



NGH



INDEPENDENT ENVIRONMENTAL AUDIT

Dunloe Sand Quarry

February 2022

06_0030



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1. INTRODUCTION

1.1. BACKGROUND

Ramtech Pty Ltd (Ramtech) received Project Approval (PA06_0030) on 24 November 2008 for Dunloe Sand Quarry (the Quarry) at Pottsville, NSW. Two subsequent modifications were approved on 28 August 2009 (Mod 1) and 6 November 2018 (Mod 2). Pottsville is about 53 km North of Ballina and 25 km south of the Queensland - NSW border at Tweed Heads, NSW. The Quarry is about 4.5km south of Pottsville and 1km west of the Pacific Ocean. The Quarry is situated on flat land associated with the floodplain of Moonball Creek to the east and south, and Sheens Creek to the north and west. The surrounding land use is agricultural including cattle grazing and some sugar cane.

Holcim Australia has managed operations on site from the 1 August 2016 to today. Prior to this the Quarry was managed by Ramtech, who also managed the project approval, commissioning and operation of the Quarry between 2007 and 2016.

The key features of the Dunloe Sand Quarry include:

- A 2.7km sealed access road from the Moonball – Pottsville Road to the quarry office
- A raised office, lunchroom and amenities building, along with diesel fuel and equipment storage
- Sand processing, storage and handling areas of approximately 3.2ha
- Windrowed overburden material for windbreaks approximately 750m long and 3m high
- Windrowed overburden material around the perimeter of the site ranging between 0.75-1.5m high
- A fine material return Pond (Pond 1) of 2.7ha
- A quarry dredging pond (Pond 2) of about 10ha (at the time of the audit)
- A sand grading, washing and treatment plant with fines return to Pond 1.

This is the second independent environmental audit of the project. The first audit was conducted in June 2016. This audit builds upon the compliance status of the first audit and addresses the operation of the project between 2017 and 2021.

1.2. AUDIT TEAM

The audit was completed by:

Lead Auditor - Michial Sutherland. Michial has over 26 years of experience in the environmental industry.

Holcim Australia requested approval from the NSW Department of Planning, Industry and Environment (DPIE) for NGH to be the approved auditors for the 2021 Independent Environmental Audit. DPIE wrote to Holcim Australia on the 28th June 2021 approving Mr Michial Sutherland of NGH as the Auditor (Appendix B).

1.3. OBJECTIVES

The objectives of the audit were to conduct an independent review of compliance with the Conditions of Approval PA06_0030, issued by the Minister for Planning in November 2008 (as modified), and in accordance with the requirements of the Independent Audit Post Approval Requirements, May 2020 (DPE 2020).

1.4. AUDIT SCOPE

The scope of the audit was generally in accordance with Section 3.3 of the Independent Audit Post Approval Requirements (May 2020). The scope in general included:

- Conditions of consent applicable to the operation of the project
- All post approval documents required by the conditions of consent (eg. EMPs)
- All environmental licences and approvals applicable to the development (excluding EPL)
- An assessment of the environmental performance of the development
- A high-level review of the project's EMS
- A high-level assessment of whether Environmental Management Plans and Sub-plans are adequate.

1.5. AUDIT PERIOD

The audit period for this audit was from the July 2017 to July 2021.

2. AUDIT METHODOLOGY

2.1. SCOPE DEVELOPMENT

The audit scope as developed during the preparation of the Audit program. This involved:

1. Reviewing the PA06_0030 Conditions as modified by Mod 2
2. Reviewing the DPIE Independent Audit – Post Approval requirements (May 2020)
3. Consultation with DPIE NSW DPI Fisheries, Tweed Shire and EPA
4. Site Inspection
5. Document Review
6. Preparing the Audit Table

2.2. AUDIT PROCESS

A document review was undertaken prior to and following the site inspection for the audit. The document review included a review of the Conditions of Approval.

The Audit program was submitted to the Auditee indicating the dates of the site audit, scope, criteria, audit details and required project representatives.

The audit site inspection was conducted on 20 July 2021.

An opening meeting was held at 8.30am on 20 July 2021. Present at the opening meetings were:

- Matt Kelly, Quarries Manager Teven and Dunloe Sand Quarries, Holcim
- Daniel Dwyer, Production Supervisor, Holcim
- Michial Sutherland, NGH Lead Auditor

A closing meeting was held at 1pm on 20 July 2021. Present at the closing meeting were:

- Matt Kelly, Quarries Manager Teven and Dunloe Sand Quarries, Holcim
- Daniel Dwyer, Production Supervisor, Holcim
- Michial Sutherland, NGH Lead Auditor

2.3. AUDIT INTERVIEWS

Interviews were held with a number of staff including:

- Matt Kelly, Quarries Manager Teven and Dunloe Sand Quarries, Holcim
- Daniel Dwyer, Production Supervisor, Holcim
- Shilpa Shashi, Planning and Environment Coordinator NSW / ACT, Holcim

All interview requests were granted.

2.4. SITE INSPECTION

The site inspection was attended by Michial Sutherland, Matt Kelly and Daniel Dwyer. The purpose of site inspection was to become familiar with the quarry operations and works. In particular to view the:

- Access roads and intersection treatment/arrangement, signage and security
- Site accommodation, office, storage, ablutions and on-site sewage, fuel storage
- Weather monitoring facilities, piezometers
- Ponds 1 and 2, stockpile wind breaks, stockpiled product
- Entry, loading and heavy vehicle movement area

- Perimeter bunding, vegetation screening and revegetation areas
- Ground water and surface water, and dust monitoring locations
- Adjacent dwellings and landowners
- Adjacent surface water drainage scheme
- Dredge, transfer pump, wash plant and screen, fines return line
- New dredge repairs and commissioning

No restrictions to site access occurred during the site visit. Most of the site could be easily accessed from internal access roads. Some walking was required to skirt regenerating vegetation on the southeast boundary.

At the time of the site inspection the wind speed at the Ballina Airport AWS (# 058198) was recorded as 15km/h from the WNW at 9am and 19km/h from the west at 3pm. No rain exceeding 0.2mm was recorded at Ballina AWTS during the site visit or for seven days prior to the site inspection. Between the 1 – 4 July 2021 76.3mm of rain was recorded and between the 9 – 12 July 2021 22mm of rain was recorded at Ballina AWTS. The conditions on the day of the audit were clear and sunny but cool ranging from a low of 14.8 °C at 9am to 18 °C at 3pm.

Sunrise at Ballina was at 6:36am and sunset was at 5:08pm. The first high tide was at 4:26am and the next high tide at 5:26pm. The low tide of the day was at 10:28am.

Pasture/cane drainage structures on private land adjacent to the site had some seepage flows with observed iron staining. The creeks adjacent to the site were not observed to be flowing with noticeable velocity in either direction. The water level within the ponds was well below the lip of the ponds.

2.5. CONSULTATION

A written request (Appendix C) for consultation was emailed on the 13 July 2021 to:

- NSW Environment Protection Authority (EPA)
- NSW Department of Planning, Industry and Environment (DPIE)
- NSW Department of Primary Industries – Fisheries (Fisheries)
- Tweed Shire Council TSC

Responses were received from:

- NSW EPA, 21 July 2021
- DPIE, 20 July 2021
- Fisheries, 20 July 2021

No response has been received from Tweed Shire Council.

A summary of the response is provided below (Table 2-1).

The complete response is attached (Appendix C).

Table 2-1 Summary of the agency response

Agency	Agency Comment
NSW EPA	<i>Thankyou for your letter dated 13 July 2021 in relation to the independent environmental audit of Dunloe Park Sand Quarry, Pottsville-Mooball Road, Mooball, NSW. The Environment Protection Authority (EPA) does not have any specific issues regarding the environmental performance of this site.</i>
DPIE	<i>In previous Annual Reviews, water quality exceedance has been identified as (a) common matter of non-compliance, most notably turbidity and pH. Concerns have also been raised in previous Annual Reviews regarding frequency of monitoring sampling. The Department would like an in-depth review into the continuing water quality exceedances. The Department is interested to identify if the water quality objectives identified in Schedule 3, Condition 9 are achievable, what impacts the water quality exceedances could have on the site and receiving environment and if any reasonable measures that could be employed by the project to meet the objectives. The Department would also like a review on the frequency of monitoring to confirm consistency with the Environmental Monitoring Program which forms part of the Soil and Water Management Plan.</i>
Fisheries	<i>As the quarry is located directly adjacent to Coastal Wetlands and is within the Mooball Creek catchment, the audit should include a review of the impacts of quarry operations, including those activities that impact and/or occur outside of the quarry footprint such as run-off, surface/ground water pumping and hauling activities, on adjacent key fish habitat (i.e. third order and greater waterways and Coastal Wetlands). Where impacts are identified by the audit (e.g. sedimentation and other water quality impacts such as changes in pH and thermal pollution, increased/decreased flow regimes etc.), then the report should provide appropriate measures to avoid and/or mitigate these impacts from future quarry operations.</i>

2.6. COMPLIANCE STATUS DESCRIPTORS USED IN THIS REPORT

The compliance descriptors used in this report are:

- Compliant** Sufficient verifiable evidence demonstrates that all elements of the requirement have been complied with
- Non-Compliant** Identified non-compliance with one or more elements of the requirement
- Not Triggered** The activation or timing trigger has not been met at this phase of the development

3. AUDIT FINDINGS

3.1. DOCUMENT LIST

- Dunloe Sand Quarry Water Quality Review Ramboll 2021
- Spread sheets Dunloe Sands daily material sales, April to December 2017
- Spread sheets Dunloe Sands daily material sales, January to December 2021
- Community Consultative Committee Agenda, 2018 to 2020 (x5)
- Community Complaints Register 2017-2021, (www.holcim.com.au/community-complaint-register)
- Dunloe Sands EIS Planit Consulting, September 2007
- Dunloe Sands EIA, Modification 1 Proposed Machinery Shed, Planit (2009)
- Dunloe Sands EIA, Modification 2 Proposed increase in heavy vehicle movements GHD (July 2017)
- Dunloe Sands Submissions Report Mod 2, GHD (November 2017)
- MAC Operational Noise Monitoring Report Q1 2020 to Q1 2021
- Pollution Monitoring Data - Dunloe Sand Quarry (EPL 13077) 2021
- Pollution Monitoring Data - Dunloe Sand Quarry (EPL 13077) 2020
- Pollution Monitoring Data - Dunloe Sand Quarry (EPL 13077) 2019
- Pollution Monitoring Data - Dunloe Sand Quarry (EPL 13077) 2018
- Independent Environmental Audit, MRA 2016
- 2017 Dunloe Sand On-Site Sewage Management System Approval - expiry 12/7/2023
- 190620 DPIE Approval of Dunloe Sand Traffic Management Plan
- 190924 Quarry - Submission of Landscape Management Plan for Review
- 191218 DPIE Endorsement of Dunloe Sand EMS + Comments
- 200116 DPIE Endorsement - Dunloe Sand EMS, EMP and ACHMP
- 200219 DPIE Endorsement - Dunloe Sand AQMP
- 200724 DPIE Approval of Dunloe Sand Waste Management Plan
- 201022 DPIE Approval of Dunloe Sand Soil and Water Management Plan
- 210616 DPIE advice & partial approval of Dunloe Sand Quarry LMP and review of RRMP
- 210618 DPIE Approval of Dunloe Sand Quarry LMP
- DPIE Approval of NGH as Auditor 28/6/2021
- Propeller Bathometric Survey Dunloe Sands Nov 2020
- Holcim Calculation of Dunloe 2021 Rehabilitation Bond, Rev May 2021
- Dunloe Sands Aboriginal Cultural Heritage Management Dec 2019
- Dunloe Sands Annual Review, Holcim, 2017
- Dunloe Sands Annual Review, Holcim, 2018
- Dunloe Sands Annual Review, Holcim, 2019
- Dunloe Sands Annual Review, Holcim, 2020
- Dunloe Sands Air Quality Management Plan February 2020
- Dunloe Sands Environmental Management Strategy January 2020
- Dunloe Sands Environmental Monitoring Program December 2019
- Dunloe Sands Landscape Management Plan June 2021
- Dunloe Sands Modification to Project Approval 06-0030, Subs Report Nov 2017
- Dunloe Sands Noise Management Plan July 2020
- Dunloe Sand Consolidated Approval Mod 2, 6 Nov 2018
- Dunloe Sand Quarry Water Quality Review 14 September 2021
- Dunloe Sands Incidents and Events Report 2017 – 2021
- Dunloe Sand Soil and Water Management Plan October 2020
- Dunloe Sand Traffic Management Plan May 2019
- Dunloe Sand Waste Management Plan Jul 2020
- Holcim Environmental Policy June 2019
- NSW EPA EPL #13077
- Brett Sekac Plumbing Inspection record for the Screen and treatment Plant, 17/07/2020
- Payments to Tweed Shire for Road Contributions 30K June 2019, 2020, 2021
- DPIE receipt of Rehabilitation Bond Calculations Aug 2020

- Daily Truck Movement Record sheets, 5/7/21 - 9/7/21, 14/7/21, 28/1/20,30/5/19
- Raw material delivery dockets, 16/7/21, Jan 2020, May 2019, Feb 2019, Nov 17
- Dunloe Sands Daily Loader Production Report 1/2020, 5/2019, Jan 2017, 11/2017
- Plant Maintenance white board Current
- Dredge Maintenance white board Current
- Employee and visitor induction Rev July 2018
- Historic Aerial photography, Google Earth

3.2. COMPLIANCE PERFORMANCE

A total of 350 conditions and sub-clauses of Approval were extracted from the consent. Of those conditions and sub-clauses 308 were triggered and thus found to be relevant to the current stage of the project. The project was found to be compliant with 292 of these (Table 3-1).

For the purposes of Table 3-1, if a Condition contained a part which is relevant, the whole Condition is counted as being relevant. Similarly, where a non-compliance was found with part of a Condition, the entire condition is considered non-compliant.

Table 3-1 Summary of Compliance

Number of Conditions and subclauses of Approval	350
Triggered Conditions and subclauses of Approval	308
Number of Compliances	292
Number of Non-compliances	16
Not Triggered	42

3.3. NOTICES, ORDERS OR PROSECUTIONS

No notices, orders, infringement notices or prosecutions had been issued during the audit period.

3.4. NON-COMPLIANCES

A total of 16 non-compliances were identified during the audit period. These related to eight (8) conditions of approval (CoA) and six (5) statements of commitment (Table 3-2).

Table 3-2 Non-compliances

ID	Condition of Approval	Requirement	Details of Non-compliance	Recommended Action
06-0030 Mod2 2021/A	Schedule 2 CoA 4(b & c)	<p>The Proponent must comply with any reasonable requirement/s of the Secretary arising from the Department's assessment of:</p> <p>(b) any reviews, reports or audits undertaken or commissioned by the Department regarding compliance with the conditions of this approval; and</p> <p>(c) the implementation of any actions or measures contained in these documents.</p>	Several actions from the previous audit are still open (Table 3-2).	Address and close actions from the previous audit.
06-0030 Mod2 2021/B	Schedule 3 CoA 5	Within three months of the approval of Modification 2, the Proponent must prepare a Noise Management Plan for the project to the satisfaction of the Secretary.	Mod 2 approved Nov 2018, consultation with EPA in Aug 2019, DPIE approval of NMP July 2020. As such the plan was not prepared within three months of Mod 2 approval.	Nil. Plan now developed and approved.
06-0030 Mod2 2021/C	Schedule 3 CoA 7(a)	Within three months of the approval of Modification 2, the Proponent must prepare an Air Quality Management Plan for the project to the satisfaction of the Secretary.	Mod 2 approved Nov 2018, consultation with EPA in Aug 2019, DPIE approval of plan Feb 2020. As such the plan was not prepared within three months of Mod 2 approval.	Nil. Plan now developed and approved.
06-0030 Mod2 2021/D	Schedule 3 CoA 9	The Proponent must aim to meet the water quality objectives (WQO) in Table 4 for water in the dredge ponds and in groundwater adjacent the dredge ponds, unless otherwise approved by the Secretary.	<p>Pond turbidity levels exceeded the WQO for Turbidity in 2017 and 2018, likely due to 90% rainfall/flooding.</p> <p>Pond pH levels are consistently below (more acid) the WQO, however they are within the range for upgradient groundwater.</p>	<p>Stockpiling of screened material should be managed to reduce the transmission to ground water of stormwater that infiltrates the stockpile.</p> <p>Investigate forming stockpile areas so they drain to the</p>

ID	Condition of Approval	Requirement	Details of Non-compliance	Recommended Action
			<p>In bore hole six ground water levels of pH, sulphate, aluminium and Iron are outside the nominated levels and the levels measured in other bores.</p> <p>The exceedances were major in 2015-2018 but have improved in recent years.</p>	<p>ponds, lining the stockpile areas with a barrier to prevent seepage to groundwater and lining drains to the ponds with limestone or similar.</p>
06-0030 Mod2 2021/E	Schedule 3 CoA 17	The Proponent must ensure that the flood storage capacity of the site is no less than the pre-existing flood storage capacity at all stages of the project. Details of the available flood storage capacity must be reported in the Annual Review.	Flood storage capacity not reported in the Annual Review for 2018 to 2020.	Report on flood storage capacity in the Annual Review.
06-0030 Mod2 2021/F	Schedule 3 CoA 18(b)	The Acid Sulphate Soil Management Plan (ASSMP) specifies the use of lime in the wash plant to adjust pH.	The site is using granular sodium bicarbonate in the wash plant to adjust pH. This is not documented in the plan.	Document the use of a range of alkalis in the wash plant to allow flexible pH management.
06-0030 Mod2 2021/G	Schedule 3 CoA 18(c)	The Proponent must implement the plan as approved by the Secretary.	Some historic actions were not completed for monitoring (accidental) and changes have occurred without being documented or approved.	Update the management plan to include current and planned actions that deviate from the SWMP.
06-0030 Mod2 2021/H	Schedule 3 CoA 35(b)	Traffic Management Plan (TMP) and driver code of conduct to include; complaint resolution procedures and consultation measures for peak haulage periods	Code of conduct does not include complaint resolution procedures or consultation measures for peak haulage periods.	Insert cross reference to EMS for complaint resolution. Insert cross reference to TMP for community consultation.

ID	Condition of Approval	Requirement	Details of Non-compliance	Recommended Action
06-0030 Mod2 2021/I	Schedule 5 CoA 1(b)	...prepare an Environmental Management Strategy (EMS) for the project.. (b)... in consultation with the relevant agencies	The EMS 2020 notes agency consultation but it is not appended to the plan on the web site.	Add agency consultation to EMS.
06-0030 Mod2 2021/J	Schedule 5 CoA 1(f)	...prepare an EMS for the project.. (f) describe the procedures that would be implemented to: manage cumulative impacts;	Cumulative impacts are not specifically addressed.	Include a statement addressing cumulative impact for multiple issues or singular repeat issues.
06-0030 Mod2 2021/K	Appendix 3 SoC	Surface water quality monitoring shall be ... as outlined in the draft EMP App. G	Some water quality monitoring was not completed due to subcontractor errors. This has subsequently been rectified.	Ensure subcontractors complete monitoring as required.
06-0030 Mod2 2021/L	Appendix 3 SoC	Provision of in situ monitoring equipment at all times for use by Quarry Staff. This Equipment will be calibrated at least monthly	All monitoring completed by contractors at the required frequency. For ad hoc issues pH strips are available on site.	Redundant statements of commitment need to be removed from Schedule 3
06-0030 Mod2 2021/m	Appendix 3 SoC	Groundwater monitoring bores are to be licensed with DIPNR (Water NSW)	License details could not be located on Water NSW Website.	Register monitoring bores with Water NSW.
06-0030 Mod2 2021/N	Appendix 3 SoC	Contour profiling of groundwater head data will be undertaken as part of site monitoring and reporting procedure.	Head data assessed based on AHD. Contouring not available in the reporting period, Rambolt Report dated September 2021.	Ground water head data assessed in Rambolt Report September 2021. Issue Closed
06-0030 Mod2 2021/O	Appendix 3 SoC	All operations to be limited to 7am to 6pm Monday to Friday and 7am to 12am Saturday.	Truck loaded 15 minutes early.	Issue closed out, no further action required.

