00am with an easterly breeze.</p> <p>73. Exhibited to this affidavit and marked 'FA-7' is a true and correct copy of my diary notes.</p> <p>74. From my noise measurement observations I have come to believe that when I can hear the mine the objective sound level is approximately 39dBA LAeq.</p> <p>75. I hear the noise from the mine approximately once every fortnight on average and from my above experience would believe that the LAeq meets or</p>	70- 77	<p>A noise can be audible but not be the dominant contributor to the noise level being read off the sound level meter. If a noise is just audible, it can be 10 dBA (or maybe even more) below the ambient noise level (showing on the sound level meter) at that time.</p> <p>At long distances from a mine, it is important to look at the frequency spectrum, not necessarily the overall noise level, in order to isolate the noise contribution from a distant source given that it is typically the lower frequency noise that will be attributable to the mine.</p> <p>It should be noted that noise sources become audible in the order of 10 dB below the ambient level hence the importance of correctly determining what the contribution of a distant source may be even though it may be audible at that time. Further to the above, no levels recorded by Mr Ashman are above 40dBA Leq.</p> <p>See Annexure G No 46 for a worked similar example.</p> <p>The draft EA noise criteria are 3 dBA less than the 40dBA trigger for noise mitigation in the existing EA. NAC have also committed to silencing their mobile fleet of equipment.</p>

No.	Objectors' issues to be addressed	Paragraph reference	Response
	<p>exceeds 39 dBA on these occasions.</p> <p>76. On our property we have a primary place of residence and an adjacent machinery shed which contains implements, in addition to a small workshop. These places are approximately in the location of Sensitive Receptor numbered 42 in the EIS, for example Figure 11-20 - Predicted LAmox Noise Levels in year 2019 (Stability Class F) in Chapter 11 of the 2014 EIS.</p> <p>77. The noise from the mine is evident from our property and at times it can be quite annoying. The times that the noises from the mine can be heard are dependant on the weather conditions. We have experienced and recorded; using the equipment described above, that the peak noise from the mine is at around 6:30 am and has been measured at 40dbA. We have recorded this level at this time on a number of occasions. The draft licence conditions for Stage 3, set the peak noise levels at 37dbA LAeq at night. From our experience and records taken to date, this would indicate that we are currently experiencing in Stage 2, noise impacts 3db higher than what is predicted in the future.</p>		
3.2.	<p>Presently, we are experiencing noise that comes and goes and experiencing this audible low frequency sound 24 hours a day. The noise we experience seems to depend on the atmosphere. The noise characteristic is consistent, although the amplitude seems to come and go. From my experience I can correlate this to being a result of temperature inversion. In my experience, this occurs around the hours of daybreak, which can be as early as 4:30am~ during the summer periods. I am deeply concerned about the noise impacts for</p>	78	<p>Noise levels will go up and down based on many factors, one important factor is weather (particularly the further away from the mine you get).</p> <p>Wind speed, wind direction and temperature inversions are the most critical aspects of the weather that affect noise propagation.</p> <p>Temperature inversions generally speaking are at their strongest just before dawn so there is no reason to doubt Mr Ashman's observations.</p> <p>It is for all the above reasons that the 'norm' for a noise assessment is to model both "neutral" and "worst case" weather conditions as in the EIS. It can be seen in Section 11.7.1 of the EIS noise assessment that the EIS</p>

No.	Objectors' issues to be addressed	Paragraph reference	Response
	<p>Stage 3 as the mine will be 3km closer to our property. The peak noise limits for Stage 3 (being 37dbA Leq) are already being experienced by myself and my wife, and we believe that the noise impacts will be far greater than predicted should the mine proceed.</p>		<p>modelled a Stability Class F (to account for temperature inversions) and a light breeze blowing direct from source (the mine) to the receiver (the nearest residences). It was agreed in the JER that the worst case meteorological conditions were modelled appropriately in the EIS (JER, paragraph 43).</p>
4.	DESLEY SPIES		
4.1.	<p>51. We are concerned that Stage 3 development could impact us.</p> <p>52. We have a neighbour that is presently about 5km from us and this neighbour is affected by the noise from the dozers. We believe that these impacts could affect us if the proposal goes ahead.</p> <p>53. I am also concerned that the noise will have an impact on the local fauna and flora.</p>	51 - 53	<p>There is a significant distance (in the order of 10km) between the nearest existing pits and the Spies residence, which sits to the north of the mine. The Stage 3 pit expansions are west, south or east of the existing operations and therefore are not moving closer to the Spies residence.</p> <p>The increased ROM and stockpile activity to the north of the mine has been modelled in the 2004 EIS and noise levels at the Spies residence are predicted to be significantly below the draft EA noise conditions.</p> <p>There is no impact on local fauna (or flora). See Section 5.17 of this report.</p>
5.	JOHN COOK		
5.1.	<p>50. At 38 Campbell Street Oakey 4401, we noticed an increase in traffic noise from trucks associated with the New Acland Mine since its development at various times of the day.</p> <p>51. We are concerned about the uncertainty around future impacts relating to the noise from New Acland Mine Stage 3. There have been no estimates of predicted noise impacts for any of our properties.</p>	50 - 51	<p>Given the substantial distance (in the order of 15km) between the mine and the township of Oakey, it is expected that mining noise will be inaudible within Oakey.</p> <p>It is my understanding that all haulage to and from the mine is either via rail or via the Warrego Highway (where trucks use the bypass around Oakey). As such, no haulage goes past the Cook residence. The Report of Brett McClurg dated February 2016 states in Section 2.3 that the 8km Rail Spur and the new Train Loading Facility that is proposed as part of the Project will, when completed, have the impact of reducing mine haul truck traffic on the external (public) road (predominantly Jondaryn-Muldu Road) by up to 374vpd. The current mine haul truck traffic (between the mine pit and the TLF) will then use internal private haul roads.</p> <p>It is also my understanding that other heavy vehicle movements mostly</p>

No.	Objectors' issues to be addressed	Paragraph reference	Response
			access the mine via Jondaryan-Muldu Road, which again does not pass adjacent to the Cook property.
6.	MERILYN PLANT		
6.1.	<p>Noise - I have complained about noise in the past on many occasions and over many years but not very successfully as neither the mine or the government have seemed to do anything to reduce the noise so I have pretty much given up. That in no way means that I am not stressed about it. Even now in the time where the mine management are probably trying harder to be quiet the noise is sometimes very annoying.</p> <p>Vibration - I have tried to ignore the vibration but it is very annoying.</p>	Page4 - 5 (under heading "Noise and Vibration")	<p>The EIS noise modelling has predicted Stage 3 mining noise levels at the Plant property and they are predicted to be significantly below the draft EA noise conditions.</p> <p>It is similarly expected that vibration from blasting, whilst potentially perceivable, will be significantly below recognised blasting vibration criteria intended to cover both property damage and human annoyance.</p>
7.	TANYA PLANT		
7.1.	<p>The impacts of the mine have been terrible. These have included the loss of many neighbours and friends locally, fragmentation of the community, loss of local community infrastructure and activities, noise, dust, bright lights at night, concerns about water, mine people accessing our rand as though they own it without even telling us who they are, blasting, changed landscape and the feeling of loss of sovereignty and control over our land and own destiny and ongoing stress about the impacts and risk of further impacts.</p>	29	<p>The EIS noise modelling has predicted Stage 3 mining noise levels at the Plant property and they are predicted to be in compliance with the draft EA noise conditions.</p> <p>It is similarly expected that vibration from blasting, whilst potentially perceivable, will be significantly below recognised blasting vibration criteria intended to cover both property damage and human annoyance.</p>
8.	SID PLANT		
8.1.	<p>From my experience, the dust and noise impacts vary with the atmospheric conditions and can be more significant at night due to atmospheric conditions. In</p>	51	<p>Please refer to my responses in Section 3.2, where I state my agreement with the lay witness that weather effects have a significant influence over</p>

No.	Objectors' issues to be addressed	Paragraph reference	Response
	<p>my experience, the impacts seem to be highest on a still quiet night, when the general drift of the air is in our direction. This wind direction would be a south-southeasterly wind from the current operation. Strong winds tend to break the noise and dust up making the risk slightly lower</p>		<p>received noise levels.</p> <p>It was agreed in the JER that the worst case meteorological conditions were modelled appropriately in the EIS (JER, paragraph 43).</p>
8.2.	<p>57. New Acland Coal have not offered us any mitigation measures like air-conditioning or anything to reduce impacts. The only thing is was the clause in the original stage 1 agreement where they said that "the Miner will give sympathetic consideration to accepting any offer from the Objector to sell the Relevant Land to the Miner free of all encumbrances at market value". This isn't much of a solution.</p> <p>58. I have been personally affected by the noise from the development. The noise varies with the atmospheric conditions and what they are doing.</p> <p>59. Initially the noise kept us awake a lot for approximately 2 years until the overburden dump, between us and the early pit was high enough to make a bit of a barrier from where they were working them. However it has still continued to wake us up from time to time and to be a major annoyance.</p>	57 - 59	<p>Based on the predictions contained in the EIS, mitigation measures such as air conditioning at the Plant property are unlikely to be justified given that the predicted levels are in compliance with the draft EA noise conditions and that in my opinion, these criteria are appropriate for protecting the health and wellbeing of the surrounding community (including the protection of sleep amenity).</p> <p>As per previous comments, it is my opinion that the draft EA noise conditions are appropriate to protect the health and wellbeing of the surrounding community (including the protection of sleep amenity).</p> <p>The recommendation for a real-time, 24/7 noise monitor to the north of the mine will provide ongoing measurement data relevant to monitoring compliance with the draft EA noise conditions at the Plant residence.</p>
8.3.	<p>60. The noise seems to include very low frequency noise which seems to impact especially on Marilyn's health. This seems to be increasing and if Stage 3 sees an increase in the production, then I fear all of these things are going to get worse. Stage 3 indicates that the pits will be closer to us than where they are currently digging. The noise and dust</p>	60	<p>It is correct that noise from open cut mines has a predominantly low frequency character when heard/measured several kilometres away. This is due to the fact that low frequency noise travels much further than high frequency noise, as well as due to the acoustic characteristics of the machinery used for open-cut mining. The modelling conducted for the EIS take these points into account.</p> <p>To deal with low frequency noise problems, EHP have published their "Low</p>

No.	Objectors' issues to be addressed	Paragraph reference	Response
	impacts of this really worry me.		<p>Frequency Noise" (LFN) guideline. The EIS (in Section 11.7.6 and Appendix G.7.4) evaluated predicted noise levels in accordance with EHP's LFN guideline and found that there will not be a low frequency noise problem for Stage 3. See Part A Section 5.5 of this statement.</p> <p>It is my opinion that it is unlikely that low frequency noise from existing operations will differ greatly from the Stage 3 predictions given that the Stage 3 pits are approximately the same distance as existing pits from the Plant's residence.</p>
8.4.	<p>61. We have also noticed that when the company are blasting the house shakes and wobbles a bit sometimes. It is not necessarily a noise that we can hear but we can certainly feel it.</p> <p>62. The impact from the noise began to effect Merilyn when the pit began, which was from the beginning of Stage 1, around 2002.</p> <p>63. We have often raised concerns with the mine about the noise and made numerous complaints with the NAC but nothing seems to have been done to address this. We have also made complaints to the government, however because our complaints were not on the correct piece of paper (eg were emails sent when woken in the middle of the night) nothing seems to have been done.</p>	61 - 63	<p>The draft EA blasting conditions are in line with recognised limits for protecting both human amenity and property damage from blasting. The vibration levels nominated by the CG may be perceptible however the criteria are designed to ensure that not even cosmetic damage, let alone structural damage, would occur to the property.</p>
9.	SHARYN MUNRO		
9.1.	<p>Exploration alone renders the rural area an industrial zone, but once a mine is operating, the suffering ramps up as the impacts of dust and pollution and traffic and incessant noise and/or insidious low frequency noise are felt; throw in sleep deprivation, a company that denies or ignores everything and toothless</p>	10	<p>It is my opinion that the draft EA noise conditions are appropriate for the protection of the health and wellbeing of the surrounding community.</p> <p>Both experts have agreed on an expanded real-time, 24/7 monitoring system for implementation throughout the Stage 3 operations. It is my opinion that</p>

