11.2.5 MCU17/0149 – EXTENSION TO CURRENCY PERIOD – MATERIAL CHANGE OF USE FOR EXTRACTIVE INDUSTRY AND ENVIRONMENTALLY RELEVANT ACTIVITIES 8, 16 AND 21 AT 1513 & 1515-1521 MOUNT COTTON ROAD AND 163-177 & 196 GRAMZOW ROAD, MOUNT COTTON

Objective Reference:	**A2854868** **Report and Attachments (Archives)**
Attachment:	**Approved Plans**
Authorising Officer:	**Louise Rusan** **General Manager Community & Customer Services**
Responsible Officer:	**David Jeanes** **Group Manager City Planning & Assessment**
Report Author:	**Sharee Shaw** **Planning Officer**

PURPOSE

This report is referred to Council for a decision on an extension application, being an application to extend the currency period of the development approval described below.

Following a call-in by the Planning Minister (the Minister), a Development Permit was granted on 20 December 2013 for a Material Change of Use for Extractive Industry and Environmentally Relevant Activities 8 (Chemical Storage), 16 (Extractive and Screening) and 21 (Motor Vehicle Workshop Operation) on the subject site at 1513 and 1515-1521 Mt Cotton Road, 163-177 and 196 Gramzow Road, Mt Cotton.

Council has now received an application seeking an extension to the development permit's currency period for an additional three (3) years.

The extension application is to be assessed in accordance with section 87 of the *Planning Act 2016*. The assessment set out in this report has considered relevant matters, including the consistency of the development approval with the current Redlands Planning Scheme and other applicable planning instruments. It is recommended that the extension application be approved.

BACKGROUND

Original application

The existing quartzite quarry was established in the 1960s. A planning application to extend the quarry was lodged in 2006 and was refused by Council on 20 November 2007. An appeal against this decision was filed in the Planning and Environment Court by the applicant (Appeal No. 3438 of 2007). The appeal was struck out on 12 June 2009, as it was determined by the Court that the application was not "properly made", as it did not contain resource entitlement for use of Gramzow Road, which bisects the site.

Approved development

Council refused a further application to extend the quarry on 12 June 2013. An appeal against the refusal was filed with the Planning and Environment Court. However, prior to progressing the matter, on 8 August 2013 the Minister issued a proposed call in notice and sought representations. After considering the representations the Minister called in the application on 26 September 2013. The Minister then issued a Development Permit for a Material Change of Use - Extractive Industry and Environmentally Relevant Activities, on 20 December 2013.

The approved development is a Material Change of Use for Extractive Industry and Environmentally Relevant Activities 8 (Chemical Storage), 16 (Extractive and Screening Activities) and 21 (Motor Vehicle Workshop Operation). The application involved significantly expanding the existing quarrying activities on the site to the south-west of the existing quarry pit. The new quarry area will extract meta-greywacke resource, which is processed to produce various materials extensively used in the building and construction industries.

The existing quarry pit currently contains the processing plant (crushing, screening and blending operations) and administration buildings. These components will continue to be used as part of the current extension proposal. The processing plant will be reconfigured to handle the new meta-greywacke material, and will also be enclosed to improve the function of the plant, by reducing the noise and air quality impacts. The material extracted from the new quarry area will be sent to a newly proposed crushing and loading plant and then transported to the existing processing plant via a new conveyor line. The existing processing plant will crush, screen and blend the meta-greywacke resource to produce material of varying sizes. Material will be stockpiled within the processing plant area in the existing quarry pit, and will be transported from the site via trucks, as need demands.

The quarry will be developed in four stages:

- Stage 1A – Construction of crushing and loading plant, conveyor line to processing plant, new access road to extraction site and stormwater management features;
- Stage 1B – First stage of quarry development (producing estimated 10 million tonnes of resource);
- Stage 2 – Expansion of the new quarry further to the west (producing estimated 7 million tonnes of resource);
- Stage 3 – Expansion of the new quarry further to the west (producing estimated 12 million tonnes of resource); and
- Stage 4 – Expansion of the new quarry further to the west (producing estimated 13.5 million tonnes of resource).

At present, approximately 14 hectares of the site are disturbed by the existing quarrying operation. The proposed quarry will disturb an additional 52 hectares of the site, leaving a balance of approximately 175 hectares of land.

The quarry pit will be developed to a depth of –5mAHD. The finished base level will be achieved at Stage 1B, with the subsequent stages involving pushing the pit further to the west, using the same base level.

The rate of production will depend on market demand, which is greatly influenced by construction activity; however the application proposes a maximum rate of 1 million tonnes per annum. The application does identify that the average production rate

would likely be closer to 500,000 tonnes per annum, which is the approximate production rate of the existing quarry. Based on these levels of production, it can be assumed that the proposed quarry will have a total lifespan of approximately 60 to 70 years.
The development also proposes associated works for stormwater management and rehabilitation of the site to offset losses of koala habitat and remnant vegetation within the quarry area.

