Application form
Environmental authority

Application to amend an environmental authority

This approved form is to be used when applying to amend an environmental authority under sections 222 to 227 of the Environmental Protection Act 1994 (EP Act) for an environmentally relevant activity (ERA).

An application to amend an environmental authority is not appropriate in all circumstances. If you answer YES to any of the questions in the checklist below, you cannot use this application form. If you answer NO to all of the questions in the checklist, you may continue to use this application form.

This form also contains a question relating to the Regional Planning Interests Act 2014. If you are proposing to undertake resource activities in an area of regional interests, a regional interest development approval (RIDA) may be needed. Further information, including applications forms, can be found on the Department of Infrastructure, Local Government and Planning (DILGP) website, www.dilgp.qld.gov.au.

You are encouraged to have a pre-lodgement meeting before applying to amend your environmental authority. If you would like to have a pre-lodgement meeting:

- for prescribed ERAs 2, 3 and 4—contact the Department of Agriculture and Fisheries by email at livestockregulator@daf.qld.gov.au.
- for any other ERA—please fill out and lodge the form "Application for a pre-design/pre-lodgement meeting" (EM11251), prior to lodging this application form.

Checklist for making an amendment application
You must complete this checklist before you continue with the application form.

If your application is for:

☐ a prescribed ERA → fill in Section 1 and Section 2 of the checklist below
☒ a resource activity → fill in Section 1 and Section 3 of the checklist below
☐ both a prescribed ERA and a resource activity → fill in sections 1, 2 and 3 of the checklist below

If you have answered yes to any of the below questions, you cannot use this application form. If you have answered no to all of the below questions, you may continue to use this application form.

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1 This is the publication number. The publication number can be used as a search term to find the latest version of a publication at www.qld.gov.au.
## Application form

**Application to amend an environmental authority**

<table>
<thead>
<tr>
<th>Checklist questions</th>
<th>Guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Section 1 – all applications</strong></td>
<td></td>
</tr>
<tr>
<td>Is the amendment to correct a clerical or formal error?</td>
<td>□ YES  ☒ NO</td>
</tr>
<tr>
<td>Is the amendment to amalgamate two or more environmental authorities?</td>
<td>□ YES  ☒ NO</td>
</tr>
<tr>
<td>Is the amendment to add an ERA to an amalgamated local government authority and there is not an appropriate degree of integration between the proposed activity and the existing activities on the authority?</td>
<td>□ YES  ☒ NO</td>
</tr>
<tr>
<td>Is the amendment to add an ERA to an amalgamated project authority and the proposed activity does not form part of the single integrated operation conducted under the authority?</td>
<td>□ YES  ☒ NO</td>
</tr>
<tr>
<td>Is the amendment to amend financial assurance only?</td>
<td>□ YES  ☒ NO</td>
</tr>
<tr>
<td>Is the amendment to remove or amend a condition requiring compliance with the eligibility criteria, and is a result of changes to the activity?</td>
<td>□ YES  ☒ NO</td>
</tr>
</tbody>
</table>
### Application form

**Application to amend an environmental authority**

<table>
<thead>
<tr>
<th>Section 2 – prescribed ERAs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Is the amendment for the holder of the environmental authority to transfer all or part of the environmental authority to a person?</strong></td>
</tr>
<tr>
<td>□ YES</td>
</tr>
<tr>
<td>□ NO</td>
</tr>
<tr>
<td>If yes, you cannot use this form. Please use the form Request to Transfer All or Part of an Environmental Authority for a Prescribed Environmentally Relevant Activity (EM794).</td>
</tr>
</tbody>
</table>

| **Does the proposed amendment involve changes to the relevant activity that require a new development application to be lodged under the Sustainable Planning Act 2009 and the application for the amendment has not been lodged.** |
| □ YES |
| □ NO |
| If yes, the development application must be lodged before an environmental authority amendment application can be made. Under SPA, a development application for a material change of use of premises for an environmentally relevant activity is deemed to be also an application for an environmental authority. In this case, an environmental authority amendment application should not be lodged. |

| **Is the proposed amendment solely to add or remove vehicles for ERA 57 (Regulated Waste Transport)?** |
| □ YES |
| □ NO |
| If yes, you do not need to submit this application form. Use the form Details of Regulated Waste Vehicles (EM859) available at www.qld.gov.au. Use EM859 as a search term. |

| **Is the proposed amendment to add a prescribed ERA, other than an ancillary activity, to an environmental authority for a resource project?** |
| □ YES |
| □ NO |
| If yes, you cannot use this form to add the prescribed ERA to the environmental authority. You will need to apply for a new environmental authority. Refer Section 1 above for appropriate form. |

