Hon Steven Miles MP
Deputy Premier
Minister for State Development, Infrastructure,
Local Government and Planning
Minister Assisting the Premier on Olympics Infrastructure

Our ref: MC21/6086

17 April 2022

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Brisbane Queensland 4000
PO Box 15009
City East Queensland 4002
Telephone + 61 3719 7100
Email deputy.premier@ministerial.qld.gov.au
Website www.statedevelopment.qld.gov.au

ABN 65 959 415 158

Barro Group Pty Ltd
c/- Mr John Taylor
Groundwork Plus
jtaylor@groundwork.com.au

Dear Mr Taylor

Notice of Decision
Application to change a development approval (minor change)
under section 83 of the *Planning Act 2016* (Planning Act)

Thank you for your correspondence of 15 December 2021, for an application to change a development approval (minor change), dated 20 December 2013, for the Mount Cotton quarry development approval, subject to a previous ministerial call in at 1513 and 1515-1521 Mount Cotton Road and 163-177 and 195 Gramzow Road, Mount Cotton.

I am pleased to advise that I have made a decision on this application. The approved changes are shown in bold and underlined in the enclosed decision notice for the original application, as amended.

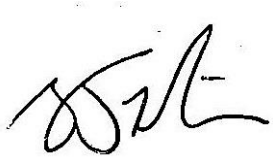
Decision for change application

Date of decision:	17 April 2022
Details of decision:	Approved
Description of changes:	- Schedule 1, condition 1 – amendment to include additional approved documents - Schedule 1, condition 28 – amended to reflect the agreed environmental offset for impacts to non-juvenile koala habitat trees - Schedule 1, condition 30 – removed due to amendment to condition 35 - Schedule 1, condition 31 - removed due to amendment to condition 35 - Schedule 1, condition 32 - removed due to amendment to condition 35 - Schedule 1, condition 35 – amended to reflect updated habitat and koala management reports - Schedule 1, condition 37 – amendment required as a result of amendments made to Condition 35

- Schedule 1, condition 38 – amendment required as a result of amendments made to Condition 35.

If you require any further information, please contact Mr Paul Beutel, Manager, Development Assessment Division, Department of State Development, Infrastructure, Local Government and Planning, on (07) 3452 7693 or paul.beutel@dsdilgp.qld.gov.au, who will be pleased to assist.

Yours sincerely



STEVEN MILES MP
DEPUTY PREMIER
Minister for State Development, Infrastructure,
Local Government and Planning
Minister Assisting the Premier on Olympics Infrastructure

Enc

Our ref: MBN13/1339

Ms Tegan Smith
Barro Group Pty Ltd
C/- Groundwork Plus
PO Box 1779
MILTON QLD 4064

Dear Ms Smith

NOTICE OF DECISION

I refer to my decision on 26 September 2013 to exercise my Ministerial powers under the *Sustainable Planning Act 2009* (SPA) and call in the development application for the extension of the Barro Quarry at Mount Cotton.

Please be advised that on 20 December 2013, I decided to approve the development application subject to conditions.

Applicant details	
Name of Applicant	Barro Group Pty Ltd, C/- Groundwork Plus
Address of Applicant	PO Box 1779 MILTON QLD 4064

Application details	
Original assessment manager	Redland City Council (Council)
Date application properly made	2 February 2011
Approvals sought	Development Permit for Material Change of Use for Extractive Industry and Environmentally Relevant Activities (ERA) 8(3)(a) (Chemical Storage 10m^3 to 500m^3 of chemicals or dangerous goods Class 3 of Class C1 or C2 combustible liquids under AS1940), 16(2)(c) (Extracting rock or other material 100,000 tonnes – 1,000,000 tonnes per year), 16(3)(b) (Screening rock or other material 100,000 tonnes – 1,000,000 tonnes per year) and 21 (Motor Vehicle Workshop Operations)
Description of development	Extension of a quarry and associated environmentally relevant activities
Category of development	Impact Assessment

Property details

Real property description	Lot 162 S31962 Lot 238 SP218968 Lot 370 S311071 Lot 1 RP108970 Lot 17 RP108970 Lot 1 SP272090 Lot 2 SP272091 Lot 3 SP272092
Address of property	1513 and 1515-1521 Mount Cotton Road and 163-177 and 195 Gramzow Road, Mount Cotton; the land comprising that part of Greenhide (California) Creek located between Lot 162 SP31962 and Lot 238 SP218968, which is the property of the State.

Ministerial call in details

Date call in notice given	26 September 2013

I re-assessed and re-decided the development application under the normal assessment and decision provisions under sections 314, 324 and 326 of the SPA.

Date of decision	20 December 2013
Details of decision	Approved subject to conditions
Type of approval	Development Permit for Material Change of Use for Extractive Industry and Environmentally Relevant Activities (ERA) 8(3)(a) (Chemical Storage 10m^3 to 500m^3 of chemicals or dangerous goods Class 3 of Class C1 or C2 combustible liquids under AS1940), 16(2)(c) (Extracting rock or other material 100,000 tonnes – 1,000,000 tonnes per year), 16(3)(b) (Screening rock or other material 100,000 tonnes – 1,000,000 tonnes per year) and 21 (Motor Vehicle Workshop Operations)

Referral Agencies
The following agencies were referral agencies for the development application. As a result of my decision to call in the development application under section 425(1) of the SPA, any concurrence agencies for the development application are taken to be an advice agency until I give the decision notice (section 427(4) of the SPA).

Referral agency (name at the time of lodgement)	**Referral agency**	**Address**	**Advice or concurrence**
Department of Natural Resources and Mines (DNRM)	Department of Environment and Resource Management (DERM)	PO Box 15216 CITY WEST QLD 4001	Concurrence
Department of Environment and Resource Management (DERM)	Department of Environment and Heritage Protection (EHP)	GPO Box 2454 BRISBANE QLD 4001	Concurrence and Advice
Department of Transport and Main Roads (TMR)	Department of Transport and Main Roads (TMR)	GPO Box 50 BRISBANE QLD 4001	Concurrence
Energex Energy (Energex)	Energex Energy (Energex)	GPO Box 1461 BRISBANE QLD 4001	Advice

Further to this, the application was also forwarded to the following entities for advice:

Entity	**Address**
Department of Community Safety (DCS)	GPO Box 1425 BRISBANE QLD 4001
Department of Science, Information Technology, Innovation and the Arts (DSITIA)	GPO Box 5078 BRISBANE QLD 4001
Queensland Health	GPO Box 48 BRISBANE QLD 4001
Logan City Council	PO Box 3226 LOGAN CITY DC 4114
Redland City Council	PO Box 21 CLEVELAND QLD 4163

Approval subject to conditions
The conditions of this approval are set out in **Schedules 1,2, 4 & 5.** A copy of the Environmental Authority is attached at **Schedule 3.** The Department of Community Safety advice is provided at **Schedule 6.**
Despite there being what I consider a minor conflict with the Redland Planning Scheme, I consider that there are sufficient grounds to approve the development application for the extension of the Mt Cotton quarry. These grounds include that the conflict is minor in nature,

being limited to ancillary uses that are generally consistent with the Redland Planning Scheme, and there is an economic need for the extension of the quarry.

Other development permits and compliance permits
The other development permits and compliance permits necessary to allow the development to be carried out are set out in **Schedule 1**.

Properly made submissions
Approximately 1139 properly made submissions and 85 not properly made submissions were received in respect of this development application during the public notification period between 25 May 2012 and 12 July 2012. The name and address of each principal submitter is set out in **Schedule 8**.

Deemed approval of applications
As a result of my decision to call in and re-assess and re-decide the development application, chapter 6, part 5, division 3, subdivision 4 of the SPA does not apply to the development application (section 427(7) of the SPA).

Any code the applicant may need to comply with for self-assessable development related to development approved
Excavation and Fill - Self assessable (if complying with the acceptable solutions in section 8.6.4 of the Erosion Prevention and Sediment Control Code and the acceptable solutions in A1.(1)(b),(c),(d) in section 7.6.4 of the Excavation and Fill Code)

Details of any compliance assessment required under chapter 6, part 10 of SPA for documents or work in relation to the development
Refer to conditions 22, 25, 31, 43, 44, 45 and 47 in **Schedule 1**.

Referenced plans
Copies of the approved plans are included in **Schedule 7**.

If you require any further information, please email: ministerial_call_in@dsdip.qld.gov.au.

Yours sincerely



JEFF SEENEY MP
DEPUTY PREMIER
Minister for State Development, Infrastructure and Planning

Enc (8)

Schedule 1: Conditions of Approval
Material Change of Use (Development Permit) for Extractive Industry

<table>
<tr><th colspan="2"></th><th>TIMING</th></tr>
<tr><td colspan="3">GENERAL/PLANNING REQUIREMENTS</td></tr>
<tr><td>1</td><td><u>Approved Plans and Documents</u>

Undertake the development generally in accordance with the approved plans and documents referred to in Table 1, subject to the conditions of this approval

Table 1: Approved Plans and Documents.
<table>
<tr><th>Approved Plan No.</th><th>Title</th><th>Date</th><th>Prepared by</th></tr>
<tr><td>DA2 001 <u>R3</u></td><td>Schematic of Proposed Plant Layout</td><td><s>7 July 2010</s> <u>14 March 2019</u></td><td>Groundwork Plus</td></tr>
<tr><td>DA2 002 <u>R3</u></td><td>Quarry Development Plan – Stage 1A</td><td><s>7 July 2010</s> <u>14 March 2019</u></td><td>Groundwork Plus</td></tr>
<tr><td>DA2 003 <u>R3</u></td><td>Quarry Development Plan – Stage 1B</td><td><s>7 July 2010</s> <u>14 March 2019</u></td><td>Groundwork Plus</td></tr>
<tr><td>DA2 004 <u>R3</u></td><td>Quarry Development Plan – Stage 2</td><td><s>9 June 2010</s> <u>14 March 2019</u></td><td>Groundwork Plus</td></tr>
<tr><td>DA2 005 <u>R3</u></td><td>Quarry Development Plan – Stage 3</td><td><s>9 June 2010</s> <u>14 March 2019</u></td><td>Groundwork Plus</td></tr>
<tr><td>DA2 006 <u>R3</u></td><td>Quarry Development Plan – Stage 4</td><td><s>9 June 2010</s> <u>14 March 2019</u></td><td>Groundwork Plus</td></tr>
<tr><td>987.310.003 <u>R3</u></td><td>Figure 3 – Site Layout and Topography</td><td><s>24 November 2010</s> <u>14 March 2019</u></td><td>Groundwork Plus</td></tr>
<tr><td>987.310.023 <u>R3</u></td><td>Conceptual Plant Layout</td><td><s>27 January 2011</s> <u>14 March 2019</u></td><td>Groundwork Plus</td></tr>
<tr><td>987_233</td><td>Geotechnical Report – Mt Cotton Quarry Extension</td><td>20 December 2010</td><td>Groundwork Plus</td></tr>
<tr><td><u>18-093-2</u></td><td><u>Acoustic Barriers/Mound Locations</u></td><td><u>1 November 2018</u></td><td><u>MWA Environmental</u></td></tr>
<tr><td><u>18-093-3</u></td><td><u>Detail Plan Acoustic Mound/Barriers - West</u></td><td><u>1 November 2018</u></td><td><u>MWA Environmental</u></td></tr>
</table></td><td>While site works are occurring and then at all times</td></tr>
</table>

	0241-001-3 (009)	**Habitat Management Plan**	**23 July 2021**	**BAAM Ecological Consultants Pty Ltd**	
	0241-0013 / 0241-009	**Integrated Koala and Koala Habitat Reports**	**9 December 2021**	**BAAM Ecological Consultants Pty Ltd**	
	0241-001-12	**Koala Offset Site Management Plan**	**9 December 2021**	**BAAM Ecological Consultants Pty Ltd**	
	Note: This condition refers to the approved plans and documents to which the approval relates and is the primary means of defining the extent of the approval. Approved plans and documents are stamped and referred to in the approval and are dated to reflect the date of approval of the application by the Minister.				
2	**Development Permit** A copy of the development permit (including all relevant approved plans and documents) is to be maintained on the site at all time.				At all times
3	**Quarry Extents** The quarry shall not encroach outside the bounds shown in the development application Stage 4 (Ref Drawing DA2 006 prepared by Groundwork Plus).				At all times
4	**Survey data** Submit to Council the electronic data for the survey points which define the entire approved extent of the quarry pit. These survey points must be in accordance with the quarry extent shown on the development application Stage 4 (Ref Drawing DA2 006 prepared by Groundwork Plus).				Prior to the commencement of the use
5	**Compliance** Comply with all conditions of this approval, at no cost to Council or the Department of Infrastructure, Local Government and Planning, at the timing periods specified in the conditions. Where the condition indicates that the condition is an ongoing condition, that condition must be complied with for the life of the development, and where the timing of the condition indicates it is prior to the commencement of the use, that condition must be complied with prior to extraction of quarry material occurring in the quarry pit extent identified in condition 4.				As indicated
6	**Hours of operation** (a) Operate the approved use, including truck movements associated with the use, only between the following hours: (i) Monday to Friday - 6:30am to 6:00pm; and (ii) Saturday - 6:30am to 4pm. (b) After hours maintenance is only to take place between 6:00am to 8:00pm Monday to Saturday. (c) Quarrying activities are not to occur at any other time or on public holidays				At all times

<table>
<tr><td></td><td></td><td></td></tr>
<tr><td>7</td><td>Condition deleted</td><td></td></tr>
<tr><td>8</td><td>Complete All Building Work

Complete all building work associated with this development approval where such building work is to be carried out generally in accordance with the approved plans and documents and, where the building work is assessable development, in accordance with a current development permit. Prior to the commencement of any building work, development permit(s) for carrying out building work may be required.

Note: This approval does not permit building work to occur. Refer to advice regarding additional development permits and compliance permits.</td><td>Prior to the completion of Stage 1B</td></tr>
<tr><td>9</td><td>Operational Restrictions - Quarry

(a) Operate the quarry with a rate of production that does not exceed one (1) million tonnes per annum, unless otherwise stipulated in the relevant environmental authority for the activity.
(b) Upon request by a duly authorised Council officer, provide to Council, within 10 business days of the request being made, details of the tonnage amounts for the period(s) specified by the Council officer. Maintain suitable records of tonnage amounts that enable this information to be provided.</td><td>At all times

As indicated and at all times</td></tr>
<tr><td colspan="3">ACOUSTIC</td></tr>
<tr><td>~~10~~</td><td>~~Except during blasting operations, the emission of noise from the operation and maintenance of the development and onsite road traffic, must not result in noise levels at noise sensitive places (e.g. at dwellings) greater than those specified in Table 2 - Noise Limits~~

<table>
<tr><td colspan="4">~~Table 2 - Noise Limits~~</td></tr>
<tr><td>~~Location Noise Sensitive Land Uses~~</td><td colspan="3">~~Noise Limits (dBA LAeq,aj,T(15min))~~</td></tr>
<tr><td></td><td>~~Morning (6am – 7am)~~</td><td>~~Daytime (7am – 6pm)~~</td><td>~~Evening (6pm – 10pm)~~</td></tr>
<tr><td>~~To the West~~</td><td>~~35[1]~~</td><td>~~35~~</td><td>~~35~~</td></tr>
<tr><td>~~To the South~~</td><td>~~41[1]~~</td><td>~~41~~</td><td>~~41~~</td></tr>
<tr><td>~~To the East/South-east~~</td><td>~~45~~</td><td>~~45~~</td><td>~~42~~</td></tr>
<tr><td>~~To the east~~</td><td>~~46~~</td><td>~~47~~</td><td>~~40~~</td></tr>
</table>
~~[1] Note: The noise limits for the morning period have been kept consistent with the daytime period, since it is not believed to be appropriate to have a higher noise limit during the morning period.~~</td><td>~~As indicated~~</td></tr>
<tr><td>11</td><td><u>The rock drill used at the site is to have a maximum Sound Power Level of 110.1dBA.</u> Provide vendor data or measurement data to the Council and to the Department of Environment and ~~Heritage Protection~~ <u>Science</u> to demonstrate noise emissions from rock drilling (or alternative drilling method) ~~will achieve a maximum Sound Power Level of not greater than 111 dBA~~ <u>is achieving compliance</u>.</td><td>Prior to the commencement of the use</td></tr>
<tr><td>~~12~~</td><td>~~Submit to Council and to the Department of Environment and Heritage Protection a noise survey to confirm the operational noise levels and compliance with the noise limits in Table 2- Noise Limits.~~</td><td>~~Within six months of the commencement of the use~~</td></tr>
<tr><td><u>12A</u></td><td><u>Construct the following generally in accordance with Acoustic Barrier/Mound Locations, drawing no. 18-093-2 prepared by MWA Environmental and dated 1 November 2018 and Detail Plan Acoustic Mound/Barriers/West, drawing no. 18-093-3 prepared by MWA Environmental and dated 1 November 2018:</u></td><td><u>Prior to the commencement of both Stage 1b extraction, and the</u></td></tr>
</table>

	(i) 10 metre high mound/barrier. **(ii) 3 metre high barrier.** **(iii) Barrier adjacent ramp to tip head – 6 metres high.** **(iv) Enclosed tip head – 3 sides and roof – open to the north.**	**commissioning of the new primary and secondary crushing plant**
12B	**Retain the earth/rock embankment to the west of the batching plant as shown on Schematic of Proposed Plant Layout, drawing no. DA2 001 R3, prepared by Groundwork Plus and dated 14 March 2019.**	**At all times**
12C	**Submit certification from a suitably qualified acoustic consultant to Council confirming that the acoustic barriers/mounds have been constructed in accordance with condition 12A of this approval.**	**Prior to the commencement of both Stage 1b extraction, and the commissioning of the new primary and secondary crushing plant**
12D	**(a) Submit to the Council, a construction noise management plan (CNMP) that identifies the following:** • **duration and location of works,** • **expected key noise sources,** • **noise management and mitigation measures adopted for each stage of construction** • **details of community liaison and notification procedures** **Where extensive construction works which generate high noise levels are proposed over a period of weeks, the CNMP should incorporate respite periods into the noise management procedures.** **(b) Carry out the construction of the development in accordance with the CNMP prepared under part (a) of this condition.**	**(a) and (b) Prior to the commencement of both Stage 1b extraction, and the commissioning of the new primary and secondary crushing plant**
AIR QUALITY		
13	Implement the following dust control measures: (a) Seal and maintain the access road by appropriate measures which may include watering, sweeping and/or vacuum cleaning.so as to minimise silt loading; **(aa) Maintain a supply of spare parts for the dust control sprinkler systems and spare filters for the dust baghouse at the concrete batching plant on site.** (b) Operate a wheel wash or alternative measure at the site to minimise silt loading on the access road; (c) Cover the haul road between the pit and the tip head with secondary crusher scalps and dampen by a water truck (2 litres/m^2/hour) as required; (d) Fit dust extraction systems on rock drill with collectors and wet drilling by water sprays; and (e) Progressively stabilise completed quarry areas by mulching and planting. (f) Enclose crushers and fine material screens; (g) Cover the surge screen at the top of the overland conveyor; (h) Include luffing, slewing and telescoping units which minimise drop height; on conveyors to stockpiles; (i) Fit conveyors carrying primary and secondary crushed stone with water sprays at all transfer points; (j) Cover the overland conveyor from the primary crushing station to the main processing plant, allowing maintenance access on one side; (k) Cover conveyors transporting material that has been crushed to tertiary or finer grade, and provide water sprays at transfer points. **(l) Fully enclose the conveyor from the secondary crusher to the main processing area to minimise release of dust.**	(a) to (e) At all times (f) to (**l**~~k~~) At all times after completion of **the relevant** building work

<table>
<tr><td></td><td></td><td></td></tr>
<tr><td>14</td><td><u>A weather station is to be installed at a location suitable for assessing wind speeds at open erodible surfaces, and operated continuously. The meteorological sensors should be located at a minimum height of 2 metres. The monitoring data should be reviewed continuously and use as a basis for determining requirements for operation of stockpile sprinklers and haul route watering as follows:</u>
<u>(i) Sprinklers on stockpiles and open, erodible areas should be operated when wind speeds exceed 5.4m/s. for clarity, sprinklers on conveyors and discharges to stockpiles should be operated at all times;</u>
<u>(ii) Watering of internal, unsurfaced haul routes must occur during all approved operational hours at a rate of 2 litres/m2/hour except where 0.25mm or more rainfall has occurred in the prior 24 hour period.</u>
~~Use a weather station to assist in anticipating adverse meteorological conditions that may give rise to dust generation and implementation of operational changes and improve mitigation to avoid adverse impacts.~~</td><td>At all times</td></tr>
<tr><td colspan="3">BLASTING</td></tr>
<tr><td>~~15~~</td><td>~~Undertake blasting activities only Monday to Friday – 9:00am to 5:00pm. No blasting is to occur at any other time or on public holidays~~</td><td>~~At all times~~</td></tr>
<tr><td>~~16~~</td><td>~~Noise from blasting operations must not exceed an airblast over-pressure level of 115 dB Linear Peak for nine (9) out of ten (10) consecutive blasts when measured at any noise sensitive place or commercial place.~~</td><td>~~At all times~~</td></tr>
<tr><td>~~17~~</td><td>~~Noise from blasting operations must not exceed an airblast over pressure level of 120 dB Linear Peak for any blast when measured at any noise sensitive place or commercial place.~~</td><td>~~At all times~~</td></tr>
<tr><td>~~18~~</td><td>~~The ground-borne vibration must not exceed a peak particle velocity (PPV) of 5 mm per second for nine (9) out of ten (10) consecutive blasts.~~</td><td>~~At all times~~</td></tr>
<tr><td>~~19~~</td><td>~~The ground-borne vibration must not exceed a PPV of 10 mm/s for any blast.~~</td><td>~~At all times~~</td></tr>
<tr><td>~~20~~</td><td>~~All blast monitoring data, including vibration and overpressure measurements, is to be provided to the Department of Environment and Heritage Protection (or its successor) upon request.~~</td><td>~~At all times~~</td></tr>
<tr><td>~~21~~</td><td>~~The development must ensure that the airblast overpressure and ground vibration limits in Table 3 are not exceeded at all adjacent residences. Ground vibration and airblast overpressure monitoring must be undertaken for all blasts at a location as close as practical to the nearest residence(s).~~
<table><tr><th colspan="3">~~Table 3 Airblast Overpressure and Vibration Limits~~</th></tr><tr><td rowspan="2">~~Parameter~~</td><td colspan="2">~~Threshold Value (as measured at the sensitive or commercial place)~~</td></tr><tr><td>~~Monday to Friday 9am – 5pm~~</td><td>~~Other times and public holidays~~</td></tr></table></td><td>~~At all times~~</td></tr>
</table>

	~~Vibration~~	~~a. the ground borne vibration must not exceed a peak particle velocity (PPV) of 5 mm/s for nine (9) out of ten (10) consecutive blasts; and~~ ~~b. the ground borne vibration must not exceed a PPV of 10 mm/s for any blast.~~	~~No blasting to occur~~	
	~~Airblast overpressure~~	~~a the airblast overpressure must not exceed 115 dB Linear Peak for nine (9) out of ten (10) consecutive blasts; and~~ ~~b the airblast overpressure must not exceed 120 dB Linear Peak for any blast.~~	~~No blasting to occur~~	
COMMUNITY ENGAGEMENT				
22	Submit, and have approved by Council a post-approval Community Engagement Strategy for compliance assessment in accordance with the relevant sections of Redlands Planning Scheme Part 11 Policy 12 – Social and Economic Impact Assessment and including the following information: (a) Details on how, when and where the community will be advised of the details of the development approval by the operator. This must include, as a minimum, an initial engagement prior to works being carried out under this approval and then periodic engagement prior to the commencement of each approved stage of the development. (b) Details on the formulation of a Community Reference Group, as required by conditions of this approval.			Prior to the commencement of the use or prior to new access road works whichever occurs sooner
23	Establish a Community Reference Group to facilitate the effective management of the social and environmental issues associated with the development. The Group must: (a) be chaired by the Quarry Manager (or appropriate delegate); (b) include representatives from Redland City Council, interested community groups and individual surrounding land owners; and (c) establish a Terms of Reference for the Group that is founded on transparency and clearly identifies the purposes and objectives of the Group.			Prior to the use commencing and ongoing
24	Provide to Council details of the Community Reference Group, including the: (a) list of members in the Group; (b) Terms of Reference for the Group; and (c) proposed meeting schedule for the Group.			Prior to the use commencing
DESIGN				
25	(a) Submit, and have approved by Council floor plans and elevations of all proposed buildings for Compliance Assessment in accordance with Redlands Planning Scheme Part 4 Division 21 – Rural Non-Urban Zone Code – Specific Outcomes S2.1 and S2; (b) The heights of the buildings are to be generally in accordance with the reduced levels (RLs) identified on the approved plan titled, Conceptual Plant Layout. The submitted plans must indicate the			Prior to the commencement of building work

	finished floor levels referenced to Australian Height Datum, must be to scale and must be fully dimensioned.	
26	If the existing Energex Easement E on SP102535 is relocated in accordance with the conditions contained in Energex's advice agency response dated 1 November 2013, a plan indicating the location of the new easement and any proposed clearing or planting is to be submitted to Council for approval so as to ensure that impacts on, for example, vegetation, fauna movement, stormwater and visual amenity are suitably addressed and minimised.	Prior to the relocation of the existing electrical infrastructure located within Easement E on SP102535 and the reinstatement of an easement in favour of Energex for the relocation
27	Locate, design and install outdoor lighting, where required, in accordance with the relevant Australian Standards, to minimise the potential for light spillage to cause nuisance to neighbours.	At all times
ECOLOGY		
28	~~(a) Submit to the Department of Environment and Heritage Protection and submit to and have approved by Council a revised Habitat Management Plan which is generally in accordance with the Habitat Management Plan prepared by BAAM Pty Ltd dated 2 December 2010 and a revised Integrated Koala and Koala Habitat Report, which is generally is accordance with the Integrated Koala and Koala Habitat Report prepared by BAAM Pty Ltd dated 18 November 2010. These documents must:~~ ~~(i) provide detailed design of structures and demonstrates that safe koala (and other fauna) movement will be provided and maintained across the north of the site;~~ ~~(ii) quantitatively confirms the ecological equivalence between the impact area and offset sites;~~ ~~(iii) provide a detailed assessment of potential impacts and management strategies to avoid mortality or injury to koalas during the construction and operational phases and address koala movement (barriers to movement, safe movement opportunities, fencing and indirect operational impacts on adjacent high value bushland habitat);~~ ~~(iv) Provide the following additional detail, including the key management plan elements, including:~~ ~~– responsible entity/ personnel;~~ ~~– performance targets;~~ ~~– implementation strategies/ mitigation measures;~~ ~~– audit and review provisions;~~ ~~– monitoring; and~~ ~~– corrective action processes; and~~ ~~(v) recalculate the proposed non-juvenile koala trees to be offset, based on the identified highest estimated trees to be removed within vegetation polygons 1, 3, 5, and 6, being 13, 953, as indicated in the Koala Tree Survey Report prepared by BAAM dated 18 November 2010 in addition to the trees identified to be removed within vegetation polygons 2, 4 and 7. This is expected to equate to a total of 15,499 non-juvenile koala trees to be offset.~~ ~~(b) The revised Habitat Management Plan referred to in (a) above is also to provide details on:~~ ~~(i) pre-disturbance surveys for Macadamia;~~ ~~(ii) propagation of Macadamia;~~	~~Prior to the clearing of any mapped Remnant Vegetation~~

	~~(iii) development and improvement of the recovery plan for Corchorus cunninghamii;~~ ~~(iv) consultation with the relevant authorities to manage remnant vegetation to support Corchorus; and~~ ~~(v) appropriate fire management to support Corchorus.~~ **(a) Enter into an agreed delivery arrangement to deliver an environmental offset in accordance with the *Environmental Offsets Act 2014 to* counterbalance the significant residual impacts on matter/s of state environmental significance being 10,400 of non-juvenile Koala (*Phascolarctos cinereus*) habitat trees.** ***Note: Deemed conditions provided in section 16 of the* Environmental Offsets Act 2014 *also apply to this approval.*** **(b) The impact(s) authorised in Condition 28(a) may be carried out in stages.** **(c) The environmental offset requirement detailed in Condition 28(a) can be delivered for each stage of impact.** **(d) Prior to the commencement of each stage, the Department of Environment and Science must be provided with a report, completed by an appropriately qualified person, which analyses the following:** **(i) For the forthcoming stage – the estimated impact to each prescribed environmental matter; and** **(ii) For the previous stage(s), if applicable – the actual impact to each prescribed environmental matter, to date.**	**As indicated**
29	Condition deleted.	
~~30~~	~~Submit a request to Chief Executive administering the *Vegetation Management Act 1999* to have the koala offset areas as identified in the Koala Tree Offset Strategy prepared by BAAM dated 2 December 2010 and the Koala Offset Site Management Plan prepared by BAAM dated 18 November 2010, declared as areas of high nature conservation value under Section 19E of the *Vegetation Management Act 1999*.~~	~~Prior to the clearing of any mapped Remnant Vegetation~~
~~31~~	~~Submit, and have approved by Council a request for compliance assessment for the proposed declared area management plan, to accompany a request for declaration under section 19E of the *Vegetation Management Act 1999* in accordance with the relevant sections of the South East Queensland Koala Conservation State Planning Regulatory Provisions. This plan must be approved before it is provided as part of the request for declaration to the Chief Executive responsible for administering the *Vegetation Management Act 1999*.~~	~~Prior to the commencement of the use~~
~~32~~	~~Submit to Council a current title search showing the vegetation management notation on the title, which demonstrates that the declaration has been made and written notice provided to the Registrar of Titles in accordance with Section 19K of the *Vegetation Management Act 1999*.~~	~~Within 14 days of being notified or otherwise becoming aware that the notation on title has been made~~
33	Submit to the Department of Natural Resources and Mines, the Department of Environment and Heritage Protection and Council for approval a revised Rehabilitation of Post Extraction Area Management Plan, generally in accordance with the Rehabilitation of Post Extraction Area Management Plan of the Site Environmental Management Plan, prepared by Groundwork Plus dated 19 November 2010 as amended by these conditions of approval, which quantitatively confirms the ecological equivalence between the impact area and rehabilitation sites.	Prior to the clearing of any mapped Remnant Vegetation

34	Submit a revised Site Environmental Management Plan generally in accordance, with the Mount Cotton Quarry Site Environmental Management Plan prepared by Groundwork Plus, dated 19 November 2010. The revisions are to include the amendments required by the conditions of this approval and are to provide, additional detail, including the key management plan elements, as follows: (i) responsible entity/ personnel; (ii) performance targets; (iii) implementation strategies/ mitigation measures; (iv) audit and review provisions; (v) monitoring; and (vi) corrective action processes. The revised Environmental Management Plan must be reflective of the revised documents and conditions forming part of this approval. *Note: Where there is a conflict between the EMP and conditions of approval, the conditions of approval take precedence.*	Prior to the commencement of site works
35	~~Submit a revised Koala Offset Site Management Plan, generally in accordance with the Koala Offset Site Management Plan prepared by BAAM dated 18 November 2010, to the Department of Environment and Heritage Protection for approval which demonstrates compliance with the Offsets for Net Gain of Koala Habitat in South East Queensland Policy, published by the Department of Environment and Heritage Protection. In particular, the applicant must achieve a net benefit ratio of 5:1 for all non-juvenile Koala trees proposed to be cleared.~~ ~~In relation to juvenile koala habitat, the following points must also be addressed:~~ ~~(a) identify the location of existing koala habitat (survey plan/tree plot with non-juvenile and juvenile koala habitat trees);~~ ~~(b) exclude existing mature koala habitat trees from any formal calculation of the offset obligation;~~ ~~(c) determine the number of juvenile koala habitat trees (regrowth) which can be counted towards the offset requirement by using the following principles:~~ ~~a. estimate the number of juvenile regrowth trees which will most likely reach maturity. This may be done by calculating the stems per hectare of mature koala habitat trees for that particular regional ecosystem type as described in the Policy;~~ ~~*Note: Not all regrowth juvenile koala habitat trees can be counted towards the offset obligation as some regrowth may occur in highly dense clumps which over time will naturally thin out. These trees will not achieve the overall outcomes for establishing koala habitat described in the Policy.*~~ ~~(d) actively manage the site to ensure that the offset management obligation is achieved. This includes compensating for the loss of trees;~~ ~~(e) revegetate the remainder of the site in accordance with the principles described in the Policy;~~ ~~(f) provides justification for the utilisation of regrowth that will contribute to the overall offset obligation;~~ ~~(g) achieve the offset obligation in terms of the number of mature koala habitat trees regardless of whether revegetation is done through revegetation, replanting or a combination of these options.~~ ~~*ADVICE: For example, based on an offset site of one hectare, if the site had a pre-clearing regional ecosystem canopy stem density of 500 stems per hectare and the site had existing regrowth juvenile koala habitat trees at a density of*~~	~~Prior to the clearing of any mapped Remnant Vegetation~~

	~~*1000 stems per hectare spread across the site, then only 500 regrowth stems can be counted towards the offset obligation. Note that this outcome is based on the assumption that the regrowth is spread across the site and not confined to one or more highly dense patches; building on the above example, if the offset obligation was for the establishment of 500 non-juvenile koala habitat trees (for the clearing of 100 non-juvenile koala habitat trees) and 2000 m of area on the offset site (one hectare) currently contained regrowth juvenile koala habitat trees, this would mean that 100 regrowth stems could be counted towards the 500 stems offset obligation. If the regrowth area had more than 100 juvenile koala habitat trees, the additional trees could not be counted. To complete the offset obligation, a further 400 non-juvenile koala habitat trees would need to be established on site. (Note that this example does not factor in replanting at higher densities to compensate for plant mortality that may occur on the site);*~~ ~~*Note: The decision of incorporating regrowth of koala habitat trees will be at the discretion of the relevant authority.*~~ **(a) Implement the approved koala offset strategy, generally in accordance with the following documents:** **(i) Habitat Management Plan, prepared by BAAM Ecological Consultants Pty Ltd, dated 23 July 2021;** **(ii) Integrated Koala and Koala Habitat Reports prepared by BAAM Ecological Consultants Pty Ltd, dated 9 December 2021; and** **(iii) Koala Offset Site Management Plan (KOSMP) prepared by BAAM Ecological Consultants Pty Ltd dated 9 December 2021.** **(b) The koala offset strategy must provide a 3:1 offset for all identified non-juvenile koala trees to be offset, based on the identified highest estimated number of trees, which equates to a total of 10,400 non-juvenile koala trees to be offset**	**(a) (i) - (ii) and (b) Prior to the commencement of any works that impact on the Koala or its habitat within Stage 1B and any subsequent stages.** **(a) (iii) at all times**
36	Demonstrate to the satisfaction of the Department of Environment and Heritage Protection and Council that the proposed development complies with the following provisions of the South East Queensland Koala Conservation State Planning Regulatory Provision: (a) During construction phases and for the life of operational activities: (i) measures are taken in construction and operational practices to not increase the risk of death or injury to koalas; and (ii) native vegetation that is cleared and in an area intended to be retained for safe koala movement opportunities is progressively restored and rehabilitated. (b) Native vegetation clearing is undertaken as sequential clearing and under the guidance of a koala spotter where the native vegetation is a non-juvenile koala habitat tree. (c) Native vegetation is progressively restored and rehabilitated once extractive operations have ceased on that part of the premises. (d) Landscaping activities provide food, shelter and movement opportunities for koalas consistent with the site design. (e) Operational activities are staged in line with operational need.	At all times
37	At the time periods specified in the revised Habitat Management Plan referred to in condition ~~28~~ **35** of this approval undertake monitoring and maintenance to the koala offset areas generally in accordance with the approved Habitat Management Plan, as amended by these conditions, unless otherwise varied by the declared area management plan.	At all times

38	Upon request by a duly authorised Council officer, provide to Council, within 10 business days of the request being made, copies of the outcomes of monitoring conducted in accordance with the revised Habitat Management Plan referred to in condition ~~28~~ **35** of this approval, unless otherwise varied by the declared area management plan. Maintain suitable records of the monitoring programs that enable this information to be provided.	At all times
39	a) Submit, and have approved by Council plans for earthworks and access works that identify fauna crossings over or under the new access road, in accordance with the relevant sections of the Department of Transport and Main Roads Fauna Sensitive Road Design Manual – Volume 2, Chapter 6. The plans must detail the designs of the crossings and any directional fencing proposed to give the crossings full effect for fauna usage. b) Submit, and have approved by Council plans that identify fauna crossings under the elevated conveyor belt between the processing plant area and the new quarry pit. Such plans are to be in accordance with the relevant sections of the Department of Transport and Main Roads Fauna Sensitive Road Design Manual – Volume 2, Chapter 6.	Prior to the commencement of the use or prior to the commencement of the new access road works whichever occurs sooner Prior to the commencement of building work for the elevated conveyor belt
GEOTECHNICAL		
40	Undertake the recommended measures presented in the approved Groundwork Plus Geotechnical Report dated 20 December 2010.	As indicated and as required and then at all times
INFRASTRUCTURE AND UTILITY SERVICES		
41	External reticulated water supply must only be used for potable use and ablution facilities.	At all times
42	Pay the cost of any alterations to existing public utility mains, services or installations due to building and works in relation to the proposed development, or any works required by conditions of this approval. Any cost incurred by Council must be paid at the time the works occur in accordance with the terms of any cost estimate provided to perform the works.	At the time of works occurring
LANDSCAPING		
43	Submit, and have approved by Council landscape plans for compliance assessment in accordance with the relevant sections of the following: - Redlands Planning Scheme Part 5 Division 7 – Habitat Protection Overlay Code - Redlands Planning Scheme Part 8 Division 8 – Landscape Code - Redlands Planning Scheme Part 9 Schedule 9 – Street Trees - Redlands Planning Scheme Part 9 Schedule 10 – Vegetation Species List - Redlands Planning Scheme Part 9 Schedule 12 – Weed Species List - Redlands Planning Scheme Part 11 Policy 3 Chapter 3 – Landscaping and Chapter 6 – Security Bonding - Redlands Planning Scheme Part 11 Policy 9 Chapter 2 – Documentation and General Conditions, Chapter 10 – Parks and Open Space and Chapter 11 – Landscaping - Redlands Planning Scheme Part 11 Policy 16 – Safer by Design	Prior to the commencement of the use

	The landscape plans must include the following: (a) Details regarding proposed fencing to be located on the site; (b) Details of landscaping and visual mitigation measures within the Energex easement. Provide Council with a copy of Energex approval for the proposed landscaping and visual mitigation measures within the Energex easement.	
STORMWATER MANAGEMENT		
44	**Water Monitoring Plan** Submit, and have approved by Council a Water Monitoring Plan for compliance assessment in accordance with the relevant sections of Redlands Planning Scheme Part 9 Schedule 11 and which includes: (a) A groundwater quality sampling program which includes a minimum of 12 months sampling to establish a baseline water quality data set; (b) Monitoring of groundwater levels in the monitoring bores and RN97706 to confirm the magnitude of predicted groundwater drawdown; (c) A surface water monitoring program which includes: (i) Monitoring of surface runoff water quality in Greenhide/California Creek at Gramzow Road (prior to and during operations); (ii) Monitoring of pit water quality, (iii) Monitoring of discharge volumes and water quality from the water treatment system. (d) A process for preparation of an annual monitoring report that reviews the collected data against water quality objectives for surface and groundwater.	Prior to the commencement of the use
45	**Acid Rock Management Plan** Submit, and have approved by Council an Acid Rock Management Plan for compliance assessment in accordance with the relevant sections of Redlands Planning Scheme Part 9 Schedule 11 that details: (a) A monitoring program to identify whether acid rock drainage is occurring on the site, and (b) Proposed mitigation measures to manage any acid rock drainage identified on the site	Prior to the commencement of the use
46	**Dam Safety Report** If it is intended to use the existing dam on the site for the storage of excess water from disturbed areas on the site, submit to Council for approval a Dam Safety Report, certified by a Registered Professional Engineer of Queensland, to demonstrate that the existing dam structure is suitable for use in quarry operations. The Dam Safety Report should also comply with relevant requirements of the *Water Supply (Safety and Reliability) Act 2008*.	Prior to the commencement of the use
47	**Stormwater Management Plan** Submit and have approved by Council a Stormwater Management Plan for compliance assessment in accordance with the relevant sections of the following: - Redlands Planning Scheme Part 8 Division 9 – Stormwater Management Code - Redlands Planning Scheme Part 11 Policy 3 Chapter 6 – Security Bonding	Prior to the commencement of the use

	- Redlands Planning Scheme Part 11 Policy 9 Chapter 2 – Documentation and General Conditions and Chapter 6 – Stormwater Management - Redlands Planning Scheme Part 9 Schedule 11 – Water Quality Objectives. The Stormwater Management Plan is to be generally in accordance with the Stormwater Assessment and Management Plan, prepared by Gilbert and Sutherland Pty Ltd, dated November 2010 and addresses both quality and quantity in accordance with the Stormwater Management Code and associated policy in the Redlands Planning Scheme, and which includes the following: (a) Details, including a hydraulic assessment, of the surface water diversions for the external catchment of the quarry pit according to the expected flows, protected with appropriate lining to reduce erosion and sediment run-off and details of the energy dissipater discharging to the existing natural watercourse; (b) Details of the Greenhide Creek flood extent and the immunity for flooding to the quarry pit, sedimentation basin, water treatment pond, gravel filter and sedge filters in a 100 Year ARI event (1% AEP); (c) Details of the sedimentation basin, water treatment pond, gravel filter, sedge filters and the pump out system to manage the stormwater run-off from the quarry pit; (d) A detailed erosion and sediment control plan which identifies a. The locations of all proposed disturbed areas on the site, including internal roadways and temporary stockpiles, b. The boundaries of all catchments affected by disturbance on the site, c. The location of proposed sediment control measures and detailed calculations showing how the size of any sedimentation ponds has been determined.	
48	**Site closure plan** Submit a Site Closure and Rehabilitation Plan to Council which details: (a) The proposed final landform for the site, including the final void; (b) Drainage designs and other management measures to be implemented on the site to ensure that the final landform is stable in the long term and environmental impacts are acceptable; (c) A final void water balance based on historical site data, which estimates the long term volume of overflows, if any, from the final void and demonstrates that the water quality of any overflows will meet water quality objectives.	No less than 12 months prior to completion of quarry operations.
49	Manage stormwater discharge from the site in accordance with the Redlands Planning Scheme Policy 9 Chapter 6 – Stormwater Management, so as to not cause an actionable nuisance to adjoining properties. Comply with the Management of Potential Impacts provisions included in the stormwater management plan in relation to sediment and erosion control, maintenance of clean water diversion drains, maintenance of treatment measures, construction phase surface water drainage quality and operational phase surface controls.	At all times
50	Provide a substitute water supply of equivalent quality and quantity if groundwater drawdown in RN97706 renders the bore inoperable.	At all times
TRAFFIC AND ACCESS		
51	All access and egress to the site by vehicles associated with the quarry must be via Mount Cotton Road only.	At all times

52	No vehicular access is permitted from Gramzow Road at any time.	At all times
53	No truck movements associated with the operation or construction of the activities on the site, other than local deliveries, are to occur via Wuduru Road or California Creek Road.	At all times
WASTE		
54	Implement and maintain a comprehensive waste minimisation program as part of the Environmental Management Plan.	Prior to the commencement of the use and then at all times
GENERAL COMPLIANCE ASSESSMENT		
55	Apply to Council for a compliance certificate for the documents and works requiring compliance assessment. The documents and works must be assessed against relevant Council assessment criteria.	As indicated in conditions
OTHER CONDITIONS		
56	**Department of Transport and Main Roads** Conditions set out in **Schedule 4** from the Department of Transport and Main Roads dated 30 August 2013 (DTMR Permit number: No. 24838/13).	
57	**Energex** Conditions set out in **Schedule 5** from ENERGEX dated 1 November 2013 referenced HBD 3701512 297080	
ADDITIONAL DEVELOPMENT PERMITS		
	The following further development permits are necessary to allow the development to be carried out. Please be aware that details of any further approvals, other than a development permit or compliance permit, are provided in the 'Advice' section of this decision. • Development permit for building work, including demolition. *Note: Provide evidence to Council that a development permit for building work comprising demolition has been issued for structures that are required to be removed and/or demolished from the site in association with this development.*	
ASSESSMENT MANAGER ADVICE		
	Department of Community Safety The Department of Community Safety's advice dated 28 October 2013 Ref No 08560-2013 is attached at Schedule **6.**	
	Adopted Infrastructure Charges Adopted infrastructure charges apply to the development in accordance with the State Planning Regulatory Provisions (adopted charges) levied by way of an Adopted Infrastructure Charges Notice.	
	Live Connections	

	Redland Water is responsible for all live water and wastewater connections. It is recommended that contact be made with Redland Water to arrange live works associated with the development. Further information can be obtained from Redland Water on 1300 015 561.
	Other Approvals Please be aware that other approvals may be required for your development. This includes, but is not limited to, the following: • Approvals for plumbing and drainage work. • Compliance assessment. • Road Opening Permit – for any works proposed within an existing road reserve.
	Survey and As-constructed Information Upon request, the following information can be supplied by Council to assist survey and engineering consultants to meet the survey requirements: (a) A map detailing coordinated and/or levelled PSMs adjacent to the site. (b) A listing of Council (RCC) coordinates for some adjacent coordinated PSMs. (c) An extract from Department of Natural Resources and Mines SCDM database for each PSM. (d) Permanent Survey Mark sketch plan copies. This information can be supplied without charge once Council received a signed declaration from the consultant agreeing to Council's terms and conditions in relation to the use of the supplied information. Where specific areas within a lot are being set aside for a special purpose, such as building sites or environmental areas, these areas should be defined by covenants. Covenants are registered against the title as per Division 4A of the *Land Title Act 1994*.
	Services Installation It is recommended that where the installation of services and infrastructure will impact on the location of existing vegetation identified for retention, an experienced and qualified arborist that is a member of the Australian Arborist Association or equivalent association, be commissioned to provide impact reports and on site supervision for these works.
	Fire Ants Areas within Redland City have been identified as having an infestation of the Red Imported Fire Ant (RIFA). It is recommended that you seek advice from the Department of Agriculture, Fisheries and Forestry (DAFF) RIFA Movement Controls in regards to the movement of extracted or waste soil, retaining soil, turf, pot plants, plant material, baled hay/straw, mulch or green waste/fuel into, within and/or out of the City from a property inside a restricted area. Further information can be obtained from the DAFF website www.daff.qld.gov.au
	Cultural Heritage Should any aboriginal, archaeological or historic sites, items or places be identified, located or exposed during the course or construction or operation of the development, the *Aboriginal and Cultural Heritage Act 2003* requires all activities to cease. For indigenous cultural heritage, contact the Department of Environment and Heritage Protection.
	Fauna Protection It is recommended an accurate inspection of all potential wildlife habitats be undertaken prior to removal of any vegetation on site. Wildlife habitat includes trees (canopies and lower trunk) whether living or dead, other living vegetation, piles of discarded vegetation, boulders, disturbed ground surfaces, etc. It is recommended that you seek advice from the Queensland Parks and Wildlife Service if evidence of wildlife is found.
	Environment Protection and Biodiversity Conservation Act

	Under the Commonwealth Government's *Environment Protection and Biodiversity Conservation Act* (the EPBC Act), a person must not take an action that is likely to have a significant impact on a matter of national environmental significance without Commonwealth approval. Please be aware that the listing of the Koala as **vulnerable** under this Act may affect your proposal. Penalties for taking such an action without approval are significant. If you think your proposal may have a significant impact on a matter of national environmental significance, or if you are unsure, please contact Environment Australia on 1800 803 772. Further information is available from Environment Australia's website at www.ea.gov.au/epbc

Schedule 2: Conditions of Approval

Vegetation Clearing

1. VEGETATION OFFSETS

1.1 Prior to commencement of site works, submit to the Department of Natural Resources and Mines, and obtain approval, of a revised Vegetation Offset Rehabilitation Management Plan (VORMP) which demonstrates the compliance with the Policy for Vegetation Management Offsets 2011, and which incorporates the following:

(a) quantitatively confirm ecological equivalence between the impact areas and offset sites, in accordance with the Policy for Vegetation Management Offsets 2011;
(b) details describing how the proposed vegetation offsets will be legally secured;
(c) details of restrictions on activities in the offset area;
(d) how an offset for the impacted watercourse will be provided
(e) essential habitat and management recommendations to propagate and secure threatened Macadamia species and Corchorus species detailed in the Habitat Management Plan (as amended by these conditions) (i.e. Pre-disturbance surveys/ propagation and planting. Consultation/ fire management) need to be carried through to the VORMP;
(f) a yearly schedule of management actions or the estimated time until the offset management objectives and outcomes will be achieved as well as estimate management costs or funding details for achieving the offset objectives;
(g) the management works identified in the Habitat Management Plan, as amended by these conditions, including:
    (i) pre-disturbance surveys for Macadamia;
    (ii) propagation of Macadamia;
    (iii) development and improvement of the recovery plan for Corchorus cunninghamii;
    (iv) consult with the relevant authorities to manage remnant vegetation to support Corchorus;
    (v) appropriate fire management to support Corchorus;
    (vi) Prior to commencement of site works.

1.2 In order to mitigate land degradation and loss of biodiversity and ecological processes, the applicant must implement the *'Mount Cotton Quarry Extension Vegetation Offset Management Plan – Report prepared for Barro Group Pty Ltd – Biodiversity Assessment and Management Pty Ltd – File No. 0241-003b'*, as amended by condition 1.1 of this Schedule, and as amended from time to time, hereafter known as the vegetation offset management plan (VORMP).

1.3 An applicant-signed copy of the VORMP, that the Department of Natural Resources and Mines (DNRM) agrees is in accordance with the approval given under condition 1.1 of this schedule, must be submitted to DNRM within four (4) months of the VORMP being approved.

1.4 Implementation of the VORMP must commence within 6 months of the revised VOMP being approved under condition 1.1 of this schedule.

1.5 If an activity not identified in the VORMP is proposed to be undertaken, an amended VORMP must be submitted to DNRM for approval. The varied activity must not commence until DNRM approves the amended VORMP in writing.

2. VEGETATION CLEARING

2.1 Clearing of remnant vegetation must not occur on the subject lots until:

2.1.1 the VORMP required in condition 1.2 of this schedule has been reviewed and countersigned by DNRM; and

2.1.2 the applicant has been notified by DNRM that a property map of assessable vegetation (PMAV) identifying the vegetation offset areas as a Category A area has been certified and registered on the title of the subject lots.

2.2 To ensure loss of biological diversity is prevented and ecological processes are maintained clearing of remnant vegetation is not permitted in Area A (A1 to A10) identified on Referral Agency Response (Vegetation) Plan RARP 2011/001693 except for the following reasons:

2.2.1 by fire under the *Fire and Rescue Service Act 1990* to reduce hazardous fuel loads or an activity under the *Fire and Rescue Service Act 1990*, section 53, 68 or 69; or

2.2.2 necessary to remove or reduce the imminent risk that the vegetation poses to serious personal injury or damage to property.

2.3 Clearing of remnant vegetation is permitted in Area B (B1 and B2) identified on Referral Agency Response (Vegetation) Plan RARP 2011/001693.

2.4 Clearing of vegetation is not permitted in Area C (C1 to C3) identified on Referral Agency Response (Vegetation) Plan RARP 2011/001693 unless the clearing is in accordance with the approved VORMP.

2.5 Clearing of remnant vegetation is not permitted on land described as Road on RARP2011/001693 unless the clearing is authorised by a development permit for operational work or is not assessable development under schedule 3, part 1, table 4, item 1 *Sustainable Planning Regulation 2009.*

2.6 To ensure loss of biological diversity is prevented and ecological processes are maintained, no structures or infrastructure are permitted in Area A except for those established before the date of this clearing permit.

2.7 No structures or infrastructure are permitted in Area C to ensure loss of biological diversity is prevented and ecological processes are maintained.

2.8 No structures are permitted within 50 metres, or within the firebreak buffer required by relevant legislation, whichever is the lesser in Area A, except for structures established before the date of this clearing permit; and

2.9 No structures are permitted within 50 metres of Area C with the exception of any necessary works within an existing electricity easement.

2.10 Clearing of vegetation outside of Area A and Area C must be staged in line with operational needs.

2.11 Any clearing or activity associated with clearing outside of Area A and Area C must not occur until the clearing area has been clearly defined.

2.12 Any clearing or activities associated with clearing outside of Area A and Area C must not adversely impact on vegetation in Area A or Area C.

2.13 Vegetation cleared outside of Area A and Area C must be felled in a manner that does not result in the vegetation falling into Area A or Area C.

2.14 Where excavation is undertaken adjacent to Area A and Area C the edge of excavation must be stabilised to ensure soil levels in Area A and Area C are maintained.

2.15 Measures used to stabilise excavation areas must not encroach into Area A and Area C.

2.16 Measures used to stabilise excavation areas must be of sufficient depth and/or lateral distance from Area A and Area C to ensure root systems of vegetation in Area A and Area C are not impacted in such a way as to adversely affect the health of the tree.

2.17 Except where inconsistent with the conditions of this permit, any clearing activities, or activities associated with clearing outside of Area A and Area C must be undertaken in accordance with the document entitled '*Mount Cotton Quarry Site Environmental Management Plan – Prepared for Barro Group Pty Ltd – Groundwork Plus – 19 November 2010*', received by DNRM 16 March 2011 and as amended by this condition package, hereafter known as the environmental management plan (SEMP), and any amendments that are consistent with best practice.

2.18 The SEMP must be updated to include the document entitled '*Mount Cotton Quarry Landcare Management Plan – Prepared for Barro Group Pty Ltd – Groundwork Plus – 16 March 2012'*, received by DNRM 16 March 2012.

2.19 All measures used to manage erosion, sediment and stormwater quantity and quality must be designed, installed, operated and maintained in accordance with the EMP and any amendments that are consistent with best practice, to ensure loss of biological diversity is prevented, land degradation does not occur and ecological processes are maintained.

2.20 All disturbed soil and excavated soil must either be contained within the construction boundary or alternatively securely stockpiled or respread in a location where its placement will not result in the clearing of vegetation that is regulated under the *Vegetation Management Act 1999*.

2.21 Land clearing debris must not be pushed into gullies, watercourses, other drainage lines or waterlogged areas.

2.22 To ensure loss of biodiversity is prevented, land degradation does not occur and ecological processes are maintained, rehabilitation/restoration of the approved clearing areas must occur in accordance with the EMP.

2.23 The applicant must ensure a copy of the development approval conditions, development permit, EMP and VORMP, are provided to the principal contractor prior to the commencement of land-disturbing activities.

2.24 The applicant must ensure that any and all employees, contractors, subcontractors, agents or any other person engaged or employed to carry out the clearing of any vegetation under this permit comply at all times with the requirements of this permit and do not clear any vegetation that is not approved to be cleared.

Schedule 3: Environmental Authority
~~**Schedule 3: Conditions of Approval**~~
~~Environmentally Relevant Activities (ERA)~~
~~ERA 8 3(a) – Chemical Storage~~
~~ERA 16 – Extractive and Screening Activities Threshold 2(c)~~
~~ERA 16 – Extractive and Screening Activities Threshold 3(b)~~
~~ERA 21 – Motor Vehicle Workshop Operation~~

~~EHP Permit number: SPECE01725511~~

~~**Agency Interest: General**~~

~~G1 All reasonable and practicable measures must be taken to minimise the likelihood of environmental harm being caused.~~

~~G2 Any breach of a condition of this approval or any adverse impact on an environmental value must be reported to the administering authority in writing within 24 hours of becoming aware of the breach or the impact and any subsequent actions undertaken.~~

~~G3 All information and records that are required by the conditions of this approval must be kept for a period of at least 5 years.~~

~~G4 The activity must not be carried out until financial assurance has been given to the administering authority as security for compliance with this approval and any costs or expenses, or likely costs or expenses, mentioned in section 298 of the *Environmental Protection Act 1994*.~~

~~G5 If the administering authority increases the amount of financial assurance, the additional financial assurance must be given to the administering authority within 28 days of receiving written notice.~~

~~G6 Other than as permitted within this environmental authority, the release of a contaminant into the environment must not occur.~~

~~G7 An appropriately qualified person(s) must monitor, interpret and record all parameters that are required to be monitored, in the manner provided, as specified in this approval.~~

~~G8 When requested by the administering authority, monitoring must be undertaken in the manner prescribed by the administering authority, to investigate a complaint of environmental nuisance caused by the activity. The monitoring results must be provided to the administering authority upon request.~~

~~G9 The activity must be undertaken in accordance with written procedures that:~~

- ~~(a) identify potential risks to the environment from the activity during routine operations and emergencies;~~
- ~~(b) establish and maintain control measures that minimise the potential for environmental harm;~~
- ~~(c) ensure plant, equipment and measures are maintained in a proper and effective condition;~~

(d) ensure plant, equipment and measures are operated in a proper and effective manner;
(e) ensure that staff are trained and aware of their obligations under the Environmental Protection Act 1994; and
(f) ensure that reviews of environmental performance are undertaken at least annually.

G10 Nuisance (exemption)

For the purpose of nuisance conditions A1, A6, N1, N5 and N8; any part of the unformed road bisecting and adjoining Lot 17 RP108970, Lot 370 S311071 and Lot 162 S31962, and the land comprising the part of Greenhide (California) Creek located between Lot 162 SP31962 and Lot 238 SP218968 which is the property of the state is exempt from the definition of a "sensitive place".

Agency Interest: Air

A1 Odours, dust or airborne contaminants which are noxious or offensive or otherwise cause environmental nuisance must not be released to any sensitive place or commercial place.

A2 Dust and particulate matter must not exceed a dust deposition of 120 milligrams per square metre per day, when monitored in accordance with Australian Standard AS 3580.10.1 of 2003 (or more recent editions), when measured at any nuisance sensitive or commercial place.

A3 Dust and particulate matter with an aerodynamic diameter of less than 10 micrometer (PM_{10}) suspended in the atmosphere must not exceed a 50 micrograms per cubic meter over a 24hour average when monitored in accordance with Australian Standard AS 3580.9.6, when measured at any nuisance sensitive or commercial place.

A4 **Ambient Dust Monitoring Program**
(a) Prior to the commencement of the activity, an Ambient Dust Monitoring Program must be developed and submitted to the administering authority, to specify how the ambient dust impacts of the project will be monitored. This Program must then be implemented upon commencement of the activity. The Program must include, but not necessarily be limited to:
(i) procedures for monitoring dust emissions from the project, in order to meet the requirements of this approval;
(ii) locations, frequencies and methods for monitoring PM_{10} and deposited particulate matter;
(iii) provision for the use of at least one PM_{10} monitoring station, five dust depositional gauges and one meteorological station capable of monitoring wind direction and speed;
(iv) using air quality monitoring data to inform environmental management decisions associated with the project; and
(v) a framework for identifying actual and potential dust impacts, and for applying pro-active and reactive mitigation and management measures to address those impacts.

(b) Ambient dust monitoring must be conducted in accordance with the following standards:

(i) Australian Standard AS 3580.9.6 of 2003 (or more recent editions) 'Ambient air-Particulate matter- Determination of suspended particulate PM_{10} high-volume sampler with size-selective inlet-Gravimetric method'; or

(ii) any alternative method of monitoring PM_{10} which may be permitted by the 'Air Quality Sampling Manual' as published by the administering authority.

(iii) Australian Standard AS 3580.10.1:2003: Methods for sampling and analysis of ambient air - Determination of particulate matter - Deposited matter - Gravimetric method.

(iv) Australian Standard AS 2923:1987: Ambient air - Guide for measurement of horizontal wind for air quality applications.

A5 Where monitoring at locations identified in the Ambient Dust Monitoring Program indicates that the air quality objectives detailed in Conditions A2 and A3 have been exceeded, within 14 days the matter must be investigated and the following information reported to the administering authority:

(a) the concentration of PM_{10} particulates or dust deposition rate recorded;

(b) a description of meteorological conditions occurring at the time; and

(c) the measures taken to reduce dust generated by the quarry activities.

A6 (a) When requested by the administering authority or as a result of a complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer), additional monitoring of dust deposition, PM_{10}, $PM_{2.5}$ and crystalline silica must be undertaken, and the results thereof notified to the administering authority within 14 days following completion of the monitoring. This includes providing interim reports if the monitoring lasts for more than one month.

Note: This monitoring must be carried out at a place(s) relevant to the potentially affected dust sensitive place. Monitoring must be conducted in accordance with the appropriate standards.

(b) If monitoring conducted as a result of a complaint indicates an exceedance of the air quality objectives detailed in Conditions A2 and A3:

(i) dust abatement measures must be implemented; and

(ii) the complaint must be addressed through the use of appropriate dispute resolution if required.

A7 The results of PM_{10}, dust deposition and meteorological monitoring must be reported to the administering authority on request.

(a) Following the collection of twelve (12) months of representative ambient dust monitoring data in accordance with Condition A4(a), a model validation study must be undertaken to review PM_{10} and dust deposition levels to assess compliance with the dust impact predictions made in the documents entitled: "MWA Dust Impact Assessment Report, 201O" and with the ambient air quality objectives specified in Conditions A2 and A3. The model validation study must be undertaken in accordance with NSW DECC *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (DECC, 2005), and specific requirements of the administering authority.

(b) Within 28 days of conducting the dust validation study referred to under Condition A8(a) of this approval a copy of the report must be provided to the administering authority. If the dust validation study identifies any exceedances of levels permitted in the ambient air quality objectives of Environmental Protection (Air) Policy 2008, details must be provided of the additional measures that will be implemented to further mitigate dust impacts. The report must also contain the following information:
(i) who will implement these measures; and
(ii) when these measures will be implemented; and
(iii) how the effectiveness of these measures will be assessed and reported to the administering authority.

Agency Interest: Land

L1 **Land Rehabilitation**

The site (including all disturbed areas such as slopes, borrow pits, stockpile and screening areas) must be rehabilitated in a manner such that:
(a) suitable native species of vegetation are planted and established;
(b) potential for erosion of the site is minimised;
(c) the quality of stormwater, other water and seepage released from the site is such that releases of contaminants such as suspended solids, turbidity, total dissolved salts, pH, total iron, total aluminium, and total manganese are not likely to cause environmental harm;
(d) the likelihood of environmental nuisance being caused by release of dust is minimised;
(e) the water quality of any residual water body meets relevant criteria for subsequent uses and does not have potential to cause environmental harm;
(f) the final landform is stable and not subject to slumping; and
(g) any actual and potential acid sulfate soils in or on the site are either not disturbed, or are submerged or treated, so as to not be likely to cause environmental harm.

L2 Rehabilitation of disturbed areas must take place progressively as works are staged and new areas of extraction are commenced.

L3 For the purpose of demonstrating compliance with conditions L1 and L2, a land rehabilitation audit must be conducted within 3 months of completion of each stage of the quarry.

L4 The audit detailed in condition L3 must be conducted by a suitably qualified third party auditor.

L5 In relation to the audit required by condition L3, the auditor must submit a final version of the auditor's report to the administering authority within 28 days of completing the audit.

L6 Spillage of all chemicals and fuels must be contained within an on-site containment system and controlled in a manner that prevents environmental harm.
NOTE: All petroleum product storage's must be designed, constructed and maintained in accordance with AS 1940 - Storage and Handling of Flammable and Combustible Liquids.

Agency Interest: Noise

N1 Noise from the activities must not result in noise levels at noise sensitive places (e.g. at dwellings) greater than those specified in Table 1 - Recommended Noise Limits for Approval.

Table 1 - Noise Limits

Location Noise Sensitive Land Uses	**Noise Limits (dBA LAeq,aj,T(15min))**		
	Morning (6am – 7am)	**Daytime (7am – 6pm)**	**Evening (6pm – 10pm)**
To the West	35[1]	35	35
To the South	41[1]	41	41
To the East/South-east	45	45	42
To the east	46	47	40

[1] *Note: The noise limits for the morning period have been kept consistent with the daytime period, since it is not believed to be appropriate to have a higher noise limit during the morning period.*

N2 **Noise Monitoring**

When requested by the administering authority, noise monitoring must be undertaken to investigate any complaint of noise nuisance that the administering authority considers is not frivolous or vexatious, and the results notified within 14 days to the administering authority. Monitoring must include:
(a) airblast overpressure (dB (Lin) Peak);
(b) $LA_{eq, adj\ T}$
(c) $LA_{10, adj\ T}$
(d) $LA_{1, adj\ T}$
(e) ambient and background noise levels;

(f) the level and frequency of occurrence of impulsive or tonal noise;
(g) atmospheric conditions including wind speed and direction;
(h) effects due to extraneous factors such as traffic noise; and
(i) location, date and time of recording.

N3 The method of measurement and reporting of noise levels must comply with the latest edition of the administering authority's *Noise Measurement Manual.*

N4 For the purpose of conditions N1 and N2, the measurement duration, T, must be determined by an appropriately qualified person, so as to adequately represent and validate the data.
Note: The minimum value for T must be:
- *15 minutes for continuous steady noises*
- *1 hour for intermittent noises*

N5 **Explosive blasting nuisance**

Explosive blasting for the ERA must not cause an environmental nuisance at any nuisance sensitive place or commercial place.

N6 Explosive blasting must be carried out within the time specified in Table 2 unless otherwise approved by the administering authority due to a meteorological and/or safety reasons that it must occur at the time outside of the specified times.

N7 The vibration and the air blast overpressure from the activity must not exceed the levels specified in Table 2 - ***Airblast Overpressure and Vibration Limits*** Ground vibration and airblast overpressure monitoring must be undertaken for all blasts at a location as close as practical to the nearest residence(s).

Table 2 Airblast Overpressure and Vibration Limits

Parameter	Threshold Value (as measured at the sensitive or commercial place)	
	Monday to Friday 9am – 5pm	Other times and public holidays
Vibration	(a) the ground-borne vibration must not exceed a peak particle velocity (PPV) of 5 mm/s for nine (9) out of ten (10) consecutive blasts; and (b) the ground-borne vibration must not exceed a PPV of 10 mm/s for any blast.	No blasting to occur
Airblast overpressure	(a) the airblast overpressure must not exceed 115 dB Linear Peak for nine (9) out of ten (10) consecutive blasts; and (b) the airblast overpressure must not exceed 120 dB Linear Peak for any blast.	No blasting to occur

N8 **Vibration Monitoring**

When requested by the administering authority, vibration monitoring and recording must be undertaken to investigate any complaint of vibration nuisance that the administering authority considers is not frivolous or vexatious, and the results notified within 14 days to the administering authority. Monitoring must include:

(a) peak particle velocity (mm/s);
(b) location of the blast/s within the site (including which bench level);
(c) atmospheric conditions including temperature, relative humidity and wind speed and direction;
(d) the level and frequency of occurrence of impulsive or tonal noise;
(e) effects due to extraneous factors; and
(f) location, date and time of recording.

N9 For vibration monitoring the ground-borne vibration transducer (or array) must be attached to a mass of at least thirty (30) kg to ensure good coupling with the ground where the blast site and the measurement site cannot be shown to be on the same underlying strata. The mass must be buried so that its uppermost surface is at the same level as the ground surface.

N10 The ground-borne vibration transducer (or array) must be placed at a distance of at least the longest dimension of the foundations of a noise-affected dwelling away from such dwelling and between that dwelling and the site of the blasting.

N11 All third party blast records, including the location of the blast monitoring, must be kept and submitted to the administering authority upon request.

Agency Interest: Social

S1 **Complaint Response**

The operator of the ERA must record the following details for all complaints received and provide this information to the administering authority on request:

(a) Time, date, name and contact details of the complainant;
(b) reasons for the complaint;
(c) any investigations undertaken;
(d) conclusions formed; and
(e) any actions taken

Agency Interest: Water

WA 1 Contaminants must not be released from the approved place to any waters, bed and banks of any waters, roadside gutter or stormwater drains outside the approved place except in accordance with the conditions.

WA2 **Monitoring**

Monitoring must be undertaken and records kept of contaminant releases to waters from the discharge location in accordance with the approved Stormwater

Management Plan. All determinations of the quality of contaminants released must be:
(a) made in accordance with methods prescribed in the latest edition of the administering authority's Water Quality Sampling Manual; and
(b) carried out on samples that are representative of the discharge.

WA3 The size of any sedimentation dam must be sufficient to contain the runoff expected from an extraction or processing area from a 24 hour storm with an average recurrence interval of 1 in 5 years.

WA4 A stormwater management and erosion and sediment control audit must be conducted within 3 months of the completion of the stormwater treatment system.

WA5 The audit detailed in condition WA4 must be conducted by a suitably qualified third party auditor.

WA6 The audit detailed in condition WA4 must also be conducted within 3 months of the commencement of each stage of the quarry.

WA7 In relation to the audit required by condition WA4, the auditor must submit a final version of the auditor's report to the administering authority within 28 days of completing the audit.

Agency Interest: Waste

WS1 All waste generated in carrying out the activity must be reused, recycled or removed to a facility that can lawfully accept the waste.

WS2 The operator must not:
(a) burn waste on site;
(b) allow waste to be burned on site; or
(c) remove waste from site to be burned elsewhere, unless at a suitable facility that is authorised to incinerate waste.

WS3 Where regulated waste is removed from the licensed premises, the holder of this license must retain the record provided by the registered waste removalist.

~~Assessment Manager Advice~~

~~The following advice is provided by the Department of Environment and Heritage Protection:~~

~~"A DA application was made prior to 31 March 2013 and is granted post the commencement of the amended EP Act.~~
~~If the DA application in progress is approved, the client will be issued a DA. However, once the DA is issued, they will need to use the transitional conversion application to convert the DA to an EA under s.678A of the EP Act. This document is EM1100. No fees are required to make this application.~~

~~The conditions on the DA (imposed by the administering authority under the EP Act) will be removed from the DA and placed on the EA. These conditions (imposed due to the trigger requiring an MCU for an ERA) become the EA and are no longer part of the DA, they become the operational conditions for the activity and will be subject to enforcement provisions under the EP Act. It is an offence to conduct and ERA without an EA therefore the client will need to convert the DA conditions to an EA (per s678A) prior to commencing the activity. The application is available on the BIP website and the document is EM1100. No fees are required to make this application."~~

Definitions for Schedule 3

Key terms and/or phrases used in this document are defined in this section and bolded throughout. Note that where a term is not defined, the definition in the *Environmental Protection Act 1994,* its regulations or environmental protection policies must be used. If a word remains undefined it has its ordinary meaning.

"activity/ies" means the environmentally relevant activities, whether resource activities or prescribed activities, to which the approval relates,

"administering authority" means the Department of Environment and Heritage Protection or its successor.

"approval" means 'notice of development application decision' or 'notice of concurrence agency response' under the *Sustainable Planning Act 2009.*

"approved place" means the place authorised under this approval for the carrying out of the specified ERAs.

"airblast overpressure (or airblast level)" is the energy transmitted from the blast site within the atmosphere in the form of pressure waves. As these waves pass a given position, the pressure of the air rises very rapidly then falls more slowly then returns to the ambient value after a number of oscillations. The pressure wave consists of both audible (noise) and inaudible (concussion) energy. The maximum excess pressure in this wave is known as the peak air overpressure, generally measured in decibels using the linear frequency weighting.

"appropriately qualified person(s)" means a person or persons who has professional qualifications, training, skills or experience relevant to the nominated subject matter and can give authoritative assessment, advice and analysis to performance relative to the subject matter using the relevant protocols, standards, methods or literature.

"background" noise means either:

(a) LA90, r being the A-weighted sound pressure level exceeded for a relevant the time period measured in the absence of the noise under investigation, using fast response, or

(b) LAbg, r being the arithmetic average of the minimum readings measured in the absence of the noise under investigation during a relevant time period, using fast response.

"boundary" means within 1 (one) meter of the cadastral boundary of the approved place.

"commercial place" means a place used as a workplace, an office or for business or commercial purposes and includes a place within the curtilage of such a place reasonably used by persons at that place.

"disturbed areas", or words to that effect, means:

(a) contaminated land; or

(b) land that has been disturbed and human intervention is needed to rehabilitate it;

(i) including:

- mining or quarrying areas including processing plant, stockpiles and tailings areas;
- areas where soil has been compacted, removed, covered, exposed or stockpiled;

- areas where vegetation has been removed or destroyed to an extent where the land is susceptible to erosion;
- areas where land use suitability or capability has been diminished;
- areas within waters where mining/quarry activities occur;
- areas submerged by tailings or hazardous contaminant storage dams in all cases;
- areas under temporary infrastructure e.g. roads, tracks, bridges, culverts, dams, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads which is to be removed after mining/quarrying has ceased; and

(ii) not including:

- areas off mining lease or quarry site (e.g. roads or tracks which provide access to the mining lease or quarry site);
- areas previously significantly disturbed which have achieved rehabilitation outcomes;
- by agreement with the administering authority, areas previously significantly disturbed which have not achieved rehabilitation objectives due to circumstances beyond the control of the authority/approval holder (such as climatic conditions);
- areas under permanent infrastructure e.g. roads, tracks, bridges, culverts, dams, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads which are to be lawfully left on the site after cessation of mining/quarrying.

"Dwelling" means any of the following structures or vehicles that is principally used for habitation:

(a) a house, unit, motel, nursing home or other building or part of a building; a caravan

(b) mobile home or other vehicle or structure on land; or

(c) a water craft in a marina.

"environmental nuisance" (the Act) is unreasonable interference or likely interference value caused by -

(a) aerosols, fumes, light, noise, odour, particles or smoke; or

(b) an unhealthy, offensive or unsightly condition because of contamination; or

(c) another way prescribed by regulation.

"environmental value" (the Act) is -

(a) a quality or physical characteristic of the environment that is conducive to ecological health or public amenity or safety; or

(b) another quality of the environment identified and declared to be an environmental value under an environmental protection policy or regulation.

"LAeq, adj r" means the A weighted "equivalent sound pressure level" over time T obtained using Fast response and adjusted for noise characteristics.

"land" in the Land section of this approval means land excluding waters and the atmosphere.

"measures" has the broadest interpretation and includes plant, equipment, physical objects, monitoring, procedures, actions, directions and competency

"noxious" means harmful or injurious to health or physical well being

"offensive" means causing offence or displeasure; is disagreeable to the sense; disgusting, nauseating or repulsive

"release of a contaminant into the environment" means:

(a) to deposit, discharge, emit or disturb the contaminant; an

(b) to cause or allow the contaminant to be deposited, discharged, emitted or disturbed; and

(c) to fail to prevent the contaminant from being deposited, discharged emitted or disturbed; and

(d) to allow the contaminant to escape; and

(e) to fail to prevent the contaminant from escaping.

"regulated waste" means non-domestic waste mentioned in Schedule 7 of the *Environmental Protection Regulation 1998* (whether or not it has been treated or immobilised), and includes –

(a) for an element - any chemical compound containing the element; and

(b) anything that has contained the waste

"rehabilitation" means the process of reshaping and revegetating land to restore it to a stable post mining or quarry state and in accordance with acceptance criteria or rehabilitation conditions, and where relevant includes remediation of contaminated land.

"representative" means a sample set which covers the variance in monitoring or other data either due to natural changes or to different phases of mining/quarrying activities.