No.	Objectors' issues to be addressed	Paragraph reference	Response
	<p>government monitoring or penalties - and people go over the edge or get out, or both, beaten, often broken - and usually broke. Fighting to save your future livelihood means it's hard to find time to actually make that living, especially for farmers. As a farmer near Clermont told me, the only reason they had time to take the months to build a case against Rio Tinto to win any conditions against losing their water was because they'd had such a bad drought that there were no crops. to harvest. But approval with conditions, no matter how many - always 'rigorous' and 'stringent'- is no substitute for rejecting a project when that is really what is warranted. The damage will be done regardless, and I'm sure others will tell you of the manipulation of monitoring, of the lack of reporting or appropriate penalising of breaches of conditions, a practice reported to me all over the country. My book is littered with first hand instances of this.</p>		<p>such a system will not be open to manipulation of the monitoring results.</p>

No.	Objectors' issues to be addressed	Paragraph reference	Response
10.	STEVEN WARD		
10.1.	<p>15) Until 2011, my involvement with the mine remained largely indirect, since my wife submitted several noise complaints on both our behalves. During this period, I regularly found the noise emanating from the mine to be annoyingly loud to the extent that it interfered with my sleep and the sleep of my wife and children.</p> <p>16) In particular, it concerned me that the sounds of the dump trucks and the drone of the plant at the mine were still penetrating despite windows being shut and the television being on during the evening.</p> <p>17) My involvement with the mine became more in-depth during 2011. My wife and I were attempting to work collaboratively with the mine in order to identify and reduce noise impacts at our residence.</p>	15 - 17	<p>The draft EA noise conditions are appropriate for preventing sleep disturbance in the future.</p> <p>Based on the extent of façade noise reduction information contained in the JER (see paragraphs 182 to 192), it is my opinion that the draft EA noise conditions are appropriate for all types of dwellings.</p>
10.2.	<p>21) In the aftermath of these disappointing engagements with the mine, the Department of Environment and Heritage Protection (EHP) undertook noise monitoring at our residence on two occasions (once in summer 2012 and once in winter 2012) in response to a formal complaint we had made about the high level of noise impacting on our health and wellbeing.</p> <p>22) Each EHP noise monitoring event lasted 2-3 days and did not necessarily coincide with the highest noise levels. The initial EHP noise monitoring event showed noise values just below the allowable EA limits, whilst the second EHP noise monitoring event demonstrated a breach of the mines 40 decibel limit on night-time noise.</p>	21 - 22	<p>Based on my review of the EHP monitoring report, it is my opinion that mine noise levels may have been very marginally over 40 dBA Leq (1hr) on one occasion in July 2012, however the Department's letter is very brief and provides no detail to allow a technical review of the findings, such as the raw monitoring results, mine noise contribution excluding extraneous sources such as insects or the specific application of numerical penalties for tonality or impulsivity.</p> <p>See also Bruce Denney's Affidavit (see Item Nos 4.4 of Exhibit No BD27).</p>
10.3.	I also have concerns that the noise modelling done	32	

No.	Objectors' issues to be addressed	Paragraph reference	Response
	<p>for the project was inadequate to appropriately determine the extent of those impacts. For example, based on the noise modelling the mine admits that despite implementation of mitigation measures, "...the predicted noise levels from the mining operation will still exceed EHP's <i>Planning for Noise Control Guideline's</i> Planning Noise limit (PNL) at a number of noise sensitive receptors." The mine surmises that "By implanting noise management and mitigation measures including reduced night time operation and using attenuated equipment (noise attenuation of noisier equipment including excavators, track dozers, loaders and rear dump trucks), the predicted noise levels from the mining operation will meet EPP (noise) LAEQ,adj,1hr (noise level targets) at all noise sensitive receptors over the life of the revised Project." There are several key issues with this admission by the mine, which include:</p> <ul style="list-style-type: none"> a) the mine appears unable to meet appropriate noise levels for their Stage 3 project under ordinary operating conditions; and b) the elements of noise control proposed by the mine to be implemented <i>has</i> to be the best practice and <i>not</i> fall short of this standard since there appears no margin for error. 		<p>It is not uncommon at all for mines to implement either mitigation and/or management measures in order to achieve certain noise limits.</p> <p>Yes, it is likely that NAC will need to undertake significant noise attenuation of its equipment in order to achieve the draft EA noise conditions. But this is not dissimilar to the efforts miners undertake in the Hunter Valley region in NSW where communities, similar to those living in the Acland area, are located in the vicinity of mining activities.</p>
11.	AILEEN HARRISON		
11.1.	<p>24) We were also affected by blasting at the property. We were supposed to be notified before each blast and each blast was supposed to be monitored, but this did not always occur.</p> <p>25) After blasts our Alpacas would jump up and look around shaking and looking scared. They would</p>	24 - 30	<p>Following a literature review, I was not able to find any information specifically in relation to the response of alpacas to blast noise or vibration. I refer to paragraphs 169 to 179 in relation to this issue.</p>

No.	Objectors' issues to be addressed	Paragraph reference	Response
	<p>often bunch up in a group around s the clam and would shake. From the way they behaved I don't think they were able to get used to the noise and would often jump up when there was any sound and/or vibrations.</p> <p>26) We came to notice that when monitoring teams did tum up there would only be a small blast but when they did not there would be a large one.</p> <p>27) There were also no trees between the New Acland Mine and our property.</p> <p>28) I believe there was a condition to have trees between the mine and the farms.</p> <p>29) Some of the blasts were exceptionally large and these were generally the blasts that would not be monitored, suggesting to us that they exceeded the limit on these occasions. They would cause the whole house to shake and even caused some of our crockery to break, including antiques.</p> <p>30) My house had been built with 'Polly Waffle' batts beneath the foundations which are designed to absorb movement and the fact that the house still shook shows the extent of the blast's vibrations.</p>		<p>A row of trees to block line of sight with the mine would only assist as a visual aid. A row of trees would have a negligible effect on the mine noise levels as measured by a sound level meter.</p> <p>The draft EA blasting criteria are in line with recognised limits for protecting both human amenity and property damage from blasting. The vibration levels nominated by the draft EA may be perceptible however the criteria are designed to ensure that not even cosmetic damage, let alone structural damage, would occur to the property.</p>
11.2.	<p>36) It was also an inadequate offer because it would not lessen the noise of the mine, the disturbance from blasting, improve the air outside for animals and tourists nor stop the seepage of coal into the house nor make our tank water drinkable.</p> <p>37) When we lived at Bremar by late 2007 the noise became so loud that we were not able to hear the wireless at night.</p> <p>38) During 2006 and 2007 I made many complaints about noise to the Mine. No action seemed to taken by them.</p>	36 - 46	<p>I have not been provided with any results from monitoring undertaken at this property so I cannot make an informed comment on the statement provided other than to say:</p> <ul style="list-style-type: none"> • It is highly unlikely that a noise level of 76 dBA was measured that was attributable to the mine (other than possibly from blasting) • Noise from animals (wildlife, dogs, insects etc) can interfere with noise measurements and should ideally be absent when noise measurements are being conducted.

No.	Objectors' issues to be addressed	Paragraph reference	Response
	<p>39) One night in 2007, after many fruitless complaints I finally demanded that someone come up from the mine. Two employees of the mine came out to our property and commenced monitoring from our gate.</p> <p>40) When they attended all of the machinery in and around the pit was switched off. Each of the machines were then switched on one by one. Every motor could be heard to start individually. We received a report which stated that the testers were astonished at the amount of noise however I do not have a copy of that report. I cannot get a copy of that report from my daughter. I believe the reason is that it is covered by confidentiality.</p> <p>41) Some months later I again demanded (politely asking had gotten me nowhere) action on noise. An NAC night duty employee carried out noise monitoring which I asked him to conduct outside our bedroom window. This would be in 2007 when stage 2 was underway.</p> <p>42) This employee showed us at one time a recording of 76dB, however we were later told the employee was not trained properly in using the recording equipment. Incidents like these have created a lot of distrust between landholders and NAC.</p> <p>43) After further complaints which we did not feel had been addressed NAC gave us a telephone number for a Brisbane based noise assessor, Mr David Moore.</p> <p>44) After contacting him with 3 or 4 phone calls over several weeks Mr Moore eventually came out. It was hard to get him to come out as he had a tight schedule with many conditions that had to be met</p>		

No.	Objectors' issues to be addressed	Paragraph reference	Response
	<p>before he could do any monitoring.</p> <p>45) On his visits he would not monitor noise levels at dawn or twilight as it was said wildlife and livestock could interfere with his monitoring. There was an incident when we were told the levels could not be monitored correctly as a dog had barked in the background, and on another occasion the insect noise was causing interference.</p> <p>46) It seemed to me that on the occasions when Mr Moore came to monitor noise the mine was quieter than usual.</p>		
12.	DAVID VONHOFF		
12.1.	<p>99) There have been changes to the noise levels from the mine since the development started. There is now a constant hum which can grow louder depending on wind movement and atmospheric temperature. Generally, when the wind is blowing the hum is less obvious.</p> <p>100) On one occasion there has also been a shaking in the ground.</p> <p>101) I am concerned that the increased proximity of the Stage 3 expansion might increase the humming noise which I already find quite annoying. If the noise was substantially louder I would probably make a complaint about it.</p>	99 - 101	<p>Noise levels will go up and down based on many factors, one important factor is weather (particularly the further away from the mine you get).</p> <p>Wind speed, wind direction and temperature inversions are the most critical aspects of the weather that affect noise propagation.</p> <p>It is entirely feasible that vibration from a blast could be felt in the ground however compliance with the draft EA blasting limits will protect against damage to any property.</p>
13.	MAX SCHOLEFIELD		
13.1.	<p>68) In terms of noise impacts, we have always been able to hear the mine, from the beginning of Stage 1 and now Stage 2.</p> <p>69) I have been personally affected by the noise from the development and there has been an</p>	68 - 71	<p>Inaudibility is not a criterion for mining noise in Queensland, nor any state in Australia. Based on the draft EA noise conditions protecting health and wellbeing and that predicted noise levels for Stage 3 operations are below these criteria, it is expected that the protection of sleep amenity will continue</p>

