REDISAND

Modification to Redisand Salt Ash Sand project approval 07_0094 Response to Submissions

April 2018

Redisand Pty Ltd

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1. INTRODUCTION

A modification to the Major Project approval MP07_0094 is being sought under s75w of the Environmental Planning and Assessment Act. The proposed modification of the Salt Ash sand quarry includes increasing the capacity of the approved quarry to a maximum of 400,000 tonnes per annum, modifying the extraction sequencing (substitute stages 2 and 3 respectively) to allow for the orderly progression through stages and to assist in effective rehabilitation, increasing the allowable laden truck movements off site from three (3) per hour averaged over a working day to 3.5 per hour averaged over a working day and increase operating hours from 7:00am to 5:00pm (Monday to Friday) to 6:00am to 6:00pm (Monday to Friday).

The Environmental Assessment was publicly exhibited from 7 December 2017 to 15 January 2018 by the NSW Department of Planning & Infrastructure. Responses were received from the following agencies:

- Department of Industry Crown Lands and Water Division
- Department of Planning & Environment – Resources and Geoscience
- Environment Protection Authority
- Health Hunter New England Local Health District
- Office of Environment & Heritage
- Port Stephens Council
- Transport Roads & Maritime Services
- Community Submissions

Three (3) submissions were also received from the public objecting to the proposal.

Section 2 of this report addresses the responses received from the agencies and the public.

2. RESPONSE TO SUBMISSIONS

Detailed within the following table are the key issues raised within each of the respective agency and public submissions and Redisand's response.

Issue	Response
Department of Industry - Crown Lands & Water Division	
• Considers the existing conditions of consent adequate to address potential impacts of the development. • The department advises that any works undertaken within a watercourse or on waterfront land should be conducted in accordance with Lands & Water's Guidelines for Controlled Activities (2012)	• Noted
Department of Planning & Environment – Resources & Geoscience	
• The building and construction industries in NSW require ongoing replacement of supplies as current sources are exhausted. The continued sustainable development of existing and new quarries will facilitate ongoing supply of construction materials to support affordable housing and infrastructure development for the growth of NSW. The resource in the subject area represents a regionally significant source of construction sand for the Nelson Bay and Newcastle areas. • GSNSW has reviewed the Environmental Assessment (EA) for the modification to Salt Ash Sand Quarry Project. The proposal does not seek to modify the project footprint, net volume of sand to be extracted, depth of extraction or the method employed for extraction and processing. Modification to the extraction sequence will not result in sterilisation of resources. Accordingly, GSNSW has no issues to raise regarding the proposed modifications to the project.	• Noted
Environment Protection Authority	
• The EA contains contradictory statements regarding the proposed change in operating hours.	• The proposal details a modification to the hours of operation for Monday to Friday only from 7:00am to 5:00pm (Monday to Friday) to 6:00am to 6:00pm (Monday to

• Inaccurate calculation of truck movements provided for the basis of the justification for the proposed increase in operating hours. • It is unclear if the predicted truck movements are referring to one way movements. • The EA bases predicted truck movement numbers for the project by using the calculation of averages. The EPA views this method as inaccurate as the nature of the operations relies on campaign operation where the maximum numbers of trucks will be moving for the full operating hours. • The EA states weighbridge data shows that the quarry is only operating at an average 35% of the annual limit. It is unclear if the EA refers to truck movement limits or mining capacity. • Justification for the increased hours is not demonstrated in the EA. **Noise** • Noise impacts can be managed through existing licence limits and conditions • Community concern in relation to increased noise and road safety issues that would arise if an increase in truck movements and operating hours were approved for the project. **Air Quality** • Section 6.2 of 'Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (2016) states that AUSPLUME is not suitable for modelling complex terrain or coastal effects. As the proposal is in a coastal environment, strong reasoning is needed to show AUSPLUME is suitable • Key CALMET model parameters controlling the merging of modelled	Friday). No change in operating hours is proposed for Saturday's. • Using 2016 as the basis for calculations, the total number of business operating days (Monday to Friday) equated to 250. The total number of quarry operating Saturdays for the same year equated to 52. Using this information in addition to the maximum allowable laden trucks to be dispatched from the site (averaged over a working day – Schedule 2 Condition 7) the following calculations were made. Monday to Friday – Maximum laden trucks despatched from site = 30 (3 laden trucks despatched per hour x 10 hours per day) Saturday - Maximum laden trucks despatched from site = 15 (3 laden trucks despatched per hour x 5 hours per day). 30 laden trucks x 250 business operating days (Monday to Friday) + 15 laden trucks x 52 business operating days (Saturday) = 8,280 laden trucks despatched from site per year (2016). Multiplying this by the average net weight of each laden truck (35t) equates to 289,800t. Whilst this tonnage was not achieved at the Salt Ash sand quarry for 2016, it was a calculation to allow for an **accurate** estimate as to how many laden trucks would be required to be despatched from the site to achieve a total of 400,000t. Accordingly, the following calculation was made: Monday to Friday – Maximum laden trucks despatched from site = 42 (3.5 per hour x 12 hours per day) Saturday - Maximum laden trucks despatched from site = 17.5 (3.5 per hour x 5 hours per day). This calculates to 11,410 laden trucks despatched from site per year (2016). Multiplying this by the average net weight of each laden truck (35t) equates to 399,350t. These calculations are accurate and reflect (as close as possible) the actual operations as could be expected should the Department determine to support the proposal.

