



Karuah East Quarry - Community Consultative Committee

Meeting Minutes – 29 March 2021

Venue: KEQ weighbridge office on Lot 13 DP 1024564

Time: CCC Meeting: Start 3.55pm
End 5.00pm

Minutes

Attendees: Michael Ulph (Chairperson), Wade Cameron (Community Representative), Goetz Schraer (Community Representative), Joel Fleming (Karuah East Quarry Pty Ltd) and Mat Radnidge (ADW Johnson).

Apologies: Tony Ebben (Community Representative) and Mat Bell (Mid Coast Council) (late apology).

Agenda

1) Welcome

- Michael Ulph paid respect to the traditional Aboriginal land owners of Karuah, past, present and future.

2) Apologies

- Tony Ebben (Community Representative).
- Mat Bell (Mid Coast Council) (late apology).

3) Declaration of Pecuniary Interests

- Michael Ulph confirmed that KEQ Pty Ltd is paying GHD (his employer) a fee for Michael to act as the independent chairperson for the CCC.
- Mat Radnidge confirmed that KEQ Pty Ltd is paying ADW Johnson (his employer) a fee for Mat to be a member of the CCC.
- Joel Fleming is an employee of Hunter Quarries / Karuah East Quarry Pty Ltd.

4) Acceptance of Previous Minutes

- Draft CCC Meeting Minutes dated 14 September 2020; and
- Draft Site Inspection Record dated 14 September 2020.

Moved: Wade Cameron

Seconded: Joel Fleming

5) Business Arising from Previous Minutes:

- Mat Radnidge to advise Michael Ulph when a decision on MOD 8 (acoustics) is made by the NSW DPIE. Michael will then advise the CCC members.

Comment:

This action was completed on 2 February 2021. MOD 8 is approved.

No questions / comments were raised by the CCC.

- Mat Radnidge to advise Michael Ulph as any progress on MOD 9 (proposed extended hours) and MOD 10 (proposed additional disturbance area for stockpiling) is made. Michael to then advise CCC members. In particular:

- When the details of MOD 9 are known; and
- When applications are lodged with the NSW DPIE.

Comment:

Refer to Item 8 of the minutes.

6) Correspondence.

- a) 20 October 2020 – Michael Ulph supplied the draft minutes of the 14th September 2020 CCC meeting and site inspection to all CCC members and invited comment.

28 October 2020 – Wade Cameron responded confirming that the minutes were accurate.

- b) 2 February 2021 – Michael Ulph supplied a copy of the MOD 8 (Acoustics) approval documentation. This included the Notice of Modification and Consolidated Consent.

- c) 19 February 2021 – Michael Ulph emailed all CCC members to advise that given recent wet weather, the next CCC meeting is to be postponed. A revised date of 29 March 2021 was agreed to by CCC members.

Comment:

Each of the above was noted by CCC members.

7) Company Report and Overview of Activities.

The Company Report and Overview of Activities is attached to these minutes.

The Company Report & Overview of Activities includes the following:

- Progress of the Project
- Monitoring and Environmental Performance
- Community Complaints and Response to Complaints
- Information Provided to the Community and any Feedback

Joel Fleming advised the following:

- No air quality issues have been recorded (ie. compliant monitoring).
- No noise issues were recorded (ie. compliant monitoring).
- Karuah East Quarry did not receive any complaints. It was noted that a complaint relative to noise and hours of operation was received in November 2020; however this related to the separate Karuah Quarry operation.
- During the recent flooding event (March 2021) and also the flooding event in October 2020, KEQ implemented the Pollution Incident Response Management Plan (PIRMP) because all three (3) site dams experienced uncontrolled discharge.
 - Mat Radnidge – Explained that the PIRMP is in place to be implemented in response to an environmental incident.
 - Joel Fleming – Confirmed that this involved notification of relevant authorities (eg. NSW Environment Protection Authority and the NSW Department of Planning & Infrastructure) and a message is supplied to nearby neighbours confirming that the plan has been implemented (the same list of residents who are advised prior to a blast occurring). There is also a notification on the company website that the PIRMP has been implemented.
- Confirmed that the company website is in the process of being updated (www.hunterquarries.com.au).
- In relation to the *Tetratheca juncea* (TJ) translocation area, the following was noted:
 - The 5 year implementation, management & monitoring period has concluded.
 - The TJ translocation and ongoing monitoring / management was undertaken in accordance with TJ management plan and was regularly observed by an ecologist.
 - The TJ translocation effort was not as successful as hoped. This was potentially caused by competing grasses which thrived because of the irrigation system. A copy of the monitoring report will be made available on the KEQ website.
 - Indicated that a 'slow burn' completed by the Karuah Local Aboriginal Land Council could be an option to consider to aim to improve the TJ translocation area.

Questions / discussions resulting from the above were as follows:

- Michael Ulph – Is the 'slow burn' of the TJ translocation area a realistic option?
Joel Fleming - This is not being actively pursued by KEQPL. This action would also generate potential compliance issues with the Biodiversity Offset Area Management Plan (BOAMP) that applies over the site.

- Michael Ulph – At the next CCC meeting (scheduled for September, 2021) the CCC will inspect the TJ translocation area.

This was noted by all CCC members.

No further questions were raised by CCC members.

8) Update on status of Modification Applications discussed at September 2020 CCC meeting.

MOD 8 (Acoustics)

Status: Approved.

MOD 9 (Proposed Extended Hours)

Status: Modification application has not been lodged. An Acoustic Impact Assessment is currently being completed. Once the application is lodged, KEQPL will confirm with Michael Ulph, who will then confirm with the CCC.