No.	Objectors' issues to be addressed	Paragraph reference	Response
	<p>increase in the noise since the development has started, the noise has always worried me more than my wife, Jane. However, when the mine moves closer to us I expect the noise will increase dramatically, and therefore the impacts will worsen not just for myself, but for both of us. While it does not interrupt our sleep or cause us to raise our voices, it is constantly there and I find it very disturbing.</p> <p>70) There is a constant noise disturbing the quiet enjoyment of my property and this is my main concern in this area. Compared to a busy highway which has quiet times at night, the noise occurs 24/7 and I fear it will become extremely unbearable and mind bending the closer it comes to our property.</p> <p>71) The company have not offered any mitigation measures in terms of the noise impacts.</p>		<p>at the Scholefield residence.</p> <p>As such, there would be no acoustic trigger for offering mitigation measures at the property (noting that NAC will be spending considerable money on mitigation measures for their equipment in order to meet the draft EA noise conditions).</p> <p>See Bruce Denney's Affidavit (see Item Nos 4.1 and 4.8 of Exhibit No BD27).</p>
14.	NOEL WIECK		
14.1.	<p>123) The property has two proposed sensitive receptors identified in the EIS for the Stage 3 expansion.</p> <p>124) The blasting from the mine has caused windows to rattle, although it is yet to cause physical damage.</p> <p>125) We are concerned about the impact that the noise could have, both the sound and noise vibrations on our milking herd. This could unnerve the herd and impact on their wellbeing.</p> <p>126) We are concerned that as the house on The Park will be 4.5km from the Stage 3 expansion, that there may be physical damage caused by the</p>	123 - 126	<p>Windows rattling can occur at vibration levels much lower than those that cause any form of cosmetic damage, let alone structural damage to a property.</p> <p>Provided compliance with the draft EA blasting conditions are met, there should be no issues associated with the integrity of the residence due to blasting vibration (or over-pressure).</p> <p>Airblast over-pressures of less than 136 dB are unlikely to have adverse impacts on farm animals. Indeed, even high levels may still be acceptable.</p>

No.	Objectors' issues to be addressed	Paragraph reference	Response
	vibrations from blasting.		The draft EA blast limits of 115 dB (90%) and 120 dB (maximum) are therefore appropriate to avoid adverse impact on farm animals. See Section 5.17 of this statement for more evidence in relation to impacts on livestock.
15.	GRANT WIECK		
15.1.	<p>64. To date, noise has not really infringed on our quality of life. We can hear the trucks sometimes and a few rattling sounds here and there. I have observed a change in low levels of background noise. I estimate these changes would be consistent with my understanding of how the location of the pits and associated activity have progressed.</p> <p>65. Our biggest concern is how the livestock will react to the noise and vibration from blasting should Stage 3 go ahead. If they react badly, then their levels of adrenaline will spike and this will have a devastating effect on milk production. High levels of adrenaline have significant negative effects on other hormones that are essential in milk production and cow reproduction. This is a crucial concern for the viability of our business and the accreditation of the quality of milk we produce on the farm.</p>	64 - 65	Airblast over-pressures of less than 136 dB are unlikely to have adverse impacts on farm animals. Indeed, even high levels may still be acceptable. The draft EA blast limits of 115 dB (90%) and 120 dB (maximum) are therefore appropriate to avoid adverse impact on farm animals. See Section 5.17 of this statement for more evidence in relation to impacts on livestock.

Annexure G - Opinion and Findings On Noise and Vibration Matters Raised in MLA And EA Objections

No.	Specific objection	MLA Objector	MLA Reference	EA Objector	EA Reference	Response
1	<p>If the project proceeds, it will have unacceptable noise impacts on human and environmental health, including wildlife. This will also adversely affect social values of the region.</p> <p>David and Cheryl Vonhoff also add unacceptable vibration impacts.</p>	<p>DDEC;OCAA; John Cook; Patricia Cook; Kevin and Desley Spies; Tanya Plant; Sid Plant; Noel and Fay Wieck; Dr Steven Ward; David and Cheryl Vonhoff; Meryllyn Plant; Paul and Angela Mason</p>	<p>Paragraph 23 ((DDEC; OCAA; JC; PC); Paragraph 24 (Spies); Paragraph 60, 118, EIS submission p 42-54, AEIS submission p25, 26 (TP); Paragraph 61, 119 (SP); Paragraph 1 under Environmental Monitoring heading (NFW); Paragraph 30 (Ward); Paragraph 3, 4 (DCV); Paragraph 20, EIS submission, under heading 4; AEIS submission (Feb 2014), Page 24 (MP); Paragraph 28 (Mason)</p>	<p>Tanya Plant; Sid Plant; Max and Jane Scholefield; Meryllyn Plant; Aileen Harrison; OCAA; Kevin and Desley Spies; David and Cheryl Vonhoff; Dr Steven Ward; Noel and Fay Wieck; John Cook; Patricia Cook; Russell Byron</p>	<p>EA submission paragraph 48,98 (TP); EA submission paragraph 48,106 (SP); Page 6, paragraph 21 (MJS EA submission); Page 5, paragraph 27 and page 7, paragraph 54 (MP EA Submission); Paragraph 2 (AH); Paragraph 22 (OCAA); Paragraph 24 of Attachment A (Spies); Page 2 paragraph 22 (DCV EA Submission); Para 29 Ward EA submission and objection; Para 2 under Social Impact heading of NFW EA submission; EA Submission page 5 para 20 (JC); EA Submission page 5 para 20 (PC); EA</p>	<p>See the following reference(s) for my response to this objection:</p> <ul style="list-style-type: none"> • JER - Section 6 (para 170 to 225) • Part A – Section 5.1 • Part A – Section 5.2 • Part B – Section 5.17

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					Submission Page 4 and 5 (RB)	
2	<p>The noise modelling done for the project was inadequate to appropriately determine the extent of those impacts.</p> <p>Inaccurate baselines were obtained.</p> <p>Example by Tanya Plant:</p> <ul style="list-style-type: none"> the current EA noise limit of 40db at night has been recoded to be exceeded by the Queensland Government after just a few days monitoring, (at a time when NAC was already aware of my concerns about noise and had undertaken actions to reduce noise) even the limited data that we received of noise monitoring conducted by the mine's expert in just 3 samples recorded found LAeq of 38.7, and LMax of 55 at a time when the wind was coming from another direction 	DDEC; OCAA; John Cook; Patricia Cook; Kevin and Desley Spies; Glenn Beutel; Paul and Angela Mason; Tanya Plant; Sid Plant; Dr Steven Ward; Marilyn Plant	<p>Paragraph 24 ((DDEC; OCAA; JC; PC); Paragraph 25 (Spies); Page 9, (GB); Paragraph 29 (Mason); Paragraph 61, EIS submission p49, 51, 52 (various examples provided in pp42-54), AEIS submission p10, 11, 13, 14, 15, 25, 26, 28 (various examples provided) (TP); Paragraph 62 (SP); Paragraph 31 (Ward); Annexure "Further notes on reasons for objections" under heading 7; AEIS submission (Feb 2014), Page 24, 53 (MP)</p>	Tanya Plant; Sid Plant; Max and Jane Scholefield; Marilyn Plant; OCAA; Kevin and Desley Spies; David and Cheryl Vonhoff; John Cook; Patricia Cook	EA submission paragraph 49 (TP); EA submission paragraph 49 (SP); Page 6, paragraph 22 (MJS EA submission); Page 5, paragraph 28 and page 8, paragraph 60 (MP EA Submission); Paragraph 23 (OCAA); Paragraph 25 of Attachment A (Spies); Page 2 paragraph 23 (DCV EA Submission); Para 30 EA submission and objection (Ward); EA Submission page 5 para 21 (JC); EA Submission page 5 para 21 (PC)	<p>See the following reference(s) for my response to this objection:</p> <ul style="list-style-type: none"> JER - Section 5 JER - Section 7 Part A - Section 5.6 Part A – Section 5.7 Part A – Section 5.9 Part A – Section 5.12 Part A – Section 5.16 Part B – Section 5.18
3	<p>The past performance of the proponent with regards to noise has not been satisfactory, e.g. exceeding of EA limits.</p> <p>Example provided by JC: This company has demonstrated a long</p>	DDEC;OCAA; John Cook; Patricia Cook; Kevin and Desley Spies; Tanya Plant; Dr Steven Ward; Marilyn	Paragraph 26 (DDEC and OCAA); Paragraph 63, 149, 150, 151, EIS submission, Page 4, 45, 46	Tanya Plant; Sid Plant; Marilyn Plant; Aileen Harrison; Glenn Beutel	EA submission paragraph 51 (TP); EA submission paragraph 51 (SP); Page 8, paragraph 64	<ul style="list-style-type: none"> NAC have committed to removing the rail load out facility at Jondaryan and relocating it within the mining lease. This will result in a significant noise reduction for the residents of Jondaryan.

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	<p>history of dust and noise exceedances in their operations at Jondaryan and do not engender confidence that they will operate to a higher standard of excellence on any future mining operations."</p> <p>There is evidence of a pattern of non-compliance by the applicant in exceeding safe noise levels in their existing operations which breaches their general duty not to carry out an activity that may cause harm without taking measures to prevent or minimise them.</p>	Plant	(various examples provided in pp42-54), AEIS submission p47 (various examples provided, emails attached) (TP); Paragraph 64, 158, 159, 160 (SP); Paragraph 33 (Ward); AEIS submission (Feb 2014), Page 25, AEIS submission (29/09/13), page 13, Various comments made by Marilyn Plant in EIS, AEIS and second AEIS submission regarding past performance (MP); Page 1 (JC)		(MP EA submission); Paragraph 2 (AH); EA Submission Attachment A page 9/17 (GB)	<p>See the following reference(s) for my response to this objection:</p> <ul style="list-style-type: none"> • Part A – Section 5.16 • Part B – Section 5.18
4	The adverse impacts of noise are contrary to the public interest	Kevin and Desley Spies; Tanya Plant; Sid Plant; Dr Steven Ward; Marilyn Plant; John Cook; Patricia Cook	Paragraph 25 (JC; PC); Paragraph 26 (Spies); Paragraph 62 (TP); Paragraph 63 (SP); Paragraph 32 (Ward); Paragraph 21, 38(a), 38(c) (MP)	Tanya Plant; Sid Plant; Kevin and Desley Spies	EA submission paragraph 50 (TP); EA submission paragraph 50 (SP); Paragraph 26 of Attachment A (Spies)	<p>See the following reference(s) for my response to this objection:</p> <ul style="list-style-type: none"> • JER - Section 6 (para 170 to 225) • Part A – Section 5.1 • Part A – Section 5.2
5	EIS / AEIS indicates that the proposed project cannot comply	Tanya Plant; Sid	Paragraph 64(a), EIS submission	Tanya Plant; Sid	EA submission paragraph 52(a)	<ul style="list-style-type: none"> • It is my opinion that the Planning for

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	with the Queensland Government Planning for Noise Control Guideline limits. This non-compliance is unacceptable.	Plant	p42, 43, AEIS submission p10 (TP); Paragraph 65(a) (SP)	Plant	(TP); EA submission paragraph 52(a) (SP)	<p>Noise Control guideline is not appropriate for this project</p> <p>See the following reference(s) for my response to this objection:</p> <ul style="list-style-type: none"> • JER - Section 6 (para 219 to 223) • Part A – Section 5.1 • Part A – Section 5.2
6	Operation Noise Modelling Results under typical mining operations show the proposed project exceeds the Environmental Protection Policy noise limits at least 5 sensitive receptors (even when they allow an additional 7db assuming people only have their windows partially open)	Tanya Plant; Sid Plant	Paragraph 64(b), EIS submission p42, 50, AEIS submission p10 (TP); Paragraph 65(b) (SP)	Tanya Plant; Sid Plant	EA submission paragraph 52(b) (TP); EA submission paragraph 52(b) (SP)	<ul style="list-style-type: none"> • The EIS noise assessment shows that no sensitive receptors exceed the draft EA conditions (based on the modelling methodology used) • I am unsure whether this objection comes from Table 11.14 of the EIS Noise & Vibration chapter where five residences are highlighted grey because they are within 2 dBA, but still below the limits in the draft EA conditions <p>See the following reference(s) for my response to this objection:</p> <ul style="list-style-type: none"> • JER - Section 7 • Part A – Section 5.6 • Part A – Section 5.9
7	The EIS only shows a snapshot of 3 points in time throughout the life of the mine. This leaves plenty of room for bias (e.g. the location of digging and dumping and other machinery and operations and the landforms at the time etc) and is	Tanya Plant; Sid Plant	Paragraph 64(c), EIS submission page 51 (TP); Paragraph 65(c) (SP)	Tanya Plant; Sid Plant	EA submission paragraph 52(c) (TP); EA submission paragraph 52(c) (SP)	<p>See the following reference(s) for my response to this objection:</p> <ul style="list-style-type: none"> • JER - Section 7 • Part A – Section 5.6 • Part A – Section 5.9