"sensitive place" includes -

(a) a dwelling, mobile home or caravan park, residential marina or other residential premises; a motel, hotel or hostel;

(b) a kindergarten, school, university or other educational institution; a medical centre or hospital;

(c) a protected area under the *Nature Conservation Act 1992*, the *Marine Parks Act 1992* or a World Heritage Area, excluding any nature refuge under the *Nature Conservation Act 1992* which is within a key resource area;

(d) a public thoroughfare, park or gardens;

(e) a commercial place; or

(f) for noise, a place defined as a sensitive receptor for the purposes of the Environmental Protection (Noise) Policy 2008.

"site" means land or tidal waters on or in which it is proposed to carry out the activity/ies approved under this approval.

"stable" means geotechnical stability of a rehabilitated landform where instability caused by settlement and subsidence has ceased.

"vibration" is the oscillating or periodic motion of a particle, group of particles, or solid object about its equilibrium position.

~~"waters" includes watercourse, river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, unconfined water natural or artificial watercourse, bed and bank of any waters, dams, non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater run-off, and groundwater and any part thereof.~~

Permit

Environmental Protection Act 1994

Environmental authority EPPR03087315

This environmental authority is issued by the administering authority under Chapter 5 of the Environmental Protection Act 1994.

Environmental authority number: EPPR03087315

Environmental authority takes effect on 12 April 2019

Environmental authority holder(s)

Name(s)	Registered address
Barro Group Pty. Ltd.	191 Drummond Street CARLTON VIC 3053 Australia

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Prescribed ERA, ERA 16 - Extraction and Screening, 3: Screening, in a year, the following quantity of material, (b) more than 100,000t but not more than 1,000,000t	Lot 17/RP108970
Prescribed ERA, ERA 16 - Extraction and Screening, 3: Screening, in a year, the following quantity of material, (b) more than 100,000t but not more than 1,000,000t	Lot 1/RP108970
Prescribed ERA, ERA 16 - Extraction and Screening, 2: Extracting, other than by dredging, in a year, the following quantity of material, (b) more than 100,000t but not more than 1,000,000t	Lot 17/RP108970
Prescribed ERA, ERA 16 - Extraction and Screening, 2: Extracting, other than by dredging, in a year, the following quantity of material, (b) more than 100,000t but not more than 1,000,000t	Lot 1/RP108970
Prescribed ERA, ERA 16 - Extraction and Screening, 3: Screening, in a year, the following quantity of material, (b) more than 100,000t but not more than 1,000,000t	Lot 162/S31962
Prescribed ERA, ERA 16 - Extraction and Screening, 3: Screening, in a year, the following quantity of material, (b) more than 100,000t but not more than 1,000,000t	Lot 370/S311071
Prescribed ERA, ERA 16 - Extraction and Screening, 3: Screening, in a year, the following quantity of	Lot 238/SP218968

ABN 46 640 294 485

Queensland Government

Environmentally relevant activity/activities	Location(s)
material, (b) more than 100,000t but not more than 1,000,000t	
Prescribed ERA, ERA 16 - Extraction and Screening, 2: Extracting, other than by dredging, in a year, the following quantity of material, (b) more than 100,000t but not more than 1,000,000t	Lot 162/S31962
Prescribed ERA, ERA 16 - Extraction and Screening, 2: Extracting, other than by dredging, in a year, the following quantity of material, (b) more than 100,000t but not more than 1,000,000t	Lot 370/S311071
Prescribed ERA, ERA 16 - Extraction and Screening, 2: Extracting, other than by dredging, in a year, the following quantity of material, (b) more than 100,000t but not more than 1,000,000t	Lot 238/SP218968

Additional information for applicants

Environmentally relevant activities

The description of any environmentally relevant activity (ERA) for which an environmental authority (EA) is issued is a restatement of the ERA as defined by legislation at the time the EA is issued. Where there is any inconsistency between that description of an ERA and the conditions stated by an EA as to the scale, intensity or manner of carrying out an ERA, the conditions prevail to the extent of the inconsistency.

An EA authorises the carrying out of an ERA and does not authorise any environmental harm unless a condition stated by the EA specifically authorises environmental harm.

A person carrying out an ERA must also be a registered suitable operator under the Environmental Protection Act 1994 (EP Act).

Contaminated land

It is a requirement of the EP Act that an owner or occupier of contaminated land give written notice to the administering authority if they become aware of the following:

- the happening of an event involving a hazardous contaminant on the contaminated land (notice must be given within 24 hours); or
- a change in the condition of the contaminated land (notice must be given within 24 hours); or
- a notifiable activity (as defined in Schedule 3) having been carried out, or is being carried out, on the contaminated land (notice must be given within 20 business days);

that is causing, or is reasonably likely to cause, serious or material environmental harm.

For further information, including the form for giving written notice, refer to the Queensland Government website www.qld.gov.au, using the search term ‘duty to notify’.

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Take effect

Please note that, in accordance with section 200 of the EP Act, an EA has effect:

a) if the authority is for a prescribed ERA and it states that it takes effect on the day nominated by the holder of the authority in a written notice given to the administering authority-on the nominated day; or
b) if the authority states a day or an event for it to take effect-on the stated day or when the stated event happens; or
c) otherwise-on the day the authority is issued.

However, if the EA is authorising an activity that requires an additional authorisation (a relevant tenure for a resource activity, a development permit under the Planning Act 2016 or an SDA Approval under the State Development and Public Works Organisation Act 1971), this EA will not take effect until the additional authorisation has taken effect.

If this EA takes effect when the additional authorisation takes effect, you must provide the administering authority written notice within 5 business days of receiving notification of the related additional authorisation taking effect.

If you have incorrectly claimed that an additional authorisation is not required, carrying out the ERA without the additional authorisation is not legal and could result in your prosecution for providing false or misleading information or operating without a valid environmental authority.

Clancy Mackaway
Department of Environment and Science
Delegate of the administering authority
Environmental Protection Act 1994

Date issued: 12 April 2019

Enquiries:
Extraction, Energy and Chemical Industries Assessment
Department of Environment and Science
Phone: 1300 130 372
Email: palm@des.qld.gov.au

ABN 46 640 294 485

Obligations under the Environmental Protection Act 1994

In addition to the requirements found in the conditions of this environmental authority, the holder must also meet their obligations under the EP Act, and the regulations made under the EP Act. For example, the holder must comply with the following provisions of the Act:

- general environmental duty (section 319)
- duty to notify environmental harm (section 320-320G)
- offence of causing serious or material environmental harm (sections 437-439)
- offence of causing environmental nuisance (section 440)
- offence of depositing prescribed water contaminants in waters and related matters (section 440ZG)
- offence to place contaminant where environmental harm or nuisance may be caused (section 443)

Conditions of environmental authority

Agency interest: General	
Condition number	**Condition**
G1	All reasonable and practicable measures must be taken to minimise the likelihood of environmental harm being caused.
G2	Any breach of a condition of this approval or any adverse impact on an environmental value must be reported to the administering authority in writing within 24 hours of becoming aware of the breach or the impact along with details of any subsequent actions undertaken.
G3	All information and records that are required by the conditions of this approval must be kept for a period of at least 5 years.
G4	The activity must not be carried out until financial assurance has been given to the administering authority as security for compliance with this approval and any costs or expenses, or likely costs or expenses, mentioned in section 298 of the *Environmental Protection Act 1994*.
G5	If the administering authority increases the amount of financial assurance, the additional financial assurance must be given to the administering authority within 28 days of receiving written notice.
G6	Other than as permitted within this environmental authority, the release of a contaminant into the environment must not occur.
G7	An appropriately qualified person(s) must monitor, interpret and record all parameters that are required to be monitored, in the manner provided, as specified in this approval.
G8	When requested by the administering authority, monitoring must be undertaken in the manner prescribed by the administering authority, to investigate a complaint of environmental nuisance caused by the activity. The monitoring results must be provided to the administering authority upon request.
G9	The activity must be undertaken in accordance with written procedures that: (a) identify potential risks to the environment from the activity during routine operations and emergencies; (b) establish and maintain control measures that minimise the potential for environmental harm; (c) ensure plant, equipment and measures are maintained in a proper and effective condition; (d) ensure plant, equipment and measures are operated in a proper and effective manner; (e) ensure that staff are trained and aware of their obligations under *the Environmental Protection Act 1994*; and (f) ensure that reviews of environmental performance are undertaken at least annually.

G10	For the purpose of nuisance conditions A1, N1, N8 and N11; any part of the unformed road bisecting and adjoining Lot 17 on RP108970, Lot 370 on S311071 and Lot 162 on S31962, and the land comprising the part of Greenhide (California) Creek located between Lot 162 on SP31962 and Lot 238 on SP218968 which is the property of the state is exempt from the definition of a "sensitive place".

Agency interest: Waste

Condition number	Condition
WS1	All waste generated in carrying out the activity must be reused, recycled or removed to a facility that can lawfully accept the waste.
WS2	The operator must not: (a) burn waste onsite; (b) allow waste to be burned on site; or (c) remove waste from site to be burned elsewhere, unless at a suitable facility that is authorised to incinerate waste.
WS3	Where regulated waste is removed from the licensed premises, the holder of this license must retain the record provided by the registered waste removalist.

Agency interest: Air

Condition number	Condition
A1	Odours, dust or airborne contaminants which are noxious or offensive or otherwise cause environmental nuisance must not be released to any sensitive place or commercial place.
A2	Dust and particulate matter suspended in the atmosphere must not exceed the limits identified in *Table – Dust Criteria* at any sensitive or commercial place when monitored in accordance with the relevant Australian Standard (or any other relevant method of monitoring permitted by the administering authority's Air Quality Sampling Manual).

Table – Dust Criteria

Contaminant	Averaging Period	Limit	Relevant Australian Standard
Dust deposition	24 hours	120 mg/m^2	AS/NZS3580.10.1
PM_{TSP}	Annual Average	90 µg/m^3	AS/NZS3580.9.3
PM_{10}	24 Hour Average (Maximum)	50 µg/m^3	AS/NZS3580.9.6 or AS/NZS3580.9.8 or AS/NZS3580.9.9
	Annual Average	25 µg/m^3	

	$PM_{2.5}$	24 Hour Average (Maximum)	25 µg/m^3	AS/NZS3580.9.10 or AS/NZS3580.9.13 or AS/NZS3580.9.14
		Annual Average	8 µg/m^3	
	Silica (as $PM_{2.5}$)	Annual Average	3 µg/m^3	AS/NZS3580.9.10

Note:

i. Australian Standard AS3580.9.3 – Methods for sampling and analysis of ambient air: Determination of suspended particulate matter - total suspended particulate matter – High volume sampler gravimetric method.

ii. Australian Standard AS3580.9.6 - Methods for sampling and analysis of ambient air: Determination of suspended particulate matter - PM_{10} high volume sampler with size selective inlet – gravimetric method.

iii. Australian standard AS3580.9.8 – Methods for sampling and analysis of ambient air: Determination of suspended particulate matter- PM_{10} continuous direct mass method using tapered element oscillating microbalance analyser.

iv. Australian Standard AS3580.9.9 – Methods for sampling and analysis of ambient air: Determination of suspended particulate matter- PM_{10} low volume sampler – Gravimetric method

v. Australian Standard AS3580.9.10 – Methods for sampling and analysis of ambient air: Determination of Suspended particulate matter – $PM_{2.5}$ low volume sampler- Gravimetric method

vi. Australian Standard AS3580.9.13 – Methods for sampling and analysis of ambient air: Determination of suspended particulate matter – $PM_{2.5}$ continuous direct mass method using a tapered element oscillating microbalance monitor

vii. Australian Standard AS3580.9.14 - Methods for sampling and analysis of ambient air: Determination of suspended particulate matter - $PM_{2.5}$ high volume sampler with size selective inlet- gravimetric method.

viii. Australian Standard AS3580.10.1 – Methods for sampling and analysis of ambient air: Determination of particulate matter – deposited matter – gravimetric method.

A3	An Air Quality Management Plan (AQMP) must be developed and submitted to the administering authority prior to the commencement of use. The AQMP must: (a) define the best practice air quality management and mitigation measures to be implemented at the site, monitoring and reporting requirements; (b) be subject to annual review and annual update to ensure the appropriate health and amenity criteria can be achieved, and to incorporate best practice management measures for minimising emissions to the ambient environment; and (c) be implemented upon commencement of the activity.
A4	The air quality management performance of the site must be subject to an annual audit by an appropriate qualified and experienced person. The findings of this audit must be submitted to the administering authority with the annual return, and include: (a) a summary of results of all monitoring completed in the previous 12 month period; (b) an analysis of the monitoring results with regard to the performance of current measures of managing the releases to air caused by this activity; and

	(c) a recommendation of any changes that should be made to plant, equipment or procedures to further improve the air quality management performance of the site and ensure that all measures comply with current best practice.
A5	Prior to the commencement of the activity, an Ambient Dust Monitoring Program must be developed and submitted to the administering authority, to specify how the ambient dust impacts of the project will be monitored. This program must then be implemented upon commencement of the activity. The program must include, but not necessarily be limited to: (a) procedures for monitoring dust emissions from the project, in order to meet the requirements of this approval; (b) locations, frequencies and methods for monitoring PM_{TSP}, PM_{10} , $PM_{2.5}$, dust deposition and crystalline silica (as $PM_{2.5}$); (c) provision for the use of at least one PM_{TSP}, PM_{10} , $PM_{2.5}$ and crystalline silica (as $PM_{2.5}$) monitoring station, five dust depositional gauges and one meteorological station capable of monitoring wind direction and speed; (d) using air quality monitoring data to inform environmental management decisions associated with the project; (e) a framework for identifying actual and potential dust impacts, and for applying pro-active and reactive mitigation and management measures to address those impacts. The Ambient Dust Monitoring Program may form part of the AQMP required by condition A3 of this approval.
A6	Dust and particulate matter suspended in the atmosphere must be monitored in accordance with the relevant standards specified in A2 (or any other relevant method of monitoring permitted by the administering authority's Air Quality Sampling Manual). Meteorological monitoring must be undertaken in accordance with Australian Standard AS 2923: Ambient air - Guide for measurement of horizontal wind for air quality applications.
A7	Where monitoring at locations identified in the Ambient Dust Monitoring Program indicates that the limits detailed in condition A2 have been exceeded, within 14 days the matter must be investigated and the following information must be reported to the administering authority: (a) the concentration of PM_{TSP}, PM_{10}, $PM_{2.5}$ and crystalline silica and dust deposition rate recorded; (b) a description of meteorological conditions occurring at the time; and (c) dust abatement measures that have or will be implemented to ensure dust from the activity does not exceed the limits in A2 and A3.
A8	The results of PM_{TSP}, PM_{10}, $PM_{2.5}$, crystalline silica, dust deposition and meteorological monitoring must be reported to the administering authority on request.
Agency interest: Land	
Condition number	**Condition**
L1	The site (including all disturbed areas such as slopes, borrow pits, stockpile and screening areas) must be rehabilitated in a manner such that: (a) suitable native species of vegetation are planted and established;

	(b) potential for erosion of the site is minimised; (c) the quality of stormwater, other water and seepage released from the site is such that releases of contaminants such as suspended solids, turbidity, total dissolved salts, pH, total iron, total aluminium, and total manganese are not likely to cause environmental harm; (d) the likelihood of environmental nuisance being caused by release of dust is minimised; (e) the water quality of any residual water body meets relevant criteria for subsequent uses and does not have potential to cause environmental harm; (f) the final landform is stable and not subject to slumping; and (g) any actual and potential acid sulfate soils in or on the site are either not disturbed, or are submerged or treated, so as to not be likely to cause environmental harm.
L2	Rehabilitation of disturbed areas must take place progressively as works are staged and new areas of extraction are commenced.
L3	For the purpose of demonstrating compliance with conditions L1 and L2, a land rehabilitation audit must be conducted within 3 months of completion of each stage of the quarry.
L4	The audit detailed in condition L3 must be conducted by a suitably qualified third party auditor.
L5	In relation to the audit required by condition L3, the auditor must submit a final version of the auditor's report to the administering authority within 28 days of completing the audit.
L6	Spillage of all chemicals and fuels must be contained within an on-site containment system and controlled in a manner that prevents environmental harm. NOTE: All petroleum product storage's must be designed, constructed and maintained in accordance with AS 1940 - Storage and Handling of Flammable and Combustible Liquids.

Agency interest: Acoustic

Condition number	**Condition**
N1	Noise from the activity must not exceed the noise limits specified in *Table - Noise Limits* at a sensitive place. **Table – Noise Limits**

Location Noise Sensitive Land Use	**Noise Limits (dB(A) $L_{Aeq,aj,T}$)**			
	Early Morning Maintenance Only (6am – 6.30am)	**Early Morning (6.30 am - 7am)**	**Daytime (7am - 6pm)**	**Evening (6pm - 10pm)**
To the West	35	35	35*	35
To the South	40	41	41	41

	<table><tr><td>To the South-East</td><td>40</td><td>42</td><td>45</td><td>42</td></tr><tr><td>To the East/North East</td><td>41</td><td>42</td><td>47</td><td>40</td></tr></table> ***** Note: L_{90} of 29dB(A), adjusted to L_{90} of 30dB(A)
N2	Conduct continuous noise monitoring, including audio recordings and 1/3rd octave frequencies, at one position to the west of the quarry. A summary of the results of the noise monitoring are to be provided to the administering authority with the annual return, with any exceedances highlighted. Actions taken to investigate and rectify measured exceedances are to be included in the annual return.
N3	When requested by the administering authority, additional noise monitoring must also be undertaken to investigate any complaint of noise nuisance that the administering authority considers is not frivolous or vexatious, and the results notified within 14 days to the administering authority. Monitoring must include: (a) air blast overpressure (dB (Lin) Peak); (b) $L_{Aeq, adj\ T}$ (c) $L_{A10, adj\ T}$ (d) $L_{A1, adj\ T}$ (e) ambient and background noise levels; (f) the level and frequency of occurrence of impulsive or tonal noise; (g) atmospheric conditions including wind speed and direction; (h) effects due to extraneous factors such as traffic noise; (i) location, date and time of recording; and (j) where relevant, measurement and assessment of low frequency noise against relevant criteria.
N4	A noise management plan (NMP) for the proposed operation is to be developed and submitted to the administering authority for approval prior to commencement of the use. The NMP must: (a) define the best practice noise management and mitigation measures to be implemented at the site; (b) define monitoring and reporting requirements; and (c) be reviewed annually by an appropriately qualified person and updated as necessary to ensure the appropriate amenity criteria can be achieved, and to incorporate best practice management measures for minimising noise emissions.
N5	The appropriately qualified person who conducts the review of the noise management plan required by condition N4 is also to conduct an annual audit of the acoustic performance of the site to be submitted to the administering authority with the annual return, which includes a summary of the results of all monitoring conducted in the previous 12 month period.
N6	The method of measurement and reporting of noise levels must comply with the latest edition of the administering authority's *Noise Measurement Manual*.
N7	For the purpose of conditions N1 and N2, the measurement duration, T, must be determined by

<table>
<tr><td></td><td>an appropriately qualified person, so as to adequately represent and validate the data.
The minimum value for T must be:
(a) 15 minutes for continuous steady noises
(b) 1 hour for intermittent noises</td></tr>
<tr><td>N8</td><td>Explosive blasting for the activity must not cause an environmental nuisance at any nuisance sensitive place or commercial place.</td></tr>
<tr><td>N9</td><td>Explosive blasting must be carried out within the time specified in Table - Airblast Overpressure and Vibration Limits, unless otherwise approved by the administering authority due to a meteorological and/or safety reasons that it must occur at the time outside of the specified times.</td></tr>
<tr><td>N10</td><td>The vibration and the air blast overpressure from the activity must not exceed the levels specified in Table - Airblast Overpressure and Vibration Limits. Ground vibration and airblast overpressure monitoring must be undertaken for all blasts at a location as close as practical to the nearest residence(s).
Table - Airblast Overpressure and Vibration Limits
<table>
<tr><th rowspan="2">Parameter</th><th colspan="2">Threshold Value (as measured at the sensitive or commercial place)</th></tr>
<tr><th>Monday to Friday 9am - 5pm</th><th>Other times and public holidays</th></tr>
<tr><td>Vibration</td><td>a) the ground-borne vibration must not exceed a peak particle velocity (PPV) of 5 mm/s for nine (9) out of ten (10) consecutive blasts; and
b) the ground-borne vibration must not exceed a PPV of 10 mm/s for any blast.</td><td>No blasting to occur</td></tr>
<tr><td>Airblast overpressure</td><td>a) the airblast overpressure must not exceed 115 dB Linear Peak for nine (9) out of ten (10) consecutive blasts; and
b) the airblast overpressure must not exceed 120 dB Linear Peak for any blast.</td><td>No blasting to occur</td></tr>
</table></td></tr>
<tr><td>N11</td><td>When requested by the administering authority, vibration monitoring and recording must be undertaken to investigate any complaint of vibration nuisance that the administering authority considers is not frivolous or vexatious, and the results notified within 14 days to the administering authority. Monitoring must include:
(a) peak particle velocity (mm/s);
(b) location of the blast/s within the site (including which bench level);
(c) atmospheric conditions including temperature, relative humidity and wind speed and direction;
(d) the level and frequency of occurrence of impulsive or tonal noise;
(e) effects due to extraneous factors;
(f) location, date and time of recording; and</td></tr>
</table>

	(g) where relevant, measurement and assessment of low frequency noise against relevant criteria.
N12	For vibration monitoring the ground-borne vibration transducer (or array) must be attached to a mass of at least thirty (30) kg to ensure good coupling with the ground where the blast site and the measurement site cannot be shown to be on the same underlying strata. The mass must be buried so that its uppermost surface is at the same level as the ground surface.
N13	The ground-borne vibration transducer (or array) must be placed at a distance of at least the longest dimension of the foundations of a noise affected dwelling away from such dwelling and between that dwelling and the site of the blasting.
N14	All third party blast records, including the location of the blast monitoring, must be kept and submitted to the administering authority upon request.
Agency interest: Water	
Condition number	**Condition**
WA1	Contaminants must not be released from the approved place to any waters, bed and banks of any waters, roadside gutter or stormwater drains outside the approved place except in accordance with the conditions.
WA2	Monitoring must be undertaken and records kept of contaminant releases to waters from the discharge location in accordance with the approved Stormwater Management Plan. All determinations of the quality of contaminants released must be: (a) made in accordance with methods prescribed in the latest edition of the administering authority's Water Quality Sampling Manual; and (b) carried out on samples that are representative of the discharge.
WA3	The size of any sedimentation dam must be sufficient to contain the runoff expected from an extraction or processing area from a 24 hour storm with an average recurrence interval of 1 in 5 years.
WA4	A stormwater management and erosion and sediment control audit must be conducted within 3 months of the completion of the stormwater treatment system.
WA5	The audit detailed in condition WA4 must be conducted by a suitably qualified third party auditor.
WA6	The audit detailed in condition WA4 must also be conducted within 3 months of the commencement of each stage of the quarry.
WA7	In relation to the audit required by condition WA4, the auditor must submit a final version of the auditor's report to the administering authority within 28 days of completing the audit.
Agency interest: Social	

Condition number	Condition
S1	The operator of the ERA must record the following details for all complaints received and provide this information to the administering authority on request: (a) time, date, name and contact details of the complainant; (b) reasons for the complaint; (c) any investigations undertaken; (d) conclusions formed; and (e) any actions taken.

Definitions

Key terms and/or phrases in this environmental authority are defined in this section. Where a term is not defined, the definition in the *Environmental Protection Act 1994*, its regulations or environmental protection policies must be used. If a word remains undefined it has its ordinary meaning.

24 hour storm event with an average recurrence interval of 1 in 5 years means the maximum rainfall depth from a 24 hour duration precipitation event with an average recurrence interval of once in 5 years. *For example, an Intensity-Frequency-Duration table for a 24 hour duration event with an average recurrence interval of 1 in 5 years, identifies a rainfall intensity of 7.09mm/hour. The rainfall depth for this event is therefore 24 hour x 7.09mm/hour = 170.16mm.*

Activity means the environmentally relevant activities, whether resource activities or prescribed activities, to which the environmental authority relates.

Administering authority means the Department of Environment and Science or its successor or predecessors.

Airblast overpressure is the energy transmitted from the blast site within the atmosphere in the form of pressure waves. As these waves pass a given position, the pressure of the air rises very rapidly then falls more slowly then returns to the ambient value after a number of oscillations. The pressure wave consists of both audible (noise) and inaudible (concussion) energy. The maximum excess pressure in this wave is known as the peak air overpressure, generally measured in decibels using the linear frequency-weighting.

Appropriately qualified person(s) means a person or persons who has professional qualifications, training, skills or experience relevant to the EA requirement and can give authoritative assessment, advice and analysis in relation to the EA requirements using the relevant protocols, standards, methods or literature.

Background noise means either:

(a) $LA_{90,\ t}$ being the A-weighted sound pressure level exceeded for a relevant the time period measured in the absence of the noise under investigation, using fast response, or

(b) $LA_{bg,\ t}$ being the arithmetic average of the minimum readings measured in the absence of the noise under investigation during a relevant time period, using fast response.

Blasting is the use of explosives to fracture:

- rock, coal and other minerals for later recovery; or
- structural components or other items to facilitate removal from a site or for reuse.

Boundary means within 1 (one) meter of the cadastral boundary of the approved place.

Commercial place means a place used as a workplace, an office or for business or commercial purposes and includes a place within the curtilage of such a place reasonably used by persons at that place.

Disturbed areas includes areas:

a) contaminated land; or

b) land that has been disturbed and human intervention is needed to rehabilitate it, including:

- mining or quarrying areas including processing plant, stockpiles and tailings areas;
- areas where soil has been compacted, removed, covered, exposed or stockpiled;
- areas where vegetation has been removed or destroyed to an extent where the Land is susceptible to erosion;
- areas where land use suitability or capability has been diminished;
- areas within waters where mining/quarry activities occur;
- areas submerged by tailings or hazardous contaminant storage dams in all cases;
- areas under temporary infrastructure e.g. roads, tracks, bridges, culverts, dams, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads which is to be removed after mining/quarrying

has ceased; and

But does not include:

- areas off mining lease or quarry site (e.g. roads or tracks which provide access to the mining lease or quarry site);
- areas previously significantly disturbed which have achieved rehabilitation outcomes;
- by agreement with the administering authority, areas previously significantly disturbed which have not achieved rehabilitation objectives due to circumstances beyond the control of the authority/approval holder (such as climatic conditions);
- areas under permanent infrastructure e.g. roads, tracks, bridges, culverts, dams, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads which are to be lawfully left on the site after cessation of mining/quarrying.

Dwelling means any of the following structures or vehicles that is principally used for habitation:

- a house, unit, motel, nursing home or other building or part of a building; a caravan
- mobile home or other vehicle or structure on land; or
- a water craft in a marina.

Environmental nuisance as defined in Chapter 1 of the *Environmental Protection Act 1994*.

Environmental value means:

- a quality or physical characteristic of the environment that is conducive to ecological health or public amenity or safety; or
- another quality of the environment identified and declared to be an environmental value under an environmental protection policy or regulation.

Land means any land, whether above or below the ordinary high-water mark at spring tides (i.e. includes tidal land).

$L_{Aeq, adj, T}$ means the A weighted "equivalent sound pressure level" over time T obtained using Fast response and adjusted for noise characteristics.

Measures has the broadest interpretation and includes plant, equipment, physical objects, monitoring, procedures, actions, directions and competency

Noxious means harmful or injurious to health or physical well-being.

Offensive means causing offence or displeasure; is unreasonably disagreeable to the senses; disgusting, nauseous or repulsive.

Release of a contaminant into the environment means to:

- deposit, discharge, emit or disturb the contaminant;
- cause or allow the contaminant to be deposited, discharged, emitted or disturbed;
- fail to prevent the contaminant from being deposited, discharged emitted or disturbed;
- allow the contaminant to escape; or
- fail to prevent the contaminant from escaping.

Regulated waste means non-domestic waste mentioned in Schedule 7 of the *Environmental Protection Regulation 1998* (whether or not it has been treated or immobilised), and includes -

- for an element - any chemical compound containing the element; and
- anything that has contained the waste

Rehabilitation means the process of reshaping and revegetating land to restore it to a stable post mining or quarry state and in accordance with acceptance criteria or rehabilitation conditions, and where relevant includes remediation of contaminated land.

Representative means a sample set which covers the variance in monitoring or other data either due to natural changes or to different phases of mining/quarrying activities.

Sensitive place includes the following and includes a place within the curtilage of such a place reasonably used by persons at that place:

- a dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises; or
- a motel, hotel or hostel; or
- a kindergarten, school, university or other educational institution; or
- a medical centre or hospital; or
- a protected area under the *Nature Conservation Act 1992*, the *Marine Parks Act 2004* or a World Heritage Area; or
- a public park or garden; or
- for noise, a place defined as a sensitive receptor for the purposes of the Environmental Protection (Noise) Policy 2008.

Site means land or tidal waters on or in which it is proposed to carry out the activity/ ies approved under this approval.

Stable means geotechnical stability of a rehabilitated landform where instability caused by settlement and subsidence has ceased.

Vibration is the oscillating or periodic motion of a particle, group of particles, or solid object about its equilibrium position.

Waters includes river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, unconfined water, natural or artificial watercourse, bed and bank of any waters, dams, non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater run-off, and groundwater and any part thereof.

END OF ENVIRONMENTAL AUTHORITY

Schedule 4
Conditions of Approval
Department of Transport and Main Roads

Our ref TMR 13-006715
Your ref MCU012421
Enquiries Kelvin Teo

Queensland Government

Department of
Transport and Main Roads

8 November 2013

The Chief Executive Officer
Redland City Council

PO Box 21
Cleveland QLD 4163

Attention: **Chris Vise**

Dear Sir/Madam

CONCURRENCE AGENCY RESPONSE – CONDITIONS

Proposed Development:	Development Permit for a Material Change of Use (Extractive Industry and ERA 8 (10-500 m^3), ERA 16 (100,000-1,000,000 tonnes) & ERA 21 (Motor Vehicle Workshop))
Real Property Description:	Lot 1 on RP108970, Lot 162 on S31962, Lot 370 on S311071, Lot 17 on RP108970, Lot 238 on SP218968, part of Greenhide (California) Creek between Lot 162 on S31962 and Lot 238 on SP218968 and unformed road bisecting and adjoining Lot 17 on RP10897, Lot 370 on S311071 and Lot 162 on S231962
Street Address:	1513 & 1515-1521 Mount Cotton Road and 163-177 & 195 Gramzow Road, Mount Cotton
Assessment Manager ref.:	MCU012421
Local Government Area:	Redland City Council

Reference is made to the referral agency material for the development application described above which was received by the Department of Transport and Main Roads (the department) under section 272 of the *Sustainable Planning Act 2009* (SPA) on 9 March 2011.

An assessment of the proposed development has been undertaken against the purposes of the *Transport Infrastructure Act 1994* for state-controlled roads and Land use and transport coordination under the *Transport Planning and Coordination Act 1994*.
Based on this jurisdiction, the department provides this concurrence agency response under section 285 of the SPA.

Program Delivery and Operations
Metropolitan Region
313 Adelaide Street Brisbane Queensland 4000
PO Box 70 Spring Hill Queensland 4004

Telephone 13 23 80
Facsimile +61 7 3220 6071
Website www.tmr.qld.gov.au
Email developmentcontrol@tmr.qld.gov.au
ABN: 39 407 690 291

In carrying out this assessment, the Department of Transport and Main Roads has considered:

a) The safety of road users through material provided by the applicant and documents commissioned by Transport and Main Roads.

b) The efficiency of Mt Cotton Road and other state-controlled roads (Beenleigh-Redland Bay Road and Mt Gravatt-Capalaba Road). The efficiency of the road including such aspects as ease of traffic movement, capacity of the roads and intersections and quality of the pavement have been drawn from material provided by the applicant and acquired by Transport and Main Roads.

c) The impact that the development will have on the planning for the state-controlled roads, through material provided by the applicant and acquired by Transport and Main Roads.

It should be noted that State Planning Policy 2/07 was adopted on 8 June 2007 by the Minister for Local Government and Sport. The application falls within Key Resources Area 71.

The department advises the assessment manager that it requires conditions to attach to any development approval for the application. The department would also like to provide advice about the application to the assessment manager under section 287(6) of the SPA.

Under section 325(1) of the SPA, the assessment manager must therefore attach this response, including the enclosed Department of Transport and Main Roads Concurrence Agency Conditions and Statement of Reasons, to any approval for the application.

The department may change its concurrence agency response in accordance with section 290(1)(b) of the SPA.

The department must be provided with a copy of the assessment manager's decision notice regarding the application within five (5) business days after the day the decision is made in accordance with section 334 of the SPA.

When forwarding information to the Department of Transport and Main Roads (Metropolitan Office) the preferred method is by email to developmentcontrol@tmr.qld.gov.au or on CD-Rom. Please ensure our application number **TMR 13-006715** is referred to on all correspondence.

A copy of this response has been sent to the applicant for their information.

If you have any questions or wish to seek clarification about any of the details in this response, please contact Kelvin Teo, Senior Town Planner (Land Use Management) on 13 23 80.

Yours sincerely

Stephen Smaha
Principal Advisor (Development Control)

Enc. 3(Department of Transport and Main Roads Agency Conditions and Statement of Reasons Figure *3 Site Layout and Topography Plan,* 987.310.003 prepared by Groundwork Plus and dated 24 November 2010, *Sketch Plan* 2293sK2 from the Traffic Report by Colin Beard, Beard Traffic Engineering dated 25 October 2013.)

C/c The Barro Group Pty Ltd
C/- Groundwork Plus
PO Box 1779
Milton BC QLD 4064

Queensland Government

Department of
Transport and Main Roads

Our ref TMR 13-006715
Your ref 987.3

C/c The Barro Group Pty Ltd
C/- Groundwork Plus
PO Box 1779
Milton BC QLD 4064

Attention: **Kelly Alcorn**

Please find attached correspondence for your information and action as required. Should you wish to discuss this correspondence, please contact Kelvin Teo, Senior Town Planner (Land Use Management) on 13 23 80.

Yours sincerely

Stephen Smaha
Principal Advisor (Development Control)

Date 8 November 2013

Enc. 3(Department of Transport and Main Roads Agency Conditions and Statement of Reasons Figure *3 Site Layout and Topography Plan,* 987.310.003 prepared by Groundwork Plus and dated 24 November 2010, *Sketch Plan* 2293sK2 from the Traffic Report by Colin Beard, Beard Traffic Engineering dated 25 October 2013.)

Department of Transport and Main Roads
Concurrence Agency Conditions and Statement of Reasons

Proposed Development:	Development Permit for a Material Change of Use (Extractive Industry and ERA 8 (10-500 m^3), ERA 16 (100,000-1,000,000 tonnes) & ERA 21 (Motor Vehicle Workshop))
Real Property Description:	Lot 1 on RP108970, Lot 162 on S31962, Lot 370 on S311071, Lot 17 on RP108970, Lot 238 on SP218968, part of Greenhide (California) Creek between Lot 162 on S31962 and Lot 238 on SP218968 and unformed road bisecting and adjoining Lot 17 on RP10897, Lot 370 on S311071 and Lot 162 on S231962
Street Address:	1513 & 1515-1521 Mount Cotton Road and 163-177 & 195 Gramzow Road, Mount Cotton
Our ref.:	L6948 METRO-401
Assessment Manager ref.:	MCU013057
Local Government Area:	Redland City Council

No.	Conditions of Development	Condition Timing	Jurisdiction and Reasons
Development Permit for a Material Change of Use (Extractive Industry and ERA 8 (10-500 m^3), ERA 16 (100,000-1,000,000 tonnes) & ERA 21 (Motor Vehicle Workshop)			
1	**Upgrade Quarry Vehicular Access** 1.1 Access to Mount Cotton Road is approved in principle. The applicant shall locate the access between Lot 1 on RP108970 and Mount Cotton Road in generally in accordance with the submitted *Figure 3 Site Layout and Topography Plan,* and 987.310.003 prepared by Groundwork Plus and dated 24 November 2010 (attached). It is the applicant's responsibility to mitigate the traffic impacts from the proposed development.	Prior to the commencement of new use and to be maintained at all times.	The purposes of the *Transport Infrastructure Act 1994* (TIA). This is a decision under section 62(1) of the TIA in conjunction with a development approval for a permitted road access location. In accordance with Section 33 of the TIA, you must have written approval to carry out road works, including road access works on a state-controlled road. These development conditions

No.	Conditions of Development	Condition Timing	Jurisdiction and Reasons
	The applicant shall upgrade the existing Quarry Access at Mount Cotton Road in accordance with the Traffic Report prepared by Colin Beard, Beard Traffic Engineering dated 25 October 2013 for the proposed development and as shown on Sketch Plan 2293sk2 (attached). 1.2 Upgrade the existing AUR right turn (passing) lane to a Type CHR right turn treatment in Mt Cotton Road at the quarry access. **Note:** The Type CHR right turn treatment would need to provide a high standard of alignment to provide a smooth travel path for northbound and southbound through vehicles on Mt Cotton Road. This may require increased taper lengths to achieve the appropriate alignment. • Widen the quarry access generally in accordance with concept Colin Beard, Beard Traffic Engineering 2293sK2. Widening of the access to ensure sight distance to the left meets Main Roads standards. • The applicant shall provide detailed engineering drawings, certified by a suitably skilled registered professional engineer (RPEQ) in accordance with Transport and Main Roads' Road Planning and Design Manual. These drawings are to be submitted to the Department of Transport and Main Roads (Metropolitan Office) for acceptance a minimum of six (6) weeks prior to the		do not constitute such approval. You will need to contact the Department of Transport and Main Roads, Mr Brijesh Kumar on 30665831 to make an application for approval under section 33 of the TIA to carry out road works. In accordance with Section 64 of the *Transport Infrastructure Act 1994* the Department may perform remediation works on driveway access if the driveway is causing potential safety issues to the adjacent State Controlled road. The Department of Transport and Main Roads' technical standards and publications can be accessed at http://www.tmr.qld.gov.au/Business-industry/Technical-standards-publications.aspx.

No.	Conditions of Development	Condition Timing	Jurisdiction and Reasons
	beginning of construction. These details shall include, but not necessary be limited to:- (i) Street Lighting (ii) Pavement construction details (iii) Traffic signal alteration as necessary (iv) Provision for pedestrians and cyclists (v) Line marking and traffic signing (vi) Drainage as needed (vii) Relocation of services at the developer's expense including any Transport and Main Roads' services (viii) Public transport requirements • Following acceptance of detailed engineering drawings, a 'Works Permit' to proceed with construction within the state controlled corridor will be granted. • As part of the detail design, the applicant shall conduct public consultation with impacted land owners. 1.3 The applicant shall submit to Transport and Main Roads (Metropolitan Office) a 'program of works' for approval. The applicant shall complete all works within the road reserve in accordance with the timelines specified in the approved 'program of works'.		

No.	Conditions of Development	Condition Timing	Jurisdiction and Reasons
	1.4 The applicant and subsequent land owners are responsible for maintenance of the existing driveway access. This maintenance also includes all drainage structures located under your driveway access. At all times the applicant shall keep the access to the development clear of gravel and loose debris. If rectification of your driveway and/or drainage structures is required, the Department may perform remediation works if there is a potential safety issues to Mount Cotton Road as a result of your property access. The costs of these rectification works will be the responsibility of the land owner.		
2	**Road Impact (Extractive Industry)** The proposed development will accelerate the maintenance requirements on the State Controlled Roads. The applicant must pay to the Regional Director (Metropolitan Region) Department of Transport and Main Roads contribution towards the maintenance of Mount Cotton Road. 2.1 The applicant shall pay **$418,311.29 (Four Hundred and Eighteen Thousand, Three Hundred and Eleven Dollars and Twenty Nine Cents)** to the Department of Transport and Main Roads. This is a one off payment towards the accelerated maintenance and reconstruction costs for Mt Cotton Road.	Prior to the commencement of new use and to be maintained at all times.	The purposes of the *Transport Infrastructure Act 1994*. The traffic movements from the proposed development will have an impact on the pavement life of the adjacent State-controlled road. This contribution is to go towards the maintenance of Mount Cotton for the duration of the operational period of the Extractive Industry.

No.	Conditions of Development	Condition Timing	Jurisdiction and Reasons
	2.2 The above payment must be made prior to 1 year following the taking of effect of the council's development permit. 2.3 If the amount hauled from the site exceeds 15 million tonnes in a period of 15 years from the date of effect of the development permit the applicant shall pay 2 cents per tonne over and above the 15 million tonnes to the Department of Transport and Main Roads. No payment will be required after 15 years following the taking of effect of the council's development. 2.4 The applicant shall keep and maintain accurate records and books of account which record the quantity of material extracted from the site and transported by road and shall keep such records and accounts for not less than fifteen years. 2.5 The applicant shall at all reasonable times allow any properly authorised officer of TMR to enter upon its premises, inspect and take extracts from its books of accounts, records and other documents kept in accordance with subparagraph (3 and 4) of this condition and, if such authorised officer thinks fit, to interview any persons employed by the applicant in connection with its business in relation to any matters relevant to performance of this condition. **Note:** The department has applied CPI to the original contribution figure of $400,000. The inflation calculator can be found on the		

No.	Conditions of Development	Condition Timing	Jurisdiction and Reasons
	Australian Bureau of Statistics Website: http://www.abs.gov.au/websitedbs/d3310114.nsf/home/consumer+price+index+inflation+calculator		
3	**Stormwater Runoff** The applicant shall not increase the peak intensity or adversely impact the quality of the stormwater run-off to the state controlled road network.	Prior to the commencement of use and to be maintained at all times	The purposes of the *Transport Infrastructure Act 1994* (TIA). The safety and efficiency of state-controlled roads can be adversely affected by changes to stormwater runoff as a result of development. Please refer to the Department of Transport and Main Roads' Road Drainage Manual which can be accessed at http://www.tmr.qld.gov.au/Business-industry/Technical-standards-publications.aspx. Further guidance regarding stormwater management is also provided in the Queensland Urban Drainage Manual available at www.derm.qld.gov.au and in the *Environmental Protection Act 1994* and *Environmental Protection (Water) Policy 2009* which are available at www.legislation.qld.gov.au
4	**Environmental Nuisance**	To be maintained at all	The purposes of the *Transport Infrastructure Act*

No.	Conditions of Development	Condition Timing	Jurisdiction and Reasons
	The applicant shall ensure that no dust and/or debris from the development site shall adversely impact Mount Cotton Road either during the construction phase or the ongoing operation of the extractive industry. The applicant shall implement mitigation measures to ensure that dirt and debris will not be deposited on the Mount Cotton Road carriageway.	times	*1994.* Dust and debris from development on the site can affect the state-controlled road, causing a safety hazard to road users.
5	**Compliance** The applicant shall provide the Assessment Manager with a letter from the Department of Transport and Main Roads confirming compliance with the requirements of the Department.	Prior to the commencement of new use	The purposes of the Transport Infrastructure Act 1994 (TIA). The reason for requiring the above condition is that the applicant has a statutory obligation to ensure that the department's conditions of development have been satisfactorily complied with.

Stephen Smaha
Principal Advisor (Development Control)

Advice for state controlled roads and public passenger transport and railways
Under section 33 of the *Transport Infrastructure Act 1994*, written approval is required from the Department of Transport and Main Roads to carry out road works, including road access works, on a state-controlled road. Please contact the Department of Transport and Main Roads, Mr Brijesh Kumar on 30665831 to make an application for road works approval. This approval must be obtained prior to commencing any works on the state-controlled road reserve. The approval process may require the approval of engineering designs of the proposed works, certified by a Registered Professional Engineer of Queensland (RPEQ).
An application for a Road Corridor Permit is required for any ancillary works and encroachments on the state-controlled road under section 50(2) and Schedule 6 of the *Transport Infrastructure Act 1994* and Part 5 and Schedule 1 of the *Transport Infrastructure (State-Controlled Roads) Regulation 2006*. Please contact the Department of Transport and Main Roads, Mr Brijesh Kumar on 30665831 to make an application for a Road Corridor Permit. Ancillary works and encroachments include but are not limited to advertising signs or other advertising devices, paths or bikeways, buildings/shelters, vegetation clearing, landscaping and planting.
The *Transport Planning and Coordination Regulation 2005* is available at: www.legislation.qld.gov.au
Pursuant to Section 580 of the *Sustainable Planning Act 2009* it is a development offence to contravene a development approval, including any condition in the approval.
Pursuant to Section 80 of the *Transport Infrastructure Act 1994*, the construction, augmentation, alteration or maintenance of a public utility plant on a state-controlled road reserve, must be in accordance with the Department of Transport and Main Roads' requirements.
The Department of Transport and Main Roads' technical standards and publications can be accessed at http://www.tmr.qld.gov.au/Business-industry/Technical-standards-publications.aspx

INFORMATION ATTACHMENT TO CONCURRENCE AGENCY RESPONSE

Representations on Referral Agency Response

If the applicant intends to make a representation to the Department of Transport and Main Roads (the department) regarding the attached concurrence agency response, the applicant needs to do this before the assessment manager decides the application.

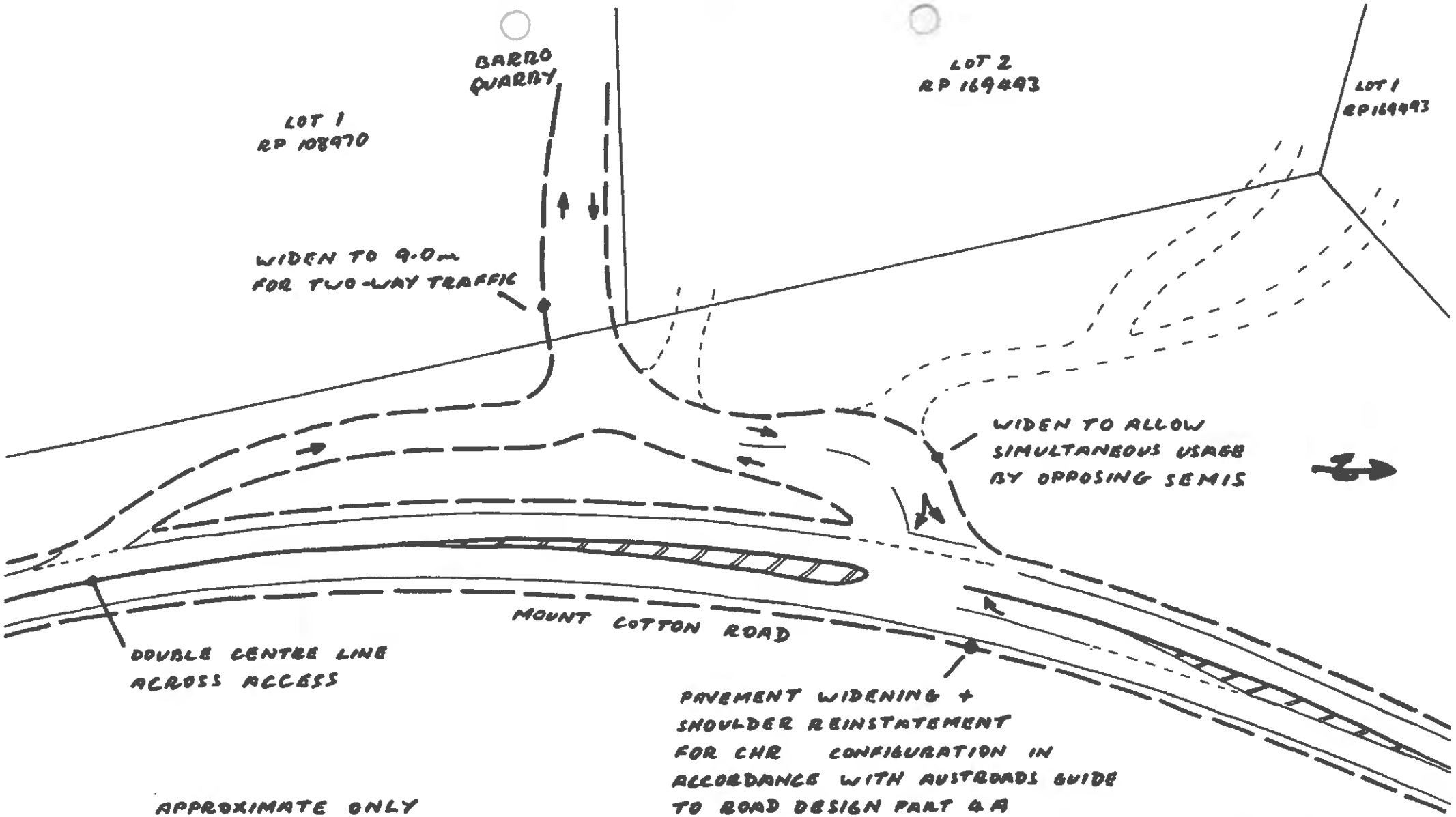
The applicant will need to give the assessment manager written notice under section 320(1) of the *Sustainable Planning Act 2009* (SPA) to stop the decision-making period to make a representation to the department and subsequently contact the department to make the representation. The decision making period cannot be stopped for more than 3 months.

Planning and Environment Court Appeals

If an appeal is lodged in the Planning and Environment Court in relation to this application, the appellant must give written notice of the appeal to the department under section 482(1) of the SPA. This notice should be given to:

Chief Executive Officer
Department of Transport and Main Roads
C/- Planning Law Team
Planning Management Branch
GPO Box 213
Brisbane QLD 4001

This notice should be given within 2 business days if the appeal is started by a submitter, or otherwise within 10 business days after the appeal is started.



APPROXIMATE ONLY
BASED ON AERIAL PHOTOGRAPHY
SUBJECT TO SURVEY

BEARD TRAFFIC ENGINEERING PTY LTD A.C.N. 011 068 134	CLIENT: DSDIP
	PROJECT: BARRO QUARRY REVIEW
ORIG. SCALE: 1:500 (0, 10, 20)	TITLE: RECOMMENDED ACCESS CONFIGURATION
BY: CLB · DATE: 22.10.13 · DRG NO.: 2293sk2	

Schedule 5
Conditions of Approval
Energex

01 November 2013

Department of State Development,
Infrastructure and Planning
PO Box 150099
City East QLD 4002

Attention: Tamara Cavallaro

Dear Tamara,

'Ministerial Call In' in accordance with Section 424 of the Sustainable Planning Act 2009 – Material Change of Use (Extractive Industry) and Environmentally Relevant Activities (ERA 8 – Chemical Storage, ERA 16 – Extractive and Screening Activities and ERA 21 – Motor Vehicle Workshop Operations) located at 1513 and 1515-1521 Mount Cotton Road and 163-177 and 195 Gramzow Road, Mount Cotton described as Lot 162 on S31962, Lot 238 on SP218968, Lot 370 on S311071 and Lot 1 and 17 on RP108970.
Departments Ref: WR13/14368
Our Ref: HBD 3701512 297080

We refer to your correspondence dated 29 October 2013 regarding the above proposal and the conditions of Easement E on SP102535 granted in favour of Energex Limited.

Section 2 of the easement documentation (relevant to Easement E on SP102535) states that '*the grantor shall not without the consent in writing of the grantee*':

> *2.2) erect or permit the erection of any buildings or structures on the easement*
> *2.4) lay or permit the laying of subterranean services under, in or across the easement*

The proposed development plans identify the establishment of a Crushing and Conveyor Loading Plant area within the bounds of Easement E on SP102535. Energex consents to the development in its current form under the conditions of Easement E on SP102535 subject the following conditions:

Enquiries
Tom Sexton
Telephone
(07) 3664 5766
Facsimile
(07) 3664 9839
Email
thomassexton
@energex.com.au

Corporate Office
26 Reddacliff Street,
Newstead QLD 4006
GPO Box 1461
Brisbane Qld 4001
Telephone (07) 3664 4000
Facsimile (07) 3025 8301
www.energex.com.au

Energex Limited
ABN 40 078 849 055

1. The developer/ applicant is to relocate the existing feeders (3580 and MCN3) where affected by the development (i.e. Crushing and Conveyor Loading Plant area) prior to the establishment to any structures being located or works being undertaken within the easement.

2. The developer/ applicant is to enter into a Works Project Contract with Energex for the relocation of the existing electrical infrastructure located within Easement E on SP102535.

3. The developer/ applicant is to reinstate an easement in favour of Energex over the relocated infrastructure at a width no less than that which is presently provided by Easement E on SP102535. The easement is to be subject to Energex's current easement conditions (Dealing number 708346714).

4. The applicant is to bear the full cost of the relocation inclusive of costs associated with the reinstatement of the electricity easement.

5. No amenity screening devices are to be located within the new or existing electricity easement.

6. It is the responsibility of the developer/ applicant to acquire any necessary vegetation approvals to facilitate the relocation of the electrical infrastructure.

If the developer/ applicant should choose not to pursue the relocation of the electrical infrastructure, the conditions of Easement E on SP102535 are to be upheld in full. In such regard, Energex will not support the construction of any structure(s) within Easement E on SP102535. Furthermore no civil works will be supported within the easement unless detailed civil plans are submitted to Energex for assessment.

Please find attached for your reference the Title Search relevant to Lot 162 on S31962 on which the Crushing and Conveyor Loading Plant area is proposed to be located and the conditions relevant to Easement E on SP102535.

Should you require any further information on the above matter, please contact Tom Sexton on (07) 3664 5766.

Yours faithfully,

Tom Sexton
Town Planner
Property Services
Energex Limited

Reference: HBD 3701512 297080

CURRENT TITLE SEARCH
ENVIRONMENT AND RESOURCE MANAGEMENT, QUEENSLAND

Request No: 8566141
Search Date: 11/02/2010 09:34

Title Reference: 10317021
Date Created: 12/02/1878

REGISTERED OWNER

Dealing No: 706992250 16/09/2003

BARRO GROUP PTY LTD A.C.N. 005 105 724

ESTATE AND LAND

Estate in Fee Simple

LOT 162 CROWN PLAN S31962
County of STANLEY Parish of REDLAND
Local Government: REDLAND

For exclusions / reservations for public purposes refer to
Plan CP S31962

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by
   Deed of Grant No. 10317021 (POR 162)

2. EASEMENT IN GROSS No 704398171 01/11/2000 at 09:22
   burdening the land
   ENERGEX LIMITED A.C.N. 078 849 055
   over
   EASEMENT E ON SP102535

ADMINISTRATIVE ADVICES

Dealing	Type	Lodgement Date	Status
712786771	VEG NOTICE VEGETATION MANAGEMENT ACT 1999	12/10/2009 11:49	CURRENT

UNREGISTERED DEALINGS - NIL

CERTIFICATE OF TITLE ISSUED - Yes 17/11/2003 707184035 Certificate No. 3

Caution - Charges do not necessarily appear in order of priority

** End of Current Title Search **

COPYRIGHT THE STATE OF QUEENSLAND (ENVIRONMENT AND RESOURCE MANAGEMENT) [2010]
Requested By: D APPLICATIONS ESPREON

FORM 9 Version 2
Land Title Act 1994 and Land Act 1994

EASEMENT

QUEENSLAND LAND REGISTRY
Page 1 of 1

704398171

$88.00
01/11/2000 09:22

BE 601

Stamp Duty Imprint

Queensland Stamp Duty Paid	
13A: CONV: 814	
292/00	
$120-	PJ

1. Grantor

W.F.M. INVESTMENTS PROPRIETARY LIMITED (ACN 004 568 727)

Lodger Name, address & phone number
Thynne & Macartney
Solicitors & Notaries
GPO Box 245
BRISBANE Q 4001
PH: 3231 8888

Lodger Code 305

2. Description of Easement/Lot

Description of Easement/Lot	County	Parish	Title Reference
Servient Tenement (burdened land) Easement E in Lot 162 on CP S31962 on SP102535	Stanley	Redland	10317021
*Dominant Tenement (benefited land) Not applicable			

* not applicable if easement in gross

3. Interest being burdened

Fee simple

***4. Interest being benefited**

Not applicable
* not applicable if easement in gross

5. Grantee

Given names | Surname/Company name and number (include tenancy if more than one)

ENERGEX LIMITED (ACN 078 849 055)

6. Consideration

EIGHT THOUSAND DOLLARS ($8,000.00)

7. Purpose of easement

Electrical Works

8. Grant/Execution

The Grantor for the above consideration grants to the Grantee the easement over the servient tenement for the purpose stated in item 7 and the Grantor and Grantee covenant with each other in terms of standard terms document no. L967635R The Grantee further agrees not to fence or cause to have fenced any part of the easement boundary without the written consent of the Grantor.

Witnessing Officer

signature

Katherine Takerei full name

Justice of the Peace (Vic 10540) qualification

as per Schedule 1 of Land Title Act 1994 (eg Legal Practitioner, JP, C.Dec)

Execution Date 21/9/2000

Grantor's Signature

W.F.M. INVESTMENTS PROPRIETARY LIMITED (acn 004 568 772)

The Common Seal of W.F.M. INVESTMENTS PROPRIETARY LIMITED ACN 004 568 727

DIRECTOR

DIRECTOR/SECRETARY

Witnessing Officer

signature

JEFFERY KENNETH MILLER full name

J.P. (C.Dec) qualification

as per Schedule 1 of Land Title Act 1994 (eg Legal Practitioner, JP, C.Dec)

Execution Date 20/10/00

Grantee's Signature

ENERGEX LIMITED (ACN 078 849 055) by its duly constituted Attorney Richard John Harris under Power of Attorney No. 703399171

R.J. Harris

W:\P2\NEWFILE\0091908U05.wpd

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Image status: 601056327 See instrument for status Pages: 5
© The State of Queensland (Department of Natural Resources) 2001

FORM 14 Version 1

Land Title Act 1994 and Land Act 1962

Queensland Land Registry

GENERAL REQUEST

Dealing No

L967635R [redacted]

$87.00

19 MAY 1994
12:28 PM

9400 MEMORANDUM

Stamp Duty Imprint

601056327

Office of State Revenue USE ONLY

1. Nature of Request

To Register Document under Section 154

Lodger Name, address and phone number

THYNNE & MACARTNEY, SOLICITORS
Level 29, Comalco Place, 12 Creek Street,
BRISBANE. QLD 4000
231.8824 940935

2. Description of Lot | **County** | **Parish** | **Title Reference**

Not applicable

3. Registered Proprietor/Crown Lessee

Not applicable

4. Interest

Not applicable

5. Applicant

THE SOUTH EAST QUEENSLAND ELECTRICITY BOARD

6. Request

I hereby request that:

REGISTER THE ATTACHED DOCUMENT UNDER SECTION 154

7. Execution by Applicant

Execution Date

17 / 5 / 1994

Applicant's ~~or Solicitor's~~ Signature

THE SOUTH EAST QUEENSLAND ELECTRICITY BOARD by its Attorneys BRIAN EDWARD BLINCO and CECIL VINCENT WEBSTER under Power of Attorney No. L279728F

.....

.....

1. The Grantor grants an easement in perpetuity to permit and allow the Grantee at all times and in all manner hereafter full right to convey electricity on, over, in, under, across and through the servient tenement ("the easement") by "electric lines" as defined in the Electricity Act 1976 which states '"electric line" means any wire or wires, conductor or other means used for the purpose of conveying, transmitting, transforming or distributing electricity, together with any casing, coating, covering, tube, pipe, pillar, pole or tower, post frame, bracket or insulator enclosing, surrounding or supporting the same or any part thereof, or any apparatus connected therewith for the purpose of conveying, transmitting, transforming or distributing electricity' or by any such means as may be appropriate, and the Grantor hereby authorises the Grantee by its employees, agents, workmen, linesmen, contractors and others authorised by it to:

   1.1 construct, inspect, maintain, repair, renew, reconstruct, replace, add to, lay down, install, erect electric lines or further electric lines on, in, under, over, across or through the easement or remove from the easement any electric line or lines;

   1.2 clear and keep cleared as the Grantee shall consider necessary by any means or method the easement of timber, trees and undergrowth and to burn off on the easement all such timber, trees and undergrowth;

   1.3 construct and maintain on the easement all such access tracks, gates and other works as the Grantee shall consider necessary.

2. The land comprising the easement may be used by the Grantor for any purpose not inconsistent with the rights of the Grantee herein provided such use is not capable of causing interference with or damage or risk to the electric lines on, under, in, over, across or through the easement, AND IN PARTICULAR THE GRANTOR SHALL NOT WITHOUT THE CONSENT IN WRITING OF THE GRANTEE:

   2.1 make or permit to be made any alterations or additions to the structures or buildings affecting their overall dimensions existing on the easement at the date hereof;

   2.2 erect or permit the erection of any buildings or structures on the easement;

   2.3 erect any fence of a height of more than 2.4 metres on the easement;

   2.4 lay or permit the laying of subterranean services under, in or across the easement;

   2.5 stockpile or fill with or permit the stockpiling of or filling with any soil, sand, gravel, other substance or materials or the construction of any roads, dam walls or other earthworks on the easement which would in any way reduce the clearance above the ground level of the conductors below the statutory clearance as may exist from time to time;

   2.6 inundate any part of the easement;

   2.7 remove or permit the removal of or fill the easement with any soil, sand, gravel or other substances;

   2.8 grow or permit the growing of sugar cane upon the easement where it is not assigned sugar cane land as at the date hereof.

3. AND FURTHER THE GRANTOR SHALL NOT

   3.1 lay or permit the laying of any metal pipe or other conductor of electricity on, under, in or across the easement;

   3.2 burn off crops or where it is assigned land at the date hereof permit the growing of sugar cane within ten (10) metres of any electric works;

3.3 reside in or permit the residing in or occupation of any caravan or mobile home which may be parked or located on the easement irrespective of whether the easement is part of a caravan park or private property.

3.4 store or permit the storage of flammable fuels or explosive materials in, on or under the easement.

4. The Grantee its employees, agents, workmen, linesmen, contractors and others authorised by it shall have full and free right to enter upon and remain, pass and repass on and over the easement for all or any of the purposes aforesaid or for the purpose of preventing any breach by the Grantor of the Grantor's obligations herein contained and with or without vehicles, plant and equipment of any description and for all or any of the purposes aforesaid the Grantee, its employees, agents, workmen, linesmen, contractors and others authorised by the Grantee with or without vehicles, plant and equipment of any description shall have the right of ingress and egress to and from the easement over the land of the Grantor adjoining or adjacent to the easement to permit access to the nearest surveyed road or to such point on the land of the Grantor as the Grantee shall consider convenient or necessary to enable the Grantee, its employees, agents, workmen, linesmen, contractors and others authorised by the Grantee to obtain access to and from the easement.

Schedule 6
Department of Community Safety Advice

Queensland
Government

Office of the
Director-General

Department of
Community Safety

File No: CSD/01506
Ref No: 08560-2013
Your Ref: MBN13/1232

28 OCT 2013

The Honourable Jeff Seeney MP
Deputy Premier
Minister for State Development, Infrastructure and Planning
PO Box 15009
CITY EAST QLD 4002

Dear Deputy Premier

Thank you for your correspondence received *on* 18 October 2013, regarding the exercise of your call in powers under section 425 of the *Sustainable Planning Act 2009* (SPA) for the development application covering expansion of the Barro Group Pty Ltd quarry at Mount Cotton Road and Gramzow Road, Mount Cotton.

As requested, the Department of Community Safety (DCS) provides the following submission.

The Department of State Development, Infrastructure and Planning (DSDIP) Planning Services has advised that State Planning Policy 1/03 *Mitigating the Adverse Impacts of Flood, Bushfire and Landslide* (SPP 1/03) applies to this application since it was submitted before the SPP lapsed on 1 September 2013. Therefore, DCS provides the following comments based on the provided Mount Cotton Quarry – Barro Group PTY LTD Planning Assessment Report, 6 December 2010 regarding reflection of SPP 1/03 State interests.

Bushfire
Figure 12 identifies the site as susceptible to high and medium bushfire hazard, and DCS supports the commitment to undertake a Bushfire Management Plan (BMP). The content of the framework in Attachment 1.8/ Section 2.10 Bushfire Management Plan appears appropriate. When the detailed BMP is undertaken, DCS recommends the proponent also address additional requirements in SPP 1/03 Guideline/Appendix 8 *Undertaking a Bushfire Management Plan*. The proponent will need to work with Queensland Fire and Rescue Service (QFRS) through consultation and review of the developed BMP to address any arising issues.

.../2

Creating a safer Queensland
Emergency Services Complex
Cnr Park and Kedron Park Roads Kedron
Queensland 4031
GPO Box 1425 Brisbane
Queensland 4001 Australia
Telephone +61 7 3635 3531
Facsimile +61 7 3247 8535
Website www.communitysafety.qld.gov.au
ABN 19 823 962 345

Please update the QFRS BMP consultation contact as follows – Southern Brisbane Zone, Level 2, 1191 Logan Road, Mt Gravatt, QLD 4122, telephone number (07) 3635 1604 and facsimile number (07) 3219 2120

Flood
Figure 13 identifies the site as having flood prone areas. SPP 1/03 Guideline/Appendix 5A sets out specific requirements for development occurring within flood prone areas. Relevant provisions are as follows:

- Specific Outcome (SO) 1 sets out provisions for non-residential development including floor level flood immunity, evacuation, flood warning times and safe refuge;
- SO 2 sets out guidance to avoid adverse impacts on people's safety or capacity to use land within the flood plain, this includes guidance on preparing floodplain management plans;
- SO4 sets out provisions for manufacture and storage of bulk hazardous materials; and
- SO 5 sets out provisions for essential services.

DCS recommends the proponent address these requirements to satisfy Outcome 1 of SPP 1/03.

Landslide
Figure 16 identifies the site as including very high to low landslide hazard management areas. Attachment 1.18 Geotechnical Report Executive Summary States "*Providing the recommendations of this report are implemented, the risk of the proposed extension to quarry activities causing geotechnical issues is considered low pursuant to the Australian Geomechanics Landslide Risk Assessment Guidelines".*

SPP 1/03 Appendix 5C Note for 1.1 outlines the requirement for site-specific geotechnical analysis to be prepared by a registered professional engineer. Although this appears to have occurred, DCS does not have the technical expertise to undertake a peer review of the geotechnical report, thus cannot provide advice regarding the acceptability of the findings.

Emergency Response Plans
Section 2.5.19 Emergency Response Plans states existing response plans will be reviewed and amended to account for the extended area of operations. DCS requests consultation with emergency responders when this occurs.

Should you require further assistance, please contact Mr Graham Wiltshire, Director, Strategy and Intergovernmental Relations, telephone number (07) 3635 3317 and email graham.wiltshire@dcs.qld.gov.au.