Mat Radnidge advised:

- The details of proposed MOD 9 were introduced to CCC members, including:
 - Proposed extension to the hours of operation for product loading and dispatch to:
 - 5.00am to 10.00pm Monday to Friday (currently 7am to 6pm); and
 - 5.00am to 6.00pm Saturday (currently 7am to 1pm).
 - Proposed extension of the hours of quarrying operations (excluding overburden removal activity and drilling/blasting activity) to:
 - 7.00am to 10.00pm Monday to Friday (currently 7am to 6pm); and
 - 7.00am to 6.00pm Saturday (currently 7am to 1pm).
- The key points of project justification for proposed MOD 9 were outlined to the CCC members. In particular:
 - KEQPL needs greater long term flexibility in operational hours to operate efficiently and respond to market demand for product. At present, the currently consented operating hours are restrictive and this is leading to operational inefficiencies. MOD 9 will allow KEQPL to maintain a constant supply of product to its current and emerging customer base;
 - An earlier opening time of 5.00am (Monday to Saturday) for product loading and dispatch will allow KEQPL to make product available to construction / building sites at the time of daily commencement (which is typically 7.00am). The current opening time of 7.00am at KEQPL creates a lag in the supply of product to building sites noting that Karuah is approximately one (1) hour away from markets in Newcastle and the broader Hunter Valley;
 - Similarly, a later finishing time of 10.00pm (Monday to Friday) will allow KEQPL to supply product to building / infrastructure projects that are active during the evening;
 - Commensurate with the request to extend product loading and dispatch times, extended operations are essential to ensure product is available for dispatch.

Extended operational times are also necessary for KEQPL to satisfy times of intense product demand. Quarry operations will only be extended beyond 6.00pm on an as needed basis; however it is important for the long term efficiency of the quarry that flexible hours be established as part of MOD 9;

- It was confirmed that it was only loading and dispatch proposed to occur from 5.00am and that the balance of the operations would continue to occur unchanged from 7.00am; and
- No increase in total extraction is proposed. This will remain unchanged at 1.5 million tonnes per annum.
- A Noise Impact Assessment and Traffic impact advice will accompany the modification application and the application will be subject to rigorous assessment by the NSW DPIE, NSW EPA and any other relevant authorities. The need for these inputs has been confirmed with the NSW DPIE.
- Following lodgement of MOD 9, similar to previous MOD 8, once public exhibition dates are confirmed CCC members will be notified.

Questions / discussions resulting from the above were as follows:

- Wade Cameron - The justification for the proposal has been previously well explained and is understood.

This comment was noted by CCC members.

- Wade Cameron - Will the application be publicly notified?

Similar to MOD 8, the application will be publicly notified and opportunity for public comment directly to the NSW DPIE will be available. KEQPL will advise the CCC once the public exhibition period is confirmed.

- Wade Cameron – Will MOD 9 extend the hours of quarry traffic?

Mat Radnidge – Total approved traffic numbers will not change because the extraction rate of the quarry is not proposed to change. MOD 9 will result in traffic being on the road during the proposed extended hours; however this is anticipated to have a positive benefit because on average it will balance the traffic movements over a greater period of time. The traffic impact advice to be submitted with MOD 9 will address this matter.

- Goetz Schraer - The first load of material can be heard in the morning in the rural area east of KEQ (eg Halloran Road).

Joel Fleming - This is likely the first load of raw material as it is loaded into the hopper of the primary crusher.

Mat Radnidge - Noted that the operations of the primary crusher will not be modified by MOD 9 in relation to daily commencement time (i.e. commencement time will remain at

7.00am). MOD 9 proposes to extend the hours of operation of the primary crusher from 6.00pm to 10.00pm (Mon-Fri) and from 1.00pm to 6.00pm on Saturday.

- Goetz Schraer – The operations of the KEQ are typically only audible in the rural area east of the KEQ when the wind is blowing from the west. Loading and dispatch activity in the southern portion of the KEQ is not audible.

This comment was noted.

- Goetz Schraer – Noted that (1) he does not anticipate objection from the broader neighbourhood to the extended loading and dispatch times due to the position of stockpiles; and (2) the neighbourhood will likely not want the quarry to operate after 7.00pm as noise travels very well at night and could therefore be unacceptable to the local community.

MOD 10 (Additional Disturbance Area for Stockpiling)

Status: Application has not been lodged. Ecology reporting, landform design, surface water management and Aboriginal Archaeology reporting are well advanced.

Other inputs are currently underway including acoustic Impact Assessment, Air Quality Impact Assessment, Visual Impact Assessment, Groundwater, Soil & Land Resource Assessment & Rehabilitation.

The need for each of these inputs has been confirmed with the NSW DPIE.

- Mat Radnidge advised the CCC of the following:
 - This proposed MOD application has been flagged at previous CCC meetings.
 - The proposal involves an additional disturbance area of approximately 7.2ha, primarily in the southern section of the site (on either side of the existing southern stockpile area).
 - KEQ Pty Ltd are also considering installing a new administration office and workshop in the proposed MOD 10 area. MOD 10 will also provide sufficient area to formalise a heavy vehicle parking area.
- Mat Radnidge confirmed the following key points of justification for proposed MOD 10:
 - KEQ's customer base is evolving and now includes Transport for NSW (formerly RMS), Port of Newcastle and local Councils.
 - To comply with tendering requirements of such clients, KEQ needs to demonstrate proof of stockpiling capacity that has been subject to quality assurance testing. This often requires three (3) x 4,000m³ stockpiles. Given that KEQ produce 15 different products, stockpiling area is insufficient. This is a problem that will lead to lost tenders.
- Mat Radnidge noted:
 - As identified at previous meetings, the proposal will cut into the edge of the biodiversity offset area on Lot 13 DP 1024564.