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	risky.					
8	The proponent doesn't adequately consider how much lower the ambient noise is without the mine and as such the proposed noise limits would be a significant amount of noise above the noise levels that would otherwise be present in the area. This is a significant adverse impact and interferes with social values and the peaceful enjoyment of land and property.	Tanya Plant; Sid Plant	Paragraph 64(d) (TP); Paragraph 65(d) (SP)	Tanya Plant; Sid Plant	EA submission paragraph 52(d) (TP); EA submission paragraph 52(d) (SP)	See the following reference(s) for my response to this objection: <ul style="list-style-type: none"> • JER - Section 5 • JER – Section 6 (para 170 to 225) • Part A – Section 5.1 • Part A – Section 5.2
9	The proposed project relies on trust that they will comply (e.g. achieve 37db LAeq,adj,1hr at night - which is a higher level of noise than perhaps should be allowed) "By implementing noise management and mitigation measures including reduced night time operation and using attenuated equipment (noise attenuation of noisier equipment including excavators, track dozers, loaded and rear dump trucks)" (p11-61). There is insufficient confidence that this will avoid nuisance, harm on unreasonable interference with the quiet enjoyment of life and property.	Tanya Plant; Sid Plant	Paragraph 64(e), EIS submission p43 (TP); Paragraph 65(e) (SP)	Tanya Plant; Sid Plant	EA submission paragraph 52(f) (TP); EA submission paragraph 52(f) (SP)	The proposed project does not rely on trust to comply with the noise limits, it will rely on an extensive, real-time noise monitoring system used in conjunction with the existing TARP. Furthermore, the noise monitoring results will be published publicly every month. <p>See the following reference(s) for my response to this objection:</p> <ul style="list-style-type: none"> • JER - Section 7 • JER - Section 8 • JER - Section 10 • Part A – Section 5.6 • Part A – Section 5.9 • Part B – Section 5.19
10	The proponent's proposal seems to rely on future agreements being reached with adversely impacted sensitive receptors and the possibility that sensitive receptors could be forced into mediation at a	Tanya Plant; Sid Plant	Paragraph 64(f) (TP); Paragraph 65(f) (SP)	Tanya Plant; Sid Plant	EA submission paragraph 52(g) (TP); EA submission paragraph 52(g) (SP)	<ul style="list-style-type: none"> • Reaching future agreements with adversely impacted sensitive receptors is but one of a suite of mitigation and management measures available to NAC as part of the Noise & Vibration

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	later stage if the proposal is approved. (For example the expert report from Acoustics RB raises concerns in this regard, as well as other noise concerns (Report attached). This is an unreasonable impact on people who may be impacted and also increases the community impact of the proposed project.					<p>Management Plan for Stage 3 operations</p> <p>See the following reference(s) for my response to this objection:</p> <ul style="list-style-type: none"> JER - Section 10
11	The proponent's mining operation has already exceeded even more lenient Environmental Authority limits of 40db LAeq,adj,1hr at sensitive receptors even when operating at a substantially smaller scale than the proposed stage 3.	Tanya Plant; Sid Plant	Paragraph 64(g), EIS submission p52 (TP); Paragraph 65(g), submission on revised EIS, page 3 "Revised project is largely the same and actually worse in many regards" and page 5, "Social and Community Impacts" (SP)	Tanya Plant; Sid Plant	EA submission paragraph 52(h) (TP); EA submission paragraph 52(h) (SP)	<p>See the following reference(s) for my response to this objection:</p> <ul style="list-style-type: none"> Part A – Section 5.16 Part B – Section 5.18
12	The current project has had to reduce operations between 1am and 6am, due, at least in part, to the difficulty complying with noise limits even at the smaller scale than what is proposed. (See ABC news article for example July 2014 "Some new Acland Mine workers face pay cut from reduced hours: Union")	Tanya Plant; Sid Plant	Paragraph 64(h) (incorrectly numbered (a)) (TP); Paragraph 65(h) (incorrectly numbered (a)) (SP)	Tanya Plant; Sid Plant	EA submission paragraph 52(i) (incorrectly numbered (a)) (TP); EA submission paragraph 52(i) (incorrectly numbered (a)) (SP)	<p>See the following reference(s) for my response to this objection:</p> <ul style="list-style-type: none"> Part A – Section 5.16 Part B – Section 5.18 Part B – Section 5.19
13	The limited monitoring, the refusal to provide data to impacted sensitive receptors and the attitude to addressing noise complaints has	Tanya Plant; Sid Plant	Paragraph 64(i) (incorrectly numbered (b)) (TP); Paragraph	Tanya Plant; Sid Plant	EA submission paragraph 52(j) (incorrectly numbered (b))	<p>See the following reference(s) for my response to this objection:</p> <ul style="list-style-type: none"> Part A – Section 5.16

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	been unsatisfactory in the past.		65(i) (incorrectly numbered (b)) (SP)		(TP); EA submission paragraph 52(j) (incorrectly numbered (b)) (SP)	<ul style="list-style-type: none"> Part B – Section 5.18
14	In addition to the in pit mining and transportation of material and the location and operation of an additional coal processing plant and the proposed location and operation of a 200,000t (approximately 21m high) stockpile of coal in their "materials handling facility" near Muldu is a particular concern. Concerned about noise, dust, traffic and land use contamination regarding the materials handling facility.	Tanya Plant; Sid Plant	Paragraph 64(j) (incorrectly numbered (c)), EIS submission, page 12, 13, AEIS submission p23 (TP); Paragraph 65(j) (incorrectly numbered (c)) (SP)	Tanya Plant; Sid Plant	EA submission paragraph 52(k) (incorrectly numbered (c)) (TP); EA submission paragraph 52(k) (incorrectly numbered (c)) (SP)	<p>See the following reference(s) for my response to this objection:</p> <ul style="list-style-type: none"> JER – Section 7 JER – Section 8
15	The proposed EA conditions are still inadequate to sufficiently address concerns about noise (or several other) impacts. EIS does not propose strong enough conditions to ensure compliance with noise limits. The draft EA conditions include inadequate monitoring requirements to ensure compliance with the conditions (such as the noise and dust conditions as they relate to various receptors).	Tanya Plant; Sid Plant	Paragraph 64(k) (incorrectly numbered (d)), EIS submission p44 (TP); Paragraph 65(k) (incorrectly numbered (d)) (SP)	Tanya Plant; Sid Plant	EA submission paragraph 52(l) (incorrectly numbered (d)) (TP); EA submission paragraph 52(l) (incorrectly numbered (d)) (SP) EA submission paragraph 155 (TP); EA submission paragraph 165 (SP)	<p>See the following reference(s) for my response to this objection:</p> <ul style="list-style-type: none"> JER – Section 6 (para 170 to 225) JER – Section 9 Part A – Section 5.1 Part A – Section 5.2
16	Multiple people have commented that they find the vibration unpleasant and that they have concerns about movement of their	Tanya Plant; Sid Plant	Paragraph 64(l) (incorrectly numbered (e)) (TP); Paragraph	Tanya Plant; Sid Plant; Marilyn Plant	EA submission paragraph 52(m) (incorrectly numbered (e))	<p>See the following reference(s) for my response to this objection:</p>

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	houses.		65(l) (incorrectly numbered (e)) (SP); AEIS submission (Feb 2014), Page 25 (MP)		(TP); EA submission paragraph 52(l) (incorrectly numbered (d)) (SP); Page 7, paragraph 54 (MP EA submission)	<ul style="list-style-type: none"> Part B – Section 5.22
17	The proposed project cannot meet noise criteria under "typical" mining operations.	Tanya Plant; Sid Plant	Paragraph 65, 149, EIS submission p43, 44, AEIS submission p10-11 (TP); Paragraph 66, 158 (SP)	Tanya Plant; Sid Plant	EA submission paragraph 53 (TP); EA submission paragraph 53 (SP)	<ul style="list-style-type: none"> It is (typical) for mining operations throughout Australia to employ a suite of noise management & mitigation Measures as required to achieve compliance with approved EA conditions. The management and mitigation operations outlined in the EIS and the JER for NAC's Stage 3 operations are being utilised by other mine sites throughout Australia <p>See the following reference(s) for my response to this objection:</p> <ul style="list-style-type: none"> JER – Section 7 JER – Section 8 JER – Section 10 Part B – Section 5.19
18	Proposal relies on unproven non-typical operations	Tanya Plant; Sid Plant	Paragraph 66 (TP); Paragraph 67 (SP)	Tanya Plant; Sid Plant	EA submission paragraph 54 (TP); EA submission paragraph 54 (SP)	<ul style="list-style-type: none"> It is (typical) for mining operations throughout Australia to employ a suite of noise management & mitigation measures as required to achieve compliance with approved EA conditions. The management and mitigation

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						<p>operations outlined in the EIS and the JER for NAC's Stage 3 operations are being utilised by other mine sites throughout Australia and are not unproven.</p> <p>See the following reference(s) for my response to this objection:</p> <ul style="list-style-type: none"> • JER – Section 7 • JER – Section 8 • JER – Section 10 • Part B – Section 5.19
19	Proposed solutions are unproven and may pose an unreasonable interference with people's lives and enjoyment of their properties.	Tanya Plant; Sid Plant	Paragraph 67 (TP); Paragraph 68 (SP)	Tanya Plant; Sid Plant	EA submission paragraph 55 (TP); EA submission paragraph 55 (SP)	<ul style="list-style-type: none"> • Refer row 18 Annexure G. <p>See the following reference(s) for my response to this objection:</p> <ul style="list-style-type: none"> • JER – Section 7 • JER – Section 8 • JER – Section 10 • Part A – Section 5.1 • Part A – Section 5.2 • Part B – Section 5.19
20	There are concerns about the proposed project's adverse impact on amenity. As well as adverse impact on the lives of people nearby this also has the capacity to cause adverse economic impacts such as reduced marketability of land or products or services (such as farm stays or tourism ventures).	Tanya Plant; Sid Plant	Paragraph 57, 68 (TP); Paragraph 58, 69 (SP)	Tanya Plant; Sid Plant	EA submission paragraph 56 (TP); EA submission paragraph 56 (SP)	<p>See the following reference(s) for my response to this objection:</p> <ul style="list-style-type: none"> • JER – Section 6 (para 170 to 225) • Part A – Section 5.1 • Part A – Section 5.2 • Part B – Section 5.21