Yours sincerely

Kelvin Anderson PSM
Director-General

Schedule 7
Approved plans and documents

Existing Access Road

Existing Weighbridge and Office

Existing Concrete Plant

Existing Workshop

Existing Underground Fuel Storage

Existing Water Treatment Pond

Existing Shed

Stockpile Area

17 RP108970

Water Treatment Pond

Key Resource Area

Key Resource Area

Internal Access Road

Processing, Stockpile and Operations Area

Retain western topographic rim at this location

Tip head

Main Conveyor Corridor

Retaining Wall

Existing Access Road

Crushing and Conveyor Loading Plant Area

Key R

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

DSDMIP ref: MC19/1465

Date: 19 June 2019

REV	DESCRIPTION	DATE	BY
1	Plan Amendments	17-10-14	JS
2	Plan Amendments	18-10-17	JS
3	Plan Amendments	14-03-19	JHV

Data Sources:
Photography:
Topography:
Cadastre:
Ecosystem:
Other:

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Legend:
- Cadastral Boundary
- Site Boundary
- Existing Roads/Tracks
- Access Roads
- Proposed Acoustic Barrier

PROJECT: Mt Cotton Quarry

CLIENT: Barro Group

TITLE: Schematic of Proposed Plant Layout

GROUNDWORK plus
PH: +61 7 3871 0411
WWW.GROUNDWORK.COM.AU

SCALE: 1:2,000 When Printed On A3 — 0 — 40m

DRAWING NUMBER: 987.142 DA2 001

REVISION: 3

DATE: 14 March 2019 | DRAWN: JHV

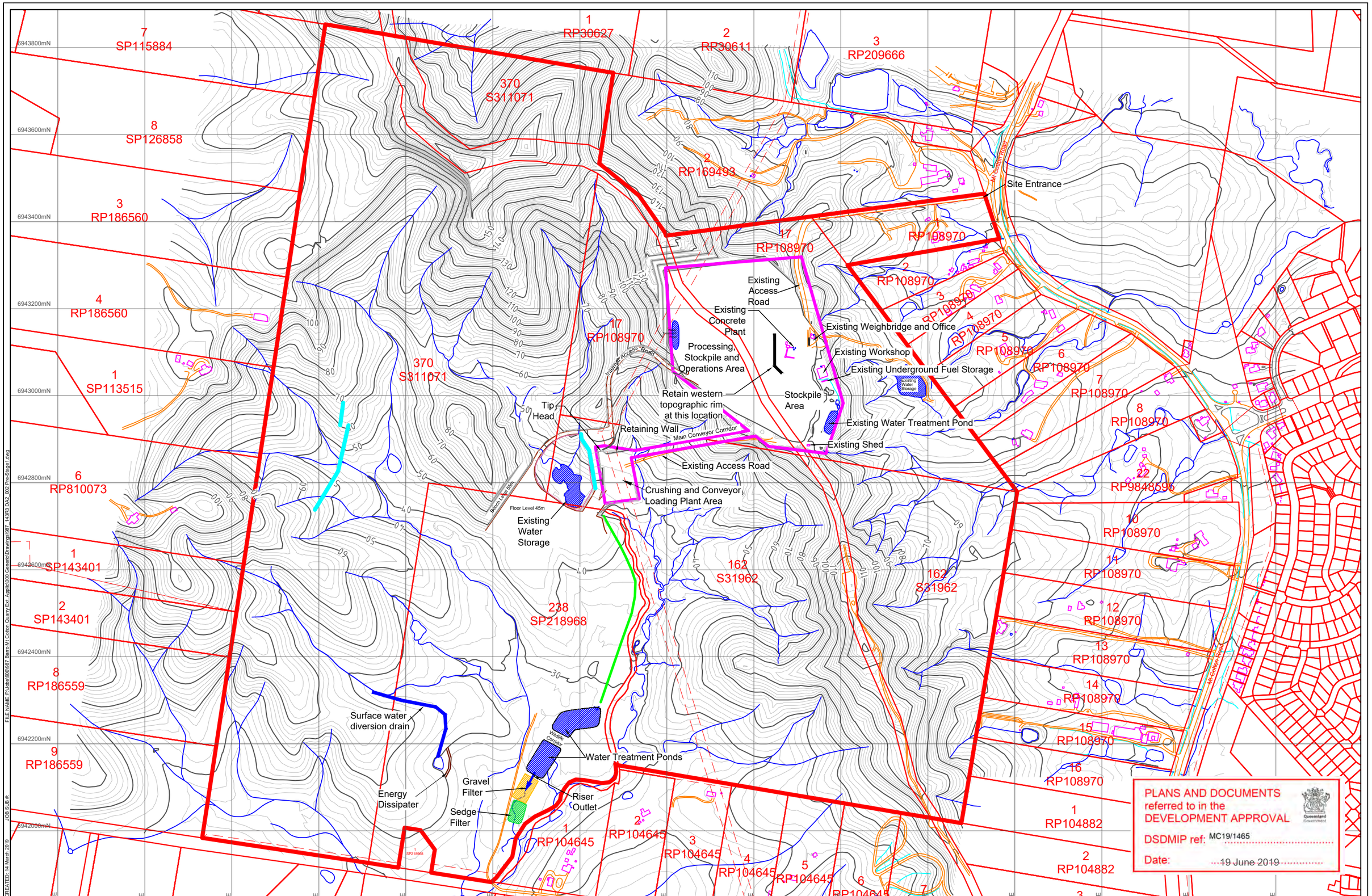
PRINTED: 14 March 2019 | CHECKED: JT

DATUM: HORIZONTAL / VERTICAL / ZONE: MGA / AHD / 56

FILE NAME: F:\Jobs\900\987 Barro Mt Cotton Quarry Ext, Applic\000 Generic\Drawings\987 14263 DA2_001 Plant Layout.dwg

JOB SUB #

CREATED: 14 March 2019



REV	DESCRIPTION	DATE	BY
1	Plan Amendments	23-10-14	JS
2	Plan Amendments	18-10-17	JS
3	Plan Amendments	14-03-19	JHV

Data Sources:
Photography:
Topography:
Cadastre:
Ecosystem:
Other:

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Legend:
- Cadastral Boundary
- Site Boundary
- Existing Roads/Tracks
- Access Roads
- Amenity Bund
- Water Treatment/Storage
- Proposed Acoustic Barrier

PROJECT: Mt Cotton Quarry

CLIENT: Barro Group

TITLE: Quarry Development Plan - Stage 1A

GROUNDWORK plus
PH: +61 7 3871 0411
WWW.GROUNDWORK.COM.AU

SCALE: 1:8,000 When Printed On A3 — 0 — 160m

DRAWING NUMBER: 987.143 DA2 002 | REVISION: 3

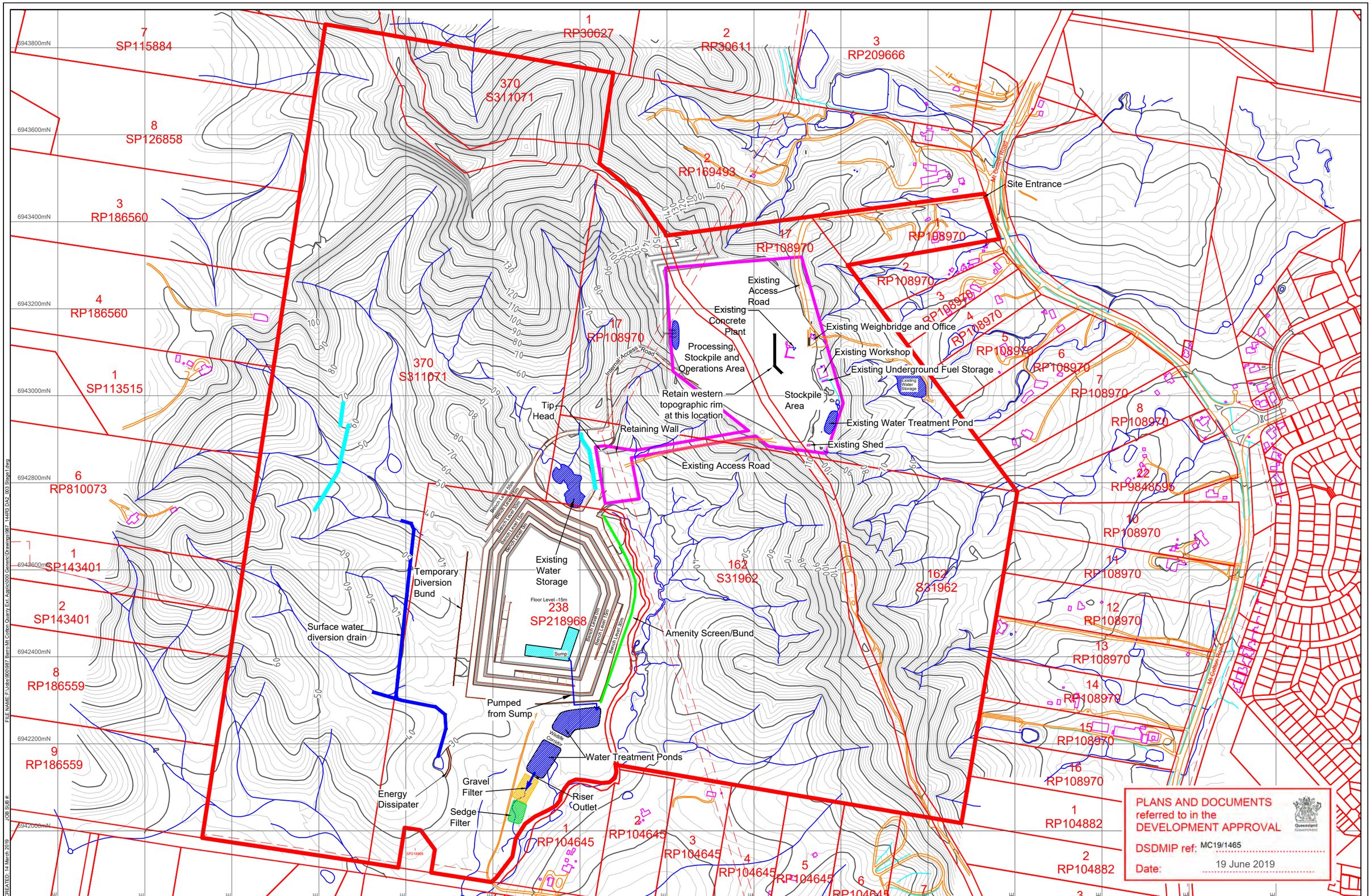
DATE: 14 March 2019 | DRAWN: JHV | DATUM: HORIZONTAL / VERTICAL / ZONE

PRINTED: 14 March 2019 | CHECKED: JT | MGA / AHD / 56

FILE NAME: P:\Jobs\900\987 Barro Mt Cotton Quarry Ext. Applic\000 General\Drawings\987 143R3 DA2 002 Pre-Stage1.dwg

JOB SUB #:

CREATED: 14 March 2019



FILE NAME: P:\data\900\987 Barro Mt Cotton Quarry Ext. Applic\000 General\Drawings\987 144R3 DA2 003 Stage1.dwg
JOB SUB #:
CREATED: 14 March 2019

REV	DESCRIPTION	DATE	BY
1	Plan Amendments	23-10-14	JS
2	Plan Amendments	18-10-17	JS
3	Plan Amendments	14-03-19	JHV

Data Sources:
Photography:
Topography:
Cadastre:
Ecosystem:
Other:

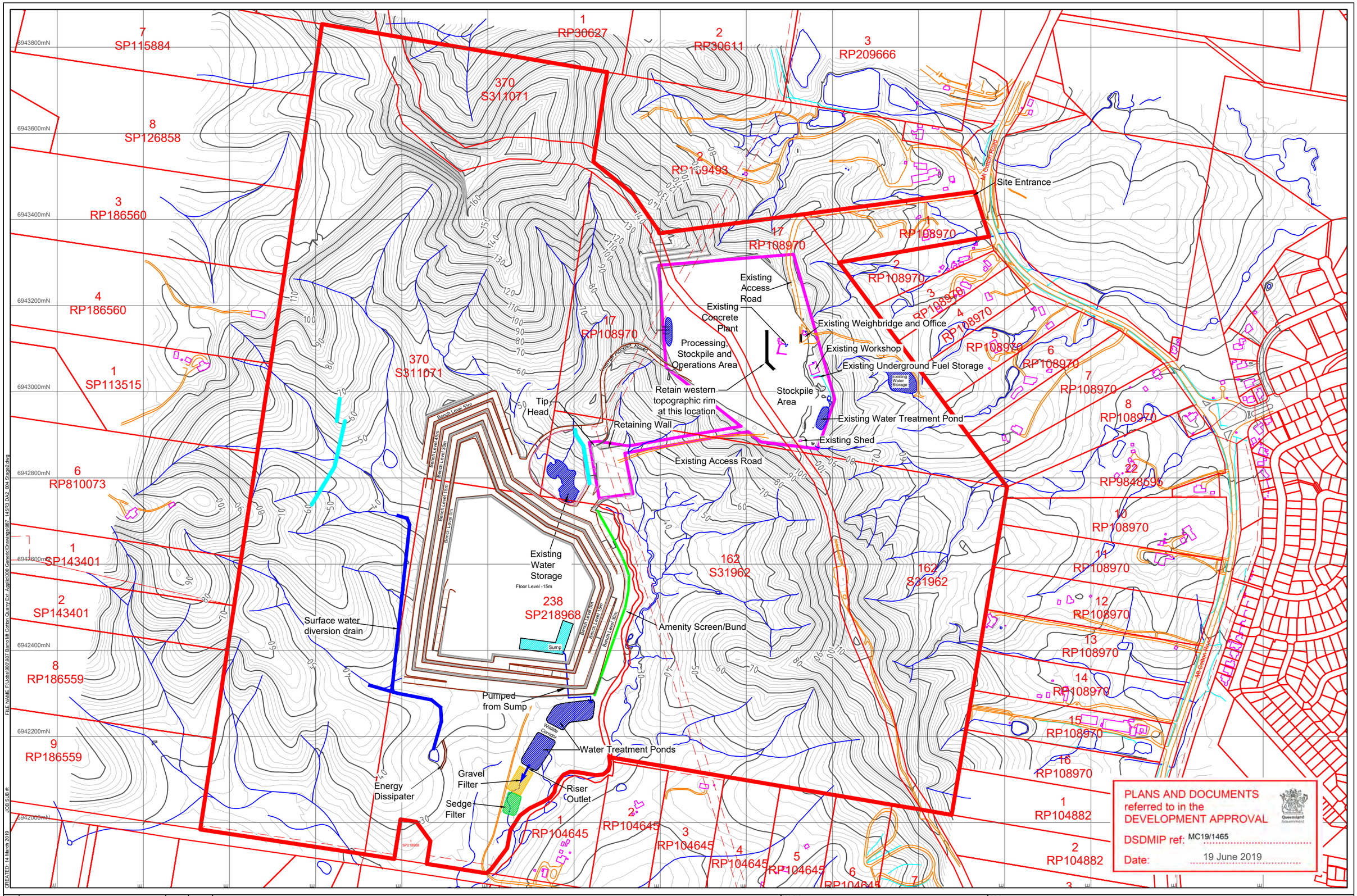
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Legend:
- Cadastral Boundary
- Site Boundary
- Existing Roads/Tracks
- Access Roads
- Amenity Bund
- Water Treatment/Storage
- Proposed Acoustic Barrier

PROJECT: Mt Cotton Quarry
CLIENT: Barro Group
TITLE: Quarry Development Plan - Stage 1B

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SCALE: 1:8,000 When Printed On A3 — 0 — 160m
DRAWING NUMBER: 987.144 DA2 003
REVISION: 3
DATE: 14 March 2019 DRAWN: JHV
PRINTED: 14 March 2019 CHECKED: JT
DATUM: HORIZONTAL / VERTICAL / ZONE
MGA / AHD / 56



PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

DSDMIP ref: MC19/1465

Date: 19 June 2019

Queensland Government

REV	DESCRIPTION	DATE	BY
1	Plan Amendments	23-10-14	JS
2	Plan Amendments	18-10-17	JS
3	Plan Amendments	14-03-19	JHV

Data Sources:
Photography:
Topography:
Cadastre:
Ecosystem:
Other:

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Legend:
- Cadastral Boundary
- Site Boundary
- Existing Roads/Tracks
- Access Roads
- Amenity Bund
- Water Treatment/Storage
- Proposed Acoustic Barrier

PROJECT: Mt Cotton Quarry

CLIENT: Barro Group

TITLE: Quarry Development Plan - Stage 2

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DRAWING NUMBER: **987.145** REVISION: DA2 004 3

DATE: 14 March 2019 DRAWN: JHV

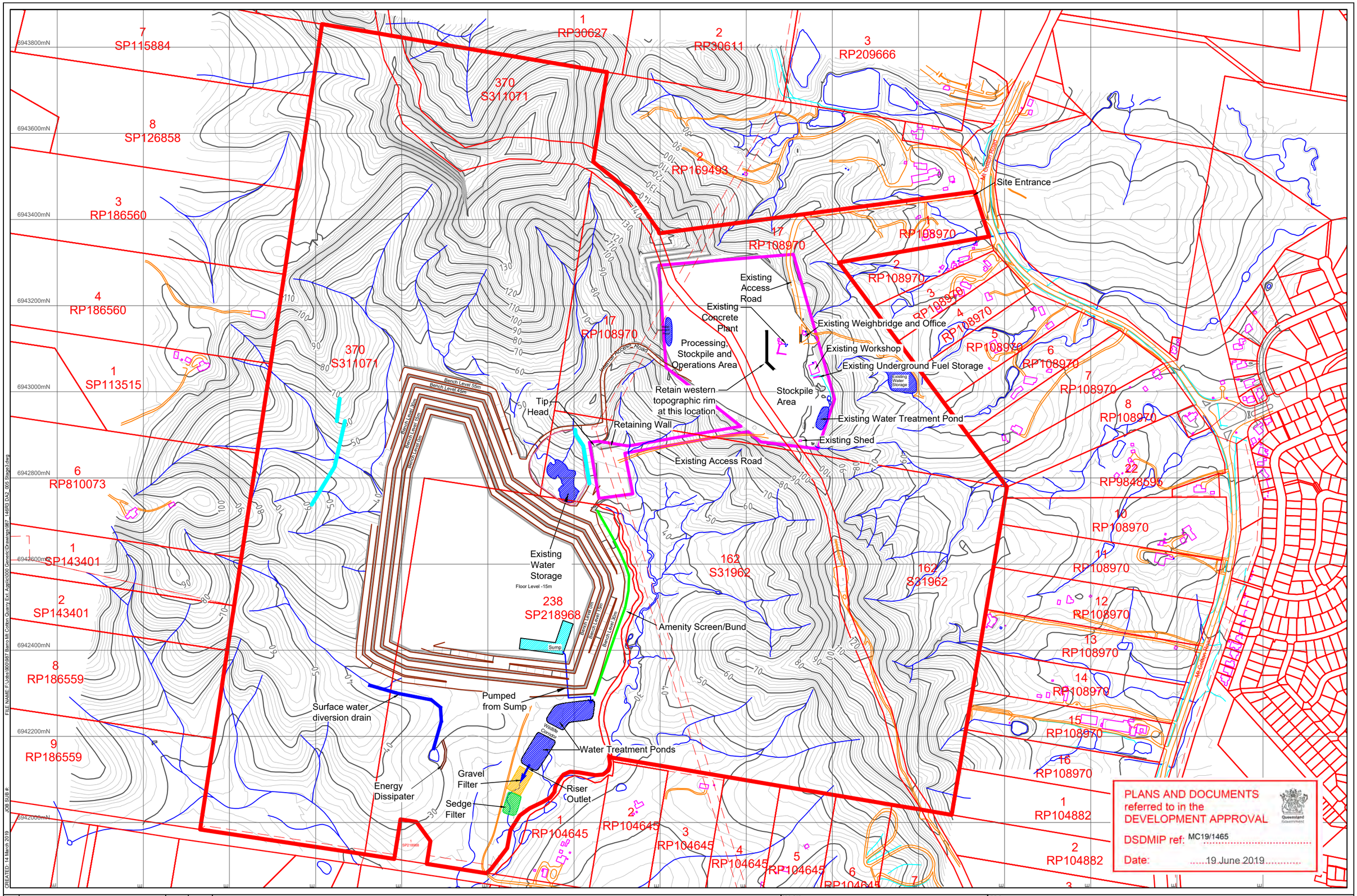
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DATUM: HORIZONTAL / VERTICAL / ZONE MGA / AHD / 56

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JOB SUB #

CREATED: 14 March 2019



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2	Plan Amendments	18-10-17	JS
3	Plan Amendments	14-03-19	JHV

Data Sources:
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Topography:
Cadastre:
Ecosystem:
Other:

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Legend:
- Cadastral Boundary
- Site Boundary
- Existing Roads/Tracks
- Access Roads
- Amenity Bund
- Water Treatment/Storage
- Proposed Acoustic Barrier

PROJECT: Mt Cotton Quarry

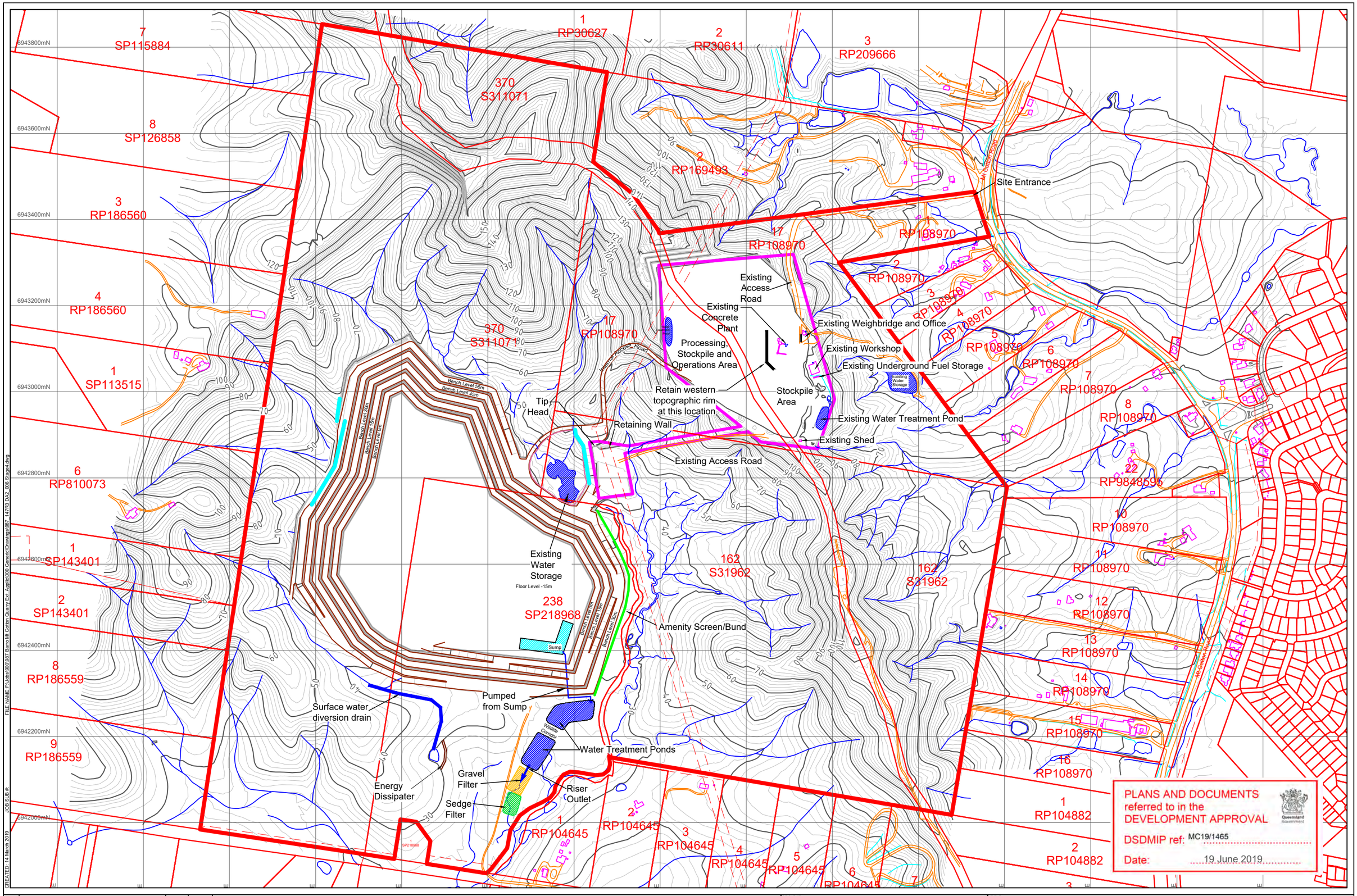
CLIENT: Barro Group

TITLE: Quarry Development Plan - Stage 3

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DRAWING NUMBER: 987.146 | REVISION: DA2 005 | 3
DATE: 14 March 2019 | DRAWN: JHV
PRINTED: 14 March 2019 | CHECKED: JT
DATUM: HORIZONTAL / VERTICAL / ZONE: MGA / AHD / 56

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JOB SUB #
CREATED: 14 March 2019



FILE NAME: F:\Jobs\900\987 Barro Mt Cotton Quarry Ex\ Applic\200 Generic\Drawings\987 - 147RD DA2 006 Stage4.dwg
JOB SUB #
CREATED: 14 March 2019

REV	DESCRIPTION	DATE	BY
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2	Plan Amendments	18-10-17	JS
3	Plan Amendments	14-03-19	JHV

Data Sources:
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Cadastre:
Ecosystem:
Other:

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Legend:
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- Site Boundary
- Existing Roads/Tracks
- Access Roads
- Amenity Bund
- Water Treatment/Storage
- Proposed Acoustic Barrier

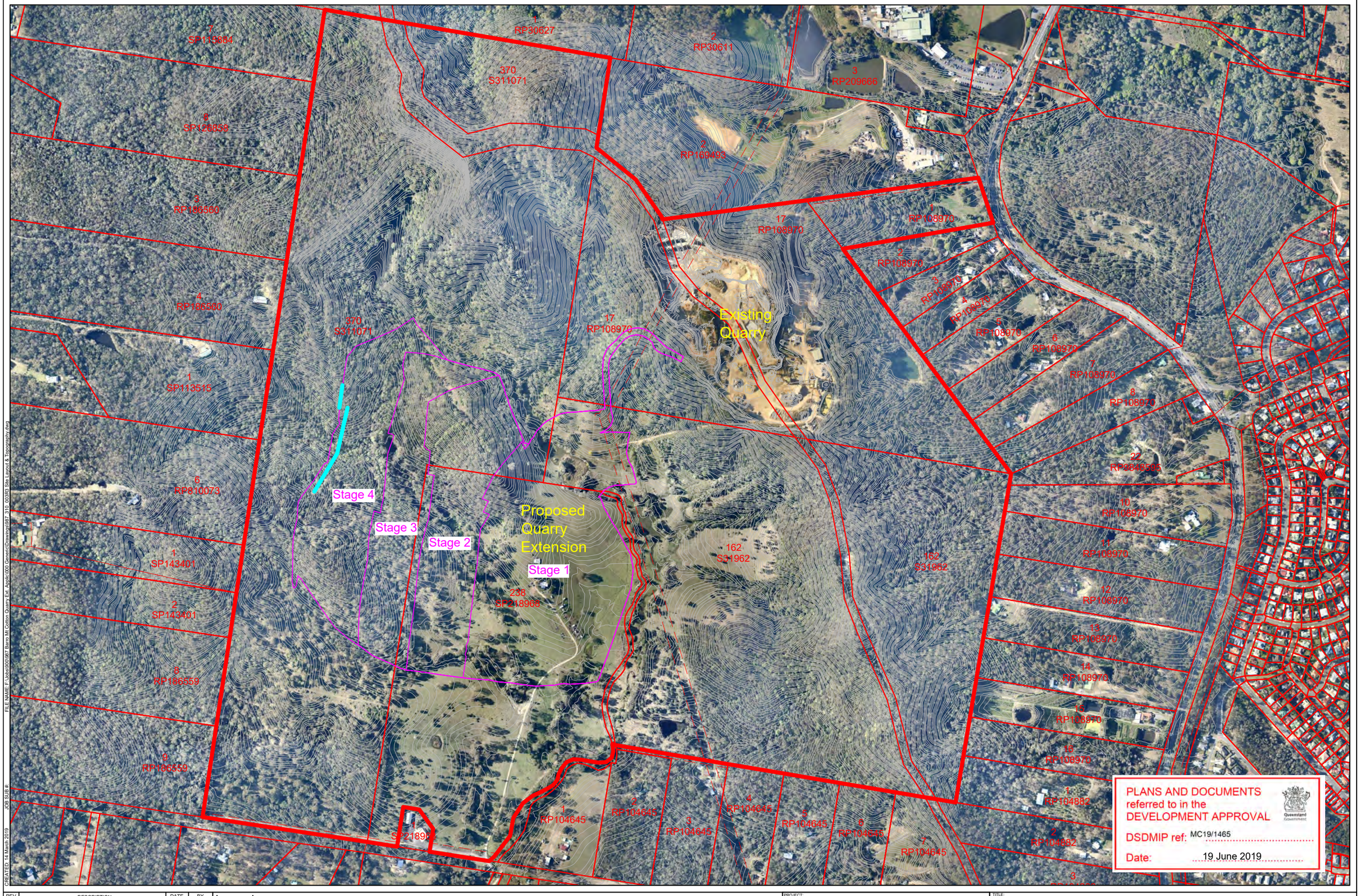
PROJECT: Mt Cotton Quarry

CLIENT: Barro Group

TITLE: Quarry Development Plan - Stage 4

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SCALE: 1:8,000 When Printed On A3 — 0 — 160m
DRAWING NUMBER: 987.147
REVISION: DA2 006 — 3
DATE: 14 March 2019 | DRAWN: JHV
PRINTED: 14 March 2019 | CHECKED: JT
DATUM: HORIZONTAL / VERTICAL / ZONE: MGA / AHD / 56



FILE NAME: F:\Jobs\90\90987 Barro Mt Cotton Quarry Ext. Appls\000 Generic\Drawing\987 310 00\3R3 Site Layout & Topography.dwg
JOB SUB #:
CREATED: 14 March 2019

REV	DESCRIPTION	DATE	BY
1	Update Quarry Staging & Aerial Image	17-10-14	JS
2	Plan Amendments	18-10-17	JS
3	Plan Amendments	14-03-19	JHV

Data Sources:
Photography:
Topography:
Cadastre:
Ecosystem:
Other:

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Legend:
- Cadastral Boundary
- Site Boundary
- Stage Boundary
- Proposed Acoustic Barrier

PROJECT: Mt Cotton Quarry

CLIENT: Barro Group

TITLE: Site Layout & Topography

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REVISION: 3
DATE: 14 March 2019 DRAWN: JS
PRINTED: 14 March 2019 CHECKED: JT
DATUM: HORIZONTAL / VERTICAL / ZONE
MGA / AHD / 56

Existing Access Road

Existing Weighbridge and Office

Existing Concrete Plant

Existing Workshop

Existing Underground Fuel Storage

17
RP108970

Water Treatment Pond

Key Resource Area

Internal Access Road

Key Resource Area

Processing, Stockpile and Operations Area

Tip Head

Retain western topographic rim at this location

Stockpile Area

Existing Water Treatment Pond

Main Conveyor Corridor

Retaining Wall

Existing Shed

Existing Access Road

Crushing and Conveyor Loading Plant Area

Key R

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

DSDMIP ref: MC19/1465

Date: 19 June 2019

REV	DESCRIPTION	DATE	BY
1	Plan Amendments	17-10-14	JS
2	Plan Amendments	18-10-17	JS
3	Plan Amendments	14-03-19	JHV

Data Sources:
Photography:
Topography:
Cadastre:
Ecosystem:
Other:

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Legend:
- Cadastral Boundary
- Site Boundary
- Existing Roads/Tracks
- Access Roads
- Operations Area
- Proposed Acoustic Barrier

PROJECT: Mt Cotton Quarry

CLIENT: Barro Group

TITLE: Conceptual Plant Layout

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DRAWING NUMBER: 987.310.023

REVISION: 3

DATE: 15 March 2019 | DRAWN: JHV

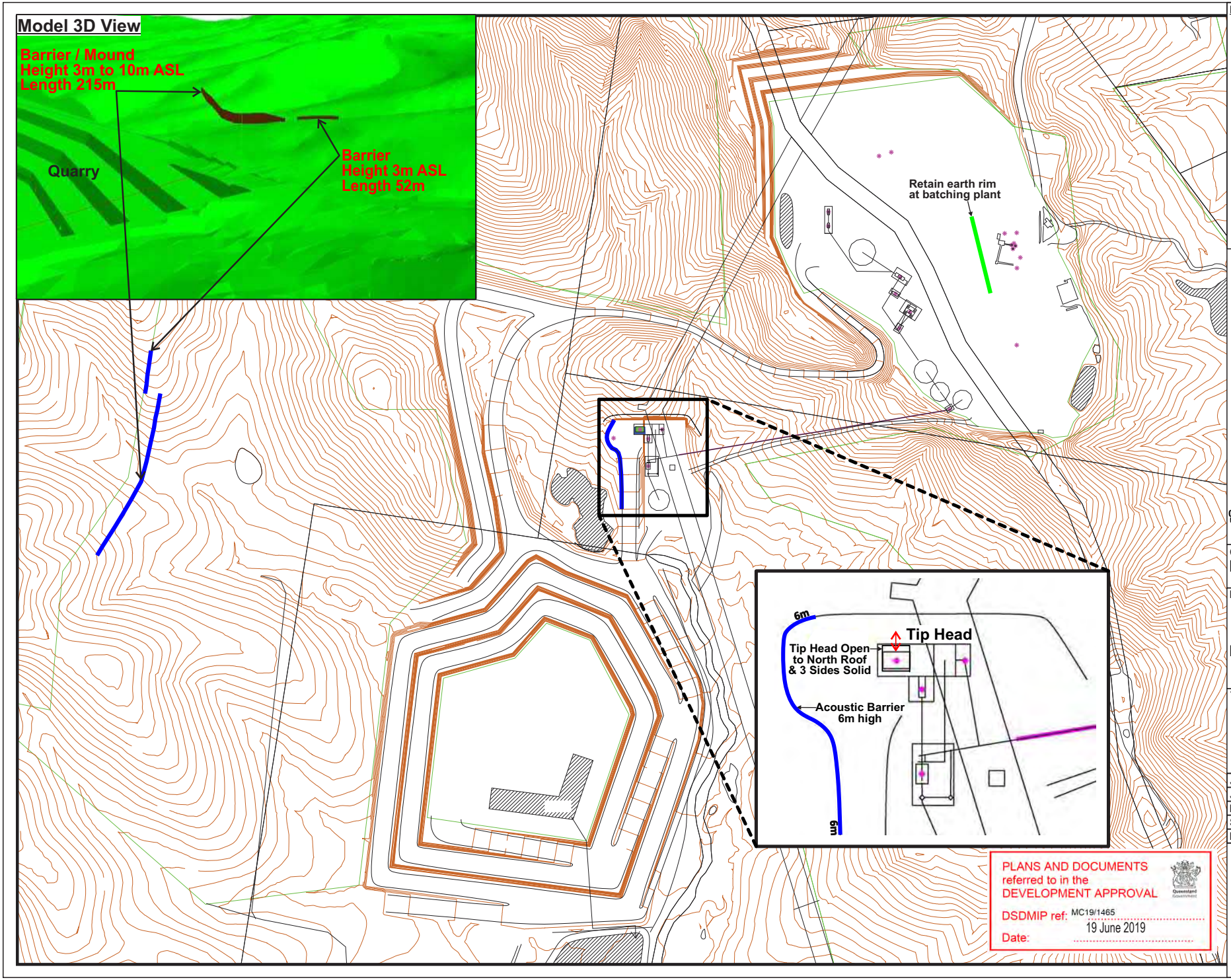
PRINTED: 15 March 2019 | CHECKED: JT

DATUM: HORIZONTAL / VERTICAL / ZONE: MGA / AHD / 56

FILE NAME: P:\Jobs\900\987 Barro Mt Cotton Quarry Ext. Applic\000 General\Drawings\987_310_023R3 Plan Layout.dwg

JOB SUB #:

CREATED: 15 March 2019



LEGEND

- Point receiver
- Point source
- Base line
- Line source
- Wall/Mound
- Ground absorption
- Elevation line
- ASL — Above Natural Surface Level

0 50 100 150 200m

CLIENT
BARRO GROUP PTY LTD

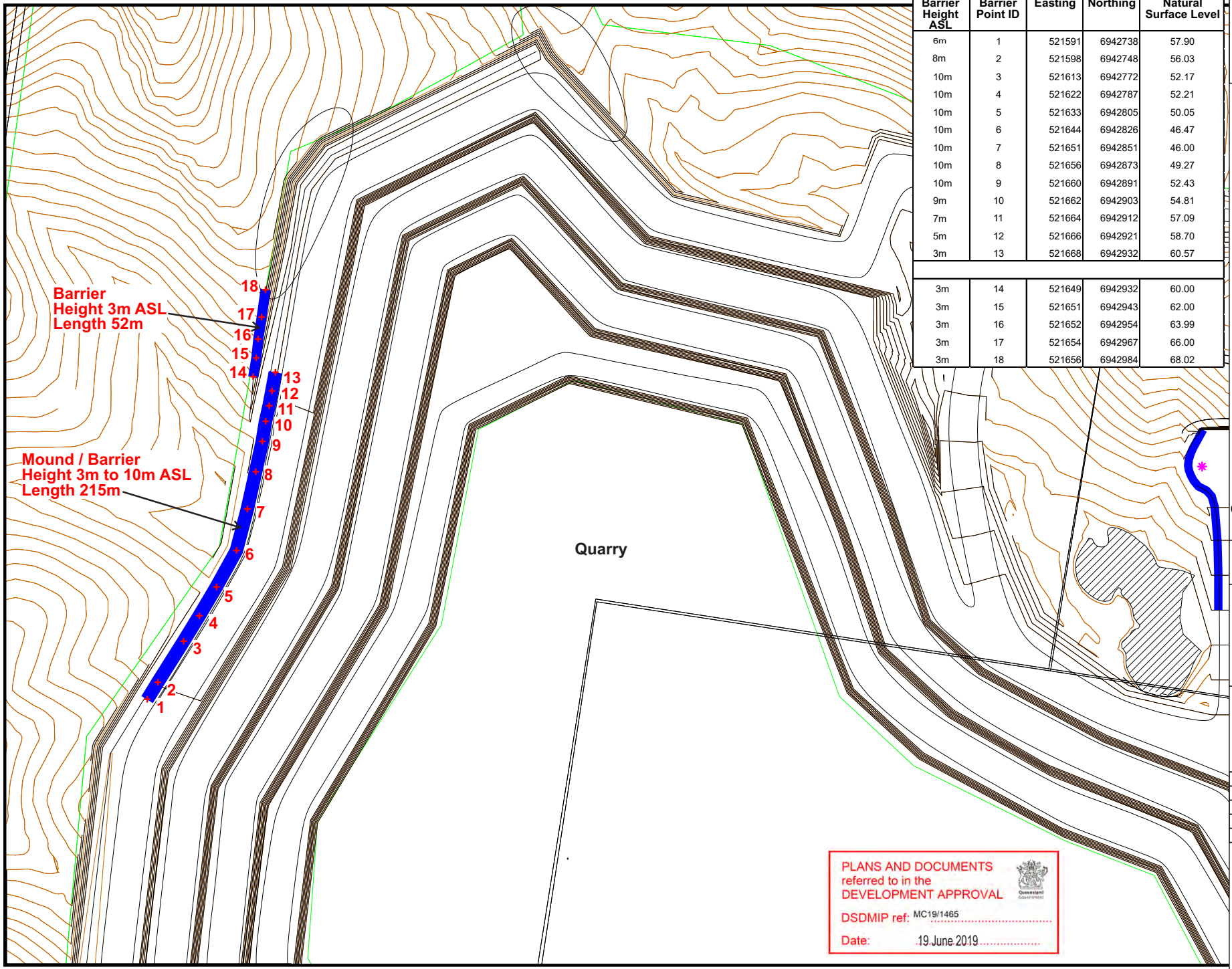
PROJECT
NOISE ASSESSMENT
PROPOSED QUARRY EXTENSION
BARRO QUARRY MT COTTON

TITLE
ACOUSTIC BARRIER /MOUND LOCATIONS

JOB	MT COTTON	**FIGURE 2**
JOB NO.	18-019	
DATE	01/11/18	DWG NUMBER
SCALE	1:6000 (A4)	**18-093-2**
REV.		

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL
DSDMIP ref: MC19/1465
Date: 19 June 2019

mwa ENVIRONMENTAL
Max Winders & Associates Pty Ltd tas MWA Environmental
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ABN 94 010 833 084



Barrier Height ASL	Barrier Point ID	Easting	Northing	Natural Surface Level
6m	1	521591	6942738	57.90
8m	2	521598	6942748	56.03
10m	3	521613	6942772	52.17
10m	4	521622	6942787	52.21
10m	5	521633	6942805	50.05
10m	6	521644	6942826	46.47
10m	7	521651	6942851	46.00
10m	8	521656	6942873	49.27
10m	9	521660	6942891	52.43
9m	10	521662	6942903	54.81
7m	11	521664	6942912	57.09
5m	12	521666	6942921	58.70
3m	13	521668	6942932	60.57
3m	14	521649	6942932	60.00
3m	15	521651	6942943	62.00
3m	16	521652	6942954	63.99
3m	17	521654	6942967	66.00
3m	18	521656	6942984	68.02

LEGEND

- Wall/Mound
- 18+ Barrier Point ID
- ASL Above Natural Surface Level

N

0 25 50 75 100m

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

DSDMIP ref: MC19/1465

Date: 19 June 2019

CLIENT
BARRO GROUP PTY LTD

PROJECT
NOISE ASSESSMENT
PROPOSED QUARRY EXTENSION
BARRO QUARRY MT COTTON

TITLE
DETAIL PLAN ACOUSTIC MOUND / BARRIERS - WEST

JOB	MT COTTON	FIGURE 3
JOB NO.	18-019	
DATE	01/11/18	DWG NUMBER
SCALE	1:3000 (A4)	18-093-3
REV.		

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W www.mwaenviro.com.au
ABN 94 010 833 084

GROUNDWORK plus

Resources, Environment, Land Use Planning



GEOTECHNICAL REPORT

MT COTTON QUARRY EXTENSION

Prepared for:
Barro Group Pty Ltd

Date:
20 December 2010

File Ref:
documents / 987_233

PLANS AND DOCUMENTS
Referred to in the
DEVELOPMENT APPROVAL
20 DEC 2013
Date .....
Queensland Government

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2. Work Completed 2

2.1 Geotechnical Mapping 2

2.2 Criteria Used for Geotechnical Modelling 3

3. Recommendations 6

APPENDICES

Appendix 1 Quarry Development Plans

Appendix 2 Joint Expert Witness Statements

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Document Control Sheet

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Version	FINAL V1
Principal Author:	Rod Huntley
Client:	Barro

Revision/ Checking History

Version	Date	Issued By	Checked By
FINAL V1	December 2010	RH	

Distribution Record

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Redland City Council	D										1
Office Copy	D/H										1

Statement of Competency/Qualification and Responsibility

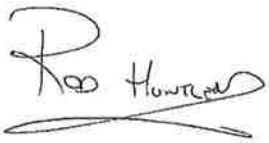
All information in this report relating to Identified Mineral Resources, is based on and accurately reflects information compiled by Groundwork Plus. This report complies with the Mineral Resources and Ore Reserves prepared by The Joint Ore Reserves Committee of The Australasian Institute of Mining and Metallurgy, (AusIMM), effective December 2004.

The Geological and Geotechnical information was logged, compiled and audited by Rod Huntley, Senior Resource Consultant of Groundwork Plus who is a Competent or Qualified Person as defined by *JORC 2004*.

Name: Rod Huntley

Experience: 19 years Mining, Engineering, Geotechnical, Resource and Exploration Geology

Professional Qualifications: B. Sc, M.App.Sc, M .Eng .Sc, MAIG, MIQA



Signature: _____

Executive Summary

Rod Huntley from Groundwork Plus has been engaged by The Barro Group to undertake a review of geotechnical issues for the proposed extension of the existing Mount Cotton Quarry located at 1513 – 1515 Mount Cotton Road, Mount Cotton (Lot 162 on S31962, Lot 238 on S31474, Lot 370 on S311071, Lot 1 on RP108970, Lot 17 on RP108970 and it is understood the development application also includes the unformed road bisecting and adjoining Lot 17, Lot 370 and Lot 162 and part of Greenhide (California) Creek located between Lot 238 and Lot 162, although no physical works are proposed in those areas) ("Site"). The proposed extension to the existing quarry is detailed in the staged Quarry Development Plans included at **ATTACHMENT 1.**

Rod Huntley from Groundwork Plus was engaged as an expert consultant in Planning and Environment Court Appeal No.BD3438 of 2007 related to a previous application for essentially the same development ("Court Appeal"). It is noted that the matter did not proceed to a merits appeal as the respondent raised a preliminary point of law and sought an order that the appeal be struck out on the grounds that the application that was the subject of the Court Appeal was not "properly made" in accordance with the Integrated Planning Act 1997 ("IPA"). The court ruled in favour of the respondent and held that the appeal be struck on the grounds that the application was not properly made.

Whilst the Court appeal was ultimately dismissed, meetings conducted between the expert witnesses representing all parties to the proceedings successfully narrowed and largely resolved any outstanding issues in dispute relating to the merits of the proposal.

The assessment and recommendations made in this report are consistent with that agreed by the geotechnical experts involved in the Court Appeal (Mr Norm Bain of Queensland Geographics Pty Ltd and Mr Rod Huntley of Groundwork Plus). The joint expert witness statements which were concluded by the geotechnical consultants are included as **ATTACHMENT 2**.

Providing the recommendations of this report are implemented, the risk of the proposed extension to quarry activities causing geotechnical issues is considered low pursuant to the Australian Geomechanics Landslide Risk Assessment Guidelines.

1. Introduction

Groundwork Plus has been engaged by The Barro Group to undertake a review of geotechnical issues for the proposed extension of the existing Mount Cotton Quarry located at 1513 – 1515 Mount Cotton Road, Mount Cotton (Lot 162 on S31962, Lot 238 on S31474, Lot 370 on S311071, Lot 1 on RP108970, Lot 17 on RP108970 and it is understood the development application also includes the unformed road bisecting and adjoining Lot 17, Lot 370 and Lot 162 and part of Greenhide (California) Creek located between Lot 238 and Lot 162, although no physical works are proposed in those areas) ("Site"). The proposed extension to the existing quarry is detailed in the staged Quarry Development Plans included at **ATTACHMENT 1.**

The assessment and recommendations in respect of geotechnical issues likely to be associated with the proposed extension to the Mount Cotton Quarry is consistent with the conclusions of the two court appointed geotechnical experts and other geotechnical issues for the Mount Cotton extension area. The joint expert witness statements which were concluded by the geotechnical consultants are included as **ATTACHMENT 2**.

The ensuing procedures for assessment of the geotechnical issues identified by the experts in the Court Appeal and associated with the current proposal to extend the Mount Cotton Quarry were identified.

The conclusions and recommendations made by the expert geotechnical consultants during the Court Appeal can be summarised as follows:

1. Adequately assess the terrain including slopes and spur lines leading into the proposed pit for identification of all instability;

2. Adequately assess the risk to the stability of slopes and spur lines surrounding the quarry from operations conducted by the quarry;

3. Provide sufficient mitigations to be introduced at each proposed stage of the development to manage the risk to slope stability to allow the effect of those proposed mitigations to be assessed;

4. Adequately assess the resulting impacts of the application with the proposed mitigations in measures in place including consideration of slope stability on ecological health and waterway habitat values.

2. Work Completed

2.1 Geotechnical Mapping

Further geotechnical mapping has occurred at Mount Cotton Quarry specifically in the steep terrain to the north and west of the proposed quarry workings and the up slope terrains in the quarry access and haul route area. This mapping has identified one localised area of failure (circular failure) which occurs over an area of approximately 20 metres width by about 50 metres length down slope. The resultant volume of the slip material in the recognised failure is not large with the failure stripping up to two metres of topsoil and regolith off the surface (the average thickness of the failure is around one metre). The primary slip vector was at 195^0. This slip is likely to have resulted due to the effects of previous land clearing and other agricultural pursuits. Several other slips are likely to have occurred in the area, however further inspections would be needed to identity any additional failures. Whilst this slip is not large it needs to be managed as it does have potential to propagate up slope, as commonly occurs, with these types of failures.

Perusal of the contour map would suggest that the identified failure area possesses the steepest topography on site which could possibly interact with the quarry development. The angle of the slope in the failure area ranges between 40-50%.

Additionally perusal of the Stage 3 and Stage 4 revisions of the development proposal is generally beneficial to the overall slope design and stability of the proposal as it moves the quarry development away from the steeper slopes of the northern and western areas and will subsequently encounter more benign geotechnical conditions. Additionally due to the variance in the topography the angle of intersection of the upper bench with the topography will be variable and only in some areas, mainly the north western area, and one 120m long section of the western wall, will the 55-70m AHD bench intersect the 70m contour line.

To mitigate any potential affects of the quarry on the geotechnical stability of the surrounding slopes the following is proposed.

- That the area north of the proposed access area is subject to weed management and habitat rehabilitation on the slopes. This will have the dual effect of increasing conservation values of the land whilst increasing stability due to the increased biological restraining capacity per m^2.

- That the upper batter slope of the northern wall is cut at a terminal batter angle which is equal to or less than the angle of the slope which it intersects. Given that the toe of the slope decreases in total slope angle toward the quarry workings a terminal batter angle of 34^0 is assessed to be stable.

To negate the effect of the quarry encroaching on the vegetated slope area redesign of the final northern wall has been completed. Risk of failure in this slope has been assessed by both numerical modelling using Slide V 5.0, and by risk assessment using the industry standard Australian Geomechanics Landslide Risk Assessment Guidelines.

2.2 Criteria Used for Geotechnical Modelling

Soils/Unconsolidated material.

- Uniaxial compressive Strength of 2.5 Mpa for soil and unconsolidated material
- Moist Density insitu 1.65t/m^3
- Cohesion 5 kN m^2
- phi = 30^0

Weathered Greywacke

- Uniaxial compressive Strength of 75 Mpa
- Density insitu 2.0t/m^3
- Cohesion 27 kN m^2
- phi = 33^0

Slightly weathered and fresh Greywacke

- Uniaxial compressive Strength of 250 Mpa
- Density insitu 2.32t/m^3
- Cohesion 48 kN m^2
- phi = 36^0

Stage 4 Revision3 Geotechnical pit design criteria

- minus 5 to 55m AHD benches 15m width 15m height terminal batter of $70^0$to 85^0
- 55-70m AHD bench distinctly to slightly weathered greywacke 59^0 batter and variable bench height as intersected by 70m AHD contour. Unconsolidated material 34^0 terminal batter, bench height variable as intersected by 70m AHD contour.

Use of these criteria result in stable geotechnical conditions Factor of Safety and a (FOS) >1.5.

Additionally risk assessment of the final slope shows the total risk of failure is low provided that the experts recommendations are implemented. If required ground support and retaining structures could be used to reinforce

local instabilities however it is unlikely that these will be required apart from achieving stability around key pieces of infrastructure i.e. the tip head.

The proposed slopes in the quarry design have been modelled for stability in the program dips to determine potential kinematic failure planes and that this information is then modelled in Slide V5 to determine the Factor of Safety or design criteria of the proposed quarry design. As part of this investigation the terminology is derived from Australian Standard 1726-1993 Geotechnical Site Investigations. In addition the rehabilitation criteria listed in the development proposal report should be strictly adhered to for rehabilitation, safety and stability purposes. The toe restraint that is proposed to be used for rehabilitation has not been modelled however it will improve the overall FOS of the slope.

Additionally the design of stage 4 revision 3 pit shell will need to be slightly altered to incorporate geotechnical design criteria. This is based on revision of the available drill data and perusal of the salient rock characteristics. These design criteria are drawn from drill holes MCP 19 to MCP 23 and MCD-1 MCD-5 which indicate that the thickness of the unconsolidated material in the northern access area is around 3m thick with a maximum identified thickness of 6m. To ensure stability one bench if required should be cut into the unconsolidated material with a batter angle of no greater than 34^0. This will only be required in terminal bench areas which intersect the 70m AHD contour.

The second bench from 50-59m AHD will consist of distinctly to slightly weathered greywacke which has a variable weathering profile. Parameters which affect stability are summarised below Joint weathering was recorded to a depth of approximately 39m AHD with some minor erratic joint weathering occurring below this level. Some infill was recorded on the joints with this material consisting of calcite and chlorite. Total joints sets recognised from review of the core drilling show that there is one pervasive joint set with a spacing of 0.29m with a rough hackly surface. Two additional random sets were recorded. The core was not orientated therefore only general trends for modelling can be drawn from this material, however given the size and scale of the operation and the generally high strength and good quality nature of the rock, this lack of orientated core is not expected have a material impact on the design criteria.

These design criteria will not materially increase the overall footprint of the quarry, it may however require that some internal design parameters are modified slightly. The total slope of the proposed development is 41^0 which is considered conservative in contrast to most actual quarry developments.

That staged geotechnical mapping will be required which is coincident with the various stages of expansion of the quarry and that this information is utilised in the design loop of quarry extension to ensure geotechnical stability in the overall quarry design. This mapping will identify the potential risks to slope stability and amend the design criteria and other salient factors accordingly to ensure that all risks are mitigated.

Redesign of the upper slope has occurred based on the criteria previously mentioned.

In a practical sense the proposed program of slope rehabilitation and revegetation, combined with slope redesign will ensure that the effects of the quarry on the ecological health and waterway habitat values are minimal. Furthermore these measures should mitigate any significant geotechnical risk to the ecological health of the "up slope" vegetated areas by not undercutting the overall slope geometry whilst improving water quality of the runoff by increasing the density, and therefore holding capacity, of the vegetation on the slope.

To reiterate, and in conclusion, it is strongly recommended that the experts recommendations are, if possible, inserted as conditions into the development proposal.

3. Recommendations

It is recommended that the following measures are undertaken in relation to the proposed extension to the Mount Cotton Quarry:

- That the steep slopes, which border the western and northern areas of the proposed quarry, are subject to a program of weed management and subsequently habitat enhancement to increase the stability and holding capacity/strength of the soils and regolith in these areas.

- That staged geotechnical mapping will be required which is coincident with the various stages of expansion of the quarry. This information will then be utilised in the design loop of quarry extension to ensure geotechnical stability in the overall quarry design. This mapping will identify the potential risks to slope stability and amend the design criteria and other salient factors accordingly to ensure that all risks are mitigated.

- That the criteria used in the modelling are adhered to.

- That perimeter blasting techniques are used in areas adjacent to all terminal batters.

- That the proposed stormwater design is cognisant of geotechnical issues and makes allowance for stability issues, as they arise, in relation to the ecological health and habitat values of the waterways on site.

- That the terminal benches below 55m AHD where excavated in unweathered material have a 70^0 to 85^0 batter and a 15m terminal bench width and height. That benches 55-70m AHD where intersecting the 70m AHD contour are split into two and that the lower bench in the distinctly to slightly weathered greywacke has a terminal batter of 59^0 whilst the unconsolidated material should be battered of at 34^0 and revegetated as soon as is practicable.

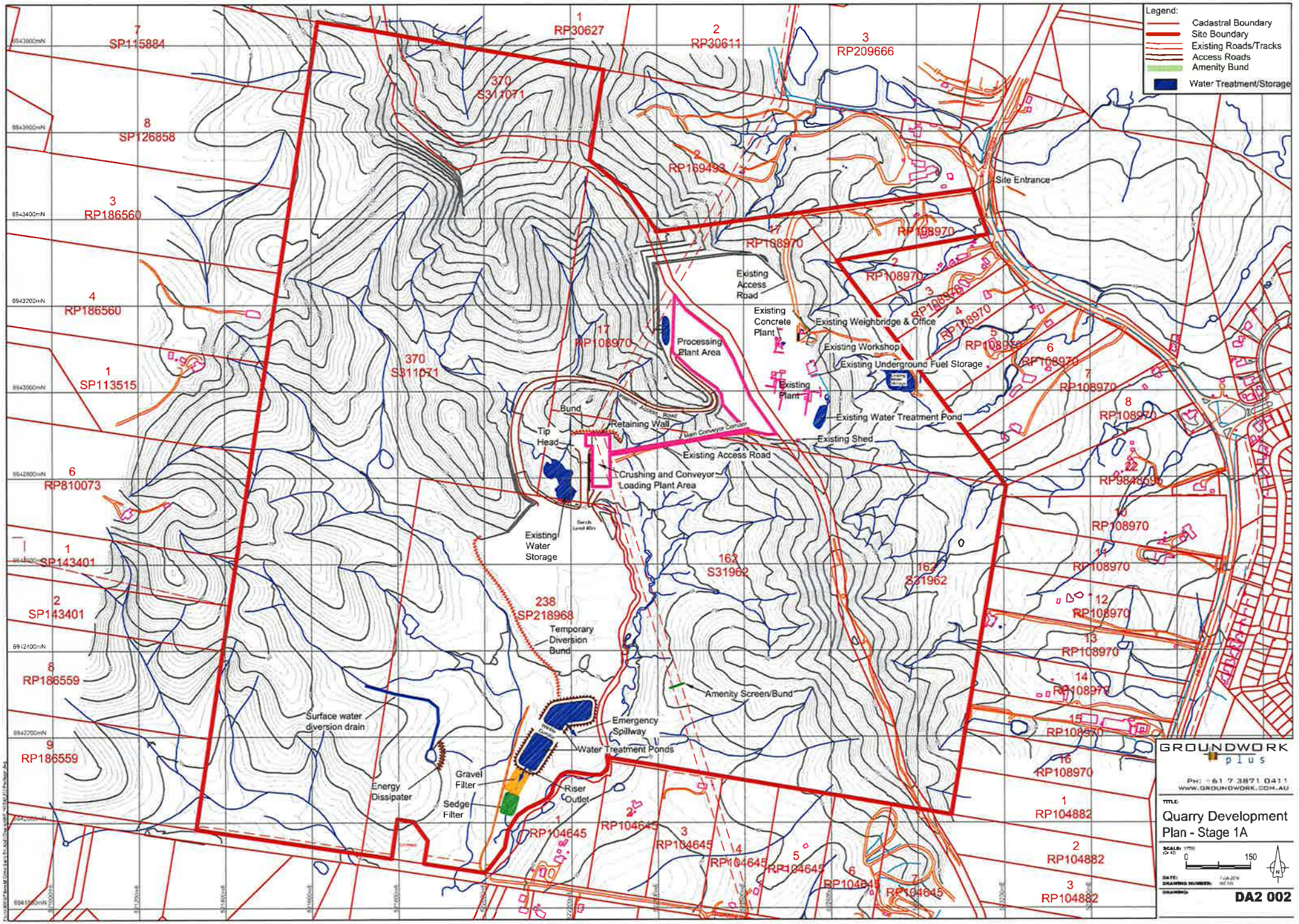
- That a yearly review of geotechnical stability is completed in conjunction with the annual production review.

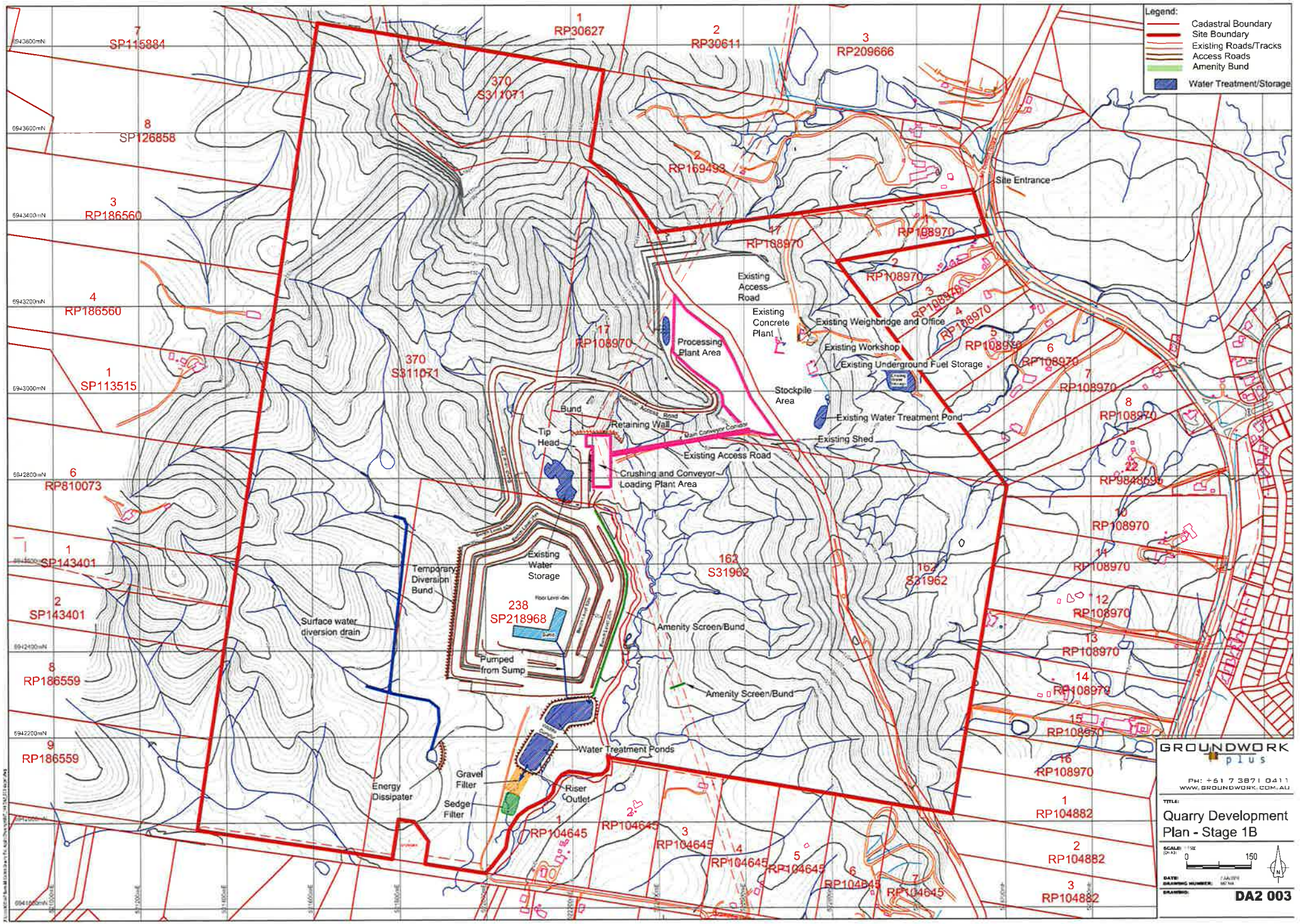
- That **FIGURE 8 BATTER TREATMENTS** and **FIGURE 9 SCHEMATIC OF QUARRY BENCH REHABILITATION** (refer **ATTACHMENT 3**) of the Site Environmental Management Plan, Document Number 987_232 is consulted when rehabilitation of the benches occurs and that the general concepts in this figure are followed for rehabilitation purposes in regards to geotechnical stability.

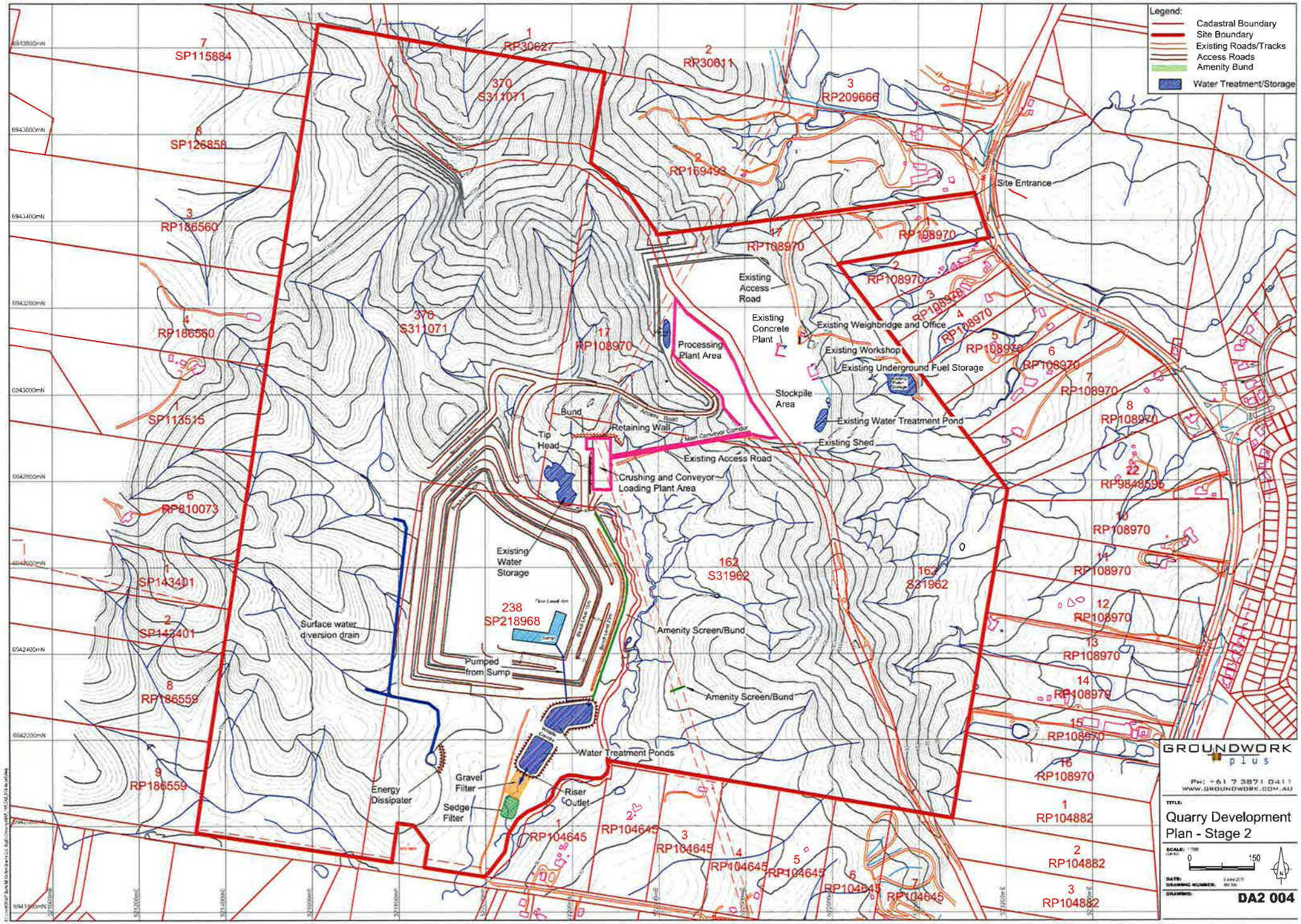
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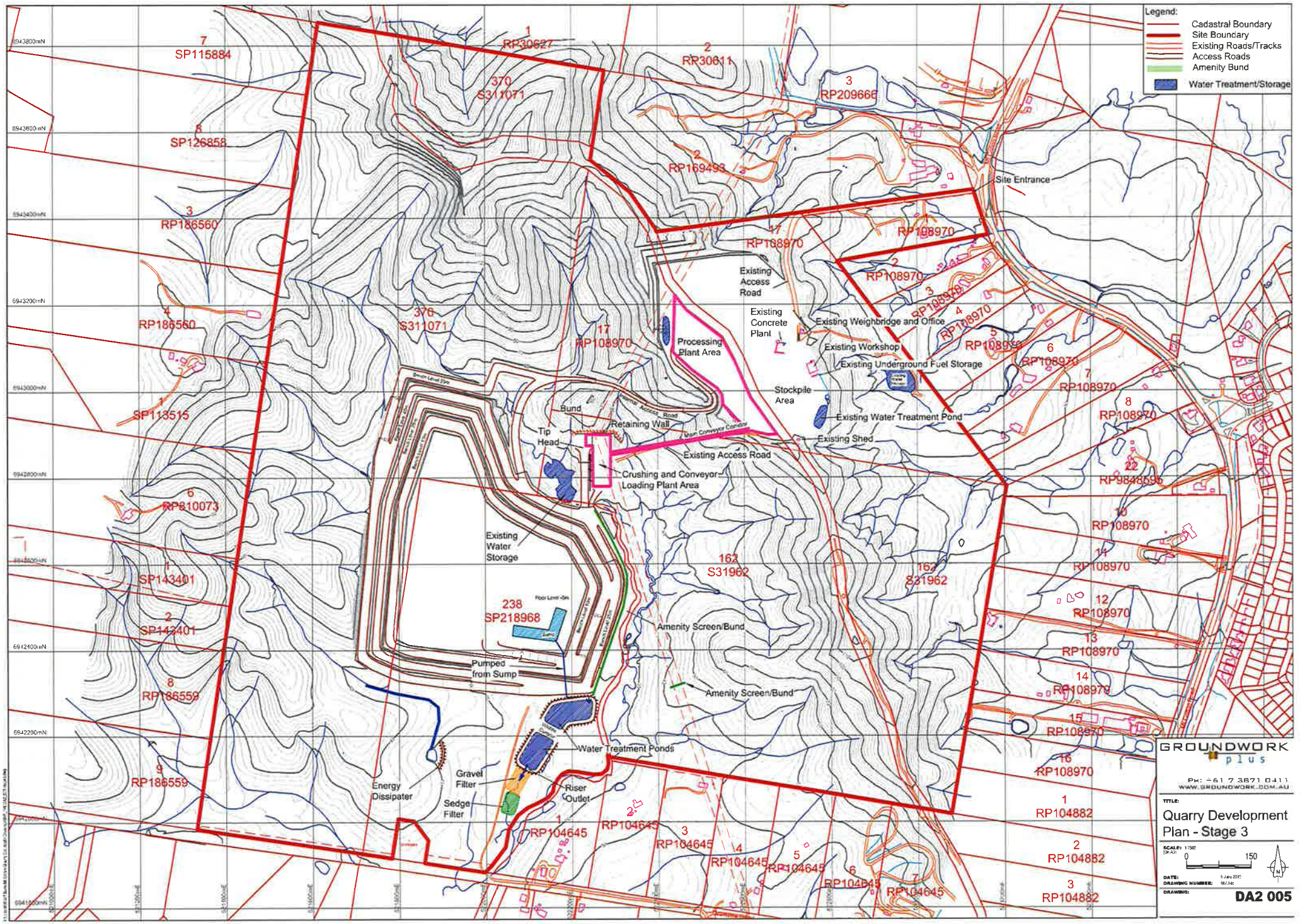
Attachment 1

Staged Quarry Development Plans


Legend:
Cadastral Boundary
Site Boundary
Existing Roads/Tracks
Access Roads
Amenity Bund
Water Treatment/Storage
Site Entrance
Existing Access Road
Existing Concrete Plant
Existing Weighbridge & Office
Existing Workshop
Existing Underground Fuel Storage
Existing Plant
Existing Water Treatment Pond
Existing Shed
Processing Plant Area
Bund
Retaining Wall
Tip Head
Crushing and Conveyor Loading Plant Area
Existing Water Storage
Temporary Diversion Bund
Amenity Screen/Bund
Surface water diversion drain
Emergency Spillway
Water Treatment Ponds
Energy Dissipater
Gravel Filter
Sedge Filter
Riser Outlet
GROUNDWORK plus
PH: +61 7 3871 0411
WWW.GROUNDWORK.COM.AU
TITLE:
Quarry Development Plan - Stage 1A
SCALE:
0
150
DRAWING NUMBER:
DA2 002


Legend:
Cadastral Boundary
Site Boundary
Existing Roads/Tracks
Access Roads
Amenity Bund
Water Treatment/Storage
Site Entrance
Existing Access Road
Existing Concrete Plant
Existing Weighbridge and Office
Existing Workshop
Existing Underground Fuel Storage
Processing Plant Area
Stockpile Area
Existing Water Treatment Pond
Existing Shed
Bund
Retaining Wall
Tip Head
Crushing and Conveyor Loading Plant Area
Existing Water Storage
Temporary Diversion Bund
Surface water diversion drain
Pumped from Sump
Amenity Screen/Bund
Amenity Screen/Bund
Water Treatment Ponds
Energy Dissipater
Gravel Filter
Sedge Filter
Riser Outlet
GROUNDWORK plus
PH: +61 7 3871 0411
WWW.GROUNDWORK.COM.AU
TITLE:
Quarry Development Plan - Stage 1B
SCALE:
0
150
DATE:
DRAWING NUMBER:
DRAWING:
DA2 003


Legend:
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Site Boundary
Existing Roads/Tracks
Access Roads
Amenity Bund
Water Treatment/Storage
Site Entrance
Existing Access Road
Existing Concrete Plant
Existing Weighbridge and Office
Existing Workshop
Existing Underground Fuel Storage
Processing Plant Area
Stockpile Area
Existing Water Treatment Pond
Existing Shed
Bund
Retaining Wall
Tip Head
Crushing and Conveyor Loading Plant Area
Existing Water Storage
Surface water diversion drain
Pumped from Sump
Amenity Screen/Bund
Amenity Screen/Bund
Water Treatment Ponds
Energy Dissipater
Gravel Filter
Sedge Filter
Riser Outlet
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8 SP126858
3 RP186560
4 RP186560
1 SP113515
5 RP810073
1 SP143401
2 SP143401
8 RP186559
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1 RP30627
2 RP30611
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3 RP209666
2 RP169493
17 RP108970
376 S311071
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162 S31962
238 SP218968
1 RP104645
2 RP104645
3 RP104645
4 RP104645
5 RP104645
6 RP104645
7 RP104645
1 RP104882
2 RP104882
3 RP104882
22 RP9848595
GROUNDWORK plus
PH: +61 7 3871 0411
WWW.GROUNDWORK.COM.AU
TITLE:
Quarry Development Plan - Stage 2
SCALE:
0
150
DATE:
DRAWING NUMBER:
DRAWING:
DA2 004



GROUNDWORK plus

PH: +61 7 3871 0411
WWW.GROUNDWORK.COM.AU

TITLE:

Quarry Development Plan - Stage 3

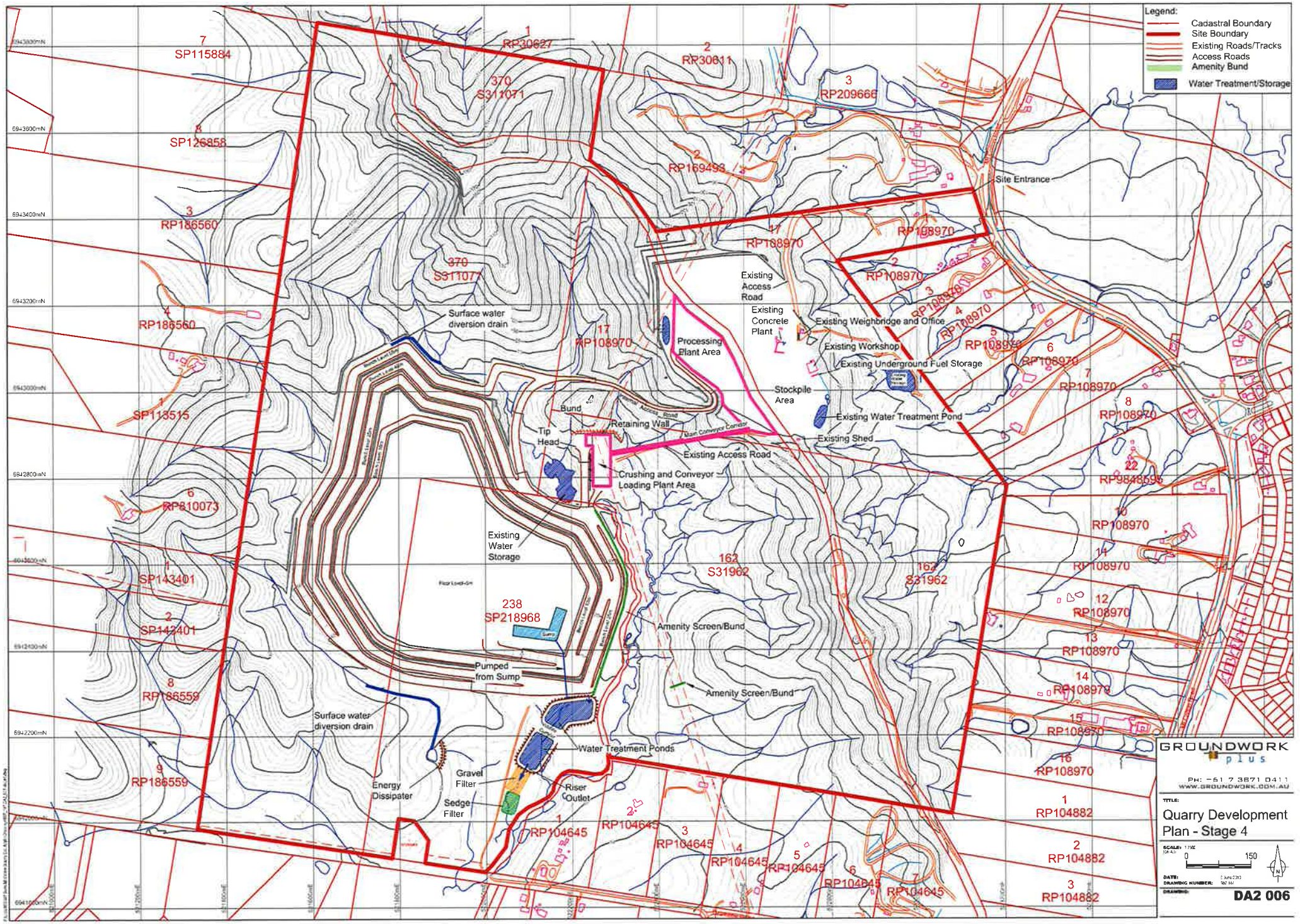
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DATE: 5 June 2015

DRAWING NUMBER: 98144

DRAWING: **DA2 005**


Legend:
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Site Boundary
Existing Roads/Tracks
Access Roads
Amenity Bund
Water Treatment/Storage
Site Entrance
Existing Access Road
Existing Concrete Plant
Existing Weighbridge and Office
Existing Workshop
Existing Underground Fuel Storage
Existing Water Treatment Pond
Existing Shed
Processing Plant Area
Stockpile Area
Crushing and Conveyor Loading Plant Area
Tip Head
Bund
Retaining Wall
Surface water diversion drain
Existing Water Storage
Amenity Screen/Bund
Pumped from Sump
Water Treatment Ponds
Riser Outlet
Gravel Filter
Sedge Filter
Energy Dissipater
GROUNDWORK plus
PH: +61 7 3871 0411
WWW.GROUNDWORK.COM.AU
TITLE:
Quarry Development Plan - Stage 4
SCALE: 1:750 (@ A1)
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150
DATE:
DRAWING NUMBER:
DRAWING:
DA2 006

Attachment 2

Joint Expert Witness Statements

Freehills

Mr Brent Lilywhite, Deacons
brent.lilywhite@deacons.com.au
Mr David Keogh, dpkeogh@bigpond.com
Mr Don Baxter, donb35@bigpond.net.au
Ms Letitia Marshall, Crown Law
letitia.marshall@crownlaw.qld.gov.au
Mr Nathan Donaldson,
nathan@abyssdemolition.com.au
Ms Natasha Daniell,
tasha@abyssdemolition.com.au
Mr Lynda Body, Environmental Protection Agency, lynda.body@epa.qld.gov.au
Mr Simon Baltais, baltais@bigpond.net.au
Ms Lesley Noah, lesleynoah@bigpond.com
Mr Andrew Rimington,
andrewrimington@bigpond.com
Ms Rosanne Meurling, Allens Arthur Robinson, rosanne.meurling@aar.com.au

17 November 2008
Matter 81340236
By email

Dear All

Barro Group Pty Ltd v Redland Shire Council & Ors
P&E Court Appeal No. BD3438 of 2007

In accordance with paragraph 22 of the Order of His Honour Judge Wilson S.C. made on 10 July 2008, we enclose, by way of service upon you, a copy of the agreed first Joint Statement prepared by Mr Norm Bain and Mr Rod Huntley in relation to slope stability.

Yours sincerely

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Partner
Freehills

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Freehills

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Attached

1 Joint statement by slope stability experts

Doc I.330003.1

Report of Experts due October 2008

In accordance with Paragraph 21 of the Court Order this initial report is submitted by the following experts, who were convened in October 2008:

Norm Bain (appointed by the Respondent)
Queensland Geographics Pty Ltd
1905 Mount Cotton Road Comubia, Qld, 4130
Ph: (07) 3206 6620 E: normbain@ozemail.com.au
Rod Huntley (appointed by the Appellant)
Groundwork Plus 9 McInroy Street, Taringa, Qld 4068
Ph: (07) 3871 0411 E: rhuntley@groundwork.com.au

The procedure followed by the appointed experts was to make contact by telephone, and exchange information and preliminary opinions.

The experts were in broad agreement that more information was need to be provided to the respondents to allow for a fair assessment of the following points to be made.

- Adequately assess the terrain including slopes and spur lines leading into the proposed pit for identification of all instability;
- Adequately assess the risk to the stability of slopes and spur lines surrounding the quarry from operations conducted by the quarry;
- Provide sufficient mitigations to be introduced at each proposed stage of the development to manage the risk to slope stability to allow the effect of those proposed mitigations to be assessed;
- Adequately assess the resulting impacts of the application with the proposed mitigations in measures in place including consideration of slope stability on ecological health and waterway habitat values

To facilitate this several maps have been supplied to the expert for the respondents which consists of:

- Quarry Plans Stage 1 to 4
- Rehabilitation Plans
- Drill Hole Plans
- Other plans as requested

It is intended that once sufficient time has been allowed for these document to be reviewed another site visit will be conducted. The experts are preparing to fulfil the further reporting requirements as directed in the Court Order.



.....
Norm Bain



.....
Rod Huntley

Freehills

Mr Brent Lilywhite, Deacons
brent.lilywhite@deacons.com.au
Mr David Keogh, dpkeogh@bigpond.com
Mr Don Baxter, donb35@bigpond.net.au
Ms Letitia Marshall, Crown Law
letitia.marshall@crownlaw.qld.gov.au
Mr Nathan Donaldson,
nathan@abyssdemolition.com.au
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Ms Lynda Body, Environmental Protection Agency, lynda.bodyr@epa.qld.gov.au
Mr Simon Baltais, baltais@bigpond.net.au
Ms Lesley Noah, lesleynoah@bigpond.com
Mr Andrew Rimington,
andrewrimington@bigpond.com
Ms Rosanne Meurling, Allens Arthur Robinson, rosanne.meurling@aar.com.au

9 December 2008
Matter 81340236
By email

Dear All

Barro Group Pty Ltd v Redland Shire Council & Ors
P&E Court Appeal No. BD3438 of 2007

In accordance with paragraph 23 of the Order of His Honour Judge Wilson S.C. made on 10 July 2008 (as amended by paragraph 1(b) of the Order of Judge Wilson S.C. made on 26 September 2008), we enclose, by way of service upon you, a copy of the agreed second Joint Statement prepared by Mr Norm Bain and Mr Rod Huntley in relation to slope stability.

Yours sincerely

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Partner
Freehills

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Attached

1 Second joint statement by slope stability experts

Doc I.579717.1

2nd Report of Experts Geotechnical Issues

In accordance with Paragraph 21 of the Court Order this initial report is submitted by the following experts, who were convened in November 2008:

Norm Bain (appointed by the Respondent)
Queensland Geographics Pty Ltd
1905 Mount Cotton Road Cornubia, Qld, 4130
Ph: (07) 3206 6620 E: normbain@ozemail.com.au

Rod Huntley (appointed by the Appellant)
Groundwork Plus
9 McInroy Street, Taringa, Qld 4068
Ph: (07) 3871 0411 E: rhuntley@groundwork.com.au

The procedure followed by the appointed experts was to:

- Complete a preliminary meeting and discussion of the geotechnical issues on site,
- Geotechnical mapping which provided the basis for design, modelling and analysis, and
- Two sessions of mediation to exchange information, ideas and opinions.