SoC = Statement of Commitments

3.5. PREVIOUS AUDITS

Table 3-3 Non-compliance Status from Previous Audit

Condition of Approval	Requirement	Details of Non-compliance	Recommended Action	Compliance Status
Schedule 2 CoA 4	<p>4. The Proponent shall comply with any reasonable requirement/s of the Director-General arising from the Department's assessment of:</p> <p>a) any reports, plans, programs or correspondence that are submitted in accordance with this approval; and</p> <p>b) the implementation of any actions or measures contained in these reports, plans, programs or correspondence.</p>	<p>Following a NSW Department of Planning and Environment Sand Quarry Audit a in 2015, an Action Plan was developed to address non-compliances identified during the audit. An Action Plan was prepared in response to this audit report and submitted to the Department on 15 February 2016. Following further discussion, the Department accepted an updated Action Plan on 19 February 2016.</p> <p>Ramtech are currently working through completion of these items.</p>	<p>Continue implementation of the Action Plan to transition nominated conditions to compliance, including:</p> <ul style="list-style-type: none"> • Calibration records for monitoring equipment. • AEMRs 2018-2020 need comment on flood storage. • BG Algae monitoring not at required frequency. 	<p>Action being progressed and previous audit issues still open (see below).</p> <p>Issue Open.</p>
Schedule 3 CoA 6	<p>The Proponent shall ensure that dust generated by the project does not cause additional exceedances of the criteria listed in Tables 3 to 5 at any privately owned land.</p>	<p>No dust monitoring results were identified within the AEMR observed for the previous 12 months. Ramtech advised that dust monitoring did not commence until 2015. Results provided relate to analysis reports dated 1/10/2015, 9/12/2015, 10/5/2016 and 31/5/2016 and address deposited dust only and not particulate matter.</p> <p>It is noted that a request to amend monitoring within the approved EMP is currently in progress. An extract of the scope of</p>	<p>Implement dust monitoring in accordance with current approved EMP until such time as an amendment is approved by DoP.</p>	<p>Confusion on air monitoring requirements and the Air Quality Management Plan led to missed PM10 monitoring in 2016 and 2017. PM10 monitoring is now conducted when production exceeds 200,000t/a. Monitoring</p>

Condition of Approval	Requirement	Details of Non-compliance	Recommended Action	Compliance Status
		amendments under discussion between the Department and ASK was observed. Ramtech advised the proposed amendment will request a reduction in the PM10 monitoring until such time a production increases to over 200,000T. TSP monitoring proposed to continue whilst production is less than 200,000T.		for PM10 during 2017 and 2018 indicated general compliance. Issue Closed.
Schedule 3 CoA 7	<p>7. The Proponent shall prepare and implement a Dust Monitoring Program for the project to the satisfaction of the Director-General. This program must:</p> <p>a) be submitted to the Director-General prior to carrying out any development on the site;</p> <p>b) be prepared in consultation with DECCW; and</p> <p>c) include details of how the air quality performance of the project would be monitored, and include a protocol for evaluating compliance with the relevant air quality criteria in this approval.</p>	<p>a) DMP submitted prior to operation as part of EMP. Department approved 19th June 2009. Operations commenced October 2010. Dust monitoring not commence until 2015. Request to amend monitoring within the approved EMP is currently (2016) being prepared.</p> <p>Results provided relate to analysis reports dated 1/10/2015, 9/12/2015, 10/5/2016 and 31/5/2016 and address deposited dust only and not particulate matter.</p> <p>b) EMP approval letter (19/6/2009) notes sufficient opportunity for consultation.</p> <p>c) In Section 7.3 of EMP (July 2012). Ramtech advised they have review the DMP and a that request to amend monitoring within the approved EMP is currently (2012) being prepared.</p>	Implement dust monitoring in accordance with current approved EMP until such time as an amendment is approved by DoP.	Altered conditions for dust and air quality issued for Mod 2 in 2018. Issue Closed.
Schedule 3 CoA 9	The Proponent shall aim to meet the water quality objectives in Table 6 for	Water quality equipment and calibration not available on site.	Suitable water quality monitoring equipment	Water quality equipment and

Condition of Approval	Requirement	Details of Non-compliance	Recommended Action	Compliance Status
	<p>water in the dredge ponds and in groundwater adjacent the dredge ponds, unless otherwise approved by the Director-General.</p>	<p>AEMR format for water quality results requires improvement.</p> <p>Exceedances noted but no recommended actions described.</p>	<p>should be available to staff to allow for in-situ monitoring as per the EMP at all times of operation.</p> <p>Develop a process for calibration of in-situ monitoring equipment and maintain records of calibration occurring.</p> <p>Or, remove consent condition as monitoring now outsourced.</p> <p>Review the AEMR format to ensure relevant Interim Targets are reflected and all required information is presented in the reports.</p>	<p>calibration records not available on site.</p> <p>Remove consent requirement.</p> <p>AEMR data format altered and acceptable.</p> <p>Issue Open.</p>
<p>Schedule 3 CoA 10</p>	<p>The Proponent shall ensure that all excavated potential acid sulfate soil fines material is returned back to below the watertable as soon as possible to prevent oxidation.</p> <p>No potential acid sulfate soil shall be removed from the site, unless adequately neutralised in accordance with methods</p>	<p>Observation at the time of the audit was that fines from the wash-plant are discharged to an initial fore-bay pond prior to discharging via a pipe into the re-internment pond. Quarry staff move pipe location based on visual monitoring.</p> <p>Fines material is incorporated into products when needed and subject to lime treatment to reduce the potential risk of acid sulfate leaching. No evidence of verification sampling</p>	<p>Implement a process to demonstrate that the fines are not 'potential acid sulfate soil fines' or are adequately neutralised in accordance with the approved Soil and Water Management Plan.</p>	<p>Fines materials returned to Pond 1 directly from the wash screen. Alkali is used at the wash screen to neutralise acid sulfate materials.</p> <p>Issue Closed.</p>

Condition of Approval	Requirement	Details of Non-compliance	Recommended Action	Compliance Status
	approved under the Soil and Water Management Plan.	having occurred was provided at the time of the audit.		
Schedule 3 CoA 11	The Proponent shall ensure that all potential acid sulfate soil fines material is discharged into the pond at a depth of no less than 3 metres from the water surface, and that all fines are deposited to a final depth of at least 8 metres from the water surface, unless an alternative method(s) is approved by OOW and the Director-General.	Observation at the time of the audit was that fines are discharged via a pipe into the re-internment pond at a point less than 3 metres from the water surface as evidenced by the vegetation growth immediately adjacent the discharge location. The depth of pipe is fixed from the starting point based on the water level at that time. Quarry staff move pipe location based on visual monitoring. No record of depth of fines re-internment is taken.	1. Recommend a review of Fines Management including the method in which potential ASS fines are placed at depths in accordance with Schedule 3 Condition 11. 2. Undertake refresher training with Quarry staff on the requirements of PA06_0030.	Bathymetric survey demonstrated that ample pond 1 depth was available. Site observations indicated that fines were being returned to a deep area of the pond. Issue Closed.
Schedule 3 CoA 17	The Proponent shall ensure that the flood storage capacity of the site is no less than the pre-existing flood storage capacity at all stages of the project. Details of the available flood storage capacity shall be reported in the AEMR.	The most recent Annual Environmental Monitoring Report (AEMR) available covered the period December 2014 to December 2015 was reviewed and did not contain information on the available flood storage capacity of the site.	Incorporate flood storage capacity information into the AEMR.	2017 AEMR included comment on flood storage at Ch 7.6. Subsequent AEMRs 2018-2020 do not include comment on flood storage. Issue Open.
Schedule 3 CoA 22	22. The Blue-Green Algae Management Plan shall: a) be prepared by a suitably qualified blue-green algae expert, whose	Monitoring plan not fully completed or approved and as such not being implemented as required by the plan.	Implement monitoring requirements as outlined in current approved Blue Green Algae Management Plan until such time as an	Monitor at the required frequency described in the plan was not occurring 2017-2019.

Condition of Approval	Requirement	Details of Non-compliance	Recommended Action	Compliance Status
	<p>appointment has been approved by the Director-General;</p> <p>b) be consistent with extant guidelines for blue-green algae management including the NHMRC's Guidelines for Managing Risks in Recreational Water;</p> <p>c) describe the measures that would be implemented to prevent and control the sources of algal blooms over the short, medium and long term; and</p> <p>d) define procedures for the management and notification of identified algal blooms.</p>		<p>amendment to this condition is approved.</p>	<p>Issue Open.</p>
<p>Schedule 3 CoA 24</p>	<p>24. The Ground Water Monitoring Program shall include:</p> <p>a) detailed baseline data on groundwater levels and quality, based on statistical analysis;</p> <p>b) groundwater impact assessment criteria;</p> <p>c) a program to monitor ground water levels and quality;</p> <p>d) a program to monitor ground water level effects on vegetation, and on ground water supply to adjoining properties; and</p> <p>e) a protocol for the investigation, notification and mitigation of identified</p>	<p>Item d) is not specifically addressed within the Groundwater Monitoring Program.</p> <p>It is noted that in 2012, Ramtech engaged Hydrosphere to undertake a review of the water quality monitoring program for the Dunloe Sands operation. Correspondence dated 26/4/12 from the Department approved some of the requested changes and requested Ramtech seek formal approval of the revised monitoring schedule.</p>	<p>Implement monitoring requirements as outlined in current approved Ground Water Management Plan until such time as an amendment to this condition is approved.</p>	<p>A review of the ground water monitoring results from the AEMR 2017-2020 indicate that in general ground water monitoring is being completed as per the plan all be it with some exceptions.</p> <p>Issue Closed.</p>

Condition of Approval	Requirement	Details of Non-compliance	Recommended Action	Compliance Status
	exceedances of the groundwater impact assessment criteria.			
Schedule 3 CoA 26	26. The Proponent shall: a) rehabilitate and revegetate the 15 ha of land identified in the EA (see the revegetation plan in Appendix 2); and b) within 12 months of the commencement of quarrying operations, make suitable arrangements to provide appropriate long term security for the revegetation area to ensure it is managed for conservation purposes to the satisfaction of the Director-General.	Long term arrangements for the security of the revegetation land have not been finalized. It is noted however that development of a master planned long term strategy for the site including security of the revegetation land is in progress.	Continue development of long-term arrangements for security of the revegetation land to progress finalisation as soon as possible.	Long term strategy (App C of the LMP) makes provision for monitoring and maintaining the site and revegetation areas. Land tenure, covenanting, etc not considered. Issue Closed.
Schedule 3 CoA 45	The Proponent shall: a) provide annual production data to the DII using the standard form for that purpose; and b) include a copy of this data in the AEMR.	A review of the AEMR for Dec 2014- Dec 2015 indicated that the annual production data was not included. Ramtech have stated that a copy of this production data will be included in future AEMRs.	Include the annual production data in the AEMR.	AEMR Section 4 reports production figures and compares it to the limit and past year. Issue Closed.
Schedule 5 CoA 5	Within 12 months of the date of this approval, and annually thereafter, the Proponent shall submit an AEMR to the Director-General and relevant agencies. This report must: a) identify the standards and performance measures that apply to the project;	Review of AEMR Jan 2015 to Dec 2015 titled "Six Monthly Monitoring for July 2015 – Dec 2015". This AEMR contained data for the Dec 2014 to Dec 2015 period. Correspondence identified the AEMR was submitted to DoP 5 May 2016 and was	Ensure all required items are adequately addressed within the AEMR. Ensure the AEMR is submitted within the DoP nominated timeframe and	AEMR 2017-2020 now includes the details required. Issue Closed.

Condition of Approval	Requirement	Details of Non-compliance	Recommended Action	Compliance Status
	<p>b) describe the works carried out in the last 12 months;</p> <p>c) describe the works that will be carried out in the next 12 months;</p> <p>d) include a summary of the complaints received during the past year & compare to complaints received in previous years;</p> <p>e) include a summary of the monitoring results for the project during the past year;</p> <p>f) include an analysis of these monitoring results against the relevant:</p> <ul style="list-style-type: none"> • impact assessment criteria/limits; • monitoring results from previous years • predictions in the EA; <p>g) identify any trends in the monitoring results over the life of the project;</p> <p>h) identify any non-compliance during the previous year; and</p> <p>i) describe what actions were, or are being, taken to ensure compliance.</p>	<p>generally in accordance with MP06_0030. However, DoP requires future AEMR's are to be submitted no later than 31 March immediately after the reporting period.</p> <p>Items a), d), e), g), h) and i) are addressed within the AEMR reviewed. Items b), c) and f) did not appear to be addressed within the AEMR. Ramtech have stated that they are currently reviewing and revising the AEMR at the request of the Department and have committed to submitting an updated version on or before the 14/8/2016.</p> <p>Ramtech consultant PlanIt have stated that they posted AEMR's to relevant agencies, however no additional physical evidence was provided to confirm this at the time of the audit.</p>	<p>evidence of it being provided to relevant agencies is maintained.</p>	
<p>Schedule 5 CoA 6</p>	<p>Within 2 years of the start of quarrying operations on site, and every 5 years thereafter, unless the Director-General directs otherwise, the Proponent shall commission and pay the full cost of an</p>	<p>This audit undertaken by Mark Rigby & Associates (MRA) represents the first Independent Environmental Audit conducted on the Dunloe Sands quarry operations and was not conducted within 2 years from the start of quarrying operations in October 2010.</p>	<p>Ensure that future IEA's are undertaken in timeframes nominated by the Director-General.</p>	<p>MRA completed their Audit in 2016, NGH are undertaking this Audit in 2017.</p>

Condition of Approval	Requirement	Details of Non-compliance	Recommended Action	Compliance Status
	Independent Environmental Audit of the project.			Unavoidable delays have occurred due to Covid-19. Issue Closed.
Schedule 5 CoA 10	<p>Within 1 month of the approval of any plan/strategy/program required under this approval (or any subsequent revision of these plans/strategies/programs), or the completion of any independent environmental audit or AEMR, the Proponent shall:</p> <p>a) provide a copy of the relevant document/s to Tweed Shire Council and relevant agencies; and</p> <p>b) ensure that a copy of the relevant document/s is made publicly available on site and/or at the Proponent's regional office,</p> <p>to the satisfaction of the Director-General</p>	No record/evidence was provided to confirm the EMP and AEMRs was submitted to any other relevant agencies.	Ensure that copies of any plan/strategy/program or subsequent revision required under the approval, each AEMR and IEA's are provided to the Tweed Shire Council and relevant agencies within the Department's nominated timeframes.	<p>All plans are available on the Project Website.</p> <p>Agencies were consulted in plan preparation.</p> <p>Issue Closed.</p>

3.6. ENVIRONMENTAL MANAGEMENT

Noise Management

The hours of operation are generally restricted to those indicated in CoA 3. One instance of early truck loading was identified. This issue was investigated and closed out. A Noise Management Plan (NMP) has been prepared for the project. The management plan was approved by DPIE July 2020. The NMP is appropriate for the nature of the operation. The use of spoil mounds as windbreaks and on-site plant access also serve to reduce noise transmission. The spoil mounds are positioned between the screen, loader and truck movement areas and the nearest sensitive receivers. The dredge is low in the landscape as it floats on the surface of the pond (Figure 1). The level of the water surface and diesel engine allows the perimeter bund to provide some noise dampening.



Figure 1 Dredge, pond 2

Noise monitoring was conducted quarterly in 2017-2021. The monitoring was conducted in accordance with the plan and Condition 4 (Ch.3). The noise monitoring found that the quarry operations were inaudible at each of the four nearest sensitive receivers (R1-R4). For three of the receivers the noise from the adjacent (~1km) Pacific Highway traffic (15,000+ vehicles/day) was the dominant noise source.

The CoA 5 (Schedule 3) required the Noise Management Plan for the project to be prepared to the satisfaction of the Secretary within 3 months of the approved modification, the time frame was not met. **This issue is raised as a non-compliance ID. 2021/B (Mod 2, Sch 3, CoA 5).** The Noise Management Plan has subsequently been prepared and approved by DPIE, as such this issue is closed.

Air Quality

An Air Quality Management Plan was developed and most recently approved by DPIE in February 2020. The plan adequately addresses the management of dust on site. At the time of the audit no dust was observed on the haul roads or being generated on site. Dust generation and management was discussed with staff. A water cart is available for dry windy conditions. Covered loads were observed for trucks leaving the site. Speed limit signs were in place and the site induction and driver code of conduct address dust. Mounded spoil is used to breakup easterly winds and reduce wind speeds at ground level. The reduced wind speeds at ground level decreases the movement of product and surface sands.

Dust monitoring using depositional gauges and PM10 static air quality monitoring (2017 and 2018) has occurred. Results from the monitoring indicate that dust levels are within acceptable limits. Some exceedances in PM10 levels were observed in 2018 but were not routine. Depositional dust gauges are now the primary source of fixed monitoring.

The CoA 7A (Schedule 3) required the Air Quality Management Plan for the project to be prepared to the satisfaction of the Secretary within 3 months of the approved modification, the time frame was not met. **This issue is raised as a non-compliance ID. 2021/C (Mod 2, Sch 3, CoA 7A)**, The Noise Management Plan has subsequently been prepared and approved by DPIE, as such this issue is closed.

Soil and water management

A Soil and Water Management Plan was prepared for the works and most recently approved by DPIE in October 2020. The plan adequately addresses the conditions of consent. Most of the monitoring has been completed as per the plan. Exceptions include flooding, site access issue and some subcontractor management issues. However, in general an extensive data set now exists to facilitate discussion of past practice and inform future management.

The extensive surface water monitoring for the site is of little value for managing surface water quality impacts. Observation of the site and reference to the sites geomorphological setting indicate that water in adjacent creeks and constructed paddock drains are not impacted by the facility. Rather drainage from local paddocks and water courses are the predominant source of water. Water within the facility percolates through the sands underlying the facility hardstands or the walls and floors of the facility ponds. Surface water discharge from the site is likely only in periods of very high rainfall or flooding. In either case the dilution from rainfall and run-on water are likely to negate any impacts from the facility.

Further confounding surface water quality monitoring are the effects of tides, paddock runoff and discharges from the Pacific highway. The daily fluctuation of the tides influences both brackish flows in Moonball Creek and movement of Ground water to the east. Paddock drainage introduces both nutrient rich water and acidic tail water from cane drains. The Pacific Highway provides run off from even the smallest rainfall events. These competing factors make the interpretation of results from monthly monitoring difficult. Drawing meaningful management action from the surface water quality monitoring results is very difficult.

The ground water under and adjacent to the site has and is being directly impacted by the works. The historic management of fines and acid sulfate forming materials appears to have affected the water quality of ground water associated with Piezometer 6 (DLP6). The pH of the ground water and the levels iron, Aluminium and sulphate were consistently outside the desired range between May 2015 and April 2019.

The 2016 Independent Audit identified that fines from the screen were discharged to an adjacent shallow unlined lagoon. The lagoon then discharged to the now Pond 1 area. This method exposed the fines to oxygen promoting the generation of acid and the release of iron, aluminium and sulphate. The pulsing of local recharge driven by rainfall and evaporative losses from the extraction ponds would inject acidic water with iron, aluminium and sulphate into the groundwater around Piezometer 6.

As observed at the time of the audit fines are being returned from the wash screen directly to pond 1. This reduces the time of exposure for acid forming fines by interning them at depth in Pond 1. From 2017 the levels of pH, iron, aluminium and sulphate begin to return to normal. In 2020 the levels are similar to those observed in 2012-14.

The CoA 9 (Schedule 3) required that the Proponent must aim to meet the water quality objectives (in Table 4 of the Consent) for water in the dredge ponds and in groundwater adjacent the dredge ponds, unless otherwise approved by the Secretary. Water quality parameters in the ponds and DLP6 were not met. **This issue is raised as a non-compliance ID. 2021/D (Mod 2, Sch 3, CoA, 9).** Groundwater quality in DLP6 has recovered in recent years. However, some potential still exists for curing stockpiles to leach acid forming by-products to the shallow ground water. Consideration should be given to forming stockpile areas so they always drain to the ponds, lining the stockpile areas with a barrier to prevent seepage to groundwater and lining drains to the ponds with limestone or similar to neutralise acidic seepage from the stockpiles.



Figure 2 Fines return lagoon 2016 (left) and Pond 1 2021 (right)

The CoA 17 (Schedule 3) required that the Proponent to report the details of the available flood storage capacity in the Annual Review, flood storage was reported in 2017 Annual Environmental Review but not in subsequent annual reviews. **This issue is raised as a non-compliance ID. 2021/E (Mod 2, Sch 3, CoA, 17).** Flood storage should be reported in each annual review.

The CoA 18 (b) requires the preparation of a Soil and Water Management Plan including an Acid Sulfate Management Plan to the satisfaction of DPIE. The existing Acid Sulfate Management Plan states that lime will be used to manage acidity at the screen and in the curing stockpiles. At the time of the audit it was observed that sodium bicarbonate was being used to manage acidity. **This issue is raised as a non-compliance ID. 2021/F (Mod 2, Sch 3, CoA, 18 b).** Update the Acid Sulfate Management Plan to include the use of sodium bicarbonate to manage acidity.

The CoA 18 (Schedule 3) requires the preparation of a Soil and Water Management Plan and that the Proponent must implement the plan as approved by the Secretary. Programmed monitoring was not being completed (accidental/flooding) and changes to the plan occurred without being documented or approved. **This issue is raised as a non-compliance ID. 2021/G (Mod 2, Sch 3, CoA, 18 c).** Ensure monitoring is completed where safe to do so and that changes in management or processes are documented and approved prior to implementation.

The management and monitoring of erosion and sediment control and blue-green algae appeared at the time of the audit to be fit for the current purpose.

