MULTIQUIP
QUARRIES

Annual Environmental Review

Ardmore Park Quarry Project

For the period 21st August 2018 – 20th August 2019

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NOVEMBER 2019

Contents

Definitions

Acronym	Meaning
ACHMP	Aboriginal Cultural Heritage Management Plan
AEMR	Annual Environmental Management Review
AGE	Australasian Groundwater and Environmental Consultants
AHIP	Aboriginal Heritage Impact Permit
APQP	Ardmore Park Quarry Project
AQIA	Air Quality Impact Assessment
AQMP	Air Quality Management Plan
BCD	NSW Biodiversity Conservation Division
BLMP	Biodiversity and Landscape Management Plan
CCC	Community Consultative Committee
CEAL	CEAL Ltd – registered name of Multiquip Quarries
dBA	Decibels (A weighted)
DPI	NSW Department of Primary Industries
DPIE	NSW Department of Planning, Industry and Environment
DRE	NSW Department of Resources and Energy
EEC	Endangered Ecological Community
EMS	Environmental Management Strategy
EP&A	Environmental Planning and Assessment Act (NSW)
EPA	NSW Environmental Protection Authority
EPBC	Environmental Protection and Biodiversity Conservation Act (NSW)
EPL	Environmental Protection Licence
FDI	McArthur Forest Fire Danger Index
GMC	Goulburn Mulwaree Council
IEA	Independent Environmental Audit
IPC	NSW Independent Planning Commission
LGA	Local Government Area
LMP	Landscape Management Plan
NMP	Noise Management Plan
NPW	National Parks and Wildlife Act (NSW)
OEH	NSW Office of Environment and Heritage
POEO	Protection of the Environment Operations Act (NSW)
PRP	Pollution Reduction Program
QCP	Quarry Closure Plan
RAPs	Registered Aboriginal Parties
RMS	NSW Roads and Maritime Services
SSD	State Significant Development
T	Tonne
TMP	Traffic Management Plan
TOC	Top of Collar
TSC	Threatened Species Convention Act (NSW)
WAL	Water Access Licence
WMP	Water Management Plan

Title block

Name of operation	**Ardmore Park Quarry Project**
Address	5152 Oallen Ford Road Bungonia, 2580, NSW
Name of operator	CEAL Limited, trading as Multiquip Quarries
Project approval	PA 07_0155
Environmental protection license	13213
Water license	30111 (refer to Section 7)
Name of holder of water license	CEAL Limited
Annual review start date	21st August 2018
Annual review end date	20th August 2019

I ALEXANDER COX certify that this audit report is a true and accurate record of the compliance status of ARDMORE PARK QUARRY for the period 21st AUGUST 2018 – 20th AUGUST 2019 and that I am authorised to make this statement on behalf of MULTIQUIP QUARRIES.

Note:

The Annual Review is an 'environmental audit' for the purposes of section 122B(2) of the Environmental Planning and Assessment Act 1979. Section 122E provides that a person must not include false or misleading information (or provide information for inclusion in) an audit report produced to the Minister in connection with an environmental audit if the person knows that the information is false or misleading in a material respect. The maximum penalty is, in the case of a corporation, $1 million and for an individual, $250,000.

The Crimes Act 1900 contains other offences relating to false and misleading information: section 192G (Intention to defraud by false or misleading statement—maximum penalty 5 years imprisonment); sections 307A, 307B and 307C (False or misleading applications/information/documents—maximum penalty 2 years imprisonment or $22,000, or both).

Name of authorised reporting officer	Alexander Cox
Title of authorised reporting officer	Environmental Officer
Signature of authorised reporting officer	***Alexander Cox***
Date	15/11/2019

Statement of compliance

Where all conditions of compliance adhered to during the reporting year?	
Approval: PA 07_0155	NO

Table 1 – Non-compliances during 2018 reporting year

Approval	Condition	Subject	Status	AEMR reference
PA 07_0155	Condition 24, Schedule 3	Aboriginal heritage		6.7.2
PA 07_0155	Condition 2, Schedule 2	Crushing of basalt on hard rock processing area, not in cut area of the project site (residual matter from 2017 reporting year)		5
PA07_0155	Condition 2, Schedule 2	Extraction of material restricted to areas nominated under the EA, EA Mod 1, EA Mod 2 and PA 07_0155		11

Table 2 – Non-compliance risk level key

Risk level	Colour	Description
High		Potential for significant environmental consequences regardless of likelihood.
Medium		Potential for serious environmental consequences but unlikely OR potential for moderate environmental consequences with moderate likelihood.
Low		Potential for moderate environmental consequences but is unlikely to occur OR potential for low environmental consequences but is likely.
Administrative		No potential for environmental harm.

1 Introduction

1.1 Project description

The Ardmore Park Quarry Project (**AQMP, the quarry, the project**) is a sand and basalt rock quarry located near Bungonia, in regional New South Wales. The quarry is owned and operated by CEAL Limited, trading as Multiquip Quarries (**Multiquip**).

The quarry operates under a State Significant Development (**SSD**) approval issued by the NSW Department of Planning, Industry and Environment (**DPIE**), Project Approval 07_0155 (**the approval**). Approval for the quarry was first granted by Minister for Planning in September of 2009. Under the current conditions of approval, the quarry is permitted to extract up to 400,000 tonnes of mixed products annually until June of 2039.

Apart from a small number of local sales, quarry products are transported via road, along a defined haulage route to the Hume Highway (M31) interchange at South Marulan. This route includes 4km of Oallen Ford Road, a private bypass which circumvents the village of Bungonia, and the length of Jerrara Road.

The quarry predominantly supplies the Sydney market with washed sand products for ready mix concrete manufacture.

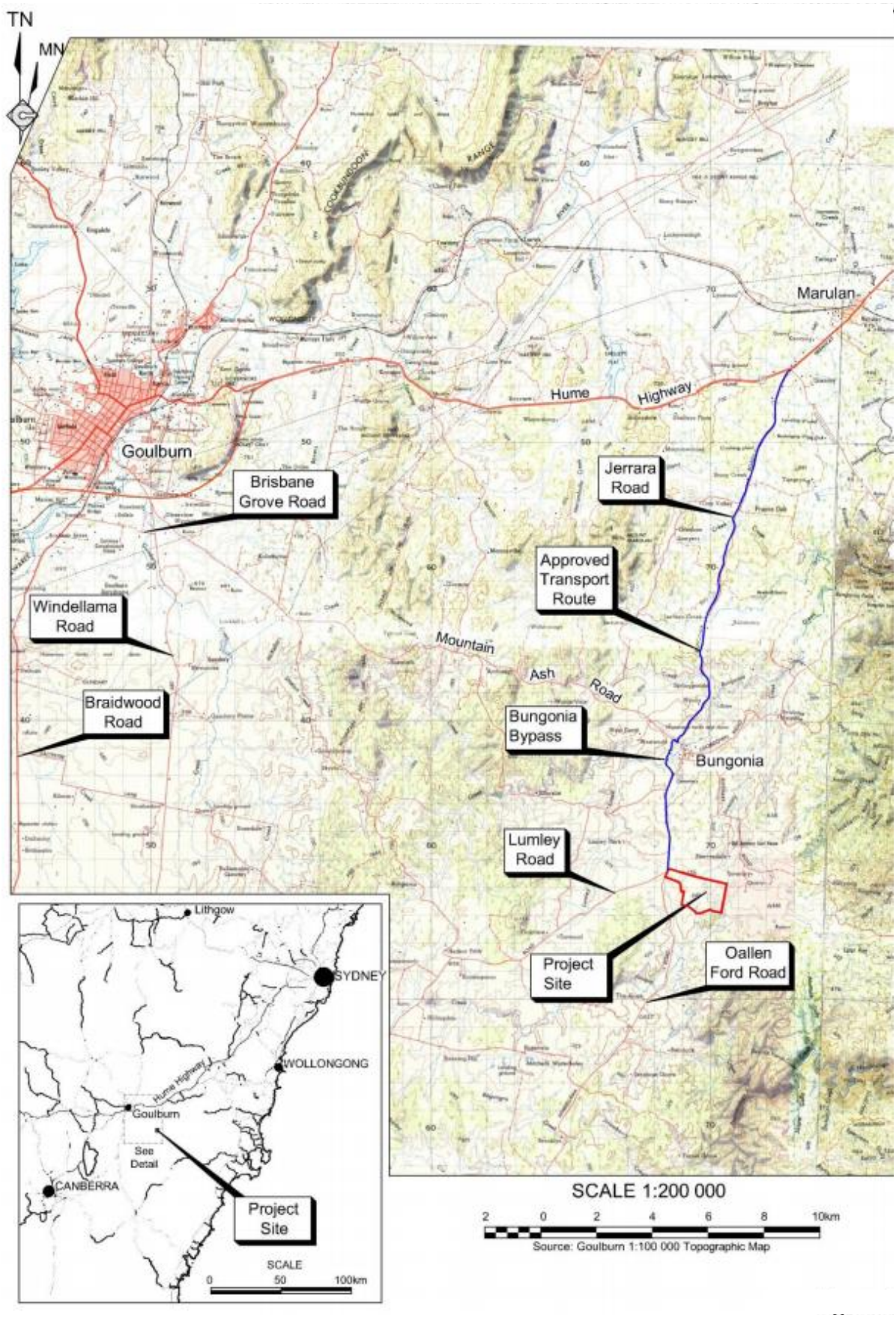
1.2 Project location and setting

The quarry is located on the property “Ardmore Park” at 5152 Oallen Ford Road. The site is located approximately 20km south-east of the town of Goulburn and 200km south-west of Sydney (see Figure 1). Predominant surrounding land uses include grazing and light agriculture.