(MM5) and observed winds have not been specified. • Section 5.4 (p14) states wet deposition has been chosen. AUSPLUME requires rainfall to be included in the hourly data files to run this option. The source of hourly rainfall data must be specified and if taken from modelling, shown to reasonably match observed rainfall frequency and duration. • Wind roses (figure 4) of the data supplied to AUSPLUME from CALMET show very few calms. Equivalent wind roses for the observational data sets used by CALMET are needed to verify this result. • Clarification is needed regarding topography — section 5.2 states AUSPLUME is suitable in "relatively flat" terrain, yet section 5.4 (p13) states topography is "not flat". • Emission estimates are listed in table 5 of AQIA (p15). No detail is provided regarding how these emissions were estimated. • The assumptions listed in section 5.4 (pp13-14) include using a PM2.5 to PM10 ratio for emission sources of 0.35 based on observations at Beresfield. This assumption has not been justified. ATASU advises that ambient monitoring may not reflect the character of the emissions sources. Justification is needed for assumptions used in estimating emissions. • Emissions were assumed to occur for 12 hours per day every day in the year. This is a conservative assumption.	• The EA refers to truck movements the same way as the condition of the Major Project approval refers to them, that is, laden trucks despatched from site. • The method of calculations based on averages is utilised to accurately reflect what the condition of the Major Project approval states. The comment made by the EPA, that this method is inaccurate is unsupported by any justification and has not been demonstrated to be inaccurate, rather the methodology employed to undertake the calculations as detailed above show it to be extremely accurate. With continued monitoring by the quarry manager, the site will continue to operate within the conditions of approval as prescribed. • The 35% references truck movements for the 2016 Annual Review reported to the Department of Planning. • The modification to the hours of operation will effectively permit Redisand to be competitive in the local and Sydney markets and to allow for the increased tonnage extracted from the site to be transported. Further, it could be considered to be anti-competitive if surrounding sand quarries were permitted to operate for extended hours, yet Redisand was not. Redisand have had no instances of non-compliance or complaints made with regards to operating hours. It is reasonable to expect that this would continue with the support of the extended operating hours. **Noise** • Noted. • The CCC meeting addressed concerns over the condition of Janet Parade and how the increased truck movements would impact its current condition and potential safety of pedestrians walking along the shoulder of the road. This is a local government issue and has been addressed by the CCC. **Air Quality** **(Response by Advitech Environmental)** • It is generally accepted that near field air quality impacts can be suitability modelled by both the AUSPLUME and CALPUFF

modelling programs. While we accept the proximity of the subject site to the Pacific Ocean, it is our opinion that the AUSPLUME model is still suitable for the following reasons:

- The subject area does not exhibit complex terrain (e.g. valleys, mountains etc.). Within the vicinity of the subject site the land elevation does not vary by more than 20 - 30 metres.
- The subject site emissions-to-air can be considered to originate close to ground level, are non-buoyant, and not released at high vertical velocity. It is considered that the dispersion of these emissions will not be influenced by the presence of thermal inversion boundary layer (i.e. TIBL, coastal fumigation) phenomena found close to the land-ocean interface.

- Agreed, CALMET model parameters have not been specified in the AQIA report and should be included. The table below specifies the CALMET model parameters used in the AQIA report.