### Section 3 – resource activities (mining, petroleum, geothermal or GHG storage activities)

| **Is the amendment for a partial surrender of an environmental authority for a mining, geothermal or petroleum resource activity?** |
| □ YES |
| □ NO |
| If yes, you cannot use this form. Please use the form Application for Surrender or Partial Surrender of an Environmental Authority (EM796). |

| **Is the proposed amendment to add a resource activity to an environmental authority for a prescribed ERA project?** |
| □ YES |
| □ NO |
| If yes, you cannot add the resource activity to the environmental authority. You will need to apply for a new environmental authority. Refer Section 1 above for appropriate form. |
Definitions of terms used in this form

Where there is inconsistency between the definition of terms used here and the terms used in the EP Act, the terms in the EP Act apply.

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condition conversion</td>
<td>For an environmental authority, means a minor amendment replacing all the conditions of the authority with the standard conditions for the environmentally relevant activity which the authority relates. The relevant eligibility criteria and standard conditions must be able to be met.</td>
</tr>
<tr>
<td>Eligibility Criteria</td>
<td>For an environmentally relevant activity, means eligibility criteria that are in effect for the activity under – (a) an ERA standard; or (b) a code of environmental compliance; or (c) a regulation in respect of a mining activity.</td>
</tr>
<tr>
<td>Environmentally relevant activity (ERA)</td>
<td>A resource activity or a prescribed ERA</td>
</tr>
<tr>
<td>ERA project</td>
<td>A prescribed ERA project or a resource project.</td>
</tr>
<tr>
<td>ERA standard</td>
<td>For an environmentally relevant activity, means the eligibility criteria and/or the standard conditions set by the administering authority.</td>
</tr>
<tr>
<td>Major amendment</td>
<td>For an environmental authority, means an amendment that is not a minor amendment.</td>
</tr>
<tr>
<td>Material change of use of premises for an environmentally relevant activity</td>
<td>A category of assessable development requiring a development permit under SPA. Refer Schedule 3, Table 2, Item 1 of the Sustainable Planning Regulation 2009.</td>
</tr>
<tr>
<td>Minor amendment</td>
<td>For an environmental authority, means an amendment that is— (a) a condition conversion; or (b) a minor amendment (threshold).</td>
</tr>
<tr>
<td>Minor amendment (threshold)</td>
<td>For an environmental authority, means an amendment that the administering authority is satisfied— (a) Is not a change to a condition identified in the authority as a standard condition, other than— (i) a change that is a condition conversion; or (ii) a change that is not a condition conversion but that replaces a standard condition of the authority with a standard condition for the environmentally relevant activity to which the authority relates; and (b) does not significantly increase the level of environmental harm caused by the relevant activity; and</td>
</tr>
</tbody>
</table>

Department of Environment and Heritage Protection
(c) does not change any rehabilitation objectives stated in the authority in a way likely to result in significantly different impacts on environmental values than the impacts previously permitted under the authority; and

(d) does not significantly increase the scale or intensity of the relevant activity; and

(e) does not relate to a new relevant resource tenure for the authority that is—

(i) a new mining lease; or

(ii) a new petroleum lease; or

(iii) a new geothermal lease under the Geothermal Energy Act; or

(iv) a new GHG injection and storage lease under the GHG storage Act; and

(f) involves an addition to the surface area for the relevant activity of no more than 10% of the existing area; and

(g) for an environmental authority for a petroleum activity—

(i) if the amendment involves constructing a new pipeline—the new pipeline does not exceed 150km; and

(ii) if the amendment involves extending an existing pipeline—the extension does not exceed 10% of the existing length of the pipeline; and

(h) if the amendment relates to a new relevant resource tenure for the authority that is an exploration permit or GHG permit—the amendment application under section 224 seeks an amended environmental authority that is subject to the standard conditions for the relevant activity or authority, to the extent it relates to the permit.