The extraction area encompasses approximately 30 hectares, located mostly along the southern boundary and centre of the Ardmore Park property.

The site is located within the Goulburn-Mulwaree Council (**GMC, Council**) local government area (**LGA**).

Figure 1 – Ardmore Park Quarry location



1.3 Scope

Multiquip Quarries is required by Condition 5(5) in the approval to produce and publish an Annual Environmental Management Review (**AEMR**). Each AEMR includes a summary of quarrying activity and the environmental performance of the project for the previous year. The anniversary date which has been adopted for this each reporting period is the same as that of the quarry's Environmental Protection License, the 21st August.

The AEMR is the primary environmental reporting document associated with the project. It is lodged annually with the DPIE, GMC, Pejar Local Aboriginal Land Council and is published on the company's website (www.mqquarry.com.au/media/).

The 2018 AEMR was prepared with reference to the *Annual Review Guideline* (The Department of Planning and Envrionment, 2015).

1.4 Site contacts

The contact details of staff responsible for the on-site environmental performance of the quarry are summarised in Table 3.

Table 3 – Management contact details

Name	Role	Mobile	Email
Stephen Wall	Quarry Manager	0418 255 535	Stephen.W@mqquarry.com.au
Alexander Cox	Environmental Officer	0429 378 945	Alexander.C@multiquip.com.au

2 Approvals

The quarry operates under a state significant development project approval, an Environmental Protection Licence (**EPL, the licence**) and multiple Water Access Licences (**WAL**). The approvals in effect are summarised in Table 4.

Multiquip additionally holds a separate approval permitting the extraction of small quantities of clay rich, basalt soils which are used in the construction of sporting surfaces and cricket wickets. The consent authority for this approval is council. The undertaking of this activity predates development approval and operation of the quarry.

Table 4 – Approvals

Approval	Consent Authority	Year Granted	Reference #
Project Approval	NSW Department of Planning	2009, modified in 2011, 2013	PA 07_0155
Environmental Protection Licence	NSW Environmental Protection Authority	2009	13213
Water Access Licence	Water NSW		30111 – 110 units
	Water NSW		25390 – 9 units, held by Multiquip Transport Pty Ltd
	Water NSW		WAL number yet to be issued – 100 units
Wicket Soil Extraction	Goulburn Mulwaree Council	2001, modified in 2015	MOD/0109/1415

The approval has been modified twice during the life of the project:

- Modification 1 (2010) realignment of the entranceway to the quarry to the intersection of Oallen Ford and Lumley Roads.
- Modification 2 (2013) approval for limited quantities of local sales of quarries products along specified local routes, in addition to the principal haul route of Oallen Ford and Jerrara Roads to the Hume Highway interchange at South Marulan.

Multiquip applied for a third modification (Modification 3) to the approval in January of 2018. This modification has proposed an extension to the approved extraction area, a lengthening of the permitted hours for product transport and an increase to the maximum quantity of heavy vehicles allowed to be dispatched from the site each day.

Further information regarding Modification 3 can be found in Section 3.1.

3 Changes to approvals

3.1 Modification 3

In January of 2018, Multiquip Quarries applied to the DPIE for a third modification to the project approval. The terms of this modification included:

- An extension to the hours of product dispatch from 5am-10pm during weekdays and 7am-5pm on Saturdays.
- An increase to the total extraction quantity of material from 400,000 tonnes per annum to 580,000 tonnes.
- A change to the way in which maximum dispatches are calculated which would increase daily maximum dispatches from 44 outbound vehicles to 62 outbound vehicles, while retaining the same monthly number of outbound dispatches.
- An expansion of the approved basalt extraction area towards the east.
- A voluntary planning agreement (**VPA**) between Multiquip and Goulburn Mulwaree Council.

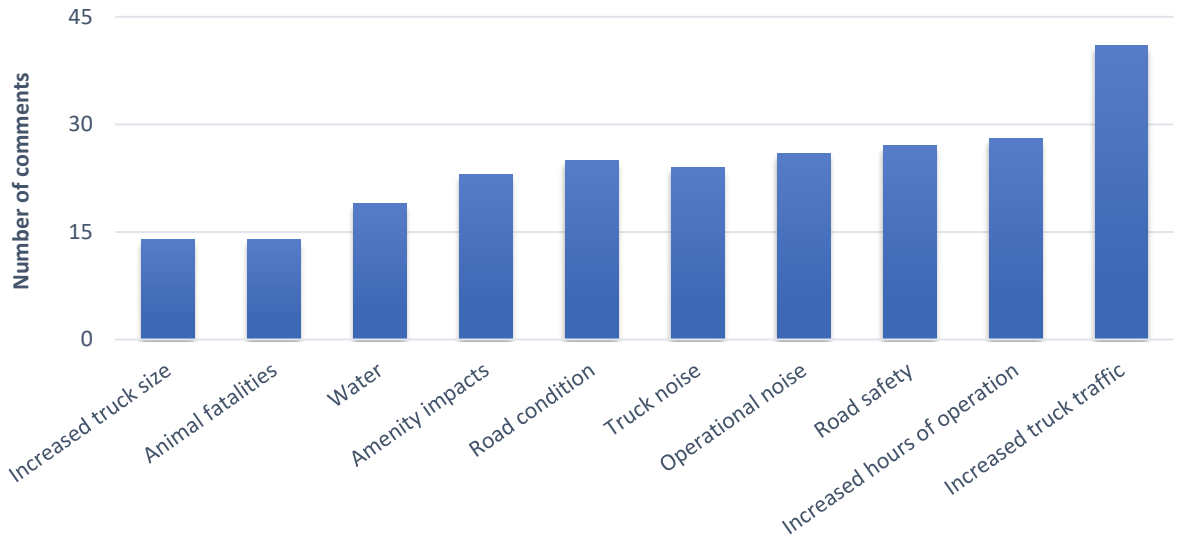
The terms of the modification were exhibited for 30 days, attracting 46 public submissions. Additional submissions were received from 11 incorporated entities, including government agencies such as the EPA, RMS, the Department of Education and DPI Water.

In June of 2018, the DPIE hosted a community meeting at the Bungonia Progress Association Hall to outline the terms of the proposed modification and receive additional feedback from members of the public. This meeting was well attended by residents and members of the Bungonia community. Key concerns raised by the public submissions were discussed by Departmental representatives and pertained mainly to issues of road safety and concern about increased heavy vehicle traffic. Apart from issues relating to road safety, concerns raised by community submissions included water availability and operational (site) noise.

A breakdown of the frequency of issues raised throughout the public submissions, as presented at the public meeting held by the DPIE, is shown in Figure 2.[1]

[1] Source: Department of Planning Industry and Environment public presentation, available at the Major Project's portal: https://majorprojects.accelo.com/public/56ec0cb7edea7db8fa48b1e644c305a4/Ardmore%20Park%20Community%20Presentation.pdf

Figure 2 – Issues raised in public submissions during Modification 3 exhibition



3.2 Revisions to environmental protection license

The EPA made two changes to EPL 13213 during the reporting year. In June of 2018, the EPA revised the licence for the Ardmore Park Quarry to require attended noise surveys to be conducted in both September 2018 and December 2018 as part of a Pollution Reduction Program (**PRP**). This revision to the EPL was discussed in the 2017 AEMR. The results of the noise monitoring undertaken are discussed in Section 6.4 of this report. The PRP was removed from the licence, subsequent to extensive on-site noise assessment.

In March of 2019 the EPA further amended the licence to remove any requirement to monitor two groundwater monitoring points (BH1 and BH2, monitoring points 9 and 10 in the EPL) as well as the "western spring" (monitoring point 17) during periods of no flow. The removal BH1 and BH2 from the monitoring program was justified given the southward expansion of the main sand pit required their excavation.

4 Operations summary

4.1 Quarrying activities

4.1.1 Extraction

Extraction and processing of sand occurred throughout the reporting year. Mining and crushing of basalt occurred on an infrequent, campaign basis, although was undertaken with greater consistency towards the end of the reporting year.

Sand and sand derived products represent the most significant share of products transported from Ardmore Park. A majority of the sand produced on site is used for ready-mix concrete, primarily by customers in the greater Sydney region. Other products produced on site include larger rock used for landscaping and erosion control and fill material. During the reporting year approximately 130,000 tonnes of sand and 15,000 tonnes of basalt products were extracted.

Figure 3 - Rock Extraction, crushing and screening

4.1.2 Plant commissioning

The 2018 reporting year saw the commissioning of the sand wash plant on site. The model installed was an M4500 manufactured by CDE. The plant was delivered to site in August of 2018 and was fully operational by the conclusion of the calendar year.