Identifier	Descriptor	Comment
CALMET (v 6.333)	Meteorological grid domain	42 km x 42 km
	Meteorological grid origin (SW corner)	360100 m, 6345800 m
	Meteorological grid resolution	0.6 km
	Surface meteorological station	Williamtown Airport AWS, Newcastle Nobbys AWS, Tomago Aluminium AWS
	TERRAD value	6 km
	Critical Parameters (R1, R2, R1Max, R2Max, R3Max)	7 km, 4.2 km, 10 km, 6 km, 10 km
	Cell Face Heights	0, 20, 40, 80, 160, 320, 700, 1300, 1700, 2300, 3000

- Wet deposition was stated, however rainfall data was not provided in the surface observational data. Therefore, this statement (i.e. wet deposition) should be removed from the report.

- The CALMET model used observational meteorological data from Williamtown Airport (9km West of the subject site), Tomago Aluminium (20 km West of the subject site) and Nobbys Newcastle (19 km Southwest of the subject site) with 12 km resolution prognostic MM5 meteorological data. Advitech applied a maximum radius

	of influence to observational data to 10 km (R1Max = 10) which would ensure the Williamtown data would influence the wind fields at the subject site. • Advitech believes the term "relatively flat" more appropriately describes the topography surrounding the subject site. The maximum and minimum elevation in the surrounding area of the subject site is 30 m and 0 m respectively. The topography of the subject site consists of the sand dunes (20 – 30 m elevation) at the southern side of the property with a gradual decline from the southern to northern end of the property. A terrain file was included in the AUSPLUME modelling. • Agreed. Advitech calculated the emissions estimate using NPI emission factors from EET Manual for Mining v3.1. The manual was not stated in the assumptions of the report. • The assumption of a PM2.5 to PM10 ratio of 0.35 has been reviewed and can be considered a very conservative value. A comparison with recent data from the Stockton monitoring station gives a PM2.5 to PM10 ratio of 0.27. Typical PM2.5 to PM10 ratios published in AP42 manual for aggregate handling (13.2.4) and unpaved roads (13.2.2) are 0.15 and 0.1 respectively. • Advitech agrees that this assumption was conservative.
Health Hunter New England Local Health District	
• The preparation of a comprehensive Water Management Plan is recommended with addresses surface water, groundwater, wastewater, and potable water. • The Noise Monitoring Program should form part of and be included in the community consultation process. • A Mosquito Management Plan including risk assessment should be included to identify breeding sites. • The Air Quality Management Plan should include measures to monitor	• A comprehensive water management plan has been undertaken by SLR Consulting and has been approved by the Department of Planning. This plan detailing monitoring and reporting requirements relevant to surface water, groundwater, wastewater, and potable water is readily available on the Redisand website under Environmental Management Reports and Plans: http://www.redisand.com.au/environmental/ • If and when complaints are received, they are entered into the Complaints Record in accordance with the Department approved complaints procedure. Further,

and reduce the generation of particulate matter and indicate how this will be managed. The plan should allow for ongoing monitoring for PM10 and PM2.5. • Community Consultation should continue up to and if approved during ongoing operations.	complaints information is reported on the Redisand website: http://www.redisand.com.au/environmental/ • Further investigations into a Mosquito Management Plan will be undertaken and should it be determined to be necessary, Redisand will undertake the necessary risk assessment and reporting. • Noted. It is understood that the EPA considers the current monitoring to be sufficient. Continued monitoring and approaches to improving on site operations are ongoing. It should be noted that the existing Dust Monitoring Program will be reviewed after approval of the 2017 Independent Environmental Audit (IEA). Should it be determined that additional monitoring is necessary, it will be integrated into the current monitoring program, • The recently completed IEA found that dust results are still below the annual averages (some exceedances have occurred but these have all been attributed to foreign matter in samples; bird droppings, insects etc. PM10 and TSP from HVAS- showed no exceedances for the period from November 2015 until January 2017. Monthly monitoring is conducted for all three monitoring points. The number of samples satisfy the requirements of the EPL. 2017 Monitoring data of special mention: o Monitoring point 1: Highest PM10 sample for 2017 Annual Return was 27µg/m3 (below the criteria of 50µg/m3). o Highest TSP sample for 2017 Annual Return was 68µg/m3 (below the criteria of 90µg/m3). o Highest Particulate Matter for 2017 Annual Return was 7.4 µg/m3 which is also below the criteria of 50 µg/m3. o There have been no PM10 monitoring exceedances or complaints since operation. A review of the data for 2016 and 2017 found some data had readings over the 4 g/m2/month,