Rehabilitation and landscaping

A Landscape Management Plan was prepared for the works and most recently approved by DPIE in July 2021. The plan adequately addresses the conditions of consent. The plan includes a Rehabilitation and Revegetation Management Plan, a Long Term Management Strategy, a Kola Management Plan and various procedures and forms.

Approximately 14-15ha of the site has been revegetated since the commencement of operations. Most revegetation has occurred in the north and east of the site about 700m from Pond 2. At the time of the audit about 10ha of native revegetation was mature and well established. About 4ha of planted vegetation was developing and appeared to be between 3-5 years old. In general, the revegetation was being completed according to the plan. In addition, planting along the western side of the site was observed to be established and forming a visual screen. Some natural regeneration was observed along the southern boundary of the ponds.

A rehabilitation bond is required for the project (CoA 30, Schedule 3). The previous audit cited evidence of the bond, and additional evidence was cited for both payment of the bond and a review of the bond in line with the CPI. Remediation of the site has yet to commence as the project is still actively extracting sand. Stockpiled spoil material has been revegetated but this is a temporary measure to control wind and water erosion.

Aboriginal cultural heritage

An Aboriginal Cultural Heritage Management Plan (December 2019) was prepared for the works and most recently approved by DPIE in January 2021. The plan adequately addresses the conditions of consent. Areas of potential cultural sensitivity were identified in the EIS to the east of Pond 2. These areas were to be further investigated prior to disturbance. The plan states that test excavations did not uncover aboriginal objects or human remains. Consultation reproduced in Appendix A of the plan indicates that the Registered Aboriginal Parties were supportive with the plan.

Traffic and Transportation

A Traffic Management Plan (May 2019) was prepared for the works and most recently approved by DPIE in June 2019.

Traffic enters and exits the site via an upgraded intersection with the Pottsville-Moonball Rd. The intersection is signed on Moonball Road and also on the access road. The intersection of the access road was sealed and line marked. The access road is sealed from Moonball road to the site access. A parking area was available adjacent to the intersection on the access road. There is a turnaround bay prior to the site office and an additional heavy vehicle parking area at the site office. Light vehicle parking exists at the site office. Room exists within the site for the turning and movement of heavy vehicles and loaders.

A review of the site induction and records indicates that heavy vehicle operators are inducted prior to accessing the site as are site staff. This includes the driver code of conduct and access rules to and from the site. Entry to the site is sign posted and speed limited. Attendance is by appointment and sales to the general public as passing trade is not permitted. Movement paths, stockpiles and hold points for heavy vehicles were sign posted on site. At the time of the audit driver radio calls could be heard, advising that they were entering and exiting the site. Drivers were observed tarping vehicles prior to leaving the site.

The CoA 35B (Schedule 3) requires the driver code of conduct to include a complaint resolution procedure and community consultation measures for peak haulage periods. The code of conduct does not include a complaint resolution procedure or consultation measures for peak haulage periods. **This issue is raised as a non-compliance ID. 2021/H (Mod 2, Sch 3, CoA, 35 b).** Insert cross reference to EMS for complaint resolution in the driver code of conduct. Insert cross reference to TMP for community consultation in the driver code of conduct.

Visual impact

The approved Landscape Management Plan makes provision for screen plantings along the western edge of the quarry. The area immediately surrounding the site office and entry is landscaped and grassed. Access areas are delineated with logs and stone. Signage is legible without being gaudy. Advertising signage was not observed.

Lighting at the site is minimal and flood lighting was not observed.

Vegetative growth along the quarry boundaries, access roads and public roads screen views of the quarry. At the time of the audit it was difficult to directly observe the development from public roads. Dwellings to the south and southwest may be afforded direct view because of the elevated position of those dwellings in the landscape.

Waste management

A Waste Management Plan (July 2020) was prepared for the works and most recently approved by DPIE in July 2020.

Overburden stripped from the site is variously used for mounding around the site. Those mounds are both shallow perimeter bunds, but also tall wind breaks in the vicinity of the stockpile areas. In general, those spoil stockpiles were revegetated with grass, except for the western mound where wood vegetation (Shea Oaks) have also been planted.

Office waste is removed on a weekly basis. Black and grey water is treated onsite with an aerated waste water treatment system approved by Tweed Shire and serviced by a local plumber. Approval and service records were cited at the time of the audit.

Process waste in terms of the fines from the screening process have been returned to the centre of Pond 1 from at least May 2018 (Figure 3). For a period of time in 2017 the fines were delivered directly to the edge of Pond 1. Prior to 2017 it appears that fines passed through a shallow lagoon(s) system before the supernate was returned to Pond 1 (Figure 4). It's the auditor's opinion that the management of fines prior to 2017 generated acid from the aeration of acid sulfate fines held in the lagoons.

Figure 3: Management and placement of screen fines 2017 to now

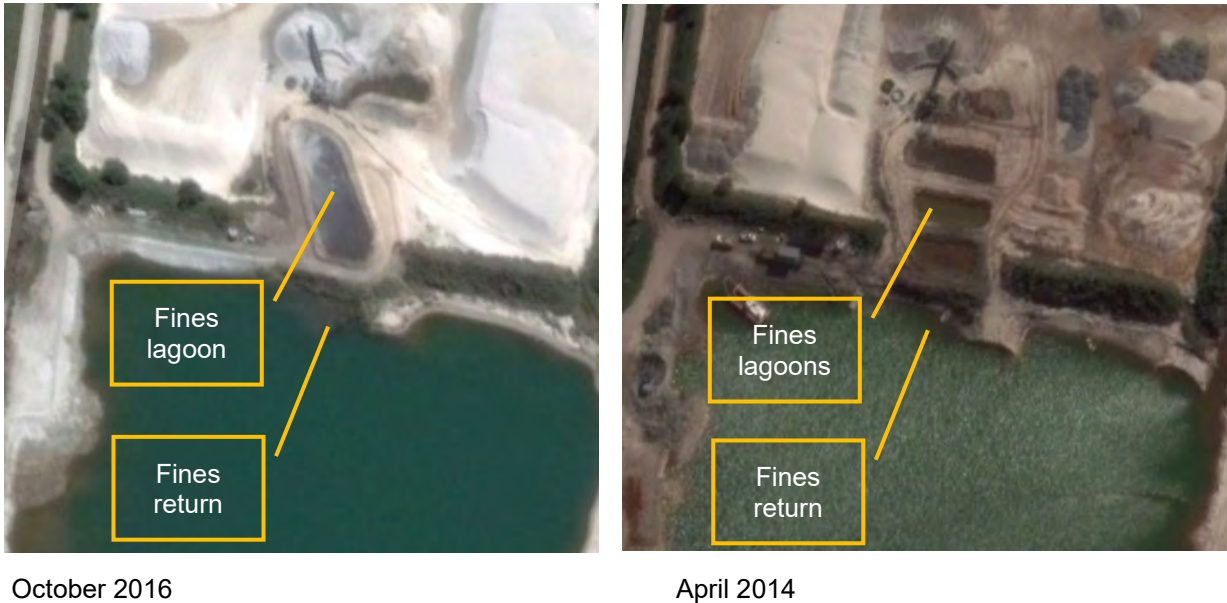


May 2018

July 2017

The width of the lagoon prior to 2017 are at best 15m. With an angle of repose of 3:1 (conservative) the maximum depth would be 2.5m. As the depth was shallow the water will have been constantly aerated facilitating the generation of acid releasing, iron, aluminium and sulphur. This is reflected in the elevated levels for pH, aluminium and sulphur in Pond 1 between 2013 and 2017, and the elevated ground water levels for pH, iron aluminium and sulphur discussed above.

Figure 4 Management and placement of screen fines before 2017



October 2016

April 2014

3.7. ENVIRONMENTAL MANAGEMENT STRATEGY

An Environmental Management Strategy (January 2020) has been prepared for the Dunloe Sand Quarry by GHD and most recently approved by DPIE in January 2020. The management has been prepared in accordance with the requirements of CoA 1 Schedule 5 of the consent.

The Environmental Management Strategy (January 2020) provided by Holcim contains the consultation with agencies during preparation of the strategy. However, when viewed on the website the consultation for the strategy presentation is not available. **This issue is raised as a non-compliance ID. 2021/I (Mod 2, Sch 5, CoA, 1 b).** Agency consultation for Environmental Management Strategy 2020 preparation to be included in the Environmental Management Strategy 2020 made available on the company website.

The Environmental Management Strategy is required to identify strategies that addressed cumulative impacts. The Environmental Management Strategy does not identify and address cumulative impacts. **This issue is raised as a non-compliance ID. 2021/J (Mod 2, Sch 5, CoA, 1 f).** Address cumulative impacts in the Environmental Management Strategy.

3.8. STATEMENTS OF COMMITMENTS

A total of 66 Statements of Commitment (SoC) are contained in Appendix 3 of the consent for Mod 2. Of the 66 SoC, six (6) were found to be non-compliant while 10 were found to be not triggered. In general, broad adherence with the SoC were observed at the time of the audit. The main areas of non-compliance related to ground water and surface water quality not meeting the required levels. One non-compliance with the hours of operation was also recorded.

The auditor has arbitrarily numbered each statement of commitment in the audit protocol for ease of reporting.

Some water quality monitoring was not completed as required due to subcontractor errors and flooding. **This issue is raised as a non-compliance ID. 2021/K (Mod 2, App. 3, SoC, 19).** Ensure water quality monitoring is completed as specified in the EMP. Include a provision in the EMP that water quality monitoring will only be completed where safe to do so.

In relation to surface water and ground water, there is a requirement for in situ monitoring equipment to be provided (onsite) for use by Quarry staff, and that the equipment will be calibrated at least monthly. All monitoring is now completed by subcontractors and the site has reduced its equipment to a stock of litmus paper to assess pH as required. **This issue is raised as a non-compliance ID. 2021/L (Mod 2, App. 3, SoC, 21/25).** It is recommended that this SoC be removed at the time of the next modification.

All groundwater monitoring bores for the site are required to be licensed. A review of the Water NSW website could not locate any licensed bores at the site. **This issue is raised as a non-compliance ID. 2021/M (Mod 2, App. 3, SoC, 26).** Register the bores with Water NSW.

Contour profiling of ground water head data was required to be part of routine monitoring and reporting. Ramboll reviewed the water quality monitoring data for July 2020-July 2021 report. No other contouring of ground water head data was available at the time of the audit. **This issue is raised as a non-compliance ID. 2021/N (Mod 2, App. 3, SoC, 28).** Contour profiling of ground water head data should be completed on an annual basis and reported in the Annual Review.

Operations on the site are restricted to 7am to 6pm Monday to Friday and 7am to 12 noon Saturdays. On one occasion it was reported that a truck was loaded at 6.45am. **This issue is raised as a non-compliance ID. 2021/O (Mod 2, App. 3, SoC, 46).** This issue has been investigated and closed out.

3.9. OTHER MATTERS

The EPA varied the EPL (#13077) via notice 1552463 dated 20 February 2018. The notice introduced a new description of the activity and extractive limits, and it updated the points of discharge and set new limits for water quality and established monitoring frequency for surface and ground water.

The EPA completed a desktop audit in July 2020 of the water quality monitoring data for the site published on the Holcim Web site.

In addition, the EPA varied the EPL (#13077) via notice 1599399 dated 20 October 2020. The notice made minor changes to the licence to ensure consistency across extractive industries for NSW.

3.10. COMPLAINTS

Two complaints were received in 2017; one related to faded stop sign and stop line. The line was re-painted and stop sign subsequently replaced. The second complaint was in relation to noise from truck operations. This was investigated and closed out.

No complaints were received in 2018, 2019 or 2020.

3.11. INCIDENTS

Flooding of the site from significant rainfall in adjacent catchments occurred in Feb 2020 and April 2017. In both cases the monitoring program was interrupted. Water quality in the ponds took some time to recover following sediment inflows to the facility.

In addition, there have been exceedances in pond and groundwater quality limits over the last five years. However, as discussed above the impacts to DLP6 appear to have dissipated over time with the correction of fines management on site.

3.12. KEY STRENGTHS

The auditor notes the following key strengths of the environmental performance as observed during the audit:

1. Mounding of spoil material has reduced the impact of winds on dust generation.
2. The project's Community Consultative Committee continues to function on a regular basis apart from 2020 due to Covid 19. Complaints from the community are infrequent.
3. The project appears to have adequate human resources to deliver environmental management, with management support from Holcim.
4. Revegetation and rehabilitation are progressing well despite the impacts of the February 2020 floods.
5. Deep fines return to Pond 1 from 2018 onwards has reduced impacts on groundwater quality.
6. A new dredge is due to be commissioned in Q3 2021.
7. Surface water in adjacent creeks is unlikely to be impacted by the facility due to its position in the landscape and the nature of the hydrogeology of the site and surrounds.

4. RECOMMENDATIONS

4.1. RECOMMENDED ACTIONS

Non-compliances raised during the current audit and recommendations are tabulated below (Table 4-1).

Table 4-1 Recommended Actions

ID	CoA	Details of Non-compliance	Recommended Action
06-0030 Mod2 2021/A	Schedule 2 CoA 4(b&c)	Several actions from the previous audit are still open (Table 3-2).	Address and close actions from the previous audit.
06-0030 Mod2 2021/B	Schedule 3 CoA 5	Mod 2 approved Nov 2018, consultation with EPA in Aug 2019, DPIE approval of NMP July 2020. As such the plan was not prepared within three months of Mod 2 approval.	Nil. Plan now developed and approved.
06-0030 Mod2 2021/C	Schedule 3 CoA 7(a)	Mod 2 approved Nov 2018, consultation with EPA in Aug 2019, DPIE approval of plan Feb 2020. As such the plan was not prepared within three months of Mod 2 approval.	Nil. Plan now developed and approved.
06-0030 Mod2 2021/D	Schedule 3 CoA 9	<p>Pond turbidity levels exceeded the WQO for Turbidity in 2017 and 2018, likely due to 90% rainfall/flooding.</p> <p>Pond pH levels are consistently below (more acid) the WQO, however they are within the range for upgradient groundwater.</p> <p>In bore hole six ground water levels of pH, sulphate, aluminium and Iron are outside the nominated levels and the levels measured in other bores.</p> <p>The exceedances were major in 2015-2018 but have improved in recent years.</p>	<p>Stockpiling of screened material should be managed to reduce the transmission to ground water of stormwater that infiltrates the stockpile.</p> <p>Consideration should be given to forming stockpile areas so they drain to the ponds, lining the stockpile areas with a barrier to prevent seepage to groundwater and lining drains to the ponds with limestone or similar to neutralise leachate.</p>
06-0030 Mod2 2021/E	Schedule 3 CoA 17	Flood storage capacity not reported in the Annual Review for 2018 to 2020.	Report on flood storage capacity in the Annual Review.
06-0030 Mod2 2021/F	Schedule 3 CoA 18(b)	The site is using granular sodium bicarbonate in the wash plant to adjust pH. This is not documented in the plan.	Document the use of a range of alkalis in the wash plant to allow flexible pH management.
06-0030 Mod2 2021/G	Schedule 3 CoA 18(c)	Some historic actions were not completed for monitoring (accidental) and changes have occurred without being documented or approved.	Update the management plan to include current and planned actions that deviate from the SWMP.

ID	CoA	Details of Non-compliance	Recommended Action
06-0030 Mod2 2021/H	Schedule 3 CoA 35(b)	Code of conduct does not include; complaint resolution procedures and consultation measures for peak haulage periods.	Insert cross reference to EMS for complaint resolution. Insert cross reference to TMP for community consultation.
06-0030 Mod2 2021/I	Schedule 5 CoA 1(b)	The EMS 2020 notes agency consultation but it is not appended to the plan on the web site.	Add agency consultation to EMS.
06-0030 Mod2 2021/J	Schedule 5 CoA 1(f)	Cumulative impacts are not specifically addressed.	Include statement addressing cumulative impact for multiple issues or singular repeat issues.
06-0030 Mod2 2021/K	Appendix 3 SoC	Some water quality monitoring was not completed due to subcontractor errors. This has subsequently been rectified.	Ensure subcontractors complete monitoring as required.
06-0030 Mod2 2021/L	Appendix 3 SoC	All monitoring completed by contractors at the required frequency. For ad hoc issues pH strips available on site.	Redundant statements of commitment need to be removed from Schedule 3
06-0030 Mod2 2021/m	Appendix 3 SoC	License details could not be located on Water NSW Website.	Register monitoring bores with Water NSW.
06-0030 Mod2 2021/N	Appendix 3 SoC	Head data assessed based on AHD. Contouring not available in the reporting period, Rambolt Report dated September 2021.	Ground water head data assessed in Ramboll Report Sept 2021. Issue Closed
06-0030 Mod2 2021/O	Appendix 3 SoC	Truck loaded 15 minutes early.	Issue closed out, no further action required.

APPENDIX A AUDIT TABLE AND PROTOCOL

The compliance status for each requirement or commitment has been assessed in accordance with the criteria in (DPIE 2020).

Compliance status descriptors

Status	Description
Compliant	The auditor has collected sufficient verifiable evidence to demonstrate that all elements of the requirement have been complied with within the scope of the audit.
Non-compliant	The auditor has determined that one or more specific elements of the conditions or requirements have not been complied with within the scope of the audit.
Not triggered	A requirement has an activation or timing trigger that has not been met at the time when the audit is undertaken, therefore an assessment of compliance is not relevant.

Dunloe Park Sand Project Audit Protocol 2021

Reference	Required Audit Action, and Terms of Approval	Evidence collected July 2021	Comments	Finding	Proposed Action
	Licence No. 06_0030 • Licensee: Ramtech Pty Ltd • Approval Authority: Minister for Planning • Project: Dunloe Park Sand Project				
	Lot 1 DP208249; Lot 182 DP755721; Lot 183 DP755721; Lot 44 DP755721; Lot 81 DP755721; Lot 162 DP755721; Lot 2 DP 780199; Lot 1 DP780199; Lot 1 DP780200; Lot 2 DP785895				
ADMINISTRATIVE CONDITIONS					
Obligation to minimise harm to the environment					
1	In addition to meeting the specific performance measures and criteria established under this approval, the Proponent must implement all reasonable and feasible measures to prevent, and if prevention is not reasonable and feasible, minimise any material harm to the environment that may result from the construction and operation of the project, and any rehabilitation required under this approval.	The result of this audit. Site observations and Aerial photography.	In general the actions of the Management Plans and other documents have been implemented. While some issues require further actions Holcim management of the site has corrected past failures and reduced the level of impact of the development.	Compliant	
Terms of approval					
2	The Proponent must carry out the project generally in accordance with the:				
	(a) EA, EA (MOD 1) and EA (MOD 2); and	The result of this audit. Site observations and Aerial photography.	The project is being carried out generally in accordance with the original EIS and subsequent modifications. The machinery storage shed for Mod 1 was not constructed. Some non-compliances have been identified below.	Compliant	
	(b) Statement of Commitments.	The result of this audit. Site observations and Aerial photography.	The statements of commitments are generally being adhered too.	Compliant	
	Notes: * The general layout of the project is shown in Appendix 1; and * The Statement of Commitments is reproduced in Appendix 3.	The result of this audit. Site observations and Aerial photography.	The site layout is generally in accordance with the project site lay out. Stage two has not commenced.	Compliant	
2A	The Proponent must carry out the project in accordance with the conditions of this approval.				
3	If there is any inconsistency between the documents referred to above, the conditions of this approval shall prevail to the extent of any inconsistency.	Noted			
4	The Proponent must comply with any reasonable requirement/s of the Secretary arising from the Department's assessment of:	Noted			
	(a) any reports, strategies, plans, programs, reviews, audits or correspondence that are submitted in accordance with the conditions of this approval;	The result of this audit. Site observations and Aerial photography.	Reports, strategies and plans have been prepared as required.	Compliant	
	(b) any reviews, reports or audits undertaken or commissioned by the Department regarding compliance with the conditions of this approval; and	The result of this audit. Site observations and Aerial photography.	The findings of the previous audit have been mostly implemented and corrections to various aspects of the monitoring program have been effected.	Non-compliant	Close items form previous audit.
	(c) the implementation of any actions or measures contained in these documents.	The result of this audit. Site observations and Aerial photography.	In general the actions of the Management Plans and other documents have been implemented. However, several actions from the previous audit are still open.	Non-compliant	Close items form previous audit.
Limits on approval					
5	Sand extraction operations may take place until 1 January 2035. Note: Under this Approval, the Proponent is required to rehabilitate and revegetate the site to the satisfaction of the Secretary. Consequently this approval will continue to apply in all other respects other than the right to conduct quarrying operations until the site has been rehabilitated and revegetated to a satisfactory standard.	Aerial Photography and site inspection during Audit	No rehabilitation occurring at this stage. Macrophyte species normalising areas of pond banks not subject to disturbance.	Not triggered	