Mobile and temporary ERA
A prescribed ERA, other than an activity that is dredging material, extracting rock or other material, or the incinerating of waste:

(a) carried out at various locations using transportable plant or equipment, including a vehicle

(b) that does not result in the building of any permanent structures or any physical change of the landform at the locations (other than minor alterations solely necessary for access and setup including, for example, access ways, footings and temporary storage areas)

(c) carried out at any 1 of the locations:

(i) for less than 28 days in a calendar year, or

(ii) for 28 or more days in a calendar year only if the activity is necessarily associated with, and is exclusively used in, the construction or demolition phase of a project.

Prescribed ERA
An environmentally relevant activity that is not a resource activity and is prescribed under section 19 of the EP Act.
Prescribed ERA project
All prescribed ERAs carried out, or proposed to be carried out, as a single integrated operation.

Registered suitable operator
A person who, or a corporation which, under section 318I of the EP Act has been assessed as being suitable to carry out an ERA and has been listed on the suitable operator register.

Resource activity
An activity that is any of the following:
(a) a geothermal activity
(b) a greenhouse gas (GHG) storage activity
(c) a mining activity
(d) a petroleum activity.

Resource project
Resource activities carried out, or proposed to be carried out, under 1 or more resource tenures, in any combination, as a single integrated operation.

Single integrated operation
Occurs when all the below criteria are met:
(a) the activities are carried out under the day-to-day management of a single responsible individual, for example, a site or operations manager
(b) the activities are operationally interrelated
(c) the activities are, or will be, carried out at one or more places
(d) the places where the activities are carried out are separated by distances short enough to make feasible the integrated day-to-day management of the activities.
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GUIDE

If you require assistance in answering any part of this form, or have any questions about your application please contact the relevant department. Contact details are at the end of this form.

The environmental authority number and details may be found on the existing environmental authority or quoted in other correspondence received from the administrative authority.

If more space is required for any responses, please attach additional information as a separate page.

If there is an agent acting on behalf of the environmental authority holder, provide details in this section. An agent could be a consultant or a contact for the environmental authority holder.

As statutory documents need to be sent to all applicants, this section can also be used when there are multiple environmental authority holders to nominate an address for statutory documentation to be sent 'care of to'.

Application details

1. Environmental authority number

   ENVIRONMENTAL AUTHORITY NUMBER
   EPVL00498613

   ENVIRONMENTAL AUTHORITY HOLDER NAMES
   CQ DOLOMITE PTY LTD AND MACEGATE PTY LIMITED

Agent details / address for service

The address supplied here will also be used as a service address for sending statutory documents. If blank, statutory documents will be sent to the address previously supplied for the holder or principal applicant for the environmental authority.

INDIVIDUAL OR BUSINESS NAME (INCLUDE TRADING NAME IF RELEVANT)
   CQ DOLOMITE PTY LTD AND MACEGATE PTY LIMITED

RESIDENTIAL ADDRESS OR REGISTERED BUSINESS ADDRESS (NOT A POST OFFICE BOX ADDRESS)
   FLOR-HANLY AND ASSOCIATES
   6 DISCOVERY LANE,
   NORTH MACKAY QLD 4740

POSTAL ADDRESS (WHERE DIFFERENT FROM ABOVE)
   C/O - GROUNDWORK PLUS
   PO BOX 1779
   MILTON BC QLD 4064

CONTACT PERSON
   LARRY VOLTZ

PHONE
   07 3871 0411

FACSIMILE

EMAIL
   larryvoltz@landygroup.com.au

☐ CROSS IF YOU DO NOT WANT TO RECEIVE CORRESPONDENCE VIA EMAIL
2. **Describe in detail the proposed amendment and the reason the amendment is being sought**

The decision of whether the amendment is major or minor is made by the administering authority. However, the administrative process requires you to indicate whether you think the proposed amendment will constitute a major or minor amendment. If you have questions regarding whether your amendment will be minor or major you are encouraged to arrange a pre-lodgement meeting with the administering authority.

Please indicate below whether you think the proposed amendment will constitute a major or minor amendment.

☐ Minor amendment – select minor amendment type

☐ Minor amendment (condition conversion) – you wish to convert all conditions of your EA to the standard conditions for the ERAs to which the EA relates

Go to question 21.

By selecting this amendment type you are certifying that you have a complete and thorough understanding of, and can comply with the ERA Standard (eligibility criteria and standard conditions).