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21	<p>Example of ways in which the proponent's actions have caused detrimental impact on community:</p> <ul style="list-style-type: none"> - the response to addressing noise complaints and other issues in the past has been disappointing (failure to provide data, failure to take adequate action to resolve concerns, dismissing complaints after very limited monitoring not indicating an exceedance of EA conditions although the limits may have been exceeded on other occasions etc) 	Tanya Plant; Sid Plant	Paragraph 117(e) (TP); Paragraph 118(e), submission on the revised EIS, page 5, "Social and Community Impacts" (SP)	Tanya Plant; Sid Plant	EA submission paragraph 97(g) (TP); EA submission paragraph 105(g) (SP)	<p>See the following reference(s) for my response to this objection:</p> <ul style="list-style-type: none"> • Part A – Section 5.16 • Part B – Section 5.18
22	<p>Example of ways in which the proponent's actions have caused detrimental impact on community:</p> <ul style="list-style-type: none"> - the dust and noise and other adverse impacts that the proponent has caused to neighbours and near neighbours have been an obvious adverse impact on the community, the wellbeing of people (e.g. through loss of sleep, stress etc) and on the amenity of the region. The fact that the proposal seems to be unable to comply with noise and dust criteria under typical mining operations, indicates that there is a very high risk of further adverse impacts on the community in this regard and that the wellbeing of people is not the predominant concern of the proponent in this regard. 	Tanya Plant; Sid Plant	Paragraph 117(g) (TP); Paragraph 118(g) (SP)	Tanya Plant; Sid Plant; Marilyn Plant	EA submission paragraph 97(i) (TP); EA submission paragraph 105(i) (SP); Page 5, paragraph 27 (MP EA Submission)	<p>See the following reference(s) for my response to this objection:</p> <ul style="list-style-type: none"> • JER – Section 6 (para 170 to 225) • JER – Section 7 • JER – Section 8 • JER – Section 10 • Part A – Section 5.1 • Part A – Section 5.2 • Part B – Section 5.19
23	<p>Example of ways in which the proponent's actions have caused detrimental impact on community:</p> <ul style="list-style-type: none"> - The proponent has omitted nearby 	Tanya Plant; Sid Plant	Paragraph 117(k), EIS submission, page 10, 11, 50 (TP);	Tanya Plant; Sid Plant	EA submission paragraph 97(m) (TP); EA submission	It is my understanding that the sensitive receptors utilised for the EIS are correct.

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	sensitive receptors from EIS documents and inaccurately located Muldu (in the proponent's favour) in a document submitted to the federal government).		Paragraph 118(k), submission on revised EIS, page 4, "Deceit re Muldu" (SP)		paragraph 105(m) (SP)	
24	Unclear whether proponent has necessary capacity (financial or technically etc) to deliver on water, noise or dust agreements, particularly given the water impacts are modelled to last 300 years. Potential New Hope may sell the project, unclear if future owners would have financial or technical capabilities.	Tanya Plant; Sid Plant	Paragraph 152, 153 (TP); Paragraph 161, 162 (SP)			See the following reference(s) for my response to this objection: <ul style="list-style-type: none"> Part B – Section 5.21
25	The height of the Materials Handling Facility will cause dust and noise issues. Attached to the submission is a NSW Coal Mining Benchmarking Study which notes that stockpile height is a major factor in dust generation and that stockpiles should at least be protected from the wind by walls that are at least as high as them. 200,000t coal stockpiled has too much of a risk of adverse dust impacts. The MHF should be covered to protect from noise and dust issues. It is very regrettable that they now refer to their EIS statement that ""No coal will be stored in open/exposed stockpiles" as a "typographical error".	Tanya Plant	EIS Submission p12, 13, AEIS submission p3, 23 (TP)			The stock pile does not need to be covered in order to achieve the draft EA noise limits. The SoundPLAN modelling undertaken for the EIS incorporates noise associated with the increased ROM and proposed stockpile. Given compliance with the draft EA noise conditions is predicted for locations nearby the ROM and proposed stockpile, it is considered that future noise from these areas will be acceptable. The EIS modelling showed that the stockpile does not need to be covered from a noise perspective.
26	The EIS doesn't seem to have addressed section 10 of the Noise EPP regarding "creep". This needs to be addressed. Other than the	Tanya Plant	EIS submission page 47 - 48, AEIS submission p29 (TP)			See the following reference(s) for my response to this objection: <ul style="list-style-type: none"> JER – Section 5

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	noise from the mine here, it is very quiet and mainly just natural noises. Hence, even 30dB at night is a significant increase in noise and a real annoyance and impact on 'comfortable enjoyment'.					<ul style="list-style-type: none"> • JER – Section 6 (para 170 to 181 and 219 to 223) • Part A – Section 5.1 • Part A – Section 5.2
27	Truck noise recorded mainly relates to mine trucks going to the Jondaryan coal rail loading facility anyway so should be included as mine noise.	Tanya Plant	EIS submission p52 (TP)			<p>See the following reference(s) for my response to this objection:</p> <ul style="list-style-type: none"> • JER – Section 7 • JER – Section 8
28	Regarding 2.3.13 Mine Noise Attenuation Options "NAC identified that noise generated from mining operations was a key constraint for the revised Project based on the mine plan and proximity of sensitive receptors to mining activities." Therefore the proponent would need to do all possible to reduce noise. It is not acceptable for the proponent to argue that some things aren't worth it because they cost too much (as they have done in the past eg in relation to modifying trucks to reduce noise). This requires a mindset and actions contrary to this company's traditional approach and is also in conflict with various statements by corporate leadership which indicate that New Hope prides itself and promotes itself as a low cost operator.	Tanya Plant	EIS Submission p105 (TP)			<p>See the following reference(s) for my response to this objection:</p> <ul style="list-style-type: none"> • Part A – Section 5.12 • Part B – Section 5.18 • Part B – Section 5.19
29	The proponent needs to commit to not having beepers or other loud	Tanya Plant	EIS submission p114 (TP)			<p>See the following reference(s) for my</p>

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	alert sounds on the stationary equipment, e.g. conveyors or stackers or reclaimers etc.					<p>response to this objection:</p> <ul style="list-style-type: none"> Part A – Section 5.12
30	<p>Tanya and Sid Plant rely on the Acoustics RB expert report in their EIS submission. Below are extracts from that report.</p> <p>Clearly, the Proponent has dispensed with any attempt to try to comply with the noise level limits derived by application of the DEHP <i>Planning for Noise Control Guideline</i> and, instead, is proposing that the assessment of the acceptability of the degree of environmental noise control applied to the proposed expansion be assessed against Best Practice and the EPP (Noise) LAeq,adj,1hr targets.</p> <p>Broadly, the Proponent is proposing elements of Best Practice Noise Control each of which can be considered as falling into one of three categories: (i) low sound power level noise sources, (ii) mitigation of excessive noise using feedback from a real-time noise monitoring network and (iii) specific noise reduction management techniques.</p> <p>It is acknowledged that Best Practice is occasionally, and legitimately, used as a tool for setting the benchmark for assessing the acceptability, or otherwise, of the control of noise emission from resource extraction activities.</p>	Tanya Plant, Sid Plant/ Acoustics RB	EIS Submission page 42 (TP); Paragraph 167 (SP); Report page 2, 3 (Acoustics RB)			<p>See the following reference(s) for my response to this objection:</p> <ul style="list-style-type: none"> Part B – Section 5.19 Part B – Section 5.23

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	<p>In such circumstances, however, it is normally required that (i) the elements of noise control that will be implemented are indeed Best Practice for the industry and not something short of Best Practice and (ii) the elements of Best Practice that will be implemented are practical and well-tested and (iii) the conditions that are imposed for approval are certain and are written to ensure that the elements of Best Practice Noise Control are implemented from Day-One and maintained at their peak efficiency and effectiveness throughout the life of the approval.</p>					
31	<p>Tanya and Sid Plant rely on the Acoustics RB expert report in their EIS submission. Below are extracts from that report.</p> <p>If it were proposed to grant approval for the proposed expansion, it can be safely concluded that the regulatory authority agrees with the Proponent that compliance with EPP (Noise) is both necessary and sufficient. Consequently, it would also be incumbent upon the regulatory authority to impose a requirement to achieve compliance with not only the EPP (Noise) LAeq,adj,1hr (noise level targets) at all noise sensitive receptors over the life of the revised Project, but also, in the absence of an argument to do otherwise, with the EPP (Noise) LA10,adj,1hr and LA01,adj,1hr acoustical quality objectives at all noise sensitive</p>	Tanya Plant, Sid Plant/ Acoustics RB	EIS Submission page 42 (TP); Paragraph 167 (SP); Report page 3, 4 (Acoustics RB)			<ul style="list-style-type: none"> • SLR has extensive experience in measuring noise emissions of open-cut mining and quarrying operations. The typical difference between the LAeq and LA10 levels is 3 dBA and the typical difference between the LA10 and LAmx (not dissimilar to the LA1 parameter stated in the EPP(Noise)) is 5 dBA. • The difference between the LAeq and LA10 noise levels in the EPP(Noise) is 5 dBA (2 more than the typical 3 dBA difference in emissions) and another 5 dBA between the LA10 and LA1 criteria. • Therefore, the limiting criterion from the acoustic quality objectives will be the LAeq criterion. • As such, there is no need to include the LA10 and LA1 acoustic quality

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	<p>receptors over the life of the revised Project.</p> <p>Again, based on the conclusion that the regulatory authority agrees with the Proponent that compliance with EPP (Noise) is both necessary and sufficient, to not impose such a requirement would leave the community vulnerable to exposure to noise levels exceeding those deemed by DEHP to be appropriate for the preservation of the health and wellbeing of the community.</p>					<p>objectives for this Project.</p> <p>See the following reference(s) for my response to this objection:</p> <ul style="list-style-type: none"> • JER – Section 6 (para 170 to 225) • Part A – Section 5.1 • Part A – Section 5.2
32	<p>Tanya and Sid Plant rely on the Acoustics RB expert report in their EIS submission. Below are extracts from that report.</p> <p>It is expected that any conditions of approval would impose requirements generally as follows:-</p> <p>(a) Prior to commencement of operations, certification is to be provided demonstrating that source sound power levels on which the assessment of environmental noise impact is based are indeed the lowest feasibly-possible source sound power levels for all major items of noise-generating equipment relative to the particular class/capacity of the actual item of equipment. The list of noise-generating equipment will include, but not necessarily be limited to, all excavators, loaders, dump trucks and bulldozers as well as the coal handling preparation plant and all items of noise-generating equipment in the materials handling</p>	Tanya Plant, Sid Plant/ Acoustics RB	EIS Submission page 42 (TP); Paragraph 167 (SP); Report page 4, 5 (Acoustics RB)			<p>See the following reference(s) for my response to this objection:</p> <ul style="list-style-type: none"> • Part B – Section 5.19 • Part B – Section 5.23

No.	Specific objection	MLA Objector	MLA Reference	EA Objector	EA Reference	Response
	<p>facility.</p> <p>(b) Prior to commencement of operations, certification is to be provided demonstrating that the Best Practice source sound power levels on which the assessment of environmental noise impact is based are achieved by each item of equipment. This includes all items of earthmoving equipment, ie all excavators, loaders, dump trucks and bulldozers. Importantly, it also includes (i) all major items of fixed plant and equipment, notably the coal handling preparation plant, (ii) all items of noise-generating equipment in the materials handling facility and (iii) an adequately representative sample of all locomotives and rolling stock.</p> <p>(c) Regular follow-up testing of all major items of equipment as listed above is to be undertaken to confirm that the individual source sound power levels have not increased beyond the levels certified prior to commencement of operations. The interval for the follow-up testing would be a matter for determination by the regulatory authority, but would be expected to be no less frequently than annually.</p>					
33	<p>Tanya and Sid Plant rely on the Acoustics RB expert report in their EIS submission. Below are extracts from that report.</p> <p>The Proponent is asking the regulatory authority to permit the Proponent (i) to make a</p>	Tanya Plant, Sid Plant/ Acoustics RB	EIS Submission page 42 (TP); Paragraph 167 (SP); Report page 5, 6 (Acoustics RB)			<ul style="list-style-type: none"> • See response to Item 31 <p>See the following reference(s) for my response to this objection:</p> <ul style="list-style-type: none"> • Part A – Section 5.16 • Part B – Section 5.18