6	The Proponent must not extract to a depth of more than 12 m below the natural ground surface. Note: The Department acknowledges that this limit may have a variance of +/- 1m.	DSQ Bathymetric Survey November 2020	Extraction below 12m not indicated by survey.	Compliant	
7	The Proponent must not transport more than 300,000 tonnes of quarry products in any financial year from the site.	DSQ Annual Review (AR) 2017- 2020	Annual production figures indicate less than 300,000t/y. 2016 - 65730t, 2017 - 150339t, 2018 - 174,583t, 2019 - 186,280t and 2020 - 156,918t.	Compliant	
8	The Proponent must ensure that heavy vehicle movements (in and out) associated with the project do not exceed 24 per hour.	Annual production tonnages from AR 2017-2020. Load out and truck number spreadsheets, 2017-2021. Daily truck movement record sheets, 30/5/19, 20/1/20, 8/7/21, 9/7/21.	The number of loads are limited by the capacity of loading equipment (1 Loader), on-site production and sales. Load out sheets were reviewed and indicate that daily truck movements are on average about 20 to 30 movements per day. Maximum vehicle movements/hour observed were 10.	Compliant	
Staging, combining and updating strategies, plans or programs					
9	With the approval of the Secretary, the Proponent may:				
	(a) prepare and submit any strategy, plan or program required by this approval on a staged basis (if a clear description is provided as to the specific stage and scope of the project to which the strategy, plan or program applies, the relationship of the stage to any future stages and the trigger for updating the strategy, plan or program);	Management plans	The management plans acknowledge stage 1 and stage 2 of the Dunloe Sands Quarry (DSQ). At this point the DSQ is still at stage 1	Not triggered	
	(b) combine any strategy, plan or program required by this approval (if a clear relationship is demonstrated between the strategies, plans or programs that are proposed to be combined); and	Site observations.	At this point the DSQ is still at stage 1.	Not triggered	
	(c) update any strategy, plan or program required by this approval (to ensure the strategies, plans and programs required under this approval are updated on a regular basis and incorporate additional measures or amendments to improve the environmental performance of the project).	Site observations.	At this point the DSQ is still at stage 1.	Not triggered	
9A	If the Secretary agrees, a strategy, plan or program may be staged or updated without consultation being undertaken with all parties required to be consulted in the relevant condition in this approval.		Noted	Not triggered	
Application of existing strategies, plans or programs					
9B	The Proponent must continue to apply existing management strategies, plans or monitoring programs approved prior to the approval of Modification 2, until the approval of a similar plan, strategy or program following the approval of Modification 2.	EMS, EMP and ACHMP Approval letter from DPIE to Holcim dated 6 Jan 2020.	Updated plans Approved	Compliant	
Structural adequacy					
10	The Proponent must ensure that any new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA. Notes: • Under Part 4A of the EP&A Act, the Proponent is required to obtain construction and occupation certificates for the proposed building works. • Part 8 of the EP&A Regulation sets out the requirements for the certification of the project.	Site observations. Aerial Images	Buildings erected prior to the audit period	Not triggered	
Demolition					
11	The Proponent must ensure that all demolition work is carried out in accordance with AS 2601-2001: The Demolition of Structures, or its latest version.	Site observations. Aerial Images	No demolition has occurred in the audit period	Not triggered	
Operation of plant and equipment					
12	The Proponent must ensure that all plant and equipment used at the site is:				
	(a) maintained in a proper and efficient condition; and	Plant maintenance plan (white board). Site observations.	Equipment appeared to be serviceable with no visible leaks or defects.	Compliant	
	(b) operated in a proper and efficient manner.	Site observations.	Plant movement and operation on site is planned, signed and recorded. Existing dredge being replaced with new unit, loader recently replaced, diesel storage double bunded, loader parking/fuelling area concreted and drained to pit. Excessive smoke and noise was not observed from loader or dredges. Screen/wash plant was not operating at the time of the audit.	Compliant	
Road maintenance contributions					
13	Prior to increasing heavy vehicle movements (in and out) above eight per hour, the Proponent must pay Council \$182,280 in accordance with Council's Tweed Road Contribution Plan, unless a deferred payment agreement is executed under Council's Business Investment Policy, in which case contributions are to be paid in accordance with that agreement.	Payment Receipt Tweed Shire June 2019, June 2020, June 2021.	Part payment of \$30,000/year	Compliant	

Compliance																	
14	The Proponent must ensure that all employees, contractors and sub-contractors are made aware of, and instructed to comply with, the conditions of this approval relevant to their respective activities.	Dunloe Quarry Employee, visitor & Contractor Site Rules (SAWA SHE 013)	Induction describes vehicle movement requirements, incident reporting, Emergency Response and Environmental Responsibilities. Consequences of non compliance	Compliant													
Evidence of consultation																	
15	Where consultation with any public authority is required by the conditions of this approval, the Proponent must:																
	(a) consult with the relevant public authority prior to submitting the required document to the Secretary for approval;	Management Plans October to November 2020	Appended to management plans	Compliant													
	(b) submit evidence of this consultation as part of the relevant document; and	Management Plans October to November 2020	Appended to management plans	Compliant													
	(c) describe how matters raised by the authority have been addressed and any matters not resolved.	Management Plans October to November 2020	Limited response to consultation from agencies.	Compliant													
GENERAL EXTRACTION AND PROCESSING PROVISIONS																	
Identification of boundaries																	
1	Within 1 month of the date of approval of the Landscape Management Plan (see condition 27 below), the Proponent must:																
	(a) engage a registered surveyor to mark out the boundaries of the approved limits of extraction;	Beyond the time period for the audit		Not triggered													
	(b) submit a survey plan of these boundaries to the Secretary; and	Beyond the time period for the audit		Not triggered													
	(c) ensure that these boundaries are clearly marked at all times in a permanent manner that allows operating staff and inspecting officers to clearly identify those limits.	Site observations.	The boundary of stage 1 is marked by a five strand barb wire fence and signage.	Compliant													
	Note: The limit of extraction includes the area described in the EA and shown conceptually on the plan in Appendix 1.		Noted														
NOISE																	
Impact assessment criteria																	
2	The Proponent must ensure that the noise generated by the project does not exceed the criteria in Table 1 at any residence on privately-owned land.																
	<p><i>Table 1: Noise Impact Assessment Criteria</i></p> <table border="1"> <thead> <tr> <th>Receiver Location</th> <th>Day L_{Aeq} (15 min) dB(A)</th> </tr> </thead> <tbody> <tr> <td>R6 and R7</td> <td>42</td> </tr> <tr> <td>R8</td> <td>48</td> </tr> <tr> <td>All other residences</td> <td>41</td> </tr> </tbody> </table>	Receiver Location	Day L_{Aeq} (15 min) dB(A)	R6 and R7	42	R8	48	All other residences	41	Muller Acoustic Consulting (MAC): Jan 2020, May 2020, Sept 2020, Nov 2020. Site observation.	Closest receivers over 1km away.	Compliant					
Receiver Location	Day L_{Aeq} (15 min) dB(A)																
R6 and R7	42																
R8	48																
All other residences	41																
	Noise generated by the project must be monitored and measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Noise Policy for Industry (EPA, 2017). The noise criteria in Table 1 do not apply if the Proponent has an agreement with the owner/s of the relevant residence or land to exceed the noise criteria, and the Proponent has advised the Department in writing of the terms of this agreement.	MAC Noise reports Q1-4 2019 MAC Noise reports Q1-4 2020 Site observations.	Monitoring indicates that quarry operations inaudible at adjoining properties. Evening and night operations not occurring. Loading operations make little noise. Reports found activities not audible over other noise sources, including the Pacific Highway.	Compliant													
Hours of operation																	
3	The Proponent must comply with the operating hours in Table 2.																
	<table border="1"> <thead> <tr> <th>Activity</th> <th>Day</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td rowspan="3">Sand extraction and processing, delivery and distribution, and other quarry related activities</td> <td>Monday – Friday</td> <td>7:00am to 5:00pm</td> </tr> <tr> <td>Saturday</td> <td>7:00am to 12:00pm</td> </tr> <tr> <td>Sunday and Public Holidays</td> <td>Nil</td> </tr> <tr> <td>Maintenance (if inaudible at neighbouring residences)</td> <td>Any day</td> <td>Any time</td> </tr> </tbody> </table> <p><i>Table 2: Operating Hours</i></p>	Activity	Day	Time	Sand extraction and processing, delivery and distribution, and other quarry related activities	Monday – Friday	7:00am to 5:00pm	Saturday	7:00am to 12:00pm	Sunday and Public Holidays	Nil	Maintenance (if inaudible at neighbouring residences)	Any day	Any time	Annual production tonnages from AR 2017-2020. Load out and truck number spreadsheets, 2017-2021. Daily truck movement record sheets, 30/5/19, 20/1/20, 8/7/21, 9/7/21. Site signage and induction.	Works within approved hours	Compliant
Activity	Day	Time															
Sand extraction and processing, delivery and distribution, and other quarry related activities	Monday – Friday	7:00am to 5:00pm															
	Saturday	7:00am to 12:00pm															
	Sunday and Public Holidays	Nil															
Maintenance (if inaudible at neighbouring residences)	Any day	Any time															
Noise operating conditions																	
4	The Proponent must:																

	(a) implement best practice management to minimise the construction, operational and road transportation noise of the development;	Sight observations.	Stockpiles and screen plantings provide attenuation for site noise. Plant switched off when not in use. Washing plant located between stockpiled materials of similar height.	Compliant	
	(b) minimise the noise impacts of the project during meteorological conditions when the noise criteria in this approval do not apply;	MAC Noise reports Q1-4 2019 MAC Noise reports Q1-4 2020 Site observations.		Compliant	
	(c) carry out attended noise monitoring (at least every 3 months or as otherwise agreed by the Secretary) to determine whether the project is complying with the relevant conditions of this approval; and	MAC Noise reports Q1-4 2019 MAC Noise reports Q1-4 2020 Site observations.	Quarterly monitoring occurring	Compliant	
	(d) regularly assess noise monitoring data and modify and/or stop operations on site to ensure compliance with the relevant conditions of this approval	AR 2017-2020	Noise data reviewed on and annual basis by Holcim and reported in AR.	Compliant	
	to the satisfaction of the Secretary. Note: Monitoring under this approval is not required at all residences and the use of representative monitoring locations can be used to demonstrate compliance with criteria, if agreed to by the Secretary.				
Noise management plan					
5	Within three months of the approval of Modification 2, the Proponent must prepare a Noise Management Plan for the project to the satisfaction of the Secretary. This plan must:	Dunloe Quarry NMP 2020, document control and Appendix A. DPIE Approval (letter) of NMP July 2020	Mod 2 approved in Nov 2018, consultation with EPA in Aug 2019 DPIE approval of plan in July 2020. As such the plan was not prepared within three months of the approval of Mod 2.	Non-compliant	Nil
	(a) be prepared by a suitably qualified and experienced person/s whose appointment has been endorsed by the Secretary;	Dunloe Quarry NMP 2020. DPIE Approval (letter) of NMP July 2020	Plan Approved by DPIE in July 2020.	Compliant	
	(b) be prepared in consultation with the EPA;	Dunloe Quarry NMP 2020, document control and Appendix A.	EPA were consulted but declined request for review.	Compliant	
	(c) describe the measures to be implemented to ensure:	Dunloe Quarry NMP 2020. DPIE Approval (letter) of NMP July 2020	Plan Approved by DPIE in July 2020.	Compliant	
	(i) compliance with the noise criteria and operating conditions in this approval;	Dunloe Quarry NMP 2020. DPIE Approval (letter) of NMP July 2020	Plan Approved by DPIE in July 2020.	Compliant	
	(ii) best practice management is being employed;	Dunloe Quarry NMP 2020. DPIE Approval (letter) of NMP July 2020	Plan Approved by DPIE in July 2020.	Compliant	
	(iii) noise impacts of the project are minimised during noise-enhancing meteorological conditions;	Dunloe Quarry NMP 2020. DPIE Approval (letter) of NMP July 2020	Plan Approved by DPIE in July 2020.	Compliant	
	(d) describe the noise management system; and	Dunloe Quarry NMP 2020. DPIE Approval (letter) of NMP July 2020	Plan Approved by DPIE in July 2020.	Compliant	
	(e) include a monitoring program to be implemented to measure noise from the project against the noise criteria in Table 1, and which evaluates and reports on the effectiveness of the noise management system on site.	Dunloe Quarry NMP 2020. DPIE Approval (letter) of NMP July 2020	Plan Approved by DPIE in July 2020.	Compliant	
	The Proponent must implement the Noise Management Plan as approved by the Secretary.	MAC Noise reports Q1-4 2019 MAC Noise reports Q1-4 2020 Site observations.	Noise levels at the time of the audit were modest but restricted to load out operations only. Noise reports indicate that the Quarry operations are inaudible at monitoring locations. Stockpiles and tree plantings restrict noise transmission.	Compliant	
AIR QUALITY					
Impact assessment criteria					
6	The Proponent must ensure that particulate matter emissions generated by the project do not cause exceedances of the criteria in Table 3 at any residence on privately-owned land.				

Table 3: Air quality criteria				Dunloe AQMP 2017 to 2020	Some confusion about air monitoring requirements and the Air Quality Management Plan led to errors for PM10 monitoring in 2016 and 2017. PM10 monitoring is now conducted when production exceeds 200,000t/a. Monitoring for PM10 during 2017 and 2018 indicated broad compliance.	Compliant	
Pollutant	Averaging Period	Criterion					
Particulate matter < 10 µm (PM ₁₀)	Annual	a,c 30 µg/m ³					
	24 hour	b 50 µg/m ³					
Total suspended particulates (TSP)	Annual	a,c 90 µg/m ³					
d Deposited dust	Annual	b 2 g/m ² /month	a 4 g/m ² /month				
Notes: a Total impact (i.e. incremental increase in concentrations due to the development plus background concentrations due to all other sources). b Incremental impact (i.e. incremental increase in concentrations due to the project on its own). c Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fire incidents or any other activity agreed by the Secretary. d Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method.				Noted		Not triggered	
Air quality operating conditions							
7	The Proponent must:						
	(a) implement best management practice to minimise the dust emissions of the project, including routinely watering haul roads being used by heavy vehicles and equipment;	Dunloe Quarry AQMP Feb 2020. Dunloe AQMP Ch.6.3 2017, 2019, 2020. Site observations.	Site access road sealed, Loads covered, Shaker grid in place, quarry plant movement areas moist. Sand is kept wet as part of the processing. Staff induction requires dust monitoring and management.	Compliant			
	(b) regularly assess meteorological and air quality monitoring data to guide the day-to-day planning of operations and implementation of air quality mitigation measures to ensure compliance with the relevant conditions of this approval;	Dunloe Quarry Enviro. Monitoring Program 2019, Table 2.1. Met Station On site. Site observations.	Staff able to access weather reports. Staff able to interpret weather reports for various centres and gauge local issues.	Compliant			
	(c) minimise the air quality impacts of the project during adverse meteorological conditions and extraordinary events (see Note c to Table 3 above);	Dunloe Quarry Enviro. Monitoring Program 2019, Table 2.1. Met Station On site. Site observations.	Internal and perimeter vegetated soil bunds and vegetation buffer strips used to minimise wind speeds and blown dusts from stockpiles.	Compliant			
	(d) monitor and report on compliance with the relevant air quality conditions in this approval; and	Dunloe Quarry AQMP Feb 2020. Dunloe Quarry Enviro. Monitoring Program 2019. Dunloe AQMP Ch.6.3 2017, 2019, 2020. Site observations.	Air quality monitoring completed as per management plans. Results of monitoring reported in the AQMP 2017-2020 Ch. 6.3	Compliant			
	(e) minimise surface disturbance of the site, other than as permitted under this approval, to the satisfaction of the Secretary.	Site observations. Aerial Images	At the time of the audit only those areas required for dredging and the processing and storage of materials were disturbed.	Compliant			
Air quality management plan							
7A	Within three months of the approval of Modification 2, the Proponent must prepare an Air Quality Management Plan for the project to the satisfaction of the Secretary. This plan must:	Dunloe Quarry AQMP Feb 2020. DPIE Approval letter 19 Feb 2020.	Mod 2 was approved by DPIE in November 2018. Consultation with EPA in occurred in August 2019, then DPIE approval of plan was granted in February 2020. As such the plan was not prepared within three months of the approval of Mod 2.	Non-compliant		Nil	
	(a) be prepared by a suitably qualified and experienced person/s whose appointment has been endorsed by the Secretary;	Dunloe Quarry AQMP Feb 2020. DPIE Approval letter 19 Feb 2020.	Plan Approved by DPIE in July 2020.	Compliant			
	(b) be prepared in consultation with the EPA;	Plan Approved by DPIE in July 2020.	Plan Approved by DPIE in July 2020.	Compliant			
	(c) describe the measures to be implemented to ensure:	Plan Approved by DPIE in July 2020.	Plan Approved by DPIE in July 2020.	Compliant			
	(i) compliance with the air quality criteria and operating conditions in this approval;	Plan Approved by DPIE in July 2020.	Plan Approved by DPIE in July 2020.	Compliant			
	(ii) best practice management is being employed; and	Plan Approved by DPIE in July 2020.	Plan Approved by DPIE in July 2020.	Compliant			

	(iii) air quality impacts of the project are minimised during adverse meteorological conditions and extraordinary events;	Plan Approved by DPIE in July 2020.	Plan Approved by DPIE in July 2020.	Compliant	
	(d) describe the air quality management system; and	Plan Approved by DPIE in July 2020.	Plan Approved by DPIE in July 2020.	Compliant	
	(e) include an air quality monitoring program that:	Plan Approved by DPIE in July 2020.	Plan Approved by DPIE in July 2020.	Compliant	
	(i) is capable of evaluating the performance of the project against the air quality criteria;	Plan Approved by DPIE in July 2020.	Plan Approved by DPIE in July 2020.	Compliant	
	(ii) adequately supports the air quality management system; and	Plan Approved by DPIE in July 2020.	Plan Approved by DPIE in July 2020.	Compliant	
	(iii) includes a protocol for identifying any air quality-related exceedance, incident or noncompliance and for notifying the Department and relevant stakeholders of these events.	Plan Approved by DPIE in July 2020.	Plan Approved by DPIE in July 2020.	Compliant	
	The Project must implement the Air Quality Management Plan as approved by the Secretary.	Dunloe Quarry AQMP Feb 2020. Dunloe AEMR Ch.6.3 2017, 2019, 2020. Site observations.	Site access road is sealed. Loads are covered prior leaving site, Sand a shaker grid in place, while quarry plant movement areas are moist. Sand is kept wet as part of the processing. Staff induction covers dust monitoring and management.	Compliant	

SOIL AND WATER

Discharges

8	Except as may be expressly provided for by an EPL, the Proponent must not discharge any water from the project or ancillary operational areas. The Proponent must ensure that the extraction pit subject to dredging is maintained and operated to prevent discharges of any surface water from these ponds.	Site Observations	No evidence of discharge of waters from the site, with exception of flood events. Drains from the process area leading back to the dredged ponds observed.	Compliant	
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Water quality objectives

9	The Proponent must aim to meet the water quality objectives in Table 4 for water in the dredge ponds and in groundwater adjacent the dredge ponds, unless otherwise approved by the Secretary.				
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	<i>Pollutant</i>	<i>Unit of Measure</i>	<i>Water Quality Objectives</i>		
	Turbidity	NTU	5 - 20	Dunloe Quarry Environmental Monitoring Program 2019. Dunloe Quarry Soil and Water Management Plan 2020. AEMR Ch 7, 2017, 2018, 2019, 2020. Aerial Images.	Pond turbidity levels exceeded the Water Quality Objectives (WQO) for Turbidity in 2017 and 2018, likely due to 90% rainfall. Levels for pond pH are consistently below the WQO (more acidic), however they are within the range for upgradient groundwater. It is likely that the results and variations in pH are driven by rainfall and ground water flux conditions. Pond oil and grease levels are below the WQO and acceptable. Dissolved Oxygen levels in the ponds were consistently above the WQO and acceptable. Chlorophyll-A levels were found to be generally within the WQO or less than the method detection limit.
	pH	pH	6.5 – 8.5		
	Oil and Grease	mg/L	10		
	Salinity	µS/cm	<3,000		
	Dissolved oxygen	mg/L	>6		
	Chlorophyll-a	µg/L	2-10		

Non-compliant

The proponent should seek to alter the limits for pH in the ponds to be more inline with groundwater levels and a range of 5.5 to 7.5.