Permissible changes to approval

A subsequent Permissible Change request was submitted to the Minister on 13 October 2015 to address condition wording and timing specifically relating to subsequent operational works. These provisions were subsequently replaced with compliance assessment requirements. The Permissible Change request was approved by the Minister on 18 December 2015.

More recently, in October 2017, the applicant requested a change to a number of the Minister's conditions. The changes included amendments to landscaping (visual screening) and access (State-controlled road) conditions. The State referred this application to Council for their advice as an 'affected entity'. Council officers provided advice to the State government regarding the proposed changes to the landscaping condition, which sought to provide a fence/gate along an electricity easement in place of vegetated screening in order to screen the development from an adjoining residential property. Council officers advised that there was insufficient information provided by the applicant to complete a proper assessment of the requested changes, and that further information should be requested to clarify the visual impacts of the requested change.

No further information has been provided by the applicant addressing the visual impact and the Minister's office has advised that a decision on the permissible change is likely to be made on or around 19 March 2018.

ISSUES

Site and Surrounding Area

The subject site comprises five lots and is located on the western side of Mount Cotton Road. The site is bisected by the unformed road reserve of Gramzow Road, which follows the natural Mount Cotton ridge line. This ridge line supports the quartzite resource that has been quarried extensively at both the Barro Group and Karreman quarries in the past.

The north-eastern portion of the site contains the existing quarry pit and processing plant. The balance of the site is predominantly covered by native vegetation, with a cleared area towards the middle and southern part of the site. This cleared area is currently used for intermittent grazing activities. Greenhide (California) Creek, which is part of the California Creek catchment and a tributary of the Logan River, runs through the middle of the site, draining to the south.

The locality is predominantly rural in nature with a mixture of rural uses, dwelling houses on conservation lots, extractive industry and rural industry. Generally the site is adjoined by large rural residential sized lots with extensive vegetation.

The Golden Cockerel poultry processing plant is located approximately 500 metres to the north of the site. The residential community of Mount Cotton village is located approximately 600 metres to the east of the site. The Karreman quarry is located approximately 2.5 kilometres to the north-west of the site.

Proposal

The applicant has applied for an extension to the currency period of the development approval. The currency period would have lapsed on or around 20 December 2017 had this extension application not been made before that date. The lapsing of currency period is stayed until Council decides the extension application. The extension application seeks approval of an extension to the currency period of an additional three (3) years.

Application Assessment

Planning Act 2016

This application has been made in accordance with section 86 of the *Planning Act 2016* and constitutes an extension application under the *Planning Act 2016*.

Section 87 of the *Planning Act 2016* states that the Assessment Manager may consider any matter that it considers relevant in assessing the application. This is not limited to matters that were relevant to the assessment of the development application for which the development approval was given.

Council officers have identified that the relevant matters to be considered should include:

(a) the consistency of the approval, including its conditions, with the current laws and policies applying to the development, including the amount and type of infrastructure contributions, or infrastructure charges; and

(b) the community's current awareness of the development approval (for example, whether there are new residents who did not have an opportunity to know about, or make a submission about, the original proposal where public notification was required).

The relevant matters are discussed below.

Consistency of Approval with Current Laws and Policies

State planning instruments

At the time of approval the following State planning instruments were in force:

- South East Queensland Regional Plan 2009-2031;
- South East Queensland Koala Conservation State Planning Regulatory Provision (SPRP);
- State Planning Policies –
  - SPP 2/07 Protection of Extractive Resources and Guideline
  - SPP5/10 – Air, Noise and Hazardous Materials
  - SPP2/10 – SEQ Koala Conservation
  - SPP 1/03 – Mitigating the Adverse Impacts of Flood, Bushfire and Landslide

Additionally, the following legislative policies were in place and were relevant to the assessment of the Environmental Relevant Activities that formed part of the approval:

- Environmental Protection (Air) Policy 2008; and
- Environmental Protection (Noise) Policy 2008.