Resultant of this work a set of recommendations has been developed by the experts to address the below points. Provided the recommendations of the experts are followed, and that the Stage 4 Revision 3 pit is strictly adhered to, there are no areas of disagreement between the experts.

1. Adequately assess the terrain including slopes and spur lines leading into the proposed pit for identification of all instability;
2. Adequately assess the risk to the stability of slopes and spur lines surrounding the quarry from operations conducted by the quarry;
3. Provide sufficient mitigations to be introduced at each proposed stage of the development to manage the risk to slope stability to allow the effect of those proposed mitigations to be assessed;
4. Adequately assess the resulting impacts of the application with the proposed mitigations in measures in place including consideration of slope stability on ecological health and waterway habitat values.

Experts Recommendations

- It is strongly recommended that the quarry does not encroach any further north than is proposed in Stage 4 Revision 3. Development further north and west into these steeper areas of the site will significantly increase the potential for landslip.

- That the steep slopes, which border the western and northern areas of the proposed quarry, are subject to an intensive program of weed management and subsequently habitat enhancement to increase the stability and holding capacity/strength of the soils and regolith in these areas.

- That staged geotechnical mapping will be required which is coincident with the various stages of expansion of the quarry. This information will then be utilised in the design loop of quarry expansion to ensure geotechnical stability in the overall quarry design. This mapping will identify the potential risks to slope stability and amend the design criteria and other salient factors accordingly to ensure that all risks are mitigated.

- That the criteria used in the modelling are strictly adhered to. Failure to follow these design criteria could result in unforseen geotechnical instability.

- That perimeter blasting techniques are used in areas adjacent to all terminal batters.

- That the proposed stormwater design is cognisant of geotechnical issues and makes allowance for stability issues, as they arise, in relation to the ecological health and habitat values of the waterways on site.

- That the terminal benches below 55m AHD where excavated in unweathered material have a 70^0 batter and a 15m terminal bench width and height. That benches 55-70m AHD where intersecting the 70m AHD contour are split into two and that the lower bench in the distinctly to slightly weathered greywacke has a terminal batter of 59^0 whilst the unconsolidated material should be battered of at 34^0 and revegetated as soon as is practicable.

- That a yearly review of geotechnical stability is completed in conjunction with the annual production review.

- That **FIGURE 8** is consulted when rehabilitation of the benches occurs and that the general concepts in this figure are followed for rehabilitation purposes in regards to geotechnical stability.

Bullet Point 1

Further geotechnical mapping has occurred at Mt Cotton specifically in the steep terrain to the north and west of the proposed access road in and around the zone of intersection between the proposed quarry workings and the up slope terrains in the quarry access and haul route area. This mapping has identified one localised area of failure (circular failure) which occurs over an area of approximately 20 metres width by about 50 metres length down slope. The resultant volume of the slip material in the recognised failure is not large with the failure stripping up to two metres of topsoil and regolith off the surface (the average thickness of the failure is around one metre). The primary slip vector was at 195^0. This slip is likely to have resulted due to the effects of previous land clearing and other agricultural pursuits. Several other slips are likely to have occurred in the area, however further inspections would be needed to identity any additional failures. Whilst this slip is not large it needs to be managed as it does have potential to propagate up slope, as commonly occurs, with these types of failures.

Perusal of the contour map would suggest that the identified failure area possesses the steepest topography on site which could possibly interact with the quarry development. The angle of the slope in the failure area ranges between 40-50%.

Additionally perusal of the Stage 3 and Stage 4 revisions of the development proposal is generally beneficial to the overall slope design and stability of the proposal as it moves the quarry development away from the steeper slopes of the northern and western areas and will subsequently encounter more benign geotechnical conditions. Additionally due to the variance in the topography the angle of intersection of the upper bench with the topography will be variable and only in some areas, mainly the north western area, and one 120m long section of the western wall, will the 55-70m AHD bench intersect the 70m contour line. This is a favourable outcome in contrast to the previous pit design.

To mitigate any potential affects of the quarry on the geotechnical stability of the surrounding slopes the following is proposed.

- That the area north of the proposed access area is subject to intensive weed management and habitat rehabilitation on the slopes. This will have the dual effect of increasing conservation values of the land whilst increasing stability due to the increased biological restraining capacity per m^2.

- That the upper batter slope of the northern wall is cut at a terminal batter angle which is equal to or less than the angle of the slope which it intersects. Given that the toe of the slope

decreases in total slope angle toward the quarry workings a terminal batter angle of 34^0 is assessed to be stable.

To negate the effect of the quarry encroaching on the vegetated slope area redesign of the final northern wall has been completed. Risk of failure in this slope has been assessed by both numerical modelling Slide V 5.0, and by risk assessment using the industry standard Australian Geomechanics Landslide Risk Assessment Guidelines.

Criteria used for modelling

Soils/Unconsolidated material.

- Uniaxial compressive Strength of 2.5 Mpa for soil and unconsolidated material
- Moist Density insitu $1.65t/m^3$
- Cohesion 5 kN m^2
- phi = 30^0

Weathered Greywacke

- Uniaxial compressive Strength of 75 Mpa
- Density insitu $2.0t/m^3$
- Cohesion 27 kN m^2
- phi = 33^0

Unweathered Greywacke

- Uniaxial compressive Strength of 250 Mpa
- Density insitu $2.32t/m^3$
- Cohesion 48 kN m^2
- phi = 36^0

Stage 4 Revision3 Geotechnical pit design criteria

- -5 to 55m AHD benches 15m width 15m height terminal batter of 70^0
- 55-70m AHD bench distinctly to slightly weathered greywacke 59^0 batter and variable bench height as intersected by 70m AHD contour. Unconsolidated material 34^0 terminal batter, bench height variable as intersected by 70m AHD contour.

Use of these criteria result in stable geotechnical conditions Factor of Safety and a (FOS) >1.5.

Additionally risk assessment of the final slope shows the total risk of failure is low provided that the experts recommendations are implemented. If required ground support and retaining structures could be used to reinforce local instabilities however it is unlikely that these will be required apart from achieving stability around key pieces of infrastructure i.e. the tip head.

Bullet Point 2

The proposed slopes in the quarry design have been modelled for stability in the program dips to determine potential kinematic failure planes and that this information is then modelled in Slide V5 to determine the Factor of Safety or design criteria of the proposed quarry design. As part of this investigation the terminology is derived from Australian Standard 1726-1993 Geotechnical Site Investigations. In addition the rehabilitation criteria listed in the development proposal report in FIGURE 8 should be strictly adhered to for rehabilitation, safety and stability purposes. The toe restraint that is proposed to be used for rehabilitation has not been modelled however it will improve the overall FOS of the slope.

Additionally the design of stage 4 revision 3 pit shell will need to be slightly altered to incorporate geotechnical design criteria. This is based on revision of the available drill data and perusal of the salient rock characteristics. These design criteria are drawn from drill holes MCP 19 to MCP 23 and MCD-1 MCD-5 which indicate that the thickness of the unconsolidated material in the northern access area is around 3m thick with a maximum identified thickness of 6m. To ensure stability one bench if required should be cut into the unconsolidated material with a batter angle of no greater than 34^0. This will only be required in terminal bench areas which intersect the 70m AHD contour.

The second bench from 50-59m AHD will consist of distinctly to slightly weathered greywacke which has a variable weathering profile. Parameters which affect stability are summarised below Joint weathering was recorded to a depth of approximately 39m AHD with some minor erratic joint weathering occurring below this level. Some infill was recorded on the joints with this material consisting of calcite and chlorite. Total joints sets recognised from review of the core drilling show that there is one pervasive joint set with a spacing of 0.29m with a rough hackly surface. Two additional random sets were recorded. The core was not orientated therefore only general trends for modelling can be drawn from this material, however given the size and scale of the operation and the generally high strength and good quality nature of the rock, this lack of orientated core is not expected have a material impact on the design criteria.

These design criteria will not materially increase the overall footprint of the quarry, it may however require that some internal design parameters i.e. haul road locations are modified slightly. The total

slope of the proposed development is 41^0 which is considered conservative in contrast to most actual quarry developments.

Bullet Point 3

That staged geotechnical mapping will be required which is coincident with the various stages of expansion of the quarry and that this information is utilised in the design loop of quarry expansion to ensure geotechnical stability in the overall quarry design. This mapping will identify the potential risks to slope stability and amend the design criteria and other salient factors accordingly to ensure that all risks are mitigated.

Bullet Point 4

Redesign of the upper slope has occurred based on the criteria previously mentioned.

In a practical sense the proposed program of slope rehabilitation and revegetation, combined with slope redesign will ensure that the effects of the quarry on the ecological health and waterway habitat values are minimal. Furthermore these measures should mitigate any significant geotechnical risk to the ecological health of the "up slope" vegetated areas by not undercutting the overall slope geometry whilst improving water quality of the runoff by increasing the density, and therefore holding capacity, of the vegetation on the slope.

To reiterate, and in conclusion, it is strongly recommended that the experts recommendations are, if possible, inserted as conditions into the development proposal. Additionally geotechnical investigation of the site has been based on the assumption that stage 4 revision 3 will be the final design stage of the quarry, and if the development does not follow this quarry plan then there could be unforseen and deleterious issues in terms of geotechnical stability.

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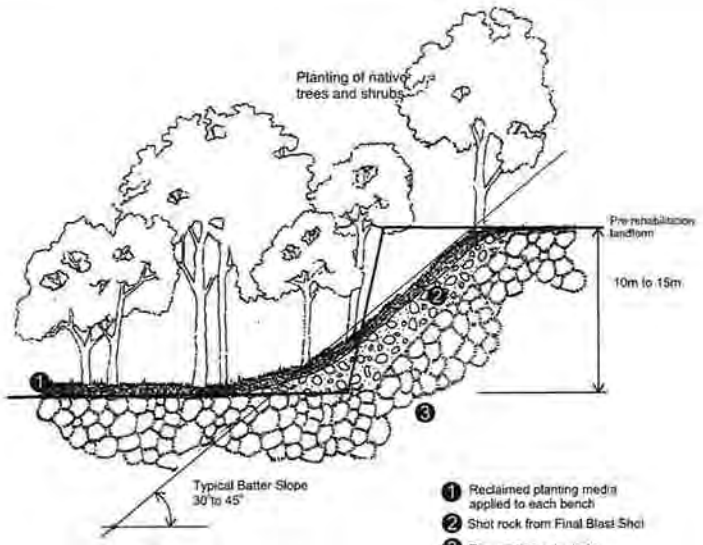
Norm Bain

.....

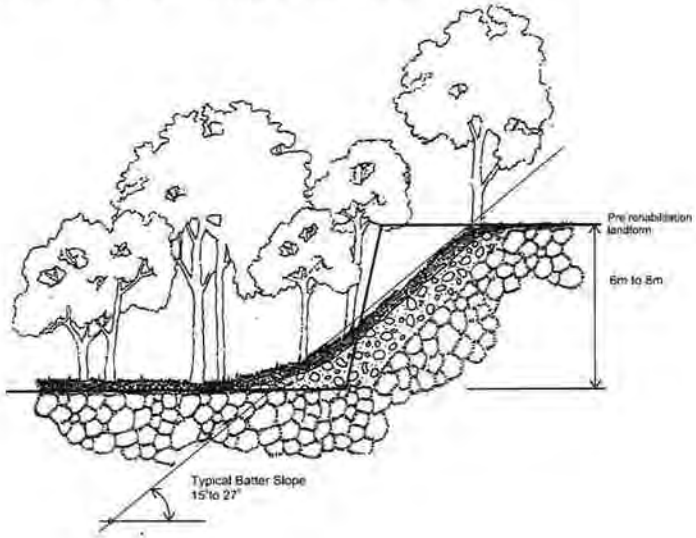
Rod Huntley

Attachment 3

Figure 8 – Batter Treatments and Figure 9 – Schematic of Quarry Bench Rehabilitation

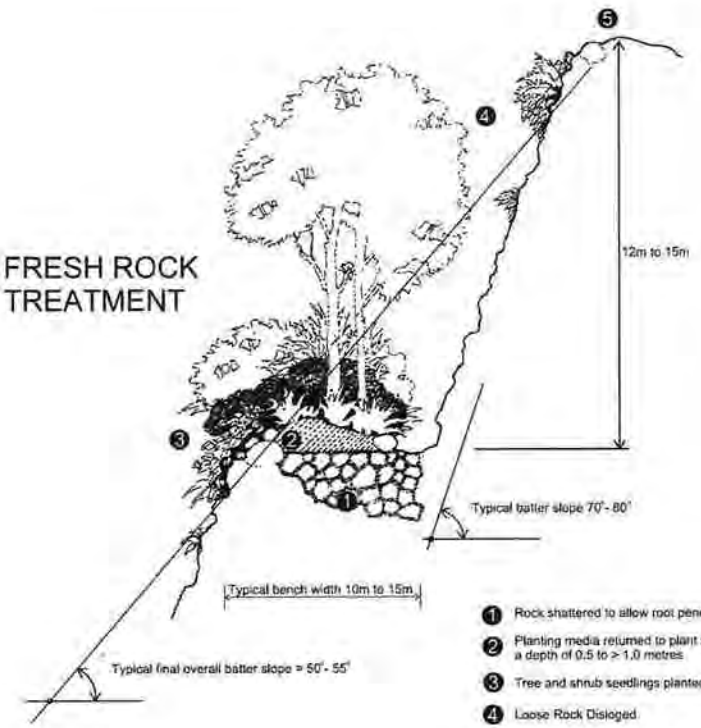


HIGHLY TO MODERATELY WEATHERED ROCK TREATMENT



COMPLETLY WEATHERED ROCK

FRESH ROCK TREATMENT



(Refer to Drawing No. 987.064 for construction details)

REV	DESCRIPTION	DATE	BY

Legend:

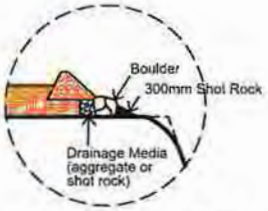
Mt Cotton Quarry

Barro Group

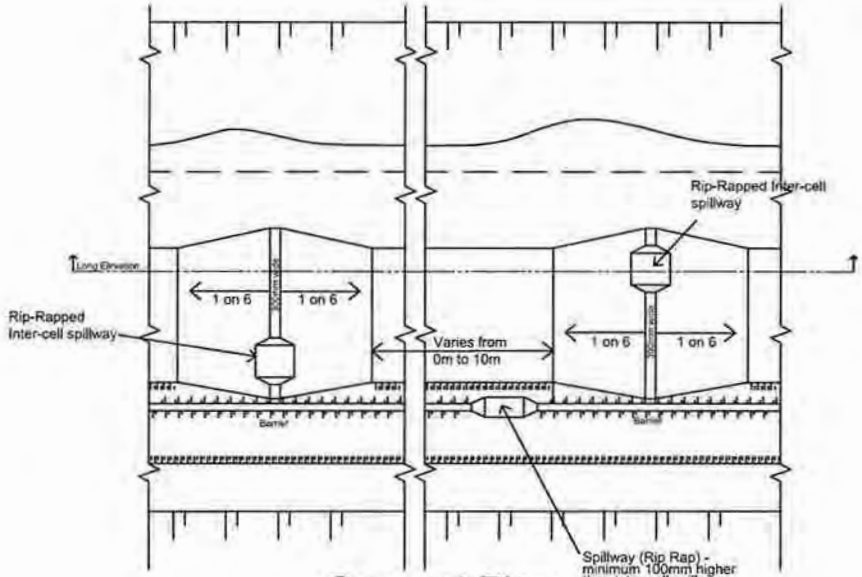
Figure 8 - Batter Treatments

GROUNDWORK PLANS

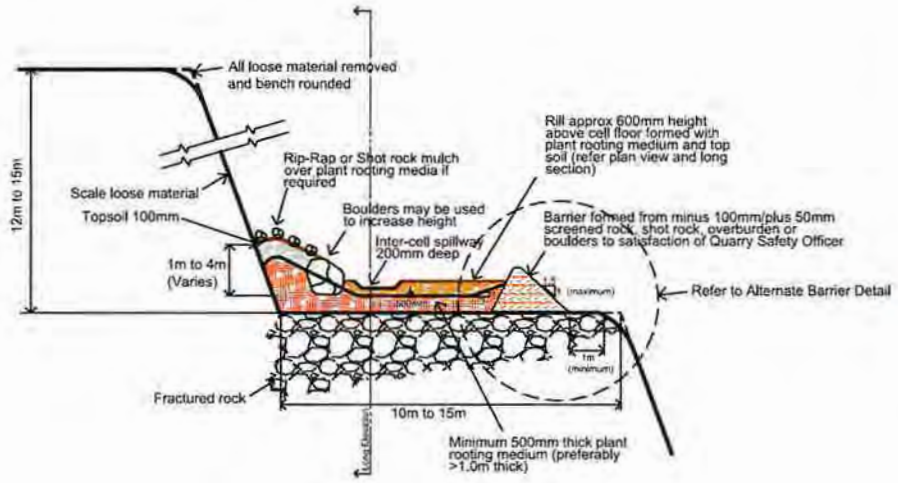
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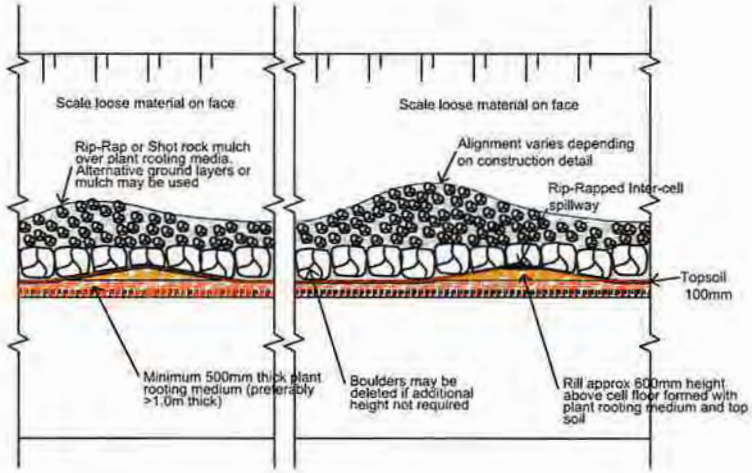
Alternate Barrier Detail



Concept Plan



Concept Cross Elevation



Concept Long Elevation

Legend:

Mt Cotton Quarry

Barro Group

Figure 9 - Schematic of Quarry Bench Rehabilitation

GROUNDWORK PLUS

1:000

987.187

HABITAT MANAGEMENT PLAN

MT COTTON QUARRY EXTENSION

Prepared for
Barro Group Pty Ltd



Biodiversity Assessment and Management Pty Ltd
PO Box 1376
CLEVELAND 4163

BAAM ECOLOGICAL CONSULTANTS

PLANS AND DOCUMENTS
referred to in the
DEVELOPMENT APPROVAL

SARA ref: MBN21/1805

Date: 17 April 2022

Specialised ecological knowledge that reduces your risk

Document Control Sheet

File Number: 0241-001-3 (009)

Project Manager: Adrian Caneris

Client: Barro Group Pty Ltd

Project Title: Habitat Management Plan - Mount Cotton Quarry

Project Author/s: Adrian Caneris, Olivia Woosnam and Dr Jo Chambers

Project Summary: The Habitat Management Plan provides guidance for managing ecological values at Mount Cotton Quarry and ensures environmental impacts from the quarry extension are minimised.

Draft Preparation History

Draft	Date Draft Completed	Checked By	Issued By
0241-001-3 Draft A	23/09/2010	Jedd Appleton	Olivia Woosnam
0241-001-3 Draft B	14/10/2010	Adrian Caneris	Olivia Woosnam

Revision/Checking History Track

Version	Date Issued	Checked By	Issued By
0241-001-3 Version 0	16/11/2010	Paulette Jones	Olivia Woosnam
0241-001-3 Version 1	02/12/2010	Olivia Woosnam	Olivia Woosnam
0241-009 Draft A	25/11/2016	Adrian Caneris	Jo Chambers
0241-009 Version 0	18/01/2017	Adrian Caneris	Jo Chambers
0241-009 Version 2	23/07/2021	Jedd Appleton	Jo Chambers

Document Distribution

Destination	Revision							
		Date Dispatched		Date Dispatched		Date Dispatched		Date Dispatched
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Signed on behalf of
Biodiversity Assessment and Management Pty Ltd

Date: 23/07/2021



Managing Director

HABITAT MANAGEMENT PLAN
MOUNT COTTON QUARRY

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List of Abbreviations

BAAM	Biodiversity Assessment and Management Pty Ltd
DAF	Queensland Department of Agriculture and Fisheries
DOR	Queensland Department of Resources (formerly DNRM - Queensland Department of Natural Resources, which is used in some superseded references)
DES	Queensland Department of Environment and Science
EPBC Act	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
HMP	Habitat Management Plan
Koala Plan	*Nature Conservation (Koala) Conservation Plan 2017*
NC Act	Queensland's *Nature Conservation Act 1992*
QFES	Queensland Fire and Emergency Services
RCC	Redland City Council
RE	Regional Ecosystems
SEMP	Site Environmental Management Plan
VM Act	Queensland's *Vegetation Management Act 1999*

1.0 INTRODUCTION

1.1. PURPOSE

The original Habitat Management Plan (HMP) was prepared on behalf of Barro Group Pty Ltd to provide guidance for managing ecological values at Mount Cotton Quarry. The principal purpose of the plan is to ensure ecological impacts from the proposed quarry extension are avoided within the surrounding environment, and are confined to the designated development area.

The HMP has been revised to address Condition 28 (a) (ii) and (b) of the Development Approval conditions.

This HMP relates to the site's ecological habitat requirements and is intended to be a continuously evolving document which will be regularly updated to include new and/or improved techniques, development approval/ conditions, and changing circumstances and expectations.

The Quarry Manager is responsible for ensuring that all onsite activities are undertaken in accordance with the overall Site Environmental Management Plan (SEMP) (Groundwork Plus 2017). The implementation of the HMP also forms an integral part of the Quarry Manager's responsibilities for ensuring the management of the environmental impact of the proposed activities.

1.2. BACKGROUND

The subject site is located at 1513 and 1515 - 1521 Mount Cotton Road and 149 - 177 and 195 Gramzow Road, Mount Cotton, on land properly described as follows:

- the land comprising that part of Greenhide (California) Creek, located between Lot 162 SP31962 and Lot 238 SP218968, which is the property of the State;
- the land previously described as the unformed road, which is now described Lot 1 SP272090, Lot 2 SP272091 and Lot 3 SP272092 and owned by Barro Group Pty Ltd; and
- the remaining land comprising Lot 162 S31962, Lot 238 SP218968, Lot 370 S311071, Lot 1 RP108970, Lot 17 RP108970 and Lot 1 RP104645.

The total site area is approximately 250 ha of which approximately 14 ha are presently disturbed through quarrying. During the life of the proposed quarry extension, it is approximated that a further 64 ha of land will be disturbed through quarrying activities.

The remaining area comprises 184 ha of which:

- Approximately 39 ha have been identified as sites for offset of Koala habitat; and
- Approximately 13 ha have been identified as sites for offset of cleared remnant vegetation.

The management and rehabilitation of Koala offset sites and Vegetation offset sites are detailed in separate reports (BAAM 2010a and BAAM 2010b (updated in 2021 and 2017 respectively) and are not the focus of this HMP.

This HMP focuses on the balance area of 131 ha, which comprises open pasture, regenerating open forest and remnant bushland.

As quarrying activities progress through the extension area, disturbed land will be progressively rehabilitated to the proposed post extraction land uses. Rehabilitation of disturbed areas offers an opportunity to provide additional habitat values and linkages for Koalas as well as other wildlife.

1.3. FORMER COURT APPEAL – SUMMARY

The author (Mr Adrian Caneris from BAAM) was engaged as a fauna and fauna habitat expert in the Planning and Environment Court Appeal 1585 of 2007.

Included as **Appendix 2** of this HMP are the two Joint Statements on Fauna and Fauna Habitat Matters. Two points of disagreement were raised, relating to habitat offsets and to the mitigation of any impediments to connectivity. This HMP has taken into consideration the matters raised by the experts in the previous appeal.

Since the joint reporting was prepared, the applicable legislative framework for the conservation of fauna and fauna habitat has changed substantially, and the quarry layout has been modified to a small extent. This HMP considers the revised quarry layout in the context of the current legislative framework.

1.4. TERMINOLOGY AND MANAGEMENT UNITS

For the purpose of this HMP, four (4) management units have been identified as shown on **Figure 1.1**:

- Rehabilitation areas are defined as areas that are subject to quarrying activities and that will require habitat rehabilitation works;
- Koala offset sites are areas identified for offset of Koala habitat (see BAAM 2010a (updated 2021) for more detail) and will require habitat rehabilitation works;
- Vegetation offset sites are areas identified for offset of remnant vegetation proposed to be cleared (see BAAM 2010b for more detail), and will require habitat enhancement works; and
- Buffer areas refer to the balance lands (i.e. all other areas within the subject site) where the focus will be on weed control and management. Buffer areas are primarily areas of remnant vegetation that are Regional Ecosystems (REs), as well as areas of non-remnant vegetation that generally currently support medium-density vegetation or related ancillary quarry or service infrastructure (see **Figure 1.1**).

Each of these four management units is shown on **Figure 1.1** and requires specific management practices, as detailed in **Section 3.0**.

1.5. ENVIRONMENTAL SUPERVISION PROTOCOL

The HMP will be overseen by the Quarry Manager.

1.6. REVIEW

There will be two review processes: at formal review periods as well as a continuous updating process.

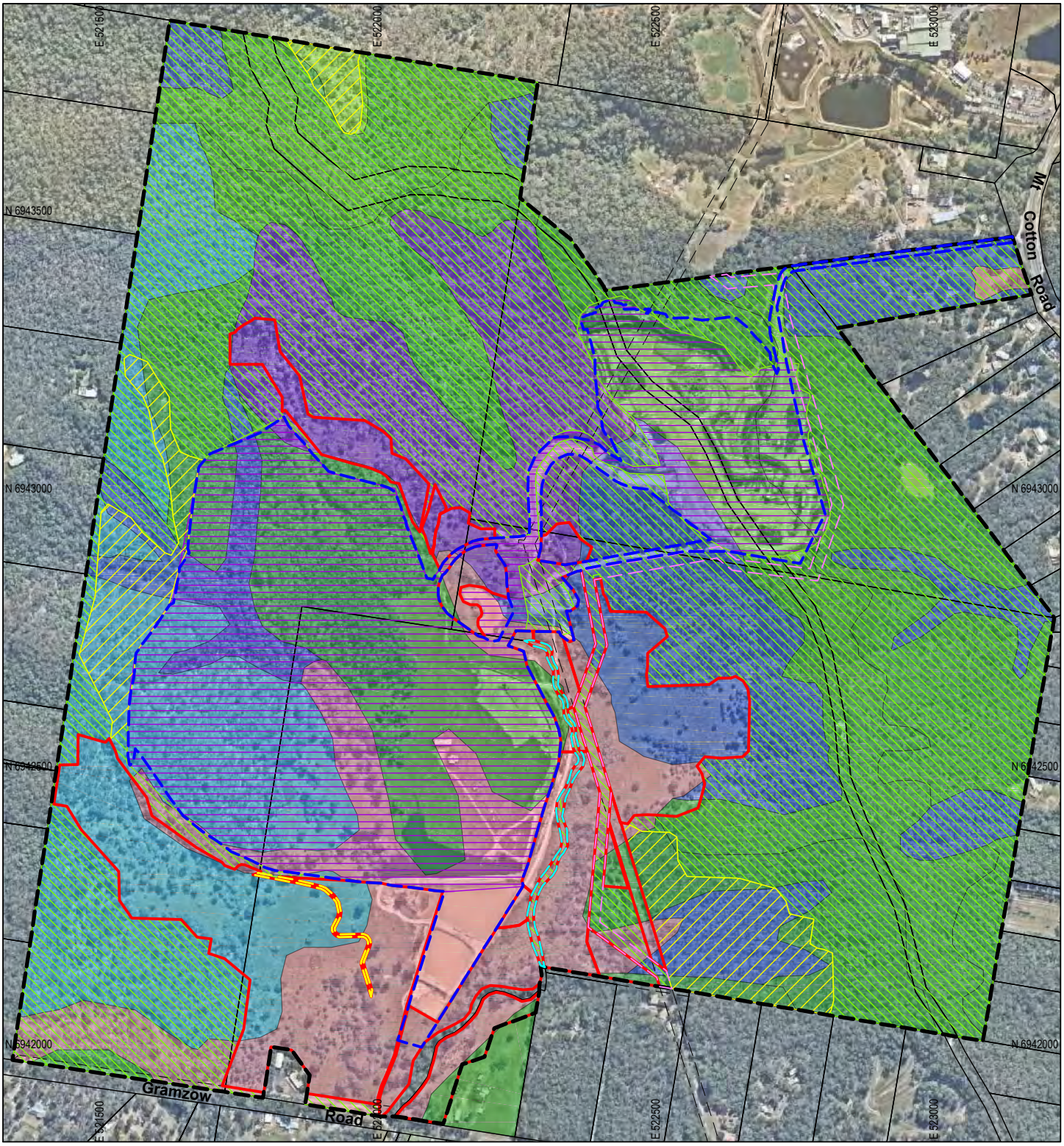
The Quarry Manager will ensure that a full review of the HMP and associated management plans is undertaken in year 3 in the first instance (or sooner if monitoring programs identify any necessary actions which would require a review), and then at intervals of not less than five years or sooner if required. Any significant or unexpected alteration in the proposed works may require the HMP to be revised and amended accordingly. Any changes or amendments proposed to the HMP will be forwarded to DES and DOR for comment prior to their adoption.

The HMP relates to the site's ecological habitat requirements and as such will be a continuously evolving document which will seek to include new and/or improved techniques, development approval/conditions, and changing circumstances and expectations.

1.7. STATUTORY REQUIREMENTS

Activities associated with this HMP will comply with the relevant provisions of legislation and regulations but not exclusive to the following legislation, plans and statutory planning documentation:

- *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) with regard to species listed under the provisions of this Act;
- Queensland's *Nature Conservation Act 1992* (NC Act) with regard to species listed under the provisions of this Act;
- The *Nature Conservation (Koala) Conservation Plan 2017* and associated policies with regard to Koala habitat;
- Queensland's *Vegetation Management Act 1999* (VM Act) with regard to Essential Habitat and 'of concern' and 'endangered' Regional Ecosystems;
- Queensland's *Planning Act 2016* and the Development Assessment Rules;
- Queensland's *Biosecurity Act* 2014with regard to weeds and pests;
- The requirements of RCC as per the Redland City Plan and associated decision notices, including any relevant 'conditions of approval'; and
- The requirements of all relevant concurrence agencies.



Aerial Photo: Nearmap - May 2020

LEGEND

- Site Boundary
- Current and Approved Quarry Areas
- Diversion Drain
- Existing Power Easement
- Electrical Easement
- California Creek

Management Units

- Koala Offset Site
- Buffer Area
- Rehabilitation Area
- Vegetation Offset Area

Pre-clearing Regional Ecosystems

- 12.3.11
- 12.11.3
- 12.11.3 / 12.11.5
- 12.11.5
- 12.11.23 / 12.11.5
- 12.11.3 / 12.11.10

Scale 1 : 10 000

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Figure:	3.1
Title:	Management Units and Pre-clearing Regional Ecosystems
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1.8. MANAGEMENT OBJECTIVES

Previous studies of the flora (LAMR 2010), Koala habitat (BAAM 2006) and terrestrial fauna (BAAM 2010c) have identified potential impacts from the proposed quarry extension. The following management objectives have been adopted by the Quarry Manager for the project in response to these previous surveys:

1. Ensure that all quarry extension development and operations are carried out in a way as to avoid, or minimise negative impacts on wildlife habitat;
2. Protect and manage extant habitats retained on the site, outside of the quarry extension area;
3. Ensure the long-term viability of the existing habitats and safe movement opportunities for fauna within the subject site;
4. Manage and monitor fauna populations, particularly Koalas;
5. Prevent intrusions into or destruction of margins of vine forest or destruction of significant plant species;
6. Prevent intrusions to habitat where *Macadamia integrifolia* and/or *M. tetraphylla* and *Corchorus cunninghamii* occurs on site;
7. Use only local native plants which are found within the appropriate ecosystem for the location in all restoration works;
8. Ensure effective weed and pest control, especially within vegetation linkages and fauna movement corridors;
9. Manage and monitor the success of rehabilitation and restoration works; and
10. Establish and implement an effective Bushfire Management Plan inviting participation from neighbouring landholders.

This HMP specifically addresses the abovementioned objectives, issues and management for fauna and associated habitats on-site and identifies an overall monitoring schedule as well as responsibilities, recording and reporting obligations with regard to the HMP. The Quarry Manager will be responsible for the overall implementation of the HMP.

This HMP will achieve the listed management objectives through four main sub-plans being:

⇒ Fauna Management Plan;
⇒ Flora Management Plan;
⇒ Rehabilitation Management Plan; and
⇒ Bushfire Management Plan.

2.0 FAUNA MANAGEMENT PLAN

The overall intent of the Fauna Management Plan is to ensure that the proposed extension and operation of the quarry have no significant adverse impacts upon the site's fauna and maintain the integrity and where possible improve the site's habitat values for fauna during all aspects of the project.

There are five main issues to be addressed for fauna management on site:

1. Vegetation clearing;
2. Fauna movement;
3. Fauna habitat restoration;
4. Pest/exotic fauna management; and
5. Monitoring.

These five issues are discussed in the following sections.

2.1. VEGETATION CLEARING

Clearing of native vegetation will only occur within the quarry extension footprint and ancillary operational areas. The clearing of trees will be carried out in accordance with a strict protocol, and in a manner that ensures Koalas living in or near the site have sufficient time to move away from areas of clearing without human intervention.

This will be achieved by:

- Advising DES of any vegetation clearing on the site at least two days prior to works commencing;
- Clearly defining areas to be cleared for quarrying purposes;
- Preventing damage and/or disturbance to areas outside defined clearing areas (i.e. native vegetation and associated habitats);
- Conducting vegetation clearing in sequential stages under the guidance of a Koala spotter where vegetation to be cleared includes non-juvenile Koala habitat trees, and only to the extent necessary for safe and effective quarrying operations, in accordance with Part 3 of the *Nature*

Conservation (Koala) Conservation Plan 2017;

- Directing sequential clearing away from threatening processes or hostile environments and towards any retained vegetation or habitat links, thus ensuring:
  - Koalas are not pressured to cross roads or move through developed or disturbed areas, or to cross areas that require movement of >100m over cleared ground to reach suitable habitat as a result of habitat loss; and
  - Koalas can safely leave the site of clearing and relocate to adjacent habitat.
- Not conducting any clearing of vegetation between the hours of 6pm and 7am;
- Placing selected timber, particularly large hollow logs/trees, that are in areas to be cleared within, alongside or near surrounding buffer areas to enhance the habitat values of retained habitat; and
- Ensuring a licensed fauna spotter will be on site prior to the commencement of and during all vegetation clearing.

The fauna spotter will check and clear vegetation prior to its felling and, if required, will relocate native wildlife into appropriate habitat areas within the site which are to be retained. In the case of a Koala being present the fauna spotter will not physically move Koalas from the tree in which they are located. Rather, the tree and immediate surrounds will be marked and the tree will not be felled, damaged or interfered with until the Koala has moved from the tree of its own volition. A report by the fauna spotter on the clearing of any native vegetation and any animals encountered or relocated will be submitted for each clearing stage.

2.2. FAUNA MOVEMENT

The following management practices are applicable to the entire site (all management units) and will be taken to increase the potential for safe fauna movement within and outside of the site:

- The maintenance and enhancement of habitat outside of the proposed extraction area and the provision of safe movement opportunities for the full range of species within habitat that adjoins the proposed activities will facilitate safe movement of fauna;
- Access to bushland areas will be restricted to land management and environmental monitoring only;
- Road speeds within the site will be restricted to 40km/hr. Vehicle movements outside designated operational areas (other than for land management purposes) will be prohibited to ensure vegetation is maintained;
- The proposed access road between the existing quarry and the proposed extension will be treated to ensure the security of fauna crossing the road. Construction of an elevated portion of the road in the form of a bridging structure, along with guide fencing, will be incorporated to ensure the provision of safe crossing opportunities. Where any fauna incidents are identified and reported to the Quarry Manager, the Quarry Manager will ensure appropriate mitigation measures are implemented under the guidance of an ecologist;
- Where proposed works create any risk for animal fatality or injury, the area will be fenced off using fauna exclusion fencing until the risk is removed;
- Clearing will only occur progressively and as required for quarrying and will occur in a manner as to direct any animals present into bushland areas away from quarry development;
- A licensed fauna spotter/catcher will be utilised prior, during and after all vegetation clearing to ensure animal safety; and
- Quarrying operations, other than maintenance works, will not be undertaken at night time (between 6pm and 6am).

2.3. FAUNA HABITAT RESTORATION

The following management practices are applicable to Koala offset sites, vegetation offset sites and rehabilitation areas (**Figure 1.1**).

Restoration of vegetation communities within these areas will be undertaken as per **Section 3.0**. In addition, all employees and contractors will be made aware of the habitat values of the site and access restrictions.

2.4. PEST/EXOTIC FAUNA MANAGEMENT

The following management practices are applicable to the entire site (all management units).

The feral animals known or expected to occur on the site (e.g. cats and foxes) are not expected to gain a significant benefit from the proposed actions. Nonetheless, effective pest management is important in the management of native species during habitat disturbances and during revegetation. In particular, native arboreal animals may be placed at a greater risk of predation from cats and foxes when they move out of large trees to feed on the new growth of recently planted trees.

A pest/weed control and monitoring program will be developed and implemented in accordance with relevant local and State legislation and plans as detailed in **Section 3.6**.

The following principles of pest management will provide the basis for pest management on site:

⇒ **Integration**

Pest management is an integral part of managing site operations.

⇒ **Awareness**

Awareness and knowledge of pests likely to infest the site must be obtained by the Quarry Manager.

⇒ **Consultation and Partnership**

Consultation and partnership arrangements between local communities, neighbours, State government agencies and RCC should be established to achieve a collaborative approach to pest management.

⇒ **Planning**

Pest management planning must be consistent at local, regional, State and Federal levels to ensure resources target priorities for pest management identified at each level.

⇒ **Prevention**

Preventative pest management is achieved by:

1. Preventing the introduction and/or spread of pests, and viable parts of pests, especially by human activity; and
2. Early detection and intervention to control pests.

⇒ **Best practice**

Pest management will be based on ecologically and socially responsible pest management practices that protect the environment and the productive capacity of natural resources.

The monitoring of feral pests is to include assessment of the site for the presence of the Red Imported Fire Ant.

In addition, no cats and dogs will be allowed to be brought onto the site by quarry personnel or contractors, including guard dogs.

2.5. MONITORING

The following management practices are applicable to the entire site (all management units).

The ongoing monitoring of the subject site's fauna populations is important in ensuring that the subject lands continue to provide suitable habitat for resident and migratory species. While the fauna monitoring will focus on the presence, health and number of Koalas on the site, it will also monitor other native species.

Areas outside of the existing quarry, quarry extension and ancillary operation areas (**Figure 1.1**) will be surveyed six months from the date of commencement, and subsequently on an annual basis for the presence of Koalas and/or Koala signs (scats and scratches). During these surveys, presence/or evidence of any other conservation-significant species (e.g. Powerful Owl *Ninox strenua, Greater Glider Petauroides volans*) will be recorded. Every five years for the first 15 years, a detailed survey of the Koala population will be undertaken.

The area to survey is greater than 50 ha which is considered too large to search in its entirety; therefore a scientifically robust sampling methodology must be used to establish a reliable estimate of the density of Koalas in the surveyed area. As methodologies for Koala presence/absence surveys are continually improving over time, the most appropriate Koala survey methodology for the project area will be determined immediately prior to commencement of surveys.

Performance Targets

1. For the life of the quarry, the number of Koala food trees within the subject site is greater than the number currently on the site. See revised BAAM (2010a, updated

2021) for more details of the intended Koala tree offset.

2. Resident Koalas are occupying the subject site (outside the existing quarry and quarry extension) at densities that reflect average densities in the local area in comparable habitat.

3.0 FLORA MANAGEMENT PLAN

The overall intent of the Flora Management Plan is to protect and improve the quality, quantity and integrity of vegetation on the subject site wherever practical and to ensure the implementation of sound management practices

3.1. GENERAL SITE MANAGEMENT

The following management practices are applicable to the entire site (all management units) and are designed to minimise potential adverse impacts from the quarry extension:

- Ensure that people entering the site are aware that no native vegetation is to be disturbed without the approval and supervision of the Quarry Manager;
- Provide barriers and/or warning signs to discourage illegal recreation vehicles;
- Exclude all stock such as goats, sheep, cattle and horses from the site unless identified management outcomes suggest otherwise (e.g. to control fuel load or weed infestation);
- Prepare a site bushfire control plan in conjunction with fire authorities and inviting participation from neighbouring landholders (**Section 4.0**);
- Plant species used in all revegetation works that generally mirror the pre-disturbance vegetation;
- Carry out weed and pest animal control in accordance with the standards adopted by landholders in the Mount Cotton district (to be included in a future pest/weed control and monitoring program for the site);
- Conduct pre-clearance surveys for Macadamia and Corchorus species immediately prior to clearing of potential habitats for these threatened flora species (as required by the imposed conditions);
- If present, it is likely that the plants will be small enough to allow successful translocation into appropriate locations within the vegetation offset areas;
- If no threatened flora species are detected during the pre-clear targeted surveys, there will be no impacts to these species as a result of the quarry extension; therefore there is no statutory requirement to propagate and secure *Macadamia* species and *Corchorus* species within the vegetation offset areas. This HMP provides appropriate management prescriptions to ensure threatened flora species present within the buffer lands will be retained and protected;
- Where further research would result in the improvement of the recovery plan for *Corchorus cunninghamii,* provide support to any managers/researchers (e.g. RCC, universities, Qld Herbarium etc.);
- Results from any research will be made available to develop and improve the recovery plan for *Corchorus cunninghamii;*
- Liaise with relevant authorities regarding appropriate management of remnant vegetation to support *Corchorus cunninghamii;*
- Minimise the use of herbicides and fertilizers. Revegetation works are taking place in what is primarily a low-fertility environment – and therefore the use of fertilizers is not likely to be necessary to re-establish native vegetation, although it cannot be discounted in all circumstances if nutrient deficiency is detected in some areas. At all times, fertilizer would be applied specifically to individual trees (e.g. would not be broadscale). The use of herbicides would be restricted to the control of weeds declared under the *Biosecurity Act 2014*, and environmental weeds that threaten the success of habitat restoration/or enhancement or impede fauna movement. Use of herbicides would be in strict compliance with the Queensland Department of Agriculture and Fisheries (DAF) guidelines; and
- Seek advice from the DAF regarding the suitability of herbicides and ensure that weed and pest management practices are consistent with those provided in the Biosecurity Act https://www.daf.qld.gov.au/business-priorities/biosecurity/policy-legislation-regulation/biosecurity-act-2014/biosecurity-matter-report

3.2. MANAGEMENT UNITS AND TREATMENT

Each of the four main management units identified in **Figures 1.1** and **3.1** requires specific treatment, as described in the following sections.

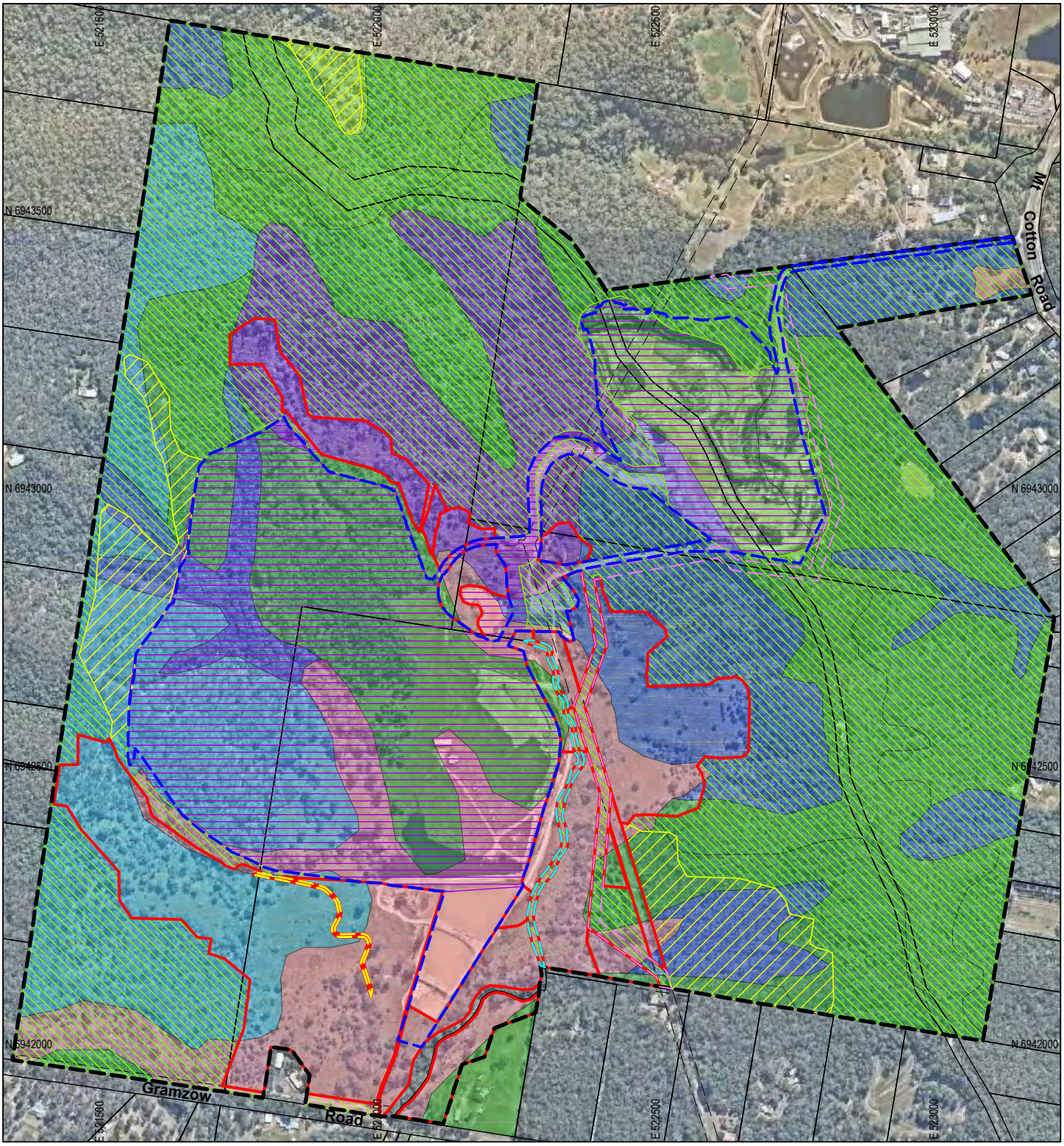
3.2.1. Rehabilitation areas

Rehabilitation of areas subject to quarrying will be guided by the Rehabilitation Management Plan contained in the SEMP. Detailed Rehabilitation Work Plans for areas disturbed through quarrying will be developed and implemented over the life of the quarry, including any necessary rehabilitation period, which is estimated to be approximately 50 years, prior to the works being carried out.

In rehabilitation areas, natural regeneration is to be encouraged. However, if natural regeneration does not achieve densities and composition that reflect those of the pre-clearing vegetation community (see **Figure 3.1**), additional, supplementary plantings will be required to reflect on-site vegetation communities. Planted individuals will be of local provenance.

Monitoring will be carried out to measure the presence/ absence of weed species, native plant species, density, diversity and health and to ensure appropriate site coverage is achieved within the nominated timeframes.

Weed management and monitoring will be on-going.



Aerial Photo: Nearmap - May 2020

LEGEND

- Site Boundary
- Current and Approved Quarry Areas
- Diversion Drain
- Existing Power Easement
- Electrical Easement
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Scale 1 : 10 000

0 100 250m

MGA94 Z56

Figure:	3.1
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Project:	Habitat Management Plan Mt Cotton Quarry Extension
Client:	Barro Group

Drawn: MP
Date: 22.07.2021
Reviewed by: JC
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Specific management practices applicable to the extraction area for protecting habitat values include:

- Clearly mark the proposed limits of quarrying with durable markers and maintain these markers;
- Clearly mark the area to be cleared for each clearing phase;
- Design and install erosion control measures;
- Salvage selected cleared timber and use to enhance habitat in the buffer area;
- Engage a licensed spotter/catcher to check vegetation prior to and during any vegetation clearing;
- Conduct all vegetation clearing in accordance with practices as detailed in **Section 2.1**;
- Dispose of vegetation in accordance with development conditions. Where no conditions exist vegetation will be utilised in the following order of preference:
  - Retrieval of material for habitat enhancement;
  - Milling of commercial timber;
  - Rotting or composting on site;
  - Chipping and mulching on site;
  - Chipping and mulching off site; and
  - Pit burning (with approval from RCC and a permit from Qld Fire and Rescue Service);
- Engage a licensed fauna spotter/catcher to check any stockpiled, cleared vegetation prior to its being moved;
- Keep cleared areas free from invasive weeds. Biannual weed maintenance should be conducted within the boundary of the extraction area; and
- Undertake progressive rehabilitation in accordance with the Rehabilitation Management Plan.

3.2.2. Koala offset sites

Koala offset sites are located in areas that have been previously cleared. The primary objective for these areas is to restore Koala bushland habitat in accordance with the *Queensland Environmental Offsets Policy*.

Restoration works will comprise a combination of natural regeneration and planting of tube stock as well as fire management, weed management, enhancing/facilitating natural forest establishment, and ongoing monitoring and maintenance.

Management practices applicable to the Koala offset sites include:

- Exclude vehicles and equipment from the Koala offset sites, except those that are necessary for fire control, pest animal and weed management, fence replacement/ repair, and general land care practices;
- Secure all Koala offset sites for conservation purposes;
- Establish protective fencing where necessary;
- Undertake regular inspections for weed/pest control and to ensure successful establishment of planted trees, as detailed in the Koala Offset Site Management Plan (BAAM 2010a, updated 2021): monthly inspections for the first 12 months, seasonally (every 3 months) for the following 3 years and yearly thereafter;
- Establish new Koala trees in the Koala offset sites in accordance with the Environmental Offset Policy; and
- Allow access to the area only for land management and monitoring habitat restoration.

3.2.3. Vegetation offset sites

Three vegetation offset sites have been identified on the subject site to offset for the clearing of remnant vegetation as a result of the quarry extension, in accordance with the VM Act. A Vegetation Offset Rehabilitation Management Plan has been revised (BAAM 2010b) that provides full details of the management and maintenance of these sites.

Vegetation offset sites are located in areas that are currently non-remnant (**Figure 1.1**) but directly adjacent to mature remnant vegetation communities of the same broad vegetation group. These three sites are progressing toward remnant status and mainly require weed management to ensure remnant status is reached.

BioCondition assessment data collected in 2010 has been reanalysed in accordance with ecological equivalence methodologies (DNRM 2011). Due to the complexity of the data analysis, a summary of the results are provided

in **Table 3.1**, whilst the excel spreadsheet containing the entire data analysis is provided separately to this report in **Appendix 3**.

The results of the ecological equivalence analysis indicate the offset sites score higher in both overall ecological condition and in special features (**Table 3.1**).

Table 3.1. Summary of ecological equivalence analysis between clearing areas and offset areas

Assessment Unit (AU)	Clearing area score	Offset area score
AU 1 (12.11.5) Ecological Condition	2.7410643	5.473125
AU 1 (12.11.5) Special Features	1.2663105	2.88496
AU 2 (12.11.3) Ecological Condition	0.2754	3.571125
AU 2 (12.11.3) Special Features	0.2516	2.34384

Management practices applicable to the vegetation offset sites include:

- Exclude vehicles and equipment from the vegetation offset sites, except those that are necessary for fire control, pest animal and weed management, fence replacement/ repair, and general land care practices;
- Allow access to the area only for land management and monitoring habitat restoration;
- Undertake annual weed inspections and herbicide treatment programs; and
- Encourage natural native plant regeneration through effective weed control and management.

3.2.4. Buffer areas

These areas comprise all balance lands. They comprise areas mapped as remnant vegetation and areas mapped as non-remnant that currently support medium-density vegetation, or related ancillary quarry or service infrastructure.

Treatment of these areas will consist of weed management and control, including annual weed inspections and herbicide treatment where required in accordance with local and State policies and strategies as well as fuel reduction activities that are consistent with the Bushfire Management Plan (**Section 4.0**) developed for the subject site.

Management practices applicable to the existing habitat and bushland within the buffer areas include:

- Exclude vehicles and equipment from the buffer areas except those that are necessary for fire control, pest animal and weed management, fence replacement/repair, and general land care practices;
- Undertake regular weed inspections and herbicide treatment programs; and
- Encourage natural native plant regeneration through effective weed control and management.

3.3. MOVEMENT CORRIDORS

Management practices applicable to the protection and maintenance of fauna movement opportunities include:

- Undertake pest management on-site;
- Remove declared plants and environmental weeds and dispose of them in an appropriate manner in accordance with the future pest/weed control and monitoring program for the site;
- Control ornamental and exotic garden species;
- Establish vegetation using tree species recognised as providing Koala habitat;
- Restore native habitats in previously disturbed areas (batters, road cuttings) with suitable species as identified within the HMP (**Section 3.4**); and
- Conduct on-going monitoring to the continued health of fauna habitats.

3.4. WEED MANAGEMENT

A pest/weed control and monitoring program based on local and State plans and strategies will be developed and implemented in consultation with RCC and DAF. Pest management must be in accordance with relevant Local and State legislation and plans, including:

- Queensland's *Biosecurity Act 2014*;
- *Queensland Invasive plants and animal strategy 2019-2024*; and
- *Redlands Coast Biosecurity Plan 2018-2023.*

3.5. MONITORING

Monitoring of restoration methods is important for increased efficiency and effectiveness, particularly where long term progressive restoration is planned. Unfavourable weather conditions, predation, disease, weed infestation and erosion can result in reduced success of natural regeneration/germination and/or death of plants.

Restoration works require time to establish, during which maintenance and monitoring will be required. Monitoring frequency will be in accordance with the schedule provided in **Section 5.0**.

The Quarry Manager will prepare an annual maintenance and monitoring program and budget allocation which will include provision for the following:

- Monitoring of minimum 5 years after treatment or planting – monitoring of regenerating/planted vegetation in the early stages will be conducted six monthly at least to allow for any plant deaths to be identified and replaced with healthy plants, and to assess weed biomass;
- Ground preparation methods – ripping of beds, removing competition from non-native species, mulching, or use of local stockpiled topsoil;
- Choice of planting stock – relying on natural regeneration for some aspects of the program, or using tube stock;
- Planting regimes – timing of plantings to ensure the best growth rates for plants, or the most effective use of resources (e.g. water) for survival of plants;
- Watering in and follow-up/establishment watering;
- Weed inspections and control;
- Fertilising, where required;
- Establishment and maintenance of plant barriers, guards and/or stakes;
- Plant replacement;
- Monitoring beyond 5 years after planting – longer term monitoring will be the primary means of measuring success to restore fauna habitats, particularly Koala habitat. Whilst Koalas may use young trees for foraging, branch formation that allows Koala to rest in the trees does not occur until trees are over five years of age. The success of establishing Koala habitat, particularly as trees mature, is reflected by Koala use of the assessed areas; and
- Monitoring at 15 years to ensure committed performance indicators for dominant canopy and species diversity has been achieved.

A review of the management practices and monitoring program will be carried out in year three in the first instance and then at intervals of not less than five years or sooner if the need arises. Monitoring results and observations will be documented and records kept on site.

To determine an appropriate monitoring schedule, the following points must be considered:

- Establish plots for monitoring methods of habitat restoration by:
  - Natural regeneration;
  - Seedling plants; and
  - Direct seeding.
- Dominant canopy, mid-storey, shrub and groundcover species diversity is at least 75% comparable with dominant species in the relevant pre-clearing REs; and
- Monitoring will continue until an independent arborist declares all restored areas to be self-sustaining.

3.5.1. Performance targets

Targets for the success of habitat restoration works include:

- For the life of the quarry, the number of trees on the subject site will be greater than the number of trees currently on the site;
- Trial restoration plots are established within six months of the development approval;
- New Koala trees are established in accordance with the Environmental Offset Policy;
- Plant diversity comprises a minimum of twelve different species per hectare of which

six are canopy species, three are mid-storey and three are ground layer;

- The diversity and abundance of exotic species on the subject site is similar to those found in the existing analogous remnant vegetation on site; and
- Within 15 years, dominant canopy, mid-storey and ground layer species diversity shall be at least 75% comparable to the dominant species within the relevant pre-clearing RE type (**Figure 3.1**).

4.0 BUSHFIRE MANAGEMENT

Site assessment and predictions of future vegetation and fuel loads on the subject site have revealed that the vegetation does pose a medium to high fire hazard. This hazard level is primarily due to the characteristics of the vegetation communities which will be retained on the site (e.g. vegetation structure and composition, size of areas retained, etc.).

For fire management the subject site is divided into key fire management zones and key water points, access tracks and fuel/ reduction loads. A Bushfire Management Plan is included in the SEMP.

The seed of Native Jute *Corchorus cunninghamii* previously recorded within the buffer area, requires disturbance from moderate-intensity fires to germinate. Inappropriate fire regimes can kill the parent plant without providing the right conditions for it to regenerate. Therefore bushfire management must incorporate an appropriate fire regime for areas where this species is present.

An assessment of bushfire hazard using the approved methodology at the time of the assessment is to be undertaken for the vegetation that will be retained and/or rehabilitated on the subject lands.

The Quarry Manager undertakes to review the preliminary Bushfire Management Plan for the site within six months of the date of approval and will submit the plan for review and acceptance by RCC and Queensland Fire and Emergency Services (QFES).

Details of the fuel reduction regime, areas to be treated and timing of the treatment are to be prepared in conjunction with the local Fire Warden/Officer, QFES and RCC, as well as adjoining neighbours.

Across the site, fuel load, fuel type, fuel height, and adjacent risks are to be monitored bi-annually. The monitoring will report on each individual fire management unit. The actual monitoring program is included in the Bushfire Management Plan contained within the SEMP.

There will be a ban for the lighting of fires except where the action is undertaken under the Bushfire Management Plan (i.e. fuel reduction or control burns) and under supervision of the Quarry Manager.

5.0 OVERALL HABITAT MONITORING SCHEDULE

The Quarry Manager will monitor the performance under this HMP at the minimum intervals specified within. The Quarry Manager will ensure that monitoring is conducted in accordance with the development conditions. Inspections pertaining to the implementation of the HMP will be documented, at least to the extent defined in the HMP. General observations will be documented in the site diary.

Successful restoration of the site's habitat values is dependent on appropriate monitoring strategies to allow identification of the success or otherwise of management practices. **Table 5.1** provides a summary of environmental indicators to be sampled/measured and the frequency of monitoring for each indicator.

An inspection of the site will be conducted in accordance with **Table 5.1** by suitably qualified individuals to identify:

- Presence/absence and health of Koalas in the area;
- Native plant species, numbers, diversity and height;
- Areas where vegetation enhancement and/or restoration works are required;
- Areas where weed and/or pest control is required;
- Areas requiring attention with regard to bushfire management;
- Effectiveness of installed drainage, erosion and sediment controls; and

- Condition of topsoil stockpiles.

Table 5.1: Monitoring schedule

Environment Indicators	Monitoring Frequency
Demarcation of extraction limits	Annual inspection and following fire
Fire controls	Bi-annual inspection
Bushfire fuel load	Bi-annual inspection
Koala survey	Annual search for evidence and/or presence of Koalas on site following the completion of restoration works and detailed Koala survey once every 5 years for 15 years
Weeds	• Koala offset sites: monthly to year 1, seasonal to year 4 and yearly thereafter. • Vegetation offset sites, buffer areas and rehabilitation areas: six-monthly
Erosion	Quarterly inspection and following major storm events
Pests (e.g. Fire Ant, Cats, Foxes)	Annual survey
Surface water quality	As per water quality monitoring program (refer to the SEMP)
Pant diversity and density in vegetation offset sites and Koala offset sites	Six monthly to year 2, then annually to year 5 (when frequency of ongoing monitoring will be reviewed), then at year 15
Topsoil stockpiles condition	Annual inspection

Table 5.2 provides a summary of general performance indicators that are relevant to habitat restoration with regard to this HMP.

Table 5.2: General performance indicators for restored habitats

Management Element	Performance Indicators
Koala	• Presence and abundance of Koala food trees; • Evidence of Koala presence; • Abundance of Koalas; and • General health of resident Koalas.
Native vegetation	• Plant health and/or mortality; • Species diversity and abundance; and • Vegetation structural composition.
Weeds and pests	• Presence/absence; • Abundance and distribution; and • Diversity.
Bushfire	• Meeting the requirements of the Bushfire Management Plan.

6.0 RESPONSIBILITIES AND CORRECTIVE ACTIONS

6.1. RESPONSIBILITIES

This HMP will be overseen by the Quarry Manager. Relevant officers from DES, DOR and RCC will also be consulted to provide additional advice and to ensure implementation of the HMP. A competent person (the Landcarer) will be appointed to develop and implement restoration works, which will be supervised by experienced contractors.

The Quarry Manager is responsible for:

- Ensuring that all on-site activities are undertaken in accordance with the overall SEMP. The implementation of the SEMP also forms an integral part of the Quarry Manager's responsibilities for ensuring the minimisation of environmental impact from the proposed activities;
- Ensuring the mitigation measures detailed in this HMP are implemented (**Section 7.0**);
- The Quarry Manager will ensure that a review of this HMP and associated Management Plans (BAAM 2010a, BAAM 2010b (updated 2021)) is undertaken in year 3 in the first instance and then at intervals of not less than five years or sooner if required. Any significant or unexpected alteration in the proposed works may require the HMP to be revised and amended accordingly. Any changes or amendments proposed to the HMP will be forwarded to DES and DOR for comment prior to their adoption;
- Undertaking to review the preliminary Bushfire Management Plan for the site within six months of the date of approval and to submit the plan for review and acceptance by RCC and the fire warden for the district;
- Preparing appropriate maintenance and monitoring program and budget allocation as per **Section 5.0**. The Quarry Manager shall monitor the performance under this HMP at the minimum intervals specified within. The Quarry Manager will ensure that monitoring is conducted in accordance with the development conditions and any other relevant documentation (i.e. Restoration Plan, Weed/Pest Control Program, Bushfire Management Plan);
- Administering a compulsory site induction program regarding the environmental

sensitivity of all management units, with particular reference to the Koala offset sites. This includes information for all contractors, employees and visitors regarding requirements not to disturb sensitive areas (i.e. appropriate signage for 'no-go' areas);

- Advising DES of any vegetation clearing on the site at least two days prior to works commencing;
- Ensuring a licensed wildlife spotter has assessed any areas where vegetation is to be cleared prior to works commencing and to report on animals sighted during clearing, and keep such records for a period for at least five (5) years. Fauna spotting should be in accordance with Policy 6 of the Koala Plan;
- Reporting any Near Threatened, Vulnerable or Endangered wildlife listed under the EPBC Act and/or the NC Act to DES. This wildlife will not be disturbed unless authorisation is given by DES and/or the Commonwealth Department of Agriculture, Water and the Environment;
- Keeping records of weed/pest control works including the type and quantity of herbicide used and any other chemical usage. Vegetation monitoring results will be recorded and available for inspection by authorised officers; and
- Keeping up-to-date records of all monitoring events, results and corrective actions.

Reporting will be consistent with the reporting requirements of the overall SEMP and the HMP.

6.2. CORRECTIVE ACTIONS

A deviation from the HMP and its performance would be considered a non-conformance and would require corrective actions to mitigate any resulting impacts.

Any deviations from the HMP and/or proposed corrective actions are to be developed in consultation with the relevant regulating authorities. Corrective actions, if necessary, are most likely to include alterations to restoration methods, weed control measures or pest animal control methods should monitoring determine that the results of the proposed methods are falling short of the performance targets.

7.0 SUMMARY OF MITIGATION MEASURES

Table 7.1 summarises the actions and/or mitigation measures that will be undertaken to achieve the overall management objectives of this HMP (**Section 1.7**). It is the responsibility of the Quarry Manager to ensure mitigation measures are implemented.

Table 7.1: Summary of mitigation measures and management objectives for the HMP

Mitigation Measures	Management Objectives (refer to section 1.8 of this HMP)
FAUNA MANAGEMENT	
Maintaining and enhancing habitat outside of quarry extraction areas, and providing safe movement opportunities for the full range of species within habitat that adjoins quarrying activities, will facilitate safe movement of fauna.	1, 2, 3
Quarrying operations and/or vegetation clearing activities will not be undertaken at night time (i.e. from 6pm to 6am).	1, 4
Preventing damage and/or disturbance to areas outside defined clearing areas.	1, 2, 3, 5, 6
Conducting vegetation clearing in sequential stages and only to the extent necessary for safe and effective quarrying operations.	1, 4
Directing sequential clearing away from threatening processes or hostile environments and towards any retained vegetation or habitat links, this ensuring that: • Koalas and other fauna are not pressured to cross roads or move through developed or disturbed areas, or areas that require movement of >100 meters over cleared ground to reach suitable habitat, as a result of habitat loss; and • Koalas and other fauna can safely leave the site of clearing and relocate to adjacent habitat.	1, 4
Ensuring a licenced fauna spotter is on site prior to commencement of and during all vegetation clearing to ensure the vegetation is clear and/or mark out an area where an animal is located to allow the animal to move on of its own accord.	1, 4
Placing selected timber, particularly large hollow logs/trees, that are in areas to be cleared	2, 4

Mitigation Measures	Management Objectives (refer to section 1.8 of this HMP)
within, alongside or near surrounding habitat to enhance the values of retained habitat. Randomly placing hollow tree trunks retrieved from the clearing areas in surrounding retained areas to provide additional habitat.	
Restricting road speeds within the site to 40km/hr. Vehicle movements outside designated operational areas will be prohibited to ensure vegetation is maintained.	1, 4
Designing the access road in such a way as to not constitute a barrier to the safe movement of fauna across the site. Specifically, construction of an elevated portion of the road in the form of bridging structures, along with guide fencing will be incorporated to ensure the provision of safe crossing opportunities.	1, 4
Where proposed works create any risk for fauna injury or fatality, the area will be fenced off using fauna exclusion fencing until the risk is removed.	1, 4
FLORA MANAGEMENT	
Clearly defining areas to be cleared for quarrying purposes.	2, 5, 6
Preventing damage and/or disturbance to areas outside defined clearing areas.	2, 3, 5, 6
Researching the use of low-impact herbicides and fertilisers on site to minimise local and downstream impacts to sensitive ecosystems. The use of herbicides would be restricted to the control of weeds declared under the *Biosecurity Act*, and environmental weeds that threaten the success of restoration works and/or impede fauna movement. Use of herbicides would be in strict compliance with DAF guidelines.	2, 9
Conduct monitoring of restoration actions to determine the most efficient and successful method or combination of methods for habitat restoration.	2, 9
Planting flora species used in the habitat restoration works that mirror the pre-disturbance vegetation community.	2, 3, 7
Favouring and encouraging natural regeneration. Supplementary planting will be used in areas where natural regeneration does not achieve the densities and composition of the pre-clearing native vegetation community. Supplementary plantings will be required to reflect on-site vegetation communities or Regional Ecosystems. Planted individuals will be of local provenance.	7, 9
Establishing new Koala trees within the Koala offset sites.	2, 3, 4, 7, 9
Adopting management recommendations as proposed by LAMR (2010) for *Corchorus cunninghamii* and *Macadamia integrifolia*.	2, 5, 6
FIRE MANAGEMENT	
Preparing a Bushfire Management Plan in conjunction with fire authorities, RCC and adjoining landowners.	10
PEST MANAGEMENT	
Developing and implementing a pest/weed control and monitoring program based on local and State plans and strategies, in consultation with RCC and DAF.	8
Cleaning all vehicles and equipment prior to entering any area outside quarry operations to remove seeds and sediment.	1, 2, 3, 5, 6, 8
Excluding cats, dogs and all stock such as goats, sheep, cattle and horses from the site, unless otherwise authorised or required.	2, 3, 8
MONITORING	
Carrying out monitoring to measure the presence/absence of Koalas, weed species, other native plant species and their density, diversity and health and to determine whether appropriate site coverage has been achieved within the nominated timeframes.	4, 9
SITE MANAGEMENT	
Ensuring that all employees, contractors and site visitors are aware: of the habitat values of the site, particularly values associated with Koala habitat; of 'no-go' areas; and that no native vegetation is to be disturbed without the approval and supervision of the Quarry Manager.	2, 3
Restricting access to areas outside quarrying operations to land management and environmental monitoring only. Providing appropriate barriers and appropriate signage to prevent unauthorised access.	1, 2, 3, 5, 6, 8

8.0 REFERENCES

BAAM (2006). Koala Habitat Assessment, Mount Cotton Quarry. Report prepared for Barro Group Pty Ltd.

BAAM (2010a). Koala Offset Site Management Plan, Mount Cotton Quarry. Report prepared for Barro Group Pty Ltd. Revised July, 2021.

BAAM (2010b). Vegetation Code Assessment and Offset Rehabilitation Management Plan, Mount Cotton Quarry. Report prepared for Barro Group Pty Ltd. Revised January, 2017.

BAAM (2010c). Terrestrial Fauna Assessment, Mount Cotton Quarry. Report prepared for Barro Group Pty Ltd.

Department of Environment and Resource Management (2011). *Ecological Equivalence Methodology Guideline. Policy for Vegetation Management Offsets. Queensland Biodiversity Offset Policy Version 1.*

Groundwork Plus (2017). Site Environmental Management Plan. Report prepared for Barro Group Pty Ltd.

LAMR (2010). Flora and its values, Mt Cotton Quarry extension. Report prepared for Barro Group Pty Ltd.

APPENDIX 1
2007 HABITAT MANAGEMENT PLAN
MOUNT COTTON QUARRY

HABITAT MANAGEMENT PLAN

Mount Cotton Quarry

February 2007

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List of Abbreviations

BAAM-	Biodiversity Assessment and Management Pty Ltd
DPI -	Department of Primary Industries (Queensland)
EPA -	Environment Protection Agency
EPBC -	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
HMP -	Habitat Management Plan
Koala Plan -	*The Nature Conservation (Koala) Conservation Plan 2006 and Management Program 2006 – 2016* (Queensland)
LAMR-	Landscape Assessment Management and Rehabilitation Pty Ltd
LPA -	*Lands Protection (Pest and Stock Route Management) Act 2002*
NCA -	*Nature Conservation Act 1992* (Queensland)
NRW -	Department of Natural Resources and Water (Queensland)
RE -	Regional Ecosystem
RSC -	Redland Shire Council
SEMP -	Site Environmental Management Plan

1.0 INTRODUCTION

A Habitat Management Plan (HMP) has been prepared to provide guidance for managing environmental values at the Mount Cotton Quarry. The principal purpose of the plan is to ensure environmental impacts from the proposed quarry extension are kept to a minimum, both within the site and the surrounding environment, and that the impacts are contained within the designated area.

Previous studies of the Flora (LAMR 2003), Terrestrial Fauna (BAAM 2004) and Koala Habitat (BAAM 2006) have identified potential impacts from the proposed quarry extension. The following management objectives have been adopted by the Quarry Manager for the project in response to these previous surveys:

1. To ensure that all quarry extension development and operations are conducted to avoid or minimise negative impacts on wildlife habitat;
2. To protect and manage extant bushland habitats retained on the site, outside of the proposed quarry area;
3. To ensure the long-term viability of the existing habitat and safe movement opportunities for fauna in the buffer area;
4. To manage and monitor fauna populations, particularly Koalas;
5. To prevent intrusions into or destruction of margins of vine forest or destruction of the significant plant species *Corchrorus cunninghamii* listed as 'endangered' under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC);
6. To prevent intrusions to habitat where *Macadamia integrifolia*, listed as 'vulnerable' under the EPBC, occurs onsite;
7. To use only local native plants which are found within the appropriate ecosystem for the location for rehabilitation and restoration works;
8. To ensure effective weed and pest control program is developed and implemented for the site; with particular attention to habitat corridor linkages;
9. To manage and monitor the success of restoration works; and
10. To establish and implement an effective Bushfire Management Plan which includes neighboring landholders.

This HMP will specifically address the aforementioned objectives, issues and management for fauna and associated habitats on-site and will identify an overall monitoring schedule as well as responsibilities, recording and reporting with regard to the HMP. The Quarry manager will be responsible for the overall implementation of the HMP.

1.1 REVIEW

The Quarry Manger will ensure that a review of the HMP and associated programs at least in three years in the first instance and then at least every five years or sooner if required. Any significant or unexpected alteration in the proposed works may require the HMP to be revised and amended accordingly. Any changes or amendments proposed to the HMP will be forwarded to the RSC and the EPA for comment prior to their enactment.

The HMP relates to the site's environmental habitat requirements and as such will be a continuously evolving document which will seek to include new and/or improved techniques, development approval/conditions, and changing circumstances and expectations.

1.2 STATUTORY REQUIREMENTS

In general, activities associated with the project and ancillary works will comply with the relevant provisions of legislation and regulations relating to the project including but not exclusive to the following legislation, plans and statutory planning documentation with regard to this HMP:

- Species identified as having conservation significance listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999;*
- Species identified as having conservation significance listed under Queensland's *Nature Conservation Act 1992* (NCA);
- *The Nature Conservation (Koala) Conservation Plan 2006 and Management Program 2006 – 2016* (Koala Plan) with specific reference to Koalas and associated habitat, movement and corridors, ;
- With regard to areas mapped as 'Of Concern'and 'Endangered' Regional Ecosystems and/or Essential Habitat under the *Vegetation Management Act 1999;*
- Development under the provisions of the *Integrated Planning Act 1997* and the Integrated Development Assessment System (IDAS);
- *Lands Protection (Pest and Stock Route Management) Act 2002* (LPA) with regard to weeds and pests;
- *State Planning Policy Guideline 1/03: Mitigating the Impacts of Floods, Bushfires and Landslides;*
- The requirements of the Redland Shire Council as per the provisions of the *Redlands Planning Scheme 2006* and associated decision notices including any relevant 'conditions of approval'; and
- The requirements of all relevant concurrence agencies..

1.3 BACKGROUND

The total site area is approximately 241 hectares of which approximately 14 hectares are presently disturbed through quarrying. During the life of the proposed quarry extension, it is approximated that a further 52 hectares of land will be disturbed though quarrying

activities. The balance area comprises 175 hectares of rural land containing remnant vegetation, open pasture, regenerating open forest and remnant bushland.

It is proposed that as the quarry moves through the extension area, the disturbed quarry land will be progressively rehabilitated to post extraction land uses including but not exclusive to: native forest; wetland; and water storage. Rehabilitation of disturbed areas offers an opportunity to provide additional habitat values and linkages for Koalas as well as other wildlife.

For the purposes of this plan, restoration areas are defined as areas that are currently vegetated and outside of the proposed quarry footprint. Rehabilitation areas are defined as areas that have been subject to quarrying activities. This HMP does not make recommendations for rehabilitated areas as this information will be included elsewhere in Site Environmental Management Plan (SEMP)

2.0 FAUNA MANAGEMENT

The overall intent for Fauna Management is to: ensure that the proposed expansion and operation of the quarry will not significantly impact upon the existing site fauna; to maintain the integrity of existing fauna habitats; and where possible improve the sites habitat values during all stages of the project.