- KEQ Pty Ltd have met with both State and Federal ecology assessment regulators and they have advised that projects such as this have been done in the past and can be done again provided that:
 - The offset to be impacted is replaced with like for like vegetation;
 - The impacts of the proposal are then offset.
 - At this stage KEQ Pty are considering fulfilling offsetting requirements by using the northern and southern portions of nearby Lot 201 DP 1042537 and the northern section of Lot 21 DP 1024341 plus payment into the Biodiversity Conservation Divisions' (BCD) Conservation Fund or securing offsets credits from the Biodiversity Credits Register (an open market database).
- Mat Radnidge noted that KEQ Pty Ltd will provide a further update to the CCC when the application is submitted to the NSW DPIE.

The above update was noted by CCC members. It was noted that this MOD has been discussed at previous meetings.

No questions were raised by CCC members.

9) General Business

- Joel Fleming – Confirmed that Greg Dressler has resigned from his position as Quarry Manager at Karuah East Quarry and is no longer employed by KEQPL. Greg will no longer be part of the CCC. It is possible that new quarry manager, Michael Todd, will join the CCC. This will be confirmed at the next CCC meeting (September 2021).
- Joel Fleming – Rehabilitation of the adjoining Karuah Quarry is underway (including side casting overburden material onto the high wall to allow successful future hydro mulching of the eastern high-wall to reduce visual impact from the northbound Pacific Highway). The Karuah Quarry consent operates until 2027.

Goetz Schraer – Is the Karuah Quarry still operational?

Joel Fleming – Yes, quarrying activity is occurring but at a much smaller intensity in comparison with Karuah East. Quarrying activity at Karuah Quarry is less than 100,000 tonnes per annum and occurs largely on a campaign basis (ie. a specific product for a specific project).

Goetz Schraer – Can the high wall separating the Karuah Quarry and Karuah East Quarry come down? Is there any agreement in place?

Joel Fleming / Mat Radnidge – There are 2 x separate consents currently in place, one for Karuah Quarry and one for Karuah East Quarry. Neither of the consents allow for the high wall to be removed. To remove the high wall would require would require a separate approval.

Joel Fleming – Invited any further CCC member comment relevant to the adjoining Karuah Quarry.

No comments / questions.

- Michael Ulph – Will the new website cover both quarry operations (ie. Karuah East Quarry and Karuah Quarry)?

Joel Fleming – Yes. The new format of the website will be more user-friendly and it will be easier to keep things up to date and readily available. Implementation of the new website is anticipated shortly – Joel will advise the CCC once it is launched.

- Michael Ulph – Do we need an additional community member on the CCC?

Wade Cameron – Is there a protocol that confirms CCC membership requirements, in particular required numbers of community members?

Mat Radnidge – Yes there is a guideline for the establishment and operation of a community consultative committee (it is a NSW DPIE issued Guideline). Mat will review the document and KEQPL will report back to the CCC.

10) Next CCC meeting and site inspection to be scheduled.

Next meeting scheduled for Monday 6 September 2021. Details as follows:

- 3pm – Site Inspection (meet at Karuah East Quarry Office, Blue Rock Close, Karuah); and
- 4pm – CCC Meeting at Karuah East Quarry office.

Michael Ulph to issue calendar invites to CCC members.

Meeting closed – 5.00pm.

Summary of Actions Arising from Meeting

1. Mat Radnidge to advise Michael Ulph when MOD 9 (proposed extended hours) has been lodged with the NSW DPIE. Michael will then advise the CCC members. Mat Radnidge to also advise Michael Ulph when public exhibition dates for MOD 9 are confirmed and Michael will advise CCC members.
2. Joel Fleming to advise the CCC (via Michael Ulph) when the new website has been implemented.
3. Mat Radnidge to advise Michael Ulph when MOD 10 (proposed additional disturbance area for stockpiling) is lodged with NSW DPIE.
4. Mat Radnidge / KEQPL to review CCC Guidelines for Community Membership and advise Michael Ulph. Michael to advise CCC members.
5. Michael Ulph to issue calendar invites for 6th September 2021 CCC meeting.

Enclosed:

- Site Inspection Minutes 29 March 2021; and
- Company Report & Overview March 2021 (refer to Item 7 above).



Karuah East Quarry – Community Consultative Committee

Site Inspection Record – 29 March 2021

Venue: Karuah East Quarry

Time: Start 3.00pm
End 3.50pm

Attendees: Michael Ulph (Chairperson), Goetz Schraer (Community Representative), Wade Cameron (Community Representative), Joel Fleming (Karuah East Quarry Pty Ltd) and Mat Radnidge (ADW Johnson)

Apologies: Tony Ebben (Community Representative)
Mat Bell (Mid Coast Council) (late apology)

Record of Site Inspection

- All CCC members met at the Karuah East Quarry weighbridge office at 3pm.
- At 3.15pm all CCC members were transported in two (2) KEQPL vehicles to the crushing plant (Lot 13 DP 1024564). At the crushing plant all CCC members exited the vehicles for discussion.
- CCC members were then transported to the KEQ weighbridge office at 3.50pm for the CCC meeting.