Figures 4 and 5 show two, progressive stages of construction of the sand plant in September of 2018.

Figure 4 - Early stages of site preparation and plant installation

Figure 5 - Assembled sand wash plant

4.2 Roadworks

Condition 25(3) of the approval required substantial road improvement works to be undertaken along the length of Oallen Ford Road and Jerrara Road utilised for the road transport of quarried products. In the project approval, these works were divided in three conceptual stages, principally the widening of the road formation (stages 1 and 2) and then bridge upgrades and ancillary works (stage 3). All three stages were completed to the satisfaction of council during the reporting year.

Several areas of road pavement identified by council officers as deficient were subject to defect rectification works and pavement stabilisation to prevent any future deforming of the road formation. Rectification works were applied on an additional 4000m^2 of road pavement along the haulage route, in sections with an expected life of less than 10 years. These areas were identified by the approval.[2]

In April of 2019, Multiquip received written acknowledgement from council that the roadworks had been completed to a satisfactory standard. This marked the formal conclusion of the roadworks program. All future road maintenance of the haulage route will be the responsibility of council, although may be funded by s94 payments from Multiquip.

4.3 Additional returns

4.3.1 DRE annual return

Multiquip is required to lodge an annual return to the NSW Department of Resources and Energy (**DRE**) describing land-based extraction activities for each financial year. The DRE return lodged during this reporting period was for the year ended 30th June 2019.

4.3.2 EPA annual return

Multiquip lodged an annual return to the EPA in October of 2019. This return is available on the EPA's website and includes the results of annual compliance monitoring for the 2018 reporting year.

[2] These areas were identified in 2009 by a study conducted by Pavement Management Services. The report on pavement life expectancy was included in the *Environmental Assessment* of the Ardmore Park Quarry Project.

4.3.3 s.94 payments

Multiquip is required to pay council for damage incurred to public roads as a result of heavy vehicle movements associated with the quarry project. In the 2018 reporting year, approximately $200,000.00 was payable to council under the s.94 rate set by the approval.

5 Actions required from previous AEMR

The single action required from the 2017 AEMR is summarised in Table 5.

Table 5 – Actions required from the 2017 AEMR

Action	Comment
Repositioning of mobile crushing plant following compliance enforcement action by the DPIE.	Mobile rock crushing equipment was relocated to a cut section of the project site during the reporting year. Confirmation of the location of mobile crushing plant in the cut section of the site was provided by survey undertaken by a licensed surveyor. This survey was provided to the DPIE. Subsequent noise assessment in December of 2018 indicated that compliance with the project's noise criteria could be accomplished with the relocated crushing plant operating in the cut section of the project site.

6 Environmental performance

6.1 Monitoring locations

Figure 6: Environmental monitoring points

Table 6 – Monitoring point key

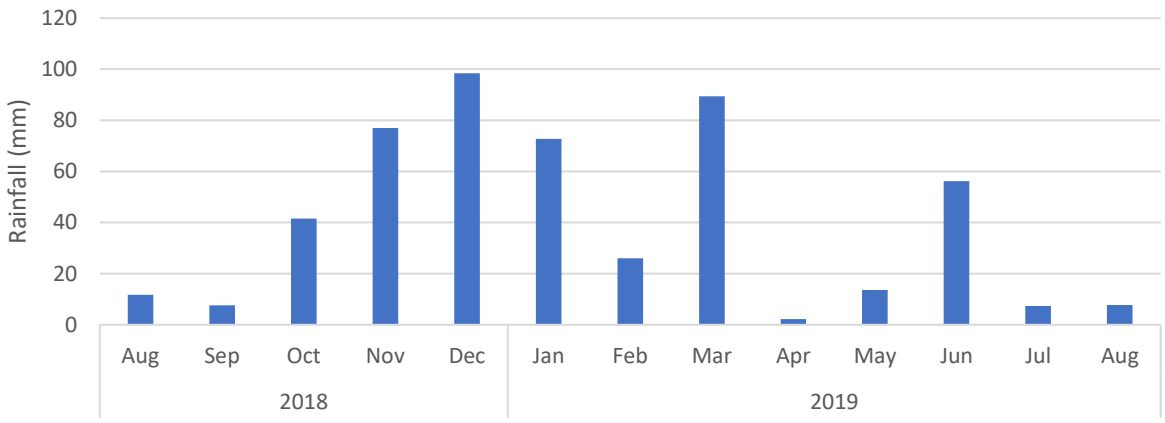
Type	Number	Key
Deposited dust	4	
Monitoring Bore	8	
Spring	3	
Noise monitoring (indicative)	2	
Weather station	1	

6.2 Meteorological data

6.2.1 Rainfall

Rainfall data from the on-site weather station were collected for the duration of the reporting year. A total of 511mL fell during the period of this AEMR. This is a 25% shortfall from the mean rainfall of the Goulburn district of 684mL.

Figure 7: Monthly rainfall totals

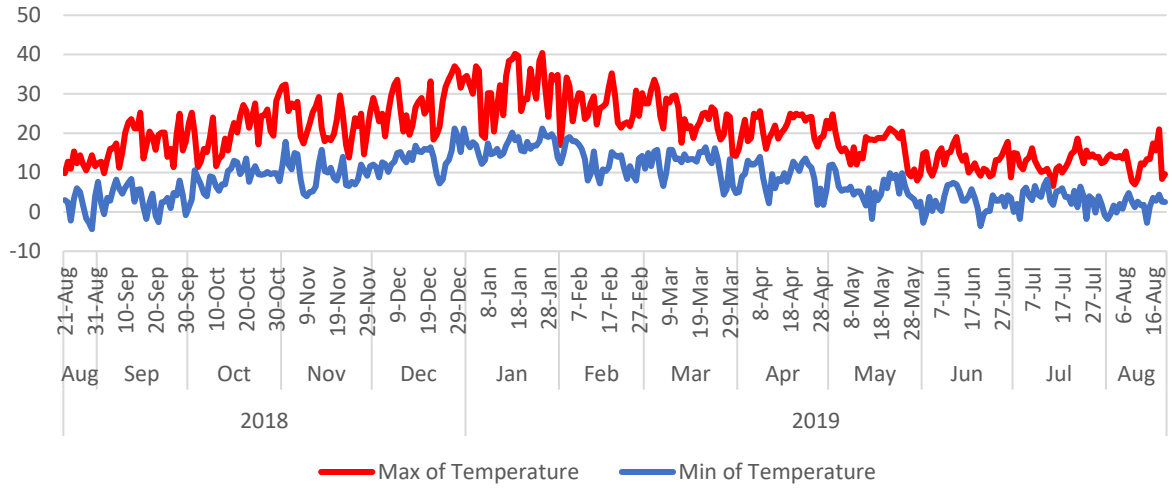


The wettest period of the year was from November 2018 to January 2019. Rainfall during this period however was concentrated in a small number of relatively intense rainfall events. Only 33 days experienced rainfall greater than 5mL, while a full six months of the reporting year had less than 15mL in total rain.

6.2.2 Temperature

Average temperature at the site varied predicably with seasonal changes. Temperature on site ranged from -5°C to 40°C. Figure 7 shows the minimum and maximum temperatures throughout the duration of reporting period.

Figure 8: Daily maximum and maximum temperatures



6.2.3 Wind

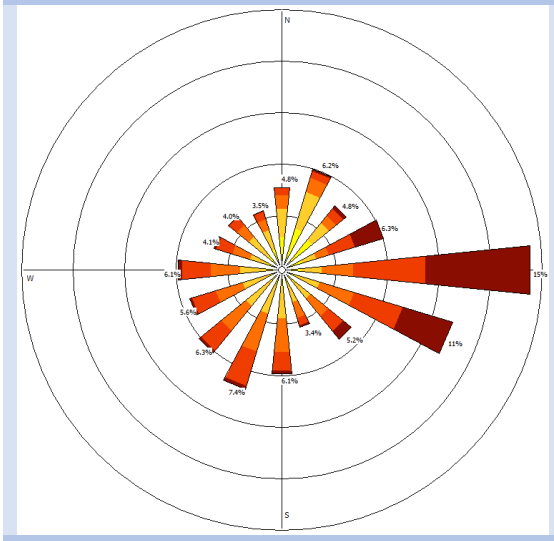
Wind conditions at Bungonia during the reporting year were varied. Strong winds are more frequent during winter months and reached speeds of 90-100km/hr. Dominant winds were westerlies, particularly in winter, however significant variation in wind direction occurred in summer and autumn.

The Ardmore Park weather station is fitted with an anemometer which allows detailed analysis of wind direction and windspeed throughout the year. Figures 9 shows wind roses for each quarter of the reporting year. These show the distribution of wind directions and the relative concentration of wind speeds in each direction for each respective quarter.