There are five main issues that are essential for fauna management on-site:

1. Vegetation clearing;
2. Fauna Movement;
3. Habitat Restoration;
4. Pest/exotic species management; and
5. Monitoring.

2.1 VEGETATION CLEARING

As this site is located in District A under the Koala Plan, the HMP must comply with Koala Plan Policy 6: Vegetation Clearing Practices where vegetation works are being conducted.

The clearing of trees will be carried out in a manner that ensures that Koalas living in or near the site have sufficient time to move away from areas of clearing without human intervention. This will be achieved by:

- Advising the RSC of any vegetation clearing on the site at least 2 days prior to works commencing;
- Clearly defining areas to be cleared for quarrying purposes;
- Preventing damage and/or disturbance to areas outside defined clearing areas (i.e. native vegetation and associated habitats);

- Conducting vegetation clearing in sequential stages and only to the extent necessary for safe and effective quarrying operations as per Policy 6 of the Koala Plan;
- Directing sequential clearing away from threatening processes or hostile environments and towards any retained vegetation or habitat links, thus ensuring that:
    - Koalas are not pressured to cross roads or move through developed or disturbed areas, or areas that require movement of > 100m over cleared ground to reach suitable habitat; as a result of habitat loss; and
    - Koalas can safely leave the site of clearing and relocate to adjacent habitat.
- Not conducting any clearing of vegetation between the hours of 6pm and 6am;
- Ensuring a fauna spotter will be on site prior to the commencement of and during all vegetation clearing. The fauna spotter will check and clear vegetation prior to its felling. The fauna spotter will relocate, if required, native wildlife into appropriate habitat areas within the site which are to be retained. In the case of a Koala being present the Fauna spotter will not physically move Koalas from a tree in which they are residing. Rather, the tree and immediate surrounds will be marked and the tree will not be felled, damaged or interfered with until the Koala has moved from the tree of its own volition. A report by the Fauna spotter on the clearing of any native vegetation and any animals encountered or relocated will be compiled for each clearing stage; and
- Placing selected timber, particularly large hollow logs/trees, that are in areas to be cleared within, alongside or near surrounding buffer areas to enhance the habitat values of retained habitat.

2.2 FAUNA MOVEMENT

The following measures will be taken to increase the potential for safe fauna movement within and outside of the site:

- The maintenance and enhancement of habitat outside of the proposed extraction area and the provision of safe movement opportunities for the full range of species within habitat that adjoins the proposed activities will facilitate safe movement of fauna;
- Access to bushland areas will be restricted to land management, environmental monitoring and environmental studies only;
- Road speeds within the site will be restricted to 40km/hr. Vehicle movements outside designated operational areas will be prohibited to ensure vegetation is maintained;
- The proposed access road between the existing quarry and the proposed extension will be treated to ensure the security of fauna crossing roads. Construction of an elevated portion (or portions) of the road in the form of bridging structures, along with guide fencing will be incorporated to ensure the provision of safe crossing opportunities. Where any steep cuttings are formed, infrastructure such as timber poles will be laid against the cuttings to facilitate arboreal fauna movement;

- All internal fencing will be removed with the exception of fencing around the boundary of Lot 1 on RP108970. However temporary fencing may be installed for environmental and fire management purposes. Where existing perimeter fencing is removed, it shall be replaced by fauna friendly fencing. If proposed works creates medium risk for an animal fatality or injury, the area will be fenced off using fauna exclusion fencing;
- Installing 50 habitat/nest boxes in appropriate locations within the area including 20 large boxes suitable for owls, 15 boxes suitable for insectivorous bats and 15 boxes suitable for small possums/gliders;
- Clearing will only occur progressively and as required for quarrying and will occur in a manner as to direct any animals present into bushland areas away from quarry development;
- A qualified and competent fauna spotter/catcher will be utilised prior to during and after all vegetation clearing, to ensure animal safety; and
- Quarrying operations will not be undertaken at night time.

2.3 FAUNA HABITAT RESTORATION

Restoration of vegetation communities within the buffer areas will be undertaken as per section 3.0 however, in addition to vegetation works on-site, the following fauna habitat restoration and management actions will be undertaken to further benefit fauna within restoration areas:

- Ensuring that all employees and contractors are aware of the habitat value of the site, particularly values associated with Koala habitat;
- Installing fauna friendly fencing when existing stock fencing around the property boundary requires replacement;
- Installing 50 habitat/nest boxes in appropriate locations within the area including 20 large boxes suitable for owls, 15 boxes suitable for insectivorous bats and 15 boxes suitable for small possums/gliders;
- Erecting 6 large rock shelters. A rock shelter comprises clusters or stacks of 2 to 4 large rocks greater than 1.0m in smallest dimension.
- Scattering 200 flat rocks (ranging from 1500 to 500 mm in length) about the area to provide additional habitat for small animals; and
- Randomly placing hollow tree trunks retrieved from the clearing areas in the area to provide additional habitat.

2.4 PEST/ EXOTIC FAUNA MANAGEMENT

2.4.1 Feral Pest Management

The feral animals known or expected to occur on the site (i.e. cats and fox) are not expected to gain a significant benefit from the proposed actions. However, effective pest

management is important in the management of native species during habitat disturbances and during revegetation. No cats and dogs will be allowed to be brought onto the site, including guard dogs.

Although the site is not within a Red Imported Fire Ant Restricted Area, restricted fire ant areas are present in the shire. The monitoring of feral pests is to include assessment of the site for the presence of the Red Imported Fire Ant.

Arboreal native species may be placed at a greater risk of predation from cats and foxes when they move out of large trees to feed on the new growth of recently planted trees.

A pest/weed control and monitoring program based on Local and State plans and strategies will be developed and implemented in consultation with Redland Shire Council. Pest management must be in accordance with relevant Local and State legislation and plans including;

- Queensland's *Lands Protection (Pest and Stock Route Management) Act 2002*;
- Queensland Pest Animal Strategy 2002-2006;
- RSC Local Law No. 13 (Control of Pests); and
- RSC Pest Management Plan 2006-2010.

The following principles of pest management will provide the basis for pest management on site:

Integration

Pest management is an integral part of managing site operations

Awareness

Awareness and knowledge of pests likely to infest the site must be obtained by the quarry manager.

Consultation and partnership

Consultation and partnership arrangements between local communities, neighbours, state government agencies and the Redland Shire Council should be established to achieve a collaborative approach to pest management.

Planning

Pest management planning must be consistent at local, regional, State and national levels to ensure resources target priorities for pest management identified at each level.

Prevention

Preventative pest management is achieved by –

1. Preventing the spread of pests, and viable parts of pests, especially by human activity; and
2. Early detection and intervention to control pests

Best practice

Pest management will be based on ecologically and socially responsible pest management practices that protect the environment and the productive capacity of natural resources.

2.4.2 Domestic Stock

Domestic stocks are a known vector for the spread of environmental weeds and can also eat or trample newly planted restoration areas. However, domestic stock can also play a positive role in the control of exotic grass biomass and reduction of fuel loads in fire prone areas. This may provide beneficial outcomes to land management intents.

Stock has been removed from the proposed restoration areas. Over the period that stock has been absent, there is evidence of good levels of natural regeneration of forest trees, although exotic grasses and weeds have also increased in biomass. This response to the removal of cattle is common.

It may be helpful to temporarily fence and "pulse graze" portions of the rehabilitation area in a mosaic pattern, while ensuring the protection of new saplings. This has been suggested as a potential management tool for contribution to the detailed rehabilitation planning phase, as it would be a less invasive control measure than burning and/or application of herbicide. Pulse grazing can be trialed as a management tool in the rehabilitation area.

Thus whilst the use of domestic stock is not currently identified within the HMP, the use of domestic stock should not be discounted and where positive outcomes are identified through consultations with the local community, fire authorities and ecologists, their utilisation should be permissible.

2.5 MONITORING

The ongoing monitoring of the sites fauna populations is important in ensuring that the subject lands continue to provide suitable habitat for resident and migratory species. Although the fauna monitoring will focus on the presence, health and number of Koalas on the site, it will also monitor other native species.

Koalas

Areas within the designated buffer zones and in the restoration areas will be surveyed for the presence of Koala signs (scats and scratches) annually for the first two years following the completion of restoration works. A detailed survey of the Koala population will be undertaken every five years for 15 years. The methodology employed for this survey follows the guidelines as prescribed in the *Nature Conservation (Koala) Conservation Plan (2006) and Management Program (2006-2016),* and developed by Dique *et al.* (2003). These being:

- Determine Koala habitat and non-Koala habitat for the subject site;
- Select permanent transect sites 60m in length and 60m in width to sample at least one third of the area supporting Koala habitat; and

- Five observers, spaced 15m apart to walk each 60m transect on a fixed bearing and record all Koalas present.

As the site is larger than 50 ha, it is considered too large to completely search. However, if a reliable sampling methodology is used (see Dique *et al.* 2004), and transects are uniformly positioned across the site at a constant compass bearing, a reliable estimate of the density of Koalas on the site can be made.

Performance Targets

For the life of the quarry, the proponent will ensure that the number of Koala food trees within the site will be greater than the numbers that are currently on the site.

Resident Koalas are occupying restoration areas at densities that reflect average densities in the local area in undisturbed habitat.

3.0 FLORA MANAGEMENT

The overall intent of the Flora Management is to protect and improve the quality, quantity and integrity of vegetation on the site wherever practical and to ensure sound management practices.

3.1 SITE MANAGEMENT

The following management practices are applicable to the entire site and are designed to minimise and ameliorate potential impacts from the quarry extension:

- Ensure that people entering the site are aware that no native vegetation is to be disturbed without the approval and supervision of the Quarry Manager;
- Provide barriers and warning signs to discourage illegal recreation vehicles;
- Exclude all stock such as goats, sheep, cattle and horses from the site unless identified management outcomes suggest otherwise;
- Remove all permanent internal fencing except fencing around the boundary of Lot 1 on RP108970;
- Prepare a site Bushfire Management Plan in conjunction with fire authorities, RSC and adjoining landowners. (see Section 4.0);
- Plant species used in the habitat restoration works will generally mirror the pre-disturbance vegetation;
- Carry out weed and pest animal control in accordance with the standards adopted by landholders in Mount Cotton district (to be included in a future pest/weed control and monitoring program for the site);
- Minimise the use of herbicides and fertilizers. The rehabilitation is taking place in what is primarily a low-fertility environment – and therefore the use of fertilizers is not likely to be necessary to re-establish native vegetation, although cannot be discounted in all circumstances if nutrient deficiency is detected in rehabilitated areas. At all times, the application of fertilizer would be applied specifically to individual trees (e.g. would not be broadscale). The use of herbicides would be restricted to the

control of weeds declared under the LPA, and environmental weeds that threaten the success of rehabilitation or impede fauna movement. Use of herbicides would be in strict compliance with DPI guidelines; and

- Seek advice from the Queensland Department of Primary Industries (DPI) regarding the suitability of herbicides and ensure that weed and pest management practices are consistent with those provided by Queensland's Department of Natural Resources and Water (NRW). These guidelines are located at www.nrw.qld.gov.au/pests/index.html.

3.2 RESEARCH TRIALS

Research trials will be established to determine the most efficient and successful method or combination of methods for habitat restoration. Research trials will be conducted for a period of three (3) years. All chemical use will be in accordance with local, State and Commonwealth legislation and policies. Only seed and/or tubestock of local provenance will be used for research trials. Trial plots will consist of 25m x 25m (625m^2) quadrats. Each of the following treatments will be conducted within a replicated quadrat:

1. Natural regeneration with no weed control or pasture grass management;
2. Natural regeneration with herbicide to control weeds and pasture grasses;
3. Natural revegetation using fire to control weed and pasture grasses;
4. Direct seeding over a prepared surface (i.e. ripped and mulched) with herbicide;
5. Planting tubestock over a prepared surface (i.e. ripped and mulched) with herbicide; and
6. Natural revegetation using pulse grazing to control weeds.

Monitoring of trial plots will be conducted twice per annum. Monitoring of trial plots will consist of the following methodology:

- A total of five transects shall be surveyed in each quadrat;
- Within each quadrat, transects shall be set five metres apart;
- Each of the five transects shall be traversed and the dicotyledon species (i.e. species excluding the grasses) are to be recorded; and
- After having traversed each of the transects, overall observations of the quadrats shall be made to ensure the full diversity of dicotyledon species is recorded.

Data shall be recorded on standardised datasheets. A template is provided in Table 1 below.

Table 1: Template of Vegetation Monitoring Data Table for a Quadrat

Site Number/Treatment: **Transect Number:** **Date:**

Species		No. per transect					Total No.
		1	2	3	4	5	
1							
2							
3							
4							
5							
Notes on Overall Condition of Quadrat (i.e. health)							

Following the termination of the of research trials, the method/combination of methods that resulted in the most successful establishment of pre-clearing vegetation type will be incorporated into the Habitat Management Plan.

3.3 MANAGEMENT AREAS AND TREATMENT

Although restoration works have commenced and will continue to be implemented progressively, a detailed Restoration Plan will be developed and implemented following the completion and analysis of research trials (see Section 3.2). Restoration works will be consistent with those proposed by 3 (2004), however, additional planting may be required to achieve desired densities. The following practices will be employed;

- Research trials will be conducted, documented and the most successful techniques adopted into the development and implementation of restoration works
- Natural regeneration is to be encouraged;
- If natural regeneration does not achieve densities and composition that reflect that of the preclearing vegetation community, additional, supplementary plantings will be required to reflect on-site vegetation communities or regional ecosystems. Planted individuals will be of local provenance;
- Management recommendations as proposed by LAMR (2003) for *Corchorus cunninghamii* and *Macadamia integrifolia* will be adopted;
- Monitoring will be carried out to measure the presence/ absence of weed species, native plant species, density, diversity and health and to determine whether appropriate site coverage has been achieved within the nominated timeframes; and
- Weed management and monitoring will be on-going.

Detailed Rehabilitation Work Plans for areas disturbed through quarrying will be developed and implemented over a fifty year period prior to the works being carried out.

Within the site four main management areas have been identified. Each of these management areas require specific treatment as described in the following sections. The four management areas are:

- Areas to be Quarried and Further Rehabilitation Areas;
- Buffer Area – Bushland Enhancement;
- Buffer Area – Habitat Restoration; and
- Special Corridor Link.

The location of each of these areas is shown in FIGURE 1 along with the pre clearing RE's which will be restored on the site.

3.3.1 Areas to be Quarried and Rehabilitation Areas

Rehabilitation of areas subject to quarrying will be subject to a Rehabilitation Plan included in the overall Site Environmental Management Plan (SEMP). Rehabilitation works are subject to a detailed rehabilitation works plan specific to the proposed disturbance areas and staging of the progressive rehabilitation.

Specific management practices applicable to the extraction area for protecting habitat values include:

- Demarcate the proposed limits of quarrying with durable markers and maintain these markers;
- Demarcate the area to be cleared for each clearing phase;
- Design and install temporary erosion control measures;
- Salvage any cleared timber and use to enhance habitat in the buffer area;
- Use an experienced spotter/catcher (who has the necessary approvals) to check vegetation prior to and during any vegetation clearing;
- Conduct all vegetation clearing in accordance with practices as detailed in section 2.1;
- Dispose of vegetation in accordance with development conditions. Where no conditions exist vegetation will be utilized in the following order of preference:
    - Retrieval of material for habitat enhancement;
    - Milling of commercial timber;
    - Rotting or natural decay on site;
    - Chipping and mulching on site;
    - Chipping and mulching off site; and
    - Pit burning (with approval from RSC and a permit from Qld Rescue and Fire Authority).

Legend:

Preclearing Regional Ecosysem Types

- 12.11.5, 100%
- 12.3.6/12.3.11, 60%/40%
- 12.11.23/12.11.5, 50%/50%

Management Areas

- Special Corridor Link
- Existing Quarry Rehabilitation Area
- Future Quarry Rehabilitation Area
- Buffer Area - Bushland Enhancement
- Buffer Area - Habitat Restoration
- Area to be Quarried
- Access Roads

Proposed Quarry Extension

Floor Level -5m
Water Level Approx 25m AHD

Existing Quarry

Site Entrance

Gramzow Road

Pre-clearing vegetation data source: v5.0 EPA December 2005

GROUNDWORK
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•Land Use
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TITLE:
Rehabilitation and Habitat Restoration Areas

SCALE: 1:7500 (On A3)
0 150

DATE: 22 March 2007
DRAWING NUMBER: 987.113

FIGURE 1

- Keep cleared areas free from invasive weeds. Biannual weed maintenance should be conducted within the boundary of the extraction area; and
- Undertake progressive rehabilitation in accordance with the Rehabilitation Management Plan included in the overall SEMP.

3.3.2 Buffer Area - Bushland Enhancement

These areas are located within the northern and eastern sections of the site (refer FIGURE 1). They contain Regional Ecosystems (REs) including three REs that are mapped as 'Not of Concern' and one RE that is mapped as 'Endangered'.

Restoration in these areas will be comprise destocking of the land, weed management including annual weed inspections and herbicide treatment where required in accordance with local and state policies and strategies as well as fuel reduction activities that are consistent with the Bushfire Management Plan (see Section 4.0) which will be developed for the subject site.

The HMP will be amended as required to incorporate the knowledge and experience gained during the course of managing the habitat value of the site. Management practices applicable to the enhancement of existing habitat and bushland within the buffer area include:

- Exclude vehicles and equipment from the buffer areas except those that are necessary for fire control, pest animal and weed management, fence replacement/repair, and general land care practices;
- All vehicles and equipment are to be cleaned prior to entering the buffer areas to remove seeds and sediment;
- Undertake annual weed inspections and herbicide treatment programs;
- Enhance bushland by encouraging natural native plant regeneration and selected planting of species endemic to the pre-disturbance regional ecosystem; and
- Allow access to the bushland for environmental research and necessary land management only to the extent that environmental values will not be compromised.

3.3.3 Buffer Area - Habitat Restoration

This area is located mostly within the southern portion of the site (refer FIGURE 1). Vegetation within this area will be restored to reflect the pre-clearing RE. In addition, trial rehabilitation plots will be established within this area to assess the suitability of various restoration techniques. Restoration works will comprise destocking the land, fire management, weed management, direct seeding, planting of tube stock, enhancing/facilitating natural forest establishment, ongoing monitoring and maintenance and performance indicators.

Restoration Areas are divided into subunits based on the pre-clearing extent of the specific REs that are contained within the Buffer Area – Habitat Restoration' and Special Corridor Link (see Table 2).

Table 2: Restoration Area and Pre-clearing Regional Ecosystem Type

Restoration Area	Mapped Pre-clearing RE Type
Buffer Area – Habitat Restoration	RE 12.11.5, RE 12.11.5 (drainage), RE 12.3.6/12.3.11 and RE 12.11.23/12.11.5
Special Corridor Link	RE 12.3.6/12.3.11 and RE 12.11.23/12.11.5

Research trials are designed to determine the best method for the successful establishment of vegetation associated with pre-clearing vegetation types. The results from these trials will incorporated into the Habitat Management Plan for these areas.

Management practices applicable to the habitat restoration activities within the buffer area include:

- Exclude vehicles and equipment from the buffer areas, except those that are necessary for fire controls, pest animal and weed management, fence replacement/repair, and general land care practices;
- Clean all vehicles and equipment prior to entering the buffer areas to remove seeds and sediment;
- Undertake annual weed inspections and herbicide treatment programs at six monthly intervals for eighteen months and then review inspection frequency based on results;
- Allow access to the area only for land management and monitoring habitat restoration;
- Germinate plants to be used in restoration from seeds and propagules of appropriate local native species; and
- Establish a minimum of 300 trees per hectare.

3.3.4 Special Corridor Link

This area is located within the north-eastern portion of the site. Restoration works within this area will be confined to weed control and the planting of tube stock and will aim to restore Koala corridor using Koala tree species from the pre-clearing RE as per section 3.4 (FIGURE 1) community.

3.4 FLORA SPECIES TO BE USED IN RESTORATION ACTIVITIES

Species selection will be determined by the pre-clearing RE type as shown in FIGURE 1. Restoration activities (i.e. direct seeding and planting tubestock) will primarily occur within the Buffer Area – Habitat Restoration and the Special Corridor Link. The following species selection is specific to these areas.

It is proposed that only canopy species will be planted within restoration areas. However, within restoration subunit 12.11.5 (drainage) additional mid stratum and ground cover species will be planted in addition to canopy species. A minimum of 25% mid storey and ground stratum species will be planted.

A species palette for each of these areas is provided within Table 3.

Table 3: Species Palette to be used for Revegetation

RE TYPE	Growth Form	Scientific Name	Common Name
12.11.5	Canopy Species/Tall Tree	*Angophora leiocarpa*	Rusty Gum
		Corymbia citriodora	Spotted Gum
		Corymbia intermedia	Pink Bloodwood
		Corymbia trachyphloia	Brown Bloodwood
		Eucalyptus acmenoides	Stringy Bark
		Eucalyptus carnea	Stingy Bark
		Eucalyptus crebra	Narrow Leaved Ironbark
		Eucalyptus tereticornis	Queensland Blue Gum
		Eucalyptus siderophloia	Grey Ironbark
		Eucalyptus propinqua	Small-Fruited Grey Gum
		Lophostemon suaveolens	Swamp Box
12.11.5 (drainage)	Canopy Species/Tall Tree	*Eucalyptus crebra*	Narrow Leaved Ironbark
		Eucalyptus siderophloia	Grey Ironbark
		Eucalyptus tereticornis	Queensland Blue Gum
		Lophostemon suaveolens	Swamp Box
	Mid Storey/Small trees & Shrubs	*Acacia fimbriata*	Brisbane Wattle
		Acacia leiocalyx	Black Wattle
		Alphitonia excelsa	Red Ash
		Callistemon salignus	Bottlebrush
		Dodonaea triquetra	Large Leaved Hop Bush
		Elaeocarpus reticulatus	Blueberry Ash
	Ground Cover	*Dianella caerulea*	Blue Flax Lily
		Gahnia aspera	Saw Sedge
		Lepidosperma laterale	Variable Sword Sedge
		Lomandra longifolia	Long Leaved Mat Rush
		Pimelea linifolia	Rice Flower
12.3.6/12.3.11	Canopy Species/Tall Tree	*Corymbia intermedia*	Pink Bloodwood
		Corymbia tessellaris	Morton Bay Ash
		Eucalyptus racemosa	Scribbly Gum
		Eucalyptus siderophloia	Grey Ironbark
		Eucalyptus tereticornis	Queensland Blue Gum
		Eucalyptus tindaliae	Stringy Bark
		Lophostemon suaveolens	Swamp Box
		Melaleuca quinquenervia	Swamp Paperbark
12.11.23/12.11.5	Canopy Species/Tall Tree	*Angophora woodsiana*	Smudgee
		Corymbia intermedia	Pink Bloodwood
		Eucalyptus carnea	Stingy Bark

RE TYPE	Growth Form	Scientific Name	Common Name
		Eucalyptus major	Grey Gum
		Eucalyptus microcorys	Tallow Wood
		Eucalyptus pilularis	Blackbutt
		Eucalyptus racemosa	Scribbly Gum
		Eucalyptus tereticornis	Queensland Blue Gum
		Eucalyptus tindaliae	Stringy Bark
		Lophostemon confertus	Brush Box

3.5 MOVEMENT CORRIDORS

Management practices applicable to the protection and maintenance of fauna movement opportunities include:

- Undertake pest management on-site;
- Remove declared plants and dispose of them in an appropriate manner in accordance with the future pest/weed control and monitoring program for the site;
- Control ornamental and exotic garden species;
- Replant with tree species recognised as providing Koala habitat;
- Restore native habitats in previously disturbed areas (batters, road cuttings) with suitable species as identified within the HMP (as per Section 3.4); and
- Conduct on-going monitoring for the continued health of fauna habitats.

3.6 WEED MANAGEMENT

A pest/weed control and monitoring program based on Local and State plans and strategies will be developed and implemented in consultation with Redland Shire Council (see Section 2.4). Pest management must be in accordance with relevant Local and State legislation and plans including;

- Queensland's Lands Protection (Pest and Stock Route Management) Act 2002;
- Queensland Weeds Strategy 2002-2006;
- RSC Local Law No. 13 (Control of Pests); and
- RSC Pest Management Plan 2006-2010.

3.7 MONITORING

Monitoring of restoration methods is important for increased efficiency and effectiveness, particularly where long-term progressive restoration is planned or there is a need to evaluate performance indicators. Unfavourable weather conditions, predation, disease, weed infestation and erosion can result in reduced success of natural regeneration/germination and/or death of plants.

Rehabilitation and restoration works require time to establish during which maintenance and monitoring will be required. Works will be initiated in all restoration areas within 5 years of the development approval. Monitoring of restoration works progress (6-monthly for first 2 years then annually until 5 years at least.) Monitoring frequency will be carried

out in accordance with Section 5.

For the first three (3) years (i.e. for the duration of the research trials) natural, unassisted habitat restoration will be encouraged. Restoration of riparian vegetation will also occur adjacent to Greenhide Creek, independent of the research program. Following analysis of data collected from field trials, vegetation establishment works will be completed within all restoration areas within two (2) years of the termination of field trials.

The Quarry Manager will prepare an annual maintenance and monitoring program and budget allocation which will include provision for the following:

- Monitoring up to 2 years after treatment or planting - Monitoring of regenerating/planted vegetation in the early stages will be conducted six monthly to allow any plant deaths to be identified and replaced with healthy plants, to assess weed biomass;
- Monitoring up to 5 years after planting will be conducted annually - monitoring of the health, growth and survival of plants in the early stages of restoration will determine the most appropriate management regimes (weed control, watering, reduction of fuel loads);
- Ground preparation methods – ripping of beds, removing competition from non-native species, mulching, or use of local stockpiled topsoil;
- Choice of planting stock – relying on natural regeneration for some aspects of the program, or using tube stock;
- Planting regimes – timing of plantings to ensure the best growth rates of plants, or the most effective use of resources (e.g. water) for survival of plants;
- Watering in and follow-up/establishment watering;
- Weed inspections and control;
- Fertilising, where required;
- Establishment and maintenance of plant barriers, guards and/or stakes;
- Plant replacement;
- Monitoring beyond five years after planting – longer term monitoring will be the primary means of measuring the success of efforts to restore fauna habitat, particularly Koala habitat. Whilst Koalas may use young trees for foraging, branch formation, that allows Koalas to rest in the trees, does not occur until trees are over five years of age. The success of establishing Koala habitat, particularly as trees mature, is reflected by Koala use of the assessed area; and
- Monitoring at 15 years to ensure committed performance indicator for dominant canopy and species diversity has been achieved.

A review of management practices and the monitoring program will be carried out in year three in the first instance and then at intervals of not less than five years or sooner if the need arises. Monitoring results and observations will be documented and records kept on site.

To determine an appropriate monitoring schedule, the following points must be considered:

- Establish plots for monitoring methods of habitat restoration by:
  - natural regeneration;
  - seedling plants;
  - direct seeding.
- Dominant canopy, mid-storey, shrub and groundcover species diversity is at least 75% comparable with dominant species in the relevant pre-clearing Regional Ecosystems; and
- Monitoring will continue until an independent arborist declares the 300 trees per hectare to be self-sustaining.

Performance Targets

Targets for the success of habitat restoration works include:

- For the life of the quarry, the number of trees on the site will be greater than the number of trees currently on the site;
- Trial rehabilitation/restoration plots established are established within 6 months of the development approval;
- The number of trees onsite; (i.e. A minimum of 300 canopy trees per hectare are to be established within restoration subunits 12.11.5, 12.3.6/12.3.11 and 12.11.23/12.11.5. Within restoration subunit 12.11.5 (drainage) a minimum of 400 stems per hectare will be established);
- Plant diversity will comprise a minimum of twelve different species per hectare of which six will be canopy species, three will be mid story and three will be understorey and ground stratum;
- The diversity and abundance of exotic species located on-site will be similar to the existing analogous remnant vegetation on site; and
- Within 15 years, Dominant canopy, mid storey, understorey and ground stratum species diversity shall be at least 75% comparable to the dominant species within the relevant pre-clearing Regional Ecosystem Type.

4.0 BUSHFIRE MANAGEMENT

Site assessment and predictions on future vegetation and fuel loads on the site has revealed that the vegetation does pose a medium to high fire hazard. This hazard level is primarily due to the type and size of the vegetation communities which will be retained on the site.

For fire management the subject site is divided up into key fire management zones and key water points, access tracks and fuel/ reduction loads. A preliminary Bushfire Management Plan is included in the SEMP.

An assessment of bushfire hazard using the methodology as detailed in the *State Planning Policy Guideline 1/03: Mitigating the Impacts of Floods, Bushfires and Landslides* is to be undertaken for the vegetation that will be retained and/or rehabilitated on the subject lands.

The Quarry Manager undertakes to review the preliminary Bushfire Management Plan for the site by the within six months of the date of approval and will submit the plan for review and acceptance by the RSC and QPWS and the fire warden for the district.

Details of the fuel reduction regime, areas to be treated and timing of the treatment are to be prepared in conjunction with the local Fire Warden/Officer, QPWS and RSC and neighbors

Across the site fuel load, fuel type, fuel height, and adjacent risks are to be monitored seasonally. The monitoring will report on each individual fire management units. The actual assessment program is to be developed within an overall bushfire management plan, which is presently under development by the Quarry Manager in conjunction with the QPWS & Redland Shire Council.

There should be a ban for the lighting of fires except where the action is undertaken under the Bushfire Management Plan (i.e. fuel reduction or control burns) and under supervision of the Quarry Manager;

5.0 OVERALL HABITAT MONITORING SCHEDULE

The Quarry Manager shall monitor the performance under this HMP at the minimum intervals specified within. The Quarry Manager will ensure that monitoring is conducted in accordance with the development conditions. Inspections pertaining to the implementation of the HMP need to be documented, in the minimum, to the extent defined in the HMP. General observations should be documented daily in site diary.

Successful restoration of the sites habitat values is dependent on appropriate monitoring strategies to allow identification of the success or otherwise of management practices (See Table 4).

An inspection of the site will be conducted in accordance with Table 4 – Monitoring Schedule by suitably qualified individuals to identify:

- Presence/absence and health of Koalas in the area;
- Native Plant species, numbers, diversity and height;
- Areas where further vegetation enhancement and/or restoration works are required;
- Areas where weed and/or pest control is required;
- Areas requiring attention with regard to bushfire management;
- Effectiveness of installed drainage, erosion and sediment controls; and
- Condition of topsoil stockpiles.

Table 4: Monitoring Schedule

Environment Indicators	Monitoring Frequency
Demarcation of Extraction Limits	Annual Inspection and following fire
Fire Controls	Bi-annual Inspection
Bushfire Fuel Load	Bi-annual Inspection
Koala Survey	Annually search for evidence and/or presence of Koalas on site following the completion of restoration works and detailed Koala survey once every five years for 15 years
Weeds	
• *Buffer Area (bushland)*	Annual inspection
• *Buffer Area (restoration)*	Six monthly for 18 months, then reviewed
• *Extraction Area including rehabilitation area*	Bi-annual
Erosion	Quarterly Inspection and following a major storm event
Animal Pests (including Red Imported Fire Ant, cats, foxes)	Annual Survey
Surface Water Quality	As per water quality monitoring program (Refer to Section 2.5 of the SEMP)
Plant diversity and density (buffer area (restoration), quarry rehabilitation	Six monthly to year 2, thence annually to year 5 when scope for on-going monitoring would be reviewed and at year 15
Topsoil stockpiles conditions	Annual inspection

5.1 PERFORMANCE INDICATORS

Table 5 provides a summary of general performance indicators that are relevant to habitat restoration with regard to this HMP.

Table 5: General Performance Indicators for Restoration Areas

Management Element	Performance Indicators
Koala	▪ Presence and abundance of Koala food trees; ▪ Evidence of Koala Presence; ▪ Abundance of Koalas; and ▪ General health of resident Koalas.
Native Vegetation	▪ Plant health and/or mortality; ▪ Species diversity and abundance; and ▪ Vegetation structural composition.
Weed and Pests	▪ Presence/absence; ▪ Abundance and distribution; and ▪ Diversity.
Bushfire	▪ Meeting the requirements of the Bushfire Management Plan.

6.0 RESPONSIBILITY and CORRECTIVE ACTIONS

6.1 RESPONSIBILITY

This HMP will be overseen by the Quarry Manager. In addition, relevant officers from Queensland Parks and Wildlife Service (QPWS) and RSC will be consulted periodically to provide additional advice and to ensure implementation of the HMP. A competent rehabilitation consultant will be retained to develop and implement Restoration and Rehabilitation Works. Works will be supervised by experienced contractors.

The Quarry Manager is responsible for the following:

- Ensuring that all onsite activities are undertaken in accordance with an overall Site Environmental Management Plan (SEMP). The implementation of the SEMP also forms an integral part of Quarry Manager's responsibilities for ensuring the minimisation of environmental impact of the proposed activities;
- Ensuring the implementation of mitigation measures (see Section 7.0) detailed in this HMP;
- Monitoring the performance under this HMP at the minimum intervals specified within. The Quarry Manager will ensure that a review of the HMP and associated programs is undertaken in year 3 in the first instance and then at intervals of not less than five years or sooner if required. Any significant or unexpected alteration in the proposed works may require the HMP to be revised and amended accordingly. Any changes or amendments proposed to the HMP will be forwarded to the RSC and the EPA for comment prior to their enactment;

- Undertaking to review the preliminary Bushfire Management Plan for the site by the within six months of the date of approval and will submit the plan for review and acceptance by the RSC and QPWS and the fire warden for the district;
- Preparing an annual maintenance and monitoring program and appropriate budget allocation as per Section 5. The Quarry Manager shall monitor the performance under this HMP at the minimum intervals specified within. The Quarry Manager will ensure that monitoring is conducted in accordance with the development conditions and any other relevant documentation (i.e. Restoration Plan, Weed/Pest Control Program, Bushfire Management Plan);
- Administering an educational program on-site regarding environmental sensitivity of the area with particular reference to Koalas. This includes information for contractors, employees and visitors to the site regarding requirement not to disturb sensitive areas (i.e. appropriate signage for 'no go' areas);
- Advising the RSC of any vegetation clearing on the site at least 2 days prior to works commencing;
- Ensuring a wildlife spotter has assessed any areas where vegetation is to be cleared prior to vegetation works and to report on animals sighted during vegetation clearing, and shall keep such records for a period of at least five (5) years. Fauna spotting should be in accordance with Policy 6 of the Koala Plan;
- Reporting any significant wildlife listed under the Commonwealth EPBC and/or Queensland's NCA to the Queensland Parks and Wildlife Service. This wildlife will not be disturbed unless authorisation is given by the Queensland Parks and Wildlife Service;
- Keeping records of weed/pest control works including the type and quantity of herbicide used and any other chemical usage. Vegetation monitoring results will be recorded and available for inspection by authorised officers; and
- Keeping up to date records of all monitoring events, results and corrective actions.

Reporting will be consistent with reporting requirements of the overall SEMP and the HMP.

6.2 CORRECTIVE ACTIONS

A deviation from the HMP and its performance requirements would be considered a non-conformance and would require corrective actions to mitigate any resulting impacts.

Any deviation from the HMP and/or any proposed corrective action are to be developed in consultation with the relevant regulatory authorities. Corrective actions, if necessary, are most likely to include alterations to rehabilitation methods, weed control measures or pest animal control methods, should monitoring determine that the results of the proposed methods are falling short of performance targets.

7.0 SUMMARY OF MITIGATION MEASURES

The following table summarises the actions and/or mitigation measures mentioned in previous sections of this document that will be undertaken to achieve the overall objectives for this report (see Section 1). It is the responsibility of the Quarry Manager to ensure mitigation measures are implemented.

Table 6: Summary of Mitigation Measures and Objectives for the HMP

Mitigation Measure	Objective
Fauna Management	
The maintenance and enhancement of habitat outside of the proposed extraction area and the provision of safe movement opportunities for the full range of species within habitat that adjoins the proposed activities will facilitate safe movement of fauna.	1,2,3
Quarrying operations and/or vegetation clearing activities will not be undertaken at night time (i.e. from 6pm to 6am)	1,4
Preventing damage and/or disturbance to areas outside defined clearing areas.	2,3,5,6,
Conducting vegetation clearing in sequential stages and only to the extent necessary for safe and effective quarrying operations as per Policy 6 of the Koala Plan.	1,4
Directing sequential clearing will be away from threatening processes or hostile environments and towards any retained vegetation or habitat links, thus ensuring that: ▪ Koalas are not pressured to cross roads or move through developed or disturbed areas, or areas that require movement of > 100m over cleared ground to reach suitable habitat; as a result of habitat loss; and ▪ Koalas can safely leave the site of clearing and relocate to adjacent habitat.	1,4
Ensuring a fauna spotter will be on site prior to the commencement of and during all vegetation clearing to ensure the vegetation is clear and/or mark out an area where an animal is located to allow the animal to move on of its own accord.	1,4
Placing selected timber, particularly large hollow logs/trees, that are in areas to be cleared within, alongside or near surrounding buffer areas to enhance the habitat values of retained habitat. Randomly placing hollow tree trunks retrieved from the clearing areas in the area to provide additional habitat.	2,4
Road speeds within the site will be restricted to 40km/hr.	1,4

Mitigation Measure	Objective
Vehicle movements outside designated operational areas will be prohibited to ensure vegetation is maintained.	
The access road will be treated to ensure the design elements ensure the road does not constitute a barrier to the safe movement of fauna across the site. Specifically, construction of an elevated portion (or portions) of the road in the form of bridging structures, along with guide fencing will be incorporated to ensure the provision of safe crossing opportunities.	1,4
Installing fauna friendly fencing when existing stock fencing around the property boundary requires replacement .	2,4
All permanent internal fencing will be removed with the exception of fencing around the boundary of Lot 1 on RP108970. Where existing perimeter fencing is removed, it shall be replaced by fauna friendly fencing. If proposed works creates medium risk for an animal fatality or injury, the area will be fenced off using fauna exclusion fencing.	1,4
Fifty habitat/nest boxes will be installed to provide shelter in linkages and corridors which do not possess sufficient numbers of hollow bearing trees. Habitat/nest boxes will placed in appropriate locations within the area including 20 large boxes suitable for owls, 15 boxes suitable for insectivorous bats and 15 boxes suitable for small possums/gliders.	1,4
Erecting 6 large rock shelters. A rock shelter comprises clusters or stacks of 2 to 4 large rocks greater than 1.0m in the smallest dimension.	1,4
Scattering 200 flat rocks (ranging from 1500 to 500 mm in length) about the area to provide additional habitat for small animals	1,4
Flora Management	
Clearly defining areas to be cleared for quarrying purposes.	2,5,6
Preventing damage and/or disturbance to areas outside defined clearing areas.	2,3,5,6,
Research the use of low impact of herbicides and fertilizers onsite to minimize local and downstream impacts to sensitive ecosystems. The use of herbicides would be restricted to the control of weeds declared under the LPA, and environmental weeds that threaten the success of restoration works and/or impede fauna movement. Use of herbicides would be in strict compliance with DPI guidelines.	2,9
Conduct research trials for a period of three years to determine the most efficient and successful method or combination of methods for habitat restoration. Results will	2,9

Mitigation Measure	Objective
be incorporated in a detailed Restoration Plan.	
Plant species used in the habitat restoration works will generally mirror the pre-disturbance vegetation.	2,3,7
Natural regeneration is to be encouraged. Supplementary planting will be used in areas where natural regeneration does not achieve the densities and composition of the pre-clearing native vegetation community. Supplementary plantings will be required to reflect on-site vegetation communities or regional ecosystems. Planted individuals will be of local provenance.	7,9
Establish a minimum of 300 trees/ha in Bushland – Habitat Restoration areas.	2,3,4,7,9
Management recommendations as proposed by Olsen (2004) for *Corchorus cunninghamii* and *Macadamia integrifolia* will be adopted.	2,5,6
Fire Management	
Prepare a site Bushfire Management Plan in conjunction with fire authorities, RSC and adjoining landowners.	10
Pest Management	
A pest/weed control and monitoring program based on Local and State plans and strategies will be developed and implemented in consultation with Redland Shire Council.	8
All vehicles and equipment are to be cleaned prior to entering the buffer areas to remove seeds and sediment.	1,2,3,5,6,8
Exclude all stock such as goats, sheep, cattle and horses from the site unless identified management outcomes suggest otherwise.	2,3,8
Monitoring	
Monitoring will be carried out to measure the presence/ absence of Koalas, weed species, other native plant species, density, diversity and health and to determine whether appropriate site coverage has been achieved within the nominated timeframes	4,9
Site Management	
Ensuring that all employees, contractors and site visitors are aware; that no native vegetation is to be disturbed without the approval and supervision of the Quarry Manager; and of the habitat value of the site, particularly values associated with Koala habitat.	2,3
Access to bushland areas will be restricted to land management and environmental monitoring only. Provide barriers and signage to discourage illegal recreation vehicles from entering the site.	1,2,3,5,6,8

ATTACHMENT 2
JOINT STATEMENTS ON FAUNA AND FAUNA HABITAT MATTERS
(P&E COURT APPEAL1585 OF 2007)

In regards P&E Court Appeal 1585 of 2007

Between Barro Group Pty Ltd (Appellants) and Redlands Shire Council (Respondent) & WPSQ Bayside Branch (Co-Respondent).

1st Joint Statement on Fauna and Fauna Habitat Matters

27 October 2008

All meetings, conferences and this joint statement have been conducted and prepared in accordance with Practice Direction #1 of 2006.

Unless otherwise stated, all references to the development refer to that which forms the original application to the **Redlands Shire Council.**

Experts involved - Mr. Adrian Caneris (AC); Mr. Simon McNeilage (SM); Ms. Lynn Roberts (LR) and Dr William Ellis (WE)

Key to opinions below: ✓ Agree, **X** Disagree, **NA** Not applicable to this expert

The experts note that the meetings were productive and useful. It has been agreed that further discussions and agreement is desirable to assist the Court, and it is intended that this take place once information requirements noted below have been addressed.

Statement	AC	SM	WE	LR	Comments
1. There are no fauna species listed under the *Environment Protection and Biodiversity Conservation Act 1998* which are considered to be threatened by the proposed actions.	✓	✓	NA	NA	(SM) I have no reason not to rely on the professionalism and competency of the ecological advisors to the Proponent and the accuracy of their reported investigations. I therefore accept the statement in the absence of any current contradictory information.
2. There are species listed under the Nature Conservation Act 1994 known to occur on the subject site	✓	✓	✓	✓	(SM) I have no reason not to rely on the professionalism and competency of the ecological advisors to the Proponent and the accuracy of their reported investigations. I therefore accept the statement in the absence of any current contradictory information.
3. Data on the loss of riparian habitat and mapped remnant vegetation is to be provided along with data on the spatial extent of future riparian habitat and remnant vegetation. A reasonable condition of development would be to provide the proposed offsets of both riparian habitat and remnant vegetation such that they are progressively established during operations and fully implemented and viable following the cessation of operations, the riparian habitats and remnant vegetation extant on site will be enhanced in area and condition. It is desirable to have the amount of vegetation lost detailed for each stage of the development and correspondingly the revegetation defined by type and area. Details of expected habitat values and timing of such should be provided for comparison.	✓	✓	✓	✓	

A. Caneris. SM WE LR

In regards P&E Court Appeal 1585 of 2007

Between Barro Group Pty Ltd (Appellants) and Redlands Shire Council (Respondent) & WPSQ Bayside Branch (Co-Respondent).

1st Joint Statement on Fauna and Fauna Habitat Matters

Statement	AC	SM	WE	LR	Comments
4. Potential riparian habitat can be identified by reference to the Redland Planning Scheme "Waterways, Wetlands & Moreton Bay overlay mapping" and Part 5 – Overlays, Division 12 - Waterways, Wetlands & Moreton Bay overlay. The relevant RPS requirements including buffer widths for minor waterways and natural drainage lines as described in Part 11 – Planning Scheme Policy 14 Waterways, Wetlands & Moreton Bay are supported for ecological reasons.	✓	✓	✓	✓	
5. Consideration of riparian habitat should include the extant values of the site and the rehabilitation of new drainage channels to achieve natural habitat values where practical.	✓	✓	✓	✓	
6. Riparian habitat is viewed as providing important habitat for koala.	✓	✓	✓	✓	(AC & SM) The value of riparian habitat for koala will depend on the degree to which it provides for movement, refuge and food. This will be strongly influenced by the presence of vegetation and vegetation type.
7. The site's values and contribution to regional and local fauna movement (including Koala) should be both described and illustrated on a figure.	✓	✓	✓	✓	
8. While water quality is being addressed by other experts any water quality criteria agreed should protect downstream ecological values including in-stream fauna and aquatic and riparian vegetation.	✓	✓	✓	✓	
9. Details on the proposed type and extent of fencing are required to assess potential impacts on fauna (including Koala) movement or habitat loss.	✓	✓	✓	✓	
10. The experts wish to continue discussions with the aim to document further agreement once information set out in points 3, 5, 7 8 and 9 is available and Lynn Roberts has undertaken a site visit.	✓	✓	✓	✓	

A. Conner.

SM

LR

WE

Signed:

Mr. Adrian Caneris (AC)

Mr. Simon McNeilage (SM)

Ms. Lynn Roberts (LR)

Dr William Ellis (WE)

In regards P&E Court Appeal 1585 of 2007

Between Barro Group Pty Ltd (Appellants) and Redlands City Council (Respondent) & WPSQ Bayside Branch (Co-Respondent).

2nd Joint Statement on Fauna and Fauna Habitat Matters

All meetings, conferences and this joint statement have been conducted and prepared in accordance with Practice Direction #1 of 2006.

Unless otherwise stated, all references to the development refer to that which forms the amended application as shown in the plans distributed by Adrian Caneris to the experts listed below by e-mail on 27 November 2008. Those distributed plans were labelled Schematic of Proposed Plant Layout Figure 2.7A, Orth photo with Schematic of Proposed Plant Layout Overlay Dwg. No. 987.133, Quarry development Plan – Stage 3 Rev. 2, and Quarry Development Plan – Stage 4 Rev. 3.

Experts involved - Mr. Adrian Caneris (AC) Fauna; Mr. Simon McNeilage (SM) Fauna & Koala; and Ms. Lynn Roberts (LR) Koala, Dr William Ellis (WE) Koala

POINTS OF AGREEMENT

1. Present conservation status of the Koala in South East Queensland

1.1. Koalas are listed as Vulnerable in South East Queensland under the *Nature Conservation Act 1994.*

1.2. Koalas have been recognised as 'endangered' within the Koala Coast Region in Redlands Koala Policy 2008.

1.3. We understand that the Court will have regard to both the SEQ Regional Plan Interim Guideline: Koalas and Development (the Koala Guidelines), as well as the Nature Conservation (Koala) Plan 2006 and Management Program 2006-2016 (the Koala Plan). These matters will be further considered through discussions between LR, SM and WE, in their individual reports, and informed through consultation with relevant EPA officers.

1.4. The quarry site is centrally located in the Koala Conservation Area designated under both the Interim Guideline and the Koala Plan.

1.5. Koala Coast Surveys 2005-2006 reported population declines of 26%, and we agree that this decline appears to be continuing based on advice from the EPA.

1.6. The next ten to fifteen years will be crucial to the survival of koalas in the Koala Coast. Habitat loss is considered to be the main cause of declining populations.

1.7. The proposed quarry development is likely to result in a decline in the numbers of koalas on site in the first 15 years of operation. While the mitigation efforts that are proposed are likely to have long term benefits, the initial onsite decline in koala numbers shown in the graph in "Development Proposal Report, Section 9.4 (Koala Habitat Assessment): Estimated Koala Numbers Over Time" is recognised.

2. Connectivity

2.1. The site's relationship to likely regional and local fauna movement patterns (including Koala) is illustrated on the figure in Attachment 1 titled "Fauna Movement Corridors" (prepared by BAAM).

2.2. The proposed quarry development is likely to impede koala movement.

3. Rehabilitation and Revegetation

3.1. The quarry proposal will permanently remove some 50 hectares of existing and potentially valuable koala habitat.

3.2. Vegetation removal for each Stage of the proposed development will result in habitat loss, which must be offset by compensatory plantings to generate replacement habitat that will exceed in extant value that habitat removed. It is recognised that those compensatory plantings have already commenced, in part, and that natural regeneration has also commenced.

3.3. The compensatory plantings must be managed to ensure their successful growth.

3.4. If the development is to proceed, every effort should be made to establish koala habitat as quickly as possible

3.5. For Stage 1 of the proposed development it is recognised that while ultimately habitat and riparian revegetation (including specific koala habitat requirements under the koala planning documents referred to in point 1.3 above and the Redland Planning Scheme) must be verified to be equivalent to and adequately compensate for the loss of habitat that will result from that Stage of development this may not be fully achieved in the short term. We therefore recommend that verification of successful and required revegetation for Stage 1 is undertaken both after five years of operations and at the completion of Stage 1. Development of any type should not proceed for Stage 2 until it can be verified that replacement habitat is equivalent to and adequately compensates for the loss of habitat that will result from all of the Stage 1 development . That verification must be undertaken by a suitably qualified and experienced person. In addition, there should be strong incentives for the applicant to ensure that the rehabilitation is well underway at the end of the first five years of operation in Stage 1.

3.6. For Stages 2, 3 and 4 habitat and riparian revegetation (including specific koala habitat requirements under the koala planning documents referred to in point 1.3 above and the Redland Planning Scheme) must be verified to be equivalent to and adequately compensate for the loss of habitat that will result from that Stage of development (and must not include revegetation from previous stages) before any clearing or ground disturbance can take place for the next Stage. That verification must be undertaken by a suitably qualified and experienced person.

3.7. The compensatory plantings must be protected from predation by wallabies.

3.8. The revegetation and natural regeneration should proceed as quickly as possible but be informed by research outcomes from research plots (as described in the Habitat Management Plan) as they become available.

4. Other Koala Issues

4.1. It is agreed that the internal access road from the existing quarry to the proposed quarry should avoid if possible, the three large Eucalypts in the vicinity. However, there should be a precautionary offset to allow for possible impacts on all of these trees. That offset should fully compensate for the three trees.

4.2. Monitoring of koalas should be undertaken to better understand the relationship between rehabilitation works and movement requirements. It is noted that this may be undertaken by site-specific studies or through a contribution to a broader regional study if suitable studies can be identified.

4.3. Although no definitive studies have been identified, it is possible that dust deposits on koala food trees may affect selection and / or palatability of such leaves to koalas. Additionally there may be other effects such as increased tooth wear from abrasion by dust particles on leaf. Koalas are present on site near the pit, and koalas are known to inhabit areas of high dust deposition.

4.4. The long term and short term effects of the noise from the operations, such as blasting, on koala are unknown.

4.5. Traffic impacts on koalas external to the site have been minimised by restricting truck movements to daylight hours. There are likely to be 30 deliveries per annum between 7pm and 5am. Koalas are known to be road victims during the day as well as at night.

4.6. Exclusion fencing has been proposed to keep fauna from potential danger (e.g. the edges of the quarry pit) and security fencing is

proposed in other locations. The effects of all fencing on fauna, especially kolas, must be considered.

POINTS OF DISAGREEMENT

1.1. The habitat offsets required for each stage of the development will be considered in individual reports.

1.2. If the proposal is to proceed, it is critical to mitigate any impediments to connectivity. SM and WE say this will be best addressed by detailed design to ensure infrastructure (including roads, water treatment areas, embankments and structures) do not unnecessarily impede movement, the establishment of compensatory habitat within the site, speed control of vehicles, ongoing education of all people accessing the site, installation of the conveyor belt above the ground, properly designed fencing, prohibition of dogs from the site, and the maintenance of linkages to areas beyond the site. AC says these matters are addressed in the draft habitat management plan and recommended conditions. LR and SM note that the water treatment ponds and filtration system must be designed to allow for fauna movement, but would still impede fauna movement to some extent depending on final arrangements.

Dated 18 December 2008

Mr. Adrian Caneris (AC)

Mr. Simon McNeilage (SM)

Ms. Lynn Roberts (LR)

Dr William Ellis (WE)

APPENDIX 3
ECOLOGICAL EQUIVALENCE DATA (ATTACHED IN SEPARATE EXCEL FILE)

KOALA OFFSET SITE MANAGEMENT PLAN

MT COTTON QUARRY EXTENSION

Prepared for
Barro Group Pty Ltd



Biodiversity Assessment and Management Pty Ltd
PO Box 1376
CLEVELAND 4163

BAAM
ECOLOGICAL CONSULTANTS

PLANS AND DOCUMENTS
referred to in the
DEVELOPMENT APPROVAL

SARA ref: MBN21/1805

Date: 17 April 2022

Specialised ecological knowledge that reduces your risk

Document Control Sheet

File Number: 0241-0013 / 0241-009

Project Manager/s: Adrian Caneris

Client: Barro Group Pty Ltd

Project Title: Koala Offset Site Management Plan, Mount Cotton Quarry

Project Author/s: Adrian Caneris, Olivia Woosnam, Jo Chambers

Project Summary: To provide management strategies to achieve the desired outcomes for the Koala offset sites for the proposed Mount Cotton Quarry extension.

Revision/ Checking History Track:

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0241-009 Draft B	22/12/2016	Adrian Caneris	Jo Chambers
0241-009 Version 0	18/01/2017	Adrian Caneris	Jo Chambers
0241-009 Version 1	29/11/2017	Adrian Caneris	Jedd Appleton
0241-021 Version 2	23/07/2021	Jedd Appleton	Jo Chambers
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PDF - server	3	03/12/2021	4	09/12/2021		

Confirmation of Request for a Voluntary Declaration under the *Vegetation Management Act 1999*

Proponent Details:

Barro Group Pty Ltd - ABN: 25 553 947 414
191 Drummond Street
CARLTON VIC 3053

Voluntary Declaration:

The proponent is an Australian registered Company and the registered owner of the subject lands, and makes this Voluntary Declaration to comply with a current development approval (MATERIAL CHANGE OF USE – DEVELOPMENT PERMIT FOR EXTRACTIVE INDUSTRY AND ENVIRONMENTALLY RELEVANT ACTIVITIES AT 1513 AND 1515-1521 MOUNT COTTON ROAD AND 149-177 AND 196 GRAMZOW ROAD, MOUNT COTTON QLD 4165) with full knowledge.

i. **Parcel (lot and Plan)**	**Tenure**
Lot 162 on S31962	Freehold
Lot 238 on SP218968	Freehold
Lot 370 on S311071	Freehold
Lot 17 on RP108970	Freehold
Lot 1 on RP104645	Freehold

The proponent (Barro Group Pty Ltd) hereby gives its consent for the lodgement and enactment of a voluntary declaration for the Koala Offset Areas as identified on the Koala Tree Offset Strategy Plan, prepared by BAAM Ecological Consultants, reference, 0421-009 sheet 1, dated 23 July 2021 to be declared as areas of high nature conservation value under section 19E of the *Vegetation Management Act 1999* and to be managed in accordance with this Koala Offset Management Plan.

Name (1):	IAN PETER ALEXANDER	***Signature:***	Ian P. Alexander
TITLE:	DIRECTOR / COMPANY SECRETARY		
Witness Name:	MONICA CASAUCIA	***Signature:***	
Date:	15 DECEMBER 2021		
Name (2):	RAYMOND BARRO	***Signature:***	
TITLE:	MANAGING DIRECTOR		
Witness Name:	MONICA CASAUCIA	***Signature:***	
Date:	15 DECEMBER 2021		

SIGNED by the Chief Executive of the Department of Natural Resources and Mines to indicate approval of the nominated areas being declared of high nature conservation value under section 19E of the *Vegetation Management Act 1999*.

Name:		***Signature:***	
Witness Name:		***Signature:***	
ii. ***Date:***			

NOTICE TO USERS OF THIS REPORT

Purpose of Report

Biodiversity Assessment and Management Pty Ltd has produced this report in its capacity as consultants for and on the request of Barro Group Pty Ltd (the "**Client**") for the sole purpose of providing a Koala Offset Site Management Plan in accordance with the *Environmental Offsets Policy* (the "**Specified Purpose").** This information and any recommendations in this report are particular to the Specified Purpose and are based on facts, matters and circumstances particular to the subject matter of the report and the Specified Purpose at the time of production. This report is not to be used, nor is it suitable, for any purpose other than the Specified Purpose. Biodiversity Assessment and Management Pty Ltd disclaims all liability for any loss and/or damage whatsoever arising either directly or indirectly as a result of any application, use or reliance upon the report for any purpose other than the Specified Purpose.

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Signed on behalf of
Biodiversity Assessment and Management Pty Ltd

Date: 09/12/2021



Managing Director

KOALA OFFSET SITE MANAGEMENT PLAN
MT COTTON QUARRY EXTENSION

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Figure 4.2 Locations of Additional Offset Sites since 2017 Reporting
Figure 4.3 Quarry and Offset Staging

List of Appendices

Appendix 1 Koala Offset Site Management Plan
Appendix 2 Results of Koala Offset Area Assessment

List of Abbreviations

BAAM	Biodiversity Assessment and Management Pty Ltd
DES	Queensland Department of Environment and Science
DOR	Queensland Department of Resources
JKHT	Juvenile Koala Habitat Tree
KMP	Koala Offset Site Management Plan
NC Act	*Nature Conservation Act 1992*
NJKHT	Non-juvenile Koala Habitat Tree
RE	Regional Ecosystem

1.0 INTRODUCTION

1.1 PURPOSE OF THE PLAN

This report was previously prepared by Biodiversity Assessment and Management (BAAM) Pty Ltd to provide Barro Group Pty Ltd with a Koala Offset Site Management Plan (the Plan) for the proposed Mt Cotton quarry extension.

The Plan was originally prepared in accordance with the Offsets for Net Gain of Koala Habitat in South East Queensland Policy (Koala Offset Policy). Following discussions with representatives from the Department of Environment and Science (DES), it was suggested that under the transitional provisions of the *Environmental Offsets Act 2014* (EO Act) (Section 95B), Barro was able to apply for re-consideration of the Koala offset strategy to accord with the current Koala offset provisions, which is at the 3:1 offset ratio.These provisions allow for the current/existing Koala protection and offset provisions to be retrospectively applied in particular circumstances.

Although the current State Koala habitat mapping (**Figure 1.1**) shows only two small areas of mapped Koala habitat within the proposed quarry extension area that would require offsets, Barro Group have committed to providing an offset for the proposed areas of the project to be cleared, in accordance with the previous Koala habitat mapping. The proposed offset ratio has been demonstrated to comply with the current legislation, at rate of 3:1, in accordance with the Queensland *Environmental Offset Policy*.

This updated version of the report has been prepared to meet the requirements of the approval conditions for the Mount Cotton Quarry extension and specifically Conditions 30, 31, 32 and 35.

The Koala offset areas as shown on Figure 2.1 are to be declared as areas of high nature conservation value under section 19E of the *Vegetation Management Act 1999.*

This Management Plan is designed to provide strategies and actions that will ensure the Koala offset sites are adequately managed and the desired outcomes are achieved.

This Management Plan addresses both the short-term and long-term management of the Koala offset sites and includes measures to maximise success during all phases of Koala habitat restoration.

1.2 BACKGROUND INFORMATION

1.2.1 Subject Site

The subject site is located at 1513 and 1515 - 1521 Mount Cotton Road and 149 - 161 and 195 Gramzow Road, Mount Cotton, on land properly described as follows:

- the land comprising that part of Greenhide (California) Creek, located between Lot 162 SP31962 and Lot 238 SP218968, which is the property of the State;
- the land previously described as the unformed road, which is now described Lot 1 SP272090, Lot 2 SP272091 and Lot 3 SP272092 and owned by Barro Group Pty Ltd; and
- the remaining land comprising Lot 162 S31962, Lot 238 SP218968, Lot 370 S311071, Lot 1 RP108970, Lot 17 RP108970 and Lot 1 RP104645.

The land area, the subject of the offset delivery includes one (1) additional lot and now includes a total of nine (9) titles, all owned by Barro Group Pty Ltd.

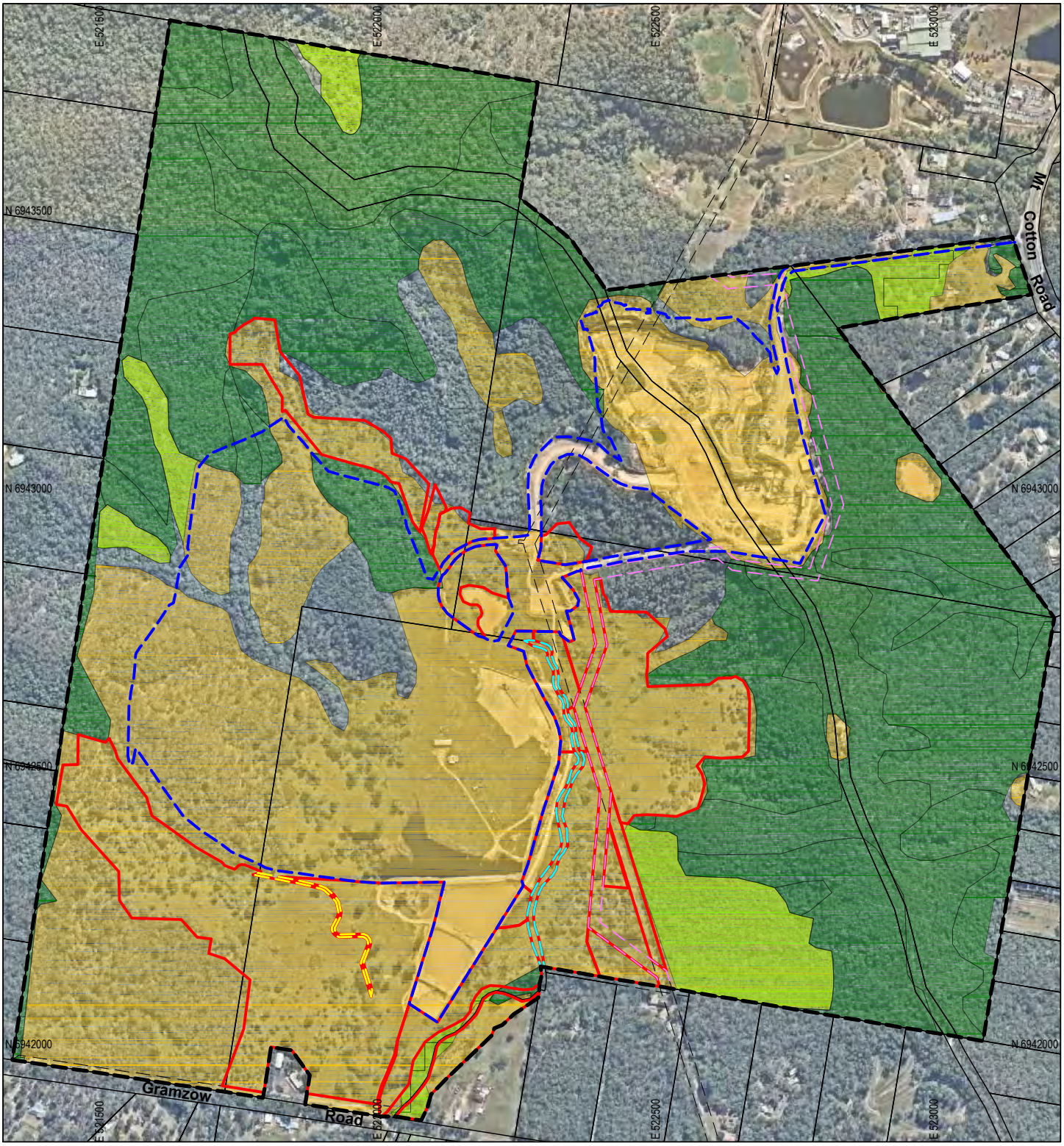
Address: Mount Cotton Quarry
1513 and 1515 - 1521 Mount Cotton Road and 149 - 177 and 195 Gramzow Road, Mount Cotton

Contact details for the Barro Group Pty Ltd are:

Address: 191 Drummond Street
Carlton, Victoria 3053

Australia
Telephone: (03) 9663 1333
Facsimile: (03) 9663 2555

.



Aerial Photo: Nearmap - May 2020

LEGEND

- Site Boundary
- Current and Approved Quarry Areas
- Koala Offset Site
- Diversion Drain
- Existing Power Easement
- Electrical Easement
- California Creek

Koala Areas

- Core Koala Habitat
- Locally Refined Koala Habitat
- Koala Habitat Restoration

Scale 1 : 10 000

0 100 250m

MGA94 Z56

Figure:	1.1
Title:	Current Koala Habitat Mapping & Proposed Quarry Extension
Project:	Koala Offset Site Management Plan Mt Cotton Quarry Extension
Client:	Barro Group

Drawn: MP
Date: 2.12.2021
Reviewed by: JC
File: 47_MCQ05.dwg

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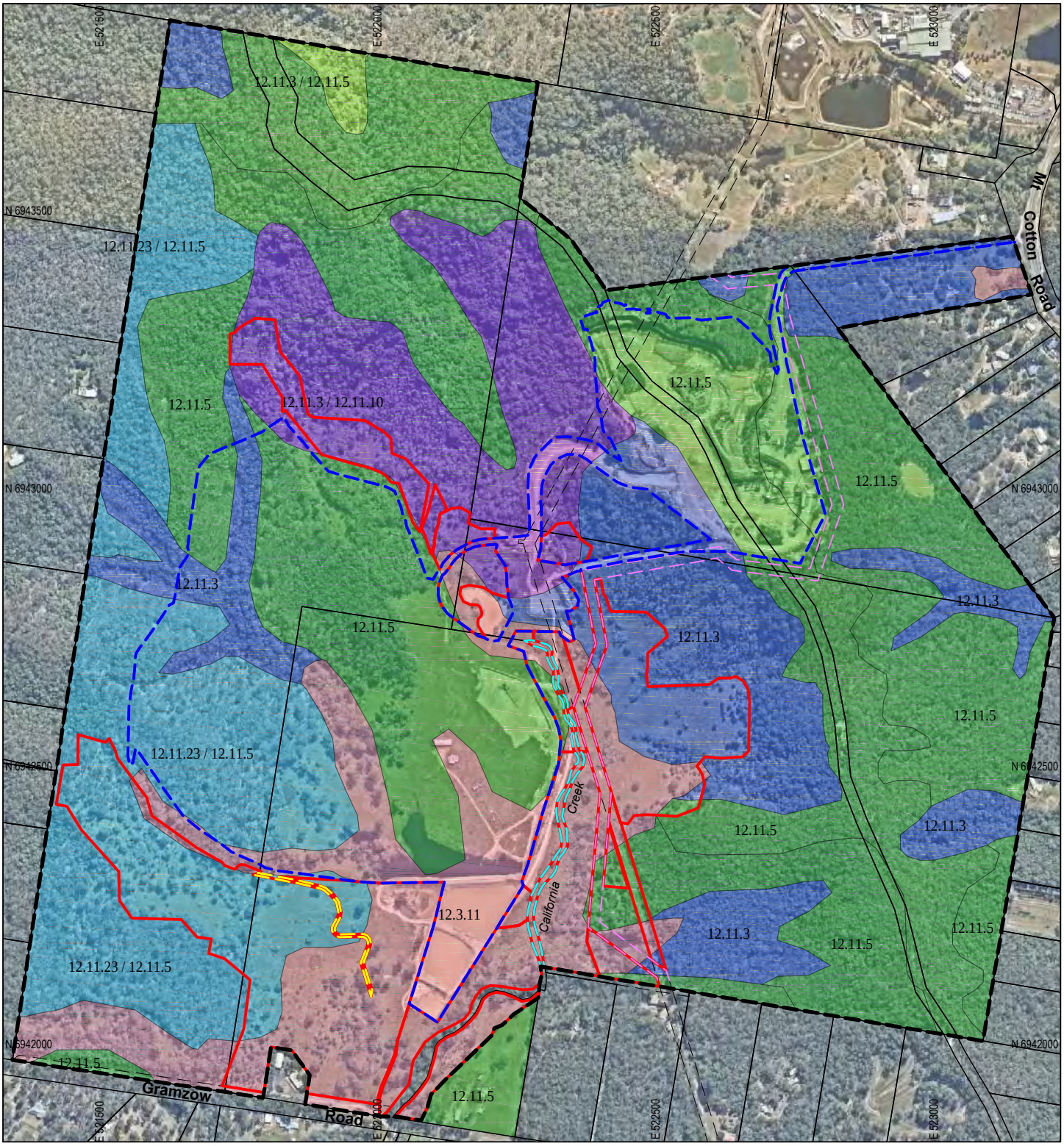
1.2.2 The Plan Updates

Negotiations commenced in early 2017 with DES to obtain their signoff for condition 35. A number of meetings were held and notwithstanding the earlier assessment and approval of the Koala offset strategy, DES (in consultation with the Queensland Herbarium) requested further amendments including reduction of the offset planting densities.

Further field work and calculations were then undertaken and it was determined, notwithstanding the reduction in the offset planting ratio, that additional land was required to deliver the amended Koala offset obligation. Subsequently, Barro acquired an additional adjoining property, being 149 – 161 Gramzow Road, Mount Cotton, properly described as Lot 1 on RP104645.

The Plan and other Koala offset strategy documents were then revised to incorporate the current offset planting ratio for non-juvenile koala food trees of 3:1, the required reduction in planning densities, as well as the provisions of the Queensland Environmental Offset Policy V1.9. The updated documents were re-submitted to DES in July 2021. It was subsequently agreed by DES that the amendments proposed could be re-assessed having regard to the intent of Section 95 of the EO Act. These provisions allow for the current/existing Koala protection and offset provisions to be retrospectively applied in particular circumstances.

Following further negotiations with DES, the Plan and other Koala offset strategy documents were again amended to address further matters raised and also to outline the intended staging for the offset delivery.



Aerial Photo: Nearmap - May 2020

LEGEND

- Site Boundary
- Current and Approved Quarry Areas
- Koala Offset Site
- Diversion Drain
- Existing Power Easement
- Electrical Easement
- California Creek

Regional Ecosystems

- 12.3.11
- 12.11.3
- 12.11.3 / 12.11.5
- 12.11.5
- 12.11.23 / 12.11.5
- 12.11.3 / 12.11.10

Scale 1 : 10 000

0 100 250m

MGA94 Z56

Figure:	2.1
Title:	Koala Offset Sites and Pre-clearing Regional Ecosystems
Project:	Koala Offset Site Management Plan Mt Cotton Quarry Extension
Client:	Barro Group

Drawn: MP
Date: 2.12.2021
Reviewed by: JC
File: 47_MCQ05.dwg

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2.0 OVERVIEW OF KOALA OFFSET SITES

Figure 2.1 shows the proposed quarry extension, the DOR regional ecosystem (RE) mapping and the location of the proposed Koala offset sites.

All of the required Koala offset sites will be located within the subject site or on adjacent lands owned by Barro Group. The offset sites will be outside of the footprint of the proposed quarry extension and any associated infrastructure (e.g. pondage areas), and outside of any road reserve or power easements that traverse the subject site.

Approximately 40 ha of the subject site has been identified as Koala offset sites where Koala habitat will be restored (**Figure 2.1 & 4.1**). These areas will easily accommodate the entire offset obligation of 31,260 trees (refer **Table 4.1**) in accordance with the *Environmental Offset Policy*.

Koala offset sites have been planned so as to maximise Koala movement opportunities and improve Koala habitat values in the local landscape, and to contribute to the aims of the *Nature Conservation (Koala) Conservation Plan 2017.*

3.0 KOALA OFFSET SITE MANAGEMENT PLAN

3.1 AIMS AND OBJECTIVES

The primary aim of the Koala Offset Site Management Plan (KOMP) is to reinstate mature Koala bushland habitat [(1)] within the offset sites and achieve the offset obligation in terms of the number of mature Koala habitat trees.

The Koala offset sites will, in conjunction with the prescribed action herewith, also be managed in accordance with the Habitat Management Plan (BAAM 2010b, 2021).

The objectives of the KOMP are to provide:

- readily understandable guidelines for the restoration of Koala habitat in the offset sites;
- an integrated approach to responsible management and maintenance of restored Koala habitat; and
- a schedule of monitoring and reporting to be undertaken to facilitate adaptive management and meet reporting obligations.

3.2 DESIRED OUTCOMES

The key priority of the Koala Offset Site Management Plan is to address the long-term management of Koala offset sites and specifically:

- to protect restored Koala habitat from any future development;
- to ensure that restored Koala habitat is sustainable over the long term;
- to reduce Koala habitat fragmentation within the subject site and to increase opportunities for safe Koala movement in the local landscape; and
- to ensure a maximised survival rate for new Koala habitat trees planted in the Koala offset sites.

3.3 PERFORMANCE OBJECTIVES

This Management Plan addresses all phases of the Koala offset sites, until they reach mature Koala bushland habitat status.

The primary aim (**Section 3.1**) of the plan will be achieved through the following performance objectives:

- To inform all relevant personnel of the Koala Offset Site Management Plan;
- To protect and secure the Koala offset sites;
- To collect baseline data for the Koala offset sites;
- To establish a sufficient number of new Koala trees in the Koala offset sites to

[1] Habitat restored in the Koala offset sites will be considered 'mature Koala bushland habitat' once:
- at least 75% of trees planted are either 4 metres high or 31.5cm trunk circumference at 1.3m above ground (as per the definition of a non-juvenile Koala habitat tree under the *Planning Regulations 2017)*; and
- Presence of Koalas is confirmed in the Koala Offset sites.

meet the offset obligation in accordance with the Koala Offset Policy;

- To manage and maintain the Koala offset sites; and
- To implement monitoring and reporting protocols to inform on the progress of restored Koala habitat and evaluate the success of Koala habitat restoration works.

The performance objectives and specific management actions/responsibilities, performance indicators, corrective actions/responsibilities and timing/frequency for monitoring and reporting are provided in **Appendix 1**.

4.0 MANAGEMENT STRATEGIES

The Koala offset sites identified on **Figure 2.1** consist of areas that are currently largely cleared or that support low tree density. There are a few scattered, mature *Eucalyptus tereticornis* (Forest Red Gum) in some locations and although Koalas are known to utilise these existing trees, they would currently need to traverse large areas of cleared lands to access these isolated trees.

Rehabilitation of Koala bushland habitat will benefit Koala populations by restoring suitable habitat within and near the subject site and providing safe movement opportunities within the local landscape.

The Koala offset sites identified in **Figure 2.1** will accommodate the entire offset obligation in accordance with the Koala Offset Policy. The 40 ha of offset areas will allow any required plantings to be placed sufficient distances away from the quarry boundaries to minimise the risk of root damage to growing trees.

4.1 OFFSET ESTABLISHMENT

In accordance with Condition 35, the locations of existing Koala habitat, as recorded by BAAM Senior Ecologists on 6th October, 2016, 17th April, 2020 and 1st April 2021, are shown on Figure 5.1 of the Koala Tree offset strategy (BAAM 2010a revised 2021).

Offset areas have been grouped by pre-clear regional ecosystem. The presence of cattle has resulted in limited juvenile koala trees being recorded in most areas. Representative photographs taken in each offset polygon, together with the existing NJKHT and JKHT recorded, are provided in **Appendix 2** (refer Figure 5.1 of the Koala Offset Tree Strategy) for locations of the offset polygons.