The following State planning instruments now apply to the development application, and their effect to the assessment is discussed below:

- South East Queensland Regional Plan 2017 – the site remains within the Regional Landscape and Rural Production Area. There is no expansion of the urban footprint closer to the subject site.
- State Planning Policy (SPP) 2017 –
  - Mining and extractive resources – The SPP still identifies the site as Key Resource Area (KRA No. 71) and includes the same extent of area as under the previous SPP 2/07.
  - Natural hazards, risk and resilience – bushfire hazard – As it is not possible to avoid the natural hazard area, the development must mitigate the risks to an acceptable or tolerable level. The existing fire trails and roads ensure acceptable buffers as noted in the original Environmental Management Plan and access for fire fighting purposes.
  - Water quality – The water quality assessment criteria were introduced after the original approval was given. However, the approved development meets these new criteria.
- *Planning Regulation 2017* (Schedule 10, Part 10) – The Koala SPRP has been translated into the *Planning Regulation 2017*. The provisions relating to extractive industries remain the same as in the Koala SPRP, and therefore the development complies with Schedule 10, Part 10 of the Regulation.
- Environmental Protection (Air) Policy 2008 – Council's Health and Environment team have advised that air quality objectives relevant to the quarry are unchanged as per the policy in place at the time of approval.
- Environmental Protection (Noise) Policy 2008 – Council's Health and Environment team have advised that noise nuisance objectives are unchanged as per the policy in place at the time of approval.

Redlands Planning Scheme

It is noted that the original application was assessed under Version 3.1 of the Redlands Planning Scheme (RPS). Version 7.1 of the RPS is currently in place.

The zoning and overlays affecting the site remain the same in both versions of the planning scheme. The assessment provisions associated with these zone and overlay codes remain the same.

Conclusion:

In view of the above, there have been no changes to the RPS or State planning instruments, which specifically affect this development. Accordingly, it is considered that there is no basis to not approve this extension application on the grounds of changed laws or policies.

Community Awareness:

The development application that led to the approval (MCU012421) was publicly notified from 25 May 2012 to 11 July 2012. Approximately 1,139 properly made submissions were received during the notification period. There were approximately 85 not properly made submissions. These submissions raised a large number of issues that were considered in the assessment of the development application.

If the extension application was refused and a new Material Change of Use application was to be lodged, it is likely that a large number of submissions would be

received, as was the case with the original application. In this regard, it should be noted that:

- It is considered unlikely that further submissions would raise any new issues, given the large number of submissions made on the original application, and the absence of any relevant changes in laws or policies that could provide a basis for raising new submission issues;
- The application was approved only four years ago and the approval is understood to be well-known in the local area, particularly due to local newspaper coverage and community interest at the time of the development application and approval;
- Some new residents in the area may not have been aware of, or had the opportunity to make a submission in relation to, the original application. However, given the absence of any relevant changes in laws or policies, this must be balanced against the fact that, objectively, it can reasonably be expected that development of the kind approved may occur in the area; and
- There is little utility in forcing the applicant to re-lodge essentially the same application, which is considered to be consistent with current laws and policies.

These considerations are consistent with the Planning and Environment Court's decision in *Cleveland Power Pty Ltd v Redland Shire Council* [2013] QPELR 406 (Appeal No. 5192 of 2011), and subsequent decisions. However, it is noted that those cases concerned earlier legislation, which, unlike the current *Planning Act 2016*, specifically identified, and limited, the matters that Council could consider in assessing a proposed extension.

Concurrence Agencies

Section 86 of the *Planning Act 2016*, sets out the process for making an extension application. Under that section, there is no requirement for the applicant to provide a copy of the extension application to any referral agency.

STRATEGIC IMPLICATIONS

Legislative Requirements

Under the *Planning Act 2016*, in assessing this extension application, Council may consider any matter that Council considers relevant, even if not relevant to the assessment of the development application.

Risk Management

Similar risks to those applying to a normal development application apply. In accordance with the *Planning Act 2016* the applicant, or any concurrence agency for the development application, may appeal to the Planning and Environment Court against Council's decision on the extension application.

Financial

If the extension applied for is not approved, or a concurrence agency for the original development application is dissatisfied with Council's decision on the extension application, there is a potential that an appeal will be lodged and subsequent legal costs may apply. It is also possible that a third party (e.g. a community member who opposes the extension) could commence a declaratory proceeding challenging the lawfulness of Council's decision, even if they would not otherwise have appeal rights.

People

Not applicable. There are no implications for staff.

Environmental

Environmental impacts were assessed as part of the original application and considered to be acceptable, subject to conditions. Relevant planning instruments have not changed in this regard, as discussed in the "issues" section of this report.

Social

There are no known social impacts as a result of this report.

Alignment with Council's Policy and Plans

The assessment and officer's recommendation align with Council's policies and plans as described within the "issues" section of this report.

CONSULTATION

The assessment manager has consulted with other internal assessment teams where appropriate. Advice has been received from relevant officers and forms part of the assessment of the application. General Counsel was consulted on the content of this report.

OPTIONS

In accordance with the *Planning Act 2016*, the extension application has been assessed with consideration of matters considered to be relevant, as outlined in the "issues" section of this report, including the current Redlands Planning Scheme and other applicable planning instruments.