Record of Matters Discussed During Site Inspection

- Joel Fleming:
 - Confirmed that no plant / equipment has changed since the last site inspection.
 - Provided a general summary of the quarrying process as follows:
 1. Quarried rock is transported from the pit and fed into the primary jaw crusher;
 2. Rock is then conveyed through the secondary and tertiary cone crushers;
 3. Rock is then conveyed through the barmac crusher;
 4. Rock is then fed into the screening plant where various rock sizes are achieved (eg. 7mm, 10mm, 12mm, etc); and
 5. Rock is then transported to stockpile areas for sale.
- Joel Fleming: Confirmed that at the time of the inspection the barmac crusher was not operating.
- Wade Cameron: Observed that the stockpiles were larger now than at the time the previous CCC site inspection occurred. Wade also noted that there was more activity in the quarry than he had previously observed.
- Joel Fleming:
 - Confirmed that a polo citrus dust suppression system has been installed at the secondary crusher. This had been introduced at the previous CCC meeting (September 2020). The polo citrus treatment involves water and air blended with orange peel. It has the texture of shaving foam.
 - A benefit of the use of the polo citrus is that it reduces the risk of contamination of the quarry product which can be caused by too much water being blended with the rock.

Mat Radnidge: Does the polo citrus reduce overall site water usage?

Joel Fleming: Yes, but it is not the primary reason for installation of the system. The polo citrus system is more effective than using just water as a dust suppressor.

Wade Cameron: Does the polo citrus treatment cause clumps of aggregate to build up in the crusher teeth (ie. more than if water only was used)?

Joel Fleming: Yes it can. With the use of the polo citrus system, KEQPL have identified fines conglomerating that require maintenance. KEQPL will rectify this by changing the concentration of the polo citrus fluid.

- Joel Fleming: The extreme weather event in March 2021 contributed to over 600mm of rain being recorded for the month. Furthermore, in October 2020 there was also an extreme weather event which included 278mm being recorded in a timeframe of 12 hours. This was equivalent to a 1 in 200 year rainfall intensity event.

Joel Fleming: The extreme wet weather affected the regular operation of the quarry.

Wade Cameron: Was there overflow from the site dams?

Joel Fleming:

- Yes, there was overflow from all three (3) dams.
 - As a result, the Pollution Incident Response Management Plan (PIRMP) was triggered. KEQPL prepared and submitted an incident report to the NSW DPIE.
 - Erosion and sediment control was a key focus for KEQPL.
- Joel Fleming: Invited any further questions.

Michael Ulph: Indicated that as previously discussed an inspection of the *Tetratheca juncea* translocation area will be completed during the next CCC meeting (September 2021) to align with the flowering period of the species.

No further questions were raised from CCC members.

End of Site Inspection Discussions

DRAFT



Karuah East Quarry

Company Report & Overview of Activities



Table of Contents

1	Introduction	2
2	Air Quality Monitoring	4
2.1	Deposited Dust Monitoring	4
2.2	High Volume Air Sampling	4
3	Blast Monitoring	6
4	Noise Monitoring	7
4.1	Attended Monitoring	7
4.2	Unattended Noise Monitoring.....	8
5	Water Monitoring	9
5.1	Surface Water	9
5.2	Groundwater.....	9
5.3	Discharge Compliance.....	9
5.3.1	Dam 1	9
5.3.2	Dam 2	10
5.3.3	Dam 3	11
6	Production.....	12
7	Reporting.....	15
7.1	Incidents.....	15
7.2	Non-Compliance	15
7.3	Complaints	16
7.4	Training	16
Appendix 1EPL20611 Monitoring Locations	

the Consent Development Consent 09_0175

DAWE Australian Government Department of Agriculture, Water and the Environment (formerly the Department of Environment)

the Department Department of Planning, Industry and Environment

EPA NSW Environmental Protection Authority

EPL Environmental Protection Licence 20611

KEQPL Karuah East Quarry Proprietary Limited

the Quarry Karuah East Quarry

the reporting period 1 January 2020 to 30 June 2020

RMS Roads and Maritime Services

1 INTRODUCTION

Karuah East Quarry is an approved hard rock quarry located at Karuah in the Hunter Region of New South Wales. The Quarry was approved by the NSW Planning Assessment Commission as a State Significant Development (formerly referred to as a Part 3A Major Project) on 18 June 2014 (*Project Approval 09_0175*). The project also received approval from DAWE on 20 March 2015 (*EPBC 2014/7282*).

The key elements of the approved project are as follows:

- Extraction of up to 1.5 million tonnes of andesite material per year from a total resource of approximately 29 million tonnes.
- Removal and stockpiling an estimated 380,000m³ of overburden from the Quarry extraction area. Overburden is not included in the extraction rate of 1.5 million tonnes of andesite per annum.
- Construction of quarry plant (crushing plant, wash plant, pug mill, workshop and weighbridge), stockpile areas, and haulage road.
- Quarry Lands – Pt Lot 12 and Part Lot 13 DP 1024564.
- Disturbance Area of proposed works – 31.63ha (actual vegetation disturbance 28.09ha).
- Environmental Offset Lands – Lot 13 and Lot 14 DP 1024564, and Lot 5 DP 838128. Total environmental offset 138.22ha. These offset lands were confirmed acceptable by DPIE and DAWE.
- Upgrade and extension of Blue Rock Lane (RMS owned land) to provide access to the Quarry.
- Haulage of product from site to market by 25 – 30 tonne haul trucks via the Pacific Highway.
- Approximately 216 laden truckloads per day at maximum production.
- Drilling and blasting activity.
- Crushing and screening of extracted material.
- Loading and hauling of extracted material.
- Employment of approximately 28 staff to operate the Quarry and approximately 56 construction jobs will be created.
- The Karuah East Quarry is a stand-alone operation, separate to the existing Karuah Hard Rock Quarry.