	but this was attributed to insects or other foreign material • The CCC meeting is held each 6 months ro earlier if determined to be necessary. Minutes of each meeting are reported on the Redisand website: http://www.redisand.com.au/environmental/
Office of Environment & Heritage	
• OEH notes that the site of the proposed modification falls entirely within the approved footprint of the Redisand Pty Ltd Salt Ash Quarry Project, and does not impact on biodiversity, Aboriginal cultural heritage or flooding matters. • OEH has no further comment or recommended conditions of consent for this proposal.	• Noted
Port Stephens Council	
• At the time of the initial approval of the development (October 2010), the Department did not require the lodgement of a Social Impact Assessment (SIA) to support the development. All State Significant Development (SSD) now require a SIA. It is suggested that a SIA be requested to address potential social impacts in response to the increase in operating times, transportation rates and truck movements. • Council's Section 94 Contribution Plan and/or details of any Voluntary Planning Agreement, which may be required to be amended because of the modification is required to be addressed.	• The requirement for a SIA is considered unnecessary given the proposal is for the modification to the existing approval under Part 3a. A SIA is irrelevant to Part 3A. However given the suggestion of Council, suitable matters relating to social impacts have been addressed within the EA and further within the RTS. • Should Redisand be successful in gaining Department consent for the proposed s75 modification all relevant s94 contributions applicable to the operation of the Salt Ash sand quarry will be appropriately updated.
Transport Roads & Maritime Services	
• The intersection of Nelson Bay Road and Janet Parade shall be upgraded to comply with the intersection warrants within Section 2.3.6 of Austroads Guide to Traffic Management Part 6: Intersections, Interchanges and Crossings.	• It is considered that this upgrade is not required due to the following reasons: o The intersection of Janet Parade and Nelson Bay Road was upgraded as part of the approval process for the current sand mining operations. This was in 2012 and the intersection upgrade was approved by the RMS at that time. Since this upgrade has been in place, there

	have been no recorded accidents at this intersection and the current mining operations have been in operation; o The current approval allows for 3 laden trucks per hour to exit the site (and a similar empty number of trucks to enter the site via Janet Parade). The proposed expansion will increase the hours of operation and will generate an average of 4 truck movements per hour entering (and exiting) the site. This represents an increase of just one truck per hour per direction and is considered to have a minimal impact upon the operation and safety of this intersection as such; o The requirement to provide a channelised left turn lane for traffic turning off Nelson Bay Road into Janet Parade is not warranted at all by the project, as all trucks associated with the project will be turning right into Janet Parade off Nelson Bay Road and then exiting left onto Nelson Bay Road. There is no requirement for trucks to head east of the site so this upgrade is not justified as part of this project.
Community Submissions	
Macka's Sand • The proposal does not limit truck movements per hour, to allow for safety of users of Nelson Bay Road during 6:00am to 9:00am, thus potential impacts to traffic could occur. • Macka's Sand contends that the intersection does not provide acceleration and deceleration lanes to sufficiently address public safety. **Tomaree Ratepayers and Residents Association Inc** • Delay in application processing and modified EA requirements. Note application lodged in 2013 and EA requirements were issued in 2013.	• With the proposed increase of 0.5 laden trucks despatched from site per hour (averaged over the working day), it is unlikely that an additional 12 (maximum) trucks utilising Nelson Bay Road between the hours of 6:00am to 6:00pm will have a significant impact upon the existing traffic conditions experienced along Nelson Bay Road. Refer to submitted Traffic Impact Assessment for a detailed analysis of potential traffic impacts the proposed modification will have on Nelson Bay Road. • Please refer to the Transport Roads & Maritime Services response above. Justification to support Macka's contention has not been provided, consequently, this point is considered vexatious.