Option 1

That Council resolves as follows:

1. That the application to extend the currency period of the Development Permit granted on 20 December 2013 for Material Change of Use for Extractive Industry and Environmentally Relevant Activities 8, 16 and 21 on the land known as 1513 & 1515-1521 Mount Cotton Road and 163-177 & 195 Gramzow Road, Mount Cotton (MCU012421) be approved; and
2. That the currency period be extended for an additional three (3) years (giving a total relevant period of seven (7) years) starting the day the approval took effect.

Option 2

That Council resolves that the application to extend the currency period of the Development Permit granted on 20 December 2013 for Material Change of Use for Extractive Industry and Environmentally Relevant Activities 8, 16 and 21 on the land known as 1513 & 1515-1521 Mount Cotton Road and 163-177 & 195 Gramzow Road, Mount Cotton (MCU012421) be approved, but for a different timeframe to the 3 years applied for.

Option 3

That Council resolves to refuse to extend the currency period of the Development Permit granted on 20 December 2013 for Material Change of Use for Extractive Industry and Environmentally Relevant Activities 8, 16 and 21 on the land known as 1513 & 1515-1521 Mount Cotton Road and 163-177 & 195 Gramzow Road, Mount Cotton (MCU012421).

OFFICER'S RECOMMENDATION

That Council resolves as follows:

1. **That the application to extend the currency period of the Development Permit granted on 20 December 2013 for Material Change of Use for Extractive Industry and Environmentally Relevant Activities 8, 16 and 21 on the land known as 1513 & 1515-1521 Mount Cotton Road and 163-177 & 195 Gramzow Road, Mount Cotton (MCU012421) be approved; and**
2. **That the currency period be extended for an additional three (3) years (giving a total relevant period of seven (7) years) starting the day the approval took effect.**

Legend:
- Cadastral Boundary
- Site Boundary
- Existing Roads/Tracks
- Access Roads

370
S311071

17
RP108970

17
RP108970

Key Resource Area

Water Treatment Pond

Processing Plant Area

Existing Access Road

Existing Concrete Plant

Existing Weighbridge and Office

Existing Workshop

Existing Underground Fuel Storage

Key Resource Area

Internal Access Road

Stockpile Area

Existing Water Treatment Pond

Bund

Retaining Wall

Tip Head

Main Conveyor Corridor

Existing Shed

PLANS AND DOCUMENTS
Referred to in the
DEVELOPMENT PERMIT
Date 20 DEC 2013
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Existing Access Road

Potential acoustic screen at edge of ramp

Crushing and Conveyor Loading Plant Area

162
S31962

238
SP218968

25m

Bund

Key Resource Area

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TITLE:
Schematic of Proposed Plant Layout

SCALE: 1:2000 (On A3)
0 40

DATE: 7 July 2010
DRAWING NUMBER: 587.142

DRAWING:
DA2 001

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

PLANS AND DOCUMENTS
Referred to in the
DEVELOPMENT PERMIT
Date 20 DEC 2013
Queensland Government
As amended in red

6943800mN
6943600mN
6943400mN
6943200mN
6943000mN
6942800mN
6912400mN
6912200mN

7 SP115884
8 SP126858
3 RP186560
4 RP186560
1 SP113515
6 RP810073
1 SP143401
2 SP143401
8 RP186559
9 RP186559

1 RP30627
370 S311071
2 RP30611
3 RP209666
2 RP169493
17 RP108970
2 RP108970
3 RP108970
4 RP108970
5 RP108970
6 RP108970
7 RP108970
8 RP108970
22 RP98485
10 RP108970
11 RP108970
12 RP108970
13 RP108970
14 RP108970
15 RP108970
16 RP108970
1 RP104882
2 RP104882
3 RP104882
162 S31962
238 SP218968
1 RP104645
2 RP104645
3 RP104645
4 RP104645
5 RP104645
6 RP104645
7 RP104645

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
Tip Head
Retaining Wall
Internal Access Road
Main Conveyor Corridor
Existing Access Road
Crushing and Conveyor Loading Plant Area
Bench Level 40m
Existing Water Storage
Temporary Diversion Bund
Amenity Screen/Bund
Surface water diversion drain
Emergency Spillway
Water Treatment Ponds
Gravel Filter
Sedge Filter
Riser Outlet
Energy Dissipater

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TITLE:
Quarry Development Plan - Stage 1A

SCALE: 1:7500 (On A3)
0 150
DATE: 7 July 2010
DRAWING NUMBER: 967.103
DRAWING: DA2 002

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

PLANS AND DOCUMENTS
Referred to in the
DEVELOPMENT PERMIT
Date 20 DEC 2013
Queensland Government
As amended in red