All environmental modelling undertaken (e.g., air quality and noise) considered the cumulative impacts of both quarries combined and results satisfied legislative goals.

All Project Approval documents and Environmental Reporting are available on the Hunter Quarries website at www.hunterquarries.com.au (see 'Karuah East Documents' at the bottom of the webpage).

Prior to the commencement of vegetation clearing and construction, the Project Approval and EPBC Approval required the preparation of a number of important management plans inclusive of environmental safeguards. These management plans (prepared by experts endorsed by DPIE) include:

- Biodiversity Offset Area Management Plan.
- Tetratheca Juncea Translocation Management Plan.
- Noise Management Plan.

- Air Quality and Greenhouse Gas Management Plan.
- Blast Management Plan.
- Water Management Plan.
- Traffic Management Plan (including Construction Management and Operational Traffic Management).
- Heritage Management Plan.
- Landscaping and Rehabilitation Management Plan.
- Environmental Management Strategy.

All of the abovementioned management plans have been endorsed by DPIE. In addition, the Biodiversity Management Plan was also endorsed by DAWE.

Construction of the Quarry began on 27 April 2016 with operations commencing on 16 November 2017.

2 AIR QUALITY MONITORING

KEQPL ensure that all practical mitigation measures are used to prevent and minimise particulate matter emissions generated by the Quarry operation, so emissions do not exceed the criteria in Tables 7 to 9 of the Consent at any residence on any privately-owned land.

Air quality monitoring is undertaken in accordance with the approved *Air Quality Management Plan*.

2.1 DEPOSITED DUST MONITORING

Deposited dust monitoring results for the reporting period are displayed in **Table 1**. The results are compliant with the criteria of the Consent.

DDG4 was not able to be analysed for date 7/05/2020 due to the sample jar being broken during collection. This was immediately reported to the Department and no further action was required.

Table 1 Deposited dust monitoring results

Date	DDG1	DDG2	DDG3	DDG4	DDG5
2/07/2020	0.2	<0.1	0.2	0.6	<0.1
31/07/2020	0.4	0.2	0.4	1.0	<0.1
1/09/2020	0.6	0.5	0.4	1.0	1.0
1/10/2020	0.2	<0.1	1.3	0.7	0.6
2/11/2020	3.2	2.3	0.8	0.7	4.7
3/12/2020	0.3	0.5	<0.1	0.4	1.5
Rolling Annual Average	1.0	0.8	0.7	0.9	1.3
Annual Average Criteria	4.0	4.0	4.0	4.0	4.0

2.2 HIGH VOLUME AIR SAMPLING

High volume air sampling monitoring results for the reporting period are displayed in **Table 2**. The results are compliant with the criteria of the Consent.

Table 2 High volume air sampling results

Date	TSP ($\mu\text{g}/\text{m}^3$)	PM10 ($\mu\text{g}/\text{m}^3$)	Comment
1/07/2020	32	21	
7/07/2020	13	7	
13/07/2020	5	4	
19/07/2020	5	3	
25/07/2020	12	6	
31/07/2020	18	12	
6/08/2020	13	5	
12/08/2020	9	4	
18/08/2020	8	2	
24/08/2020	13	4	
30/08/2020	15	14	
5/09/2020	15	10	
11/09/2020	7	3	
17/09/2020	27	17	
23/09/2020	25	13	
29/09/2020	10	8	
5/10/2020	29	16	
11/10/2020	16	9	
17/10/2020	40	20	
23/10/2020	25	13	
29/10/2020	9	7	
4/11/2020	14	10	
10/11/2020	8	7	
16/11/2020	36	21	
22/11/2020	24	19	
28/11/2020	27	16	
4/12/2020	28	16	
10/12/2020	33	17	
16/12/2020	47	16	
22/12/2020	10	8	
28/12/2020	22	15	
¹ 24hr Max Criteria	N/A	50	
Year-to-date Average	23.3	12.4	
¹ Annual Average Criteria	90	30	

3 BLAST MONITORING

KEQPL conducts blasts in accordance with the approved *Blast Management Plan* and conditions stipulated in the Consent and the EPL to avoid harm and minimise nuisance to environment and the surrounding community.

Blast monitoring results for the reporting period are displayed in **Table 3**. The results are compliant with the criteria of the Consent and the EPL.

Table 3 Blast monitoring results

Date & Time	Overpressure (dB(L))	Vibration (mm/s)
Friday, 10 July 2020 2:01 PM	109.8	0.55
Friday, 31 July 2020 1:56 PM	n/t	n/t
Friday, 14 August 2020 12:28 PM	n/t	n/t
Wednesday, 26 August 2020 12:29 PM	n/t	n/t
Friday, 4 September 2020 12:29 PM	n/t	n/t
Monday, 14 September 2020 12:23 PM	n/t	n/t
Friday, 18 September 2020 12:30 PM	n/t	n/t
Friday, 9 October 2020 12:27 PM	n/t	n/t
Tuesday, 20 October 2020 12:27 PM	n/t	n/t
Monday, 9 November 2020 12:28 PM	n/t	n/t
Wednesday, 25 November 2020 11:28 AM	n/t	n/t
Tuesday, 1 December 2020 12:28 PM	n/t	n/t
Friday, 11 December 2020 12:27 PM	n/t	n/t
Friday, 18 December 2020 11:53 AM	n/t	n/t

Not triggered = n/t

4 NOISE MONITORING

KEQPL uses all practical mitigation measures to ensure that the operational noise generated by the Quarry does not exceed the criteria stipulated in the Consent and the EPL.