No.	Specific objection	MLA Objector	MLA Reference	EA Objector	EA Reference	Response
	<p>determination as to whether compliance with the EPP (Noise) LAeq,adj,1hr noise level targets, and by logical extension, the LA10,adj,1hr and LA01,adj,1hr acoustical quality objectives as well, is being achieved real-time at night and (ii) trust that the proponent will "limit or stop" noisier mining operations (specifically, operations in the Manning Vale East pit during the night-time period – ref S 11.8) and adopt "immediate management actions" (S 3.3 Appendix J.11) in response to the output from the real-time noise monitoring system.</p> <p>Unless the proposed real-time monitoring system were to also include a fool-proof method of both (i) detecting the presence of tonality and impulsiveness and (ii) ascribing accurately the appropriate adjustment penalty, it would be necessary to either (i) conservatively assume that the maximum penalties for each of these noise characteristics were to apply at all times, or (ii) carry out continuous subjective assessment of the level of noise emitted to all noise sensitive receptors to detect the presence, or otherwise, of these specific noise characteristics and ascribe the appropriate penalties real-time as well.</p> <p>Promising to undertake immediate action is clearly commendable, but questions about (i) the positive identification of exceedance and (ii) how promptly action is, or can</p>					<ul style="list-style-type: none"> Part B – Section 5.19

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	reasonably be, taken to "limit or stop" mining operations in the pit are clearly relevant.					
34	<p>Tanya and Sid Plant rely on the Acoustics RB expert report in their EIS submission. Below are extracts from that report.</p> <p>At S 11.8, it is stated that "if no suitable acceptable noise amelioration solutions are available for a particular noise issue, NAC will negotiate in good faith with all affected property owners for property purchase or by agreement implement some other form of amicable arrangement. ... In the event agreement cannot be reached, NAC will enter into mediation with the affected party and employ the services of a third party to facilitate this process." Each of these propositions is examined in turn below.</p> <p>It may be considered commendable that it is acknowledged that provision needs to be made for alternative solutions in circumstances where there are no suitable noise amelioration solutions available.</p> <p>The offer of negotiation in good faith with all affected property owners to purchase or, by agreement, implement some other form of amicable arrangement, or where agreement cannot be reached to enter into mediation may also be judged in the same way.</p> <p>There are, however, a few</p>	Tanya Plant, Sid Plant/ Acoustics RB	EIS Submission page 42, 46 (TP); Paragraph 167 (SP); Report page 6, 7 (Acoustics RB)			<ul style="list-style-type: none"> • It is (typical) for mining operations throughout Australia to employ a suite of noise management & mitigation measures as required to achieve compliance with approved EA conditions. • The management and mitigation operations outlined in the EIS and the JER for NAC's Stage 3 operations are being utilised by other mine sites throughout Australia <p>See the following reference(s) for my response to this objection:</p> <ul style="list-style-type: none"> • JER – Section 7 • JER – Section 8 • JER – Section 10 • Part B – Section 5.19

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	<p>questions that arise from this acknowledgement and offer.</p> <p>In the first instance, if (i) the regulatory authority were to agree that compliance with EPP (Noise) is a necessary and sufficient requirement for successful operation of the expanded mine, especially in light of non-compliance with the noise level limits derived from DEHP <i>Planning for Noise Control Guideline</i> and (ii) if it has been demonstrated that Best Practice Noise Control will result in complete compliance with all of the EPP (Noise) noise level targets, in what circumstances would it then be necessary to give consideration to alternative solutions?</p> <p>As it is deemed necessary to include provision for such dispute resolution, would it not also be reasonable to conclude that, even with the best intentions, the Best Practice Noise Control actions proposed for the proposed expansion may not live up to expectations?</p> <p>Or put more simply, failure of the Project to achieve compliance with the objective criteria may lead to the affected person/s being requested to enter into mediation to resolve an issue not of their making.</p> <p>And finally, while this may be a matter for others to provide analysis and judgment, is it appropriate to consider approval of the proposed expansion if successful operation of the expanded mine rests upon the</p>					

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	outcome of future negotiations and/or mediation with affected persons – the success or failure of which cannot be known at this time?					
35	I do not accept that an additional 7db is appropriate at my house given the house design and the large window area and our preference for fresh air. The EA noise limits should be set at the EPP (noise) limits without adding this additional 7db (that the EPP does not refer to and which is not conservative as it is more than the guidelines even estimate for open windows). In addition, the EA limits should also require that the mine does not cause noise levels to rise above 3db above background (excluding the mine) levels during the day and to not rise above background levels at night. This is common practice.	Tanya Plant	AEIS submission p3 (TP)			See the following reference(s) for my response to this objection: <ul style="list-style-type: none"> • JER – Section 6 (para 182 to 192) • Part A – Section 5.1 • Part A – Section 5.2
36	Noise monitoring at several sensitive receptors has not been completed (including at Sid and Merilyn Plant's house).	Tanya Plant	EIS submission p57, 66, 94 (TP)			See the following reference(s) for my response to this objection: <ul style="list-style-type: none"> • Part A – Section 5.16 • Part B – Section 5.18
37	The strict reliance on the modelling does not seem to provide any allowance for the limitations of the modelling or any variations and completely fails to reflect the precautionary principle or the fact that exceedances have already been recorded at both my place and Acland at least.	Tanya Plant	AEIS submission p26 (TP)			See the following reference(s) for my response to this objection: <ul style="list-style-type: none"> • JER – Section 7 • JER – Section 8 • Part A – Section 5.2 • Part A – Section 5.7 • Part A – Section 5.9

No.	Specific objection	MLA Objector	MLA Reference	EA Objector	EA Reference	Response
						<ul style="list-style-type: none"> Part A – Section 5.10 Part A – Section 5.16 Part B – Section 5.18
38	The omission of nearby sensitive receptors from EIS documents does not lead to any convincing argument that the proponents can be trusted to immediately take appropriate action to avoid the noise or dust impacts that even their own modelling shows is typical in operating scenarios.	Sid Plant	Submission on revised EIS, pages 4 and 5, "Deceit re Muldu" (SP)			It is my understanding that the sensitive receptors utilised for the EIS are correct.
39	Expanding the CHPP capacity near our place and stockpiling 200,000t near us at the northern end of the proposed mine at Muldu will only worsen dust and noise impacts at our place.	Sid Plant	Submission on revised EIS, page 3 "Revised project is largely the same and actually worse in many regards" (SP)			<p>The stock pile does not need to be covered in order to achieve the draft EA noise limits.</p> <p>The SoundPLAN modelling undertaken for the EIS incorporates noise associated with the increased ROM and proposed stockpile.</p> <p>Given compliance with the draft EA noise conditions is predicted for locations nearby the ROM and proposed stockpile, it is considered that future noise from these areas will be acceptable.</p> <p>The EIS modelling showed that the stockpile does not need to be covered from a noise perspective.</p>
40	NAC's EIS and AEIS comments that they intend on examining the feasibility of commercially extracting basalt on the mining lease. This is of great concern to me and my family as it could represent yet more noise and detrimental impacts on air	Dr Steven Ward	Paragraph 28 (Ward)			<p>See the following reference(s) for my response to this objection:</p> <ul style="list-style-type: none"> Part B – Section 5.22

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	quality around our home, which is already proposed to have the 'materials handling facility' about 2km away.					
41	<p>Noise modelling was inappropriate. For example, based on the noise modelling NAC admit that despite implementation of mitigation measures, "...the predicted noise levels from the mining operation will still exceed EHPs <i>Planning for Noise Control Guideline's</i> Planning Noise Limit (PNL) at a number of noise sensitive receptors." NAC surmises that "by implementing noise management and mitigation measures including reduced night time operation and using attenuated equipment (noise attenuation of noisier equipment including excavators, track dozers, loaders and rear dump trucks), the predicted noise levels from the mining operation will meet EPP (Noise) Laeq,adj,1hr (noise level targets) at all noise sensitive receptors over the life of the revised Project." There are several key issues with this admission by NAC; these being:</p> <ul style="list-style-type: none"> - NAC are unable to meet appropriate noise levels for their Stage 3 project under ordinary operating conditions; - the elements of noise control proposed by NAC to be implemented <i>has</i> to be best practice and <i>not</i> fall short of this standard; - Given the importance of NAC 	Dr Steven Ward	Paragraph 31 (Ward)	Dr Steven Ward	Para 30 Ward EA submission and objection	<p>In relation to third party audits, I note that the draft EA contains the following condition:</p> <ul style="list-style-type: none"> • the holder of this environmental authority must within 1 year of the commencement of this environmental authority, obtain from an appropriately qualified person a report on compliance with the conditions of this environmental authority; • obtain further such reports at regular intervals, not exceeding 3 yearly intervals, from the completion of the report referred to <i>above</i>; and • provide each report to the administering authority within 90 days of its completion. <p>See the following reference(s) for my response to this objection:</p> <ul style="list-style-type: none"> • JER – Section 6 (para 219 to 223) • JER – Section 8 • Part A – Section 5.1 • Part A – Section 5.2 • Part B – Section 5.19 • Part B – Section 5.23

No.	Specific objection	MLA Objector	MLA Reference	EA Objector	EA Reference	Response
	implementing best practice standards, it should be effectively enforced (i.e. through third party audit) in NAC's environmental authority.					
42	Example of unsatisfactory past performance re: noise - As a result of a noise complaint made by my family to EHP, subsequent EHP noise monitoring demonstrated that NAC were in breach of their maximum noise levels allowed under their environmental authority. As evidence of this environmental authority breach, subsequent correspondence from the EHP in August 2012 also stated that New Acland Coal has been requested to take action to implement noise abatement measures so that emissions of noise from mining activities do not result in further environmental nuisance". Later correspondence from EHP (April 2013) also stated that NAC was "required to implement noise abatement measures so that emissions of noise from mining activity do not result in further environmental nuisance."	Dr Steven Ward	Paragraph 33 (Ward)	Dr Steven Ward	Para 32 Ward EA submission and objection	See the following reference(s) for my response to this objection: <ul style="list-style-type: none"> • Part A – Section 5.16 • Part B – Section 5.18
43	The health of those residing and working in the area will be badly affected by the dust, noise and toxic fumes from blasting.	John Cook	Page 2 (JC)			See the following reference(s) for my response to this objection: <ul style="list-style-type: none"> • JER – Section 6 (para 170 to 225) • Part A – Section 5.1 • Part A – Section 5.2