7 SP115884
1 RP30627
2 RP30611
3 RP209666
370 S311071
8 SP126858
2 RP169493
3 RP186560
17 RP108970
1 RP108970
2 RP108970
3 RP108970
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7 RP108970
8 RP108970
4 RP186560
1 SP113515
370 S311071
17 RP108970
6 RP810073
1 SP143401
2 SP143401
8 RP186559
9 RP186559
162 S31962
162 S31962
22 RP9848695
10 RP108970
11 RP108970
12 RP108970
13 RP108970
14 RP108970
15 RP108970
16 RP108970
1 RP104882
2 RP104882
3 RP104882
1 RP104645
2 RP104645
3 RP104645
4 RP104645
5 RP104645
6 RP104645
7 RP104645

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
Existing Access Road
Crushing and Conveyor Loading Plant Area
Internal Access Road
Main Conveyor Corridor
Bund
Retaining Wall
Tip Head
Existing Water Storage
Floor Level -5m
238 SP218968
Temporary Diversion Bund
Surface water diversion drain
Pumped from Sump
Amenity Screen/Bund
Amenity Screen/Bund
Water Treatment Ponds
Gravel Filter
Sedge Filter
Riser Outlet
Energy Dissipater

6943800mN
6943600mN
6943400mN
6943200mN
6943000mN
6942800mN
6942600mN
6942400mN
6942200mN
6942000mN

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TITLE:
Quarry Development Plan - Stage 1B

SCALE: 1:7500 (On A3)
0 150
DATE: 9 July 2010
DRAWING NUMBER: 597 144
DRAWING: DA2 003

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

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

as amended in red

7 SP115884
8 SP126858
3 RP186560
4 RP186560
1 SP113515
6 RP810073
1 SP143401
2 SP143401
8 RP186559
9 RP186559
1 RP30627
370 S311071
2 RP30611
3 RP209666
2 RP169493
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1 RP108970
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3 RP108970
4 RP108970
5 RP108970
6 RP108970
7 RP108970
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22 RP9848595
10 RP108970
11 RP108970
12 RP108970
13 RP108970
14 RP108970
15 RP108970
16 RP108970
1 RP104882
2 RP104882
3 RP104882
162 S31962
238 SP218968
1 RP104645
2 RP104645
3 RP104645
4 RP104645
5 RP104645
6 RP104645
7 RP104645

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
Existing Access Road
Crushing and Conveyor Loading Plant Area
Bund
Retaining Wall
Internal Access Road
Main Conveyor Corridor
Tip Head
Existing Water Storage
Floor Level -5m
Sump
Surface water diversion drain
Pumped from Sump
Amenity Screen/Bund
Amenity Screen/Bund
Water Treatment Ponds
Energy Dissipater
Gravel Filter
Sedge Filter
Riser Outlet

6943800mN
6943400mN
6943000mN
6942800mN
6942400mN
6942200mN

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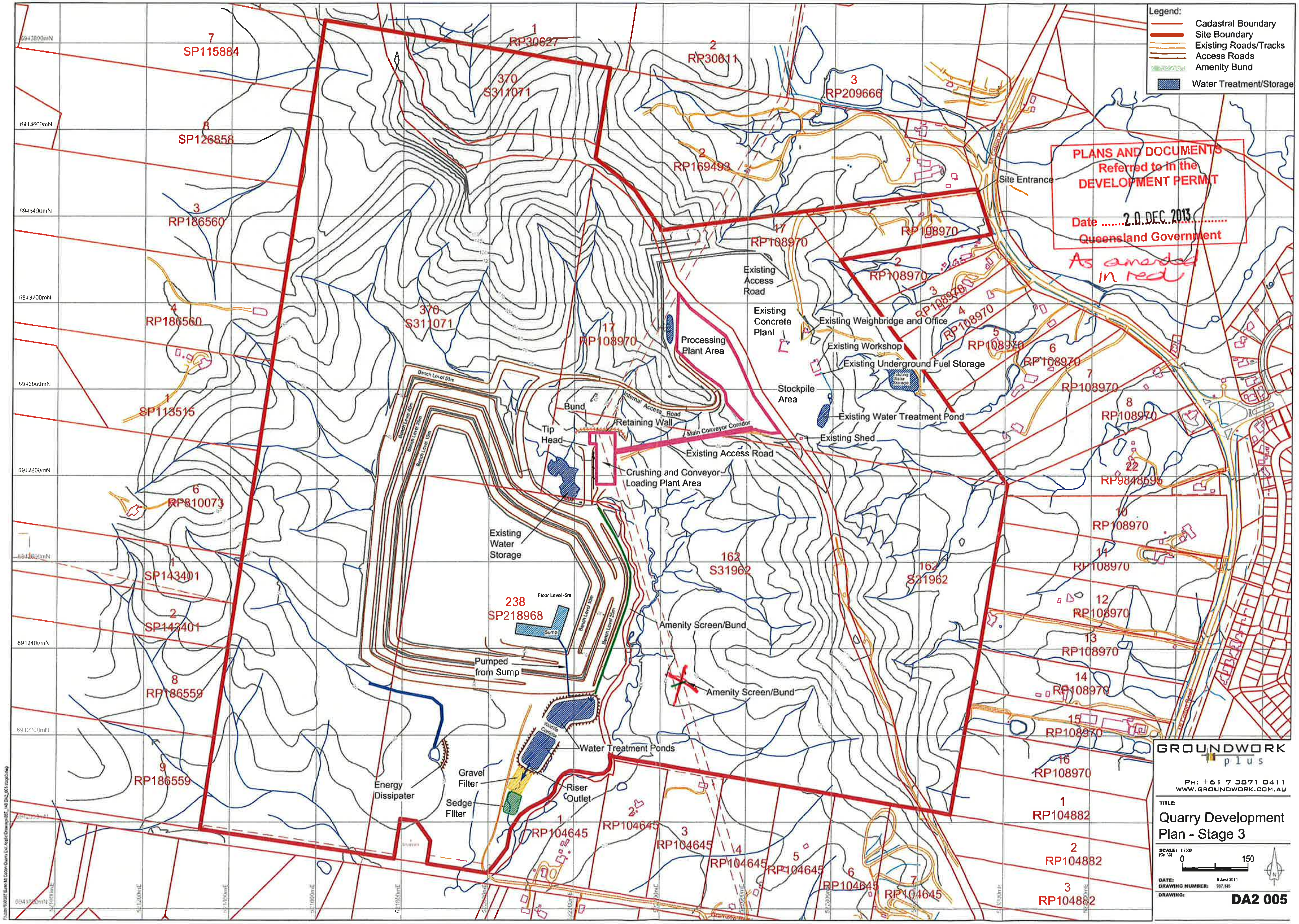
TITLE:
Quarry Development Plan - Stage 2