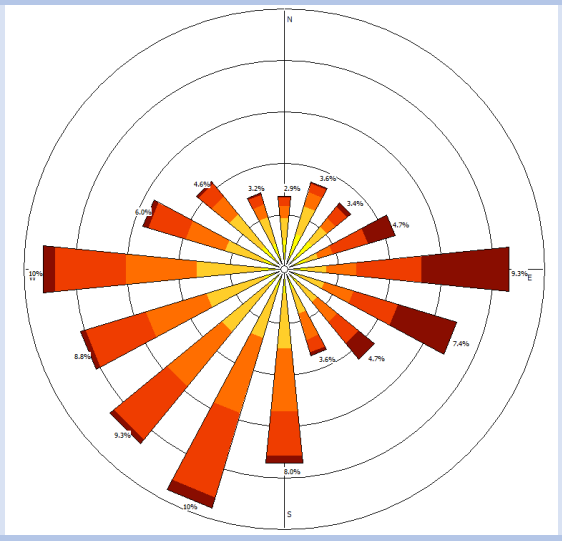
A key to the colour bands (describing windspeed) in each wind rose is presented in Table 7.

Figure 9: Quarterly wind roses

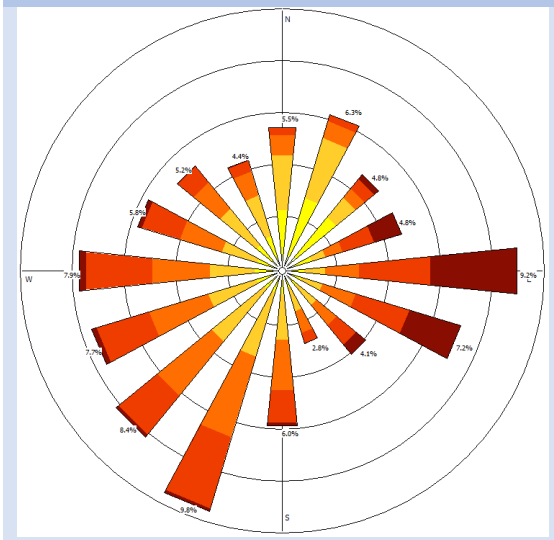
1st Quarter August 18 – November 18



2nd Quarter November 18 – February 19



3rd Quarter February 19 – May 19



4th Quarter May 19 – August 19

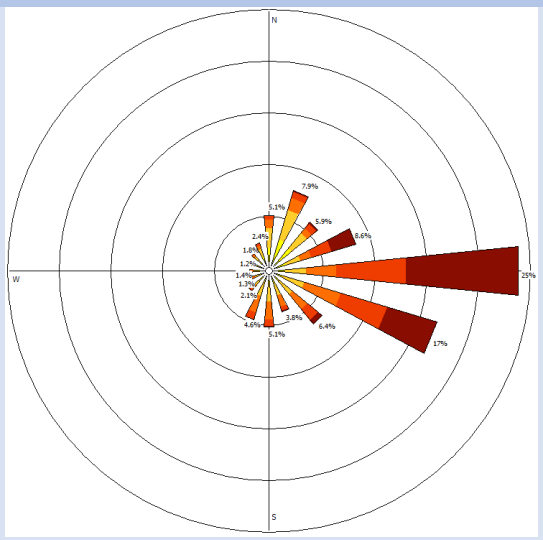


Table 7 – Wind rose wind strength key

Colour	Windspeed
	>25km/hr
	15 < 25 km/hr
	10 < 15 km/hr
	5 < 10 km/hr
	2 < 5 km/hr
	0.5 < 2 km/hr
	< 0.5 km/hr

6.3 Air quality

Ardmore Park conducts monthly assessments of deposited dust with a network of four deposited dust gauges at fixed points throughout the quarry site and nearby receivers. Locations where samples are collected were chosen for their open setting, thereby making them likely to capture fugitive dust generated by the quarry. Two gauges are located along the western boundary, one near the front entrance and another nearby the residence on the neighbouring property to the east, "Inverary Park."

Schedule 3 of the approval summarises the air quality impact criteria for the project. The quantity of deposited dust (measured as the insoluble solid fraction of collected samples) is required to be kept below 4g/m^2/month. The long-term average for dust deposition is likewise not to exceed this level when averaged over the twelve, monthly samples of any given reporting year.

The monthly deposited dust measured by each monitor as measured by the ash and insoluble solids fraction of each sample is presented in Figures 10 and 11.

Figure 10 – Ash

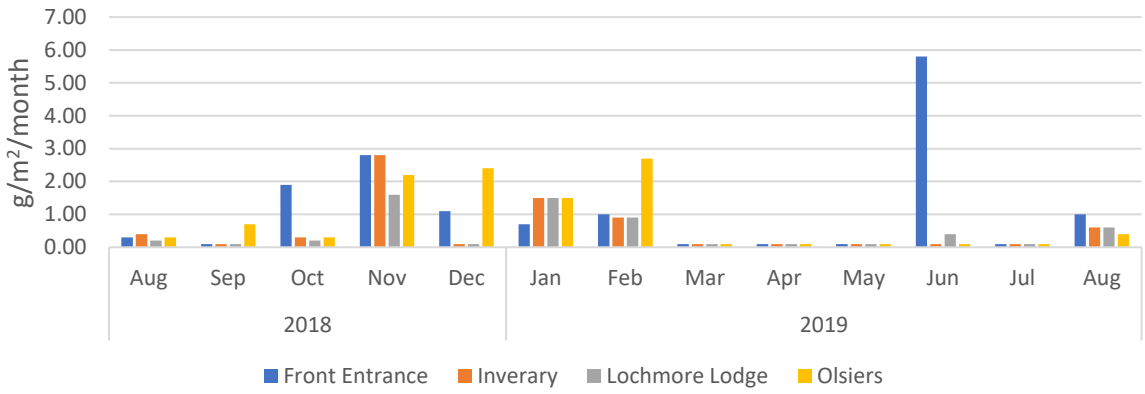
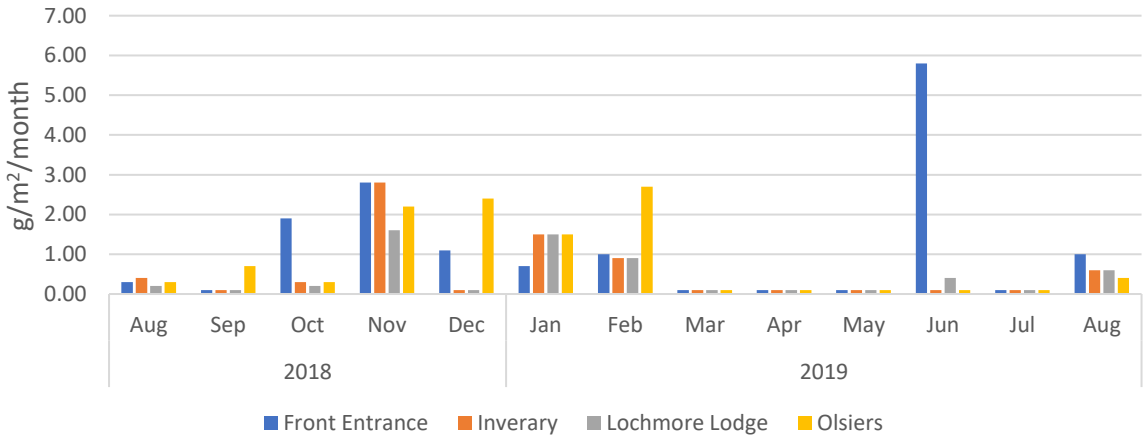


Figure 11 – Insoluble Solids



The short-term criteria for the project was exceeded by monitor 4 (Front Entrance) in the month of June 2019. Given this result was highly anomalous to both other monitors in June and to the results of preceding and following months in monitor 4, this result was not considered indicative of a failure to comply with the project's monitoring criteria and was discounted as an outlier.

The long-term averages for each monitor are shown in Table 8.

Table 8 – Long term average deposited dust results

Monitor	Inverary Park	The Olsiers	Lochmore Lodge	Front Entrance
Ash (g/m^2/month)	0.55	0.85	0.46	1.16
Target criteria	4 g/m^2/month			

The 12-month average for each dust monitor were well within the long-term performance criteria for the project.

The low levels of deposited dust demonstrate a high degree of compliance with the project's air quality impact criteria. This performance is consistent with previous reporting years and the expectations of the Air Quality Impact Assessment (**AQIA**) (Heggies Pty Ltd, 2008).

6.4 Noise

Five noise assessments were conducted during the reporting period; two in September of 2018, two in December of 2018 and one in March of 2019. Of these, one of the September and one of the December surveys were undertaken as part of a formal Pollution Reduction Program (**PRP**) implemented and overseen by the NSW Environmental Protection Authority (**EPA**).

Table 9: Nosie Assessment Results

Date	Context	Number of Attended Surveys	Non-compliances identified
21/9/2018	EPA noise assessment	24	0
21/9/2018	General compliance	5	0
5/12/2018	EPA noise assessment	24	0
11/12/2018	General compliance	4	0
8/3/2019	General compliance	14	0

During both the September and December PRP surveys, 24 attended noise measurements were undertaken by Benbow Environmental Consultants. These surveys were complemented by attended

surveys conducted by the EPA during December, including directional noise analysis using a "BarnOwl"-type noise monitoring system. Figure 12 shows the large array of noise assessment equipment utilised by the EPA in the December assessment.