• Exhibition period – Strongly object to the application being placed on public exhibition only over the Christmas/New Year period. • Further information obtained from Redisand Town Planner as offered within the EA. • Volume of Sand and Market Demand • Current Road Condition • Issues raised relating to Macka's Sand	• The EA requirements were requested to form a new application under s75w of the EP&A Act to modify the 3a approval (MP07_0094). This request was made 8 March 2017. The application numbering was altered to remove an inactive application made in 2013. • The public exhibition period was determined by the Departments responsible officer and is considered appropriate given previous exhibition requirements under Part 3a. • Noted. Thank you • The Annual Reviews undertaken for the Salt Ash sand quarry have detailed the following annual totals of sand being despatched from the quarry: o 2015 - 35,320t; o 2016 - 98,043t; and o 2017 (submitted to the Department of Planning and Environment 16 April 2018) – 188,409t As can be seen from the increase in sand being despatched from the Salt Ash sand quarry, demand has increased significantly and as detailed within the Department of Planning & Environment – Resources & Geoscience submission, the building and construction industries in NSW require ongoing replacement of supplies as current sources are exhausted. The continued sustainable development of existing and new quarries will facilitate ongoing supply of construction materials to support affordable housing and infrastructure development for the growth of NSW. The resource in the subject area represents a regionally significant source of construction sand for the Nelson Bay and Newcastle areas.
Redacted Submission • Sand trucks are going above the speed limit, causing accidents. • The modification request to increase operation hours from, 7 am to 5 pm to 6 am to 6pm means another 2 hours of heavy laden trucks on the roads and the removal of sand at almost double of what the company is removing now. • Some of the sand companies who are extracting sand from this area are not looking after environmental concerns. Removing more than their legal agreements allow, also extracting sand below the surface which will/may destabilize what is left of the sand dunes. • The Department of Planning and Environment does not seem to have the staff to keep some of these companies honest. • The Police do not have enough staff to ensure safety on our Roads. • State and local governments do not have enough money and staff to keep the damaged road surfaces safe for all road users. • The sand mining companies are not compensating/paying enough to	• The issue raised is considered to be a matter to be addressed by RMS and should not hinder the operation of a local business. The ongoing safety concern for motorists along Nelson Bay Road is a matter that must be suitably dealt with by the responsible state agency (RMS) and not addressed by a local business who utilises the road network like all other motorists. The potential for a major accident to occur by car drivers is far

cover the ancillary costs of the removal of sand from this area.	greater than that of truck drivers given the volume of cars utilising this stretch of Nelson Bay Road daily. • Should the s75w modification be supported by the Department (as proposed) the maximum number of laden truck despatched from site (Monday to Friday) will not exceed 42. Referring to 50 trucks being despatched from the site is an exaggeration and does not accurately reflect the proposal. • Redisand is in no way affiliated with Macka's Sand. Further, Redisand and do not believe comparing the operations of Salt Ash sand quarry to that of Macka's Sand is fair or reasonable given the extent to which Macka's currently operate and the ongoing operational compliance issues experienced at that sand plant. • The trucks entering and exiting the Salt Ash sand quarry site do so in a responsible manner and as per the signalled speed limit. The quarry manager actively monitors speeds within the internal roadway. If trucks are exceeding the speed limits on state controlled roads, this is a matter for the NSW Police Department to address. • The second objection within the redacted submission does not actually indicate what the person is objecting to, rather stating a portion of the proposed modification. • The suggestion that Salt Ash sand quarry operates outside its approval, specifically, removing more than their allowable sand limit, extracting below the approved surface level is untrue. All reporting currently undertaken on site reflects that the extraction has been in accordance with conditions of the Major Project approval. It is understood that the submitter may be referring to Macka's Sand being the recent recipient of Department of Planning (Compliance) penalty notices for exceeding truck movements from the site and extracting below the approved surface level. • Redisand is unable to comment on the staffing circumstances of the Department

	of Planning. However it can be said that the Compliance Team (Department of Planning and Environment) is very active within the local sand quarry industry and requires stringent reporting to be undertaken and submitted to ensure continued compliance and improvement. • Redisand are unable to comment on current staffing within the NSW Police Department. • Redisand are unable to comment on the position of State and Local Government's Capital Works programs. • The submitter has not indicated what a suitable "compensation" figure would be. Notwithstanding, Salt Ash sand quarry pay relevant s94 contributions to Local Government and relevant royalties to Local Aboriginal Council and land owners.

Appendix A – Advitech Environmental (EPA Response – Air Quality)

12 March 2018

ATB Morton
PO Box 186
Hunter Region Mail Centre NSW 2310
AUSTRALIA

Attention: **Luke Johnson**

Subject: **Response to NSW EPA Air Quality Concerns at Salt Ash Sand Quarry Modification**

The purpose of this letter is to respond to the particulars raised by the NSW EPA in regard to the AQIA report prepared by Advitech Environmental entitled *15039-500-Air Quality Impact Assessment Rev0.pdf* (27 July, 2017).

If our responses are found to be acceptable to the NSW EPA, Advitech recommends that each of the particulars be incorporated into a revised/updated AQIA report *(i.e. 15039-500-Air Quality Impact Assessment Rev1.pdf.*

Please find below our response to the points raised by the NSW EPA. This letter is not intended for use by any other individual or organisation and as such, Advitech will not accept liability for use of the information contained in this letter, other than that which was intended at the time of writing.