SCALE: 1:1500 (On A3)
0 150
DATE: 9 June 2010
DRAWING NUMBER: 987 145
DRAWING: DA2 004



Legend:
Cadastral Boundary
Site Boundary
Existing Roads/Tracks
Access Roads
Amenity Bund
Water Treatment/Storage
PLANS AND DOCUMENTS Referred to in the DEVELOPMENT PERMIT
Date 20 DEC 2013
Queensland Government
As amended in red
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
Internal Access Road
Main Conveyor Corridor
Tip Head
Existing Access Road
Crushing and Conveyor Loading Plant Area
Existing Water Storage
Amenity Screen/Bund
Amenity Screen/Bund
Floor Level -5m
Pumped from Sump
Water Treatment Ponds
Gravel Filter
Sedge Filter
Riser Outlet
Energy Dissipater
7 SP115884
8 SP126858
3 RP186560
4 RP186560
1 SP113515
6 RP810073
1 SP143401
2 SP143401
8 RP186559
9 RP186559
1 RP30627
370 S311071
2 RP30611
3 RP209666
2 RP169493
17 RP108970
1 RP108970
2 RP108970
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4 RP108970
5 RP108970
6 RP108970
7 RP108970
8 RP108970
22 RP984859
10 RP108970
11 RP108970
12 RP108970
13 RP108970
14 RP108970
15 RP108970
16 RP108970
162 S31962
238 SP218968
1 RP104645
2 RP104645
3 RP104645
4 RP104645
5 RP104645
6 RP104645
7 RP104645
1 RP104882
2 RP104882
3 RP104882
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TITLE:
Quarry Development Plan - Stage 3
SCALE: 1:7500
0 150
DRAWING: DA2 005

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

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

as amended in red

6943800mN
6943600mN
6943400mN
6943200mN
6943000mN
6942800mN
6942600mN
6942400mN

7 SP115884
8 SP126858
3 RP186560
4 RP186560
1 SP113515
6 RP810073
1 SP143401
2 SP143401
8 RP186559
9 RP186559
1 RP30627
370 S311071
2 RP30611
3 RP209666
2 RP169493
17 RP108970
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4 RP108970
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6 RP108970
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10 RP108970
11 RP108970
12 RP108970
13 RP108970
14 RP108970
15 RP108970
16 RP108970
1 RP104882
2 RP104882
3 RP104882
238 SP218968
162 S31962
1 RP104645
2 RP104645
3 RP104645
4 RP104645
5 RP104645
6 RP104645
7 RP104645

Site Entrance
Existing Access Road
Existing Concrete Plant
Existing Weighbridge and Office
Existing Workshop
Existing Underground Fuel Storage
Stockpile Area
Existing Water Treatment Pond
Existing Shed
Existing Access Road
Crushing and Conveyor Loading Plant Area
Processing Plant Area
Surface water diversion drain
Bund
Tip Head
Retaining Wall
Internal Access Road
Main Conveyor Corridor
Existing Water Storage
Amenity Screen/Bund
Amenity Screen/Bund
Pumped from Sump
Surface water diversion drain
Water Treatment Ponds
Gravel Filter
Sedge Filter
Riser Outlet
Energy Dissipater