No exceedance of the performance criteria was recorded on the quarry site or at surrounding sensitive receivers during monitoring. Results demonstrated comfortable compliance with the noise performance criteria of the quarry. This led the EPA to conclude the PRP without recommending any changes to operating plant or procedures on site. During the reporting year, the EPA updated EPL 13213, removing the requirement to conduct further noise monitoring as part of the PRP. This notwithstanding, Multiquip will continue to conduct attended noise surveys on an ongoing basis to assessment compliance.

Figure 12 – Attended noise survey on 5th December 2018

6.5 Groundwater levels

6.5.1 Monitoring results

The standing water level in eight on-site monitoring bores are assessed monthly. Four of these bores are located in the south-western corner of the sand extraction area and four "hard rock" bores are located along the northern half of the property, beyond the approved extraction area.

A summary of bore depths measured during the reporting year is presented in Table 10.

Table 10: Monitoring Bore Depth

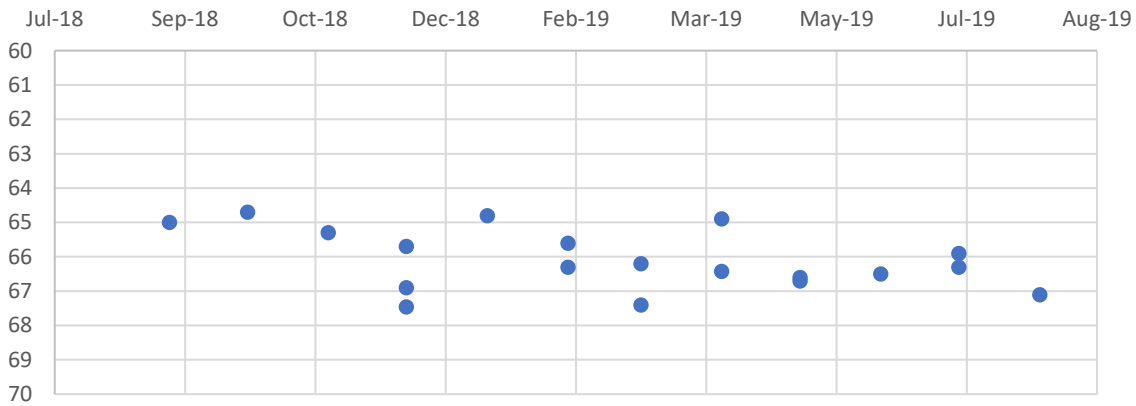
Name	Min of SWL (m)	Average of SWL (m)	Max of SWL (m)
BHAP1	7.40	7.50	7.70
BHAP5	20.30	20.44	20.50
BHAP6	64.70	66.09	67.46
BHAP10	26.80	26.98	27.10
BH3	4.60	4.71	4.80
BH4	4.20	4.33	4.40
BH5	6.60	6.67	6.70
BH6	10.70	10.72	10.80

Monitoring bore water levels remained stable for the duration of the reporting year. Water levels have not deviated significantly from those assessed in previous AEMRs.

As quarrying in the southern sand extraction area continues, Multiquip expects that BH3, BH4, BH5 and BH6 will need to be removed as monitoring points. Removing these monitoring points and replacing them with other groundwater monitoring points will require a review of the Groundwater Management Plan (**GMP**) and a subsequent application to review EPL 13213.

Water take from the "production bore" (BHAP6) is discussed in Part 7 of this report. Water level in BHAP6 is shown in greater detail in Figure 13.

Figure 13: Standing Water Level BHAP6



6.5.2 Independent Review of spring decline

In November of 2018, Multiquip was requested by the Secretary of the DPIE to organise an Independent Review into the decline in flow rate at "Phils Spring" located on the neighbouring property, Inverary Park. The review was undertaken by Australasian Groundwater and

Environmental Consulting (**AGE**) and concluded in 2019. The study involved the analysis of water levels in monitoring bores at Ardmore Park, geological and spring features on neighbouring properties and an assessment of climate records.

At the time of this AEMR, consultation with both the owners of Inverary Park and the DPIE regarding this matter is ongoing.

6.6 Groundwater quality

Quarterly samples are collected from Phils Spring, the Southern Spring and the network of ten monitoring bores on Ardmore Park.

There was no evidence of groundwater pollution or any deterioration of groundwater quality at any monitoring site during the reporting year. Average results for each monitoring point are presented in Tables 11 to 13.

Table 11: Physical properties

Name	Sulfate mg/L	EC µS/cm	pH	TDS
BHAP1	6	820	6.8	480
BHAP5	10	850	7.5	410
BHAP6	5	900	7.8	550
BHAP10	24	760	8.4	460
BH3	4.75	832.5	7.3	475
BH4	4.25	740	7.6	415
BH5	3.25	800	7.3	452.5
BH6	5.5	855	7.5	452.5
Phils Spring	15	1300	7.625	690
Southern Spring	1.75	682.5	7.275	402.5

Table 12: Anions and Cations

Name	Calcium mg/L	Chloride mg/L	Fe mg/L	Mg mg/L	Mn mg/L	K mg/L	Na mg/L
BHAP1	28	180	10	16	42	1.8	84
BHAP5	75	58	10	28	100	1.7	45
BHAP6	18	21	10	28	5	1.3	130
BHAP10	23	44	10	67	5	1.1	15
BH3	46.25	81.5	10	49.75	5	1.075	30.5
BH4	37.25	36.75	10	52.75	5	0.8	23.75
BH5	49.75	52	10	51.5	5	1.075	24.5
BH6	50.5	68.25	10	45.25	5	1	40
Phils Spring	51	142.5	10	81	5	0.625	71
Southern Spring	29.5	77.25	152.5	32	3807.5	0.875	39

Table 13: Hydrocarbons

Name	TRH µg/L	Xylene µg/L	Toluene µg/L	Benzene µg/L	Ethyl benzene µg/L
BHAP1	<100	<2	<1	<1	<1
BHAP5	<100	<2	<1	<1	<1
BHAP6	<100	<2	<1	<1	<1
BHAP10	<100	<2	<1	<1	<1
BH3	<100	<2	<1	<1	<1
BH4	<100	<2	<1	<1	<1
BH5	<100	<2	<1	<1	<1
BH6	<100	<2	<1	<1	<1
Phils Spring	<100	<2	<1	<1	<1
Southern Spring	<100	<2	<1	<1	<1

6.7 Heritage

6.7.1 Test excavation program

On the 21st and 22nd of August 2018, Multiquip Quarries undertook a test pitting program throughout the southern sand resource on Ardmore Park. The test pitting program was conducted by OzArk Heritage and Environmental Consultants (**OzArk**) in conjunction with representative Aboriginal parties (**RAPs**) acting on behalf of the Pejar Local Aboriginal Land Council. The majority of work conducted was along the southern boundary as per the recommendations of the Aboriginal Cultural Heritage Management Plan (**ACHMP**) (Kayandel Archaeological Services, 2010). A small number of additional test pits were excavated throughout the southern sand resource, towards the centre of the approved extraction area. On the 22nd August a mechanical excavator was utilised to supplement manual excavations.

In total, five artefacts were recovered from a total of thirty excavated pits (OzArk Environmental and Heritage Management, 2018). Pits were excavated according to the methodology described by the guidelines published by the OEH. These guidelines require pits to be excavated manually in 0.5m by 0.5m pits, spaced 10m apart along 50m transects. Mechanical excavation occurred to depths of 1m in areas where dense clay subsurface material rendered manual excavation too laborious (OzArk Environmental and Heritage Management, 2018).

The five artefacts recovered were all single piece stone fragments varying in size from 1cm across to 5cm. A photo of one typical recovered artefact is shown in Figure 14.

Figure 14: Quartzite flake artefact

None of the recovered artefacts were considered archaeologically significant, nor did the density of finds discovered differ from what typical background scatter of the local area (OzArk Environmental and Heritage Management, 2018). None of the sites assessed demonstrated archaeological stratigraphy or hearths. Consequently, OzArk concluded that "the findings are assessed to have a very low scientific significance due to their inability to meaningfully add to our understanding of past Aboriginal occupation and use of the area" (OzArk Environmental and Heritage Management, 2018).