1. APPROACH TO DISPERSION MODELLING

NSW EPA Comment 1A:

Section 6.2 of 'Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (2016) states that AUSPLUME is not suitable for modelling complex terrain or coastal effects. As the proposal is in a coastal environment, strong reasoning is needed to show AUSPLUME is suitable.

Advitech Response 1A:

It is generally accepted that near field air quality impacts can be suitability modelled by both the AUSPLUME and CALPUFF modelling programs. While we accept the proximity of the subject site to the Pacific Ocean, it is our opinion that the AUSPLUME model is still suitable for the following reasons:

- The subject area does not exhibit complex terrain (e.g. valleys, mountains etc.). Within the vicinity of the subject site the land elevation does not vary by more than 20 - 30 metres.
- The subject site emissions-to-air can be considered to originate close to ground level, are non-buoyant, and not released at high vertical velocity. It is considered that the dispersion of these emissions will not be influenced by the presence of thermal inversion boundary layer (i.e. TIBL, coastal fumigation) phenomena found close to the land-ocean interface.

NSW EPA Comment 1B:

Key CALMET model parameters controlling the merging of modelled (MM5) and observed winds have not been specified.

Advitech Response 1B:

Agreed, CALMET model parameters have not been specified in the AQIA report and should be included. The table below specifies the CALMET model parameters used in the AQIA report.

Identifier	Descriptor	Comment
CALMET (v 6.333)	Meteorological grid domain	42 km x 42 km
	Meteorological grid origin (SW corner)	360100 m, 6345800 m
	Meteorological grid resolution	0.6 km
	Surface meteorological station	Williamtown Airport AWS, Newcastle Nobbys AWS, Tomago Aluminium AWS
	TERRAD value	6 km
	Critical Parameters (R1, R2, R1Max, R2Max, R3Max)	7 km, 4.2 km, 10 km, 6 km, 10 km
	Cell Face Heights	0, 20, 40, 80, 160, 320, 700, 1300, 1700, 2300, 3000

NSW EPA Comment 1C:

Section 5.4 (p14) states wet deposition has been chosen. AUSPLUME requires rainfall to be included in the hourly data files to run this option. The source of hourly rainfall data must be specified and if taken from modelling, shown to reasonably match observed rainfall frequency and duration.

Advitech Response 1C:

Wet deposition was stated, however rainfall data was not provided in the surface observational data. Therefore, this statement (i.e. wet deposition) should be removed from the report.

NSW EPA Comment 1D:

Wind roses (figure 4) of the data supplied to AUSPLUME from CALMET show very few calms. Equivalent wind roses for the observational data sets used by CALMET are needed to verify this result.

Advitech Response1D:

The CALMET model used observational meteorological data from Williamtown Airport (9km West of the subject site), Tomago Aluminium (20 km West of the subject site) and Nobbys Newcastle (19 km Southwest of the subject site) with 12 km resolution prognostic MM5 meteorological data. Advitech applied a maximum radius of influence to observational data to 10 km (R1Max = 10) which would ensure the Williamtown data would influence the wind fields at the subject site.

NSW EPA Comment 1E:

Clarification is needed regarding topography – section 5.2 states AUSPLUME is suitable in "relatively flat" terrain, yet section 5.4 (p13) states topography is "not flat".

Advitech Response1E:

Advitech believes the term “relatively flat” more appropriately describes the topography surrounding the subject site. The maximum and minimum elevation in the surrounding area of the subject site is 30 m and 0 m respectively. The topography of the subject site consists of the sand dunes (20 - 30 m elevation) at the southern side of the property with a gradual decline from the southern to northern end of the property. A terrain file was included in the AUSPLUME modelling.

2. ESTIMATION OF EMISSIONS

NSW EPA Comment 2A:

Emission estimates are listed in table 5 of AQIA (p15). No detail is provided regarding how these emissions were estimated.

Advitech Response 2A:

Agreed. Advitech calculated the emissions estimate using NPI emission factors from EET Manual for Mining v3.1. The manual was not stated in the assumptions of the report.

NSW EPA Comment 2B:

The assumptions listed in section 5.4 (pp13-14) include using a $PM_{2.5}$ to PM_{10} ratio for emission sources of 0.35 based on observations at Beresfield. This assumption has not been justified. ATASU advises that ambient monitoring may not reflect the character of the emissions sources. Justification is needed for assumptions used in estimating emissions.