Noise monitoring is undertaken in accordance with the approved *Noise Management Plan*.

4.1 ATTENDED MONITORING

Attended noise monitoring was undertaken in November 2020 and February 2021. The results are displayed in **Table 4** and **Table 5** respectively.

The results detail all noise sources, such as traffic, insects, birds, Karuah Hard Rock Quarry operation, and the Quarry operation. The results are compliant with the criteria of the Consent and the EPL.

Table 4 Attended noise monitoring results - November 2020

Location	Date Start Time Weather	LAMAX	LA1	LA10	LA90	LAEQ	Description of noise and typical maximum noise levels (dBA)
A	04/11/2020 10:40 AM Calm	58	54	47	41	44	Birds 35-40 Karuah East Quarry Inaudible
B	4/11/2021 11:35 AM Calm	75	70	66	57	63	Pacific Highway 55-65 Birds 40-45 Karuah East Quarry Inaudible
F	4/11/2021 12:44 PM Calm	76	60	48	40	49	Birds 40 Local traffic 50-55 Karuah East Quarry inaudible
G	4/11/2021 10:00 AM Calm	59	50	42	36	41	Birds 30-35 Pacific Highway 35-40 Karuah East Quarry 30-36 Karuah East Quarry audible

Table 5 Attended noise monitoring results - February 2021

Location	Date Start Time Weather	LAMAX	LA1	LA10	LA90	LAEQ	Description of noise and typical maximum noise levels (dBA)
A	23/02/2021 10:23 AM Calm	85	60	57	52	55	Birds 50-55 Pacific Highway 55 Karuah East Quarry Inaudible
B	23/02/2021 10:53 AM Calm	86	71	67	59	64	Pacific Highway 60-65 Karuah East Quarry Inaudible
F	23/02/2021 11:28 AM Calm	88	53	57	53	56	Bird and Insects 40 Local Traffic 65 Pacific Highway 55 Karuah East Quarry Inaudible
G	23/02/2021 12:07 PM Calm	75	57	56	50	54	Birds and Insects 40-55 Pacific Highway 50 Karuah East Quarry Inaudible

4.2 UNATTENDED NOISE MONITORING

Unattended noise monitoring was undertaken in November 2020 and February 2021. The results are displayed in **Table 6** and **Table 7** respectively.

The unattended noise monitoring results have been determined to be compliant with the criteria of the Consent and the EPL.

Table 6 Unattended noise monitoring results - November 2020

INP Period	LA1	LA10	LA90	LAEQ
Day	56	49	41	49
Evening	57	50	41	48
Night	52	48	37	46

Table 7 Unattended noise monitoring results - February 2021

INP Period	LA1	LA10	LA90	LAEQ
Day	59	54	48	53
Evening	62	59	52	57
Night	58	56	50	54

5 WATER MONITORING

Water monitoring is undertaken in accordance with the approved *Water Management Plan*. This includes periodical monitoring of surface water and groundwater, and daily monitoring of water during discharge events from licenced discharge points.

5.1 SURFACE WATER

Surface water monitoring is to be undertaken monthly and compared against baseline data to ensure that ecological health downstream of discharge locations are not compromised due to the Quarry operation.

5.2 GROUNDWATER

Groundwater levels are monitored on a quarterly basis and groundwater quality is analysed on a six-monthly basis. The monitoring results are analysed and compared against baseline results to identify any impacts arising from the Quarry operation and to identify long-term groundwater level trends.

5.3 DISCHARGE COMPLIANCE

Water quality monitoring is undertaken daily during discharge in order to demonstrate compliance with pollutants specified in the EPL (see **Table 8**).

Table 8 EPL 20611 Concentration limits for pollution of waters

Pollutant	Units of Measure	Concentration Limit
Oil and Grease	Milligrams per litre	5 &/ or none visible
pH	pH	6.5 – 8.5
Total suspended solids	Milligrams per litre	40

5.3.1 Dam 1

During the reporting period, there were 15 days of discharging from Dam 1 (LDP1). Water quality monitoring results are displayed in **Table 9**.

Table 9 Water quality monitoring results - Dam 1

Date	Temperature	pH	Conductivity	Turbidity	Total Suspended Solids	Oil and Grease
13 August 2020	16.7	7.2	693	75	37	NV
14 August 2020	18	7	700	50	31	NV
17 August 2020	16.2	7	704	55	31	NV
18 August 2020	17.3	7.1	712	60	25	NV
19 August 2020	14.8	6.9	714	60	27	NV
20 August 2020	15.8	6.8	690	70	35	NV
21 August 2020	16.2	6.8	689	75	36	NV

24 August 2020	14.9	6.8	689	75	40	NV
25 August 2020	15.2	7	753	75	37	NV
26 August 2020	13.7	6.9	715	75	33	NV
26 October 2020	17.2	6.5	241	8620	5380	NV
27 October 2020	21.5	6.7	598	905	412	NV
28 October 2020	21.5	6.4	692	300	161	NV
29 October 2020	20.5	6.5	714	260	95	NV
30 October 2020	22.2	6.9	737	160	71	NV

Not visible = NV

There were five non-complaint discharges during this reporting period; these were all uncontrolled discharges due to extreme rainfall received (refer to Section 8.2 for further information).

5.3.2 Dam 2

During the reporting period, there were 11 days of discharging from Dam 2 (LDP2). Water quality monitoring results are displayed in **Table 10**.