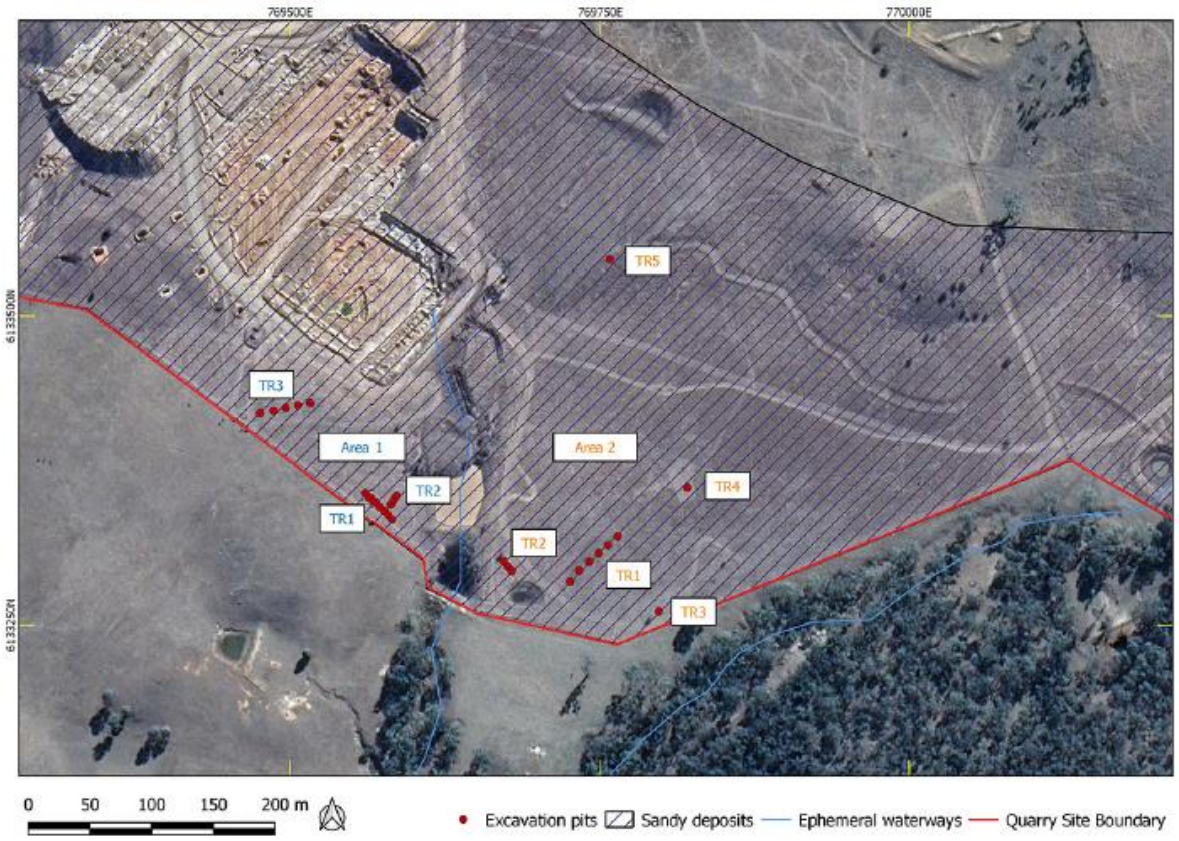
The findings of the test pitting program were forwarded to the DPIE and the OEH (now BCD). They have been additionally published on the company website (www.mqquarry.com/media/).

While alluvial sand deposits can have rich archaeological potential, the sand on Ardmore Park was deposited early in the quaternary period approximately 150 million years ago. It has been preserved by multiple surface flows of tertiary basalt approximately 30 million years ago, which has since been heavily eroded (Larry Cook and Associates, 2008). Given this, the sand deposits on Ardmore Park are unlikely to contain items of heritage value given they dramatically pre-date human occupation of the area which has been restricted to the late Eocene (Kayandel Archaeological Services, 2010). Artefacts, where they have been identified by the project have been contained only within the A-horizons of the existing, skeletal soils, at depths of between 0 and 15cm.

Custody of the artefacts was transferred to Multiquip Quarries with the consent of the RAPs present during excavation. Multiquip is currently considering the most appropriate course of action with regards to the recovered artefacts. Pending future consultation with project RAPs, one of two courses is likely to be pursued:

- Relocation of the artefacts to a site on or nearby Ardmore Park where the artefacts will be protected from future disturbance.
- Relocation of the artefacts to their original locations on Ardmore Park following the cessation of quarrying and completion of rehabilitation activities.

Figure 15: Test Pitting Locations



The site where the artefacts were recovered, is depicted in Figure 15 (TR 1 and TR2 of Area 1). This site was registered with the Aboriginal Heritage Information System (**AHIMS**) following the excavation program in August of 2018. No artefacts were uncovered during mining within this reporting period. The procedure to be followed in response to identifying possible Aboriginal artefacts during excavation activities is outlined in Section 3 of the ACHMP. Staff on site have been trained in the identification of Aboriginal heritage items and their obligations under the National Parks and Wildlife Act (1979) not to harm items of Aboriginal heritage.

At the time of this AEMR, the project's ACHMP is under review by OzArk. A revised version of the ACHMP will be implemented during the following reporting year, following consultation with BCD and the project RAPs. The ACHMP will need to be further reviewed following the determination of Modification 3 by the IPC.

6.7.2 Show cause notice and non-compliance

In the 2017 AEMR, Multiquip advised that the DPIE had issued a "show cause" notice in September of 2018 with regards to the implementation of the ACHMP. In August of 2018, Multiquip had reported to both the DPIE and BCD (then OEH) that during the development of the quarry and associated roadworks, some recommendations of the ACHMP had not been implemented fully and that this may have contributed to harm being done to certain artefacts identified in the ACHMP.

Multiquip commissioned a “harm assessment” report to advise on the status of all artefacts identified in the ACHMP and relevant to the project. This assessment was conducted by OzArk in August of 2018. The findings of this assessment formed part of the notification Multiquip provided to both the DPIE and BCD. In addition to confirming that some recommendations of the ACHMP had not been fully implemented, this harm assessment additionally identified several discrepancies in how artefacts identified in the project’s AHIA had been documented.

During this reporting year, the DPIE issued Multiquip with a penalty notice in November 2018 for failing to implement the ACHMP. The penalty notice acknowledged that while Multiquip had proactively notified the DPIE of the suspected compliance issue and had taken steps to both investigate and remedy any shortfalls with the implementation of the ACHMP.

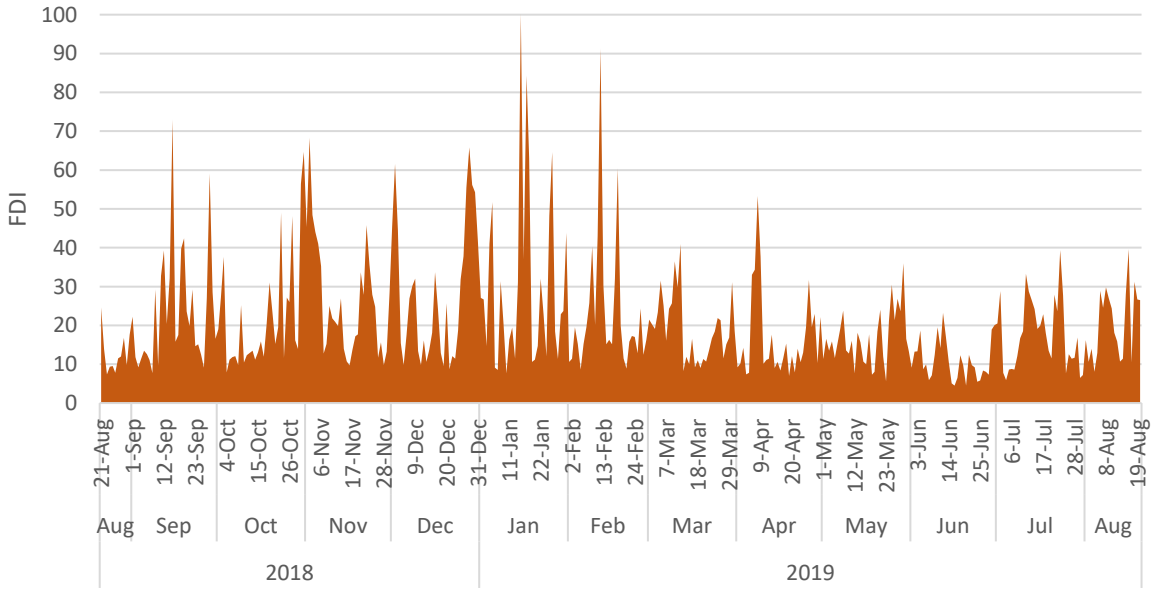
6.8 Bushfire management

Multiquip maintains a Bushfire Management Plan (**BMP**). The BMP describes the actions Multiquip will take to practicably minimise the risk posed by bushfires to the site, quarry staff and neighbouring properties.

The BMP is retained in hard copy format in the quarry site office has additionally been published on the company website (www.mqquarry.com.au/media/).

The McArther Forest Fire Danger Index (**FDI**) is an index of generalised fire risk taking into account temperature, windspeed and humidity in addition to historic dryness (rainfall). The Ardmore Park weather station is capable of calculating the FDI directly. Figure 16 shows the FDI throughout the duration of the reporting year.

Figure 16: Daily Maximum FDI



The bushfire danger index shows that while bushfire risk remains all year, highest fire risk fell between October 2018 and February 2019. Highest risk remains concentrated among a relatively small number of isolated days.

Staff on site undertook training in the use of fire extinguishers during the reporting year. Fire extinguishers fitted to all items of mobile and fixed plant provide the primary defence on site to fire risk. Hoses attached to mobile water carts used on site provide additional fire suppression.

Fire-trails are periodically slashed in pasture grass on site to allow efficient access of dams and property boundaries in the event of an emergency.