Advitech Response 2B:

The assumption of a $PM_{2.5}$ to PM_{10} ratio of 0.35 has been reviewed and can be considered a very conservative value. A comparison with recent data from the Stockton monitoring station gives a $PM_{2.5}$ to PM_{10} ratio of 0.27. Typical $PM_{2.5}$ to PM_{10} ratios published in AP42 manual for aggregate handling (13.2.4) and unpaved roads (13.2.2) are 0.15 and 0.1 respectively.

NSW EPA Comment 2C:

Emissions were assumed to occur for 12 hours per day every day in the year. This is a conservative assumption.

Advitech Response 2C:

Advitech agrees that this assumption was conservative.

Yours faithfully,

advitech environmental

Patrick McGaw

Process Engineer
Advitech Pty Limited

Checked By: Dr Carl Fung - Process Engineering and Sustainability *CAQP (CASANZ)*
Job No.: J0170117
Folder No.: F15039
Our Ref: 15039 NSW EPA AQ Response Rev0.docx

Appendix B – Advitech Environmental (EPA Response – Noise)

18 April 2018

ATB Morton
PO Box 186
Hunter Region Mail Centre NSW 2310
AUSTRALIA

Attention: **Luke Johnson**

Subject: **Response to NSW EPA NIA Concerns - Salt Ash Sand Quarry Modification**

Advitech Environmental was engaged by ATB Morton to respond to the particulars raised by the NSW EPA in regard to the Noise Impact Assessment (NIA) report prepared by Advitech Environmental, entitled *15039 ATB SASM Noise Assessment Rev0.pdf* (24 November, 2017). The NSW EPA's statement in regard to the NIA report is provided as follows:

> *The NIA does not include an assessment of road traffic noise off-site from the increased truck movements on Janet Parade. However, the modification report states that there is community concern in relation to the increased noise and road safety issues that would arise if an increase in truck movements and operating hours were approved for the project.*

In response to the issue raised by the NSW EPA, Advitech Environmental has undertaken an assessment of road traffic noise for receivers potentially impacted by truck movements along Janet Parade, associated with the proposed mine expansion. This letter is not intended for use by any other individual or organisation and as such, Advitech will not accept liability for use of the information contained in this letter, other than that which was intended at the time of writing.

The road traffic assessment was undertaken in accordance with the *NSW Road Noise Policy* (RNP), and the criteria were based on the 'Local Roads' road category, reproduced in **Table 1**.

Table 1: Road traffic noise assessment criteria

Road Category	Type of Project / Land Use	Assessment Criteria - dB(A)	
		Day (7am – 10pm)	Night (10pm – 7am)
Local Road	Existing residences affected by **additional traffic** on existing local roads generated by land use developments	$L_{eq,(1hour)}$ 55 (External)	$L_{eq,(1hour)}$ 50 (External)

In addition to the above mentioned criteria, the RNP also states that for residences and other sensitive land uses affected by additional traffic on existing roads generated by land use developments, any increase in the total traffic noise levels should be limited to 2 dB above that of the corresponding 'no build option'.

A road traffic noise model was constructed using the *Predictor* (Type7810) calculation software. Two modelling scenarios were constructed to evaluate the potential road traffic noise impacts at receivers along Janet Parade associated with:

- existing quarry traffic flows; and
- existing quarry traffic flows plus additional heavy vehicle movements generated by the proposed development.

It is noted that no data is available for existing traffic flows (non-quarry related) along Janet Parade. Advitech Environmental understands that Janet Parade is a no-through road servicing up to six residential properties. Additionally, the Hellfire Paintball Centre is located at 10 Janet Parade, and operates Monday to Sunday, 8:30 am to 5:30 pm.

It is noted that receivers R3 to R7 are located in close proximity to Nelson Bay Road. Road traffic movements on Nelson Bay Road would therefore contribute to the overall existing road traffic noise levels experienced by these receivers.

It is noted that no existing data (traffic counts or noise monitoring) for Nelson Bay Road is available, therefore, the potential noise impacts are assessed based only on the heavy vehicle flows on Janet Parade associated with the existing quarry traffic and the proposed quarry traffic. The noise levels presented for existing and proposed traffic flows are based on modelled noise parameters as provided in **Table 2**. The existing and proposed heavy vehicle pass-by event scenarios were provided by Redisand Pty Ltd (the quarry operator).