Bench Level 55m
Bench Level 40m
Bench Level 25m
Bench Level 10m
Floor Level -5m

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TITLE:
Quarry Development Plan - Stage 4

SCALE: 1:7500 (On A3)
0 150
DATE: 9 June 2010
DRAWING NUMBER: 567.147
DRAWING: DA2 006

CREATED: 19 November 2010 FILE NAME: P:\Jobs\000987 Barro Mt Cotton Quarry Ext. Apps\Drawings\987.310.DA-Figure 3 Site Layout And Topography.dwg

REV	DESCRIPTION	DATE	BY

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

Legend:
- Cadastral Boundary
- Site Boundary
- Stage Boundary

PROJECT: Mt Cotton Quarry

CLIENT: Barro Group

TITLE: Figure 3 - Site Layout and Topography

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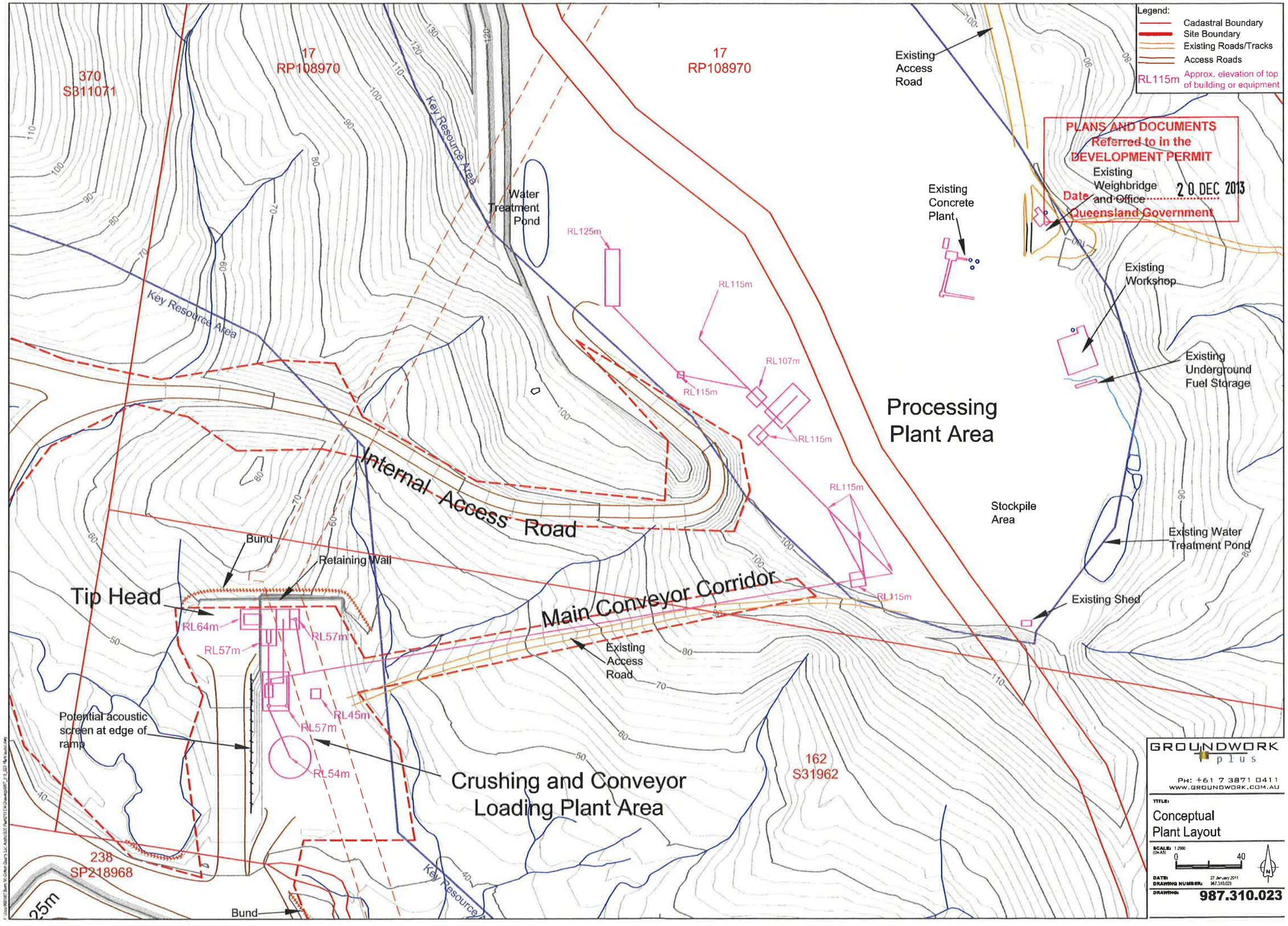
SCALE: 1:8000 When Printed On A3 — 0 — 160