6.9 Native flora and fauna

The land upon which the Ardmore Park Quarry is being developed was extensively cleared for stock grazing not long after European settlement of the Bungonia area in the early 1830s. A few small patches of regrowth native woodland occur in several areas of the Ardmore Park property, in three knolls located in the eastern and northern corners of the property. Species common in these locations include Silvertop Ash (*Eucalyptus sieberi*), Red Stringybark (*E. macrorhyncha*), Inland Scribbly Gum (*E. rossii*) and Blue-leaved Stringybark (*E. agglomerate*) (Kevin Mills and Associates, 2008). No land clearing will occur in these areas throughout the duration of the project, as wooded areas are well clear of the extraction area.

Two threatened species of fauna were identified in the original flora and fauna survey conducted as part of the original Environmental Assessment of the Ardmore Park Quarry project (Kevin Mills and Associates, 2008). These species, both birds; the Diamond Firetail (*Stagonopleura guttata*) and the Speckled Warbler (*Pyrrholaemus sagittatus*) were identified in and nearby the forested knolls, especially near the existing residence in the case of the Diamond Firetail. The measures in place to protect these species are described in the Landscape Management Plan and include the regular maintenance of fencing and preventing disturbance of forested areas (Kevin Mills and Associates, 2010).

The principal endangered ecological community (**EEC**) scheduled under both The Environmental Protection and Biodiversity Conservation Act (**EPBC Act**) (2016) and the NSW Threatened Species Convention Act (**TSC Act**) (1995) relevant to the project is the White Box, Yellow Box and Blakely's Red Gum Woodland. This ecological community was originally common throughout the western slopes and tablelands of the Great Dividing Range and could be found from Victoria through to Southern Queensland (The Department of Envrionment and Heritage, 2006). Currently as a result of land clearing and poor management, less than 5% of the original distribution remains intact. While remnant formations are present in the local area, none have been identified on the Ardmore Park property, nor in the immediate vicinity of the project area. Rehabilitation activities will prioritise the restoration of this vegetation community (Kevin Mills and Associates, 2010).

6.10 Invasive species

A program of weed spraying took place in January 2019, throughout the Ardmore Park Quarry site and the Bungonia bypass road. Targeted species included serrated tussock (*Nassella trichotoma*), blackberry (*Rubus fruticosus*) and St John's Wort (*Hypericum perforatum*).

No program to manage invasive fauna were implemented during the reporting year. Feral species in the area include foxes, deer, pigs and rabbits.

6.11 Transport management

The movement of quarried products from Ardmore Park is managed by a dedicated Transport Management Plan (**TMP**) which has been developed by a qualified, independent consultant, Christopher Hallam and Associates. The TMP was further developed in consultation with both Roads and Maritime Services (**RMS**) and Council.

The TMP describes the means by which product dispatches and returning unladen heavy vehicles are managed on local roads. It outlines the Multiquip Quarries drivers code of conduct; the communication and consultation procedures Multiquip Quarries implements with respect to the local school bus services and the measures Multiquip will implement to ensure the safety of all motorists.

During the reporting year, Multiquip undertook consultation with representatives from Culmones Coach Service and Lewis Coaches. These two operators are responsible for providing school bus services along the primary haulage route, including both Oallen Ford and Jerrara Road. This consultation was undertaken in response to community feedback that Multiquip had received regarding road safety, particularly in relation to school bus services operating on Jerrara Road in the morning and afternoon periods. No safety concerns were reported to Multiquip staff during these consultation periods. Feedback received was that drivers were courteous, drove to conditions and regularly made contact with school bus drivers when sharing the road.

6.12 Waste management

General waste generated from maintenance and office work activities is disposed of in a skip bin located on site. This bin is periodically removed by contractors to local landfill.

Waste oils and chemicals are removed from site by licensed contractors and are disposed of in a safe and legally complaint manner.

Replacement of heavy vehicle tyres and all scheduled servicing occurs in a workshop operated by the Multiquip group of companies in western Sydney. This reduces the quantity of waste material produced and stored at the Ardmore Park site.

7 Water management

Multiquip holds three water access licenses (**WALs**). Two are directed at the Goulburn Fractured Rock Aquifer and a third permits limited withdrawal from Bungonia Creek. The licences relating to the Goulburn Fractured Rock Aquifer are subject to the Water Sharing Plan for the Greater Metropolitan Region Groundwater Sources. Water is only currently drawn from BHAP6 "the production bore" located near the centre of the Ardmore Park property. This water is used for dust suppression by the on-site water cart and to replenish the water level in dams associated with sand washing.

Water usage at the quarry is metered and checked weekly. Water use for the year ending 30th June 2019 is summarised in Table 14.

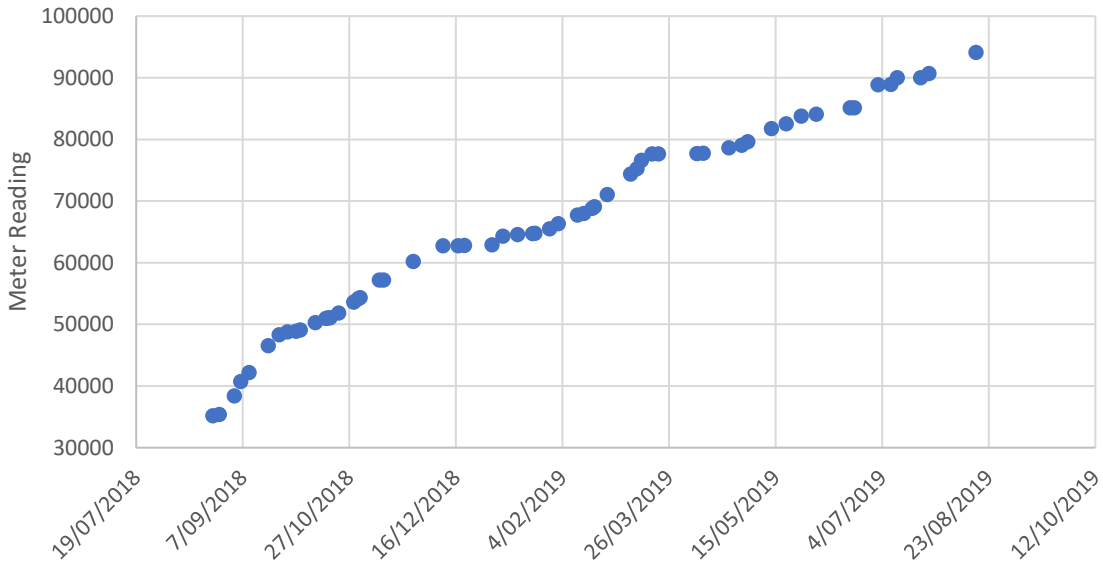
Table 14 – Water Access Licences

WAL#	Water body	Entitlement units*	Take (year ending 30/6/2019)
30111	Goulburn Fractured Rock Aquifer	110	68.1
25390	Bungonia Creek	9	0
Not issued	Goulburn Fractured Rock Aquifer	100	0

*One unit under the water sharing plan is equivalent to an entitlement of one ML.

Figure 17 shows the meter readings taken during the reporting year covered by this AEMR.

Figure 17 Meter reading



Water usage at the quarry remained consistent throughout the reporting year. Total usage was approximately 60 ML. This volume remains comfortably within the Multiquip's existing allocation.

8 Rehabilitation

8.1 Rehabilitation performance during the reporting period

No work on rehabilitating land disturbed by the quarry took place during the reporting year.

The rehabilitation bond for the project was reviewed in January 2019. The total bond payable was increased to take into consideration the increased footprint of disturbed area in addition to the planned areas of expansion during the period 2019-2021.

The rehabilitation bond will be reviewed in October 2021, following the next independent environmental audit.

8.2 Actions for the next reporting period

Rehabilitation of previously worked areas is expected to being during the next reporting period. Initial rehabilitation activities will prioritise the revegetation of surfaces unlikely to be disturbed by future quarrying, such as embankments along permanent haul roads and bund walls.

The project's Landscape Management Plan (**LMP**) and Quarry Closure Plan (**QCP**) will be reviewed and replaced by a Biodiversity and Landscape Management Plan (**BLMP**). This document will contain updated details concerning the rehabilitation objectives for the site.

9 Community

9.1 Community engagement

9.1.1 Community Consultative Committee

Multiquip operates a Community Consultative Committee (**CCC**). Meetings are held at least three times per year in the Bungonia Progress Association Hall. The committee comprises of an independent chair, seven members of the local community and three representatives from Multiquip. A representative from the Planning and Environment team at Goulburn-Mulwaree Council also typically attends.

This year the committee welcomed two new members, Mr Bill Dobbie and Mr Robert James.

During this reporting year, three CCC meetings were held, in November 2018, March 2019 and August 2019. The August meeting also included an opportunity for CCC members to take part in a tour of the quarry.

Topics discussed included groundwater availability, the progress on local roadworks, the Modification 3 application and ongoing reporting of Ardmore Park's environmental performance.

Committee meetings are publicly advertised and interested local people are encouraged to attend. Attendance by members of the public varied between meetings.

9.1.2 Charitable donations

During this reporting year Multiquip made one charitable donation to the Bungonia Progress Association. This was to design, build and install a covered area for the new Bungonia Progress Association outdoor barbeque area. Installation of this roof will take place in the 2019 reporting year.

9.2 Complaints

Multiquip received 10 complaints during the reporting year. Of these, five related to noise, two to airborne dust and three to road related incidents.