Table 2: Assumptions for noise level prediction

Parameter	Element	Assumption
Quarry Traffic Flows	Existing	6 heavy vehicle pass-by events per hour
	Proposed	7 heavy vehicle pass-by events per hour
Vehicle Speed	Nelson Bay Road	80 km/h
	Janet Parade	40 km/h
Sound Power Levels (SWLs)	Passenger Vehicle	93 dB(A)
	Heavy Vehicle	102 dB(A)

Noise modelling was undertaken for each of the residential receivers on Janet Parade, along the traffic path, as well as those located adjacent to the intersection between the site haul road and Janet Parade. Additionally, noise modelling was undertaken for three receiver locations along Nelson Bay Road (R5, R6 and R7) that were considered potentially affected by traffic movements on Janet Parade as a result of the proposed quarry expansion. The receiver locations are provided in **Figure 1** at the end of this document. It is important to note that the receivers considered in the Heggies (2009) study did not include all receivers along Janet Parade. For that reason, the receivers assessed within this study do not offer a direct comparison with previous assessments.

The results of the noise level prediction are provided in **Table 3** below.

Table 3: Noise level predictions (dB(A)) for traffic movements on Janet Parade

Receiver Location	Predicted Noise Levels – $L_{eq,(1\ hour)}$ dB(A)		Relative Increase
	Existing	Proposed	
R1	34.4	35.1	0.7
R2	29.1	29.8	0.7
R3	45.9	46.6	0.7
R4	51.0	51.7	0.7
R5	33.5	34.1	0.6
R6	39.8	40.5	0.7
R7	32.2	32.9	0.7

The results of the noise modelling found that the existing and predicted traffic noise levels for quarry traffic along Janet Parade were calculated to be lower than the day period assessment criterion of 55 dB(A) $L_{eq,(1hour)}$.

Advitech Environmental understands that under the proposed quarry expansion plan, the quarry would extend the operating hours from 7:00 am to 5:00 pm, Monday to Friday to 6:00am to 6:00pm, Monday to Friday. It is noted that the period from 6:00 am to 7:00 am is considered to be part of the night period. The results of the modelling indicate that at the proposed volume of quarry vehicle movements, the night period assessment criterion of 50 dB(A) $L_{eq,(1hour)}$ would likely be exceeded at receiver R4.

Yours sincerely,

Dale Redwood

Senior Environmental Scientist (M.A.A.S)
Advitech Pty Limited

Checked By: Clayton Sparke – Senior Environmental Scientist (M.A.A.S)
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Our Ref: 15039 NSW EPA NIA Response Rev0.docx

Figure 1: Sensitive Receiver Locations

Appendix C – SECA Solution – Transport Roads and Maritime Service Repsonse

SECA solution
ACN: 164611652
ABN: 14164611652
161 Scott St
Newcastle NSW 2300
Ph: (02) 40327979
admin@secasolution.com.au

13 February 2018

ATB Morton Group
9 Old Punt Road
Tomago NSW 2322

Attention: Luke Johnson

Dear Luke

Review of RMS comments for the expansion of the Salt Ash Sand Quarry

Further to our discussions, we have reviewed the RMS letter dated 18th January 2018 with regard to the traffic implications associated with the planned expansion of the Salt Ash Sand quarry. In particular, the RMS letter has highlighted that the intersection of Janet Parade and Nelson Bay Road should be upgraded, indicating that the current intersection is not acceptable and is required to be upgraded to provide a channelised-right turn / channelised left turn (CHR/ CHL).

It is considered that this upgrade is not required due to the following reasons:

- The intersection of Janet Parade and Nelson Bay Road was upgraded as part of the approval process for the current sand mining operations. This was in 2012 and the intersection upgrade was approved by the RMS at that time. Since this upgrade has been in place, there have been no recorded accidents at this intersection and the current mining operations have been in operation;
- The current approval allows for 3 truck loads per hour to exit the site (and a similar empty number of trucks to enter the site via Janet Parade). The proposed expansion will increase the hours of operation and will generate an average of 4 truck movements per hour entering (and exiting) the site. This represents an increase of just one truck per hour per direction and is considered to have a minimal impact upon the operation and safety of this intersection as such;
- The requirement to provide a channelised left turn lane for traffic turning off Nelson Bay Road into Janet Parade is not warranted at all by the project, as all trucks associated with the project will be turning right into Janet Parade off Nelson Bay Road and then exiting left onto Nelson Bay Road. There is no requirement for trucks to head east of the site so this upgrade is not justified as part of this project.

Please feel free to contact me on (02) 40327979, should you have any queries.

Yours sincerely

Sean Morgan

Director

Quality Traffic Advice

REDISAND