Stem densities for the pre-clear REs within the Koala offset areas were obtained from the Queensland Government publication: *Regional Ecosystem Technical Descriptions* (updated 16/4/2019) to calculate the area required to meet the offset obligation (**Table 4.1**). The average stem densities for the T1 and T2 strata of each pre-clear RE within the Koala offset areas were used to calculate the appropriate offset densities. As there is currently no technical description for RE 12.11.5, advice was sought from the Queensland Herbarium, who provided a copy of the draft technical description for RE12.11.5; this was used to calculate the offset densities for this RE.

As indicated in **Table 4.1**, the designated offset areas are sufficient to accommodate the entire offset obligation of 31,260 trees.

Offset establishment will include naturally regenerating Koala habitat trees within the offset areas. Supplementary planting calculations will be determined based on the extent of natural Koala habitat tree recruitment following cattle exclusion. Any plantings will be located away from quarry boundaries to minimise the risk of root damage from quarry activities.

Five categories of suitable species mix have been identified for supplementary planting (**Table 4.2**) that reflect the pre-clearing Regional Ecosystems (**Figure 4.1**), to maximise survival rate and overall Koala habitat values.

Figure 4.2 shows the locations of offset areas additional to those shown in the 2017 reports, and counts of juvenile and NJKHT within each additional offset area are provided in **Appendix 2.**

All additional KO10 sites, as shown on **Figure 4.2**, were surveyed in April 2020, and KO9 was surveyed in April 2021. KO10 sites are located in either totally cleared lands or highly degraded lands that did not support Koala habitat trees. KO9 supported a total of 27

NJKHTs (refer **Appendix 2**) over a highly disturbed or managed shrub/ground layer. All other KO areas were surveyed in October 2016.

Table 4.1. Offset establishment density calculations based on average stem densities of T1 and T1 strata (based on RE technical description) in each relevant pre-clear RE.

Regional Ecosystem	12.11.3/ 12.11.10	12.3.11	12.11.3	12.11.5	12.11.23/ 12.11.5
Area in RE Polygon (ha)	4.32	19.38	5.116	1.47	9.27
T1 Stratum - RE's Stem Density Average (stems/ha) *Based on RE Technical Description*	223	284	223	247	264
Number of Trees that can be Established in T1 Stratum *Based on the RE stem density average and area in the RE polygon*	963.36	5503.92	1140.87	363.09	2447.28
T2 Stratum - RE's Stem Density Average (stems/ha) *Based on RE Technical Description*	321	562	321	420	900
Number of Trees that can be Established in T2 Stratum *Based on the RE stem density average and area in the RE polygon*	1386.72	10891.56	1642.24	617.40	8343.00
Total Number of Trees that can be Established in the RE Polygon *Number of Trees that can be Established in T1 Stratum + Number of Trees that can be Established in T2 Stratum*	2350.08	16395.48	2783.10	980.49	10790.28
Existing NJKHT in RE Polygon*	16	374	8	7	467
Existing juvenile KHT in RE Polygon	0	24	0	0	75
Remaining Number of Trees that can be Established in the RE Polygon *Total Number of Trees that can be Established in the RE Polygon - Existing NJKHT in RE Polygon*	2334.08	16045.48	2775.10	973.49	10398.28
Total Number of Trees that can be Established in the offset areas	**32526.43**				

* derived from field surveys conducted on 06/10/2016 and 8/4/2021.

Table 4.1. Offset establishment density calculations based on average stem densities of T1 and T1 strata (based on RE technical description) in each relevant pre-clear RE.

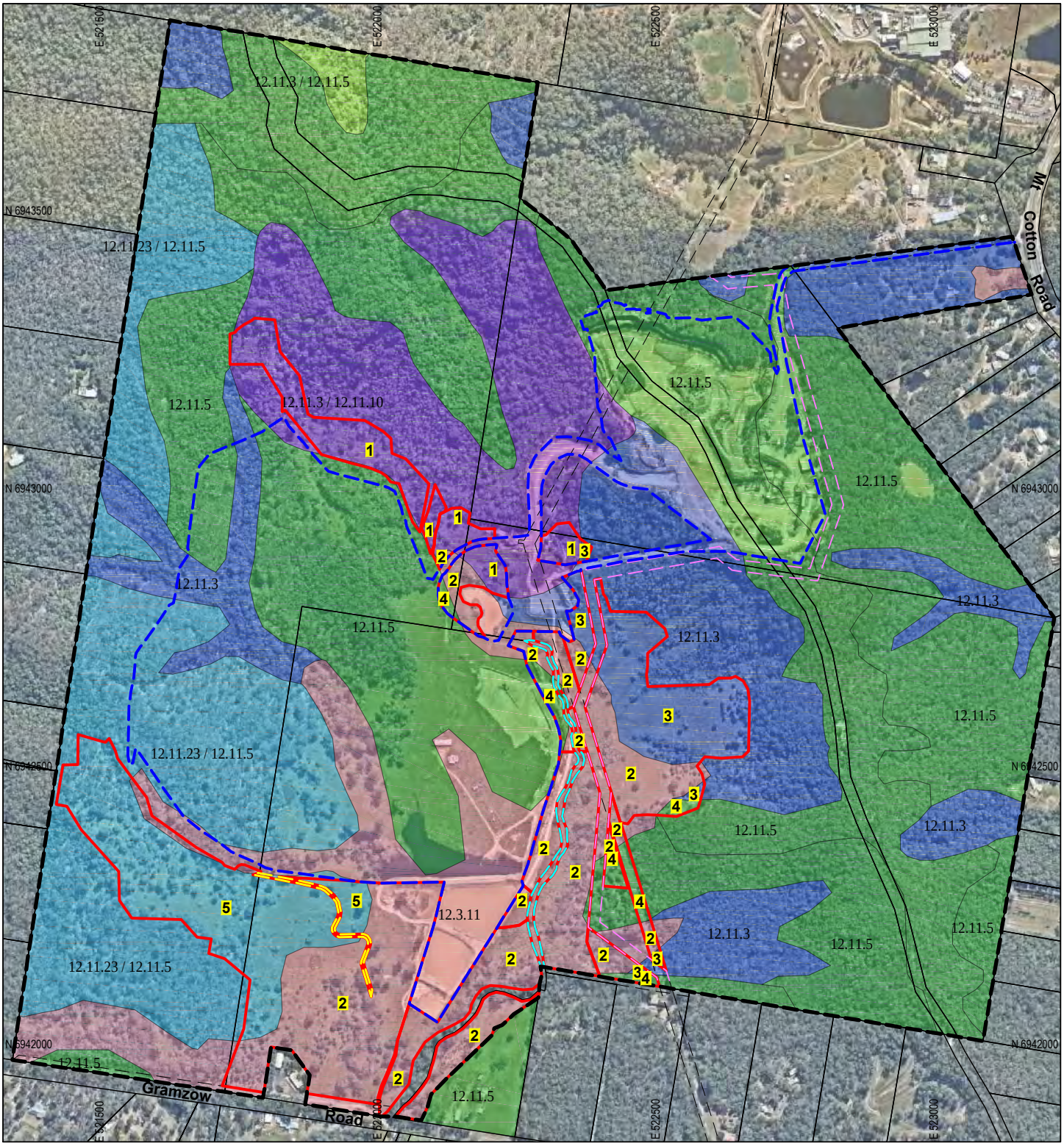
Regional Ecosystem	12.11.3/ 12.11.10	12.3.11	12.11.3	12.11.5	12.11.23/ 12.11.5
Area in RE Polygon (ha)	4.32	19.38	5.116	1.47	9.27
T1 Stratum - RE's Stem Density Average (stems/ha) *Based on RE Technical Description*	223	284	223	247	264
Number of Trees that can be Established in T1 Stratum *Based on the RE stem density average and area in the RE polygon*	963.36	5503.92	1140.87	363.09	2447.28
T2 Stratum - RE's Stem Density Average (stems/ha) *Based on RE Technical Description*	321	562	321	420	900
Number of Trees that can be Established in T2 Stratum *Based on the RE stem density average and area in the RE polygon*	1386.72	10891.56	1642.24	617.40	8343.00
Total Number of Trees that can be Established in the RE Polygon *Number of Trees that can be Established in T1 Stratum + Number of Trees that can be Established in T2 Stratum*	2350.08	16395.48	2783.10	980.49	10790.28
Existing NJKHT in RE Polygon*	16	374	8	7	467
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Remaining Number of Trees that can be Established in the RE Polygon *Total Number of Trees that can be Established in the RE Polygon - Existing NJKHT in RE Polygon*	2334.08	16045.48	2775.10	973.49	10398.28
Total Number of Trees that can be Established in the offset areas	**32526.43**				

* derived from field surveys conducted on 06/10/2016 and 8/4/2021.

Table 4.2: Offset supplementary planting schedule for each category (refer Figure 5.1 for locations of categories).

Category (refer to Figure 2.1) and species mix	Proportion (% of each category)	Maximum planting density	Comment
CATEGORY 1 (Pre-clear 12.11.3/12.11.10)			
E. acmenoides	20-30	18m centre	T1 layer
E. propinqua	10-20	18m centre	T1 and T2 layer
E. microcorys	10-20	18m centre	T1 layer
L. confertus	10-20	18m centre	T2 layer
Angophora woodsiana	10-20	18m centre	T1 and T2 layer
E. tindaliae	10-20	18m centre	T1 layer
CATEGORY 2 (Pre-clear 12.3.11)			
E. tereticornis	30-40	12m centre	
E. siderophloia	20-30	12m centre	T1 layer
C. intermedia	10-20	12m centre	T1 and T2 layer
L. suaveolens	10-20	12m centre	T1 and T2 layer adjacent to California Creek and along any

Category (refer to Figure 2.1) and species mix	Proportion (% of each category)	Maximum planting density	Comment
			other drainage lines
CATEGORY 3 (Pre-clear 12.11.3)			
E. acmenoides	20-30	18m centre	T1 layer
E. propinqua	20-30	18m centre	T1 and T2 layer
E. microcorys	20-30	18m centre	T1 layer
L. confertus	10-20	18m centre	T1 and T2 layer
E. carnea	10-20	18m centre	T1 layer
E. siderophloia	10-20	18m centre	T2 layer
CATEGORY 4 (Pre-clear 12.11.5)			
E. acmenoides	20-30	15m centre	T1 and T2 layer
E. propinqua	20-30	15m centre	T1 layer
E. microcorys	30-40	15m centre	T1 layer
L. confertus	5-10	15m centre	T2 layer
C. citriodora	5-10	15m centre	T1 and T2 layer
Category 5 (Pre-clear 12.11.23/12.11.5)			
E. microcorys	20-40	9m centre	T1 layer
E. pilularis	20-40	9m centre	T1 layer
C. intermedia	10-20	9m centre	T1 and T2 layer
E. tindaliae	5-10	9m centre	T1 layer
A. woodsiana	5-10	9m centre	T1 and T2 layer
L. confertus	5-10	9m centre	T2 layer



Aerial Photo: Nearmap - May 2020

LEGEND

- Site Boundary
- Current and Approved Quarry Areas
- Koala Offset Site
- Diversion Drain
- Existing Power Easement
- Electrical Easement
- California Creek
- 1 Species Mix Category

Regional Ecosystems

- 12.3.11
- 12.11.3
- 12.11.3 / 12.11.5
- 12.11.5
- 12.11.23 / 12.11.5
- 12.11.3 / 12.11.10

Scale 1 : 10 000

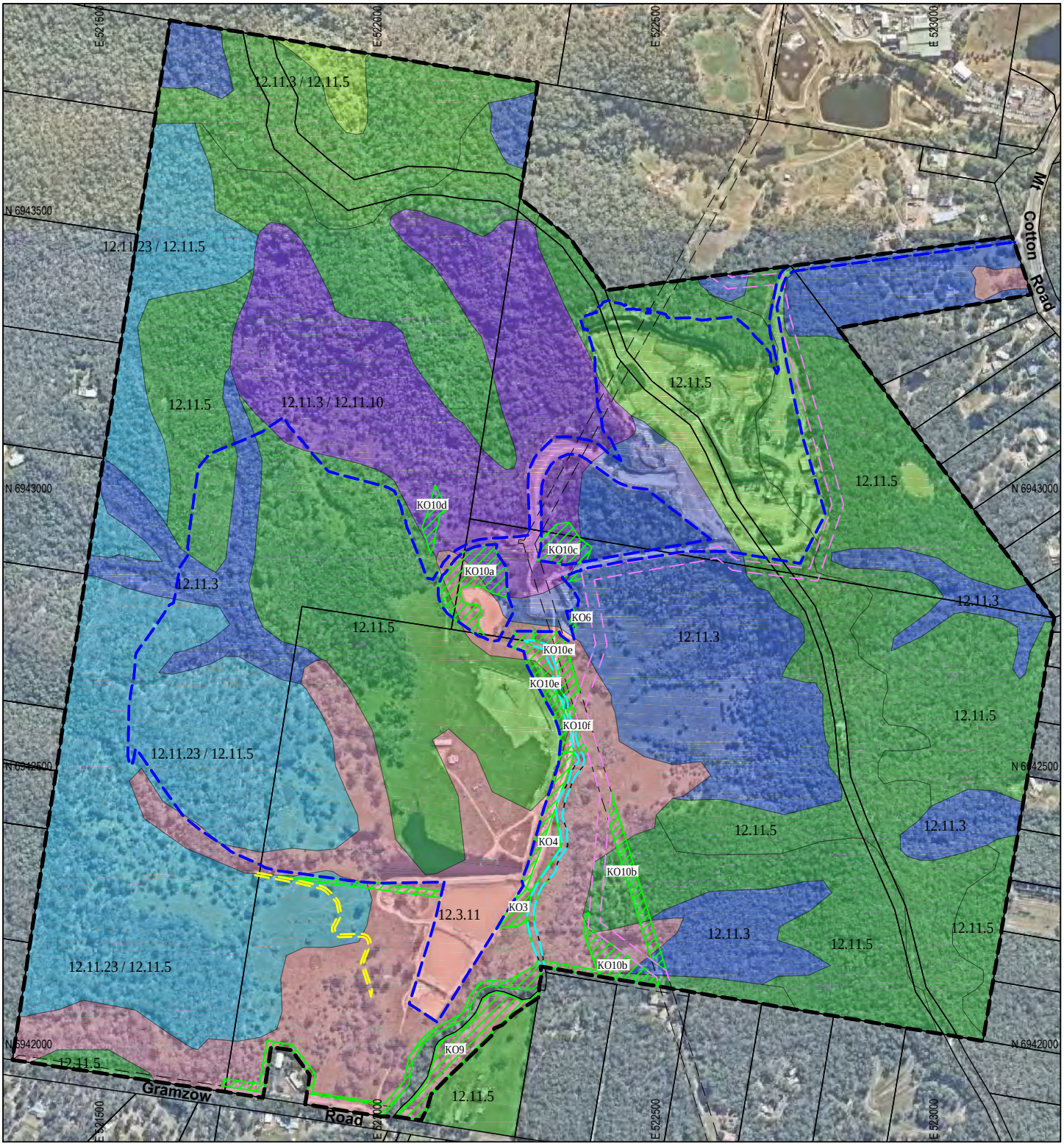
0 100 250m

Figure:	4.1
Title:	Koala Offset Sites, Species Mix Categories and Pre-clearing Regional Ecosystems
Project:	Koala Offset Site Management Plan Mt Cotton Quarry Extension
Client:	Barro Group

Drawn: MP
Date: 2.12.2021
Reviewed by: JC
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Aerial Photo: Nearmap - May 2020

LEGEND

- Site Boundary
- Current and Approved Quarry Areas
- KO1 Additional Koala Offset Areas
- Diversion Drain
- Existing Power Easement
- Electrical Easement
- California Creek

Regional Ecosystems

- 12.3.11
- 12.11.3
- 12.11.3 / 12.11.5
- 12.11.5
- 12.11.23 / 12.11.5
- 12.11.3 / 12.11.10

Scale 1 : 10 000

0 100 250m

Figure:	4.2
Title:	Additional Offset Areas since 2017
Project:	Koala Offset Site Management Plan Mt Cotton Quarry Extension
Client:	Barro Group

Drawn: MP
Date: 2.12.2021
Reviewed by: JC
File: 47_MCQ05.dwg

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4.2 STAGING OF OFFSET DELIVERY

Delivery of Koala offsets will be staged in accordance with the predicted quarry staging shown on **Figure 4.3** and listed in **Table 4.3**.

Offset establishment for Stage 1a (i.e. 321 Koala trees) will commence immediately following approval of this KOSMP in the area shown on **Figure 4.3**. Prior to commencement of use in July 2022, the Stage 1a offset area will be inspected by a suitably qualified landscape restoration contractor to certify the following;

- 321 Koala trees have been established,
- the trees are representative of the appropriate species mix for the site (RE12.3.11, Table 4.2)
- all trees appear of good health, and
- all trees are expected to meet the offset obligation (i.e. reach maturity).

The Stage 1a offset area will also be inspected within five years after commencement of offset establishment works to certify the offset obligation has been met.

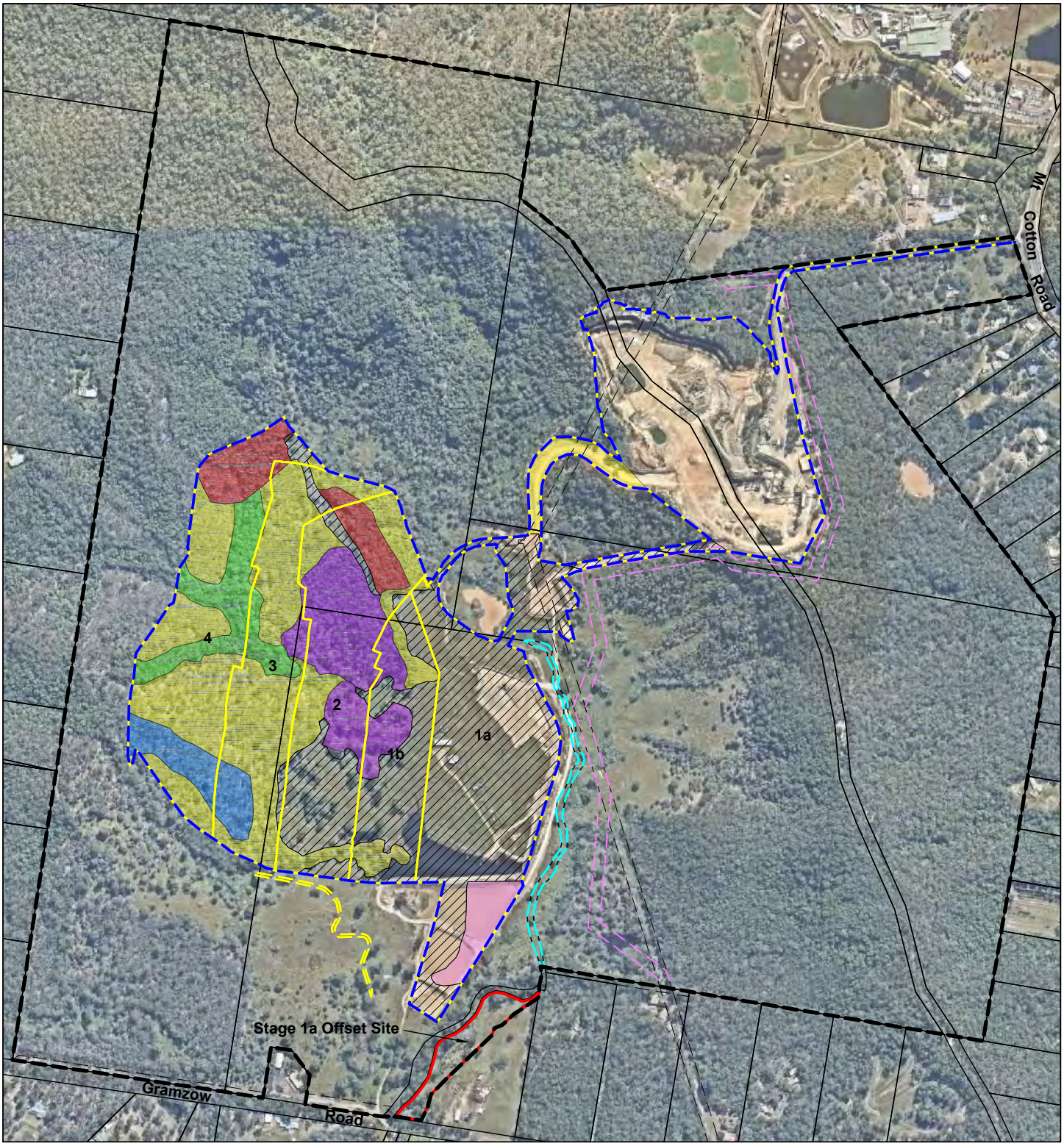
Offset establishment for Stages 1b, 2, 3 and 4 will commence seven years, at the earliest, prior to commencement of vegetation clearing for each quarry stage to allow establishment of the offset requirement prior to vegetation clearing.

Table 4.3 lists the start and end years for offset establishment for each stage, the number of existing Koala habitat trees within each stage area, and the required offset for each stage.

Vegetation clearing for Stages 1b, 2, 3 and 4 should not commence until DES receive confirmation that offset requirements for the preceding Stage have been met.

Table 4.3. Extraction rate, staging for extraction and offset establishment and offset requirement.

Stage	Years @ max extraction rate (1 mill t.p.a.)	Extraction Start	Extraction Finish	Offset Start	NJKHT Removed	KHT Offset Requirement
1a	8	2022	2030	2022	107	321
1b	4	2030	2034	2023	893	2679
2	8	2034	2042	2027	3161	9483
3	14	2042	2056	2035	2035	6105
4	16	2056	2072	2049	4224	12672
Total					**10420**	**31260**



Aerial Photo: Nearmap - May 2020

LEGEND

- Site Boundary
- Current and Approved Quarry Areas
- Stage 1a Offset Site
- Stage Boundary
- Diversion Drain
- Existing Power Easement
- Electrical Easement
- California Creek

Vegetation Mapping

- Acacia Regrowth
- Corymbia citiodora
- Gully
- Lophostemon Mature and Regrowth
- Mature Eucalyptus / Lophostemon
- Eucalyp / Allocasuarina
- Cleared

Scale 1 : 10 000

0 100 250m

Figure: 4.3

Title: Quarry and Offset Staging

Project: Koala Offset Site Management Plan
Mt Cotton Quarry Extension

Client: Barro Group

BAAM ECOLOGICAL CONSULTANTS

Drawn: MP
Date: 2.12.2021
Reviewed by: JC
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4.3 MANAGEMENT OF EXOTIC VEGETATION

As part of the Koala tree surveys (BAAM 2010d, 2015) Lantana was observed throughout the subject site, in some areas at very high densities.

Where necessary, weed control will be carried out within the Koala offset sites before any revegetation works commence and will continue until Koala trees reach mature status.

Weed control will be conducted across the remainder of the subject site for the duration of the quarry development in accordance with the *Biosecurity Act 2014*.

4.4 SECURING AND PROTECTING KOALA OFFSET SITES

Koala offset sites will be protected from future development impacts by securing the offset sites for conservation purposes through a conservation agreement under the *Nature Conservation Act 1992* (NC Act).

In order to protect the offset sites from impacts from quarry operations, vehicle and/or machinery access to/through the offset sites will be strictly controlled and no unauthorised access will be permitted.

For offset sites located adjacent to the quarry extension, the offset sites will be clearly delineated where necessary to prevent unauthorised access.

Compulsory site inductions will ensure that all staff are aware of the location of all Koala offset sites, which will be “no-go” areas.

Site visitors will be accompanied by staff if visiting the Koala offset areas.

4.5 MONITORING AND REPORTING

A monitoring and reporting program will be implemented to evaluate the progress of Koala habitat restoration works in the offset sites and provide feedback for adaptive management.

Baseline data will be collected prior to any restoration works commencing for future performance monitoring. Regular surveys will then be undertaken to collect data that will allow for comprehensive evaluation of the success of Koala habitat restoration works and for regular reporting to DES.

During these monitoring events, any maintenance works required (weed control, replacement plantings, etc.) will be reported to the Quarry Manager.

The monitoring events, together with their timing/frequency, performance indicators and the person responsible for undertaking each event are outlined within **Appendix 1**.

5.0 GENERAL ENVIRONMENTAL DUTIES

The following sections provide guidelines for the responsibilities of designated personnel who are engaged to ensure compliance with this Koala Offset Site Management Plan.

5.1 BARRO GROUP

The roles and general responsibilities of Barro Group are to:

- Comply with the Environmental Offsets Policy, NC Act, Biosecurity Act and *Vegetation Management Act 1999*;
- Nominate a Site Manager who will represent the Principal in reviewing the performance of staff, issue instructions and variations, and be responsible for KMP implementation;
- Promptly notify DES of any changes to this Management Plan and its implementation, reporting or monitoring, and any breach of any conditions and propose corrective actions;
- As necessary, engage the services of an experienced and/or appropriately qualified Landcarer for the habitat restoration works (planting and/or maintenance and/or monitoring); and
- Revegetate the remainder of the site in accordance with the principals described in the revised Habitat Management Plan (BAAM 2010b, updated 2021).

It will be the responsibility of Barro Group to ensure that the contents of this Management Plan are adequately communicated to all site personnel, and that they are advised of the

consequences if the recommended actions are not observed.

5.2 QUARRY MANAGER

The roles and responsibilities of the Quarry Manager (and/or its representatives) are to:

- Conform to specified (as per approval conditions) Environmental Management Practices;
- Satisfactorily demonstrate to Barro Group and relevant authorities that appropriate measures have been implemented on site to adequately manage the Koala offset sites, as noted in this Management Plan;
- Keep records of complaints / dysfunctions / breaches reported and responses relating to the Koala offset sites, advise Barro Group and the Landcarer, investigate and (where appropriate) implement control measures / corrective actions as soon as possible;
- Be present at inspections and as triggered by any environmental events or incidents;
- Notify the Landcarer regarding performance and monitoring, non-compliance and actions taken, and seek advice and attendance at on-site inspections when required;
- Notify the Landcarer within 24 hours regarding environmental incidents with potential to cause environmental harm or nuisance to the Koala offset sites and provide written details to the Landcarer within 7 days of occurrence;
- Report to Barro Group on the implementation and performance of this Management Plan on completion of all on-site works and following maintenance and monitoring events; and
- Follow directions of Barro Group with respect to performance of this Management Plan.

All unauthorised access to the offset sites must be reported to the Quarry Manager immediately, or as soon as practical, after the incident has occurred.

It will be the responsibility of the Quarry Manager to investigate why unauthorised access has occurred and to take any necessary corrective action to repair any damage caused by such and prevent further unauthorised access and (e.g. repair broken/damaged protective fencing, replace any planting irreparably damaged, ensure all staff is aware of this Management Plan and of the location of the offset sites, etc).

5.3 LANDCARER

The roles and responsibilities of the Landcarer may include:

- Liaise with the Quarry Manager and Barro Group to facilitate compliance with legislation, Council policies and conditions during the project;
- Conduct tree planting, maintenance and / or monitoring events as required / requested by the Quarry Manager and/ or Barro Group, and any other events if required / requested as triggered by environmental events or incidents;
- Advise the Quarry Manager on the compliance and effectiveness of this Management Plan/Site Instructions and its implementation;
- Immediately contact the Quarry Manager regarding any environmental incidents that have the potential to cause environmental harm or nuisance to the Koala offset;
- Issue a Work Plan for correction action to the Quarry Manager within seven (7) days of inspections and completion of the Inspection Procedures and Checklist(s); and
- Review and advise Barro Group of any necessary changes to this Management Plan.

6.0 SDAP 25: DEVELOPMENT IN SOUTH EAST QUEENSLAND KOALA HABITAT AREAS

Under existing Koala legislation, development that is interfering with Koala habitat should demonstrate compliance with the relevant provisions of the State Development Assessment Provisions V2.6 (SDAP), State Code 25. **Table 6.1** provides a summary of actions designed to ensure the project complies with the performance outcomes of Table 25.2.1 of this code. The response in **Table 6.1** addresses the existing Koala habitat mapping for the project area (**Figure 1.1**).

Table 6.1. Assessment of works against performance outcomes (PO) of SDAP 25.

Performance Outcome	Response
PO1 Development interfering with koala habitat (including interfering with koala habitat as a result of material change of use and interfering with koala habitat as a result of reconfiguring a lot) does not occur unless the application demonstrates the interfering with koala habitat has: 1. been reasonably avoided; or 2. been reasonably minimised where it cannot be reasonably avoided; and 3. mitigate the impacts of the interfering with koala habitat values.	**Complies**: The northern portions of the proposed quarry extension area support two small patches of mapped Koala habitat that are approximately 3 ha in area (<5% of impact area). 1. These two areas contain important, high value quarry resources; therefore, avoidance is not feasible. 2. The majority of mapped Koala habitat has been retained. 3. Responses to PO2 and PO3 provide details of the recommended impact mitigation strategies.
PO2 The design and siting of development avoids fragmenting koala habitat areas within the site.	**Complies:** The proposed quarry extension has avoided fragmenting koala habitat areas, through the retention of large areas of Koala habitat in the north, which connect with smaller areas of habitat along the western boundary.
PO3 The design and siting of development does not result in impediments that restrict the movement of koalas by providing for safe koala movement between highly connected patches of retained koala habitat area.	**Complies**: The retention, protection and enhancement of habitats, along with rehabilitation of existing cleared areas surrounding the proposed quarry extension area, will ensure safe koala movements in these connected areas are maintained.
PO4 The construction of the development does not increase the risk of injury or death of koalas.	**Complies**: All activities associated with the proposed quarry extension will be undertaken in accordance with the Koala Management Plan (Appendix 1 of BAAM 2010a), to ensure the risk of death or injury to Koala is minimised.
PO5 Development: 1. avoids impacts on matters of state environmental significance; or 2. minimises and mitigates impacts on matters of state environmental significance after demonstrating avoidance is not reasonably possible; and 3. provides an offset if, after demonstrating all reasonable avoidance, minimisation and mitigation measures are undertaken, the development results in an acceptable significant residual impact on a matter of state environmental significance that is a prescribed environmental matter.	**Complies:** The proposed quarry extension has minimised impacts on all MSES through careful design considerations, whilst allowing a viable quarry operation to proceed. Impacts will be mitigated in accordance with the Habitat Management Plan (BAAM 2010b updated 2021). A site-based offset for the loss of Koala habitat is to be provided in accordance with this Plan and BAAM 2010a (revised 2021).

7.0 REFERENCES

BAAM (2010a). Koala Tree Offset Strategy – Mount Cotton Quarry Extension. Report prepared for Barro Group. September 2010. Revised July 2021.

BAAM (2010b). Habitat Management Plan – Mount Cotton Quarry Extension. Report prepared for Barro Group. September 2010. Revised July 2021.

BAAM (2010d). Vegetation Code Assessment and Offset Rehabilitation Management Plan – Mount Cotton Quarry Extension. Report prepared for Barro Group. September 2010. Revised.

BAAM (2010d). Koala Tree Survey Report – Mount Cotton Quarry Extension. Report prepared for Barro Group. September 2010.

BAAM (2015). Revised Koala Tree Survey – Mt Cotton Quarry. Report prepared for Barro Group Pty Ltd

APPENDIX 1

KOALA OFFSET SITE MANAGEMENT PLAN

KOALA OFFSET SITE MANAGEMENT PLAN

Overall Project Management		***Aim: To reinstate mature Koala bushland habitat within the Koala offset sites.***		
Performance Objective	**Actions / Responsibilities**	**Performance Indicators**	**Corrective Actions / Responsibilities**	**Timing / Frequency**
To inform all relevant personnel of the Koala Offset Site Management Plan	pre-start meeting is to be arranged by Barro Group to clearly define roles and the approach to the management of Koala offset sites. Compulsory site inductions are to be undertaken to ensure all staff and visitors to the quarry are aware of this Management Plan. Roles specifically include: **Quarry Manager**: - Organise and conduct the pre- start meeting; and - Ensure site inductions are undertaken. **Landcarer**: - May assist in organising and/or conducting the pre-start meeting. This Koala Offset Site Management Plan is to be kept on site at all stages until the objectives and outcomes of the Plan are achieved.	- A pre-start meeting has been undertaken and all relevant personnel (including contractors) are aware of the Koala Offset Site Management Plan and of the location of all offset sites; - All relevant personnel (including contractors) are informed of their obligations with regard to Koala offset sites; and - All staff and visitors to the quarry have undergone a site induction informing them of this Management Plan.	The Quarry Manager will investigate reasons why the performance objective has not been met and ensure that all relevant staff (including contractors) not present at the pre-start meeting are debriefed and advised of their responsibilities.	Pre-start meeting at the time this Management Plan has been implemented. Inductions: Ongoing

Overall Project Management		***Aim: To reinstate mature Koala bushland habitat within the Koala offset sites.***		
Performance Objective	**Actions / Responsibilities**	**Performance Indicators**	**Corrective Actions / Responsibilities**	**Timing / Frequency**
To protect and secure the Koala offset sites	All Koala offset sites are to be protected from future development impacts and quarry operations by securing the sites for conservation purposes. Access to Koala Offset Sites is strictly controlled and no unauthorised access is permitted. Site inductions for all staff and visitors to the quarry identify Koala offset sites as "no-go" areas. Roles specifically include: **Barro Group**: - Secure all Koala offset sites through a conservation agreement under the *Nature Conservation Act 1992*. **Quarry Manager**: - Establish protective or temporary fencing around the Koala offset sites where deemed necessary; and - Ensure site inductions are undertaken. **Landcarer**: - May assist delineating Koala offset sites to be fenced for protection where necessary.	- All Koala offset sites are secured for conservation purposes; - All Koala offset sites are clearly delineated on site where necessary; and - There is no unauthorised access to / through the Koala offset sites.	The Quarry Manager will investigate reasons why the performance objective has not been met and ensure that the Koala offset sites are protected, secured, and delineated where necessary. The Quarry Manager will ensure the monitoring of Koala offset sites includes identification of unauthorised access. The Quarry Manager will report to the relevant Authorities why the performance objective has not been met, what corrective actions were taken and how this may or may not impact the Koala offset obligation.	Securing the Koala offset sites: within 12 months from the time of development commencement. Protecting the Koala offset sites: ongoing.

Overall Project Management		***Aim: To reinstate mature Koala bushland habitat within the Koala offset sites.***		
Performance Objective	**Actions / Responsibilities**	**Performance Indicators**	**Corrective Actions / Responsibilities**	**Timing / Frequency**
To collect baseline data for the Koala offset sites	Collect baseline data and conduct detailed field surveys for all Koala offset sites for future performance monitoring regarding the success of site maintenance. Roles specifically include: **Quarry Manager**: - Ensure a qualified Landcarer is appointed to carry out field survey for collection of baseline data; **Landcarer**: - Carry out the detailed field survey to collect the baseline data and report to Quarry Manager.	- The most recent available aerial imagery of the subject site are obtained and kept on record; and - All floristic information is recorded and photographs are taken for all offset sites and included in monitoring reports; and - The floristic information collected includes: • Tree diameter (at 1.3m above ground) along set quadrats within the Koala offset sites; • General health and condition of trees (incl. any signs of disease/fire/grazing etc.); • Measure of weed cover (percentage cover within each quadrat, incl. identification of the weeds); • Mid-storey and understorey composition and structure; • Any signs of Koala visitation.	The Quarry Manager will investigate reasons why all relevant baseline data was not collected and recorded prior to commencement of restoration works, and will ensure any missing data is immediately collected.	Collection of data: at commencement of offset delivery. Timing: at the time the Koala offset sites are secured, and prior to commencement of restoration works.

Overall Project Management		***Aim: To reinstate mature Koala bushland habitat within the Koala offset sites.***		
Performance Objective	**Actions / Responsibilities**	**Performance Indicators**	**Corrective Actions / Responsibilities**	**Timing / Frequency**
To plant a sufficient number of new Koala trees in the Koala offset sites to meet the offset obligation in accordance with the Queensland *Environmental Offset Policy* V1.9	Establish a minimum of 31,200 new Koala trees within the Koala offset sites. Roles specifically include: **Barro Group/Quarry Manager**: - Commission and implement a detailed Koala Tree Revegetation Plan; - Allocate sufficient funds to purchase and plant (or subcontract planting of) the offset trees; - Ensure appropriate species mix and ratios are planted; - Ensure qualified staff is appointed for revegetation works. **Revegetation staff**: - Plant all trees as instructed; - If necessary, install protective fencing around each planting/ or planting area to prevent grazing from local macropods or other fauna.	- Where necessary, invasive weeds have been brought under control prior to commencement of planting works; - A minimum of 31.260 new Koala trees have been established within the identified Koala offset sites; - Species mix and ratios follow the planting schedule provided in **Attachment A1**.	The Quarry Manager will investigate the reasons why the performance objective has not been met and will take immediate action to ensure the performance objective is met.	Timing: after collection of baseline data and where necessary, after invasive weeds have been brought under control.

Overall Project Management		***Aim: To reinstate mature Koala bushland habitat within the Koala offset sites.***		
Performance Objective	**Actions / Responsibilities**	**Performance Indicators**	**Corrective Actions / Responsibilities**	**Timing / Frequency**
To manage and maintain the Koala offset sites	Develop and implement a management and maintenance program to manage and maintain Koala offset sites in order to maximise the successful establishment of trees planted. The Koala offset sites are managed in accordance with the Habitat Management Plan (BAAM 2010b updated 2021). Roles specifically include: **Quarry Manager**: - Appoint qualified staff for ongoing management and maintenance of the Koala offset sites. **Qualified Staff**: - Conduct regular surveys to check for presence of weeds; control weeds where necessary; replace/adjust protective fencing if necessary; replace mulch where/when necessary, etc; - Where necessary, remove any unsuccessfully established planting and replace by new planting; - Maintain plantings until mature status is obtained; and - Report to Quarry Manager.	- Weeds and pests are kept under control and do not represent a threat to the successful establishment of planted trees; - Established trees are healthy and growing; - The trees are under no significant stress; - Natural recruitment of understorey species is occurring; - There is an appropriate ratio of species mix; - The offset required trees are managed and maintained until 100% of all required trees reach maturity (i.e. 4m high or 31.5cm diameter at 1.3m above ground); - The Koala offset sites are self-sustaining; and - There is Koala visitation in the Koala offset sites within 4 years onwards from the time the offset was delivered.	As soon as a weed infestation is reported, the Quarry Manager takes prompt action to control weeds where necessary. All maintenance works required are to be reported to the Quarry Manager.	Management & maintenance: ongoing Regular surveys: - Monthly surveys during the first 12 months, the first survey being conducted 1 month after the first supplementary trees were planted; - Seasonal surveys (every 3 months) for the following 3 years; - Yearly surveys thereafter and until restored habitats have become mature Koala bushland habitats.

Overall Project Management		***Aim: To reinstate mature Koala bushland habitat within the Koala offset sites.***		
Performance Objective	**Actions / Responsibilities**	**Performance Objective**	**Corrective Actions / Responsibilities**	**Timing / Frequency**
To implement monitoring and reporting protocols to inform the progress of restored Koala habitat.	Develop and implement a monitoring and reporting program capable of detecting changes in Koala habitat quality and extent over time. **Quarry Manager**: - Appoint qualified staff for monitoring events.	The monitoring and reporting program provides relevant indicators to inform on the progress of restored Koala habitat in the Koala offset sites.		
	Qualified Staff: - Obtain and keep records of all latest available satellite imagery (Google Earth, Qld Globe or other sources) for the subject site; - Establish photo points at key locations and clearly indicate the location and direction of each photo;	At least one satellite imagery of the subject site every two years, is obtained and kept on record; and - Photos are taken at least once every two years at each photo point;	The Quarry Manager will ensure that all latest available satellite imagery of the subject site is obtained and kept on record. - The Quarry Manager will ensure that photos are taken in a timely manner and kept on record.	Maximum of two-year intervals to identify changes in the extent of Koala habitat over the long term.
		The floristic information recorded includes: - Tree diameter (at 1.3m above ground) along set quadrats within the Koala offset sites; - General health and condition of trees (incl. any signs of disease/fire/grazing etc.); - Measure of weed cover (percentage cover within each quadrat, including identification of weeds); - Midstorey and understorey composition and structure; - Any signs of Koala visitation.	The Quarry Manager will ensure regular surveys are undertaken on time and will be responsible for ensuring the detailed register is kept and updated. The Quarry Manager ensures that any tree that is unsuccessfully established is replaced as soon a possible.	- Monthly surveys during the first 12 months, the first survey being conducted 1 month after the first trees were planted; - Seasonal surveys (every 3 months) for the following 3 years; - Yearly surveys thereafter and until restored habitats have become mature Koala bushland habitats.

Overall Project Management		***Aim: To reinstate mature Koala bushland habitat within the Koala offset sites.***		
Performance Objective	**Actions / Responsibilities**	**Performance Objective**	**Corrective Actions / Responsibilities**	**Timing / Frequency**
		- A detailed register of the progress of Koala habitat restoration is kept and updated after each survey; and		
	Report monitoring outcomes to Department of Environment and Science.	Progress reports are provided to DES in a timely manner.	The Quarry Manager is responsible for ensuring progress reports are provided to DES.	- First progress report within 12 months from the date the Koala offset sites were secured; - Following progress reports on a 12-monthly basis, until restored habitats have become Koala bushland habitats.

Attachment A1 provides the supplementary planting schedule for each species mix category. Refer Figure 5.1 for locations of categories.

Category (refer to Figure 2.1) and species mix	Proportion (% of each category)	Maximum planting density	Comment
CATEGORY 1 (Pre-clear 12.11.3/12.11.10)			
Lophostemon confertus	20-30	18m centre	
Eucalyptus propinqua	10-20	18m centre	
E. siderophloia	10-20	18m centre	
E. acmenoides	10-20	18m centre	
E. microcorys	10-20	18m centre	
Corymbia intermedia	10-20	18m centre	
CATEGORY 2 (Pre-clear 12.3.11)			
E. tereticornis	30-40	12m centre	adjacent to California Creek and along any other drainage lines
E. siderophloia	20-30	12m centre	
C. intermedia	10-20	12m centre	
C. tessellaris	10-20	12m centre	
L. suaveolens	10-20	12m centre	
CATEGORY 3 (Pre-clear 12.11.3)			
E. acmenoides	20-30	18m centre	
E. propinqua	20-30	18m centre	
E. microcorys	20-30	18m centre	
E. siderophloia	10-20	18m centre	
L. confertus	10-20	18m centre	
C. intermedia	10-20	18m centre	
CATEGORY 4 (Pre-clear 12.11.5)			
E. siderophloia	20-30	15m centre	
E. propinqua	20-30	15m centre	
E. microcorys	30-40	15m centre	
L. confertus	5-10	15m centre	
E. tereticornis	10-20	15m centre	adjacent to California Creek
C. intermedia	5-10	15m centre	
Category 5 (Pre-clear 12.11.23/12.11.5)			
E. microcorys	20-40	9m centre	
E. pilularis	20-40	9m centre	
C. intermedia	10-20	9m centre	
E. racemosa	10-20	9m centre	
E. tindaliae	5-10	9m centre	
Angophora woodsiana	5-10	9m centre	

APPENDIX 2

RESULTS OF KOALA OFFSET SITE ASSESSMENTS

Appendix 2. Non-juvenile Koala Habitat Trees and Juvenile Koala Habitat trees recorded within the Koala offset areas and stormwater pond area. Refer **Figure 5.1** for locations of each offset polygon and pre-clear regional ecosystem type.

Offset Polygon	Non-juvenile Koala Habitat Trees	Juvenile Koala Habitat Trees	Representative Photographs
KO1	467	75	
KO2	239	19	
KO3	30	2	
KO4	3	1	No Photo

Offset Polygon	Non-juvenile Koala Habitat Trees	Juvenile Koala Habitat Trees	Representative Photographs
KO5	55	2	
KO6	8		
KO7	7	0	

Offset Polygon	Non-juvenile Koala Habitat Trees	Juvenile Koala Habitat Trees	Representative Photographs
KO8	7	0	
KO9	27		
KO10a-f – no juvenile or non-juvenile Koala habitat trees recorded in these areas.			
Stormwater Ponds	20		

KOALA TREE OFFSET STRATEGY

MT COTTON QUARRY EXTENSION

Prepared for
Barro Group Pty Ltd



Biodiversity Assessment and Management Pty Ltd
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BAAM ECOLOGICAL CONSULTANTS

PLANS AND DOCUMENTS
referred to in the
DEVELOPMENT APPROVAL

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File Number: 0241-001-12

Project Manager/s: Adrian Caneris

Client: Barro Group Pty Ltd

Project Title: Koala Tree Offset Strategy, Mount Cotton Quarry

Project Author/s: Adrian Caneris, Olivia Woosnam, Jo Chambers

Project Summary: This report presents the proposed strategy for offsetting non-juvenile Koala habitat trees to be cleared as a result of the proposed quarry extension, in accordance with the *Environmental Offsets Policy* V1.9.

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Signed on behalf of
Biodiversity Assessment and Management Pty Ltd

Date: 09/12/2021



Managing Director

KOALA TREE OFFSET STRATEGY

MOUNT COTTON QUARRY

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List of Abbreviations

BAAM	Biodiversity Assessment and Management Pty Ltd
BPA	Biodiversity Planning Assessment
DOR	Department of Resources
DES	Department of Environment and Science
KSPRP	*Koala State Planning Regulatory Provisions*
RE	Regional Ecosystems

1.0 INTRODUCTION

Version 1 of this report was prepared to provide Barro Group Pty Ltd with a strategy for the offset of non-juvenile Koala habitat trees cleared as a result of the proposed Mount Cotton quarry extension.

This report was originally prepared in accordance with the *Offsets for Net Gain of Koala Habitat in South East Queensland Policy* (Koala Offset Policy). Following discussions with representatives from the Department of Environment and Science (DES), it was suggested that under the transitional provisions of the *Environmental Offsets Act 2014* (EO Act) (Section 95B), Barro was able to apply for re-consideration of the Koala offset strategy to accord with the current Koala offset provisions, which is at the 3:1 offset ratio. These provisions allow for the current/existing Koala protection and offset provisions to be retrospectively applied in particular circumstances.

Although the current State Koala habitat mapping (**Figure 1.1**) shows only two small areas of mapped Koala habitat within the proposed quarry extension area that would require offsets, Barro Group have committed to providing an offset for the proposed areas of the project to be cleared in accordance with the previous reporting, site surveys and field work conducted. The proposed offset ratio has been demonstrated to comply with the State Koala habitat mapping, at rate of 3:1, in accordance with the Queensland *Environmental Offset Policy* V1.9.

This updated report (0241-009 Version 4) has been prepared to address Conditions 28 and 35 of the approval conditions for the Mount Cotton Quarry extension.

An assessment of potential impacts and management strategies to avoid mortality or injury to koalas as a result of the quarry extension is provided in **Appendix 1**, in accordance with Condition 28 (a iii).

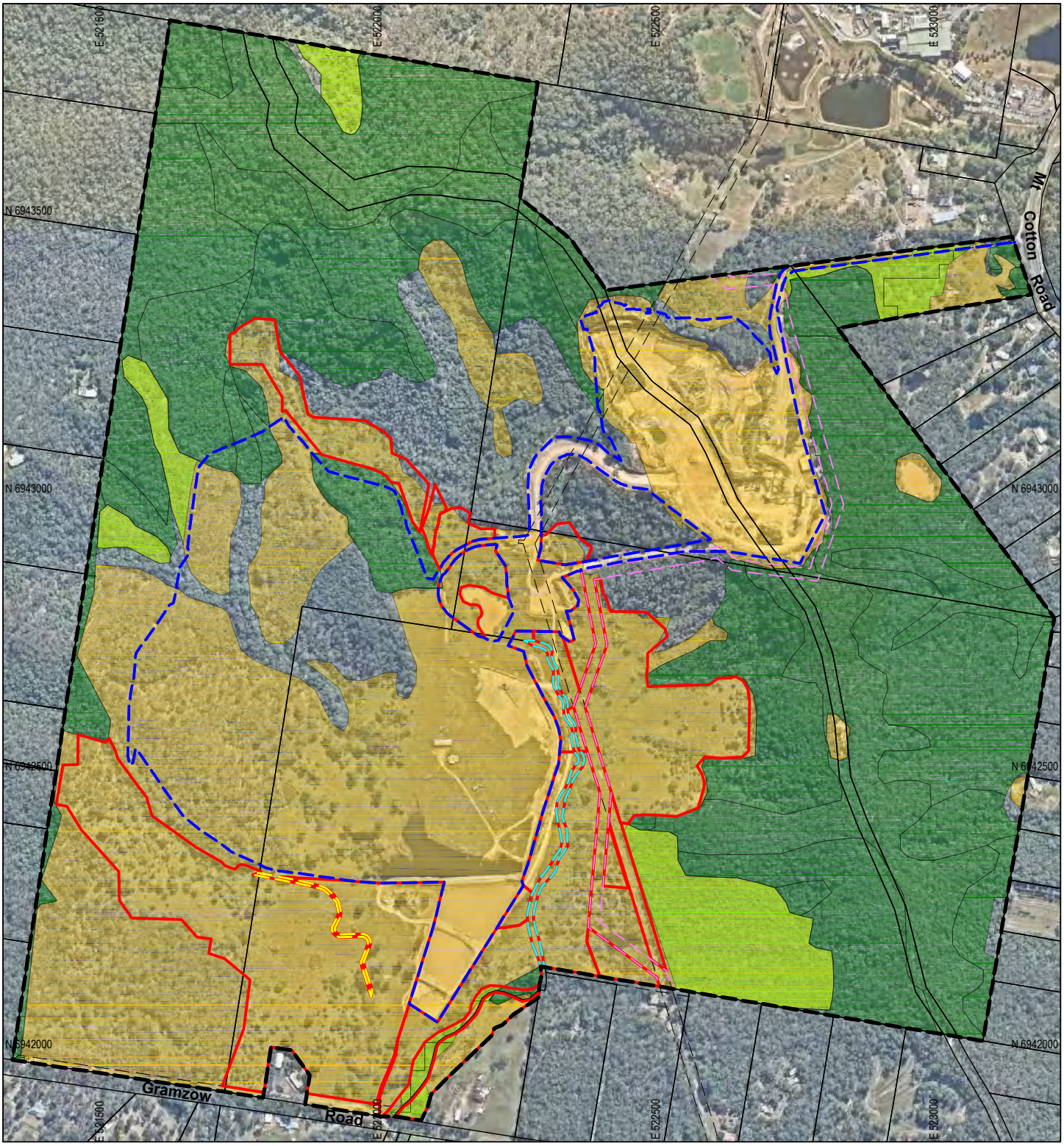
Figure 1.2 shows the Koala Habitat Values as identified in previous reporting (i.e. Schedule 1, Part 2 of the superseded *Koala State Planning Regulatory Provisions* [KSPRP]). Barro Group have committed to providing their offset obligation in accordance with the superseded KSPRP, rather than the current State Koala habitat mapping (**Figure 1.1**); therefore, all other contents of this report continue to refer to the superseded KSPRP.

2.0 GENERAL APPROACH

Quarry design and the staging schedule have been developed to avoid clearing of non-juvenile Koala habitat trees and where unavoidable, such clearing has been minimised.

Although tree clearing for the quarry extension will occur progressively (over several decades), the offset obligation will be delivered from the time of commencement in accordance with the Environmental Offsets Policy, and as required by development approval conditions. The offsetting will occur ahead of habitat loss and as a result, no net loss of Koala habitat is expected within the subject site and in time. A net gain in Koala habitat will be achieved both in terms of increased food resources and enhanced habitat connectivity.

The offset obligation is based on the results of a Koala tree surveys conducted over four days in December 2015 (BAAM 2017), which identified the number of non-juvenile Koala habitat trees present at the time of surveys within the proposed extension.



Aerial Photo: Nearmap - May 2020

LEGEND

- Site Boundary
- Current and Approved Quarry Areas
- Koala Offset Site
- Diversion Drain
- Existing Power Easement
- Electrical Easement
- California Creek

Koala Areas

- Core Koala Habitat
- Locally Refined Koala Habitat
- Koala Habitat Restoration

Scale 1 : 10 000

0 100 250m

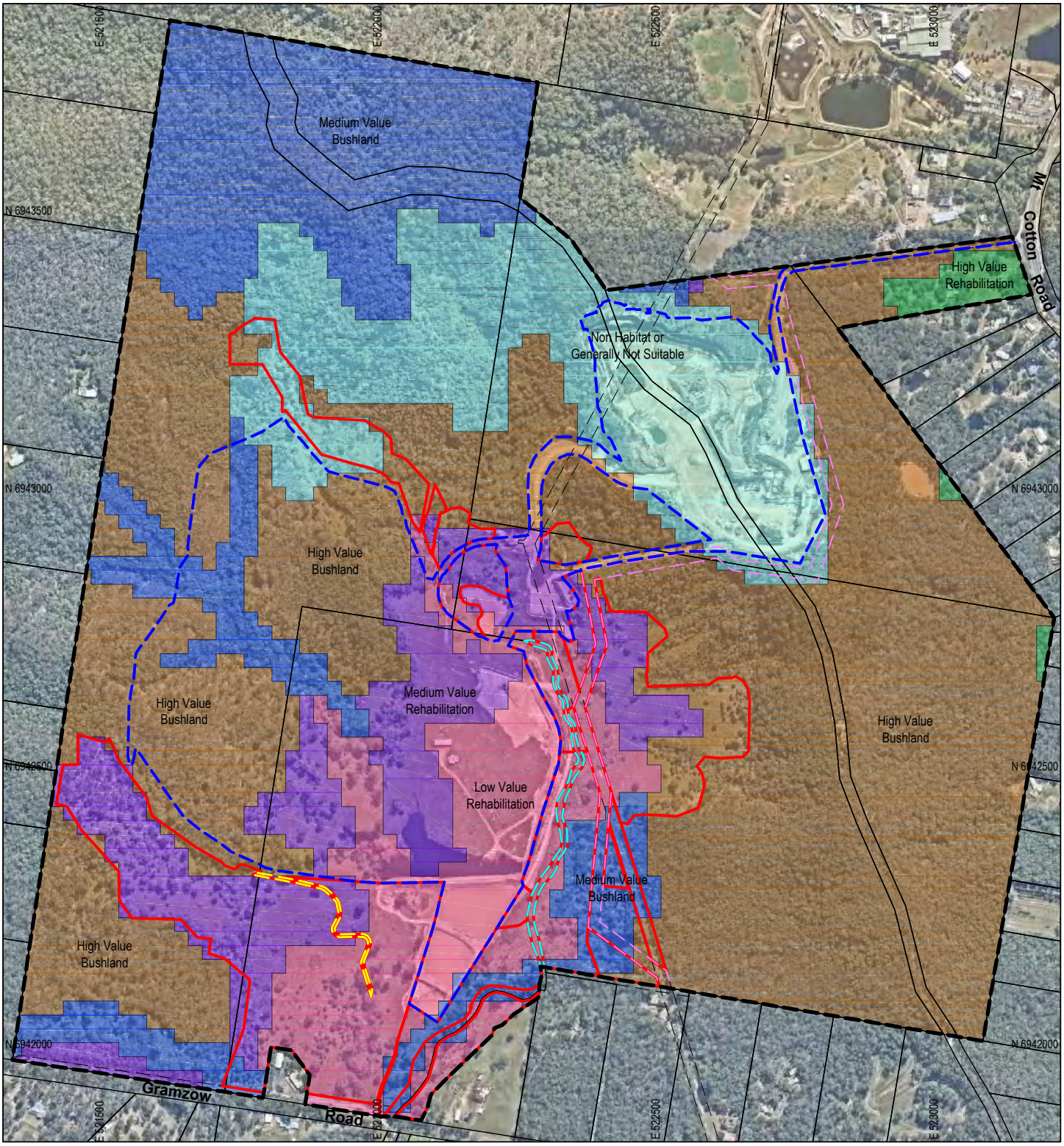
MGA94 Z56

Figure:	1.1
Title:	Current Koala Habitat Mapping & Proposed Quarry Extension
Project:	Koala Tree Offset Strategy Mt Cotton Quarry Etension
Client:	Barro Group

Drawn: MP
Date: 2.12.2021
Reviewed by: JC
File: 47_MCQ05.dwg

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Aerial Photo: Nearmap - May 2020

LEGEND

- Site Boundary
- Current and Approved Quarry Areas
- Koala Offset Site
- Diversion Drain
- Existing Power Easement
- Electrical Easement
- California Creek

Koala Habitat Values

- High Value Bushland
- Medium Value Bushland
- High Value Rehabilitation
- Medium Value Rehabilitation
- Low Value Rehabilitation
- Non Habitat or Generally Not Suitable

Scale 1 : 10 000

0 100 250m

MGA94 Z56

Figure:	1-2
Title:	KSPRP Map of Koal Habitat Values & Proposed Quarry Extension
Project:	Koala Tree Offset Strategy Mt Cotton Quarry Etension
Client:	Barro Group

Drawn: MP
Date: 2.12.2021
Reviewed by: JC
File: 47_MCQ05.dwg

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3.0 KOALA HABITAT VALUES

3.1 PROPOSED MAP OF KOALA HABITAT VALUES

After discussion with Redland City Council (in July 2010) and after groundtruthing as part of the Koala tree survey (BAAM 2010a), a revised map of Koala habitat values (see **Figure 3.1**) has been prepared to provide a more accurate map of the existing Koala habitat values within the subject site. This mapping has been produced based on observations in the field, on analysis of aerial photography and on the Department of Resources (DOR) Regional Ecosystem (RE) mapping.

It should be noted that none of the proposed 'medium value rehabilitation' areas shown in **Figure 3.1** are located within mapped REs.

As part of this application, the applicant Barro Group Pty Ltd requests Department of Environment and Science (DES), as assessment manager, to make a determination that the land the subject of the development application is of a different Koala habitat type (as shown on **Figure 3.1**) than the Koala habitat type shown on **Figure 1.2**.

Photo 1 shows Koala habitat currently identified as 'low value rehabilitation', which is proposed to be changed to 'medium value rehabilitation'. These areas typically consist of scattered, mature Forest Red Gum *Eucalyptus tereticornis* (preferred Koala food tree) on alluvial soils. Koalas are known to be present in these areas and rehabilitation would provide a significant increase in extant Koala habitat values in the local landscape.



Photo 1: Scattered *E. tereticornis* providing good opportunities for Koala habitat rehabilitation

4.0 OFFSET OBLIGATION

4.1 KOALA HABITAT VALUES TO BE OFFSET

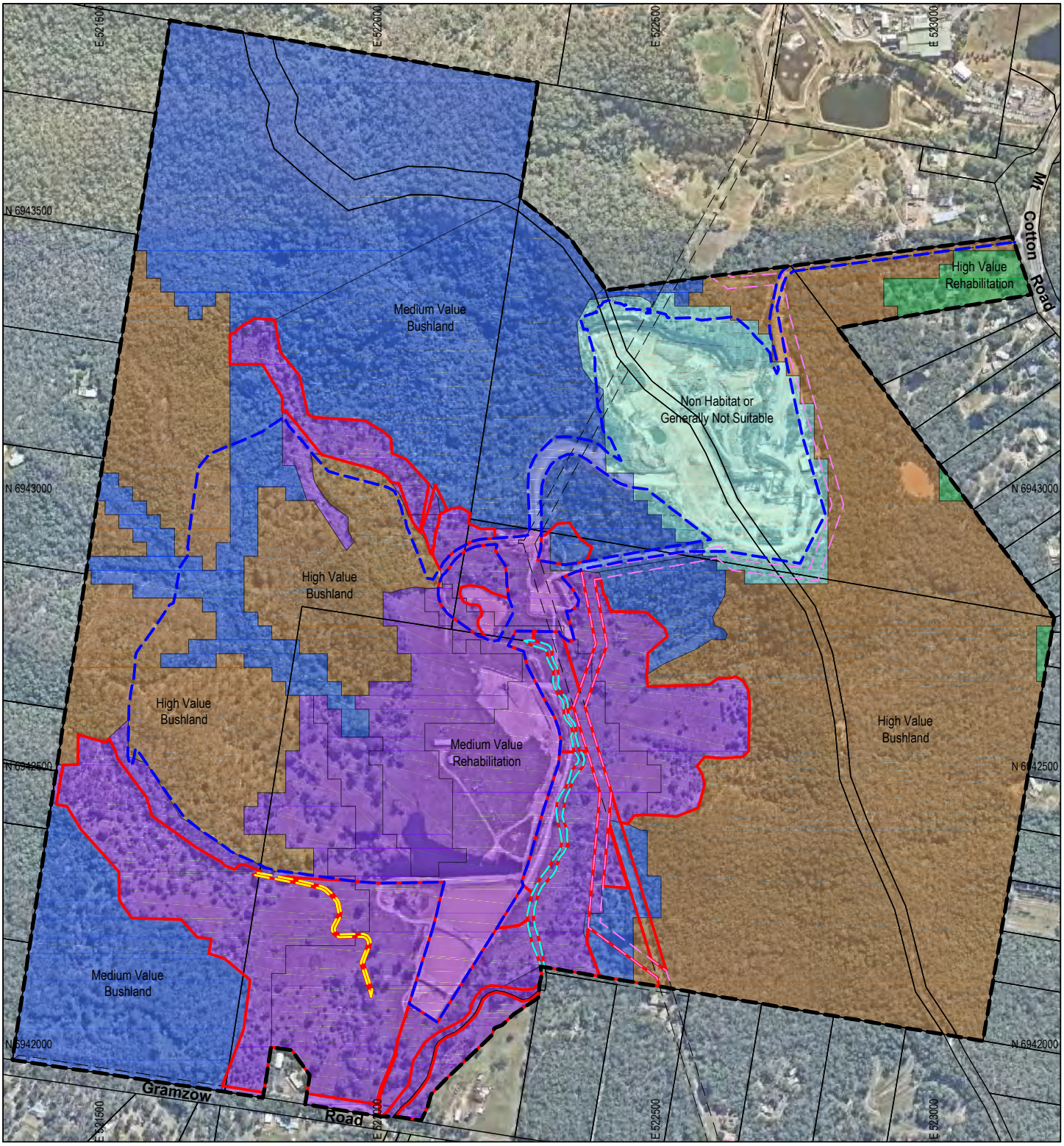
Under Table 5 of the superseded KSPRP (Division 5), unavoidable clearing of non-juvenile Koala habitat trees in areas of bushland habitat and high and medium value rehabilitation habitat is to be offset in accordance with the Koala Offset Policy (now Environmental Offsets Policy).

The ground-truthed map of Koala habitat values (**Figure 3.1**) identifies almost all areas within the proposed quarry extension area as bushland habitat (medium and high values) or medium value rehabilitation.

As a result, the applicant proposes to offset all non-juvenile Koala habitat trees to be cleared progressively from within the proposed extension area.

4.2 TOTAL OFFSET OBLIGATION

The revised Koala tree survey (BAAM 2015) identified a total of 10,420 non-juvenile Koala habitat trees to be cleared progressively within the proposed quarry extension area. These, trees will be offset to a ratio of 3:1 (three new Koala trees for every one non-juvenile cleared), in accordance with the *Environmental Offset Policy* V1.9, giving a total offset obligation of 31,260 new Koala trees.



Aerial Photo: Nearmap - May 2020

LEGEND

- Site Boundary
- Current and Approved Quarry Areas
- Koala Offset Site
- Diversion Drain
- Existing Power Easement
- Electrical Easement
- California Creek

Bushland Habitat

- High Value Bushland
- Medium Value Bushland

Suitable for Rehabilitation

- High Value Rehabilitation
- Medium Value Rehabilitation
- Non Habitat or Generally Not Suitable

Scale 1 : 10 000

0 100 250m

MGA94 Z56

Figure: 3-1

Title: Proposed Map of Koala Habitat Values

Project: Koala Tree Offset Strategy
Mt Cotton Quarry Etension

Client: Barro Group

Drawn: MP
Date: 2.12.2021
Reviewed by: JC
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5.0 OFFSET DELIVERY

5.1 DELIVERY OPTION: DIRECT DELIVERY

The Quarry Manager commits to ensuring the offset obligation is delivered on the subject site prior to impacts being realised and within the appropriate timeframe, in accordance with approval conditions.

5.2 KOALA OFFSET SITES

It is proposed to locate all offset sites within the subject site, as identified on **Figure 5.1.**

The offset obligation can be achieved within the areas identified as 'Koala offset sites'.

5.2.1. Location of Koala offset sites

Approximately 40 ha of land have been identified on the subject site as suitable Koala offset sites.

These areas are currently largely cleared and situated in areas previously mapped as 'medium value rehabilitation' on the ground-truthed map of Koala habitat values, and not mapped as Koala habitat under existing State Koala mapping.

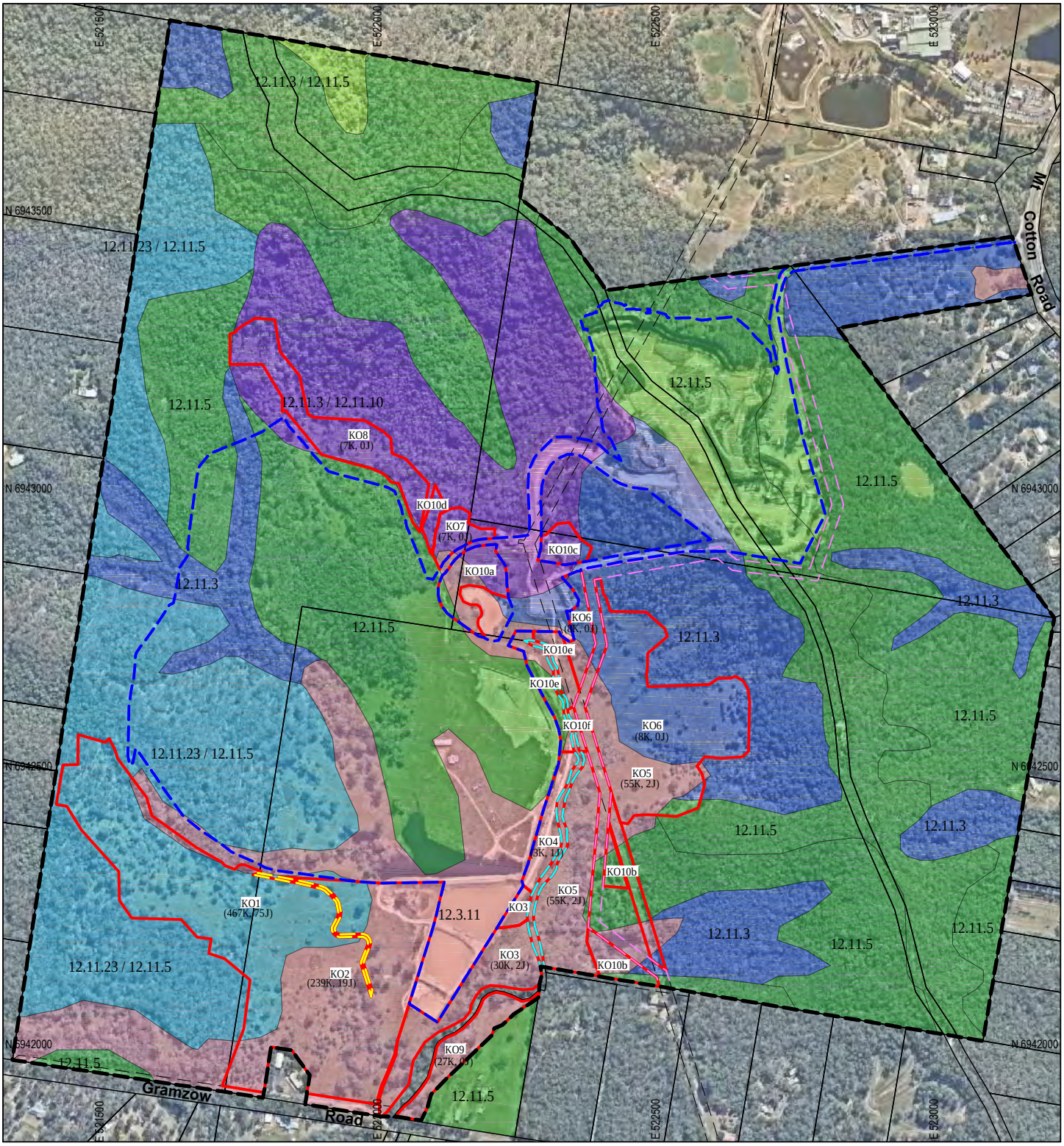
In accordance with Condition 35 (a), the total count of non-juvenile and juvenile Koala habitat trees currently growing within the offset areas has been undertaken as shown in **Figure 5.1** and **Appendix 2**.

5.2.2. Improved connectivity

As a result of past land use practices, Koala are currently forced to traverse large areas of cleared lands, especially to the east and south of the proposed quarry extension.

Establishing Koala trees in the areas identified as Koala offset sites will benefit Koala populations (as well as other fauna) through the reinstatement of suitable habitat within the subject site, and enhancement of safe movement opportunities in the local landscape.

Combined with the vegetation offset sites (see BAAM 2010b), the proposed offset works will provide a functional linkage between Koala habitats surrounding the subject site.



Aerial Photo: Nearmap - May 2020

LEGEND

- Site Boundary
- Current and Approved Quarry Areas
- KO1 Koala Offset Site
- Diversion Drain
- Existing Power Easement
- Electrical Easement
- California Creek

Regional Ecosystems

- 12.3.11
- 12.11.3
- 12.11.3 / 12.11.5
- 12.11.5
- 12.11.23 / 12.11.5
- 12.11.3 / 12.11.10

Scale 1 : 10 000

0 100 250m

MGA94 Z56

Figure:	5.1
Title:	Koala Offset Areas, Koala Tree Counts, Pre-clear Regional Ecosystems
Project:	Koala Tree Offset Strategy Mt Cotton Quarry Etension
Client:	Barro Group

Drawn: MP
Date: 2.12.2021
Reviewed by: JC
File: 47_MCQ05.dwg

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5.2.1 Koala Offset Establishment

In accordance with Condition 35 (b) and (c) new Koala habitat trees will be established at a density that reflects the pre-clear regional ecosystem. **Table 5.1** provides the count of all existing juvenile and NJKHTs together with estimated planting densities for each Koala offset area.

With the densities shown in **Table 5.1**, the total carrying capacity of Koala offset sites is 32,526 trees. Given that most offset sites currently support only sparse trees, which have been counted and deducted from the total carrying capacity (**Table 5.1**), the offset sites will accommodate the proposed offset package of 31,260 Koala trees at the required densities, which will achieve the offset obligations as required under the existing *Environmental Offset Policy*.

Once cattle are removed from the offset sites, in conjunction with commencement of use, it is expected that natural regeneration of native vegetation, including Koala habitat trees will occur. Monitoring of regeneration will occur within twelve months of cattle removal, to determine the level of supplementary plantings required to fulfil the offset obligation.

Ongoing monitoring and replanting, if necessary, will be undertaken until such time as the entire offset obligation has reached a level of maturity where management interactions are no longer required.

Further detail regarding species mix and densities as well as the management and maintenance of Koala offset sites is provided in the Koala Offset Site Management Plan (BAAM 2010c (updated 2021)).

Table 5.1. Offset tree establishment calculations based on stem densities of T1 and T1 strata in each relevant pre-clear RE.

	12.11.3a/ 12.11.10	12.3.11	12.11.3	12.11.5	12.11.23/ 12.11.24	Totals
Stem density T1*	223	284	223	244	264	
Total area	4.32	19.38	5.116	1.47	9.27	39.56
Max Trees	963	5504	1141	363	2447	10419
Stem density T2*	321	562	321	420	900	
Total area	19.38	5.116	1.47	9.27	19.38	39.56
Max Trees	1387	10892	1642	617	8343	22881
T1+T2	2350	16395	2783	980	10790	33299
-Existing NJKHT** including juvenile trees	16	374	8	7	467	872
Existing juvenile KHT in RE Polygon	0	24	0	0	75	99
Maximum Trees that can be planted in each offset polygon	2334	16045	2775	973	10398	32526

* Stem densities derived from RE Technical Descriptions per hectare
** derived from field surveys conducted on 06/10/2016, 17/4/2020 and 1/4/2021.

6.0 PROTECTION OF KOALA OFFSET SITES

All Koala offset sites will be protected from future development impacts by declaring the sites as areas of high conservation value under Section 19E of the *Vegetation Management Act* 1999.

7.0 REFERENCES

BAAM (2010a). Koala Tree Survey Report, Mt Cotton Quarry extension. Report prepared for Barro Group Pty Ltd. September 2010.

BAAM (2010b). Vegetation Code Assessment and Offset Rehabilitation Management Plan. Report prepared for Barro Group Pty Ltd. September 2010.

BAAM (2010c). Koala Offset Site Management Plan, Mt Cotton Quarry extension. Report prepared for Barro Group Pty Ltd. September 2010. Updated July 2021.

BAAM (2017). Revised Koala Tree Survey – Mt Cotton Quarry. Report prepared for Barro Group Pty Ltd.

Department of Natural Resources and Mines (2010). *South East Queensland Koala Conservation State Planning Regulatory Provisions*. Queensland Government. May 2010.

APPENDIX 1
KOALA IMPACT ASSESSMENT AND MANAGEMENT PLAN

KOALA IMPACT ASSESSMENT AND MANAGEMENT PLAN
MOUNT COTTON QUARRY EXTENSION

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1.0 INTRODUCTION

This Koala Impact Assessment and Management Plan has been prepared for Barro Group to ensure that all potential impacts to the local Koala population from the Mount Cotton Quarry extension are identified and appropriately managed.

The compilation of this Plan addresses Conditions 28 (a) (iii & iv).

2.0 POTENTIAL IMPACTS

As avoidance is not possible due to the location of the resource, impacts to the resident population of Koalas within the project area and surrounds must be minimised and mitigated. Both direct and indirect impacts, short-term and long-term in duration, may apply to Koalas as result of the quarry extension.

The potential impacts from the Mount Cotton quarry extension (the project) include:

- loss and/or fragmentation of important refuge and feeding habitat;
- death or injury to resident Koalas during vegetation clearing;
- increased risk of stress and disease; and
- increased risk of death or injury as a result of:
  - vehicle strike,
  - Koalas entering active quarry areas, and
  - an increase in pest animals that may prey on Koalas.

3.0 IMPACT MITIGATION

Management strategies to reduce the likelihood of these potential impacts causing long-term detrimental impacts to the local Koala population are provided in the following sections.

3.1 LOSS OF IMPORTANT REFUGE AND FEEDING HABITAT

Prescribed management actions to mitigate the loss of Koala habitat include offsetting the loss of habitat at the rate of 5 new Koala habitat trees for the loss of every Koala habitat cleared.

The restoration, protection and ongoing monitoring and management of the prescribed Koala offset areas will provide a net benefit in Koala habitat in the area and will therefore mitigate the loss of existing Koala habitat.

3.2 PREVENT DEATH OR INJURY TO KOALAS

Without appropriate management, the project has potential to result in death or injury to Koala throughout the vegetation clearing phase. The initial and most likely impact would be injury or death to Koalas should an animal be present at the proposed vegetation clearance area. In response to this potential impact all vegetation clearing will be conducted in accordance with the *Nature Conservation (Koala) Conservation Plan 2006 and Management Program 2006-2016* (EPA 2006) Policy 6: Vegetation clearing practices.

In addition to the vegetation clearing phase, the operational area presents an ongoing threat to Koalas as they are relatively mobile and will enter into highly modified activate areas. This potential impact will require direct management by Barro Group.