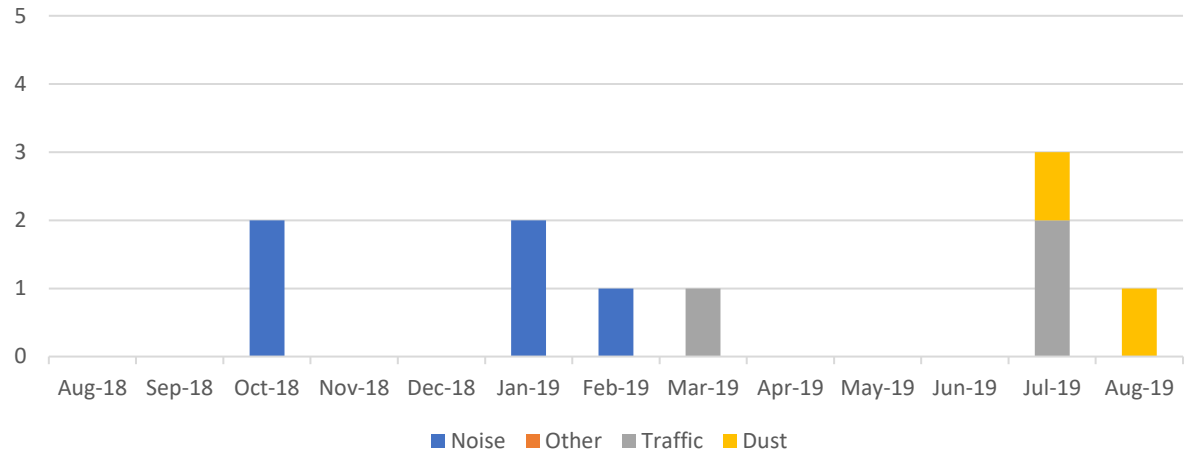
Each complaint received by Multiquip is logged into an electronic complaint register. This register contains details regarding each specific complaint and includes the follow up or corrective action required by Multiquip.

The number of complaints received was significantly less than in the previous reporting year, in which fifty-one complaints were received. Multiquip attributes this reduction to the cessation of

roadworks associated with Oallen Ford and Jerrara Road and improved environmental performance of the site, particularly with regards to noise.

A complaints hotline is advertised at the entrance to Ardmore Park and the Mountain Ash and Oallen Ford entrances to the Bungonia bypass. This complaints line has not been used to date by members of the public. It has been the experience of Multiquip that most complaints are lodged directly with quarry staff, or in the case of road and traffic issues, to compliance staff based at Multiquip's Sydney office.

Figure 18 – Complaints received during reporting year



A detailed breakdown of each complaint received is presented in Table 15.

Table 15: Complaint received and response

Date	Contact	Method	Topic	Description	Response
20/10/2018	AC	Text	Noise	Noise reported as being high (39-43 dBA) over the previous three days. Complainant asked whether anything had changed on the operations side of things as the noise levels were previously more subdued.	AC advised complainant that the operations had not changed on site and no additional equipment was operating this week as compared to the previous few weeks.
23/10/2018	AC	Text	Noise	Described high noise levels, characterised as general background machinery, buckets banging and trucks gearing in and out	Quarry manager notified.

23/01/2019	AC	Text	Noise	Complained about noise levels between 37 and 41 dBA. Noise has apparently been interruptive several instances over the previous few weeks.	Quarry manager notified.
26/01/2019	AC	Text	Noise	Invited AC to receiver to listen to interruptive noise.	Quarry manager notified. AC advised complainant on 29th January that he would be available to attend receiver over the course of the week should noise again be intrusive.
11/02/2019	AC	Text	Noise	Noise levels allegedly 40-44dBA. Left voice message advising that this would be reported to the EPA.	8:00 am observations made at the site boundary. It was noted that the crushing plant was operating and noise from the quarry was audible. Weather conditions were cold and still.
26/03/2019	SW	Phone	Traffic	Complaint alleged that trucks using Jerrara Road were using their engine brakes at the Mountain Ash intersection with Jerrara Road.	Investigation into identified offending truck as belonging to a contractor. Contractors reminded of the importance of abiding by the conditions of the Drivers Code of Conduct.
17/07/2019	AC	Text	Dust	Dust emissions observed at crushing location.	Crushing operations suspended due to high winds.
26/07/2019	SW	In person	Traffic	Complainant alleged that he had almost been in a collision with a Multiquip truck travelling north on Jerrara Road at km 9.5 (300m north of Forest Close).	SW met with the affected motorist on Jerrara Road and did an inspection of the location. No damage to the complainant's car was noted. Photographs of skid marks were taken at that location. Complainant advised

					that Multiquip would discuss the matter with the relevant driver. Driver subsequently disciplined.
30/07/2019	SW	Phone	Traffic	Complainant claimed that engine brakes used in bypass and Mountain Ash Road by Multiquip vehicle. Service brakes also applied with brakes squealing.	Telemetry identified the truck as likely being MQA612. Driver was reminded not to use engine brakes on local roads (bypass, Mountain Ash Road and Jerrara Road).
17/08/2019	AC	Text	Dust	Dust emissions observed at crushing location.	Water suppression hosing checked by staff, dust emissions declined following morning tea.

10 Independent environmental audit

On the 19th and 20th of November 2018, Multiquip undertook an Independent Environmental Audit (**IEA**). The principal auditor was Mrs. Lahnie Ward, on behalf of Groundwork Plus. The appointment of Mrs. Ward as an appropriate auditor was approved by the DPIE prior to the conducting of the audit. This is the second such audit undertaken of the quarry, and the first since commercial production commenced in December 2017.

The audit assessed compliance against all the conditions of Ardmore Park's project approval and EPL. The audit has been lodged with the Department of Planning, and has additionally been published on the Multiquip website (www.mqquarry.com.au/media/).

A total of 333 conditions were assessed for compliance according to the guidelines published by the DPIE. These guidelines allow for three compliance designations, compliant, non-compliant and not-triggered. Overall, the audit identified four non-compliances. These included two administrative and two other non-compliances.

Of the eleven non-compliances identified in the previous IEA from 2015, all had been successfully resolved at the time of the 2018 audit.

Table 16 summarises the non-compliances identified in the 2018 IEA.

Table 16 – Non-compliances identified in 2018 environmental audit

Condition	Description	Comment
Schedule 2 Condition 2	Site must be developed in accordance with terms of environmental assessment, approval and statement of commitments.	Penalty notice issued 2018 by Department of Planning for locating mobile crushing equipment in a manner unapproved by existing approval. Crushing equipment has since been relocated.
Schedule 3 Condition 12	Discharges from site prohibited except in conjunction with an EPL.	Related to unintentional discharge of clean water from the bore onto a neighbouring property. Incident was investigated by the EPA who determined there were no significant issues.
Schedule 5 Condition 3	Must report non-compliance or incident within 24 hours.	Multiquip did not advise the Department of Planning promptly regarding the bore dam overflow incident.
Schedule 5 Condition 4	Must report non-compliance or incident with detail within 6 days.	Multiquip did not advise the Department of Planning within 6 days regarding the bore dam overflow incident. The Department first became aware following the publication of the 2016 reporting year AEMR.

Multiquip Quarries has acknowledged each of these four non-compliances identified by the IEA. Each non-compliance identified relates to compliance action on the part of regulatory agencies such as the EPA and the DPIE. As such, there is no outstanding requirement to notify additional to the publishing of the audit and no further corrective actions are required as these matters have been addressed by the relevant regulator directly.

The audit report contained one recommendation. This recommendation, and Multiquips comment in response are summarised in Table 17.

Table 17: Audit recommendations

Page in Audit	Recommendation	Comment
10	Review the site Environmental Management Strategy (EMS) and other Environmental Management Plans.	EMS and management plans to be revised following a final determination by the IPC regarding Modification 3.

11 Incidents and non-compliances

There were no environmental incidents at the quarry during the 2018 reporting year.

Three non-compliances were identified during the reporting year (refer State of Compliance). Two non-compliances are described in section 5 (location of mobile crushing plant) and 6.7.2 (implementation of the ACHMP). The third non-compliance relates to the extraction of material from areas inconsistent with the approval, project Environmental Assessment, Mod 1 Environmental Assessment and Mod 2 Environmental Assessment (approval Condition 2(2)). At the time of this AEMR, Multiquip is in discussion with the DPIE regarding this matter. The outcome of any DPIE investigation or compliance related undertakings relevant to this matter will be described in the 2019 AEMR.

12 Activities in next reporting period

The 2019 reporting period extends from the 21st August 2019 to the 20th August 2020. Activities expected to occur during this period include:

- Extraction and sale of approximately 300,000 T of washed sand products.
- Extraction and sale of approximately 25,000 T of basalt derived rock products.
- Determination of Modification 3 by the IPC and implementation of the VPA with council.
- Revision of the project's EMS and associated management plans following the determination of Modification 3. These management plans will need to be submitted to the DPIE for approval.
- Further removal of overburden throughout the southern and central sand extraction area.
- Commencement of site rehabilitation.
- Continuation of routine environmental compliance monitoring and reporting.

13 References

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