	<table border="1"> <tbody> <tr> <td>Faecal coliforms</td> <td>Median No./100mL</td> <td><1000</td> </tr> <tr> <td>Enterococci</td> <td>Median No./100mL</td> <td><230</td> </tr> <tr> <td rowspan="2">Algae and blue-green algae</td> <td>No.cells/mL (M.aeruginosa)</td> <td><50,000</td> </tr> <tr> <td>mm³/L (total biovolume)</td> <td><4</td> </tr> <tr> <td>Sodium</td> <td>mg/L</td> <td>500</td> </tr> <tr> <td>Potassium ion</td> <td>mg/L</td> <td>40</td> </tr> <tr> <td>Magnesium ion</td> <td>mg/L</td> <td>100</td> </tr> <tr> <td>Chloride ion</td> <td>mg/L</td> <td>1000</td> </tr> <tr> <td>Sulphate ion</td> <td>mg/L</td> <td>800</td> </tr> <tr> <td>Bicarbonate ion</td> <td>mg/L</td> <td>400</td> </tr> <tr> <td>Soluble Iron ion</td> <td>mg/L</td> <td>20</td> </tr> <tr> <td>Soluble aluminium ion</td> <td>mg/L</td> <td>0.5</td> </tr> <tr> <td>Ammonium ion</td> <td>mg/L</td> <td>20</td> </tr> </tbody> </table>	Faecal coliforms	Median No./100mL	<1000	Enterococci	Median No./100mL	<230	Algae and blue-green algae	No.cells/mL (M.aeruginosa)	<50,000	mm ³ /L (total biovolume)	<4	Sodium	mg/L	500	Potassium ion	mg/L	40	Magnesium ion	mg/L	100	Chloride ion	mg/L	1000	Sulphate ion	mg/L	800	Bicarbonate ion	mg/L	400	Soluble Iron ion	mg/L	20	Soluble aluminium ion	mg/L	0.5	Ammonium ion	mg/L	20	Dunloe Quarry Environmental Monitoring Program 2019. Dunloe Quarry Soil and Water Management Plan 2020. AEMR Ch 7, 2017, 2018, 2019, 2020. Aerial Images.	Faecal coliforms were measured in 2020 and met the WQO. Enterococci were measured in 2020 and met the WQO. Algae and blue green Algae were measure in accordance with the criteria in 2020 and met the WQO. Most non metal concentrations meet the WQO. In bore hole six ground water levels of pH, sulphate, aluminium and Iron are outside the nominated levels and the levels measured in other bores. The exceedances were major in 2015-2018 but have improved in recent years.	Non-compliant	Significant improvements have been made regarding fines management and reducing the impacts on ground water by ensuring that fines are piped directly to Pond 1. Stockpiling of screened material should be managed to reduce the transmission to ground water of stormwater that infiltrates the stockpile. To this end consideration should be given to forming stockpile areas so they drain to the ponds, lining the stockpile areas with a barrier to prevent seepage to groundwater and lining drains to the ponds with limestone or similar.
Faecal coliforms	Median No./100mL	<1000																																									
Enterococci	Median No./100mL	<230																																									
Algae and blue-green algae	No.cells/mL (M.aeruginosa)	<50,000																																									
	mm ³ /L (total biovolume)	<4																																									
Sodium	mg/L	500																																									
Potassium ion	mg/L	40																																									
Magnesium ion	mg/L	100																																									
Chloride ion	mg/L	1000																																									
Sulphate ion	mg/L	800																																									
Bicarbonate ion	mg/L	400																																									
Soluble Iron ion	mg/L	20																																									
Soluble aluminium ion	mg/L	0.5																																									
Ammonium ion	mg/L	20																																									
<p><i>Table 4: Water Quality Objectives</i></p>																																											
	<p>Notes:</p> <ul style="list-style-type: none"> ☑ The objectives for dissolved oxygen, turbidity and algae are relevant to surface water only. ☑ The Department acknowledges that short term exceedances of these objectives may occur during natural events such as flooding. ☑ The Department acknowledges that pre-existing water quality may not meet the objectives for some analytes, including salinity. The proponent must strive to meet the water quality objectives through implementation of the Soil and Water Management Plan (see condition 18 below), as far as is reasonable and feasible and within the Proponent's control, to the satisfaction of the Secretary. 	Site observations	Operation of the dredge and sand washing has improved over time to ensure that acid forming materials are returned directly to the deeper areas of pond 1. The pyrite material extracted and returned is kept wet and receives minimal exposure to air reducing opportunities for acid formation. The dominant factor in pond water quality is the hydrogeology of the area. Groundwater moving from the top of the catchment to the ocean will flux through the site at various rates and qualities.	Compliant																																							
Fines management																																											
10	The Proponent must ensure that all excavated potential acid sulphate soil fines material is returned back to below the water table as soon as possible to prevent oxidation. No potential acid sulphate soil must be removed from the site, unless adequately neutralised in accordance with methods approved under the Soil and Water Management Plan.	Dunloe Quarry Soil and Water Management Plan 2020. Site Observations	The SWMP calls for the correct management of both dry and wet material from the quarrying process. Site observations revealed that fines were effectively treated and reinterned. Sands were stockpiled to cure, tested and released on report. Stockpiled materials were stored such that water from stockpiles could be returned to the ponds.	Compliant																																							
11	The Proponent must ensure that all potential acid sulphate soil fines material is discharged into the pond at a depth of no less than 3 metres from the water surface, and that all fines are deposited to a final depth of at least 8 metres from the water surface, unless an alternative method(s) is approved by DoI and the Secretary.	Bathymetric Survey of Pond 1. Site Observations	The Bathymetric survey demonstrated that ample pond depth was available. Site observations indicated that fines were being returned to a deep area of the pond.	Compliant																																							
Wastewater treatment																																											
12	The Proponent must manage on-site sewage to the satisfaction of Council and EPA. The facility must comply with the requirements of the Environment and Health Protection Guidelines – On-site Sewage Management for Single Households (1998).	Tweed Shire Approval for On-Site Sewage system July 2017. Site Observations	Tweed shire issued approval for System in 2017. System tanks proud of surface with no leakage. Disposal area showed no signs of effluent on the surface and vegetation was maintained.	Compliant																																							
Flood management																																											
13	The Proponent must ensure that flood bunding around the Stage 1 and Stage 2 works does not exceed 300 mm in height above natural surface level, to a maximum height of 2.0 m AHD, unless otherwise approved by the Secretary.	Site Observation.	Bunding includes flood-way on western, southern and northern boundary. Bunding observed between 200mm and 500mm above ground level, and less than two metres in height. The bathymetric survey indicates that areas surrounding the ponds are generally between 0 and 2.5m.	Compliant																																							

14	The Proponent must ensure that perimeter drainage must be installed and operational prior to the construction of bunding or the placement of fill on site.	Beyond the time frame of the audit.		Not triggered	
15	All earthworks, including flood and acoustic bunding works, must be contained wholly within the site.	Site Observation.	All works were observed to be contained within the boundary of the site at the time of the audit.	Compliant	
16	The Proponent must cease dredging and processing activities not less than 24 hours prior to the commencement of overflow from any dredge pond. No dredging or processing must occur when the dredge ponds are overflowing.	Contour information and site observations	Overflow from the ponds can only be as part of a flood event. During a flood event the site can not be accessed.	Compliant	
17	The Proponent must ensure that the flood storage capacity of the site is no less than the pre-existing flood storage capacity at all stages of the project. Details of the available flood storage capacity must be reported in the Annual Review.	Site observations. AEMR 2017-2020.	Flood storage capacity does not appear to be constrained the work. Given the water table is likely to be largely unchanged or slightly lowered due to pond evaporation as opposed to transpiration and that sand materials have been removed from the site it is probable that flood storage is similar or greater. Flood storage capacity not reported in the Annual Review for 2018 to 2020.	Non-compliant	Report on flood storage capacity in the Annual Review.
Management and monitoring					
18	The Proponent must prepare a Soil and Water Management Plan (SWMP) for the project to the satisfaction of the Secretary. This plan must:				
	(a) be prepared in consultation with DoI and EPA;	SWMP 2020 include attempt to consult with DoI and EPA	EPA declined opportunity to review the plan, DoI did not respond to invitation to review plan.	Compliant	
	(b) include a:				
	• Water Balance;	SWMP 2020 Chapter 4	Water balance included, shows net surplus of water onsite. Excess absorbed by sands of the immediate area	Compliant	
	• Erosion and Sediment Control Plan;	SWMP 2020 Appendix B	All dirty on site water directed to the extraction pit via bunding and drains.	Compliant	
	• Acid Sulphate Soil Management Plan;	SWMP 2020 Appendix C	Granular Sodium bicarbonate 99.3% is being used instead of lime at the sand washing process. SWMP does not include sue of NA CO3.	Non-compliant	Update plan to include the use of Sodium Bicarbonate for the wash plant.
	• Blue-Green Algae Management Plan;	SWMP 2020	The SWMP includes aspects of blue green algae management.	Compliant	
	• Surface Water Monitoring Program; and	Dunloe Quarry Environmental Monitoring Program 2019. Dunloe Quarry Soil and Water Management Plan 2020. DPIE approval to SWMP Oct 2020.	The SWMP has been approved by DPIE. Surface water monitoring is described in Ch 6 of the SWMP. Surface water monitoring is described in Ch2 of the environmental Monitoring Program	Compliant	
	• Groundwater Monitoring Program; and	Dunloe Quarry Environmental Monitoring Program 2019. Dunloe Quarry Soil and Water Management Plan 2020. DPIE approval to SWMP Oct 2020.	The SWMP has been approved by DPIE. Groundwater monitoring is described in Ch 6 of the SWMP. Groundwater monitoring is described in Ch2 of the environmental Monitoring Program	Compliant	
	(c) be submitted to the Secretary prior to starting quarrying operations, and prior to carrying out any development on the site in the case of the Erosion and Sediment Control Plan.	Dunloe Quarry Environmental Monitoring Program 2019. Dunloe Quarry Soil and Water Management Plan 2020. DPIE approval to SWMP Oct 2020.	Plan submitted and approved by DPIE	Compliant	
	The Proponent must implement the plan as approved by the Secretary.	Site observations AEMR 2017, 2018, 2019, 2020.	Generally the soil and water management plan is being implemented and improvements are being made on a regular basis. However, some historic actions are not being completed in terms of monitoring (accidental) and some changes are occurring without the changes being documented or approved.	Non-compliant	Update the management plan to include current and planned actions that deviate from the SWMP.
19	The Water Balance must include:				
	(a) details of all water extracted, transferred, used and/or discharged by the quarry;	DPIE approval to SWMP Oct 2020. Dunloe Quarry Soil and Water Management Plan 2020.	The Water balance and SWMP was reviewed and approved by DPIE. It includes conservative estimates of extraction.	Compliant	

	(b) the source of all water collected or stored on the site, including rainfall, stormwater and groundwater; and	DPIE approval to SWMP Oct 2020. Dunloe Quarry Soil and Water Management Plan 2020.	The balance notes that rainfall on the site will be held on site.	Compliant	
	(c) measures to minimise water use by the project.	DPIE approval to SWMP Oct 2020. Dunloe Quarry Soil and Water Management Plan 2020.	Four points are nominated that will reduce water use. However, in an environment with an over supply of water this seems unwarranted.	Compliant	
20	The Erosion and Sediment Control Plan must:				
	(a) be consistent with the requirements of Managing Urban Stormwater: Soils and Construction, Volume 1, 4th Edition, 2004 (Landcom), and Council's codes including its Code of Practice for Soil and Water Management on Construction Sites, Development Design Specification D7 – Stormwater Quality and Tweed Urban Stormwater Quality Management Plan;	DPIE approval to SWMP Oct 2020. Dunloe Quarry Soil and Water Management Plan 2020. Site observations.	The plan is consistent with the blue book. Clean water diversion, dirty water containment and secondary controls are nominated.	Compliant	
	(b) identify activities that could cause soil erosion and generate sediment;	DPIE approval to SWMP Oct 2020. Dunloe Quarry Soil and Water Management Plan 2020.	The plan nominates the sand extraction and vehicle movement as opportunities for erosion.	Compliant	
	(c) describe measures to minimise soil erosion and the potential for the transport of sediment to downstream waters;	DPIE approval to SWMP Oct 2020. Dunloe Quarry Soil and Water Management Plan 2020.	Plan nominates bunding, sit fencing and vehicle shake down.	Compliant	
	(d) describe the location, function, and capacity of erosion and sediment control structures; and	DPIE approval to SWMP Oct 2020. Dunloe Quarry Soil and Water Management Plan 2020.	Describes the location and function but not the capacity.	Compliant	
	(e) describe what measures would be implemented to maintain these structures over time.	DPIE approval to SWMP Oct 2020. Dunloe Quarry Soil and Water Management Plan 2020.	Plan nominates basic procedures to maintain the controls	Compliant	
21	The Acid Sulfate Soil Management Plan must:				
	(a) be consistent with the NSW Acid Sulphate Soil Advisory Committee's Acid Sulfate Soil Manual; and	DPIE approval to SWMP Oct 2020. Dunloe Quarry Soil and Water Management Plan 2020.	Plan approved in 2020 by DPIE.	Compliant	
	(b) define procedures for managing the potential acid sulfate soils on the site, including sample testing and procedures.	DPIE approval to SWMP Oct 2020. Dunloe Quarry Soil and Water Management Plan 2020.	Plan approved in 2020 by DPIE.	Compliant	
22	The Blue-Green Algae Management Plan (BGAMP) must:				
	(a) be prepared by a suitably qualified blue-green algae expert, whose appointment has been approved by the Secretary;	DPIE approval to SWMP Oct 2020. Dunloe Quarry Soil and Water Management Plan 2020. <u>Independent Audit 2016</u>	Blue-Green Algae Management Plan originally prepared Dr Paul Write as section within SWMP. BGAMP addressed at various locations within the SWMP, as approved by DPIE.	Compliant	
	(b) be consistent with extant guidelines for blue-green algae management including the NHMRC's Guidelines for Managing Risks in Recreational Water;	DPIE approval to SWMP Oct 2020. Dunloe Quarry Soil and Water Management Plan 2020.	SWMP acknowledges NHMRC's Guidelines for Managing Risks in Recreational Water.	Compliant	
	(c) describe the measures that would be implemented to prevent and control the sources of algal blooms over the short, medium and long term; and	DPIE approval to SWMP Oct 2020. Dunloe Quarry Soil and Water Management Plan 2020.	Table 5.1 of the SWMP discusses reducing nutrient inflow and increasing the diversity of vegetation to lower nutrient levels. Also includes measures to reduce the risk of human exposure to blooms.	Compliant	
	(d) define procedures for the management and notification of identified algal blooms.	DPIE approval to SWMP Oct 2020. Dunloe Quarry Soil and Water Management Plan 2020.	Signage to be kept on hand and installed in the event of a bloom.	Compliant	
23	The Surface Water Monitoring Program must include:				
	(a) detailed baseline data on surface water quality;	Dunloe Quarry Environmental Monitoring Program 2019. Dunloe Quarry Soil and Water Management Plan 2020. DPIE approval to SWMP Oct 2020.	Plan approved in 2020 by DPIE.	Compliant	
	(b) surface water impact assessment criteria;	Dunloe Quarry Environmental Monitoring Program 2019. Dunloe Quarry Soil and Water Management Plan 2020. DPIE approval to SWMP Oct 2020.	Plan approved in 2020 by DPIE.	Compliant	

	(c) a program to monitor surface water flows and quality;	Dunloe Quarry Environmental Monitoring Program 2019. Dunloe Quarry Soil and Water Management Plan 2020. DPIE approval to SWMP Oct 2020.	Plan approved in 2020 by DPIE.	Compliant	
	(d) a program to manage water releases from the site;	Dunloe Quarry Environmental Monitoring Program 2019. Dunloe Quarry Soil and Water Management Plan 2020. DPIE approval to SWMP Oct 2020.	Plan approved in 2020 by DPIE.	Compliant	
	(e) a program to monitor bank and bed stability; and	Dunloe Quarry Environmental Monitoring Program 2019. Dunloe Quarry Soil and Water Management Plan 2020. DPIE approval to SWMP Oct 2020.	Plan approved in 2020 by DPIE.	Compliant	
	(f) a protocol for the investigation, notification and mitigation of identified exceedances of the surface water impact assessment criteria.	Dunloe Quarry Environmental Monitoring Program 2019. Dunloe Quarry Soil and Water Management Plan 2020. DPIE approval to SWMP Oct 2020.	Plan approved in 2020 by DPIE.	Compliant	
24	The Ground Water Monitoring Program must include:				
	(a) detailed baseline data on groundwater levels and quality, based on statistical analysis;	Dunloe Quarry Environmental Monitoring Program 2019. Dunloe Quarry Soil and Water Management Plan 2020. DPIE approval to SWMP Oct 2020.	Plan approved in 2020 by DPIE.	Compliant	
	(b) groundwater impact assessment criteria;	Dunloe Quarry Environmental Monitoring Program 2019. Dunloe Quarry Soil and Water Management Plan 2020. DPIE approval to SWMP Oct 2020.	Plan approved in 2020 by DPIE.	Compliant	
	(c) a program to monitor ground water levels and quality;	Dunloe Quarry Environmental Monitoring Program 2019. Dunloe Quarry Soil and Water Management Plan 2020. DPIE approval to SWMP Oct 2020.	Plan approved in 2020 by DPIE.	Compliant	
	(d) a program to monitor ground water level effects on vegetation, and on ground water supply to adjoining properties; and	Dunloe Quarry Environmental Monitoring Program 2019. Dunloe Quarry Soil and Water Management Plan 2020. DPIE approval to SWMP Oct 2020.	Plan approved in 2020 by DPIE.	Compliant	
	(e) a protocol for the investigation, notification and mitigation of identified exceedances of the groundwater impact assessment criteria.	Dunloe Quarry Environmental Monitoring Program 2019. Dunloe Quarry Soil and Water Management Plan 2020. DPIE approval to SWMP Oct 2020.	Plan approved in 2020 by DPIE.	Compliant	
REHABILITATION AND LANDSCAPING					
Rehabilitation and revegetation					
25	The Proponent must rehabilitate the site to the satisfaction of the Secretary. This rehabilitation must be generally consistent with the proposed rehabilitation activities described in the documents listed in condition 2 of Schedule 2 and comply with the objectives in Table 5.			Not triggered	

Table 5: Rehabilitation Objectives					
Feature	Objective				
All areas of the site affected by the project	<ul style="list-style-type: none"> Safe Hydraulically and geotechnically stable Non-polluting Fit for the intended post-quarrying land use/s Final landform integrated with surrounding natural landforms as far as is reasonable and feasible, and minimising visual impacts when viewed from surrounding land 				Not triggered
Surface infrastructure	<ul style="list-style-type: none"> Decommissioned and removed, unless otherwise agreed by the Planning Secretary 				
Void lake	<ul style="list-style-type: none"> Water retained on the site maintains long-term water quality objectives fit for the intended post-mining purpose Water discharged from the site is suitable for receiving waters, aquatic ecology and riparian vegetation 				
26	The Proponent must:				
	(a) rehabilitate and revegetate the 15 ha hectares of land identified in the EA (see the revegetation plan in Appendix 2); and	Site observations and aerial photography.	Stage 1 still being developed and not available for rehabilitation. Some pond bank areas are revegetating with macrophytes from the area. 15 ha of revegetation observed.		Compliant
	(b) within 12 months of the commencement of quarrying operations, make suitable arrangements to provide appropriate long term security for the revegetation area to ensure it is managed for conservation purposes, to the satisfaction of the Secretary.	Site observations and aerial photography.	Revegetation has occurred and is substantial.		Not triggered
Landscape management plan					
27	The Proponent must prepare a Landscape Management Plan for the project to the satisfaction of the Secretary. This plan must:	Dunloe Quarry Landscape Management Plan (2021) DPIE letter approving LMP June 2021.	Plan updated and approved 2021		Compliant
	(a) be prepared:				
	· by suitably qualified consultants, including a specialist hydrologist, coastal engineer, wetlands ecologist and landscape architect;	Dunloe Quarry Landscape Management Plan (2021), Ch. 1 DPIE letter approving LMP June 2021.	Original Plan preparation by suitably qualified specialists. Updated plan largely the same. Approved by DPIE		Compliant
	· in consultation with Council, DoI, OEH, DPI Fisheries and the CCC; and	Dunloe Quarry Landscape Management Plan (2021), Ch 1 and Appendix B. DPIE letter approving LMP June 2021.	Consultation completed with Council and agencies. Plan approved by DPIE June 2021.		Compliant
	· in accordance with extant guidelines including the DoI's Constructed Wetlands Manual, Volumes 1 and 2 and the DPI's Policy and Guidelines: Aquatic Habitat Management, 1999;	Dunloe Quarry Landscape Management Plan (2021), Ch. 2 DPIE letter approving LMP June 2021.	Plan prepared in accordance with guidelines and approved by DPIE.		Compliant
	(b) be submitted to the Secretary prior to starting quarrying operations on the site; and	Dunloe Quarry Landscape Management Plan (2021), Ch. 2 DPIE letter approving LMP June 2021.	Updated plan prepared prior to the Mod activation.		Compliant
	(c) include a:				
	· Rehabilitation and Revegetation Management Plan; and	Dunloe Quarry Landscape Management Plan (2021), App A DPIE letter approving LMP June 2021.	Plan updated and approved 2021		Compliant
	· Long Term Management Strategy.	Dunloe Quarry Landscape Management Plan (2021), App C DPIE letter approving LMP June 2021.	Plan updated and approved 2021		Compliant
	The Proponent must implement the plan as approved by the Secretary.	Aerial photograph and Site observations	Zones 1, 2 and three implemented for stage 1.		Compliant
	Note: The Department accepts that the initial Landscape Management Plan may not include the detailed Long Term Management Strategy. However, a conceptual strategy must be included in the initial plan, along with a timetable for augmentation of the strategy with each subsequent review of the plan.	Noted			
28	The Rehabilitation and Revegetation Management Plan must include:				