DRAWING NUMBER: 987.310.003

REVISION:

DATE: 24 November 2010 | DRAWN: Llwjg | DATUM: HORIZONTAL / VERTICAL / ZONE

PRINTED: 24 November 2010 | CHECKED:


Legend:
Cadastral Boundary
Site Boundary
Existing Roads/Tracks
Access Roads
RL115m Approx. elevation of top of building or equipment
PLANS AND DOCUMENTS
Referred to in the
DEVELOPMENT PERMIT
Date 20 DEC 2013
Queensland Government
370
S311071
17
RP108970
17
RP108970
Key Resource Area
Key Resource Area
Water Treatment Pond
Existing Access Road
Existing Concrete Plant
Existing Weighbridge and Office
Existing Workshop
Existing Underground Fuel Storage
RL125m
RL115m
RL107m
RL115m
RL115m
RL115m
Processing Plant Area
Stockpile Area
Existing Water Treatment Pond
Existing Shed
Internal Access Road
Bund
Retaining Wall
Tip Head
RL64m
RL57m
RL57m
Main Conveyor Corridor
Existing Access Road
RL45m
RL57m
RL54m
Potential acoustic screen at edge of ramp
Crushing and Conveyor Loading Plant Area
162
S31962
238
SP218968
Bund
Key Resource Area
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TITLE:
Conceptual Plant Layout
SCALE: 1:2000 (On A3)
0 40
DATE: 27 January 2011
DRAWING NUMBER: 987.310.023
DRAWING: 987.310.023

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

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APPENDICES

Document Control Sheet

Job Details

Ref no.:	987_233
Document Title:	Geotechnical Report
Version	FINAL V1
Principal Author:	Rod Huntley
Client:	Barro

Revision/ Checking History

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Redland City Council	D										1
Office Copy	D/H										1

Statement of Competency/Qualification and Responsibility

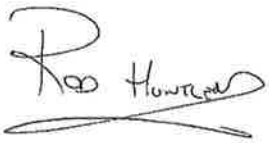
All information in this report relating to Identified Mineral Resources, is based on and accurately reflects information compiled by Groundwork Plus. This report complies with the Mineral Resources and Ore Reserves prepared by The Joint Ore Reserves Committee of The Australasian Institute of Mining and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

ATTACHMENT 1 – AMENDED GROUNDS

1. The population of Mount Cotton, its surrounds and Redland City itself has grown significantly since the original application was subject to public notification in 2012. This has manifested in many changes in home ownership as well as an increase in the number of new dwellings within Mount Cotton and the surrounding area. It is likely therefore, that a fair proportion of the surrounding community is not aware of the development approval.

2. The proposed development is not consistent with the reasonable expectations of the local community, because the proposal is for a completely separate quarry which is of a significant scale and will operate in close proximity to adjoining rural residential properties.

3. The applicant has failed to demonstrate that the new quarry can be constructed and operated in such a manner as to protect the health and amenity of the surrounding sensitive receptors.

4. The applicant has failed to adequately define and apply suitable noise criteria to assess the protection of amenity for the surrounding sensitive receptors.

5. The proposal will not maintain or enhance the rural residential amenity of the surrounding area through the minimisation of environmental nuisance occurring through the operation and construction of the quarry.

6. The proposal adversely impacts on and limits the future enhancement of the surrounding economic tourism opportunities.

7. The development will have a significant impact on Mount Cotton Road that may affect pedestrian and vehicular safety on this road. This impact is not suitably mitigated by conditions on the original approval.

8. The proposed development is in conflict with the following provisions of the Redlands Planning Scheme:
    a. Part 3.1.4, Desired Environmental Outcome No. 3 – Community Health and Wellbeing;
    b. Part 3.1.7, Desired Environmental Outcome No. 6 – Economic Development;
    c. Overall Outcomes 2(a)(i)(c), (e) and (f) and 2(c)(i)(e) for the Rural Non-Urban Zone;
    d. Specific Outcomes S3.3, S3.4 and S3.5 of the Rural Non-Urban Zone code;
    e. Overall Outcome 2(a)(iv) and (vi) of the Extractive Industry use code; and

f. Specific Outcomes S2.2, S2.3, S2.5 and S2.6 of the Extractive Industry use code.

9. There are no other relevant matters to warrant approval of the proposed development having regard to the nature and extent of the conflict with the Redlands Planning Scheme.

Pages 3 through 4 redacted for the following reasons:
- -