In response to these potential threats, the project's vegetation clearing and quarrying in the vicinity of recognised Koala habitat will be conducted in accordance with the above stated policy which involves:

The staging or limiting of vegetation clearance to what is required for safe and efficient quarrying operations;

This requires that vegetation clearing is limited to those areas required for operational purposes at that time. This method allows for the retention of Koala habitats until operations progress to that area and helps reduce any lag time between clearing and restoration of Koala offset areas.

1. the sequential clearance of trees;

Under the Koala Plan 'sequential clearing' means:

(1) clearing of trees is carried out in a way that ensures Koalas living in or near the area being cleared (the clearing site) have enough time to move out of the clearing site without human intervention, including in particular, for a clearing site with an area of more than 6ha, by:

(a) carrying out the clearing in stages; and

(b) ensuring not more than the following is cleared in any one stage:

(i) for a clearing site with an area of 6ha or less—50 percent of the site's area;

(ii) for a clearing site with an area of more than 6ha—3ha or 3 percent of the site's area, whichever is the greater; and

(c) ensuring that between each stage there is at least one period of 12 hours that starts at 6p.m. on a day and ends at 6a.m. on the following day, during which no trees are cleared on the site; and

(2) clearing of trees is carried out in a way that ensures, while the clearing is being carried out, appropriate habitat links are maintained within the clearing site and between the site and its adjacent areas, to allow Koalas living on the site to move out of the site; and

(3) no tree in which a Koala is present, and no tree with a crown overlapping a tree in which a Koala is present, is cleared.

2. all clearing will be undertaken under the guidance of a licenced and experienced Koala Spotter;

A Koala Spotter means a person who is licenced by the DEHP to act as a 'fauna spotter catcher'. The persons engaged must have demonstrated experience in locating Koalas in Koala habitats. Prior to the commencement of, and during felling operations, it is the responsibility of the Koala Spotter to identify trees in which a Koala is present and any trees where their crown overlaps trees in which a Koala is present and convey this information to the person(s) conducting the clearing.

A Koala spotter is to be independent of the clearing operators and is not to be involved in the clearing of vegetation while they are responsible for identifying Koalas present on the site.

Koalas can be difficult to see, even to the trained eye, and particularly when resting in the tops of tall leafy trees. Koalas can also jump from one tree to another. Consequently, continual surveillance of Koalas present on the site is required during clearing operations to ensure against accidentally felling or interfering with a tree that has a resident Koala.

No trees are to be felled in which a Koala is present within the tree or other nearby trees. Any Koala within the vegetation clearing area are to be left alone and allowed to move on of their own volition. It is the responsibility of the Koala Spotter to ensure that all works are suitably distant to ensure injury or harm of known resident Koalas is limited to the greatest possible extent. Each tree identified by the Koala Spotter as being a risk to Koalas if felled, should not be felled, damaged or interfered with until the Koala has moved from the works area (felling site) of its own volition.

A Koala Spotter is not to physically move Koalas from a tree in which they are residing to another location.

Barro Group will ensure that only suitably qualified persons should attempt to spot or capture and contain a Koala. The licenced and experienced Koala Spotter/Handler will be required to possess appropriate equipment and cages and to immediately release all animals after capture, unless veterinary attention is required.

3. the exclusion of vegetation clearance between the hours of 6pm and 6am;

No vegetation is to be cleared outside of daylight hours, other than in the case of an emergency action.

4. the use of exclusion fencing around dangerous or high risk operational quarrying area.

The existing and future quarry activity areas are not considered to be dangerous or high risk areas for Koala.

Koala exclusion fencing has been designed to choreograph Koala movements to the dedicated fauna underpass located on the northern internal access road (refer **Attachment 1**).

The above actions will be standard practice for the life of the quarry. Barro Group will ensure that all treed areas are assessed by a licenced and experienced Koala Spotter/Handler in advance of proposed vegetation clearance activities.

An Action Plan to minimise the risk of death or injury to resident Koalas is provided in **Table 1.**

3.3 INCREASED RISK OF STRESS AND DISEASE

Adherence to the prescribed vegetation clearing protocol provided in the previous section and to the Action Plan in **Table 1**, will greatly minimise the risk of stressing resident Koalas, which will also reduce the risk of resident Koalas succumbing to disease.

As Koala habitat clearing will be staged in line with resource demand, giving time for establishment of the Koala offset areas, there will be no net loss of Koala habitat as a result of the quarry extension. It is therefore considered that resident Koalas will not be forced to move away from the local area; a factor that can lead to increased stress and disease.

3.4 SAFE KOALA MOVEMENTS

3.4.1 Koala Crossing Design

A dedicated fauna underpass will be constructed to provide safe fauna movement opportunities, particularly for Koala across the northern internal access road for the quarry extension area (Figure 3.1). The location has been selected as the most viable as a combination of it being centrally located within the retained habitats and requires the least amount of disturbance to achieve the relevant specifications of the DTMR Fauna sensitive road design manual - Volume 2, Chapter 6.

Note that the specific location and sizing of underpass and fence is subject to change based on design requirements and detailed design.

To allow safe Koala and other fauna movements the following design elements will be incorporated into the access road fauna underpass:

a. Koala exclusion fencing will be deployed to choreograph Koalas to the underpass.
b. The dedicated fauna underpasses will provide for a dry land passage portal of a minimum size of 1.4 meters high by 2 meters wide.
c. Other design considerations include the following:
    i. provision of an unobstructed view through to the far side of the underpass/
    ii. fauna underpass design to ensure suitable drainage and avoidance of water pooling – even shallow pools of surface water may deter Koala and other terrestrial species from using the crossing structure.
    iii. underpass floors are to be designed to remain dry except during and immediately after significant rainfall events where the structure quickly dries out, or ledges or Koala furniture are incorporated in the underpass to provide a dry path for movement.
    iv. If point iii above is not achievable, then the fauna underpass to incorporate a Koala “bridge” structure comprising of a line of raised interconnecting logs which mirrors the length of the underpass to reduce the threat of predation and/or provide a resource for Koala access in the event of inundation.
    v. Habitat rehabilitation to provide some protective cover on approach/exiting the underpass though vegetation should not obstruct access or view of underpass entrance.

Table 1. The Action Plan to prevent death and or injury to Koalas

Overall Project Management		***Aim: Undertake Vegetation clearing and operation of the quarry in a manner that does not cause death or injury to Koala.***		
Performance Goal	**Actions / Responsible Officer(s)**	**Performance Indicators**	**Corrective Actions / Responsible Officer(s)**	**Timing / Frequency**
To minimise the risk of death or injury to Koala during vegetation clearing and operation of the quarry	• A 'Standard Operation Procedure' (SOP) will be developed and implemented for vegetation clearance activities within the quarry extension area. As a minimum, it will ensure that: - all vegetation clearance on-site is authorised and is specified as part of the quarry planning process (i.e. it is operationally required); - all fauna inspections are conducted immediately prior to clearance, - a licenced and experienced Koala Spotter/Handler is employed for all inspections, - all clearance is staged (i.e. no more than 50% of a patch that is ≤6 ha cleared in any one day and allowing at least 12 hours during which no trees are cleared, - all clearance areas are clearly defined (e.g. temporary fencing, signage, etc.), and - a protocol is in-place for the removal of fauna identified within the clearance area (i.e. either naturally or by a licenced and experienced Koala Handler) / ***Quarry Manager (QM).*** • Koala exclusion fencing (and signage) will be installed progressively to prevent Koalas from accessing identified high risk area / ***QM*** • An 'operation protocol' is developed and implemented to manage Koalas that accidently access high risk and other areas, which suspends all activities in the vicinity	• No death or injuries to Koalas have occurred as a result of quarrying activities (including vegetation clearance). • The 'Standard Operation Procedure' for vegetation clearance is implemented and functioning effectively on-site. • No unauthorised vegetation clearance has occurred. • The Koala exclusion fencing (and signage) is installed and functioning effectively around high risk areas. • Evidence that a licenced and experienced Koala Spotter/Handler has been employed for vegetation clearance activities is available and that their contact details are easily accessible on-site for emergency relocation tasks. • The 'operation protocol' to manage Koalas that accidently access high risk and other areas is implemented and functioning effectively on-site. • Evidence that the integrity of the Koala exclusion fencing (and signage) has been periodically inspected is available. • No Koalas have entered high	• All Koala deaths or injuries will be investigated, reported to the Regulatory Authorities, and as required, corrective actions will be developed to prevent future Koala deaths or injuries. • All failures of the SOP for vegetation clearance will be investigated, and as required, corrective actions will be developed to prevent future failures / ***QM***. • All failures of the Koala exclusion fencing (and signage) will be repaired in a timely manner and will be investigated, and as required, corrective actions will be developed to prevent future breaches / ***QM***. • All failures of the 'operation protocol' to manage Koalas that accidently access high risk and other areas will be investigated, and as required, corrective actions will be developed to prevent future failures / ***QM***. • All incidents of unauthorised vegetation clearance will be investigated, and as required, corrective actions will be developed to prevent future incidents / ***QM***. • All incidents of Koalas	• The 'Standard Operation Procedure' for vegetation clearance will be established before quarrying commences and will be maintained over the life of the quarry. • The 'operation protocol' to manage Koalas that accidently access high risk and other areas will be established before quarrying commences and will be maintained over the life of the quarry. • Koala exclusion fencing (and signage) will be established before quarrying commences and will be advanced as required to keep pace with quarrying activities over the life of the quarry.

Overall Project Management		***Aim: Undertake Vegetation clearing and operation of the quarry in a manner that does not cause death or injury to Koala.***		
Performance Goal	**Actions / Responsible Officer(s)**	**Performance Indicators**	**Corrective Actions / Responsible Officer(s)**	**Timing / Frequency**
	of the Koala until the Koala has moved independently out of the danger zone or is relocated to a safe area by a licenced and experienced Koala Spotter/Handler. (Wherever practical, the animal will be encouraged to move of its own volition.) /***QM***. • The integrity of the Koala exclusion fencing (and signage) will be periodically inspected /***QM***	risk areas on-site. • No deaths, injuries or near-misses have occurred during construction and operation of the quarry	entering high risk areas will be investigated, and as required, corrective actions will be developed to prevent future incidents / ***QM***.	

3.4.2 Koala Fencing

Rationale

Exclusion or guide fencing for wildlife has been employed successfully throughout the world to minimise the impacts of roadways on fauna, with positive outcomes for reducing road-kill numbers. It can be very successful for species that follow traditional migratory patterns over generations with the strategic location of underpass or overpass opportunities. Koalas do not follow traditional migratory patterns over generations, their movements are unpredictable, and the use of exclusion or guide fencing to manage their movement must be carefully considered.

For the Mount Cotton Quarry extension, it is recommended that fencing be installed to minimise Koala-vehicle collision under circumstances where it is desirable to guide Koalas to the road underpass adjoining key habitat or corridor areas. Due to the unpredictable movement and dispersal patterns of the species it is not possible to ensure that all animals are guided to this crossing point, hence the aim of minimising, rather than elimination of casualties.

Management Considerations

It is possible for exclusion or guide fencing to create difficulties for Koalas and other fauna. These difficulties are related to:

- the requirement for removal of trees and shrubs within 3m of a Koala-proof fence;
- any role an exclusion fence plays in preventing escape from predators or fire;
- interrupting the normal movement patterns of individuals (eg. forcing a male Koala to move through another male Koala's territory in order to access a crossing structure).

These potentially negative aspects must be considered against the likelihood that an individual would sooner or later be injured or killed crossing a road or through entering dangerous areas if such fencing was not deployed.

Martin and Handasyde (1999) conclude that home ranges of individual Koalas vary with the size of the animal and the quality of the habitat. With regard to territorial behaviour of the species, Martin and Handsyde (1999) cite a study by Peter Mitchell (Monash University) at Red Bill Creek on French Island. These researchers found that dominant male Koalas moved the most frequently, ranged over the largest area and had the highest level of social encounters, and that the ranges occupied by these males were stable over the three years of the study, although no single animal occupied an area exclusively and individual male's ranges overlapped extensively with those of other males and females, although it was found that while they may share the same trees, they will not do so at the same time.

Without knowing details of the home-ranges of individual animals and their movement patterns, and without understanding of the territorial behaviour of the affected individuals, it is impossible to predict the types and levels of stress that would be created by fencing. However, it can be said that in the longer term exclusion or guide fencing on roads in association with safe crossing opportunities would ensure the safety of more individuals than those few affected by interruptions to movement patterns in the short term. This is particularly relevant to animals of future generations that would be familiar with the presence of the fencing and crossing points.

Fencing could affect species movement options other than Koalas. The fence design should be such that smaller ground-dwelling animals (small mammals, reptiles, amphibians) are not impeded. For most other species (echidnas, bandicoots, wallabies, possums, Kangaroos, larger reptiles), the provision of the fencing directing animals to and through safer locations and crossing areas would be beneficial.

Koala Fencing Design

Koala fencing must be compliant with the current version of the *Koala-sensitive Design Guideline* (DES 2019). There are two main Fauna Exclusion or Guide Fencing design types that are relevant to Koalas:

1. "Floppy-top" fencing, consisting of chainwire fencing with the top 20cm unsupported and fence posts angled away from the road, developed specifically for Koalas and ground-based fauna and installed on the Pacific Highway in NSW; and
2. Traditional chain-wire fence with 0.8-1.5m strip of sheet metal or plastic attached on the side away from the road or exclusion area, allowing for animals to escape from

outside areas through climbing up chain wire in the event they are trapped within. This type of fencing has been developed specifically to prevent fauna from climbing the fence to access high risk areas, such as roadways and has been installed in various locations Across South east Queensland by the Queensland Department of Main Roads or local councils.

Trials of floppy-top fencing at Ballarat showed that this type of exclusion fencing is effective. However, where Koalas reach the "floppy" part of this form of fencing, they do not like the instability and become stressed, often spending long periods unwilling to move (pers. obs. Adrian Caneris, 2004). These fences also do not provide an opportunity for one-way exclusion.

The traditional chain-wire fence is considered to represent the most suitable option as: (a) the fence can be built at a lower height and is more stable than floppy-top fencing allowing provision for Koala re-entry from the road/danger side; (b) as the fence is lower it is less visually intrusive; (c) it is primarily a standard fence design and therefore less expensive; and (d) reduced maintenance costs.

All fencing must be compliant with the current *Koala-sensitive Design Guideline* (DES 2019).The following specific design features are recommended:

1. The fence need only be 1.2 meters high, with 60 centimeter strip of metal or Perspex (such as Colorbond or Perspex sheeting) attached to the top rail on the exclusion side of the fence. Koalas are unable to progress past the 60cm slippery metal/Perspex surface to breach the fence. The lower height of the fence would require less clearing or maintenance of overhanging branches as branches can be retained that are further than 1.5m above the fence, and the lower fence also has reduced wind capture implications than taller fencing.
2. Where practicable, an area 3 meters from the fence needs to be cleared and maintained to prevent Koalas from jumping onto or over the fence from nearby trees and shrubs.
3. As there is potential for a Koala to enter the exclusion area, it is important to provide opportunities for the Koala to exit. The provision of a timber pole against the fence will facilitate movements out of the exclusion area. It is considered that the provision of a timber pole is a crucial fencing design element that would reduce the amount of time that a Koala would spend within the road, hence reducing the opportunity for injury, stress or vehicle collision.

3.5 INCREASE IN PEST THAT PREY ON KOALA

Wild dogs and wondering domestic dogs are a major threat to Koala. It is considered that the Mount Cotton Quarry extension will not cause an increase in this threat, as staff and contractors visiting the quarry will be prohibited from bringing dogs on to the site. In addition, the dogs associated with the existing farm within the quarry extension footprint will leave the area once the farm is vacated; thereby alleviating the existing threat of dog/Koala interactions.

4.0 MANAGEMENT RESPONABILITIES

4.1 BARRO GROUP (PRINCIPAL)

The roles and general responsibilities of the Principal are to:

- Comply with the Koala Management Plan;
- Comply with the NC Act;
- Nominate a Quarry Manager who will represent the Principal in reviewing the performance of staff, issue instructions and variations, and be responsible for SMP implementation; and
- Promptly notify DEHP of any changes to this SMP and its implementation, reporting or monitoring, and any breach of Administrating Authority conditions and proposed corrective action.

It will be the responsibility of the Principal to ensure that the contents of the KMP are adequately communicated to all site personnel, and that they are advised of the consequences if the recommended actions are not observed.

4.2 QUARRY MANAGER

This Koala Management Plan (KMP) will be overseen by the Quarry Manager.

The Quarry Manager is responsible for:

- Ensuring that all on-site activities are undertaken in accordance with the overall Site Environmental Management Plan (SEMP). The implementation of the SEMP also forms an integral part of the Quarry Manager's responsibilities for ensuring the minimisation of environmental impact from the proposed activities;
- Ensuring the mitigation measures detailed in this Koala Management Plan are implemented;
- The Quarry Manager will ensure that a review of this KMP is undertaken in year 3 in the first instance and then at intervals of not less than five years or sooner if required. Any significant or unexpected alteration in the proposed works may require the KMP to be revised and amended accordingly. Any changes or amendments proposed to the KMP will be forwarded to RCC and the DEHP for comment prior to their adoption;
- Administering a compulsory site induction program regarding the potential impacts to Koala during vegetation clearing a quarry operations and associated impact management strategies. This includes information for all contractors, employees and visitors regarding dog and vehicle interactions with Koala;
- Ensuring a licensed wildlife spotter has assessed any areas where vegetation is to be cleared prior to works commencing and to report on Koalas sighted during clearing, and keep such records for a period for at least five (5) years. Fauna spotting should be in accordance with Policy 6 of the Koala Plan;
- Keeping up-to-date records of all monitoring events, results and corrective actions;
- Review and advise the relevant authorities of any proposed changes to the KMP; and
- Designate suitably experienced persons for the management and monitoring of the Koala management as required.

4.3 DESIGNATED PERSON (DP)

The roles and responsibilities of the Designated Person are to:

- Liaise with the Quarry Manager to facilitate compliance with legislation, Council policy and conditions during the project;
- Conduct audit inspections as required /requested during earthworks, and clearing or other inspections as triggered by environmental events or incidents;
- Advise the Quarry Manager on the compliance and effectiveness of the SMP/Site Instructions and its implementation;
- Immediately contact the Quarry Manager regarding any environmental incidents that have the potential to cause environmental harm, request written details within 24 hours of occurrence, and issue Site Instructions for rectification/remediation to the Quarry Manager as soon as possible;
- Issue Site Instructions (for correction of non-compliance) to the Quarry Manager within seven (7) days of inspections and completion of the Inspection Procedures and Checklist(s);
- Maintain accurate reports (incidents, near miss, results of monitoring) to be provided to regulatory authorities within ten days of request.

4.4 FAUNA SPOTTER/CATCHER

A qualified wildlife spotter/catcher, with experience in Koala detection and capture will be appointed to conduct pre-clearing surveys of the site and to be present during vegetation clearing.

Reporting will be consistent with the reporting requirements of the overall SEMP and the KMP

5.0 MONITORING

Areas outside of the existing quarry and quarry extension will be surveyed within six months from the date of approval, and subsequently on an annual basis for the presence of Koalas and/or Koala signs (scats and scratches). During these surveys, presence/or evidence of any other conservation-significant species (e.g. Powerful Owl *Ninox strenua*) will be recorded. Every five years for the first 15 years, a detailed survey of the Koala population will be undertaken. The methodology employed for this survey will be done in accordance with the most up to date scientifically proven survey methodology.

Performance Targets

- Resident Koalas are occupying the subject site (outside the existing quarry and quarry extension) at densities that reflect average densities in the local area in comparable habitat;

- No evidence of dead, sick, or injured Koalas has been recorded.

6.0 CONTINGENCY

In the event that other species identified as conservation significant, under the NC Act and/or EPBC Act are identified within the disturbance zone, the Quarry Manager is to contact the DEHP representative within 24 hours of other species being found. Submission of an updated SMP to provide for the additional protected species will be required.

6.1 REPORTING

Compile an overall report at the end of each monitoring period, noting any significant changes in measured variables, trends and conditions to ensure alignment with DES reporting requirements. The report is to include tabulated data (Koala census and Koala habitat quality) from all monitoring events to allow assessment of trends

A copy of the yearly report will be provided to DES.

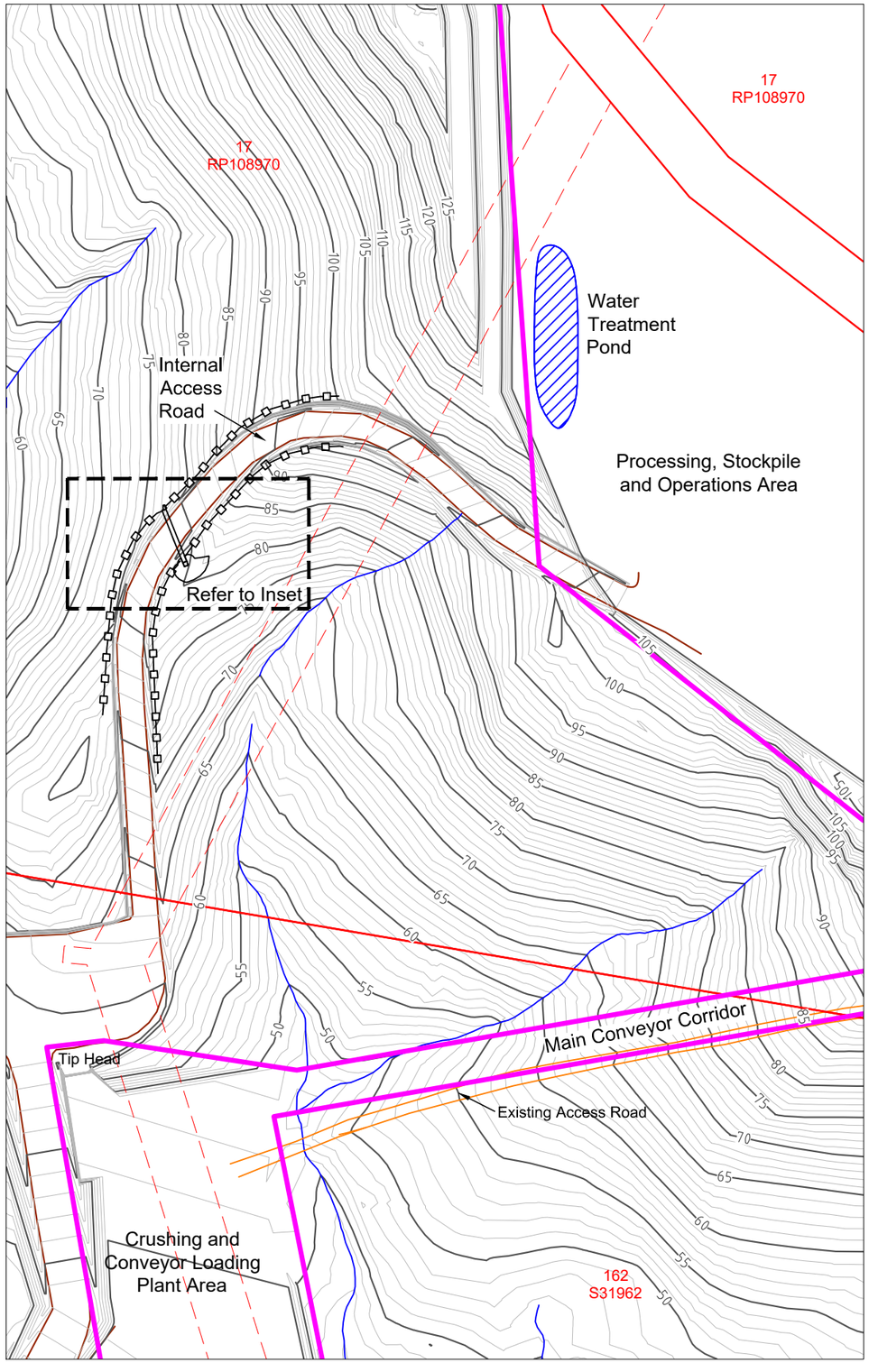
7.0 REFERENCES

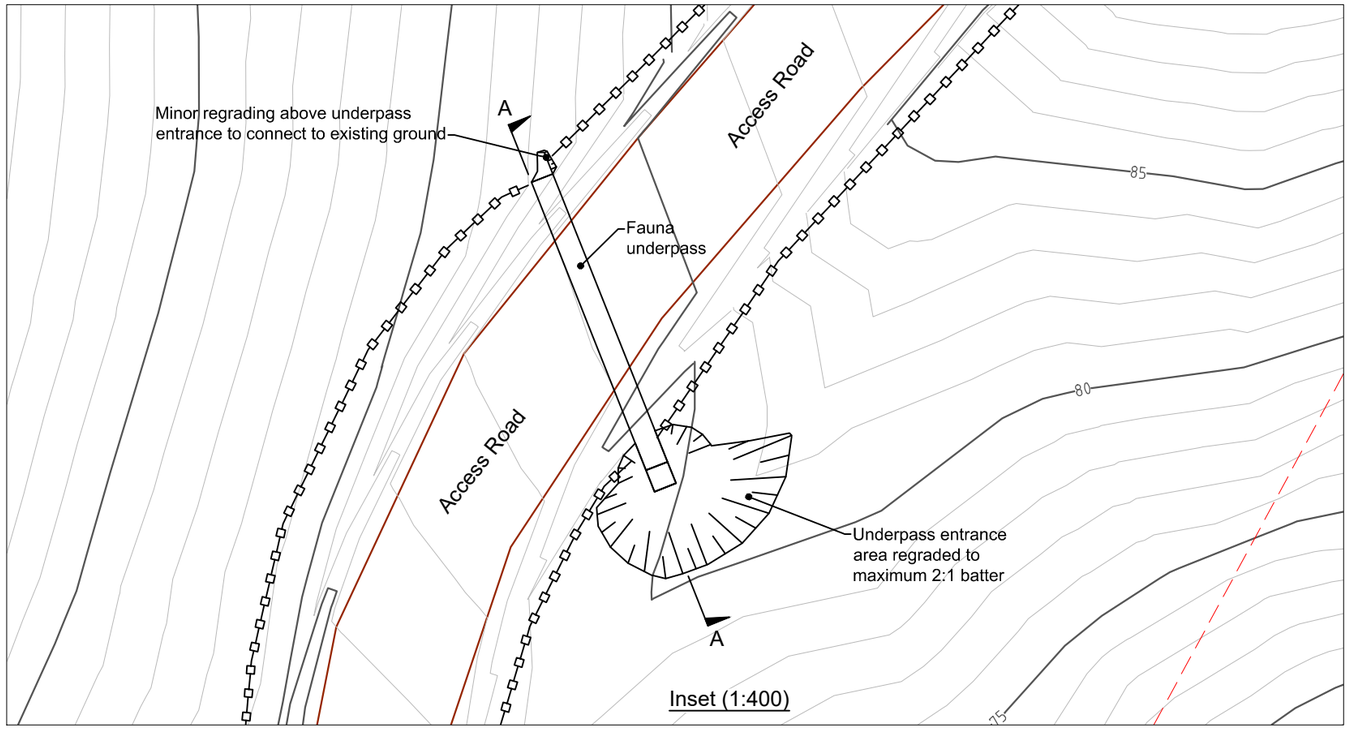
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Environmental Protection Authority (2006). *Nature Conservation (Koala) Conservation Plan 2006 and Management Program 2006-2016*. Publishes by Queensland Government.

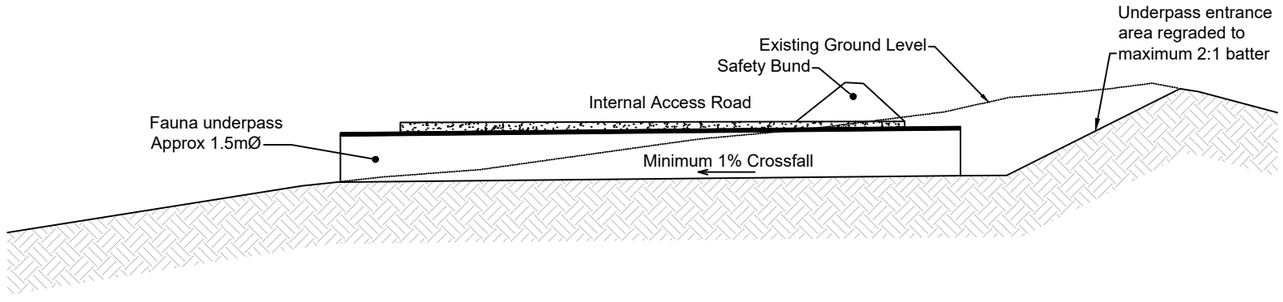
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ATTACHMENT 1
Fauna Crossing Earthworks and Access Works Plan





Inset (1:400)



Schematic Cross Section A (1:200)

REV	DESCRIPTION	DATE	BY

Data Sources:
Photography:
Topography:
Cadastre:
Ecosystem:
Other:

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Legend:
- Cadastral Boundary
- Existing Roads/Tracks
- Access Roads
- Koala Proof Fence (refer DTMR drg 1603, 6/02)

Notes:
Design reference: DTMR Fauna sensitive road design manual - Volume 2, Chapter 6, June 2010.
The specific location and sizing of underpass and fence is subject to change based on design requirements and details.
Fence length topographically modified where batter heights are greater than 3m.

PROJECT: Mt Cotton Quarry

CLIENT: Barro Group

TITLE: Fauna Crossing Earthworks and Access Works Plan

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SCALE: 1:2,000 (0 – 40) When Printed On A3
DRAWING NUMBER: 987.246
REVISION:
DATE: 16 November 2016
DRAWN:
PRINTED: 16 November 2016
CHECKED: JT
DATUM: HORIZONTAL / VERTICAL / ZONE

CREATED: 16 November 2016 JOB SUB #: FILE NAME: F:\Jobs\900\987 Barro Mt Cotton Quarry Ext. Appl\c000 Generic\Drawings\987.246 Fauna Underpass.dwg

APPENDIX 2

COUNTS OF NON-JUVENILE KOALA HABITAT TREES IN OFFSET AREAS

Appendix 2. Non-juvenile Koala Habitat Trees and Juvenile Koala Habitat trees recorded within the Koala offset areas. Refer **Figure 5.1** for locations of each offset polygon and pre-clear regional ecosystem type.

Offset Polygon	Non-juvenile Koala Habitat Trees	Juvenile Koala Habitat Trees	Representative Photographs
KO1	467	75	
KO2	239	19	
KO3	30	2	
KO4	3	1	No Photo

Offset Polygon	Non-juvenile Koala Habitat Trees	Juvenile Koala Habitat Trees	Representative Photographs
KO5	55	2	
KO6	8		
KO7	7	0	

Offset Polygon	Non-juvenile Koala Habitat Trees	Juvenile Koala Habitat Trees	Representative Photographs
KO8	7	0	
KO9	27		
KO10a-f – no juvenile or non-juvenile Koala habitat trees recorded in these areas.			
Stormwater Ponds	20		

Schedule 8

Names and addresses of submitters to the development application

Names and Addresses of Principal Submitters to the Development Application								
Title	First Name	Surname	Address	Address Line 2	Suburb	State	Post Code	Email Address
Ms	Nicole	Abbott	82 Helicia Court		MOUNT COTTON	QLD	4165	
Mr/Ms	M	Abraham	216 Sanctuary Drive		MOUNT COTTON	QLD	4165	
Mr	Joseph	Aclair	14 Charlotte Street		ROCKHAMPTON	QLD	4700	
Mrs	Mary	Adcock	10 Stanway Crescent		ALEXANDRA HILLS	QLD	4161	
Mrs	Tracey	Aird	134 Panorama Drive		THORNLANDS	QLD	4164	
Ms	Jacqueline	Aldridge	3/10 Penina Circuit		CORNUBIA	QLD	4130	
M	J	Allan	11 Santuary Drive		MOUNT COTTON	QLD	4165	
Ms	Jeanette	Allan	PO Box 3355		VICTORIA POINT	QLD	4165	
Mr	John	Allen	18215 Bayview Drive	Los Gatos	CALIFORNIA	USA	95033	
Mr	David	Allison	PO Box 242		CAPALABA DC	QLD	4157	
Mrs	Meryl	Allison	PO Box 242		CAPALABA DC	QLD	4157	
Mrs	Penelope	Allman-Payne	10 Woodrow Place		CLEVELAND	QLD	4163	
Mrs	Loreley	Althaus	2 Sentinel Court		CLEVELAND	QLD	4163	
Mr	Ronald	Althaus	2 Sentinel Court		CLEVELAND	QLD	4163	
Ms	Bianca	Anderson	1 Gilberton Crescent		FOREST LAKE	QLD	4078	
Mrs	Marjorie Ann	Anderson	36 Cochrane Street		ALEXANDRA HILLS	QLD	4161	
Miss	Jill	Angus	36 Dennis Road		SPRINGWOOD	QLD	4127	
Ms	Shirley	Angus	PO Box 2267		WELLINGTON POINT	QLD	4160	
Ms	Lisa	Anici	1 Mackerel Street		SANDSTONE POINT	QLD	4511	
Mrs	Anita	Annan	28 Pimelea Crescent		MOUNT COTTON	QLD	4165	
Ms	Jennifer	Anthony	115-119 Henderson Road		SHELDON	QLD	4157	
Mr	Stephen	Anthony	115-119 Henderson Road		SHELDON	QLD	4157	
Mr and Mrs	Malcolm and Barbara	Armitage	23 Pinelands Circuit		REDLAND BAY	QLD	4165	
Mr	Derek	Atkinson	1/116 Moreton Street		NEW FARM	QLD	4005	
Mrs	Linda	Atkinson	5A Delancey Street		CLEVELAND	QLD	4163	
Mrs	Joan	Austin	10/13a Homer Street		CLEVELAND	QLD	4163	
Mr	H	Axford	1588 Numinbah Road		CHILLINGHAM	QLD	2484	
Mrs	Susan	Axford	87-95 Hillview Road		MOUNT COTTON	QLD	4165	
Mrs	Danielle	Bain	1905 Mount Cotton Road		CORNUBIA	QLD	4130	
Mr	Barry	Baker	21 Peart Parade		MOUNT COTTON	QLD	4165	

Names and Addresses of Principal Submitters to the Development Application								
Mrs	H	Baker	6/64 Barton Road		HAWTHORNE	QLD	4171	
Ms	Bronwyn	Balfour	43 McLeod Street		CLEVELAND	QLD	4163	
Ms	Pauline	Ballington	13/80 Wynyard Street		CLEVELAND	QLD	4163	
Mr	Simon	Baltais	29 Estelle Street		BIRKDALE	QLD	4159	
Mr	Greg	Banach	25 Ganges Street		WEST END	QLD	4101	
Mrs	Nicole	Barclay	62 Amy Street		HAWTHORNE	QLD	4171	
Mr	Alan	Barker	34 Melaleuca Drive		CAPALABA	QLD	4157	
Mrs	Clarice	Barker	34 Melaleuca Drive		CAPALABA	QLD	4157	
Ms	Paulette	Barker	7 Pandora Court		CLEVELAND	QLD	4163	
Ms	Jennie	Barnard	6 Harbourview Court		CLEVELAND	QLD	4163	
Mrs	Natalie	Barnes	PO Box 7291		REDLAND BAY	QLD	4165	
Mr	Scott	Barnes	PO Box 7291		REDLAND BAY	QLD	4165	
Mr	Andrew	Bartlett	41 Swan Terrace		WINDSOR	QLD	4030	
Ms	Sarah	Bartlett	9/24 Acland Street		ST KILDA	VIC	3182	
Mr	Alan	Baskerville	1-11 Winston Road		SHELDON	QLD	4157	
Mrs	Leanne	Bastow	65 Settlers Circuit		MOUNT COTTON	QLD	4165	
Mr and Mrs	Allan and Helen	Bates	50-52 Cooberrie Street		CORNUBIA	QLD	4130	
Mr	Michael	Bates	9-11 Pandanus Street		BIRKDALE	QLD	4159	
Mr/Ms	M	Bawarr	1-13 Miles Court		TOWNSVILLE	QLD	4810	
Mr	Donald	Baxter	5 Monarch Street		ALEXANDRA HILLS	QLD	4161	
Ms	Mary	Bealing	9 Little Shore Street		CLEVELAND	QLD	4163	
Mrs	Nicole	Beck	25 Bouquet Street		MOUNT COTTON	QLD	4165	
Ms	Roslyn	Becke	89/2 Admiralty Drive	Atlantis East	PARADISE WATERS	QLD	4217	
Mrs	Kelly	Benfer	11 Seaview Road		MOUNT COTTON	QLD	4165	
Ms	Gillian	Bennett						[illegible] au
Ms	Lindy	Bennett	1/17 Blake Street		WOOLOOWIN	QLD	4030	
Mr	Ryan	Bennett	29 Helicia Circuit		MOUNT COTTON	QLD	4165	
Ms	Carla	Benson	12 Settlers Circuit		MOUNT COTTON	QLD	4165	
Mrs	Beatrice	Berger	80-92 Fabian Road		CORNUBIA	QLD	4130	
Mr	Jacob	Berger	80-92 Fabian Road		CORNUBIA	QLD	4130	
Mrs	Samara	Berger	80-92 Fabian Road		CORNUBIA	QLD	4130	
Mr	Timon	Berger	20 Store Street		ALBION	QLD	4010	
Mr	Tobias	Berger	80 Fabian Road		CORNUBIA	QLD	4130	

Names and Addresses of Principal Submitters to the Development Application								
Mr	Gregory	Bernoth	33 Fryar Street		VICTORIA POINT	QLD	4165	
Mr	Kenneth	Berry	Unit 61 Adventist Village	571 Cleveland Road	VICTORIA POINT	QLD	4165	
Mrs	Nina	Berry	Unit 61 Adventist Village	571 Cleveland Road	VICTORIA POINT	QLD	4165	
Mr	Dean	Bielanowski	23 Ancona Street		ROCHEDALE SOUTH	QLD	4123	
Ms	Dianne	Birch	112 Fitzroy Street		CLEVELAND	QLD	4163	
Mrs	Michelle	Birch	52 Gordon Street		ORMISTON	QLD	4160	
Mrs	Catherine	Birtchnell	108-110 Sanctuary Drive		MOUNT COTTON	QLD	4165	
Mr	Gregor	Blake	14 Village Drive		MOUNT COTTON	QLD	4165	
Mr	Dean	Bleasdale	174 Winstanley Street		CARINA HEIGHTS	QLD	4152	
Mrs	Nadine	Blocksidge	28 Winchester Road		ALEXANDRA HILLS	QLD	4161	
Mr	Craig	Blomer	2058 Mount Cotton Road		CARBROOK	QLD	4130	
Mr	Chris	Blosfeld	2530 Pinecove Drive		TUCKER GA	USA	30084	
Ms	Naomi	Bonnell	5 Plover Court		LAIDLEY HEIGHTS	QLD	4341	
Mrs	Rebecca	Bonner	135 Delancey Street		ORMISTON	QLD	4160	
Mr	Ivan	Bors	28 Thorne Road		BIRKDALE	QLD	4159	
Ms	Patricia	Boulton	123 Woodlands Drive		THORNLANDS	QLD	4164	
Ms	Karen	Bourke	18 Caloundra Street		MANLY WEST	QLD	4179	
Miss	Alisha	Bourne	2 Woombye Street		WOOLOOWIN	QLD	4303	
Mrs	Toni	Bowler	44-54 Kiwi Street		SHELDON	QLD	4157	
Mrs	Glenice	Bowman	12 Maclean Court		ALEXANDRA HILLS	QLD	4161	
Mr	Ian	Bowman	12 Maclean Court		ALEXANDRA HILLS	QLD	4161	
Mr	Gregory	Bradshaw	15 Settlers Circuit		MOUNT COTTON	QLD	4165	
Mrs	Janine	Bradshaw	15 Settlers Circuit		MOUNT COTTON	QLD	4165	
Ms	Kate	Bradshaw	15 Settlers Circuit		MOUNT COTTON	QLD	4165	
Mr	Michael	Bradshaw	15 Settlers Circuit		MOUNT COTTON	QLD	4165	
Ms	Carolyn	Brammer	16 Victoria Parade		COOCHIEMUDLO ISLAND	QLD	4184	
Mr	Byron	Breckle	106 Sanctuary Drive		MOUNT COTTON	QLD	4165	
Mr	Paul	Breckle	106 Sanctuary Drive		MOUNT COTTON	QLD	4165	
Ms	Yvonne	Breckle	106 Sanctuary Drive		MOUNT COTTON	QLD	4165	
Ms	Anita	Bridge	1 Colac Court		CORNUBIA	QLD	4130	
Mr	Ian	Bridge	1697-1705 Mount Cotton Road		MOUNT COTTON	QLD	4165	
Ms	Jennie	Bridge	3/200 Baroona Road		PADDINGTON	QLD	4064	
Mrs	Leann	Bridge	1 Colac Court		CORNUBIA	QLD	4130	

Names and Addresses of Principal Submitters to the Development Application								
Mr	R	Bridge	53 Baldwin Street		BULIMBA	QLD	4171	
Mrs	Rae	Bridge	9 William Parade		FAIRFIELD	QLD	4103	
Mr	W	Bridge	44 Victoria Parade North		COOCHIEMUDLO ISLAND	QLD	4184	
Ms	Lucille	Bridges	PO Box 327		CAPALABA	QLD	4157	
Ms	Wendy	Broad	32 Glady Avenue		CABOOLTURE	QLD	4510	
Mrs	Marian	Brocks	124 West Coorong Road		CORNUBIA	QLD	4130	
Mr	David	Brown	25 Brushbox Court		MOUNT COTTON	QLD	4165	
Mrs	Rachael	Brown	25 Brushbox Court		MOUNT COTTON	QLD	4165	
Miss	Rachel	Brown	22 Pine Avenue		BEENLEIGH	QLD	4207	
Ms	Robin	Brown	PO Box 4838		LOGANHOLME	QLD	4129	
Mr	Wayne	Brown	35 Gavin Way		CORNUBIA	QLD	4130	
Ms	Wendy	Brown	10 Station Street		WELLINGTON POINT	QLD	4160	
Mr	Roger	Browning	35 Kiwi Street		SHELDON	QLD	4157	
Mrs	Lynda	Brownsey	23 Boundary Street		REDLAND BAY	QLD	4165	
Ms	Kylie	Bruce	11 Sunrise Street		MOUNT COTTON	QLD	4165	
Mr	Jeremy	Brumm	3 Nawalla Court		KARANA DOWNS	QLD	4306	
Mr	K	Brunckhorst	10 Page Street		EVERTON PARK	QLD	4053	
Mrs	Elke	Bull	PO Box 2194		WELLINGTON POINT	QLD	4160	
Ms	Michele	Burford	23 Fernbourne Road		WELLINGTON POINT	QLD	4160	
Mr	Neil	Burns	12 Seagrass Place		REDLAND BAY	QLD	4165	
Mrs	Tracey	Burns	12 Seagrass Place		REDLAND BAY	QLD	4165	
Ms	Carmen	Burton	40 Beatrice Street		GREENSLOPES	QLD	4120	
Mr/Ms	G	Burton	571 Redland Bay Road		VICTORIA POINT	QLD	4165	
Mr	Kenneth	Burton	38 Taffeta Drive		MOUNT COTTON	QLD	4165	
Mrs	Lauren	Burton	38 Taffeta Drive		MOUNT COTTON	QLD	4165	
Mr	Ross	Burwood	Kougari Court	15/192-202 Long Street	CLEVELAND	QLD	4163	
Mr	Colin	Bushby	23 Orchid Drive		MOUNT COTTON	QLD	4165	
Ms	Tammy	Bushell	8/7 Kenilworth Parade		IVANHOE	VIC	3079	
Mr	Frederick	Butcher	708 Old Cleveland Road East		WELLINGTON POINT	QLD	4160	
Mrs	Mary	Byrne	Lot 5, Jonathon Road		SHELDON	QLD	4157	
Mr	Richard	Byrne Snr	Lot 5, Jonathon Road		SHELDON	QLD	4157	
Mrs	Andrea	Cadell	59 Guthrie Street		PADDINGTON	QLD	4064	
Mrs	Anne	Caerdinael	22 Claredon Street		EAST BRISBANE	QLD	4169	

Names and Addresses of Principal Submitters to the Development Application								
Mrs	G	Callaghan	27 Macadamia Street		VICTORIA POINT	QLD	4165	
Mrs	Kellie	Callebaut	2 Ransom Court		THORNLANDS	QLD	4164	
Mrs	Margaret	Camm	199 Sanctuary Drive		MOUNT COTTON	QLD	4165	
Ms	Karen	Campbell	4 Peart Parade		MOUNT COTTON	QLD	4165	
Ms	Tanya	Carey	8 Scampi Place		REDLAND BAY	QLD	4165	
Mr	Iain	Carmichael	140 Sanctuary Drive		MOUNT COTTON	QLD	4165	
Mr	Daniel	Carraway	117-119 Sanctuary Drive		MOUNT COTTON	QLD	4165	
Mrs	Patricia	Carraway	117-119 Sanctuary Drive		MOUNT COTTON	QLD	4165	
Ms	Fleur	Carter	29 Fernbourne Road		WELLINGTON POINT	QLD	4160	
Mr	Gregory	Carter	39 Macquarie Street		CAPALABA	QLD	4157	
Ms	Sylvia	Carter	39/571 Redland Bay Road		VICTORIA POINT	QLD	4165	
Mrs	Elizabeth	Cattell	168 Sanctuary Drive		MOUNT COTTON	QLD	4165	
Mr	Luke	Cavit	9 Ocean Street		CLEVELAND	QLD	4163	
Ms	Lesley	Cawdrey	67 Glenmore Street		KALLANGUR	QLD	4503	
Mr	Michael	Cawdrey	67 Glenmore Street		KALLANGUR	QLD	4503	
Ms	Vanessa	Cawdrey	67 Glenmore Street		KALLANGUR	QLD	4503	
Mr	Christopher	Chamberlain	40 Taffeta Drive		MOUNT COTTON	QLD	4165	
Mr	Peter	Chamberlain	47-49 Gavin Way		CORNUBIA	QLD	4130	
Mrs	Linda	Champney	108 Settlers Circuit		MOUNT COTTON	QLD	4165	
Mr	Terence	Chapple	41 Kunde Street		CORNUBIA	QLD	4130	
Ms	Amy	Chessor	5 Poplin Place		MOUNT COTTON	QLD	4165	
Mr	Cameron	Childs	72 Beach Street		CLEVELAND	QLD	4163	
Mr	Kevin	Childs	23 Ross Street		COOCHIEMUDLO ISLAND	QLD	4184	
Mrs	Susan	Childs	72 Beach Street		CLEVELAND	QLD	4163	
Mrs	Bronwyn	Chu	10 Oakland Avenue		REDLAND BAY	QLD	4165	
Mrs	Carol	Church	49 Summit Street		SHELDON	QLD	4157	
Mrs	Elaine	Claridge	67 Settlers Circuit		MOUNT COTTON	QLD	4165	
Mr	Garry	Claridge	4 Azalea Court		MALENY	QLD	4552	
Mr	Robert	Claridge	67 Settlers Circuit		MOUNT COTTON	QLD	4165	
Ms	Bronwyn	Clark	9 Utrecht Street		CORNUBIA	QLD	4130	
Ms	Heather	Clark	9/221 Middle Street		CLEVELAND	QLD	4163	
Mrs	Karrin	Clark	18 Thorne Road		BIRKDALE	QLD	4159	
Mr	Simon	Clark	18 Thorne Road		BIRKDALE	QLD	4159	

Names and Addresses of Principal Submitters to the Development Application								
Mrs	Rosie	Clarke	14 Papaya Street		MOUNT COTTON	QLD	4165	
Mrs	Donna	Clausen	15 Pendula Street		MOUNT COTTON	QLD	4165	
Ms	Kathleen	Clements	53 Chatsworth Circuit		CAPALABA	QLD	4157	
Mr	David	Clinton	55 Lucas Street		EAST BRIGHTON	VIC	3187	
Ms	Jennifer	Cobon	22 Craig Road		TARINGA	QLD	4068	
Mr	Gordon	Cohen	Villa 222	225 Logan Street	EAGLEBY	QLD	4207	
Ms	Kim	Cohen	222/225 Logan Street		EAGLEBY	QLD	4207	
Ms	Jemma	Colcord	53 Bluebell Street		ALEXANDRA HILLS	QLD	4161	
Mrs	Katrina	Coldsworthy	100 Carbrook Road		CORNUBIA	QLD	4130	
Mr	Ralph	Coldsworthy	100 Carbrook Road		CORNUBIA	QLD	4130	
Mr and Mrs	John and Gail	Cole	1625-1635 Mount Cotton Road		MOUNT COTTON	QLD	4165	
Ms	Sarah	Cole	PO Box 3421		LOGANHOLME	QLD	4129	
Mr	Alan	Coleman	1903 Mount Cotton Road		CORNUBIA	QLD	4130	
Ms	Donna	Coleman	1903 Mount Cotton Road		CORNUBIA	QLD	4130	
Mr	Jason	Coleman	23 Jamberoo Street		SPRINGWOOD	QLD	4127	
Mrs	Margaret	Colis	13 Crystal Place		CORNUBIA	QLD	4130	
Ms	Sandi	Colledge	37 Kunde Street		CORNUBIA	QLD	4130	scolledge2@optusnet.com.au
Ms	Kristen	Collie	250 Marshall Road		TARRAGINDI	QLD	4121	
Mr	Neil	Collier	Raby Bay Quays 1	18/12 Esperance Court	CLEVELAND	QLD	4163	
Mr	G	Collins	25 Meera Street		CORNUBIA	QLD	4130	
Miss	Nina	Connolly	9 Richardson Road		NORTH ROCKHAMPTON	QLD	4701	
Ms	Chantelle	Convey	38 Beenleigh-Redland Bay Road		LOGANHOLME	QLD	4129	
Mr	Lance	Convey	38 Beenleigh-Redland Bay Road		LOGANHOLME	QLD	4129	
Ms	Nicole	Cooper	14 Parklane Road		VICTORIA POINT	QLD	4165	
Mr and Mrs	Maule and Myrella	Coppus	390 Mount Cotton Road		MOUNT COTTON	QLD	4165	
Mr	Russell	Corcut	5 Silvergum Street		CORNUBIA	QLD	4130	
Ms	Natalie	Corkill	8 Petunia Crescent		MOUNT COTTON	QLD	4165	
Mr	Tony	Corle	10 Campus Street		INDOOROOPILLY	QLD	4068	
Ms	Belinda	Cosh	19-21 Honeysuckle Court		CORNUBIA	QLD	4130	
Mr	Rick	Costantini	121 Sanctuary Drive		MOUNT COTTON	QLD	4165	
Mr	Adam	Costin	1/15 Swan Terrace		WINDSOR	QLD	4030	
Ms	Carol	Couchmann	9 Anne Street		ALEXANDRA HILLS	QLD	4161	

Names and Addresses of Principal Submitters to the Development Application								
Ms	Belinda	Coulstock	949 Kidaman Creek Road		MALENY	QLD	4552	
Miss	Janet	Courage	33 Plumbs Road		TANAH MERAH	QLD	4128	
Mr	Peter	Courage	33 Plumbs Road		TANAH MERAH	QLD	4128	
Mr	Peter	Courtney	1812 Mount Cotton Road		CARBROOK	QLD	4130	
Mr	R J	Courtney	6/90 Mount Cotton Road		CAPALABA	QLD	4157	
Mrs	S	Courtney	1812 Mount Cotton Road		CARBROOK	QLD	4130	
Ms	Barbara	Coutts	4 Clonakilty Close		BANORA POINT	NSW	2486	
Mr	David	Coutts	4 Clonakilty Close		BANORA POINT	NSW	2486	
Miss	Evelynn	Covits	23 Borambul Road		SHAILER PARK	QLD	4128	
Mr	Travis	Cowley	153 Bryants Road		LOGANHOLME	QLD	4129	
Mrs	Glenda	Cowley	393 California Creek Road		CORNUBIA	QLD	4130	
Ms	Jennifer	Cox	243 Springwood Road		SPRINGWOOD	QLD	4127	
Mr	Steven	Crawford	5 Plover Court		LAIDLEY HEIGHTS	QLD	4341	
Mr	Terry	Creasey	Galbraith Court	4/121-123 Mount Cotton Road	CAPALABA	QLD	4157	
Ms	Jacqueline	Cresswell	4 Cypress Street		COOCHIEMUDLO ISLAND	QLD	4184	
Miss	Robyn	Crittendell	23/58 Cambridge Drive		ALEXANDRA HILLS	QLD	4161	
Mr	Matthew	Cronk	5 Poplin Place		MOUNT COTTON	QLD	4165	
Ms	Susan	Crozier	8 Michelle Court		CLEVELAND	QLD	4163	
Mrs	Karlene	Cunningham	3 Araluen Close		MOUNT COTTON	QLD	4165	
Mr	A	Currey	32 Jarrod Street		CORNUBIA	QLD	4130	
Ms	C	Currey	32 Jarrod Street		CORNUBIA	QLD	4130	
Miss	Genevieve	D'Adam	21/82 Berwick Street		FORTITUDE VALLEY	QLD	4006	
Ms	Belinda	Daglish	132-146 Gramzow Road		CORNUBIA	QLD	4130	
Ms	Chelsie	Daglish	136 Gramzow Road		CORNUBIA	QLD	4130	
Ms	Jascinta	Daglish	132-146 Gramzow Road		CORNUBIA	QLD	4130	
Mrs	Jean	Daglish	122 Fabian Road		CORNUBIA	QLD	4130	
Mr	Luke	Daglish	122 Fabian Road		CORNUBIA	QLD	4130	
Mr	Shane	Daglish	136 Gramzow Road		CORNUBIA	QLD	4130	
Ms	Simienna	Daglish	21 Orchid Drive		MOUNT COTTON	QLD	4165	
Ms	Siobhan	Daglish	136 Gramzow Road		CORNUBIA	QLD	4130	
Mr	Phil	Daly	6 Sorrento Close		WELLINGTON POINT	QLD	4160	
Mrs	Amy	Dang	20 Kennedy Drive		REDBANK PLAINS	QLD	4301	

Names and Addresses of Principal Submitters to the Development Application								
Ms	Natasha	Daniell	217 West Mount Cotton Road		CORNUBIA	QLD	4130	
Ms	E	Dann	18 Rialanna Street		KENMORE	QLD	4067	
Mrs	Doreen	Davenport	5 Marlock Court		CORNUBIA	QLD	4130	
Mrs	Jade	Davern	6 Pine Street		GODWIN BEACH	QLD	4507	
Mr	Jonathan	Davern	6 Pine Street		GODWIN BEACH	QLD	4507	
Mr	Charles	David	160 Sanctuary Drive		MOUNT COTTON	QLD	4165	
Ms	Clair	Davies	5 Marana Street		COOCHIEMUDLO ISLAND	QLD	4184	
Dr	Ruth	Davis	500 El Camino Real		SANTA CLARA	CALIF	95053	
Mrs	Simone	Davis	7 Ti Tree Court		MOUNT COTTON	QLD	4165	
Mr	Wayne	Davis	7 Ti Tree Court		MOUNT COTTON	QLD	4165	
Mr	Keith	Dawes	37 Monaco Street		SURFERS PARADISE	QLD	4217	
Mrs	Colleen	Dawson	59/571 Redland Bay Road		VICTORIA POINT	QLD	4165	
Mr	Edward	Dawson	85 Henderson Road		SHELDON	QLD	4157	
Mrs	Susan	Dawson	85 Henderson Road		SHELDON	QLD	4157	
Mr	Graham	Day	57 Gavin Way		CORNUBIA	QLD	4130	
Ms	Marilyn	Day	55 Gavin Way		CORNUBIA	QLD	4130	
Mr	Johann	De Beer	65 Sanctuary Drive		MOUNT COTTON	QLD	4165	
Mr	Russell	De Leacy	6 Honeysuckle Court		CORNUBIA	QLD	4130	
Mr	Gennaro	De Rosa	26 Hardy Road		BIRKDALE	QLD	4159	
Ms	Janet	Dean	26 Banksia Circuit		FOREST LAKE	QLD	4078	
Ms	Cheryl-Anne	Delima	4 Simmons Road		NORTH IPSWICH	QLD	4305	
Dr	Hellene	Demosthenous	13 Turill Street		SHAILER PARK	QLD	4128	
Mrs	Carmel	Denaro	35 Masthead Drive		RABY BAY	QLD	4163	
Mr	Chris	Denaro	94-98 Bromley Street		CORNUBIA	QLD	4130	
Mrs	Louise	Denisenko	66 Orana Esplanade		VICTORIA POINT	QLD	4165	
Ms	Linda	Dennis	C/ Post Office		WIANGAREE	NSW	2474	
Ms	Anita	Dent-Fitzpatrick	8 David Street		THORNESIDE	QLD	4158	
Ms	Allison	Deross	49 Riesling Street		THORNLANDS	QLD	4164	
Mrs	Kellie	Dewar	8 Drovers Place		MOUNT COTTON	QLD	4165	
Mrs	Hazel	Dick	59 Orchid Drive		MOUNT COTTON	QLD	4165	
Mrs	Judith	Dickens	165 Shore Street North		CLEVELAND	QLD	4163	
Ms	Jess	Diehl	18 Honeysuckle Court		VICTORIA POINT	QLD	4165	
Ms	Patricia	Dobson	48-50 Cavendish Street		RUSSELL ISLAND	QLD	4184	

Names and Addresses of Principal Submitters to the Development Application								
Mr	Gary	Doig	8 Cycad Close		MOUNT COTTON	QLD	4165	
Mrs	Rebecca	Doig	8 Cycad Close		MOUNT COTTON	QLD	4165	
Mr	Nathan	Donaldson	217 West Mount Cotton Road		CORNUBIA	QLD	4130	
Mr	Andrew	Douglas	42 Camballin Court		SHAILER PARK	QLD	4128	
Mr	David	Douglas	6 Marlock Court		CORNUBIA	QLD	4130	
Mrs	Eve	Douglas	6 Marlock Court		CORNUBIA	QLD	4130	
Mr	Peter	Doyle	172 Mount View Road		MOUNT COTTON	QLD	4165	
Ms	Amy	Dozier	21 Yucca Road		ROCKY POINT	NEW Y	11778	kissyboots5983@netscape.net
Mr	Jonathan	Driussi	115 Gramzow Road		MOUNT COTTON	QLD	4165	
Mrs	Kelly	Driussi	115 Gramzow Road		MOUNT COTTON	QLD	4165	
Mr	Graeme	Duckham	19 Cochrane Street		ALEXANDRA HILLS	QLD	4161	
Mr	Steve	Duffin	11 Cypress Drive		ASHGROVE	QLD	4060	
Mrs	Cynthia	Duffy	Unit 57 SDA Village	571 Cleveland Road	VICTORIA POINT	QLD	4165	
Mr	Roger	Duffy	Unit 57 SDA Village	571 Cleveland Road	VICTORIA POINT	QLD	4165	
Mr	Lyndsay	Duncan	16 Victoria Parade		COOCHIEMUDLO ISLAND	QLD	4184	
Ms	Sarah	Duncan	22 Lewina Street		DAISY HILL	QLD	4127	
Mrs	Patricia	Durnin	40 Raby Esplanade		ORMISTON	QLD	4160	
Ms	M	Durrant	5 Bollard Court		CLEVELAND	QLD	4163	
Mr	P	Durrant	5 Bollard Court		CLEVELAND	QLD	4163	
Mr	Ronald	Dyball	118-120 Winston Road		SHELDON	QLD	4157	
Mrs	Vera	Dyball	118-120 Winston Road		SHELDON	QLD	4157	
Mr	Darryn	Easterbrook	847-851 West Mount Cotton Road		MOUNT COTTON	QLD	4165	
Mrs	Leonie	Easterbrook	847-851 West Mount Cotton Road		SHELDON	QLD	4157	
Miss	Samantha	Easterbrook	847-851 West Mount Cotton Road		SHELDON	QLD	4157	
Mr	Steven	Edgar	7 Frances Street		VICTORIA POINT	QLD	4165	
Mr	B	Edgerton	33 Lakeside Drive		CARBROOK	QLD	4130	
Mr	Kevin	Edridge	6 Cassia Court		CAPALABA	QLD	4157	
Mrs	Barbara	Edwards	13 Charles Street		BIRKDALE	QLD	4159	
Mr	Peter	Edwards	13 Charles Street		BIRKDALE	QLD	4159	
Mrs	Shirley	Edwards	85 Crotona Road		CAPALABA	QLD	4157	
Ms	Lorraine	Eggers	5 Silvergum Street		CORNUBIA	QLD	4130	
Mr	Nils	Eggers	5 Silvergum Street		CORNUBIA	QLD	4130	

Names and Addresses of Principal Submitters to the Development Application								
Mr	Robert	Eggleton	2 Bluebird Court		THORNLANDS	QLD	4164	
Mr	Craig	Einam	89 Settlers Circuit		MOUNT COTTON	QLD	4165	
Mrs	Kathren	Einam	89 Settlers Circuit		MOUNT COTTON	QLD	4165	
Miss	Bronwyn	Elliott	PO Box 2083		WELLINGTON POINT	QLD	4160	
Ms	Colleen	Emery	2 Athlone Close		UNDERWOOD	QLD	4119	
Mr	Craig	Emery	2 Athlone Close		UNDERWOOD	QLD	4119	
Mr	Mark	Emery	10 Attey Street		MANLY WEST	QLD	4179	
Mrs	Colleen	Enright	4 Sarsenet Circuit		MOUNT COTTON	QLD	4165	
Mr	G	Enright	15 Ogilvy Court		CORNUBIA	QLD	4130	
Mrs	H	Enright	15 Ogilvy Court		CORNUBIA	QLD	4130	
Mr	Rolf	Eriksson	31 Mindarie Crescent		WELLINGTON POINT	QLD	4160	
Ms	Nyomie	Essa	98 Settlers Court		MOUNT COTTON	QLD	4165	
Mr	Adin	Essa						adin.essa@y7mail.com
Mr	Azizadin	Essa	98 Settlers Circuit		MOUNT COTTON	QLD	4165	
Mrs	Pearl	Essa	98 Settlers Circuit		MOUNT COTTON	QLD	4165	
Mr	Charles	Euston	24 Durian Street		MOUNT COTTON	QLD	4165	
Ms	Belinda	Eva	13 Verdelho Street		THORNLANDS	QLD	4164	
Mrs	Jan	Eva	34 Sylvie Street		THORNLANDS	QLD	4164	
Mr	Terence	Eva	34 Sylvie Street		THORNLANDS	QLD	4164	
Mr	John	Evans	112 Fitzroy Street		CLEVELAND	QLD	4163	
Ms	Kathy	Faldt	48-52 Koolena Road		NORTH MACLEAN	QLD	4280	
Mr	Allan	Farman	26 Kunde Street		CORNUBIA	QLD	4130	
Ms	Angelia	Feige	3 Begonia Crescent		MOUNT COTTON	QLD	4165	
Mrs	Colette	Ferguson	60 Taffeta Drive		MOUNT COTTON	QLD	4165	
Mr	Ross	Ferguson	4 Excalibur Road		CORNUBIA	QLD	4130	
Mr	Ervin	Ferris	7 Lees Court		VICTORIA POINT	QLD	4165	
Ms	Valmae	Ferris	7 Lees Court		VICTORIA POINT	QLD	4165	
Ms	Laura	Fitzgerald	6 Sheoak Court		MOUNT COTTON	QLD	4165	
Ms	Nina	Fitzgerald	100 Bayside Drive		BEACHMERE	QLD	4510	
Mr	Ronald	Fletcher	16 Sunrise Street		MOUNT COTTON	QLD	4165	
Mrs	Shirley	Fletcher	7 Anne Street		ALEXANDRA HILLS	QLD	4161	
Mrs	Angela	Foote	497 West Mount Cotton Road		MOUNT COTTON	QLD	4165	
Ms	Dorothy	Foote	497 West Mount Cotton Road		MOUNT COTTON	QLD	4165	

Names and Addresses of Principal Submitters to the Development Application								
Mr	Jayden	Foote	497 West Mount Cotton Road		MOUNT COTTON	QLD	4165	
Mr	Michael	Foote	497 West Mount Cotton Road		MOUNT COTTON	QLD	4165	
Ms	Betty	Foran	390 Woodlands Drive		THOR	QLD	4164	
Mr	James	Foran	390 Woodlands Drive		THORNLANDS	QLD	4164	
Ms	Pamela	Foran	390 Woodlands Drive		THORNLANDS	QLD	4164	
Ms	Patricia	Foran	390 Woodlands Drive		THORNLANDS	QLD	4164	
Ms	Christine	Ford	2/9 Point Cartwright Drive		BUDDINA	QLD	4575	
Ms	Shiralee	Ford	74 Cooberrie Street		CORNUBIA	QLD	4130	
Miss	Kim	Forde	104 Green Forest Road		KURANDA	QLD	4881	
Mr	Peter	Forrest	PO Box 190		PADDINGTON	QLD	4064	
Ms	Annika	Forsberg	131 Gramzow Road		CORNUBIA	QLD	4130	
Mr	Benjamin	Forsberg	15 Algona Street		ROCHEDALE SOUTH	QLD	4123	
Ms	Jenna	Forsberg	12 Sunata Street		SHAILER PARK	QLD	4128	
Mr	Leif	Forsberg	131 Gramzow Road		CORNUBIA	QLD	4130	
Mrs	Marjolein	Forsberg	131 Gramzow Road		CORNUBIA	QLD	4130	
Mr	Edward	Foster	37-39 Hillcrest Road		SHELDON	QLD	4157	
Mr/Ms	Vamra	Framey	32 Albert Street		ORMISTON	QLD	4160	
Ms	Anita	Fraser	43 Beckwith Street		ORMISTON	QLD	4160	
Ms	Laurel	Frawley	405 Bellthorpe West Road		BELLTHORPE	QLD	4514	
Mrs	Cheryl	Frazer	1 Yarran Street		VICTORIA POINT	QLD	4165	
Miss	Carlie	Freeman	29 West Coorang Road		CORNUBIA	QLD	4130	
Miss	Katelyn	Freeman	29 West Coorang Road		CORNUBIA	QLD	4130	
Mrs	Lorelene	Freeman	5 Staghorn Court		MOUNT COTTON	QLD	4165	
Mr	Charlie	Freeman	29 West Coorang Road		CORNUBIA	QLD	4130	
Mr	Mal	Freeman	29 West Coorang Road		CORNUBIA	QLD	4130	
Mr	Alfred	Fronis	158 Gramzow Road		CORNUBIA	QLD	4130	
Mr	Jason	Fung	35 Price Street		OXLEY	QLD	4075	
Ms	Kathy	Fyfe	34 Ashfield Street		EAST BRISBANE	QLD	4169	
Ms	Megan	Gaeta	6 Allambee Crescent		CAPALABA	QLD	4157	
Ms	June	Galea	28 Caravel Court		CLEVELAND	QLD	4163	
Mrs	Genevieve	Gall	9 Peacock Court		BIRKDALE	QLD	4159	
Mr	James	Gall	9 Peacock Court		BIRKDALE	QLD	4159	
Ms	Bridget	Gallagher	201 Russell Street		CLEVELAND	QLD	4159	

Names and Addresses of Principal Submitters to the Development Application								
Mr	Christopher	Gallagher	201 Russell Street		CLEVELAND	QLD	4163	
Mr	G	Ganzer	118 Wuduru Road		CORNUBIA	QLD	4130	
Ms	Y	Ganzer	118 Wuduru Road		CORNUBIA	QLD	4130	
Mr	Iain	Gardiner	1 Western Road		MACLEAY ISLAND	QLD	4184	
Miss	Elaine	Gardner	19 Bromley Street		CORNUBIA	QLD	4130	
Mr	Russell	Gardner	511 West Mount Cotton Road		MOUNT COTTON	QLD	4165	
Ms	Catherine	Garner	27 Sankey Street		HIGHGATE HILL	QLD	4101	
Mrs	Raeleen	Garner	41 Demigre Street		EIGHT MILE PLAINS	QLD	4113	
Mrs	Giovanna	Gibson	95 Hillview Road		MOUNT COTTON	QLD	4165	
Mr	Joga	Gill	131 West Mount Cotton Road		CORNUBIA	QLD	4130	
Mrs	Kulwinder	Gill	131 West Mount Cotton Road		CORNUBIA	QLD	4130	
Mr	Patrick	Gillett	14 Palm Drive		MOOLOOLABA	QLD	4557	
Ms	Amy	Glade	18 Sutphin Street		CAPALABA	QLD	4157	
Mrs	Leanne	Gleeson	26 Grevillea Street		ORMISTON	QLD	4160	
Ms	Susan	Gobbart	3 Woking Street		MITCHELTON	QLD	4053	
Mr	S	Goding	12 Jacklin Court		PARKWOOD	QLD	4214	
Mrs	Irene	Golby	86/571 Redland Bay Road		VICTORIA POINT	QLD	4165	
Ms	Katrina	Goldsworthy	100 Carbrook Road		CORNUBIA	QLD	4130	
Mr	Ralph	Goldsworthy	100 Carbrook Road		CORNUBIA	QLD	4130	
Mr	Kevin	Gollschewski	267 Bloomfield Street		CLEVELAND	QLD	4163	
Ms	Salina	Goodall	35 Drevesen Avenue		CLEVELAND	QLD	4163	
Mrs	Suzanne	Gorman	23 Manor Drive		WELLINGTON POINT	QLD	4160	
Mr	Perry	Gorsvenor	19 Illidge Road		VICTORIA POINT	QLD	4165	
Mr	Andrew	Gorton	25-29 Sugarglider Court		MOUNT COTTON	QLD	4165	
Ms	Christine	Gould	92 Sycamore Parade		VICTORIA POINT	QLD	4165	
Ms	Charmaine	Govey	3 Dell Street		CLEVELAND	QLD	4163	
Ms	Jen	Gow	3 Rosemary Lane		MOGGILL	QLD	4070	
Ms	Wanda	Grabowski	PO Box 3290		WARNER	QLD	4500	
Ms	Wanda	Grabowski	PO Box 1271		BURPENGARY	QLD	4505	
Mr	Alan	Grant	91 Trevallyan Drive		DAISY HILL	QLD	4127	
Mr	Allan	Grant	9 Vintners Court		MOUNT COTTON	QLD	4165	
Mrs	Beverley	Grant	6 Cassia Court		CAPALABA	QLD	4157	
Mr	Robert	Grant	6 Cassia Court		CAPALABA	QLD	4157	

Names and Addresses of Principal Submitters to the Development Application								
Mrs	Sonia	Grant	9 Vintners Court		MOUNT COTTON	QLD	4165	
Miss	Justine	Graves	12 Calara Street		CORNUBIA	QLD	4130	
Mr	Tony	Graves	12 Calara Street		CORNUBIA	QLD	4130	
Mr		Gray	PO Box 1460		SPRINGWOOD	QLD	4127	
Mr	Michael	Gray	13/201 Middle Street		CLEVELAND	QLD	4163	
Mrs	P G	Gredig	87/571 Redland Bay Road		VICTORIA POINT	QLD	4165	
Mr	Wayne	Gredig	5 Woodlands Drive		THORNLANDS	QLD	4164	
Mr	Justin	Green	1655 Mount Cotton Road		MOUNT COTTON	QLD	4165	
Mrs	Lenore	Green	15 Dart Street		REDLAND BAY	QLD	4165	
Ms	Linda	Green	1655 Mount Cotton Road		MOUNT COTTON	QLD	4165	
Mr	Robert	Green	79 Settlers Circuit		MOUNT COTTON	QLD	4165	
Mrs	P	Gregor	2/42 South Street		THORNLANDS	QLD	4164	
Mr	Colin	Gregory	12 Jonquil Court		MOUNT COTTON	QLD	4165	
Ms	Patricia	Gregory	48 Main Arm Road		MULLUMBIMBY	NSW	2482	
Mrs	Susan	Gregory	12 Jonquil Court		MOUNT COTTON	QLD	4165	
Mr	Ferid	Grgic	13 Jan Street		MACLEAY ISLAND	QLD	4184	
Miss	M	Grimmond	12 Timbertop Court		CAPALABA	QLD	4157	
Mr/s	S	Grist	Mary Street		BIRKDALE	QLD	4159	
Mr	Jason	Grosvenor	19 Illidge Road		VICTORIA POINT	QLD	4165	
Mrs	Junita	Grosvenor	19 Illidge Road		VICTORIA POINT	QLD	4165	
Ms	Madison	Grosvenor	19 Illidge Road		VICTORIA POINT	QLD	4165	
Miss	Maria	Grosvenor	19 Illidge Road		VICTORIA POINT	QLD	4165	
Mr	David	Guillau	Treeside Place	1/12 Valley Road	WELLINGTON POINT	QLD	4160	
Ms	Kelly	Gurski	3432a Mt Mee Road		KING SCRUB	QLD	4521	
Mr	Colin	Guy	1707-1717 Mount Cotton Road		MOUNT COTTON	QLD	4165	
Mr	David	Guy	1707 Mount Cotton Road		MOUNT COTTON	QLD	4165	
Mrs	Suzanne	Guy	1707 Mount Cotton Road		MOUNT COTTON	QLD	4165	
Ms	Susan	Gylee	Island Park Gardens	68/29 Island Street	CLEVELAND	QLD	4163	
Miss	Sarah	Haberecht	42 Melville Street		HAWTHORN	VIC	3122	
Ms	Suzette	Haddin	PO Box 3034		VICTORIA POINT	QLD	4165	
Mrs	Ingrid	Hadinek	128 Morris Circuit		THORNLANDS	QLD	4164	
Mr	Ken	Hainstock	247 West Mt Cotton Road		CORNUBIA	QLD	4130	
Mrs	Patricia	Hainstock	247 West Mt Cotton Road		CORNUBIA	QLD	4130	