	(a) the rehabilitation objectives for the site and revegetation areas;	Dunloe Quarry Landscape Management Plan (2021), App A DPIE letter approving LMP June 2021.	Objectives included in ch1.	Compliant	
	(b) a description of the short, medium, and long term measures that would be implemented to:	Dunloe Quarry Landscape Management Plan (2021), App A DPIE letter approving LMP June 2021.	Measures described in Ch 4.6 and in Attachment 4 Veg Man Plan.	Compliant	
	· rehabilitate and stabilise the site;	As above		Compliant	
	· implement the revegetation strategy; and	As above		Compliant	
	· manage the remnant vegetation and habitat on the site and in the revegetation areas;	Dunloe Quarry Landscape Management Plan (2021), App A DPIE letter approving LMP June 2021.	Appendix A describes the retention of remnant vegetation and the enhancement through plantings of the same vegetation community.	Compliant	
	(c) detailed performance and completion criteria for the rehabilitation and stabilisation of the site and implementation of the revegetation strategy;	Dunloe Quarry Landscape Management Plan (2021), App A DPIE letter approving LMP June 2021.	App A section 4.5 describes the criteria for the rehab.	Compliant	
	(d) a detailed description of how the performance of the rehabilitation of the quarry and the revegetation areas would be monitored over time to achieve the stated objectives;	Dunloe Quarry Landscape Management Plan (2021), App A DPIE letter approving LMP June 2021.	App A section 4.4 describes the monitoring for the rehab.	Compliant	
	(e) a detailed description of what measures would be implemented over the next 5 years to rehabilitate and manage the landscape of the site and revegetation areas including the procedures to be implemented for:	Dunloe Quarry Landscape Management Plan (2021), App A DPIE letter approving LMP June 2021.	Section 3 describes the process, strategy, species etc	Compliant	
	· progressively rehabilitating and stabilising areas disturbed by quarrying;	As above	As above	Compliant	
	· implementing revegetation and regeneration within the disturbance areas and revegetation areas;	As above	As above	Compliant	
	· protecting areas outside the disturbance areas, including SEPP 14 wetlands and SEPP 26 littoral rainforests;	As above	App section 4 describes the EPZ incl. SEPP areas	Compliant	
	· vegetation clearing protocols;	As above	App A section 5 describes clearing protocols	Compliant	
	· managing impacts on fauna;	As above	App A section 5 describes clearing protocols	Compliant	
	· controlling terrestrial and aquatic weeds and pests;	As above	App A section 4 describes weed management	Compliant	
	· controlling access;	As above	App A section 3, 4 describes access management	Compliant	
	· bushfire management; and	As above	App section 4 describes APZ, Form A monitors fire trails	Compliant	
	· reducing the visual impacts of the project;	As above	Visual buffering addressed in App A sect 1, 2 and 4	Compliant	
	(f) a description of the potential risks to successful rehabilitation and/or revegetation, and a description of the contingency measures that would be implemented to mitigate these risks;	As above	Appendix A and E	Compliant	
	(g) details of who is responsible for monitoring, reviewing, and implementing the plan; and	As above	Section 4 allocates responsibilities	Compliant	
	(h) a monitoring and reporting program of the project's impacts on Koalas, including road strike, to the satisfaction of the Secretary; and	As above	Section 4 allocates responsibilities Appendix A, D and E	Compliant	
	(i) adaptive management options for managing Impacts on Koalas, including specific impact triggers, developed in consultation with Council.	As above	Section 4 allocates responsibilities Appendix A, D and E	Compliant	
29	The Long Term Management Strategy must:				
	(a) define the objectives and criteria for quarry closure and post-extraction management;	Dunloe Quarry Landscape Management Plan (2021), App A/C DPIE letter approving LMP June 2021.	Section C3 describes the objectives Post closure management described in rehab plan App A.	Compliant	
	(b) investigate options for the future use of the site;	As above	Future use explored in Appendix A and described briefly in App C	Compliant	
	(c) describe the measures that would be implemented to minimise or manage the ongoing environmental effects of the project; and	As above	Describes performance criteria, implementation and monitoring.	Compliant	
	(d) describe how the performance of these measures would be monitored over time.	As above	Describes performance criteria, implementation and monitoring.	Compliant	
Rehabilitation bond					
30	Prior to starting quarrying operations on the site, the Proponent must lodge a rehabilitation bond for the project with the Secretary. The sum of the bond must be calculated at:	Previous Audit	Evidence supplied of Bank guarantee and DPIE correspondence and acceptance of bond calculations.	Compliant	
	(a) \$2.50/m2 for the total area to be disturbed and/or revegetated in each 5 year review period (see condition 31 below); and	Previous Audit	Evidence supplied of Bank guarantee and DPIE correspondence and acceptance of bond calculations.	Compliant	
	(b) \$1.50/m2 for the total area of land previously disturbed and/or rehabilitated by the project,	Previous Audit	Evidence supplied of Bank guarantee and DPIE correspondence and acceptance of bond calculations.	Compliant	

	to the satisfaction of the Secretary.	Previous Audit	Evidence supplied of Bank guarantee and DPIE correspondence and acceptance of bond calculations.	Compliant	
	Notes: · If the rehabilitation and revegetation works are completed to the satisfaction of the Secretary, the Secretary will release the rehabilitation bond.	Noted			
	· If the rehabilitation and revegetation works are not completed to the satisfaction of the Secretary, the Secretary will call in all or part of the rehabilitation bond, and arrange for the satisfactory completion of the relevant works.	Noted			
31	Within 6 months of each Independent Environmental Audit (see condition 6 of schedule 5) excluding the inaugural audit, unless the Secretary directs otherwise, the Proponent must review, and if necessary revise, the sum of the rehabilitation bond to the satisfaction of the Secretary. This review must consider:	Submission Advice from DPIE noting DPIE assessment of submitted Bond information 20/08/2021	Submission made for reassessment of bond.	Compliant	
	(c) the effects of inflation;	Dunloe Bond Revision May 2021	Bond rate adjusted from \$2.50 to \$3.08/m based on CPI at 2020	Compliant	
	(d) any changes to the total area of disturbance; and	Dunloe Bond Review Areas May 2021	Additional areas included	Compliant	
	(e) the performance of the rehabilitation and revegetation to date.	Submission Advice from DPIE noting DPIE assessment of submitted Bond information 20/08/2021	Revegetation areas acknowledged	Compliant	
ABORIGINAL CULTURAL HERITAGE					
Aboriginal cultural heritage management plan					
32	The Proponent must prepare an Aboriginal Cultural Heritage Management Plan to the satisfaction of the Secretary. This plan must:				
	(a) be prepared in consultation with OEH and all relevant Aboriginal communities;	Dunloe Quarry Cultural Heritage Management Plan (2021), App A DPIE letter approving CHMP Jan 2020.	Plan approved following consultation with DPIE and TWEED Byron LALC.	Compliant	
	(b) be submitted to the Secretary for approval prior to commencement of construction; and	Dunloe Quarry Cultural Heritage Management Plan (2021), App A DPIE letter approving CHMP Jan 2020.	Plan submitted and approved by DPIE, Mod works yet to commence.	Compliant	
	(c) include a:				
	· program for additional archaeological survey/s of the disturbance area;	As above	Chapter 4 examines control measures	Compliant	
	· description of the measures that would be implemented to salvage any identified Aboriginal sites within the disturbance area;	As above	Chapter 4 examines control measures	Compliant	
	· description of the measures that would be implemented to protect any Aboriginal sites outside the disturbance area; and	As above	Chapter 4 examines control measures	Compliant	
	· description of the measures that would be implemented if any new Aboriginal objects or skeletal remains are discovered during the project.	As above	Chapter 4 examines control measures	Compliant	
	The Proponent must implement the plan as approved by the Secretary.	Site Observations	Objects yet to be uncovered.	Compliant	
TRAFFIC AND TRANSPORTATION					
Road haulage					
33	Prior to commencement of operations the Proponent must:				
	(a) design and construct the haul road and its intersection with Pottsville-Mooball Road; and	Site Observations Historic images	Road constructed in 2009	Compliant	
	(b) install advanced truck turning warning signage along Pottsville-Mooball Road, to the satisfaction of Council.	Site Observations Historic images	Grade and Koala warning sign on crest	Compliant	
34	The Proponent must ensure that all loaded vehicles entering or leaving the site have their loads covered.	Site instruction, Induction, Site Observations	Loads observed to be covered at the time of the audit. Induction requires same.	Compliant	
35	The Proponent must ensure all loaded vehicles leaving the site are cleaned of materials that may fall on the road before they are allowed to leave the site.	Site instruction, Induction, Site Observations	Vehicles are cleaned. No debris observed on the road verge along the access.	Compliant	
Road maintenance					

35A	Within 12 months of approval of Modification 2, unless otherwise agreed by the Secretary, the Proponent must implement and pay the full cost of implementing the recommended treatments listed in Table 3 of the Independent Road Safety Audit prepared by Bitzios Consulting and dated 16 October 2017, and outlined in the Proponent's Response to Road Safety Audit dated March 2018, to the satisfaction of Council, including any additional line marking and signage requested by Council. Note: The Proponent must obtain all necessary approvals under section 138 of the Roads Act 1993 from Council before implementing the recommended treatments.	Dunloe Quarry Traffic Management Plan, May 2019 (TMP) DPIE letter approving TMP Jan June 2019.	Council consulted and agreed scope included in Appendix A of TMP.	Compliant	
Traffic management plan					
35B	The Proponent must prepare a Traffic Management Plan for the project to the satisfaction of the Secretary. This plan must:	Dunloe Quarry Traffic Management Plan (May 2019) DPIE letter approving TMP Jan June 2019.	Plan prepared and approved	Compliant	
	(a) be prepared in consultation with RMS and Council;	As above Ch1 and App A	Plan adjusted after consultation	Compliant	
	(b) be submitted to the Secretary for approval prior to the commencement of operations under Modification 2, unless otherwise agreed by the Secretary;	Dunloe Quarry Traffic Management Plan (May 2019) DPIE letter approving TMP Jan June 2019.	Mod 2 has not commenced	Not triggered	
	(c) describe the processes in place for the management of trucks entering and exiting the site;	As above	Ch 5 addresses controls, App B driver code of conduct	Compliant	
	(d) include a Drivers' Code of Conduct that details:	As above	App B driver code of conduct	Compliant	
	· safe and quiet driving practices that must be used by drivers travelling to and from the quarry;	TMP App B driver code of conduct	Section 1, 2 and 4 address safety and impacts (like noise) on the public.	Compliant	
	· a map of the primary haulage routes highlighting critical locations for application of safe and quiet driving practices, including residential areas and school bus routes;	TMP App B driver code of conduct	Figure 1	Compliant	
	· an induction process for drivers and regular toolbox meetings;	TMP App B driver code of conduct	Section 2 requires induction, toolbox talks listed in TMP, drivers required to contact quarry on entry via UHF.	Compliant	
	· complaint resolution procedures;	TMP App B driver code of conduct	Code of conduct does not detail dispute resolution process.	Non-compliant	Insert cross reference to EMS for complaint resolution.
	· any community consultation measures in respect of peak haulage periods; and	TMP App B driver code of conduct	Code of conduct does not detail community consultation for peak haulage periods.	Non-compliant	Insert cross reference to TMP for community consultation.
	· consideration of seasonal traffic and events;	TMP App B driver code of conduct	Section 5 addresses seasonal traffic and events.	Compliant	
	(e) describe the measures to be put in place to ensure compliance with the Drivers' Code of Conduct; and	TMP section 6 and App B driver code of conduct	Section 6 and DCC sect. 2 lists consequence for failure to comply with the DCC.	Compliant	
	(f) propose measures to minimise the transmission of dust and tracking of material onto public roads from vehicles leaving the site.	TMP table 5.1	Control measures include cleaning and tarping vehicles to ensure material spills and dust is reduced.	Compliant	
	The Proponent must implement the plan as approved by the Secretary.	Site observations	Vehicles cleaned and tarped. Induction records cited. Material on road or dust from HVs not observed.	Compliant	
Parking					
36	The Proponent must provide sufficient parking on-site for all project-related traffic and visitors, in accordance with Council's parking codes and to the satisfaction of the Secretary. No on street parking must be undertaken.	Site observations	Parking on site for Light vehicles and visitors up to 10 vehicles. Heavy vehicle parking ample on site.	Compliant	
VISUAL IMPACT					
Visual amenity					
37	The Proponent must minimise the visual impacts of the project to the satisfaction of the Secretary.	Dunloe Quarry Landscape Management Plan (2021), Ch. 1 DPIE letter approving LMP June 2021.	Buffer plantings for stage 1 established and maintained. Rehab plantings to the north and east implemented and maintained	Compliant	
38	The Proponent must establish and subsequently maintain the vegetated buffer around the extraction area within 12 months of the date of this approval. Note: The vegetation buffer must be detailed in the Landscape Management Plan.	Dunloe Quarry Landscape Management Plan (2021), Ch. 1 DPIE letter approving LMP June 2021. Site observations and Aerial photos.	Buffer plantings to the west and south for stage 1 established and maintained.	Compliant	
Lighting emissions					
39	The Proponent must:				
	(a) take all practicable measures to mitigate off-site lighting impacts from the project; and	Site observations	Minimal exterior lighting. No flood lighting on site.	Compliant	
	(b) ensure that all external lighting associated with the project complies with Australian Standard AS4282 (INT) 1995 – Control of Obtrusive Effects of Outdoor Lighting,	Site observations	Small fluorescent lights under office veranda.	Compliant	

	to the satisfaction of the Secretary.				
Advertising					
40	The Proponent must not erect or display any advertising structure(s) or signs on the site without the written approval of the Secretary. Note: This does not include business identification, traffic management and safety or environmental signs.	Site observations	No advertising signs observed.	Compliant	
WASTE MANAGEMENT					
41	The Proponent must minimise the amount of waste generated by the project to the satisfaction of the Secretary.	Dunloe Quarry Waste Management Plan (July 2020) DPIE Approval Letter for WMP, July 2020. Site observations and Aerial photos.	Plan identifies waste streams and the management of same. Waste used on site for mounds, or transported to licenced facility. Septic system approved by Council. Waste from off site is not accepted at the facility.	Compliant	
EMERGENCY AND HAZARDS MANAGEMENT					
Dangerous goods					
42	The Proponent must ensure that the storage, handling, and transport of dangerous goods are conducted in accordance with the relevant Australian Standards, particularly AS1940 and AS1596, and the Dangerous Goods Code.	Site observations	Diesel storage in bunded container. Other chemicals held in lockable shipping container. Spill kits available where required, sign-posted and observed to be well stocked.	Compliant	
Safety					
43	The Proponent must secure the project to ensure public safety to the satisfaction of the Secretary.	Site observations	Lockable gates provided at multiple points. Warning and directional signage provided.	Compliant	
Bushfire management					
44	The Proponent must:				
	(a) ensure that the project is suitably equipped to respond to any fires on-site; and	Site observations	Fire extinguishers available on site.	Compliant	
	(b) assist the rural fire service and emergency services as much as possible if there is a fire onsite.	Site observations	Loader, sand, UHF and water available. Induction includes incident and emergency information.	Compliant	
PRODUCTION DATA					
45	The Proponent must:				
	(a) provide annual production data to the DRG using the standard form for that purpose; and	AEMR 2017-2020	Production Data on Page 15, below limit.	Compliant	
	(b) include a copy of this data in the Annual Review.	AEMR 2017-2020	Production Data on Page 15, below limit.	Compliant	
NOTIFICATION OF LANDOWNERS					
1	If the results of monitoring required in schedule 3 identify that impacts generated by the project are greater than the relevant impact assessment criteria, then the Proponent must notify the Secretary, affected landowners, and/or existing or future tenants accordingly, and provide quarterly monitoring results to each of these parties until the results show that the project is complying with the relevant criteria.	AEMR 2017-2020	This condition relates primarily to Dust and Noise for adjacent landowners. No incidents reported.	Compliant	
INDEPENDENT REVIEW					
2	If a landowner considers that the project is exceeding the impact assessment criteria in schedule 3, then he/she may ask the Secretary in writing for an independent review of the impacts of the project on his/her land. If the Secretary is satisfied that an independent review is warranted, the Proponent must within 3 months of the Secretary advising that an independent review is warranted:			Not triggered	
	(a) consult with the landowner to determine his/her concerns;			Not triggered	
	(b) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Secretary, to conduct monitoring on the land, to determine whether the project is complying with the relevant criteria in schedule 3, and identify the source(s) and scale of any impact on the land, and the project's contribution to this impact; and			Not triggered	
	(c) give the Secretary and landowner a copy of the independent review.			Not triggered	
3	If the independent review determines that the project is complying with the relevant criteria in schedule 3, then the Proponent may discontinue the independent review with the approval of the Secretary.			Not triggered	
4	If the independent review determines that the project is not complying with the relevant criteria in schedule 3, and that the project is primarily responsible for this non-compliance, then the Proponent must:			Not triggered	
	(a) implement all reasonable and feasible measures, in consultation with the landowner, to ensure that the project complies with the relevant criteria; and			Not triggered	
	(b) conduct further monitoring to determine whether these measures ensure compliance; or			Not triggered	
	(b) conduct further monitoring to determine whether these measures ensure compliance; or (c) secure a written agreement with the landowner to allow exceedances of the relevant criteria in schedule 3,			Not triggered	

	to the satisfaction of the Secretary.			Not triggered	
	If the additional monitoring referred to above subsequently determines that the project is complying with the relevant criteria in schedule 3, or the Proponent and landowner enter into a negotiated agreement to allow these exceedances, then the Proponent may discontinue the independent review with the approval of the Secretary.			Not triggered	
5	If the landowner disputes the results of the independent review, either the Proponent or the landowner may refer the matter to the Secretary for resolution.			Not triggered	
ENVIRONMENTAL MANAGEMENT					
Environmental management strategy					
1	The Proponent must prepare an Environmental Management Strategy for the project to the satisfaction of the Secretary. This strategy must:	Dunloe Quarry Environmental Management Strategy (Jan 2020) DPIE Approval Letter for EMS, Jan 2020.	Strategy approved by DPIE Jan 2020.	Compliant	
	(a) be submitted to the Secretary prior to starting quarrying operations on the site;	Dunloe Quarry Environmental Management Strategy (Jan 2020) DPIE Approval Letter for EMS, Jan 2020.	Strategy approved by DPIE Jan 2020.	Compliant	
	(b) be prepared in consultation with the relevant agencies;	Dunloe Quarry Environmental Management Strategy (Jan 2020) DPIE Approval Letter for EMS, Jan 2020.	The EMS 2020 notes agency consultation but it is not appended to the plan on the web site.	Non-compliant	
	(c) provide the strategic context for environmental management of the project;	Dunloe Quarry Environmental Management Strategy (Jan 2020) DPIE Approval Letter for EMS, Jan 2020.	EMS Section 1 and 4 provides the strategic context.	Compliant	
	(d) identify the statutory requirements that apply to the project;	Dunloe Quarry Environmental Management Strategy (Jan 2020) DPIE Approval Letter for EMS, Jan 2020.	EMS Section 3 provides a legislative frame work.	Compliant	
	(e) describe in general how the environmental performance of the project would be monitored and managed;	Dunloe Quarry Environmental Management Strategy (Jan 2020) DPIE Approval Letter for EMS, Jan 2020.	EMS Sections 4, to 9 describe the various processes and procedures for monitoring and management.	Compliant	
	(f) describe the procedures that would be implemented to:	Dunloe Quarry Environmental Management Strategy (Jan 2020) DPIE Approval Letter for EMS, Jan 2020.	EMS table 1.1 identifies objectives and targets including references to procedures. EMS section 4 nominates and allocates responsibilities for procedures. EMS section 6 and Appendix K provides emergency procedures. EMS section 8 and Appendix L provides for monitoring, inspection and audit procedures.	Compliant	
	· keep the local community and relevant agencies informed about the construction, operation and environmental performance of the project;	Dunloe Quarry Environmental Management Strategy (Jan 2020) DPIE Approval Letter for EMS, Jan 2020.	EMS section 7 describes agency and community consultation including the DQCC.	Compliant	
	· receive, handle, respond to, and record complaints;	Dunloe Quarry Environmental Management Strategy (Jan 2020) DPIE Approval Letter for EMS, Jan 2020.	EMS section 7 describes complaint management.	Compliant	
	· resolve any disputes that may arise during the life of the project;	Dunloe Quarry Environmental Management Strategy (Jan 2020) DPIE Approval Letter for EMS, Jan 2020.	Section 7.6 describes dispute resolution.	Compliant	
	· respond to any non-compliance;	As above	Section 8.3 describes resolution of non-compliances for various aspects.	Compliant	
	· manage cumulative impacts; and	As above	Cumulative impacts are not specifically addressed.	Non-compliant	Include statement addressing cumulative impact for multiple issues or singular repeat issues.
	· respond to emergencies;	As above	EMS section 6 and Appendix K provides emergency procedures.	Compliant	
	(g) describe the role, responsibility, authority, and accountability of the key personnel involved in the environmental management of the project; and	As above	EMS section 4 nominates and allocates responsibilities for procedures.	Compliant	
	(h) include:				
	· reference to any strategies, plans and programs approved under the conditions of this approval; and	As above	EMS section 4.1 describes plans/sub plans required.	Compliant	
	· a clear plan depicting all the monitoring to be carried out under the conditions of this approval.	As above	EMS section 8 and Appendix L provides for monitoring, required by the consent.	Compliant	
	The Proponent must implement the strategy as approved by the Secretary.	Noted			
Management plan requirements					