Table 10 Water quality monitoring results - Dam 2

Date	Temperature	pH	Conductivity	Turbidity	Total Suspended Solids	Oil and Grease
21 July 2020	13.5	6.8	392	45	22	NV
22 July 2020	13.6	6.7	395	50	29	NV
11 August 2020	14.3	6.5	430	50	30	NV
12 August 2020	15.7	6.9	426	33	20	NV
13 August 2020	16.3	6.9	409	20	13	NV
14 August 2020	17.8	6.8	427	17	11	NV
17 August 2020	15.8	6.9	450	19	12	NV
26 October 2020	18.2	6.7	63	1872	915	NV
27 October 2020	21.1	6.8	146	660	296	NV
28 October 2020	21.5	6.6	137	970	413	NV
16 December 2020	26	6.8	840	17	14	NV

Not visible = NV

There were three non-complaint discharges during this reporting period; these were all uncontrolled discharges due to extreme rainfall received (refer to Section 8.2 for further information).

5.3.3 Dam 3

During the reporting period, there were nine days of discharging from Dam 3 (LDP3). Water quality monitoring results are displayed in **Table 11**.

Table 11 Water quality monitoring results - Dam 3

Date	Temperature	pH	Conductivity	Turbidity	Total Suspended Solids	Oil and Grease
21 July 2020	14.3	7.8	693	55	28	NV
22 July 2020	13.7	7.8	692	55	25	NV
23 July 2020	14.5	7.7	688	50	23	NV
14 August 2020	18	7.6	646	75	36	NV
25 August 2020	15.4	8	756	29	17	NV
26 August 2020	13.6	8.1	727	28	18	NV
26 October 2020	18.7	7.1	271	1690	1250	NV
27 October 2020	21.1	6.9	248	985	507	NV
28 October 2020	21.6	6.9	335	1444	715	NV

Not visible = NV

There were three non-complaint discharges during this reporting period; these were all uncontrolled discharges due to extreme rainfall received (refer to Section 8.2 for further information).

6 FLORA AND FAUNA

Flora and fauna monitoring is undertaken in accordance with the approved *Biodiversity Offset Area Management Plan*, *Tetratheca Juncea Translocation Management*, and the *Landscape and Rehabilitation Management Plan*. This includes pre cleaning inspections prior to any disturbance of areas within the approved project area, and invasive species management.

6.1 BIODIVERSITY OFFSET AREA

Results from the 2020 annual monitoring indicate that the vegetation and fauna habitats within the Biodiversity Offset Area and Lot 12 are in good condition and remain relatively stable since 2019 and the baseline surveys completed in 2015. The 2020 monitoring programme has identified several key management actions, such as weed management, erosion and sediment controls maintenance, and parameter fencing installation/repairs. Additionally, there are some administrative actions to be completed.

For further information, find the full *2020 Annual Monitoring Report for Karuah East Quarry Biodiversity Offset Area and Lot 12* at the [Hunter Quarries website](#).

6.2 TETRATHECA JUNCEA TRANSLOCATION

Annual monitoring of the *Tetratheca juncea* (*T. juncea*) translocation site was undertaken on 12 October 2020 by *Firebird ecoSultants*. Only six of the translocation rows were observed to have *T. juncea* that were in flower, otherwise the *T. juncea* within the translocation site were predominantly not in flower or have browned or died off completely. Due to the extremely low number of *T. juncea* that were observed to be in flower at this time (seven individuals total), combined with the dense overgrown rows, it was decided that it was not viable to undertake the complete survey for 2020.

It is possible that *T. juncea* may have begun flowering earlier in the year and subsequently stopped flowering earlier in the year which may explain the lack of flowering individuals observed in October 2020. Kleinfelder (2021) have also observed a decline in the *T. juncea* numbers within the Biodiversity Offset Area for the past five years. A natural decline in *T. juncea* population could potentially be related to the drier than normal conditions in past years, although the year 2020 has experienced more rainfall than previous years. Other contributing factors to the low success rate may include an increase in average temperature and translocation site suitability.

For further information, find the full *Tetratheca juncea Monitoring Report* for 2020 at the [Hunter Quarries website](#).

6.3 INVASIVE SPECIES MANAGEMENT

6.3.1 Flora

Weed spraying across the Quarry and adjacent Karuah Quarry, targeting the areas of Lantana, was undertaken in October. Spraying was successful at reducing Lantana and will be continued in 2021.

6.3.2 Fauna

KEQPL participated in a localised effort to fight back against wild dog populations that threaten native species and local agriculture during December 2020. After multiple sightings of groups of wild dogs were reported to the *Hunter Local Land Services*, a coordinated wild dog baiting program involving multiple landowners in the Karuah and North Arm Cove area was undertaken. KEQPL were

involved by laying 1080 wild dog baits (a restricted chemical product only to be used by authorised personnel) on the following properties:

- 1517 The Branch Lane, Karuah (Lot 5 DP838128); and
- 1783 The Branch Lane, Karuah (Lot 201 DP1042537).

7 PRODUCTION

Monthly monitoring of sales across the reporting period is detailed in **Table 12**, showing that there was a total of 12,051 truck movements taking 472,983.21 tonnes of material from the Quarry to various customers across New South Wales.

Table 12 Monthly production data

Date	Truck Movements	Material (tonnes)
July	1,539	43,193.92
August	2,052	59,104.66
September	2,219	64,354.43
October	2,186	65,000.50
November	2,381	71,328.76
December	1,664	47,781.46
Total	12,051	472,983.21

8 REPORTING

8.1 INCIDENTS

During the reporting period, KEQPL did not have any environmental incidents.

8.2 NON-COMPLIANCE

During the reporting period, KEQPL had two reportable non-compliances, see **Table 13** for further information.