No.	Specific objection	MLA Objector	MLA Reference	EA Objector	EA Reference	Response
44	The right of the public to clean air and water and living conditions free from excessive noise will be violated if this lease is approved.	Patricia Cook	Page 2 (PC)			See the following reference(s) for my response to this objection: <ul style="list-style-type: none"> • JER – Section 6 (para 170 to 225) • Part A – Section 5.1 • Part A – Section 5.2
45	It is unjust for residents of the area to have to suffer dust, noise, lights, decreased land values and interference to business activities for this length of time along with the visual pollution that goes with it.	Patricia Cook	Page 1 (PC)			See the following reference(s) for my response to this objection: <ul style="list-style-type: none"> • JER – Section 6 (para 170 to 225) • Part A – Section 5.1 • Part A – Section 5.2 • Part B – Section 5.21
46	The distance between our property and New Hope Stage 2 is 8km. The mining activity on 23rd June 2015 from 7.15am over a duration emitted an LAeq noise level of 40.1dB. This level is regularly achievable and obtained and is quite audible (equipment used was a Bruel & Kjaer noise meter Type 2250 S/N2506824 with Type 4231 calibrator - person operating has 25 years of experience conducting noise level tests). Naturally weather conditions have an impact on the result. The intended Stage 3 Manning Vale West pit is 5km from our property. The style of operation intended at this pit is similar to stage 2, thus a calculated noise level of 44.18dB is to be expected	Frank and Lynn Ashman	Page 2-3 (Ashman)	Frank and Lynn Ashman	Page 4 of the EA Submission (Ashman) Page 6 of the EA Objection (Ashman)	<p>It is unlikely that existing mining noise is 40 dBA LAeq at #42 (8kms from existing mining activity), and</p> <p>It is possible that mine noise was audible but not dominant at this distance therefore it is important not to just read the noise level off the sound level meter and state that level as attributable to the mine.</p> <p>The live dashboard recorded a noise level at #2 (which is roughly in the same direction as #42 from the existing mine) of 47 dBA Leq at 7:15am that day.</p> <p>The EIS SoundPLAN model consistently shows a difference between #2 and #42 of 17 dB (for the Stage 3 modelling),</p> <p>This would equate to a noise level contribution of around 30 dBA LAeq due</p>

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	<p>at our property. The COG evaluation report on the EIS (page 178 Table D1b) calls for a 42dBA ceiling. This level will be exceeded during construction activities and general operation. Others closer to the activity will be even more significantly impacted. From the Scenario SR #36 will receive a calculated LAeq noise level of 60.6dBA.</p>					<p>to the mine at #42 the morning of the measurement,</p> <p>A minor noise source would typically be audible at about 10 dB below the overall noise level so it makes sense that mine noise was audible (as claimed by the objector) but that mine noise was not likely to have been 40 dBA LAeq.</p> <p>The same philosophy of ensuring that minor audible noise is appropriately assessed (compared to the overall noise level) still applies.</p>
47	<p>Monitoring of environmental outcomes for Dust, Noise and Flood Water Discharge by the mining company is unacceptable. This must be conducted by the Department of Environment and Heritage</p>	Noel and Fay Wieck	Paragraph 1 under Environmental Monitoring heading	Noel and Fay Wieck	Paragraph 1 under Environmental Monitoring heading of EA Submission (NFW)	<p>In relation to third party audits, I note that the draft EA contains the following condition:</p> <ul style="list-style-type: none"> • the holder of this environmental authority must within 1 year of the commencement of this environmental authority, obtain from an appropriately qualified person a report on compliance with the conditions of this environmental authority; • obtain further such reports at regular intervals, not exceeding 3 yearly intervals, from the completion of the report referred to <i>above</i>; and • provide each report to the administering authority within 90 days of its completion. <p>See the following reference(s) for my response to this objection:</p> <ul style="list-style-type: none"> • JER – Section 9

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						<ul style="list-style-type: none"> • JER – Section 11 • Part A – Section 5.16 • Part B – Section 5.18
48	When in the higher range, blasting is very distressing with house wobbling and windows settling. There is no application of the precautionary principle when 1 in 10 blasts can be over the limit which is itself too high.	Glenn Buetel-vibration	Page 10			<p>See the following reference(s) for my response to this objection:</p> <ul style="list-style-type: none"> • Part B – Section 5.20
49	There can be no doubt that the expansion to stage 3 will impact both our farm enterprise and our quiet enjoyment of our land. The Stage 3 of the mine will create problems for us by noise pollution ... The currently operating stage 2 of the mine is more isolated from the farming population because all the land for a much greater radius from the mine was purchased for its future expansion. We know that even now the noise from the current stage 2 of the mine is unpleasant, we live it. The noise from the stage 3 will be unbearable, the sort of thing that causes mental illness and suicide.	Max and Jane Scholefield	Paragraph 2 (MJS)	Max and Jane Scholefield	Page 3, paragraph (b) and page 6, paragraph 23 (MJS EA submission); Attachment A, paragraph (c) (MJS EA objection)	<p>See the following reference(s) for my response to this objection:</p> <ul style="list-style-type: none"> • JER – Section 6 (para 170 to 225) • Part A – Section 5.1 • Part A – Section 5.2 • Part B – Section 5.17
50	The 'baselines' considered are often not genuine baselines as they include the impacts caused by the stage 1 and 2 mine. Stage 1 and 2 are due to conclude soon			Tanya Plant; Sid Plant	EA submission paragraph 52(e), 158 (TP); EA submission paragraph 52(e), 168 (SP)	<p>See the following reference(s) for my response to this objection:</p> <ul style="list-style-type: none"> • JER – Section 5
51	The draft EA is deficient in that it does not actually require much monitoring (such as of dust and			Tanya Plant; Sid Plant	EA submission paragraph 159 (TP); EA	<p>See the following reference(s) for my response to this objection:</p>

No.	Specific objection	MLA Objector	MLA Reference	EA Objector	EA Reference	Response
	noise) at sensitive receptors. It must require adequate monitoring to ensure that limits are not being exceeded. This data must then be immediately provided to the administering authority so that they are aware of the situation and can promptly require remedial actions to be taken if adverse outcomes are occurring.				submission paragraph 169 (SP)	<ul style="list-style-type: none"> • JER – Section 9 • Part A – Section 5.14 • Part A – Section 5.16 • Part B – Section 5.18
52	It is imperative that the EA require sufficient monitoring to ensure that the proposed project is always complying with the noise and dust limits. To do otherwise is unjust, unfair and ineffective. It also risks further damage to the reputation of the Government and the proponent's reputation.			Tanya Plant; Sid Plant	EA submission paragraph 161 (TP); EA submission paragraph 171 (SP)	Please see my response in number 51 Annexure F above
53	Under the draft EA people may be subjected to very high levels of dust or noise with no monitoring done of this and no requirements for this situation to change unless the impacted people make official complaints to the government and the government then requires monitoring. This is ludicrous.			Tanya Plant; Sid Plant	EA submission paragraph 164 (TP); EA submission paragraph 174 (SP)	Please see my response in number 51 Annexure G above
54	I appreciate that A15 requires compliance with future standards. It would be further appreciated if this clearly ensured that the proponent also had to comply with future standards for environmental impacts such as noise and dust. The current situation where the mine is allowed to cause more dust and noise impacts to people than the EPPs set as required for health			Tanya Plant; Sid Plant	EA submission paragraph 169 (TP); EA submission paragraph 179 (SP)	<p>It is appropriate that the current legislation [EPP(Noise)] be the basis for setting draft EA conditions during the approvals phase of a project.</p> <p>I have been advised that the Environmental Protection Act 1994 gives EHP an opportunity to change approved EA conditions should there be a change to the EPP(Noise) in the future.</p>

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	and wellbeing and sleep is outrageous and puts sensitive receptors at risk in terms of health and the government at risk from a legal (or at least moral) perspective.					
55	A similar condition specifically requiring particular actions including the ceasing of works in certain meteorological conditions or between certain house (e.g. no out of pit dumping between 8pm and 7am) might be appropriate in these circumstances also to avoid adverse dust and noise impacts.			Tanya Plant; Sid Plant	EA submission paragraph 174 (TP); EA submission paragraph 184 (SP)	<ul style="list-style-type: none"> With the robust noise monitoring regime recommended by both experts in place, along with "real time" noise monitoring via the TARP, cessation of particular activities (as is already occurring for Stage 2 operations) will be required in order to achieve the approved noise conditions Therefore I do not consider it appropriate to apply specific conditions to limit certain activities at certain times within the EA. <p>See the following reference(s) for my response to this objection:</p> <ul style="list-style-type: none"> JER – Section 9 Part A – Section 5.16 Part B – Section 5.18 Part B – Section 5.19
56	Schedule D noise is of serious concern to me. Noise has been a major concern and terrible impact on our lives even whilst the smaller stages 1 and 2 have been operating and there has been much less coal handling going on near our place (near Muldu) than is proposed in Stage 3.			Tanya Plant; Sid Plant	EA submission paragraph 181 (TP); EA submission paragraph 191 (SP)	<p>See the following reference(s) for my response to this objection:</p> <ul style="list-style-type: none"> JER – Section 6 (para 170 to 225) Part A – Section 5.1 Part A – Section 5.2 Part A – Section 5.16 Part B – Section 5.18

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57	Even, with very limited monitoring, the night time limit of 40dB (LA1 hour av) has been shown to be exceeded by the mine at my house even under the smaller earlier stages of the mine (without the additional coal handling plant other materials handling facility that stage 3 proposes near our place).			Tanya Plant; Sid Plant	EA submission paragraph 182 (TP); EA submission paragraph 192 (SP)	See the following reference(s) for my response to this objection: <ul style="list-style-type: none"> • JER – Section 9 • Part A – Section 5.16 • Part B – Section 5.18
58	It is important that Schedule D noise also includes limits to other noise parameters such as noted in the report by RB Acoustics (see report attached to Tanya Plant's submission). For example, the EPP noise requirements for LA10,adj,1hr and LA01,adj,1hr must also be met.			Tanya Plant; Sid Plant	EA submission paragraph 183 (TP); EA submission paragraph 193 (SP)	Please see my response in number 31 Annexure G above
59	Particularly due to the reliance on best practice, it is important that Schedule D noise also includes other requirements to reduce noise such as noted in the report by RB Acoustics (see attached). These include requirements that <p>(i) the elements of noise control that will be implemented are indeed Best Practice for the industry and not something short of Best Practice and</p> <p>(ii) the elements of Best Practice that will be implemented are practical and well-tested and</p> <p>(iii) the conditions that are imposed for approval are certain and are written to ensure that the elements of Best Practice Noise Control are implemented from Day-One and maintained at their peak efficiency and effectiveness throughout the life</p>			Tanya Plant; Sid Plant	EA submission paragraph 184 (TP); EA submission paragraph 194 (SP)	See the following reference(s) for my response to this objection: <ul style="list-style-type: none"> • Part B – Section 5.23

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	of the approval.					
60	<p>Due to the noise control strategy proposed in the EIS, which is imperative to the project even coming close to complying with noise limits, (see S 11.8 which notes the requirement for "noise management and mitigation measures including reduced night time operation (only two pits operating at night in adverse weather or atmospheric conditions) and using attenuated equipment (including excavators, track dozers, loaders and rear dump trucks)"., it is also recommended (as per the Acoustics RB report) that the following conditions also be proposed in Schedule D.</p> <p>a. Prior to commencement of operations, certification is to be provided demonstrating that source sound power levels on which the assessment of environmental noise impact is based are indeed the lowest feasibly-possible source sound power levels for all major items of noise-generating equipment relative to the particular class/capacity of the actual item of equipment. The list of noisegenerating equipment will include, but not necessarily be limited to, all excavators, loaders, dump trucks and bulldozers as well as the coal handling preparation plant and all items of noisegenerating equipment in the materials handling facility.</p> <p>b. Prior to commencement of</p>			Tanya Plant; Sid Plant	EA submission paragraph 185 (TP); EA submission paragraph 195 (SP)	<p>See the following reference(s) for my response to this objection:</p> <ul style="list-style-type: none"> • Part B – Section 5.23