1A	The Proponent must ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines, and include:	Sub plans required include for the quarry: Soil and Water Management Plan Landscape Management Plan Noise Management Plan Air Quality Management Plan Traffic Management Plan Aboriginal Cultural Heritage Management Plan Waste Management Plan	Seven Sub-plans have been developed as required by the consent. The plans have been reviewed, updated and subsequently reviewed and approved by DPIE.	Compliant	
	(a) a summary relevant background or baseline data;	As above.	Information has been provided for the EIS and specialist reports to inform the plan.	Compliant	
	(b) a description of:				
	· the relevant statutory requirements (including any relevant approval, licence or lease conditions);	As above.	Each sub plan has a section of legislative requirements.	Compliant	
	· any relevant limits or performance measures/criteria; and	As above.			
	· the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project or any management measures;	As above.	Each subplan has performance indicators.	Compliant	
	(c) a description of the measures that to be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;	As above.	Measures are contained in the subplans as discrete chapters or as matrixes.	Compliant	
	(d) a program to monitor and report on the:				
	· impacts and environmental performance of the project; and	As above.	Section 6 or seven of each report is dedicated monitoring and reporting.	Compliant	
	· effectiveness of any management measures (see (c) above);	As above.	Each subplan includes requirement to review the effectiveness on the plan generally in section 7.	Compliant	
	(e) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;	As above.	Each subplan includes a table to address the contingency plan as part of monitoring and reporting, generally section six.	Compliant	
	(f) a program to investigate and implement ways to improve the environmental performance of the project over time;	As above.	Each subplan includes requirement to review and improve performance, generally in section 7.	Compliant	
	(g) a protocol for managing and reporting any:				
	· incidents;	As above and the EMS	Where required the subplans defer incident management to the EMS.	Compliant	
	· complaints;	As above and the EMS	Complaint management is deferred where required to the EMS	Compliant	
	· non-compliances with statutory requirements; and	As above and the EMS	Dealt with in the contingency plan are specifically in chapters.	Compliant	
	· exceedances of the impact assessment criteria and/or performance criteria; and	As above and the EMS	Dealt with in the contingency plan are specifically in chapters.	Compliant	
	(h) a protocol for periodic review of the plan.	As above	Each subplan includes requirement to review and improve performance, generally in section 7.	Compliant	
	Note: The Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.	Noted			
Revision of strategies, plans and programs					
1B	Within 3 months of the submission of:				
	(a) an incident report under condition 4 below;			Not triggered	
	(b) an Annual Review under condition 5 below;	AEMR 2017-2020	Annual Review prepared and provided to agencies.	Compliant	
	(c) an audit report under condition 6 below; and			Not triggered	
	(d) any modifications to this approval,	Mod 2 and the plans listed above	All plans reviewed subsequent to the Mod 2 approval.	Compliant	
	the Proponent must review the strategies, plans and programs required under this approval, to the satisfaction of the Secretary. The Proponent must notify the Department in writing of any such review being undertaken. Where this review leads to revisions in any such document, then within 6 weeks of the review the revised document must be submitted for the approval of the Secretary. Note: The purpose of this condition is to ensure that strategies, plans and programs are regularly updated to incorporate any measures recommended to improve environmental performance of the project.	Noted			
ENVIRONMENTAL MONITORING PROGRAM					

2	The Proponent must prepare an Environmental Monitoring Program for the project to the satisfaction of the Secretary. This program must be submitted to the Secretary prior to starting quarrying operations on the site, and consolidate the various monitoring requirements in schedule 3 of this approval into a single document.	Dunloe Monitoring Program Dec. 2019. DPIE approval Letter for EMP Jan 2020	Plan submitted and approved	Compliant	
INCIDENT REPORTING					
3	Within 24 hours of detecting an exceedance of the limits/performance criteria in this approval or the occurrence of an incident that causes (or may cause) material harm to the environment, the Proponent must notify the Department and other relevant agencies of the exceedance/incident.	Quarry management comments	Some exceedances of water quality monitoring have occurred in the past. These exceedances were reported in the annual monitoring report. Nil incidents	Compliant	
4	Within 6 days of notifying the Department and other relevant agencies of an exceedance/incident, the Proponent must provide the Department and these agencies with a written report that:	Quarry management comments	Nil incidents	Compliant	
	(a) describes the date, time, and nature of the exceedance/incident;	Quarry management comments	Nil incidents	Compliant	
	(b) identifies the cause (or likely cause) of the exceedance/incident;	Quarry management comments	Nil incidents	Compliant	
	(c) describes what action has been taken to date; and	Quarry management comments	Nil incidents	Compliant	
	(d) describes the proposed measures to address the exceedance/incident.	Quarry management comments	Nil incidents	Compliant	
REGULAR REPORTING					
4A	The Proponent must provide regular reporting on the environmental performance of the project on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this approval.	Web site: https://www.holcim.com.au/dunloe-sand-quarry-pottsville-nsw	Web site has AEMR and other monitoring reports of relevance.	Compliant	
ANNUAL REVIEW					
5	Within 12 months of the date of this approval, and annually thereafter, the Proponent must submit an Annual Review to the Secretary and relevant agencies. This report must:	AEMR 2017-2020			
	(a) identify the standards and performance measures that apply to the project;	AEMR 2017-2020	Section six of the AEMR	Compliant	
	(b) describe the works carried out in the last 12 months;	AEMR 2017-2020	Section four of the AEMR	Compliant	
	(c) describe the works that will be carried out in the next 12 months;	AEMR 2017-2020	Section four of the AEMR	Compliant	
	(d) include a summary of the complaints received during the past year, and compare this to the complaints received in previous years;	AEMR 2017-2020	Section nine of the AEMR	Compliant	
	(e) include a summary of the monitoring results for the project during the past year;	AEMR 2017-2020	Section six of the AEMR	Compliant	
	(f) include an analysis of these monitoring results against the relevant:	AEMR 2017-2020	Section six of the AEMR	Compliant	
	· impact assessment criteria/limits;	AEMR 2017-2020	Section six of the AEMR	Compliant	
	· monitoring results from previous years; and	AEMR 2017-2020	Section six of the AEMR	Compliant	
	· predictions in the documents listed in condition 2 of Schedule 2;	AEMR 2017-2020	Section six of the AEMR	Compliant	
	(g) identify any trends in the monitoring results over the life of the project;	AEMR 2017-2020	Section six and seven	Compliant	
	(h) identify any non-compliance during the previous year; and	AEMR 2017-2020	Section five, six and seven	Compliant	
	(i) describe what actions were, or are being, taken to ensure compliance.	AEMR 2017-2020	Section five	Compliant	
INDEPENDENT ENVIRONMENTAL AUDIT					
6	Within 2 years of the start of quarrying operations on site, and every 5 years thereafter, unless the Secretary directs otherwise, the Proponent must commission, commence and pay the full cost of an Independent Environmental Audit of the project. This audit must:	2016 Independent Audit MRA. This NGH report 2021.			
	(a) be conducted by a suitably qualified, experienced, and independent person(s) whose appointment has been approved by the Secretary;	2016 Independent Audit MRA. This NGH report 2021.	Auditors approved by the Department.	Compliant	
	(b) include consultation with the relevant agencies;	2016 Independent Audit MRA. This NGH report 2021.	Consultation provided with agencies.	Compliant	
	(c) assess the environmental performance of the project, and its effects on the surrounding environment;	2016 Independent Audit MRA. This NGH report 2021.	Reports reviewed and reported on provided information to provide an evidence based assessment of the impacts of the development.	Compliant	
	(d) assess whether the project is complying with the relevant standards, performance measures and statutory requirements;	2016 Independent Audit MRA. This NGH report 2021.	Each report provides an object review of performance.	Compliant	
	(e) review the adequacy of any strategy/plan/program required under this approval;	2016 Independent Audit MRA. This NGH report 2021.	Each report provides an object review of performance.	Compliant	
	(f) recommend measures or actions to improve the environmental performance of the project, and/or any strategy/plan/program required under this approval; and	2016 Independent Audit MRA. This NGH report 2021.	Measure recommended.	Compliant	
	(g) be conducted and reported to the satisfaction of the Secretary.	2016 Independent Audit MRA. This NGH report 2021.	Reports adopted.	Compliant	

7	Within three months of commencing an Independent Environmental Audit, or within another timeframe agreed by the Secretary, the Proponent must submit a copy of the audit report to the Secretary, and any other NSW agency that requests it, together with its response to any recommendations contained in the audit report, and a timetable for the implementation of the recommendations. The recommendations must be implemented to the satisfaction of the Secretary.	2016 Independent Audit MRA. This NGH report 2021.	Reports adopted.	Compliant	
Monitoring and environmental audits					
8	Any condition of this approval that requires the carrying out of monitoring or an environmental audit, whether directly or by way of a plan, strategy or program, is taken to be a condition requiring monitoring or an environmental audit under Division 9.4 of Part 9 of the EP&A Act. This includes conditions in respect of incident notification, reporting and response, non-compliance notification, compliance report and independent audit. Note: For the purposes of this condition, as set out in the EP&A Act, "monitoring" is monitoring of the project to provide data on compliance with the approval or on the environmental impact of the project, and an "environmental audit" is a periodic or particular documented evaluation of the project to provide information on compliance with the approval or the environmental management or impact of the project.	Noted		Not triggered	
COMMUNITY CONSULTATIVE COMMITTEE					
9	Prior to starting quarrying operations on the site, the Proponent must establish a CCC for the project. This CCC must be established and operated in accordance with the Department's Community Consultative Committee Guidelines: State Significant Projects (2016), and to the satisfaction of the Secretary.	Web site: https://www.holcim.com.au/dunloe-sand-quarry-pottsville-nsw	Committee established and operational apart from some perturbation due to Covid 19 Pandemic.	Compliant	
	Notes: · The CCC is an advisory committee only.	Noted			
	· In accordance with the guidelines, the committee should comprise an independent chair and appropriate representation from the Proponent, Council and the local community.	Web site: https://www.holcim.com.au/dunloe-sand-quarry-pottsville-nsw	Refer to website	Compliant	
ACCESS TO INFORMATION					
10	Within 1 month of the approval of any plan/strategy/program required under this approval (or any subsequent revision of these plans/strategies/programs), or the completion of any independent environmental audit or Annual Review, the Proponent must:				
	(a) provide a copy of the relevant document/s to Tweed Shire Council and relevant agencies; and	Web site: https://www.holcim.com.au/dunloe-sand-quarry-pottsville-nsw	Documents on the web site including appendices. Some searching required to find the Environmental Policy.	Compliant	
	(b) ensure that a copy of the relevant document/s is made publicly available on site and/or at the Proponent's regional office,	Web site: https://www.holcim.com.au/dunloe-sand-quarry-pottsville-nsw	Documents on the web site including appendices. Some searching required to find the Environmental Policy.	Compliant	
	to the satisfaction of the Secretary.	DPIE approval letters for each plan.	Each plan has been approved by DPIE and added to the web site.	Compliant	
11	For the life of the project, the Proponent must:				
	(a) make the following information publicly available on its website:				
	* the documents listed in condition 2(a) of Schedule 2;	Web site: https://www.holcim.com.au/dunloe-sand-quarry-pottsville-nsw	Original assessment and Mod 1 and Mod 2 assessments are available on the website.	Compliant	
	* current statutory approvals for the development;	Web site: https://www.holcim.com.au/dunloe-sand-quarry-pottsville-nsw	Current consolidated mod 2 approval available.	Compliant	
	* all approved strategies, plans and programs required under the conditions of this consent;	Web site: https://www.holcim.com.au/dunloe-sand-quarry-pottsville-nsw	Plans and strategy's availably	Compliant	
	* a comprehensive summary of the monitoring results of the development, reported in accordance with the specifications in any conditions of this consent, or any approved plans and programs;	Web site: https://www.holcim.com.au/dunloe-sand-quarry-pottsville-nsw	Monitoring results available for 2017 to 2021.	Compliant	
	* a complaints register, updated monthly;	Web site: https://www.holcim.com.au/dunloe-sand-quarry-pottsville-nsw	Complaints register available, very few complaints recorded across the years.	Compliant	
	* the Annual Reviews of the project;	Web site: https://www.holcim.com.au/dunloe-sand-quarry-pottsville-nsw	Annual reviews form 2012 to 2020 available.	Compliant	
	* any independent environmental audit as described in condition 6 above, and the Proponent's response to the recommendations in any audit; and	Web site: https://www.holcim.com.au/dunloe-sand-quarry-pottsville-nsw	July 2016 audit available.	Compliant	

	(b) any other matter required by the Secretary; and	Noted			
	(c) keep this information up-to-date,	Web site: https://www.holcim.com.au/dunloe-sand-quarry-pottsville-nsw	Information Current	Compliant	
	to the satisfaction of the Secretary.	Noted			
APPENDIX 3 - STATEMENT OF COMMITMENTS					
The following sections summarises the commitments by Ramtech Pty Ltd regarding mitigations and control measures to be implemented for the proposal:					
Sand extraction					
1	Additional resource assessment works are to be undertaken in respect of two (2) key elements, being the extent of resource available for brickies loam and the extent of resource available with respect of mineral sands. Such assessments are to be undertaken in accord with the matters raised by the Department of Primary Industries in correspondence dated 21 st December 2007.	MRA Audit 2016	Found broad compliance with commitments and did not raise a non-compliance	Not triggered	
2	Annual production data will be made available in accord with DPI requirements.	AEMR 2017-2020	Production data made available	Compliant	
3	Extraction of marine clay will not be undertaken.	DSQ Bathymetric Survey November 2020	Survey indicates extraction below 10m has not occurred, Marine clays occur below 12m.	Compliant	
4	Sand extraction below the watertable will be by suction dredge only. No dry extraction of sand will occur on site, with the exception of the initial overburden and brickies loam.	Site observations. Dunloe Soil and Water Management Plan 2020.	Dredge only able to extent 6m below water level which is largely constant (within 0.5m).	Compliant	
5	Prior to commencement of extraction, the extent of the approved extraction areas shall be clearly and permanently marked by a licensed surveyor with survey posts.	Beyond the scope of the audit.	One survey peg was identified in the field adjacent the office at the time of the audit.	Not triggered	
6	Fines will be reinterred approximately below the water table at approximately 10m below NSL.	Site observations. Dunloe Soil and Water Management Plan 2020.	Return of materials below 10m in depth is not practical. The SWMP ensures fines are returned at a minimum depth of 3m. Based on observations and the bathymetric survey fines appeared to be placed in water with a depth of about 4m.	Compliant	
Sediment and erosion control					
7	A perimeter bund and catch drain shall be constructed around each dredge pond and processing areas. The bund is to be vegetated.	Site observations and DSQ Bathymetric Survey November 2020. Aerial photography.	Bund composed of overburden and enclosed all of the site and the ponds also. Revegetation in place for older bunds and advancing as time/conditions permit.	Compliant	
8	Installation of sediment control fences at the downslope perimeter of cleared or disturbed land. These are to be functional before clearing commences.	Site observations. Dunloe Soil and Water Management Plan 2020.	Area enclosed by bund.	Compliant	
9	A negative grade will be maintained around the dredge ponds within the bunded perimeter.	Site observations. Dunloe Soil and Water Management Plan 2020.	Site drains to the ponds, drainage observed.	Compliant	
10	Additional Erosion and sediment control devices shall be installed on an 'as required' basis. Such measures will be installed in accordance with the "Soils and Construction Guidelines - Managing Urban Stormwater".	Noted		Compliant	
11	Where practical, surface waters from undisturbed areas shall be diverted away from extraction/works areas.	Site observations. Aerial photography.	Surface water drainage for previous farming drains paddocks to adjacent Sheens creek north and unnamed creek south of the site.	Compliant	
12	All processing areas will drain towards the onsite water bodies. No discharge of processing waters from the site shall occur under normal conditions (ie. Not flooded).	Site observations. Aerial photography.	Processing areas observed to drain to on-site water bodies.	Compliant	
13	Topsoil stripping will be undertaken in sub-stages of 1 hectare or less	Site observations. Aerial photography.	New extraction areas and resultant topsoil stripping measured as less than 1ha.	Compliant	
14	All existing ground cover around the site is to remain and be maintained to limit sediment and erosion.	Site observations. Aerial photography.	Areas not used for extraction or roads have grass or woody vegetation cover.	Compliant	

15	Any on-site stockpiles of commercial sand shall remain damp and will have appropriate sediment and erosion control devices installed at all times.	Site observations. Dunloe Soil and Water Management Plan 2020.	Stockpiled product is within bunded areas, shielded from wind erosion by grassed stockpiles and drainage directed to ponds.	Compliant	
16	Stockpiled topsoil shall be seeded so as to achieve adequate vegetation cover and sediment and erosion devices will be installed around all stockpiles at all times.	Site observations. Dunloe Soil and Water Management Plan 2020.	Good vegetation cover established. Stockpile run off directed to the ponds.	Compliant	
17	No discharge of processing water from the site shall occur under normal conditions (ie. not flooded)	Site observations. Aerial photography.	Process water returned to the ponds.	Compliant	
Surface water quality control					
18	Installation of surface and ground water monitoring devices as located on figure GJ0400.9.2 (Appendix Q)	Site observations. Dunloe Soil and Water Management Plan 2020.	Monitoring device located as required	Compliant	
19	Surface water monitoring shall be undertaken in accordance with requirements as outlined with the draft EMP under Appendix G.	Site observations. Dunloe Soil and Water Management Plan 2020. DSQ Water Quality Monitoring Review.	Some water quality monitoring was not completed due to subcontractor errors. This has subsequently been rectified.	Non-compliant	Ensure subcontractors complete monitoring as required.
20	All processing areas will drain towards the onsite water bodies. No discharge of processing waters from the site shall occur under normal conditions (ie. not flooded).	Site observations. Aerial photography.	Process water returned to the ponds.	Compliant	
21	Provision of reliable <i>in situ</i> monitoring equipment at all times for use by Quarry staff. This equipment will be calibrated at least monthly.	Site Advice SWMP, EMP and Monitoring Worksheet.	All monitoring completed by contractors at the required frequency. For ad hoc issues pH strips available on site.	Non-compliant	Redundant Commitment, remove with next modification.
22	All effluent generated will be pumped off site for treatment at Council facility.	Site observations. Council approval for on site sewage treatment and disposal.	Domestic effluent is treated and disposed of through a licenced on site disposal system. This commitment is contrary to the consent and so is superseded	Compliant	Remove statement of commitment from consent.
Ground water movement and control					
23	Installation of ground water monitoring devices as located on figure GJ0400.8.1 (Appendix Q)	Site observations. Dunloe Soil and Water Management Plan 2020.	Monitoring device located as required	Compliant	
24	Ground water monitoring shall be undertaken in accordance with the requirements as outlined within the draft EMP under Appendix G.	Site observations. Dunloe Soil and Water Management Plan 2020.	Ground water monitored as required except for periods of flooding.	Compliant	
25	Provision of reliable <i>in situ</i> monitoring equipment at all times for use by Quarry staff. This equipment will be calibrated at least monthly.	Site Advice SWMP, EMP and Monitoring Worksheet.	All monitoring completed by contractors at the required frequency. For ad hoc issues pH strips available on site.	Non-compliant	Redundant Commitment, remove with next modification.
26	All groundwater bores will be licensed by DIPNR.	https://realtimedata.waternsw.com.au/	Groundwater bores not discoverable on the Water NSW web site at the time of the audit.	Non-compliant	Register bores with Water NSW.
27	Dewatering from on site water bodies will not be undertaken	Site observations. Dunloe Soil and Water Management Plan 2020.	Dewatering note required or occurring.	Compliant	
28	Contour profiling of groundwater head data will be undertaken as part of site monitoring and reporting procedures.	Site observations. Dunloe Soil and Water Management Plan 2020. DSQ Water Quality Data Review September	Head data assessed based on AHD. Contouring not available in the reporting period, Rambolt Report dated September 2021.	Non-compliant	Ground water head data assessed in Ramboll Report Sept 2021. Issue Closed
Fuel Management and Land Contamination					
29	Fuel storage is to be contained within a bund area, and protected from the elements. Bunding will be sufficient to contain 110% of the volume of fuel storage.	Site observations	Fuel storage bunded.	Compliant	
30	Operating procedures for containing and cleaning up oil spills on water to be established and implemented on site, with all staff to be trained in these procedures. Such measures are to form part of the site EMP.	Site observations. Dunloe Soil and Water Management Plan 2020.	Addressed in plan and spill kits available on site.	Compliant	
31	Products designed to contain and absorb oil spills on water will be available on site. Quantity and type of product will be monitored and will be available in sufficient quantities to deal with any potential spill on site.	Site observations. Dunloe Soil and Water Management Plan 2020.	Several spill kits available and located at key risk areas.	Compliant	