Names and Addresses of Principal Submitters to the Development Application								
Mrs	Carmel	Hall	1723 Mount Cotton Road		MOUNT COTTON	QLD	4165	
Mr	Ian	Hall	1723 Mount Cotton Road		MOUNT COTTON	QLD	4165	
Mrs	Leonie	Hall	26 Amelia Place		CLEVELAND	QLD	4163	
Mr	Nick	Hall	26 Amelia Place		CLEVELAND	QLD	4163	
Mr	Arthur	Halls	2 Flindersia Drive		MOUNT COTTON	QLD	4165	
Mrs	Tracey	Halpin	PO Box 5565		ALEXANDRA HILLS	QLD	4161	
Mr	Robert	Hambling	19 Bromley Street		CORNUBIA	QLD	4130	
Mr	Nicholas	Hambling	19 Bromley Street		CORNUBIA	QLD	4130	
Mrs	Norma	Hambling	19 Bromley Street		CORNUBIA	QLD	4130	
Mr	Lyndsey	Hamilton	16 Zeal Street		NEW GISBORNE	VIC	3438	
Ms	S	Hamilton	55 Morden Road		SUNNYBANK HILLS	QLD	4109	
Mr	John	Hammond	147 Henderson Road		SHELDON	QLD	4157	
Ms	Judith	Hanlon	60 Sanctuary Drive		MOUNT COTTON	QLD	4165	
Mr	David	Hanna	148 Gramzow Road		CORNUBIA	QLD	4130	
Mrs	Geraldine	Hanney	10 Jute Court		CAPALABA	QLD	4157	
Ms	Beth	Hansen	3 Monique Court		MACKAY	QLD	4740	
Mr	Dale	Hansen	3 Sheoak Court		MOUNT COTTON	QLD	4165	
Ms	Susan	Hardcastle	9 Bee Street		ORMISTON	QLD	4160	
Ms	Christine	Harding	12 Longden Street		COOPERS PLAINS	QLD	4108	
Mr	William	Harding	18 Petunia Crescent		MOUNT COTTON	QLD	4165	
Mr	James	Hardy	30 Thorne Road		BIRKDALE	QLD	4159	
Mr	David	Hardy	14 Kinross Road		THORNLANDS	QLD	4164	
Mrs	Margaret	Hardy	30 Thorne Road		BIRKDALE	QLD	4159	
Mr	Matthew	Hardy	53 Bluebell Street		ALEXANDRA HILLS	QLD	4161	
Ms	Rachael	Hardy	7 Carol Street		REDLAND BAY	QLD	4165	
Ms	Toni-Lea	Hardy	14 Kinross Road		THORNLANDS	QLD	4164	
Mrs	Deirdre	Hargreaves	15 Beckwith Street		ORMISTON	QLD	4160	
Mr	Kenneth	Harkness	38 Pinelands Circuit		REDLAND BAY	QLD	4165	
Ms	Kerry	Harley	42 Kiwi Street		SHELDON	QLD	4157	
Mrs	Kerry	Harley	7 Brookvale Place		BRACKEN RIDGE	QLD	4017	
Mr	Gregory	Harold	377 Schoeck Road		SHELDON	QLD	4157	
Mrs	Alison	Harris	30 Beckwith Street		ORMISTON	QLD	4160	
Mr	Gordon	Harris	11 Explorers Way		MOUNT COTTON	QLD	4165	

Names and Addresses of Principal Submitters to the Development Application								
Mrs	Lesley	Harris	46 Penzance Drive		REDLAND BAY	QLD	4165	
Mr	Norm	Harris	64 Lemke Road		TAIGUM	QLD	4018	
Mr	J	Harrison	651 Oxley Avenue		REDCLIFFE	QLD	4020	
Ms	Louise	Harrison	219 Middle Street		CLEVELAND	QLD	4163	
Mr/Ms	P	Harrison	132-146 Mount View Road		MOUNT COTTON	QLD	4165	
Ms	Michele	Harrod	PO Box 41524	St Lukes	AUCKLAND	NZ	1346	micheleharrod@clear.net.nz
Mr	G	Harry	10 Jute Court		CAPALABA	QLD	4157	
Ms	Cheryl	Hart	PO Box 8142		CLEVELAND	QLD	4163	
Mr	James	Hart	35-39 Daintree Street		CORNUBIA	QLD	4130	
Mr	Darren	Hartell	4/8 Klingner Road		REDCLIFFE	QLD	4020	
Mrs	Margaret	Harten	62 Taylor Road		THORNLANDS	QLD	4164	
Mr	Darren	Hartley	7 Brookvale Place		BRACKEN RIDGE	QLD	4017	
Mr	David	Harvest	1641 Mount Cotton Road		MOUNT COTTON	QLD	4165	
Mrs	Rosemary	Harvest	1641 Mount Cotton Road		MOUNT COTTON	QLD	4165	
Mr	Neville	Harvey	191 Avalon Road		SHELDON	QLD	4157	
Mrs	Monika	Hatch	9 Olympus Drive		CLEVELAND	QLD	4163	
Ms	Ellie	Hatfull	9 Ocean Street		CLEVELAND	QLD	4163	
Mrs	Julie-Ann	Hatherall	20 Pimelea Crescent		MOUNT COTTON	QLD	4165	
Mr	Eric	Hay	48 Illidge Road		VICTORIA POINT	QLD	4165	
Mrs	Michele	Hay	2 Mayfair Street		ALEXANDRA HILLS	QLD	4161	
Mrs	Susan	Hay	48 Illidge Road		VICTORIA POINT	QLD	4165	
Ms	Kathleen	Haydon	12 George Street		COOCHIEMUDLO ISLAND	QLD	4184	
Mrs	Jennifer	Hayes	2/45 Eyles Avenue		MURWILLUMBAH	NSW	2484	
Mr	Richard	Haynes	1 Bouquet Street		MOUNT COTTON	QLD	4165	
Mr	Alan	Hazel	22 Firtree Street		CAPALABA	QLD	4157	
Mrs	Brenda	Hazel	22 Firtree Street		CAPALABA	QLD	4157	
Miss	Carolyn	Hazel	22 Firtree Street		CAPALABA	QLD	4157	
Mr	Paul	Hazel	22 Firtree Street		CAPALABA	QLD	4157	
Mr	Stephen	Hazel	22 Firtree Street		CAPALABA	QLD	4157	
Mrs	Janine	Healy	PO Box 2330		WELLINGTON POINT	QLD	4160	
Mr	Gerard	Heffernan	46 Pinelands Circuit		REDLAND BAY	QLD	4165	
Mrs	Marianne	Hein	4/164 Wellington Street		ORMISTON	QLD	4160	
Mrs	C	Heiner	27-33 Woodhaven Place		CORNUBIA	QLD	4130	

Names and Addresses of Principal Submitters to the Development Application								
Mr	Craig	Hemple	14 Sassafras Street		THE GAP	QLD	4061	
Mrs	Marian	Henbery	12/46A Russell Street		CLEVELAND	QLD	4163	
Ms	Karen	Hendry	15-17 Brushbox Court		MOUNT COTTON	QLD	4165	
Mrs	Sonia	Hendry	PO Box 1645		CLEVELAND	QLD	4163	
Ms	Sharon	Hendy-Moman	7 Windsong Circuit		CLEVELAND	QLD	4163	
Ms	Michi	Henning	150 Sapphire Street		HOLLAND PARK	QLD	4121	
Ms	Debra	Henry	12 Sunview Street		THORNLANDS	QLD	4164	
Mr	Gordon	Herford	15 Corsair Crescent		SUNRISE BEACH	QLD	4567	
Mr	Paul	Hetherington	165 Sanctuary Drive		MOUNT COTTON	QLD	4165	
Mr	Brad	Higgens	Princess Lodge	2/141 Princess Street	CLEVELAND	QLD	4163	
Mr	Benjamin	Hilditch	73 Settlers Circuit		MOUNT COTTON	QLD	4165	
Mr	Jordi	Hill	48 Cavendish Street		RUSSELL ISLAND	QLD	4184	
Ms	Trudy	Hinds	60 West Coorang Road		CORNUBIA	QLD	4130	
Mr and Mrs	Lincoln and Wendy	Hodges	25 Sunrise Street		MOUNT COTTON	QLD	4165	
Mrs	Hannah	Hoffman	11 Citrus Circuit		MOUNT COTTON	QLD	4165	
Mr	Michel	Hoffman	11 Citrus Circuit		MOUNT COTTON	QLD	4165	
Ms	Amy	Hoge	2/1508 Wynnum Road		TINGALPA	QLD	4173	
Mrs	Celestina	Hogerheyde	87 Dart Street		REDLAND BAY	QLD	4165	
Mrs	Elizabeth	Hogerheyde	220 Fitzroy Street		CLEVELAND	QLD	4163	
Mrs	Candice	Holden	19 Spotted Gum Crescent		MOUNT COTTON	QLD	4165	
Mrs	Sarah	Holmes	243 Panorama Drive		THORNLANDS	QLD	4164	
Ms	Jill	Hong	PO Box 2022		NEW FARM	QLD	4005	
Mr	Soren	Hook	53 Vineyard Drive		MOUNT COTTON	QLD	4165	
Ms	Jean	Hope	63 Cane Street		REDLAND BAY	QLD	4165	
Mr	G R	Houstoun	62/571 Redland Bay Road		VICTORIA POINT	QLD	4165	
Mr	Simon	Houstoun	2/13 Cavendish Street		PIMLICO	QLD	4812	
Mrs	Diane	Howard	18 Hibiscus Drive		MOUNT COTTON	QLD	4165	
Mrs	Colleen	Hubbert	10 Runnymeade Road		CAPALABA	QLD	4157	
Mr	Peter	Hubbert	10 Runnymeade Road		CAPALABA	QLD	4157	
Ms	Gillian	Hudson	43 Alpinia Street		ALEXANDRA HILLS	QLD	4161	
Mr	Clayton	Hughes	3 Laurel Court		MOUNT COTTON	QLD	4165	
Miss	Laura	Hughes	24 Farnham Street		WELLINGTON POINT	QLD	4160	
Ms	Lynne	Hughes	24 Farnham Street		WELLINGTON POINT	QLD	4160	

Names and Addresses of Principal Submitters to the Development Application								
Mr	Brian	Hunt	241/2 Falcon Way		TWEED HEADS SOUTH	NSW	2486	
Mr	Brian	Hunter	15 Seeana Drive		MOUNT COTTON	QLD	4165	
Ms	Donna	Hunter	2/48 Grays Road		GAYTHORNE	QLD	4051	
Mrs	Fay	Hunter	15 Seeana Drive		MOUNT COTTON	QLD	4165	
Ms	Jeni	Hunter	72 Mount View Road		MOUNT COTTON	QLD	4165	
Mrs	Samantha	Hunter	2 Teal Close		REDLAND BAY	QLD	4165	
Mrs	Katharine	Hutch	101 Plaintain Road		SHAILER PARK	QLD	4128	
Mrs	Susan	Iddon	69 Settlers Circuit		MOUNT COTTON	QLD	4165	
Mrs	Jeanette	Ingold	37 Orchid Drive		MOUNT COTTON	QLD	4165	
Ms	Lauren	Ingold	37 Orchid Drive		MOUNT COTTON	QLD	4165	
Mrs	Leanne	Irwin	97 Sanctuary Drive		MOUNT COTTON	QLD	4165	
Ms	Judith	Ivey	44 The Esplanade		SURFERS PARADISE	QLD	4217	
Mr	Barry	Jackson	37 Timaru Road		TERREY HILLS	NSW	2084	
Mr	David	Jackson	23 Silkwood Street		CAPALABA	QLD	4157	
Mrs	Lynne	Jackson	23 Silkwood Street		CAPALABA	QLD	4157	
Mrs	Vanessa	Jackson	59 Frampton Street		ALEXANDRA HILLS	QLD	4161	
Ms	Lynne	Jago	7 Baypark Court		CLEVELAND	QLD	4163	
Ms	Anne	Jameieson	13 Ross Street		COOCHIEMUDLO ISLAND	QLD	4184	
Mrs	Susan	James	10 Vintneres Court		MOUNT COTTON	QLD	4165	
Ms	Jennifer	Jay	92 Helicia Court		MOUNT COTTON	QLD	4165	
Mr	David	Jenkins	26 Coach Way		UPPER COOMERA	QLD	4209	
Mrs	Stella	Jenkins	26 Coach Way		UPPER COOMERA	QLD	4209	
Mr	Daljit	Johal	15 Jarrod Street		CORNUBIA	QLD	4130	
Mr	Mitchell	Johanson	43 Blackbutt Street		CORNUBIA	QLD	4130	
Ms	Irene	Johns	1525 Mount Cotton Road		MOUNT COTTON	QLD	4165	
Mr	F	Johns	1525 Mount Cotton Road		MOUNT COTTON	QLD	4165	
Mr	Jeffrey	Johnston	65 Sunnydale Street		UPPER MT GRAVATT	QLD	4122	
Mrs	Joanne	Johnston	8 Begonia Crescent		MOUNT COTTON	QLD	4165	
Mr	Paul	Johnston	8 Begonia Crescent		MOUNT COTTON	QLD	4165	
Mr	Aaron	Johnstone	Suite 2, Level 2	485 Ipswich Road	ANNERLEY	QLD	4103	
Mrs	Beryl	Jones	53 Cudgee Street		REDBANK PLAINS	QLD	4301	
Mr/Ms	E	Jones	242 Avalon Road		SHELDON	QLD	4157	
Mr	G T	Jones	53 Cudgee Street		REDBANK PLAINS	QLD	4301	

Names and Addresses of Principal Submitters to the Development Application								
Ms	Julia	Jones	7 Edinburgh Drive		BETHANIA	QLD	4205	
Ms	Victoria	Jones	128 Oxlade Drive		NEW FARM	QLD	4005	
Mrs	Penny	Joseph	2 Jasmine Court		VICTORIA POINT	QLD	4165	
Mrs	Sandy	Joseph	Central at Capalaba	15/49-51 Mount Cotton Road	CAPALABA	QLD	4157	
Mr	F	Joughin	104/31 Kruger Parade		REDBANK	QLD	4301	
Mr	Pat	Joughin	104-31 Kruger Parade		REDBANK	QLD	4301	
Mrs	Elizabeth	Jowes	242 Avalon Road		SHELDON	QLD	4157	
Mrs	Kaarina	Katlio	68/571 Redland Bay Road		VICTORIA POINT	QLD	4165	
Mr	Michael	Kane	51 Collingwood Street		MILTON	QLD	4064	
Ms	Celia	Karp	54 Kunde Street		LOGANHOLME	QLD	4129	
Ms	Deborah	Kellie	50-78 Fabian Road		CORNUBIA	QLD	4130	
Mr	P	Kellner-Read	12 Outlook Parade		ORMISTON	QLD	4160	
Mrs	Trudy	Kelly	30 Carissa Street		MOUNT COTTON	QLD	4165	
Mr	John	Kellythorn	32 Chevllon Crescent		ORMEAU	QLD	4208	
Mrs	Barbara	Kemp	20 Avalon Road		SHELDON	QLD	4157	
Mr	Nevil	Kemp	20 Avalon Road		SHELDON	QLD	4157	
Miss	Callula	Kennedy	33 Shanahan Street		REDLAND BAY	QLD	4165	
Mrs	Dimity	Kennedy	PO Box 5460		ALEXANDRA HILLS	QLD	4161	
Ms	Elise	Kennedy	33 Shanahan Street		REDLAND BAY	QLD	4165	
Ms	V L	Kennedy	PO Box 3471		LOGANHOLME	QLD	4129	
Mr and Mrs	David and Melissa	Kennedy	6 Pony Place		CORNUBIA	QLD	4130	
Mr	Ben	Keogh	2/14 Sankey Street		HIGHGATE HILL	QLD	4101	
Mr	David	Keogh	105 Wudurri Road		CORNUBIA	QLD	4130	
Mr	Ian	Kerr	21 Varsity Walk		BUNDOORA	VIC	3083	
Ms	Kerrin	Kerslake	22 Thorne Road		BIRKDALE	QLD	4159	
Ms	Chloe	Kerswell	47 Duncan Street		WELLINGTON POINT	QLD	4160	
Mr	Drew	Kerswell	47 Duncan Street		WELLINGTON POINT	QLD	4160	
Ms	Elise	Kerswell	47 Duncan Street		WELLINGTON POINT	QLD	4160	
Mrs	Janet	Kerswell	47 Duncan Street		WELLINGTON POINT	QLD	4160	
Mrs	Robyn	Kesur	10 Benjamin Court		CLEVELAND	QLD	4163	
Ms	Brook	Keune	57 Boswell Terrace		WYNNUM	QLD	4178	
Ms	Monica	Keys	190 High Central Road		MACLEAY ISLAND	QLD	4184	
Mr	Stuart	Kiff	12 Fogarty Street		CLEVELAND	QLD	4163	

Names and Addresses of Principal Submitters to the Development Application								
Ms	Jacqueline	Killgour	1 Western Road		MACLEAY ISLAND	QLD	4184	
Mr	Ron	Kilpatrick	6 Tulip Street		DAISY HILL	QLD	4127	
Ms	Alison	King	6-8 Meera Street		CORNUBIA	QLD	4130	
Ms	Ashleigh	King	399 West Mount Cotton Road		MOUNT COTTON	QLD	4165	
Mrs	Lauren	King	399 West Mount Cotton Road		MOUNT COTTON	QLD	4165	
Mr and Mrs	Paul and Anne-Maree	King	399 West Mount Cotton Road		MOUNT COTTON	QLD	4165	
Ms	Yvette	King	237-64 Gilston Road		NERANG	QLD	4211	
Mr	Oliver	Kirby	60 West Coorang Road		CORNUBIA	QLD	4130	
Mr	Michael	Kissane	7 Parsonia Court		MOUNT COTTON	QLD	4165	
Mr	Graham	Klaassen	50-78 Fabian Road		CORNUBIA	QLD	4130	
Mr	George	Klich	63 Campbell Road		SHELDON	QLD	4157	
Mr	Richard	Knevitt	202 Sharton Avenue		BUCCANEER	QLD	4207	
Ms	Frances	Knight	26 Saturn Street		CAPALABA	QLD	4157	
Mr	Oliver	Knox	27 Rhodes Street		MACLEAY ISLAND	QLD	4184	
Mr	Peter	Kozina	11 Beenwerrin Crescent		CAPALABA	QLD	4157	
Mr	Kevin	Kropf	43 Illya Street		MACLEAY ISLAND	QLD	4184	
Mrs	Wendy	Kropf	43 Illya Street		MACLEAY ISLAND	QLD	4184	
Ms	Karen	Kruik	58 Bayes Road		LOGAN RESERVE	QLD	4133	
Ms	Rhonda	Kruik	169 West Mount Cotton Road		CORNUBIA	QLD	4130	
Mr	Sol	Kudrycz	66/571 Redland Bay Road		VICTORIA POINT	QLD	4165	
Mr	Dennis	Lack	33 James Street		COOCHIEMUDLO ISLAND	QLD	4184	
Ms	Margrit	Lack	33 James Street		COOCHIEMUDLO ISLAND	QLD	4184	
Miss	Carla	Lane	45 Warner Street		WELLINGTON POINT	QLD	4160	
Mrs	Barbara	Lang	28 Settlers Circuit		MOUNT COTTON	QLD	4165	
Mr	Brett	Lang	28 Settlers Circuit		MOUNT COTTON	QLD	4165	
Ms	Madison	Lang	28 Settlers Circuit		MOUNT COTTON	QLD	4165	
Mrs	Denize	Lastotchkine-Pelsky	80-90 Mount View Road		MOUNT COTTON	QLD	4165	
Mr	Brendan	Law	116 Gramzow Road		CORNUBIA	QLD	4130	
Mr	Dale	Law	116 Gramzow Road		CORNUBIA	QLD	4130	
Mr	Rod	Law	116 Gramzow Road		CORNUBIA	QLD	4130	
Ms	Shani	Law	116 Gramzow Road		CORNUBIA	QLD	4130	
Ms	Tara	Law	7 Burgallby Road		SPRINGWOOD	QLD	4127	
Mrs	Tara	Law	116 Gramzow Road		CORNUBIA	QLD	4130	tara.law@bigpond.com

Names and Addresses of Principal Submitters to the Development Application								
Mr	Alan	Lawrence	49 Carl Heck Boulevard		WINDAROO	QLD	4207	
Ms	Sue	Le Cheminant	35 Coral Street		ALSTONVILLE	NSW	2477	
Mr	Vladimere	Lebl	6 Laurel Court		MOUNT COTTON	QLD	4165	
Miss	Deborah	Lee	22 Firtree Street		CAPALABA	QLD	4157	
Ms	Jessie	Lee	3 Raife Close		WELLINGTON POINT	QLD	4160	
Ms	Rohan	Lee	3 Raife Close		WELLINGTON POINT	QLD	4160	
Mr	S	Lees	28 Sambit Street		TANAH MERAH	QLD	4128	
Mr	Glenn	Leiper	30 Tweedvale Street		BEENLEIGH	QLD	4207	
Ms	Kim	Leneham	39 Moloney Road		WATERFORD WEST	QLD	4133	
Mrs	Jacqueline	Leraj	30/223 Middle Street		CLEVELAND	QLD	4163	
Mrs	Peggy	Leslie	21 Delancey Street		CLEVELAND	QLD	4163	
Ms	Nina	Lewis	5/13a Homer Street		CLEVELAND	QLD	4163	
Ms	Marita	Lister	5 Carino Close		THE GAP	QLD	4061	
Mrs	Alison	Lockley	32 Lanyon Terrace		MOIL	NT	0810	
Mr	Ian	Lockley	32 Lanyon Terrace		MOIL	NT	0810	
Mr	Raymond	Loff	9 Agnes Street		AUCHENFLOWER	QLD	4066	
Mr	Toni	Loff	9 Agnes Street		AUCHENFLOWER	QLD	4066	
Mr	Paul	Lonton	22 Scribbly Gum Place		MOUNT COTTON	QLD	4165	
Mrs	Susan	Lonton	22 Scribbly Gum Place		MOUNT COTTON	QLD	4165	
Mrs	Jodie	Louden	9 Citrus Circuit		MOUNT COTTON	QLD	4165	
Mr	Anthony	Lucas	128 Sanctuary Drive		MOUNT COTTON	QLD	4165	
Mrs	Yvonne	Lucas	128 Sanctuary Drive		MOUNT COTTON	QLD	4165	
Mrs	Gail	Ludlow	49 Sanctuary Drive		MOUNT COTTON	QLD	4165	
Mr	Michael	Ludlow	49 Sanctuary Drive		MOUNT COTTON	QLD	4165	
Mrs	Nora	Ludlow	PO Box 852		CLEVELAND	QLD	4163	
Ms	Phyllis	Ludlow	33/10-14 Esperance Court		CLEVELAND	QLD	4163	
Mr/Ms	A	Ludlow	33/10-14 Esperance Court		CLEVELAND	QLD	4163	
Mr	Stewart	Luke	PO Box 477		GLASSHOUSE MOUNTAINS	QLD	4518	
Mr	David	Lunt	19/83 Freeth Street West		ORMISTON	QLD	4160	
Ms	Candice	Lych	10 Bouquet Street		MOUNT COTTON	QLD	4165	
Mr	George	Lycho	37-39 Blackbutt Street		CORNUBIA	QLD	4130	
Mrs	Pamela	Macadie	8 Settlers Circuit		MOUNT COTTON	QLD	4165	
Mr	Dominique	Macealo	16 Carrieton Street		ORMEAU	QLD	4208	

Names and Addresses of Principal Submitters to the Development Application								
Mr	Iain	Macpherson	8 Riverdale Court		WARRNAMBOOL	VIC	3280	
Mrs	Jenny	Maeo	17 Albert Street		ORMISTON	QLD	4160	
Mr	Peter	Maguire	61 Summit Street		SHELDON	QLD	4157	
Mrs	Rhonda	Maguire	61 Summit Street		SHELDON	QLD	4157	
Ms	Petrina	Maizey	28 Osborne Court		BELIVAH	QLD	4207	
Mr	E	Makiol	137/571 Redland Bay Road		VICTORIA POINT	QLD	4165	
Mr	John	Male	11 William Parade		FAIRFIELD	QLD	4103	
Ms	Rebecca	Maloney	18 Village Drive		REDLAND BAY	QLD	4165	
Mr	Terry	Maloney	21 Begonia Crescent		MOUNT COTTON	QLD	4165	
Mr	Darkos	Manassakis	1 Battunga Street		WISHART	QLD	4122	
Mr	Cornelis	Marcus	83 Hanover Drive		ALEXANDRA HILLS	QLD	4161	
Mrs	Janet	Marcus	83 Hanover Drive		ALEXANDRA HILLS	QLD	4161	
Ms	Amanda	Markie	15 Crowther Street		WINDSOR	QLD	4030	
Mr	Alan	Marl	43 Emperor Drive		REDLAND BAY	QLD	4165	
Mrs	Norma	Marl	43 Emperor Drive		REDLAND BAY	QLD	4165	
Mr	Thomas	Marney	36 Cassandra Street		CHAPEL HILL	QLD	4069	
Ms	Louise	Martin-Chew	126 Winston Road		SHELDON	QLD	4157	
Miss	Silverio	Mascarenhas De Oliveiria	184-188 Spinebill Drive		GREENBANK	QLD	4124	
Mr	Frederick Albert	Masci	1921 Mount Cotton Road		CORNUBIA	QLD	4130	
Ms	Lina	Masci	1921 Mount Cotton Road		CORNUBIA	QLD	4130	
Mrs	Theresa	Maskey	10 Red Ash Court		MOUNT COTTON	QLD	4165	
Mrs	Joan	Mason	2/4 Catalina Drive		MUDJIMBA	QLD	4564	
Mr	Lee	Matheson	16 Birkdale Road		BIRKDALE	QLD	4159	
Ms	Terri-Lee	Matheson	16 Birkdale Road		BIRKDALE	QLD	4159	
Mr	Ian	Maxwell	18 Stevens Place		ORMISTON	QLD	4160	
Mrs	Maureen	Maxwell	18 Stevens Place		ORMISTON	QLD	4160	
Mr	Ricki	Maynard	11 Verna Street		SHAILER PARK	QLD	4128	
Mrs	Yvonne	Maynard	11 Verna Street		SHAILER PARK	QLD	4128	
Mr	Laurie	Mayne	114 Bryants Road		SHAILER PARK	QLD	4128	
Mrs	Gail	McCann	6 Scribbly Gum Place		MOUNT COTTON	QLD	4165	
Mr	Neal	McCann	6 Scribbly Gum Place		MOUNT COTTON	QLD	4165	
Mr	Ian	McClellan	7 Bromley Street		CORNUBIA	QLD	4130	
Mrs	Lyn	McClellan	7 Bromley Street		CORNUBIA	QLD	4130	

Names and Addresses of Principal Submitters to the Development Application								
Mrs	Jo-Ann	Mccrory	43 Hawky Road		WARWICK	QLD	4370	
Mr	Jim	McDonald	6 Ross Crescent		SUNSHINE BEACH	QLD	4567	
Mr	Barry	McDonnell	10 Trent Circuit		ALEXANDRA HILLS	QLD	4161	
Ms	Belinda	McDonnell	47 Daintree Road		CORNUBIA	QLD	4130	
Ms	Leiana	McFadden	27 Danger Street		BELMONT	QLD	4153	
Mrs	Fay	McGinley	17 Carole Street		CAPALABA	QLD	4157	
Mr	Alan	McGrory	43 Hankor Road		WARWICK	QLD	4370	
Ms	Hannah	McInnes	27 Wedgetail Court		MOUNT COTTON	QLD	4165	
Mr	Damien	McIntyre	58 Helicia Circuit		MOUNT COTTON	QLD	4165	
Mrs	Kim	McIntyre	58 Helicia Circuit		MOUNT COTTON	QLD	4165	
Mr	Mark	McIvor	2 Goodall Street		WELLINGTON POINT	QLD	4160	
Ms	Nikki	McKeon	38 Settlers Circuit		MOUNT COTTON	QLD	4165	
Miss	Annieka	McKeon	38 Settlers Circuit		MOUNT COTTON	QLD	4165	
Mrs	Robyn	McKeon	27 Settlers Circuit		MOUNT COTTON	QLD	4165	
Mr	Charles	McKeown	3 Hiltop Crescent		ALEXANDRA HILLS	QLD	4161	
Mrs	Lee	McKeown	3 Hiltop Crescent		ALEXANDRA HILLS	QLD	4161	
Mr	David	McKinlay	34 Mount View Road		MOUNT COTTON	QLD	4165	
Mrs	Denice	McKinlay	34 Mount View Road		MOUNT COTTON	QLD	4165	
Miss	Tenielle	McKinlay	34 Mount View Road		MOUNT COTTON	QLD	4165	
Mrs	Shirley	Mclaren	10 Alison Court		VICTORIA POINT	QLD	4165	
Mr	N	McLauchlan	39 Burssels Avenue		MORNINGSIDE	QLD	4170	
Mr	Kyle	McLean	51 Helicia Circuit		MOUNT COTTON	QLD	4165	
Mrs	Rebel	McLeod	19 Strahan Street		BELMONT	QLD	4153	
Ms	Miriam	McMahon	78 Sterculia Avenue		HOLLAND PARK WEST	QLD	4121	
Mr	Chris	McMaster	5/10 Guy Street		EMERALD	QLD	4720	
Mr	David	McMaster	28 Wedgetail Court		MOUNT COTTON	QLD	4165	
Ms	Erin	McMaster	28 Wedgetail Court		MOUNT COTTON	QLD	4165	
Mrs	Kerrie	McMaster	28 Wedgetail Court		MOUNT COTTON	QLD	4165	
Mrs	Robyn	McNally	107 Chermside Road		MANGO HILL	QLD	4059	
Mr	Steve	McNally	107 Chermside Road		MANGO HILL	QLD	4059	
Mrs	Ludmila	McNulty	35 Oakwood Street		CAPALABA	QLD	4157	
Ms	Diana	McPhee	3 Dumbarton Drive		KENMORE	QLD	4069	
Ms	Edith	McPhee	10 Royston Street		BROOKFIELD	QLD	4069	

Names and Addresses of Principal Submitters to the Development Application								
Mrs	Dianne	McPherson	59 Settlers Circuit		MOUNT COTTON	QLD	4165	
Mrs	K	McQuiston	121 Wuduru Road		CORNUBIA	QLD	4130	
Mr	L P	McQuiston	121 Wuduru Road		CORNUBIA	QLD	4130	
Mrs	Anne Maree	McRae	4 Orchid Drive		MOUNT COTTON	QLD	4165	
Mrs	Anne	McTernan	57 Winston Road		SHELDON	QLD	4157	
Mrs	Terrie	McVeigh	34 Greenup Street		CAPALABA	QLD	4157	
Mr	Barrie	Medland	70/571 Redland Bay Road		VICTORIA POINT	QLD	4165	
Mrs	June	Medland	70/571 Redland Bay Road		VICTORIA POINT	QLD	4165	
Mrs	Andrea	Melen	19 Jason Street		CLEVELAND	QLD	4163	
Mr	Erlin	Meliam	17 Greenwood Street		WISHART	QLD	4122	
Mrs	Sally	Mellick	5 Danielle Street		CLEVELAND	QLD	4163	
Ms	Sonia	Menso	1 Orr Court		EVERTON HILLS	QLD	4053	
Mr	M	Menzel	22 Acacia Street		THORNLANDS	QLD	4164	
Ms	Rachel	Merton	8 Angala Court		ALEXANDRA HILLS	QLD	4161	
Miss	Justine	Merzian	PO Box 79		WOY WOY	NSW	2256	
Mr	J	Meulendijks	59 Helicia Circuit		MOUNT COTTON	QLD	4165	
Ms	Cora-Michelle	Miles	131 Fitzroy Street		CLEVELAND	QLD	4163	
Mr	Gavin	Milloy	39 Woodhaven Place		CORNUBIA	QLD	4130	
Mrs	Kateena	Mills	612/8 Skyring Terrace		TENERIFFE	QLD	4005	
Mrs	Roslyn	Minnikin	24 Lychee Place		BELMONT	QLD	4153	
Ms	Kerenza	Misso	8 Jagera Place		MOUNT COTTON	QLD	4165	
Ms	Caroline	Mitchell	11 Malko Street		RUNCORN	QLD	4113	
Miss	Corina	Mole	57/14 Banning Street		WISHART	QLD	4122	
Mr	Henry	Mole	57/14 Banning Street		WISHART	QLD	4122	
Mrs	Michelle	Molloy	36 Edith Street		WELLINGTON POINT	QLD	4160	
Miss	Amelie	Moloney	451 West Mount Cotton Road		MOUNT COTTON	QLD	4165	
Mr	Anthony	Moloney	451 West Mount Cotton Road		MOUNT COTTON	QLD	4165	
Miss	Karelia	Moloney	451 West Mount Cotton Road		MOUNT COTTON	QLD	4165	
Miss	Natanya	Moloney	451 West Mount Cotton Road		MOUNT COTTON	QLD	4165	
Mrs	Robin	Monks	313 West Mount Cotton Road		CORNUBIA	QLD	4130	
Ms	Tanya	Moore	78 Hibiscus Drive		MOUNT COTTON	QLD	4165	
Mr	David	Moran	PO Box 8121		CLEVELAND	QLD	4163	
Ms	Linda	Moran	PO Box 8121		CLEVELAND	QLD	4163	

Names and Addresses of Principal Submitters to the Development Application								
Mr/Ms		Morassi	8 Wobur Street		CLEVELAND	QLD	4163	
Mrs	Albertje	Morassi	PO Box 3805		VICTORIA POINT WEST	QLD	4165	
Mrs	Rachel	Morris	38 Marlborough Road		WELLINGTON POINT	QLD	4160	
Mr	Lawernce	Morris	48 Link Road		VICTORIA POINT	QLD	4165	
Miss	Sophie	Morris	38 Marlborough Road		WELLINGTON POINT	QLD	4160	
Mrs	Justine	Mortensen	32 Carissa Street		MOUNT COTTON	QLD	4165	
Mr	Raymond	Morton	3/27 Collins Street		CLAYFIELD	QLD	4011	
Mrs	Vicki	Mullholland	27 Creekside Circuit West		VICTORIA POINT	QLD	4165	
Ms	Beatrice	Mullins	126 Orchid Drive		MOUNT COTTON	QLD	4165	
Mr	John	Mullins	126 Orchid Drive		MOUNT COTTON	QLD	4165	
Mr	Brian	Murphy	10 St Andrews Court		VICTORIA POINT	QLD	4165	
Mr	Michael	Murphy	21 Vickers Drive		WARRNAMBOOL	VIC	3280	
Mrs	Betty	Murray	28 Caravel Court		CLEVELAND	QLD	4163	
Mr	Matthew	Murray	8 Staghorn Court		MOUNT COTTON	QLD	4165	
Mrs	Sarah	Murray	8 Staghorn Court		MOUNT COTTON	QLD	4165	
Ms	Tania	Murray	7 Vineyard Drive		MOUNT COTTON	QLD	4165	
Miss	Maria	Mutar	1/28 Dunmore Street		CROYDON PARK	NSW	2133	
Mr	Adrian	Nagel	PO Box 1099		SLACKS CREEK	QLD	4127	
Mr	Greg	Nathan	PO Box 233		TOOWONG	QLD	4066	
Ms	Ilana	Nathan	426 Montague Road		WEST END	QLD	4101	
Mrs	Linda	Nathan	PO Box 4336		LOGANHOLME DC	QLD	4129	
Mr	Rafael	Nathan	435 West Mount Cotton Road		MOUNT COTTON	QLD	4165	
Ms	Rebecca	Nathan	426 Montague Road		WEST END	QLD	4101	
Mrs	Alaine	Neilson	20 Brushbox Court		MOUNT COTTON	QLD	4165	
Mr	Robert	Neilson	20 Brushbox Court		MOUNT COTTON	QLD	4165	
Ms	Phillipa	Nerds	81 Allan Day Drive		WELLINGTON POINT	QLD	4160	
Mr	Ian	Newbury	54 Helicia Circuit		MOUNT COTTON	QLD	4165	
Mr	Ian	Newman	89/391 Belmont Road		BELMONT	QLD	4153	
Mr/Ms	J	Newman	89/391 Belmont Road		BELMONT	QLD	4153	
Mrs	Jessica	Newman	64 Lancaster Circuit		REDLAND BAY	QLD	4165	
Ms	Josephine	Ngaluafe	111 Princess Street		CLEVELAND	QLD	4163	
Ms	Paula	Nicholson	23 Kingston Avenue		BOONDALL	QLD	4034	
Mr	Dennis	Nielsen	59 Kunde Street		CORNUBIA	QLD	4130	

Names and Addresses of Principal Submitters to the Development Application								
Mr	Peter	Niemeyer	606-608 West Mount Cotton Road		MOUNT COTTON	QLD	4165	
Mrs	Angela	Niven	4 Vassi Concord		CLEVELAND	QLD	4163	
Mr	Brad	Nixon	15 Algona Street		ROCHEDALE SOUTH	QLD	4123	
Mrs	Catherien	Nixon	2 Ti Tree Court		MOUNT COTTON	QLD	4165	
Mr	Peter	Noble	66 Brosnan Drive		CAPALABA	QLD	4157	
Mrs	Angela	Nogaski	2 Stonley Street		CAPALABA	QLD	4157	
Mr	Dave	Norman	18 Wattlebird Street		MANGO HILL	QLD	4508	
Mrs	Antoinette	Norris	2 Ferdinando Close		THORNLANDS	QLD	4164	
Mrs	Danielle	Norris	19 Ogilvie Street		ALEXANDRA HILLS	QLD	4161	
Mrs	Irene	Novelly	29/571 Redland Bay Road		VICTORIA POINT	QLD	4165	
Mrs	Dianna	Nylund	766-788 Millstream Road		CEDAR VALE	QLD	4285	
Ms	Kelly	Nylund	768 - 788 Millstream Road		CEDAR VALE	QLD	4285	
Ms	Natalie	Nylund	5 Barrett Street		BIRKDALE	QLD	4159	
Mrs	Glynis	O'Brien	64 Hibiscus Drive		MOUNT COTTON	QLD	4165	
Mr	Stepehen	O'Brien	64 Hibiscus Drive		MOUNT COTTON	QLD	4165	
Ms	Sheila	O'Connell	97 Orchid Drive		MOUNT COTTON	QLD	4165	
Mrs	Margaret	Odgaard	191 West Mount Cotton Road		CORNUBIA	QLD	4130	
Ms	Dianne	O'Donnell	155 West Mount Cotton Road		CORNUBIA	QLD	4130	
Mrs	Janet	O'Donnell	128/571 Cleveland-Redland Bay Road		VICTORIA POINT	QLD	4165	
Mr	Denis	O'Gardy	9 Coolaman Court		MOUNT COTTON	QLD	4165	
Mrs	Josephine	O'Gardy	9 Coolaman Court		MOUNT COTTON	QLD	4165	
Mrs	Barbara	O'Hara	571 Cleveland Redland Bay Road		VICTORIA POINT	QLD	4165	
Mr	Ray	O'Hara	571 Cleveland Redland Bay Road		THORNLANDS	QLD	4164	
Mrs	Paulette	Oldfield	13 Koolan Crescent		SHAILER PARK	QLD	4128	
Miss	Mary	Olson	2750 South Street	MANDEVILLE	LOS ANGELES	USA	70448	
Ms	Elisha	O'Meara	69 Birringa Road		BELLEVUE HILL	NSW	2023	
Mr	Gavin	O'Meara	28 Henzell Terrace		GREENSLOPES	QLD	4120	
Mr	Wayne	O'Neill	240 Dawson Creek Road		HIGHVALE	QLD	4520	
Ms	Tui	Oosterloo	5 Mergowie Drive		CLEVELAND	QLD	4163	
Mrs	Kate	O'Shea	PO Box 7350		GARBUTT	QLD	4814	
Mr	Peter	O'Shea	PO Box 7350		GARBUTT	QLD	4814	
Mrs	Allison	O'Sullivan	2051 Mount Cotton Road		CORNUBIA	QLD	4130	
Mrs	Charlotte	O'Sullivan	2051 Mount Cotton Road		CORNUBIA	QLD	4130	

Names and Addresses of Principal Submitters to the Development Application								
Mr	Patrick	O'Sullivan	2051 Mount Cotton Road		CORNUBIA	QLD	4130	
Mr	Rod	O'Sullivan	2051 Mount Cotton Road		CORNUBIA	QLD	4130	
Mr	Shaun	Outhwaite	2 Grosgrain Court		MOUNT COTTON	QLD	4165	
Mrs	June	Outteridge	24 Williams Street		COOCHIEMUDLO ISLAND	QLD	4184	
Mr	Samuel	Owen	3 Fumiterry Court		SHAILER PARK	QLD	4128	
Mr	Kenneth	Owens	6 Crows Ash Street		MOUNT COTTON	QLD	4165	
Ms	Sam	Pace	847-851 West Mount Cotton Road		SHELDON	QLD	4157	
Ms	Kelly	Pack	16 Knightsbridge Crescent		ROCHEDALE SOUTH	QLD	4123	
Mrs	Karen	Page	6 Achernar Court		THORNLANDS	QLD	4164	
Ms	Marilyn	Pakes	19/83 Freeth Street West		ORMISTON	QLD	4160	
Mrs	Muriel	Palmer	Civic Centre	66 Bay Terrace	WYNNUM	QLD	4178	
Mr	Terence	Palmer	100-102 Seaview Road		MOUNT COTTON	QLD	4165	
Miss	Heather	Panos	94 Lloyd Street		ALDERLEY	QLD	4051	
Ms	Susan	Panuccio	315-355 West Mount Cotton Road		MOUNT COTTON	QLD	4165	
Miss	Hannah	Parchert	100-102 Seaview Road		MOUNT COTTON	QLD	4165	
Mr	Derek	Parker	12 Settlers Circuit		MOUNT COTTON	QLD	4165	
Mr	Michael	Parkinson	21 Orchid Drive		MOUNT COTTON	QLD	4165	
Mrs	Lisa	Parra	PO Box 5355		ALEXANDRA HILLS	QLD	4161	
Miss	Sky	Parra	PO Box 5355		ALEXANDRA HILLS	QLD	4161	
Ms	Julieanne	Parsens	101 Sanctuary Drive		MOUNT COTTON	QLD	4165	
Mr	John	Pascoe	20 Ralph Road		CLEVELAND	QLD	4163	
Ms	Carissa	Patchett	193 Coburg Street West		CLEVELAND	QLD	4163	
Mrs	Anna	Pavia	760 Mount Cotton Road		SHELDON	QLD	4157	
Mr	Peter	Pavia	760 Mount Cotton Road		SHELDON	QLD	4157	
Mrs	Tamara	Peach	15 Taffeta Drive		MOUNT COTTON	QLD	4165	
Mrs	Rebecca	Peacock	39 Orchid Drive		MOUNT COTTON	QLD	4165	
Mrs	Gabrielle	Pearce	45 Abalone Crescent		THORNLANDS	QLD	4164	
Mr/Ms		Pearson	61 Allan Day Drive		WELLINGTON POINT	QLD	4160	
Mr	John	Pearson	16 Coolaman Court		MOUNT COTTON	QLD	4165	
Mr	Russell	Pearson	2 Bloodwood Court		MOUNT COTTON	QLD	4165	
Ms	Luise	Pearson-Bernoth	33 Fryar Street		VICTORIA POINT	QLD	4165	
Mr/Ms	NK	Peatey	100B ARV	571 Redland Bay Road	VICTORIA POINT	QLD	4165	
Mr	Neil	Peatey	4 Lees Court		VICTORIA POINT	QLD	4165	

Names and Addresses of Principal Submitters to the Development Application								
Mr	Kenneth	Pegg	20 Stratford Street		MOGGILL	QLD	4070	
Ms	Vicki	Pender	319 Mount Cotton Road		CAPALABA	QLD	4157	
Ms	Barbara	Penson	4/150 Barkers Road		HAWTHORN	VIC	3122	
Mr	Trevor	Penson	315-355 West Mount Cotton Road		MOUNT COTTON	QLD	4165	
Mrs	Marie	Peters	17 Albert Street		ORMISTON	QLD	4160	
Mrs	Barbara	Petie	32 Thistle Street		ORMISTON	QLD	4160	
Mr	Ramon	Petie	32 Thistle Street		ORMISTON	QLD	4160	
Mr	Ben	Phillips	19 Summit Terrace		FOREST LAKE	QLD	4357	
Mr	James	Phillips	21 Clovelly Street		SUNNYBANK HILLS	QLD	4109	
Mrs	Sharee	Phillips	19 Summit Terrace		FOREST LAKE	QLD	4357	
Ms	Tracey	Phillips	21 Clovelly Street		SUNNYBANK HILLS	QLD	4109	
Mrs	Sharon	Phoenix	228-230 Ney Road		CAPALABA	QLD	4157	
Mrs	Johanna	Pick	42 Woodhaven Place		CORNUBIA	QLD	4130	
Mr	Justin	Pick	42 Woodhaven Place		CORNUBIA	QLD	4130	
Mr	Andrew	Pickering	17 Village Drive		MOUNT COTTON	QLD	4165	
Mr	Denis	Pickwell	24 Hansen Court		ORMISTON	QLD	4160	
Ms	Janine	Pikos	44 Parooba Avenue		CAMP HILL	QLD	4152	
Ms	Lisa	Pikos	8 Julian Street		MORNINGSIDE	QLD	4170	
Mr/Ms	Robin	Pitcher	369 Schoeck Road		SHELDON	QLD	4157	
Mr	Roland	Pitcher	369 Schoeck Road		SHELDON	QLD	4157	
Mrs	Annette	Plain	18 Begonia Crescent		MOUNT COTTON	QLD	4165	
Ms	Eve	Plant	27b Kerrs Lane		COES CREEK	QLD	4560	
Mrs	Debbie	Pointing	PO Box 660		CAPALABA DC	QLD	4157	
Mr	Nigel	Pola	74 Holme Avenue		BOONDALL	QLD	4034	
Mr	Shane	Pollard	57 Settlers Circuit		MOUNT COTTON	QLD	4165	
Mrs	Rosalie	Pommeranz	334 California Creek Road		CORNUBIA	QLD	4130	
Mrs	Angelina	Poole	70 Mount View Road		MOUNT COTTON	QLD	4165	
Mr	Anthony	Poole	70 Mount View Road		MOUNT COTTON	QLD	4165	
Ms	Christine	Potito	64-66 Sanctuary Drive		MOUNT COTTON	QLD	4165	
Mr	Adam	Power	109 Milsom Street		COORPAROO	QLD	4151	
Mrs	Jane	Power	24 Foreshore Close		ELANORA	QLD	4221	
Mrs	Jean	Prentice	54 Pioneer Road		SHELDON	QLD	4157	
Mr	William	Prentice	54 Pioneer Road		SHELDON	QLD	4157	

Names and Addresses of Principal Submitters to the Development Application								
Mr	Benjamin	Purnell	53 Helicia Circuit		MOUNT COTTON	QLD	4165	
Mrs	Melissa	Purnell	53 Helicia Circuit		MOUNT COTTON	QLD	4165	
Mrs	Dorothy	Quin	65 South Street		CLEVELAND	QLD	4163	
Mr	Richard	Quinlan	72/7 King Street		NEWCASTLE	NSW	2300	
Ms	Catherine	Quinn	PO Box 55		CAROLE PARK	QLD	4300	
Miss	Vanessa	Quirk	PO Box 450		WYNNUM	QLD	4178	
Mr	Colin	Railton	40 Victoria Parade		COOCHIEMUDLO ISLAND	QLD	4184	
Mrs	Lorraine	Railton	40 Victoria Parade South		COOCHIEMUDLO ISLAND	QLD	4184	
Mr	Clifford	Rainey	26 Mindarie Crescent		WELLINGTON POINT	QLD	4160	
Ms	Merri	Randell	Corner Jane Street and Riverside Drive		WEST END	QLD	4101	
Mr	Michael	Rankin	22 Douglas Circuit		NORTH LAKES	QLD	4509	
Ms	Rebecca	Rankin	150 Pring Street		TARRAGINDI	QLD	4121	
Mr	Dale	Ray	15-17 Brushbox Court		MOUNT COTTON	QLD	4165	
Mr	Donald	Ray	4 Lawrence Court		ALEXANDRA HILLS	QLD	4161	
Mr	Philip	Redford	8 Ti Tree Court		MOUNT COTTON	QLD	4165	
Mrs	Elizabeth	Redman	64/571 Redland Bay Road		VICTORIA POINT	QLD	4165	
Ms	Narelle	Renn	14 Capembah Street		COOCHIEMUDLO ISLAND	QLD	4184	
Mrs	Irene	Rheinberger	19 Long Island Drive		WINDAROO	QLD	4207	
Mr	Mark	Rheinberger	87 Mendra Road		BEENLEIGH	QLD	4207	
Mrs	Judith	Richardson	1049 Mount Cotton Road		MOUNT COTTON	QLD	4165	
Ms	Kristen	Richelle	21 Castor Avenue		COORPAROO	QLD	4151	
Ms	Judith	Riches	28 Paranka Drive North		CLEVELAND	QLD	4163	
Mrs	Melissa	Ries	Unit 1/55 Lawn Terrace		CAPALABA	QLD	4157	
Mr	Peter	Ries	Unit 1/55 Lawn Terrace		CAPALABA	QLD	4157	
Mr	Max	Ritter	5 Gillian Street		CORNUBIA	QLD	4130	
Mr	Brad	Robbins	6 Glovar Street		EMERALD	QLD	4720	
Ms	Kate	Robbins	6 Glovar Street		EMERALD	QLD	4720	
Ms	Gabrielle	Roberts	PO Box 124		CALOUNDRA	QLD	4551	
Ms	Lynn	Roberts	PO Box 660		CAPALABA	QLD	4157	
Ms	Julia	Robertson	20 Paperbark Street		CRESTMEAD	QLD	4132	
Mrs	Jean	Robins	29 Petunia Crescent		MOUNT COTTON	QLD	4165	
Mrs	Trudy	Robinson	125 Winston Road		SHELDON	QLD	4157	
Ms	Beryl	Rogers	218 West Mount Cotton Road		CORNUBIA	QLD	4130	

Names and Addresses of Principal Submitters to the Development Application								
Mr/Ms	M	Roth	Lot 6 Taylor Road		SHELDON	QLD	4157	
Mrs	Olga	Roth	Lot 6 Taylor Road		SHELDON	QLD	4157	
Miss	Jennifer	Roughton	49a Macdonald Street		LOTA	QLD	4179	
Ms	Donelle	Rous	2 Todman Street		CARINA	QLD	4152	
Mr	Steve	Rowland	32 Torres Street		LOGANHOLME	QLD	4129	
Mr	Hayd	Ruddle	94 Skene Street		WARRNAMBOOL	VIC	3280	
Mrs	Carrie	Rudger	7 Raymond Close		CORNUBIA	QLD	4130	
Dr	Clare	Rudkin	138 Riverside Avenue		BARELLAN POINT	QLD	4306	
Mr	Jarrod	Rutherford	12 Sunrise Court		MOUNT COTTON	QLD	4165	
Ms	Sarah	Rutherford	12 Sunrise Street		MOUNT COTTON	QLD	4165	
Mr	Sidney	Rutherford	12 Sunrise Street		MOUNT COTTON	QLD	4165	
Mrs	Wendy	Rutherford	12 Sunrise Street		MOUNT COTTON	QLD	4165	
Mrs	Lynne	Ryan	33 Helicia Circuit		MOUNT COTTON	QLD	4165	
Mrs	Mitsuyo	Ryles	14 Parsonia Court		MOUNT COTTON	QLD	4165	
Mrs	Cheryl	Rynja	3 Kurrajong Street		CAPALABA	QLD	4157	
Mr	Geoffrey	Rynja	3 Kurrajong Street		CAPALABA	QLD	4157	
Ms	Kim	Sabatini	19 Lucy Court		ORMISTON	QLD	4160	
Mr	Russ	Sadler	101 Sanctuary Drive		MOUNT COTTON	QLD	4165	
Mrs	Nancy	Samuel	38 Downey Street		ORMISTON	QLD	4160	
Mr	Sean	Samuel	38 Downey Street		ORMISTON	QLD	4160	
Mrs	Kim	Sanders	9 Petunia Crescent		MOUNT COTTON	QLD	4165	
Mr	Martin	Sanders	9 Petunia Crescent		MOUNT COTTON	QLD	4165	
Mr	Russ	Sandler	101 Sanctuary Drive		MOUNT COTTON	QLD	4165	
Ms	Georgia	Sands	141 Gordon Street		ORMISTON	QLD	4160	
Ms	Kathyrn	Sansom	52 Cherry Street		LOGAN CENTRAL	QLD	4114	
Mr	Ken	Satter	18 Stanton Road		TINGALPA	QLD	4173	
Mr	Adam	Saunders	6 Coopers Court		MOUNT COTTON	QLD	4165	
Mrs	Lisa	Saunders	6 Coopers Court		MOUNT COTTON	QLD	4165	
Ms	Christine	Say	3 Explorers Way		MOUNT COTTON	QLD	4165	
Mr	Brett	Schaffer	2 Sandpebble Court		ALGESTER	QLD	4115	
Mrs	Raeleen	Schaffer	2 Sandpebble Court		ALGESTER	QLD	4115	
Ms	Tamara	Schaffer	44 Launceston Street		SALISBURY	QLD	4107	
Mr	Trent	Schaffer	2 Sandpebble Court		ALGESTER	QLD	4115	

Names and Addresses of Principal Submitters to the Development Application								
Mr	Ian	Schofield	39 Oxley Terrace		CORINDA	QLD	4075	
Mr	Karl	Schopp	54 Cooberrie Street		CORNUBIA	QLD	4130	
Mr	Andrew	Scott	25 Sugarglider Court		MOUNT COTTON	QLD	4165	
Mr	Brad	Scott	218 West Mount Cotton Road		CORNUBIA	QLD	4130	
Ms	Ida	Scott	74 Polmuir Road	Aberdeen Ab11 7th	SCOTLAND	UK		
Mr	Keith	Scott	PO Box 1863		MILTON	QLD	4064	
Miss	Narelle	Scott	218 West Mount Cotton Road		CORNUBIA	QLD	4130	
Mrs	Teaghan	Scott	218 West Mount Cotton Road		CORNUBIA	QLD	4130	
Ms	Karen	Searle	PO Box 1268		ARMIDALE	NSW	2350	
Mr	Terence	Seedsman	Ormiston Villas	1/64 Sturgeon Street	ORMISTON	QLD	4160	
Mrs	Julie-Ann	Seedsman	Ormiston Villas	1/64 Sturgeon Street	ORMISTON	QLD	4160	
Ms	Julie	Seedsman	331 Main Road		WELLINGTON POINT	QLD	4160	
Mr	TA	Seedsman	331 Main Road		WELLINGTON POINT	QLD	4160	
Mrs	Christine	Sewell	5 Village Drive		MOUNT COTTON	QLD	4165	
Mr	Alex	Sey	5 Brush Box Place		WAKERLEY	QLD	4154	
Mr	Gerald	Seymour	5 Wake Street		MACLEAY ISLAND	QLD	4184	
Ms	Charmaine	Shakespeare	16A Sunrise Street		MOUNT COTTON	QLD	4165	
Mr	Chris	Shave	45/83 Heeb Street		ASHMORE	QLD	4214	
Mr	Alexander	Shaw	24 Orchid Drive		MOUNT COTTON	QLD	4165	
Mr	Chris	Shaw	9-11 Pandanus Street		BIRKDALE	QLD	4159	
Ms	Emily	Shaw	9-11 Pandanus Street		BIRKDALE	QLD	4159	
Mr	Glendon	Shaw	9-11 Pandanus Street		BIRKDALE	QLD	4159	
Mrs	Sharon	Shaw	24 Orchid Drive		MOUNT COTTON	QLD	4165	
Mrs	Wendy	Shaw	9-11 Pandanus Street		BIRKDALE	QLD	4159	
Mr	G	Shepherd-Ashby	39 Clifton Street		BOOVAL	QLD	4304	
Mrs	Lily	Shepherd-Ashby	39 Clifton Street		BOOVAL	QLD	4304	
Ms	Carol	Sheppard	6 Moselle Drive		THORNLANDS	QLD	4164	
Mr	Raymond	Sheppard	34 Turner Avenue		FAIRFIELD	QLD	4103	
Mr	Lindsay	Shipway	21 Parsons Street		DUNWICH	QLD	4183	
Mr	Bei-Yu	Shiu	1ATower 37 - Villa Castell	20 Yau King Lane	TAI PO	HONG KONG		
Mrs	Lisa	Short	15 Citrus Circuit		MOUNT COTTON	QLD	4165	
Mrs	Jean	Shotter	147/571 Redland Bay Road		VICTORIA POINT	QLD	4165	
Mr	Erich	Shultz	47 Stevenson Street		PADDINGTON	QLD	4064	

Names and Addresses of Principal Submitters to the Development Application								
Ms	Erica	Siegel	8 Barrett Street		BIRKDALE	QLD	4159	
Mrs	Debra	Simmich	14 Spotted Gum Crescent		MOUNT COTTON	QLD	4165	
Mr	Wayne	Simmich	14 Spotted Gum Crescent		MOUNT COTTON	QLD	4165	
Mr	Wayne	Simpson	15 Helicia Circuit		MOUNT COTTON	QLD	4165	
Ms	Miriam	Skelly	10 Hatchman Street		VICTORIA POINT	QLD	4165	
Mr	Keith	Slack	4 Orange Grove Street		COOCHIEMUDLO ISLAND	QLD	4184	
Mr	Allan	Smillie	7 Maidenhair Drive		NARANGBA	QLD	4504	
Mrs	Lillian	Smillie	7 Maidenhair Drive		NARANGBA	QLD	4504	
Miss	Cassandra	Smith	3 Elysium Road		ROCHEDALE	QLD	4123	
Mr	Frank	Smith	2750 South Street	MANDEVILLE	LOS ANGELES	USA	70448	
Mr	Gordon	Smith	14 Mary Street		BIRKDALE	QLD	4159	
Mrs	Janet	Smith	14 Mary Street		BIRKDALE	QLD	4159	
Mrs	Jan	Smith	10 Galena Street		WELLINGTON POINT	QLD	4160	
Ms	Joy	Smith	62 Larapinta Drive		ALICE SPRINGS	NT	0870	
Mr	Luke	Smith	35 Balis Street		HOLLAND PARK WEST	QLD	4121	
Mr	Garrett	Smits	193 Coburg Street West		CLEVELAND	QLD	4163	
Ms	Anne	Smyth	13 Crosby Place		CLEVELAND	QLD	4163	
Ms	E	Sodeman	21/591 Cleveland Redland Bay Road		THORNLANDS	QLD	4164	
Mr	Roy	Sodeman	21/591 Cleveland Redland Bay Road		THORNLANDS	QLD	4164	
Ms	Sally	Spain	162 Maudsland Road		OXENFORD	QLD	4210	
Ms	Lillian	Speck	42/571 Redland Bay Road		VICTORIA POINT	QLD	4165	
Mr	Ormond	Speck	42/571 Redland Bay Road		VICTORIA POINT	QLD	4165	
Mr and Mrs	Bruce and Anne	Spencer	188 Delancey Street		ORMISTON	QLD	4160	
Mrs	Suzanne	Spierenburg	132-146 Mount View Road		MOUNT COTTON	QLD	4165	
Mr	Cornelis	Spoor	101 Orchid Drive		MOUNT COTTON	QLD	4165	
Mr	Andy	Squibb	PO Box 329		HASTINGS POINT	NSW	2489	
Mr	James	Stack	3 Durian Street		MOUNT COTTON	QLD	4165	
Mrs	Majorie	Stack	3 Durian Street		MOUNT COTTON	QLD	4165	
Mr	Grant	Stanguts	14 Parklane Road		VICTORIA POINT	QLD	4165	
Mrs	Bianca	Steele	1 Vedson Street		BIRKDALE	QLD	4159	
Mr	Byran	Steenhuis	10 Buxton Road		MITCHAM	VIC	3132	
Ms	Nonnie	Stephens	54 Carbrook Road		CORNUBIA	QLD	4130	
Mrs	Eileen	Stephenson	357-397 West Mount Cotton Road		MOUNT COTTON	QLD	4165	

Names and Addresses of Principal Submitters to the Development Application								
Mr	Melvyn	Stephenson	357-397 West Mount Cotton Road		MOUNT COTTON	QLD	4165	
Mr	Alan	Stewart	4 Warnick Court		VICTORIA POINT	QLD	4165	
Miss	Alison	Stewart	25 Durant Street		MOUNT GRAVATT EAST	QLD	4122	
Mrs	Deborah	Stewart	4 Warnick Court		VICTORIA POINT	QLD	4165	
Ms	Mena	Stoke						mena@stokeit.net
Mr	Anthony	Stokes	148 Smith Street		CLEVELAND	QLD	4163	
Mrs	Deirdre	Stokes	148 Smith Street		CLEVELAND	QLD	4163	
Mr	Adam	Stone	31 Lizzie Street		BARDON	QLD	4065	
Mr	Geoffrey	Straker	View Point Cleveland	9/135-139 Shore Street West	CLEVELAND	QLD	4163	
Mrs	Joyce	Straker	View Point Cleveland	9/135-139 Shore Street West	CLEVELAND	QLD	4163	
Mr	Brian	Straker	View Point Cleveland	9/135-139 Shore Street West	CLEVELAND	QLD	4163	
Mr	Ben	Street	14/183 Colburn Avenue		VICTORIA POINT	QLD	4165	
Miss	Fiona	Streit	128 Morris Circuit		THORNLANDS	QLD	4164	
Mr	David	Stuart	10 Mariners Court	10/6-16 Anchorage Drive	CLEVELAND	QLD	4163	
Mr	Terence	Sullavan	20 Margaret Street		ALEXANDRA HILLS	QLD	4161	
Ms	Denise	Sung	15 Sunrise Street		MOUNT COTTON	QLD	4165	
Mr	Ernest	Surridge	5/58 Adventist Retirement Village	Redland Bay Road	VICTORIA POINT	QLD	4165	
Ms	Lavinia	Sutherland	5 Hodgson Street		ZILLMERE	QLD	4034	
Mr	Fedrick	Sutton	5 Truscott Place		THORNLANDS	QLD	4164	
Mrs	Margaret	Symonds	16 Poplin Place		MOUNT COTTON	QLD	4165	
Mr	John	Talty	521 West Mount Cotton Road		MOUNT COTTON	QLD	4165	
Mr	Jason	Taylor	21 Birnam Street		BEAUDESERT	QLD	4285	
Ms	Margaret	Taylor	97 Ravenshaw Street		GLOUCESTER	NSW	2422	
Mr	Max	Taylor	97 Ravenshaw Street		GLOUCESTER	NSW	2422	
Mrs	Sue-Anne	Taylor	104 Serviceton Avenue		INALA	QLD	4077	
Mrs	Wendy	Tebble	266 Witta Road		MALENY	QLD	4552	
Mr	Paul	Tedder	9 Gillian Street		CORNUBIA	QLD	4130	
Mrs	Anna	Ter Horst	1 Daradgee Street		CORNUBIA	QLD	4130	
Mr	Brian	Terry	187 Russell Street		CLEVELAND	QLD	4163	
Mrs	Clara	Tether	47 Wilson Esplanade		VICTORIA POINT	QLD	4165	
Mr	Paul	Thiess	25 Cowra Street		TANAH MERAH	QLD	4128	
Mr	Adam	Thomasson	PO Box 3421		LOGANHOLME	QLD	4129	
Mr	Bob	Thomasson	PO Box 3421		LOGANHOLME	QLD	4129	

Names and Addresses of Principal Submitters to the Development Application								
Mr	Dean	Thomasson	PO Box 3421		LOGANHOLME	QLD	4129	
Mr	Gary	Thomasson	PO Box 3421		LOGANHOLME	QLD	4129	
Ms	Helen	Thomasson	PO Box 3421		LOGANHOLME	QLD	4129	
Ms	Saron	Thomasson	PO Box 3421		LOGANHOLME	QLD	4129	
Ms	Shanara	Thomasson	PO Box 3421		LOGANHOLME	QLD	4129	
Mrs	Vicky	Thomasson	PO Box 3421		LOGANHOLME	QLD	4129	
Ms	Radi-Jade	Thompson	4 Marana Street		WARANA	QLD	4575	
Mrs	Christel	Thorne	5 Sheffield Court		ALEXANDRA HILLS	QLD	4161	
Mr	Ernest	Tickner	48 Station Street		WELLINGTON POINT	QLD	4160	
Mrs	Anne	Tidbold	24 Chesterfield Crescent		WELLINGTON POINT	QLD	4160	
Mr	Paul	Tidbold	24 Chesterfield Crescent		WELLINGTON POINT	QLD	4160	
Mrs	Ann	Tierney	37 Oakwood Street		CAPALABA	QLD	4157	
Mr	Tjeerd	Tijhof	59 Helicia Circuit		MOUNT COTTON	QLD	4165	
		To whom it may concern	PO Box 3784		SOUTH BRISBANE	QLD	4101	
		To whom it may concern	451-465 West Mount Cotton Road		MOUNT COTTON	QLD	4165	
		To whom it may concern	PO Box 3340		LOGANHOLME	QLD	4129	
Ms	Beverly	Toki	45 Hunter Street		ALEXANDRA HILLS	QLD	4161	
Mr	Edward	Tomkins	104 Carbrook Road		CORNUBIA	QLD	4130	
Mrs	Libby	Tomkins	68 Penzance Drive		REDLAND BAY	QLD	4165	
Ms	Michelle	Tomkins	3 Juniper Court		MOUNT COTTON	QLD	4165	
Mrs	Marilyn	Tonks	139 Wuduru Road		CORNUBIA	QLD	4130	
Mr	Roger	Tonks	139 Wuduru Road		CORNUBIA	QLD	4130	
Mr	Allan	Tooth	10 Carissa Street		MOUNT COTTON	QLD	4165	
Mrs	Joanne	Tooth	10 Carissa Street		MOUNT COTTON	QLD	4165	
Ms	Maureen	Tottenham	PO Box 5270		ALEXANDRA HILLS	QLD	4161	
Mrs	Lauren	Towers	59 Bay Street		CLEVELAND	QLD	4163	
Mrs	Barbara	Townsend	PO Box 7339		REDLAND BAY	QLD	4165	
Ms	Shelley	Trevaskis	19 Parsons Street		DUNWICH	QLD	4183	
Mr	Stephen	Turfrey	41 Petunia Crescent		MOUNT COTTON	QLD	4165	
Ms	L F	Turner	169 West Mount Cotton Road		CORNUBIA	QLD	4130	
Ms	Roberta	Turpin	4/8 Klingner Road		REDCLIFFE	QLD	4020	
Ms	Wendy	Turvey	2 Dasen Street		THORNLANDS	QLD	4164	
Mrs	Audrey	Twining	4 Trochus Court		THORNLANDS	QLD	4164	

Names and Addresses of Principal Submitters to the Development Application								
Ms	Sarah	Tynan	23 Camfield Place		FLOREY	ACT	2615	
Mr	Kendall	Uebergang	7 Monivae Court		EAGLEBY	QLD	4207	
Ms	Elizabeth	Underwood	112 Pimelea Crescent		MOUNT COTTON	QLD	4165	
Mr	Desmond	Unnasch	47 Duncan Street		WELLINGTON POINT	QLD	4160	
Ms	Serena	Unnasch	47 Duncan Street		WELLINGTON POINT	QLD	4160	
Ms	Georgie	Usher	116 Ney Road		CAPALABA	QLD	4157	
Ms	Vida	Van Blarcom	G1, Yurana Retirement Village	19 Dennis Road	SPRINGWOOD	QLD	4127	
Mr	Erwin	Van Dyk	41 Wrights Place		MOUNT COTTON	QLD	4165	
Ms	Jennifer	Van Rooyen	18 Rickston Street		MANLY WEST	QLD	4179	jennivr@optusnet.com.au
Ms	Karen	Vasilakos	79 Settlers Circuit		MOUNT COTTON	QLD	4165	
Mr	Richard	Vaughan	7/16 Spine Street		SUMNER PARK	QLD	4074	
Miss	Lisa	Viney	4 Cycad Close		MOUNT COTTON	QLD	4165	
Mrs	Dunia	Viscarra	21 Santa Cruz Place		FOREST LAKE	QLD	4078	
Mr	Steven	Viscarra	21 Santa Cruz Place		FOREST LAKE	QLD	4078	
Ms	Tiani	Viscarra	175 Blunder Road		DURACK	QLD	4077	
Ms	Suzanne	Visser	26 Leonie Crescent		LAMB ISLAND	QLD	4184	
Mr	Keith	Wade	8 David Street		THORNESIDE	QLD	4158	
Mr/Ms	Francesca	Wagner	27 Vienna Road		ALEXANDRA HILLS	QLD	4161	
Mrs	Francesca	Wagner	18 Stanton Road		TINGALPA	QLD	4173	
Ms	Linda	Walding	69 Summit Street		SHELDON	QLD	4157	
Dr	Richard	Walding	69 Summit Street		SHELDON	QLD	4157	
Ms	Zoe	Walding	154 Morehead Avenue		NORMAN PARK	QLD	4170	
Ms	Wendy	Wales	6/14 St Andrews Place		CRONULLA	NSW	2230	
Mr	Andrew	Walker	15/32 Middle Street		CLEVELAND	QLD	4163	
Mrs	Cheryl	Walker	15/32 Middle Street		CLEVELAND	QLD	4163	
Mr	Ryan	Walker	24 Farnham Street		WELLINGTON POINT	QLD	4160	
Ms	Marion	Wall	21 Nelson Street		KALINGA	QLD	4030	
Mr	Damon	Wallace	35 Hibiscus Drive		MOUNT COTTON	QLD	4165	
Mr	Peter	Wallace	7 Bloodwood Court		MOUNT COTTON	QLD	4165	
Mr	Greg	Walsh	9 Law Street		CAIRNS	QLD	4870	
Mrs	Karen	Walsh	9 Law Street		CAIRNS	QLD	4870	
Ms	Rachel	Walsh	3 Laurel Court		MOUNT COTTON	QLD	4165	
Mr	Robert	Walsh	132 Henderson Road		SHELDON	QLD	4157	

Names and Addresses of Principal Submitters to the Development Application								
Mr	Steven	Walsh	26 Pimelea Crescent		MOUNT COTTON	QLD	4165	
Mr	Mark	Wann	5 Juniper Court		MOUNT COTTON	QLD	4165	
Miss	Adrienne	Ward	PO Box 79		POINT LOOKOUT	QLD	4183	
Mr	Bradley	Ward	16 Wrights Place		MOUNT COTTON	QLD	4165	
Mr	David	Ward	8 Michelle Court		CLEVELAND	QLD	4163	
Mr	Andrew	Warrilow	37 Duncan Street		WELLINGTON POINT	QLD	4160	
Ms	Margaret-Anne	Watkins	PO Box 5305		MANLY	QLD	4129	
Mrs	Linda	Watts	80 Princess Street		CLEVELAND	QLD	4163	
Mr	Peter	Wear	1 James Street		COOCHIEMUDLO ISLAND	QLD	4184	
Mr	Duane	Weatherall	17 Cove Court		VICTORIA POINT	QLD	4165	
Mr	Cedric	Webb	9 Stratton Court		CREASTMEAD	QLD	4132	
Ms	Heather	Webb	3 Flindersia Drive		MOUNT COTTON	QLD	4165	
Mr	Kev	Webb	17 Royena Court		CREASTMEAD	QLD	4132	
Ms	Jill	Weber	224 Avalon Road		SHELDON	QLD	4157	
Ms	Anita	Webster	18 Arborwood Avenue		SPRINGFIELD	QLD	4300	
Mr	Todd	Webster	18 Arborwood Avenue		SPRINGFIELD	QLD	4300	
Mr	Peter	Weir	21 Tinaroo Court		ALBANY CREEK	QLD	4035	
Mrs	Rebecca	Weir	21 Tinaroo Court		ALBANY CREEK	QLD	4035	
Miss	Kylie	Weller	7 Wilson Esplanade		VICTORIA POINT	QLD	4165	
Mr	Chris	Wells	32 Caledonian Road		THAGOONA	QLD	4306	
Mrs	Danielle	Went	5 Crows Ash Street		MOUNT	QLD	4165	
Mr	Brendan	West	17 Vineyard Drive		MOUNT COTTON	QLD	4165	
Mrs	Alison	Weston	4 Jamaga Street		CAPALABA	QLD	4157	
Ms	L	Wheeler	PO Box 3044		BIRKDALE	QLD	4159	
Mrs	Melissa	Wheeler	10 Flindersia Drive		MOUNT COTTON	QLD	4165	
Ms	Amanda	White	178 Panorama Drive		THORNLANDS	QLD	4164	
Mr	John	White	22 Bouquet Street		MOUNT COTTON	QLD	4165	
Mr	Joseph	White	75/571 Redland Bay Road		VICTORIA POINT	QLD	4165	
Mrs	Moira	White	14 Brushbox Court		MOUNT COTTON	QLD	4165	
Ms	Michelle	White	76 Lyndon Road		CAPALABA	QLD	4157	
Mrs	Ruth	White	75/571 Redland Bay Road		VICTORIA POINT	QLD	4165	
Mrs	Gail	Whitehouse	7-9 Daradgee Street		CORNUBIA	QLD	4130	
Mrs	Susanne	Whitelaw	PO Box 96		CLEVELAND	QLD	4163	

Names and Addresses of Principal Submitters to the Development Application								
Mr	Graeme	Whitworth	29-31 Wrights Place		MOUNT COTTON	QLD	4165	
Mrs	Irena	Whitworth	29-31 Wrights Place		MOUNT COTTON	QLD	4165	
Mr	Darren	Wilkinson	3 Mercure Way		POINT COOK	VIC	3030	
Ms	Bridget	Williams	201 Russell Street		CLEVELAND	QLD	4163	
Mr	Christopher	Williams	23 Vineyard Drive		MOUNT COTTON	QLD	4165	
Ms	Jeanne	Wills	Lot 14 Fahey Road		MT GLORIOUS	QLD	4520	
Mrs	Aileen	Wilson	37/571 Redland Bay Road		VICTORIA POINT	QLD	4165	
Mr	BF	Wilson	120-124 Avalon Road		SHELDON	QLD	4157	
Mr	Donald	Wilson	14 Taffeta Drive		MOUNT COTTON	QLD	4165	
Mr	John	Wilson	37/571 Redland Bay Road		VICTORIA POINT	QLD	4165	
Mrs	Joy	Wilson	9 Parsonia Court		MOUNT COTTON	QLD	4165	
Mrs	Nicole	Wilson	14 Taffeta Drive		MOUNT COTTON	QLD	4165	
Ms	Peta-Lee	Wilson	9 Parsonia Court		MOUNT COTTON	QLD	4165	
Mr	Roger	Wilson	54 Hickey Way		CARRARA	QLD	4211	
Mrs	RD	Wilson	120-124 Avalon Road		SHELDON	QLD	4157	
Mrs	Vanessa	Wilson	13/300 High Street		WINDSOR	VIC	3181	
Ms	Helen	Winstoney	2046 Mount Cotton Road		CARBROOK	QLD	4130	
Mrs	Leila	Winterburn	12 Coolaman Court		MOUNT COTTON	QLD	4165	
Mr	Alan	Withers	42 Kiwi Street		SHELDON	QLD	4157	
Mr	Alan	Wood	25 Autumnwood Avenue		MOUNT COTTON	QLD	4165	
Ms	Lavinia	Wood	2 Bluebird Court		THORNLANDS	QLD	4164	
Mrs	Michelle	Woodhall	5 Satinash Court		CAPALABA	QLD	4157	
Mr	Rodney	Woolley	14 Balladonia Street		MOUNT COTTON	QLD	4165	
Mrs	Vicki	Worrall	773-777 Mount Cotton Road		SHELDON	QLD	4157	
Mr	Ron	Worth	18 Redwood Street		MARSDEN	QLD	4172	
Mrs	Evelyn	Wright	42 Victoria Parade		COOCHIEMUDLO ISLAND	QLD	4184	
Mr	Phillip	Wright	6 Buckler Court		REDLAND BAY	QLD	4165	
Mr	Vivian	Wright	42 Victoria Parade South		COOCHIEMUDLO ISLAND	QLD	4184	
Ms	Amanda	Wrigley	16 Wrights Place		MOUNT COTTON	QLD	4165	
Mrs	Naomi	Wynn	4 Montgomery Drive		WELLINGTON POINT	QLD	4160	
Mr	David	Yates	81 Campbell Road		SHELDON	QLD	4157	
Mr	Alan	Young	74 Winchester Road		ALEXANDRA HILLS	QLD	4161	
Mrs	Lowri	Young	71-75 Carbrook Road		CORNUBIA	QLD	4130	

Names and Addresses of Principal Submitters to the Development Application								
Mr	Ralph	Zamykac	15 Honeyeater Close		BUDERIM	QLD	4556	