Table 13 Non-compliances

Principle Approval	Condition	Condition Description	Compliance Status	Compliance Description
PA 09_0175	Schedule 3, condition 19	Surface water discharges	Non-compliance relating to exceedance of concentration limits.	There were 11 TSS exceedances, five recorded at LDP001, three at LDP002 and three at LDP003, all during uncontrolled discharge. There was one exceedance of pH criteria, which occurred during uncontrolled discharge from LDP001.
EPL 20611	L1; L2	Surface water discharges	Non-compliance relating to exceedance of concentration limits.	As above.

Due to extreme rainfall received during October 2020 (a total of 355.2 mm), all three of the Quarry dams experienced uncontrolled discharge. It was therefore deemed necessary to enact the *Pollution Incident Response Management Plan* to minimise potential pollution and follow due process to notify appropriate regulatory authorities and nearby residents. The EPA Pollution Hotline was contacted to self-report uncontrolled discharge from all dams.

8.3 COMPLAINTS

During the reporting period, KEQPL did not receive any complaints.

8.4 TRAINING

KEQPL conducts regular meetings to ensure all employees can be kept updated on:

- operational performance.
- company planning and business strategy.
- environmental and safety training.

During the reporting period, three key environmental factors were revised with all site workers:

- Waste Management (November);
- Biodiversity Conservation (October); and
- Fuel and Oil Spill Control (July).

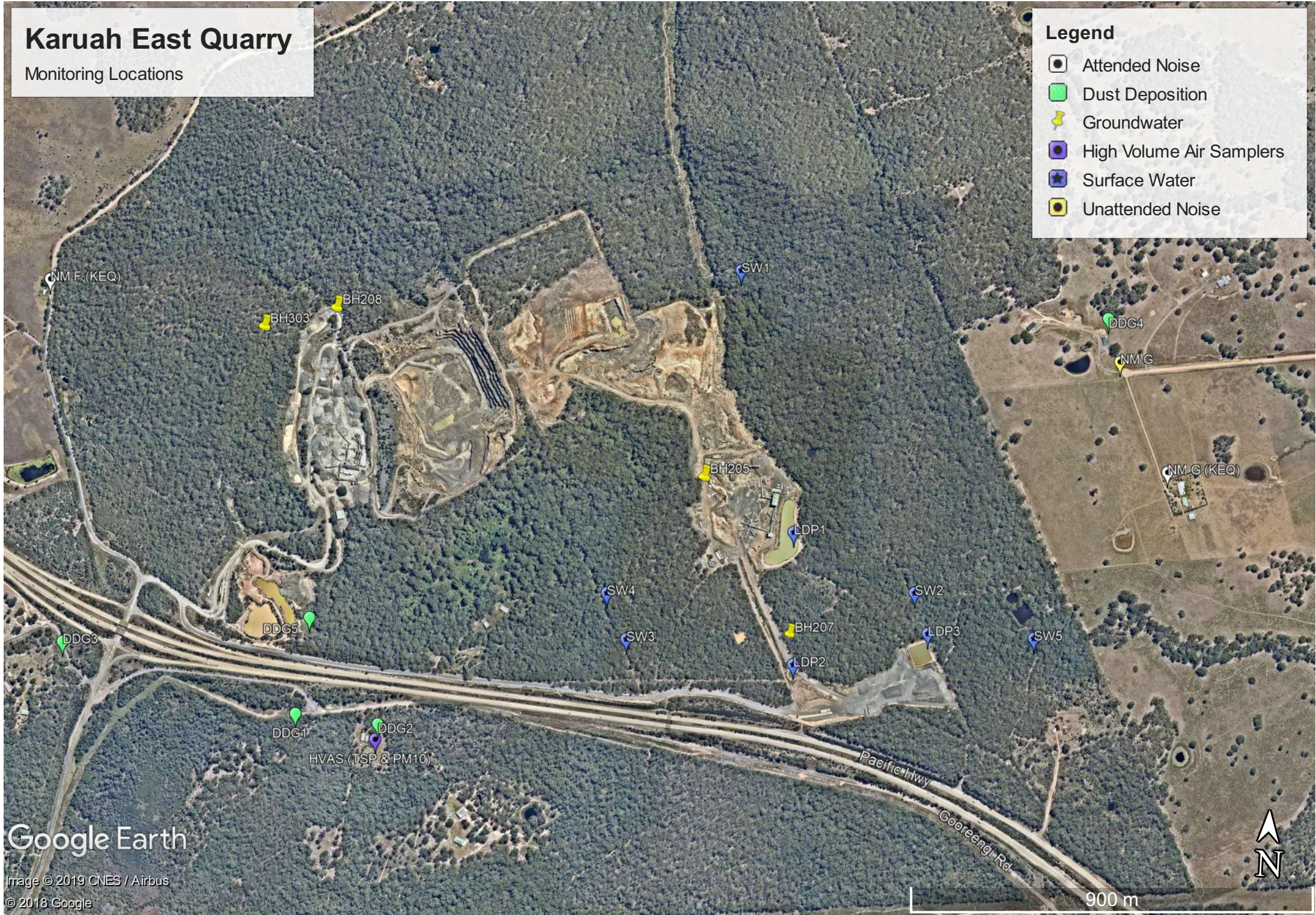
Appendix 1 – EPL 20611 Monitoring Locations

Karuah East Quarry

Monitoring Locations

Legend

- Attended Noise
- Dust Deposition
- Groundwater
- High Volume Air Samplers
- Surface Water
- Unattended Noise



Google Earth

Image © 2019 CNES / Airbus
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900 m