32	Materials stored on site will be limited to - One (1) month supply of diesel - Machine and equipment oils and grease - limited quantities of petrol	Site observations. Dunloe Soil and Water Management Plan 2020.	Small quantities of fuel and oil held on site. 1000L diesel held in bunded pod.	Compliant	
Air Quality					
33	The full length of internal haulage roadways will be sealed.	Site observations. Aerial photography.	Haul road sealed	Compliant	
34	A vegetation barrier for dust control along the southern boundary adjoining Warwick Park Road will be established (species and planting in accordance with rehabilitation plan, Appendix H).	Site observations. Aerial photography.	Vegetation established	Compliant	
35	Topsoil stripping will be undertaken in sub-stages of 1 hectare or less. Topsoil stripping will not be undertaken on day with excess winds.	Site observations. Aerial photography.	New extraction areas and resultant topsoil stripping measured as less than 1ha.	Compliant	
36	All trucks entering/leaving the site shall be covered.	Site obs. TMP	Loads were observed to be covered at the time of the audit.	Compliant	
37	Stockpiled topsoil shall be seeded so as to achieve adequate vegetation cover and sediment and erosion devices will be installed around all stockpiles.	Site observations. Aerial photography.	Stockpiles revegetated.	Compliant	
38	Any disturbed or unsealed movement areas will be watered by an onsite cart to ensure that such areas remain damp. Watering rates shall not be less than 2.5l/m ² /hour.	Site observations.	Water cart available. Surface wet.	Compliant	
Noise					
39	Construction of a 4m high earth mound shielding the operational areas. This mound shall form part of the stockpile and be lightly top soiled, seeded and maintained with native grasses.	Site observations. DSQ Water Quality Monitoring Review.	Significant stockpiles of striped materials around the processing area.	Compliant	
40	The earth mound is to be constructed between 7.30am and 5pm. The occupants of the nearest dwellings to the site be notified as to the hours of operation for the mound construction, and be provided with a contact telephone number should they have concerns regarding noise from this stage of the operation;	Beyond the scope of the audit.		Not triggered	
41	The bulldozer used to construct the earth barriers should be well maintained, and fitted with residential mufflers;	Site observations.	No Bull dozers observed on site.	Not triggered	
42	Upon plant dredge pump selection, noise levels should be less than or equal to 88dB(A) at 1m from the plant. If this level is not achievable, further acoustic treatment in the form of a semi enclosure will be required to reduce source noise levels to within the acceptable range;	Beyond the scope of the audit.		Not triggered	
43	Haulage trucks and the wheeled loader should be well maintained, and fitted with residential mufflers;	Site observations.	Plant observed were using compliant muffler systems.	Compliant	
44	Internal haulage route and the crossover to Pottsville Road be as smooth as possible, and well maintained;	Site observations.	The majority of the haul road was in good condition. Some pothole repairs were observed. Additional repairs planned.	Compliant	
45	Prior to commencement of operations, an acoustic test be conducted to ensure compliance with the noise limit criteria;	Beyond the scope of the audit.			
46	All operations to be limited to 7am to 6pm, Monday to Friday, and 7am to midday, Saturdays.	Site observations. Recordable events register.	One incident of a truck being loaded at 6.45am.	Non-compliant	Issue investigated and closed out.
Flora and fauna					
47	A detailed regeneration and rehabilitation plan is to be prepared and approved by the DECCC prior to the issue of a construction certificate.	Dunloe LMP 2020	Plan prepared, reviewed and approved by DPIE.	Compliant	
48	Removal of existing weed species (particularly infestations of Bitou Bush and Lantana).	Beyond the scope of the audit.		Not triggered	
49	Revegetation of disturbed areas within existing native vegetation communities with plants endemic to the locality. Revegetation areas will total approximately 15ha in area. No clearing of vegetation is required with the exception of approximately 20 Casuarina trees lining minor drainage channels in the extraction areas.	Site observations. Aerial photography.	Up to 10 ha of revegetation observed plus buffer strips all of native vegetation.	Compliant	

50	Revegetation of nominated areas within the rehabilitation plan as attached under Appendix H to strengthen potential habitat corridors, extend the distribution of Swamp Sclerophyll and Littoral Rainforest environments and to extend the perimeter of the narrowest portions of the eastern forest to provide long-term mitigation against potential edge effects.	Site observations. Aerial photography.	Vegetation used for regeneration endemic to the local PCT.	Compliant	
51	A monitoring program will be implemented in respect of the rehabilitation areas external to the extraction areas. Such program will be subject to final approval by the DECC and will contain consideration of additional rehabilitation / regeneration areas at the expense of implementation of the nest boxes. Consideration will also be given to strengthening corridor linkages where possible.	Beyond the scope of the audit.		Not triggered	
52	Incorporation of potential foraging resources for threatened fauna species within landscaping/revegetation areas including: - <i>Allocasuarina littoralis</i> , <i>A. torulosa</i> for Glossy Black Cockatoos - Flowering species (Eucalypts, Corymbians, Melaleuca, Banksia) for flying fox/bat species - Littoral Rainforest fruiting species for Fruit-doves/Rainforest Pigeons - Favoured Eucalypts for Koalas	Beyond the scope of the audit.		Not triggered	
53	Installation of nest boxes within the existing vegetation communities.	Beyond the scope of the audit.		Not triggered	
Waste					
54	All soil waste will be disposed of by licensed contractor in accordance with the <i>Protection of Environmental Operations Act 1997</i> (POEO Act 1997) & <i>Waste Minimisation Act 1995</i> .	DSWMP	Waste removed by contractors.	Compliant	
55	All solid wastes are to be managed in accord with the attached HMC Solid Waste Management Plan.	DSWMP	Waste removed by contractors.	Compliant	
56	Effluent will be treated on site in accord with the attached HMC report.	DSWMP. Council onsite sewage system approval letter.	Waste removed by contractors.	Compliant	
Flooding					
57	Adoption of a maximum 300mm bund height to all levels below 2m AHD.	Site observations.	Low lying areas available for flood expression.	Compliant	
Cultural Heritage					
58	The proponent will undertake additional archaeological surveys of the proposed extraction areas prior to works commencing to provide assurance that no aboriginal sites exist within the extraction areas	Beyond the scope of the audit.		Not triggered	
59	If aboriginal sites are found within the extraction areas the proponent must undertake surveys / assessment to determine the cultural heritage values of the site and report how those values might be impacted upon and provide appropriate avoidance, mitigation or compensatory measures. Such additional assessments must be in accord with guidelines and requirements of the DECC.	Pers Com with Site staff.	No Aboriginal objects discovered.	Compliant	
Views and Landscapes					
60	5m to 10m vegetated buffers will be established around the extraction areas in accordance with the rehabilitation plan attached under Appendix H. The objectives of these areas are for visual protection primarily.	Site observations Aerial photos DSLMP 2020	Buffer established	Compliant	
61	A detailed rehabilitation plan will be prepared for those areas external to the extraction areas.	Site observations Aerial photos DSLMP 2020	Plan prepared and approved by DPIE.	Compliant	
Monitoring Reporting and Consultation					
62	Reporting and consultation measures will be implemented as outlined with the draft EMP under Appendix G.	Noted.			
Licensing					

63	The proponent will commit to gaining an Environmental Protection Licence from DECC.	EPL for site.	EPL #13077 cited	Compliant	
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APPENDIX B AUDITOR APPOINTMENT



Planning,
Industry &
Environment

Ms Shilpa Shashi
Planning and Environmental Coordinator
Holcim (Australia) Pty Ltd
Level 7 – 799 Pacific Highway
CHATSWOOD NSW 2067

28/06/2021

Dear Ms Shashi

**Dunloe Quarry (MP06_0030)
Auditors Request for Approval Response**

I refer to your request (MP06_0030-PA-10) for the Planning Secretary's approval of suitably qualified persons to prepare the Independent Auditor for Dunloe Quarry (MP06_0030).

The Department has reviewed the nominations and information you have provided and is satisfied that these experts are suitably qualified and experienced. Consequently, I can advise that the Planning Secretary approves the appointment of Michial Sutherland to prepare the Independent Audit for Dunloe Quarry.

If you wish to discuss the matter further, please contact Phillip Rose on (02) 6670 8657.

Yours sincerely

A handwritten signature in black ink that reads 'H Watters'.

Heidi Watters
Team Leader Northern
Compliance

As nominee of the Planning Secretary

APPENDIX C CONSULTATION WITH AGENCIES

13 July 2021

Mr Phillip Rose
Northern Compliance
Department of Planning Industry and Environment
4 Parramatta Square
12 Darcy Street
PARRAMATTA NSW 2150



Dear Phillip

Re: Dunloe Sand Quarry Independent Environmental Audit 2021. 21-473

Holcim (Australia) Pty Ltd, in accordance with the Project Approval (06_0030) for its Dunloe Sand Quarry, has commenced the audit process. NGH has been approved as the Independent Environmental Auditor. The NSW Department of Planning and Environment Guideline *Independent Audit Post Approval Requirements* (June 2018) recommends consultation with various parties as part of the audit process.

NGH as part of the consultation process is writing to seek your input to the audit. The audit will address the requirements of the consent, and compliance with the Environment Protection Licence.

Where the Department has need to raise matters relevant to the audit please take this opportunity to express them.

NGH is also consulting with NSW EPA, Tweed Shire Council, and NSW Fisheries for the purpose of the audit.

Please provide input at your earliest convenience. I can be contacted at Michial.s@nghconsulting.com.au or 02 6923 1532.

Yours sincerely

A handwritten signature in black ink, appearing to read 'M. Sutherland', is written over a light blue horizontal line.

Mike Sutherland
Manager Riverina and Western NSW
Ph 0427-953 053

NGH

13 July 2021

Mr Benjamin Lewin
NSW EPA

Email: benjamin.lewin@epa.nsw.gov.au



Dear Benjamin

Re: Dunloe Sand Quarry Independent Environmental Audit 2021. 21-473

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Please provide input at your earliest convenience. I can be contacted at Michial.s@nghconsulting.com.au or 02 6923 1532.

Yours sincerely



Mike Sutherland
Manager Riverina and Western NSW
Ph 0427-953 053

NGH

13 July 2021

Mr Jonathan Yantsch
Senior Fisheries Manager
Coastal Systems North Coast
NSW DPIE

Email: Jonathan.yantsch@dpi.nsw.gov.au



Dear Jonathan

Re: Dunloe Sand Quarry Independent Environmental Audit 2021. 21-473

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Please provide input at your earliest convenience. I can be contacted at Michial.s@nghconsulting.com.au or 02 6923 1532.

Yours sincerely



Mike Sutherland
Manager Riverina and Western NSW
Ph 0427-953 053

NGH

13 July 2021

Mr Troy Green
General Manager
Tweed Shire Council
PO Box 816
MURWILLUMBAH NSW 2484

Email: tsc@tweed.nsw.gov.au



Dear Troy

Re: Dunloe Sand Quarry Independent Environmental Audit 2021. 21-473

Holcim (Australia) Pty Ltd, in accordance with the Project Approval for its Dunloe Sand Quarry 06_0030, has commenced the audit process. NGH has been approved as the Independent Environmental Auditor. The NSW Department of Planning and Environment Guideline *Independent Audit Post Approval Requirements* (June 2018) recommends consultation with various parties as part of the audit process.

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Please provide input at your earliest convenience. I can be contacted at Michial.s@nghconsulting.com.au or 02 6923 1532.

Yours sincerely

Mike Sutherland
Manager Riverina and Western NSW
Ph 0427-953 053

NGH



DOC21/587522-1

Mr Mike Sutherland
Manager Riverina and Western NSW
NGH Consulting
PO Box 5464
WAGGA WAGGA NSW 2650

Email: Michial.s@nghconsulting.com.au

21 July 2021

Dear Mr Sutherland,

Dunloe Park Sand Quarry Independent Environmental Audit EPL 13077

Thankyou for your letter dated 13 July 2021 in relation to the independent environmental audit of Dunloe Park Sand Quarry, Pottsville-Mooball Road, Mooball, NSW. The Environment Protection Authority (EPA) does not have any specific issues regarding the environmental performance of this site. The Environment Protection Licence and regulatory history for the site can be viewed on the EPA's public register.

The public register may be accessed at <https://www.epa.nsw.gov.au/licensing-and-regulation/public-registers>

If you have any questions or wish to discuss this matter further please contact Johanne Hunt on (02) 9860-1476 or by email Johanne.hunt@epa.nsw.gov.au

Yours sincerely

A handwritten signature in black ink, appearing to read 'RD', written over a light grey rectangular background.

ROBERT DONOHOE
Acting Unit Head
Regulatory Operations Regional

Phone 131 555

Phone +61 2 9995 5555
(from outside NSW)

TTY 133 677

ABN 43 692 285 758

Locked Bag 5022

Parramatta
NSW 2124 Australia

4 Parramatta Square

12 Darcy St, Parramatta
NSW 2150 Australia

info@epa.nsw.gov.au

www.epa.nsw.gov.au

Fwd: Communication regarding IEA Scope Request MP06_0030-PA-12



Shilpa Shashi <shilpa.shashi@holcim.com>
To: Michial Sutherland

Reply Reply All Forward

Tue 20/07/2021 9:50 AM

Click here to download pictures. To help protect your privacy, Outlook prevented automatic download of some pictures in this message.

----- Forwarded message -----

From: no-reply@majorprojects.planning.nsw.gov.au <no-reply@majorprojects.planning.nsw.gov.au>

Date: Tue, Jul 20, 2021 at 8:38 AM

Subject: Communication regarding IEA Scope Request MP06_0030-PA-12

To: <shilpa.shashi@lafargeholcim.com>

Cc: <shilpa.shashi@lafargeholcim.com>

Dear Shilpa,

Dear Mr Sutherland,

Thank you for contacting DPIE regarding input into the scope of the proposed Independent Audit.

In previous Annual Reviews, water quality exceedance has been identified as common matter of non-compliance, most notably turbidity and pH. Concerns have also been raised in previous Annual Reviews regarding frequency of monitoring sampling. The Department would like an in-depth review into the continuing water quality exceedances. The Department is interested to identify if the water quality objectives identified in Schedule 3, Condition 9 are achievable, what impacts the water quality exceedances could have on the site and receiving environment and if any reasonable measures that could be employed by the project to meet the objectives. The Department would also like a review on the frequency of monitoring to confirm consistency with the Environmental Monitoring Program which forms part of the Soil and Water Management Plan.

Please contact me to discuss if further clarification is required.

Kind Regards

Phillip Rose

To sign in to your account click [here](#) or visit the [Major Projects Website](#).
Please do not reply to this email.

Kind regards

The Department of Planning, Industry and Environment



Planning,
Industry &
Environment

RE: 21-473 - Dunloe Park Sand Quarry Audit



Jonathan Yantsch <jonathan.yantsch@dpi.nsw.gov.au>
To Michial Sutherland

Reply Reply All Forward ...

Tue 20/07/2021 4:01 PM

Hi Michial

As the quarry is located directly adjacent to Coastal Wetlands and is within the Mooball Creek catchment, the audit should include a review of the impacts of quarry operations, including those activities that impact and/or occur outside of the quarry footprint such as run-off, surface/ground water pumping and hauling activities, on adjacent key fish habitat (i.e. third order and greater waterways and Coastal Wetlands).

Where impacts are identified by the audit (e.g. sedimentation and other water quality impacts such as changes in pH and thermal pollution, increased/decreased flow regimes etc.), then the report should provide appropriate measures to avoid and/or mitigate these impacts from future quarry operations.

Please contact me on the details below if you have any questions.

Regards

Jonathan

Jonathan Yantsch | Senior Fisheries Manager - Coastal Systems (North Coast)
Aboriginal Fishing & Marine and Coastal Environments
NSW Department of Primary Industries | Fisheries
1243 Bruxner Hwy | Wollongbar | NSW 2477
T: 02 6626 1375 | M: 0447 537 168 | E: jonathan.yantsch@dpi.nsw.gov.au

PERMIT APPLICATION FORMS & FISH HABITAT POLICIES:

www.dpi.nsw.gov.au/fishing/habitat/protecting-habitats/toolkit

Submit permit applications via email to shp.central@dpi.nsw.gov.au


NB: From date of receipt of application, please allow:

- 21 days for s199 Consultations
- 28 days for Permits, Consultations and Land Owner's Consent responses
- 40 days for Integrated Development Applications

KNOWN & EXPECTED DISTRIBUTION OF THREATENED FISH SPECIES:

www.dpi.nsw.gov.au/fishing/threatened-species/threatened-species-distributions-in-nsw

APPENDIX D DECLARATION

Project Name	Dunloe Park Sand Project
Consent No.	06_0030 Mod 2
Description of Project	Sand Quarry
Project Address	Pottsville-Moonball Rd Pottsville
Proponent	Ramtech Pty Ltd (Holcim Aust) Pty Ltd
Operator Address	Holcim (Australia), Locked Bag 5007, Baulkham Hills, 1755, NSW
Title of Audit	Independent Environmental Audit
Date	June 2021
<p>I declare that I have undertaken the Independent Audit and prepared the contents of the attached Independent Audit Report and to the best of my knowledge:</p> <ul style="list-style-type: none"> the audit has been undertaken in accordance with relevant condition(s) of consent and the <i>Compliance Reporting - Post Approval Requirements (DPIE May 2020)</i>; the findings of the audit are reported truthfully, accurately and completely; I have exercised due diligence and professional judgement in conducting the audit; I have acted professionally, objectively and in an unbiased manner; I am not related to any proponent, owner or operator of the project neither as an employer, business partner, employee, or by sharing a common employer, having a contractual arrangement outside the audit, or by relationship as spouse, partner, sibling, parent, or child; I do not have any pecuniary interest in the audited project, including where there is a reasonable likelihood or expectation of financial gain or loss to me or spouse, partner, sibling, parent, or child; neither I nor my employer have provided consultancy services for the audited project that were subject to this audit except as otherwise declared to the Department prior to the audit; and I have not accepted, nor intend to accept any inducement, commission, gift or any other benefit (apart from payment for auditing services) from any proponent, owner or operator of the project, their employees or any interested party. I have not knowingly allowed, nor intend to allow my colleagues to do so. <p>Notes:</p> <p>a) Under section 10.6 of the <i>Environmental Planning and Assessment Act 1979</i> a person must not include false or misleading information (or provide information for inclusion in) in a report of monitoring data or an audit report produced to the Minister in connection with an audit if the person knows that the information is false or misleading in a material respect. The proponent of an approved project must not fail to include information in (or provide information for inclusion in) a report of monitoring data or an audit report produced to the Minister in connection with an audit if the person knows that the information is materially relevant to the monitoring or audit. The maximum penalty is, in the case of a corporation, \$1 million and for an individual, \$250,000; and</p> <p>b) The <i>Crimes Act 1900</i> contains other offences relating to false and misleading information: section 307B (giving false or misleading information – maximum penalty 2 years imprisonment or 200 penalty units, or both)</p>	
Name of Auditor	Michial Sutherland
Signature	 24/11/2021
Qualification	Ba.Edu Sci., Environmental Audit, Centre for Professional Development Melb.1997, Environmental Auditing (24 years) including quarrying, waste, SSI / SSD.
Email Address	Michial.s@ngHENvironmental.com.au
Company	NGH Environmental
Company Address	35 Kincaid Street, Wagga Wagga, NSW

APPENDIX E SITE INSPECTION PHOTOS



Figure 5 Dust Gauge east of access road and north of the site



Figure 6 Site office, carpark, met mast



Figure 7 Signage at entry/exit



Figure 8 Aerated waste water system, stormwater and signage landscaped areas



Figure 9 Bunded fuel storage and spill controls, solar power



Figure 10 Product stockpiles



Figure 11 Ground water monitoring site DLP1



Figure 12 Dredge line from Pond 2



Figure 13 Sand staining from acid sulfate seepage return to Pond 2,
Note: Grass growth tolerant of acidic conditions



Figure 14 Fines return line Pond 1 and additional fines return line



Figure 15 Opening between Ponds 1 and 2, new dredge being commissioned



Figure 16 Wash screen, liming tank and bicarbonate



Figure 17 Fringing vegetation on Pond 1



Figure 18 Soil bund along the southern edge of Pond 1



Figure 19 Revegetated mound along southern edge of Pond 2



Figure 20 Improved management and control of stockpile seepage requires investigation



Figure 21 Screen plantings along the western boundary



Figure 22 Revegetation established and mature east of the site



Figure 23 Revegetation established and mature north of the site



Figure 24 Revegetation established and maturing north of the site



Figure 25 Typical off site drain receiving ground and surface water from pastures

Note: Acid sulphate impacted water and iron staining observed.