No.	Specific objection	MLA Objector	MLA Reference	EA Objector	EA Reference	Response
	<p>operations, certification is to be provided demonstrating that the Best Practice source sound power levels on which the assessment of environmental noise impact is based are achieved by each item of equipment. This includes all items of earthmoving equipment, i.e. all excavators, loaders, dump trucks and bulldozers. Importantly, it also includes (i) all major items of fixed plant and equipment, notably the coal handling preparation plant, (ii) all items of noise-generating equipment in the materials handling facility and (iii) an adequately representative sample of all locomotives and rolling stock.</p> <p>c. Regular follow-up testing of all major items of equipment as listed above is to be undertaken to confirm that the individual source sound power levels have not increased beyond the levels certified prior to commencement of operations. The interval for the follow-up testing would be a matter for determination by the regulatory authority, but would be expected to be no less frequently than annually.</p>					
61	<p>As noted in my EIS submission and the Acoustics RB report (especially see sect 4.2) there are real concerns about the effectiveness of the proposed real time monitoring system in avoiding noise problems. Hence, it is important that the limits be set with the precautionary principal in mine and to better protect the innocent sensitive</p>			Tanya Plant; Sid Plant	EA submission paragraph 186 (TP); EA submission paragraph 196 (SP)	<p>See the following reference(s) for my response to this objection:</p> <ul style="list-style-type: none"> • JER – Section 9 • Part A – Section 5.16 • Part B – Section 5.18

No.	Specific objection	MLA Objector	MLA Reference	EA Objector	EA Reference	Response
	receptors that may be impacted. Further it is imperative that sufficient monitoring is actually required to give the real time monitoring system the best chance of success.					
62	It is terribly concerning that Schedule D does not in the current draft actually require any noise monitoring. This must be amended to at least require real time monitoring in locations to ensure that noise limits are not exceeded in Acland or at other locations where noise is likely to be an issue. (It would seem prudent to at least include a requirement for real time monitoring in Acland and at a site between my house and the mine as well as other site to the west of the mine and another site near the proposed railway extension where the noise is likely to be the worst or risk adverse impacts on a sensitive receptor.) This information should be available to the administering authority and sensitive receptors.			Tanya Plant; Sid Plant	EA submission paragraph 187 (TP); EA submission paragraph 197 (SP)	<p>Please see my response in number 61 above</p> <p>In reference to the JER, both experts have agreed that the existing "real time" noise monitoring within Acland be expanded to 3 locations during Stage 3 operations (1 location west and 1 location north of the mine) to ensure better special coverage of the surrounding community.</p> <p>This will be supplemented by short term attendance measurements, the detail which is still a matter of disagreement between the experts.</p>
63	In addition to the real time monitoring, noise monitoring must be required to be carried out by an independent and appropriately qualified person at least 12 times a year at sensitive receptors (with the consent of the relevant land holders and residents). The conditions must also make clear that these results must be available to the administering authority and the relevant sensitive receptor.			Tanya Plant; Sid Plant	EA submission paragraph 188 (TP); EA submission paragraph 198 (SP)	<p>See the following reference(s) for my response to this objection:</p> <ul style="list-style-type: none"> • JER – Section 9 • Part A – Section 5.14 • Part A – Section 5.16 • Part B – Section 5.18
64	Tables D1 a and b are too lenient			Tanya Plant; Sid	EA submission	Please see my response in number 31

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	for the proponent. These tables should also include limits to LA _{max} , LA _{10,adj,1hr} and LA _{01,adj,1hr} that do not exceed the levels noted in the EPP Noise (see report from Acoustics RB).			Plant	paragraph 189 (TP); EA submission paragraph 199 (SP)	above
65	Further, these limits set in Table D1b should not allow the additional 7db which assumes a significant reduce in noise between inside and outside limits based on assumptions about people's houses and lifestyles and that they only have their windows "partially open". This is an unreasonable impact on people. The night time limit should not be any more than 30db.			Tanya Plant; Sid Plant	EA submission paragraph 190 (TP); EA submission paragraph 200 (SP)	See the following reference(s) for my response to this objection: <ul style="list-style-type: none"> Part A – Section 5.2
66	It is appreciated that the noise limit is set based on 15 minute sampling. This will make it easier to measure (and potentially enforce). It also allows less opportunity for the proponent to average out high levels of noise over longer periods. This must remain. A requirement to get results for 1 hour averages would make it difficult to check compliance and to enforce noise limits, particularly as the consultant may need to get samples at multiple sites in the one night.			Tanya Plant; Sid Plant	EA submission paragraph 191 (TP); EA submission paragraph 201 (SP)	<ul style="list-style-type: none"> The CG's draft EA noise conditions stipulate a 15 minute sampling period.
67	D6 should not allow for 10% of blasts not to be monitored. This is inappropriate and unjustifiable and provides an easy opportunity for the proponent to choose not to monitor particular blasts. Ward: Condition D6: This condition requires the proponent to achieve			Tanya Plant; Sid Plant; Dr Steven Ward	EA submission paragraph 192 (TP); EA submission paragraph 202 (SP); Para 61 EA Submission and Objection (Ward)	See the following reference(s) for my response to this objection: <ul style="list-style-type: none"> Part B – Section 5.20

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	<p>compliance with Table D2 for 90% of its blasting operations; however Table D2 itself requires compliance with 9 out of 10 (or 90%) consecutive blasts. As such, it is unclear whether the resulting requirement on NAC is compliance with Table D2 for 100% of the time (i.e. 90% of 100%) or for 90% (i.e. 90% of 90%). The conditioning should naturally be at achieving 90% of 100% and wording of this condition should be amended to achieve clarity on this point.</p>					
68	<p>It needs to be recognised that the genuine background noise levels here are much lower than the limits in the draft EA. Indeed, as per my EIS submission, I think a limit of 3db over the non-mine background limits (as has often been applied in other EAs) would set a much lower limit than those proposed in the draft EA. An example of a similar condition was agreed to by the proponent's noise expert in relation to their proposed feedlot as below (see noise and dust joint expert report attached to Tanya and Sid Plant's EA submission)</p> <p>The A-weighted maximum sound pressure level (LA_{max,adj}) must not exceed background by more than the following amounts:</p> <ul style="list-style-type: none"> · 7 am – 6 pm background plus 5dB(A) · 6 pm – 10 pm background plus 5dB(A) 10 pm – 7 am background plus 			Tanya Plant; Sid Plant	EA submission paragraph 193 (TP); EA submission paragraph 203 (SP)	<p>See the following reference(s) for my response to this objection:</p> <ul style="list-style-type: none"> • JER – Section 5 • JER – Section 6 (para 171 to 181 and 219 to 223) • Part A – Section 5.1 • Part A – Section 5.2

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	3dB(A)					
69	A condition such as noted above (limiting LAmax to say, 3db above background) should be considered in addition to the absolute limits imposed, in order to reduce the risk of noise nuisance or environmental harm.			Tanya Plant; Sid Plant	EA submission paragraph 194 (TP); EA submission paragraph 204 (SP)	Please see my response in number 68 above.
70	Ideally the conditions should include a requirement for the noise not to be audible offsite. A similar condition was agreed to by the proponent's expert in relation to their proposed feedlot (see Noise and Dust joint expert report attached to Tanya and Sid Plant's EA submission).			Tanya Plant; Sid Plant	EA submission paragraph 195 (TP); EA submission paragraph 205 (SP)	Please see my response in number 68 above.
71	My grandkids cough for months on end, we can't sleep because of the noise and my wife and daughter give up any pretence of work on the farm and spend their lives composing things like this in the knowledge that we need to try to be heard and protect our rights. For 15 years it has been the major stressor on my family.			Sid Plant	EA submission paragraph 245 (SP)	Please see my response in number 68 above.
72	There seems to be very little monitoring to the north where some of us actually live. There isn't planned to be any appropriate monitoring that would assist the mine to respond quickly to avoid exceeding noise thresholds.			Merilyn Plant	Page 5, paragraph 30 and page 8, paragraph 62 (MP EA Submission); Annexure "Acland Stage Three Take Four" under heading "7 - Pollution - noise, airborne	Please see my response in number 62 above.

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					pollution, water pollution, vibration are all a problem"	
73	If the project proceeds, there could be a departure of farmers in surrounding areas that will be affected by mine dust, the sound of blasting, crushing and wash plant operations, trucks night and day, many of whose livelihoods will be financially devastated because their land no longer has a realistic resale value.			John Standley	Page 2 (Standley EA submission)	See the following reference(s) for my response to this objection: <ul style="list-style-type: none"> Part B – Section 5.17 Part B – Section 5.21
74	Draft EA Condition D2 (and associated Table D1b): this condition should utilise the relevant noise standards outlined within the EPP (Noise). The exceedance of these standards requires receptors to consistently accommodate sub-standard living conditions, which should not be allowed.			Dr Steven Ward	Para 60 Ward EA Submission and Objection	Table D1b: <ul style="list-style-type: none"> Affectively adopts the Leq Acoustic Quality objectives from the EPP(Noise) by converting internal noise levels to external noise levels based on an assumed façade of 7 dBA See my response to number 31 in relation to the other acoustics descriptors' contained in the EPP(Noise) The rail related Lmax and Leq (24hr) hour where the recommended by the CG are lower than the standard criteria used throughout Queensland for assessing rail related impacts Table D2 contains blasting limits more stringent than those contained in Queensland Environmental Protection Act (Section 440ZB).
75	Noise will increase substantially as the operations of Stage 3 move			David and Cheryl Vonhoff	Page 2 paragraph 24	Noise levels may increase at particular properties surrounding the new Acland

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	<p>closer to our farming operation. Heavy machinery and vehicular traffic in the mine will increase and we will have added noise from the proposed rail link.</p>				<p>(DCV EA Submission); Page 2 paragraphs 3-4 (DCV EA objection)</p>	<p>mine site as Stage 3 operations occur.</p> <p>However as per the EIS findings, all surroundings sensitive locations are predicted to comply with the draft EA noise conditions which have been recommended to protect the health, wellbeing and amenity of surrounding residents.</p> <p>Lastly the robust "real time" noise monitoring regime recommended by both experts, including the use of an enhanced TARP, will ensure that compliance monitoring during Stage 3 operations will be satisfactory for the protection of the surrounding community.</p>
76	<p>The mining activity on 26th July 2015 from 7am to 8am emitted an LAeq noise levels of up to 40.1dB</p> <p>The intended Stage 3 Manning Vale West pit will be 5km from our property. The style of operation intended at this pit is similar to stage 2 thus a calculated noise level of 44.18dB is to be expected at our property.</p> <p>The Draft EA calls for a 42 dBA(A) noise limit between 7.00am and 10.00pm. Therefore the 42dBA limit will be exceeded during construction activities and general operation. Please refer to page 68 Figure 3-1 for Sensitive Receptor locations, outs identified as Sensitive Receptor #42.</p>			Frank and Lynn Ashman	Page 6 of the EA Objection (Ashman)	Please see my response in number 46 above.
77	Inherent in the myriad of management plans is a basic			Glenn Beutel	EA Submission Attachment A	In relation to third party audits, I note that the draft EA contains the following

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	<p>problem of policing and penalties. For example, the proponent had 12 months plus to achieve compliance with their noise levels after testing proved non-compliance.</p>				<p>page 9/17 (GB)</p>	<p>condition:</p> <ul style="list-style-type: none"> • the holder of this environmental authority must within 1 year of the commencement of this environmental authority, obtain from an appropriately qualified person a report on compliance with the conditions of this environmental authority; • obtain further such reports at regular intervals, not exceeding 3 yearly intervals, from the completion of the report referred to <i>above</i>; and • provide each report to the administering authority within 90 days of its completion. <p>Furthermore, CG's Condition 3 states that <i>the proponent is to prepare and make publically available each month (including online) environmental monitoring reports that address performance against EA conditions for air, noise and vibration impacts.</i></p> <p>This will provide a much higher level of scrutiny for Stage 3 operations than was the case in the past.</p>