☐ Minor amendment (threshold) – Please complete the detailed description below

☑ Major amendment – please complete the detailed description below

For a minor amendment (threshold) or major amendment, provide a detailed description of your proposed amendment.

Include a justification of how your proposed amendment meets the criteria for a major or minor amendment and attach any supporting information to this application.

If the amendment is to add or delete a location, tenure or activity, or to change the threshold of an activity, provide details.
Background information

PROVIDE DETAILS OF THE CIRCUMSTANCES GIVING RISE TO THE PROPOSED AMENDMENT (IF INSUFFICIENT ROOM, ATTACH A SEPARATE DOCUMENT).

Details of proposed amendments

<table>
<thead>
<tr>
<th>PROVIDE FULL DETAILS OF EACH PROPOSED CHANGE TO CONDITION(S) OF THE ENVIRONMENTAL AUTHORITY</th>
<th>PROVIDE JUSTIFICATION FOR EACH PROPOSED CHANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>
3. Describe the land where the proposed amended activities will be carried out

- The activity will be carried out within the existing designated areas of the environmental authority.
- The activity is mobile and temporary and will be carried out in a new area:

**AREA OF OPERATION E.G. PARTICULAR LOCAL GOVERNMENTS**

- An additional site(s) will be added to the environmental authority as follows:

**Location(s)**

<table>
<thead>
<tr>
<th>STREET NUMBER</th>
<th>STREET NAME</th>
<th>SUBURB/TOWN</th>
</tr>
</thead>
<tbody>
<tr>
<td>7857</td>
<td>MARLBOROUGH - SARINA RD</td>
<td>LOTUS CREEK</td>
</tr>
<tr>
<td>POSTCODE</td>
<td>LOT/PLAN</td>
<td>SURFACE AREA (M²)</td>
</tr>
<tr>
<td>4705</td>
<td>PART LOT 2 ON WHS441</td>
<td>24,000 - MLA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>157,000,000 - LAND PARCEL</td>
</tr>
</tbody>
</table>

**PORT (IF APPLICABLE)**

N/A

**TENURE DETAILS (IF APPLICABLE)**

MLA TO BE ADVISED BY DNRMM ONCE ASSIGNED

**GENERAL DESCRIPTION OF LAND E.G. ENVIRONMENTAL VALUES, BIOREGIONS AND REGIONAL ECOSYSTEMS, TERRAIN, SHALLOW GROUND WATER SYSTEMS, FLOODPLAINS, SPRINGS AND SOIL DESCRIPTIONS. A SITE MAP OR SATELLITE IMAGERY SHOWING THESE FEATURES AND THE DESIGNATED AREA FOR THE ACTIVITY SHOULD BE ATTACHED.**

**NEW MLA TO THE WEST OF ML 70293. REFER TO THE EAR (REF 1801.620.001) FOR A FULL DESCRIPTION OF THE LAND.**
Details of ERAs conducted at new site(s)

<table>
<thead>
<tr>
<th>ERA NUMBER AND DESCRIPTION</th>
<th>ERA THRESHOLD</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHALLOW PIT MINING - CODE COMPLIANT VARIATION EA</td>
<td></td>
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</tbody>
</table>
4. Do you currently operate under an ERA standard?

☐ No → go to question 5
☒ Yes ☐ In making the proposed amendment, I can comply with the eligibility criteria and do not need to vary any of the standard conditions.

☐ In making the proposed amendment, I can comply with the eligibility criteria but am seeking to vary one or more of the standard conditions. Details of the proposed variation are provided in the table below:

<table>
<thead>
<tr>
<th>ERA NUMBER AND THRESHOLD</th>
</tr>
</thead>
<tbody>
<tr>
<td>STANDARD CONDITION TO BE VARIED</td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
</tr>
</tbody>
</table>

☐ In making the proposed amendment, I cannot comply with the relevant eligibility criteria for all relevant activities. This is due to factors beyond my control. Further details have been provided below.

 DETAILS INCLUDING THE RELEVANT ELIGIBILITY CRITERIA, ERA NUMBER AND THRESHOLD, AND FACTORS AFFECTING COMPLIANCE.
5. What is the ERA type you are applying to amend?

☐ Prescribed ERA—this application involves only prescribed ERA activities → go to question 6

☑ Resource activity—this application involves resource activities → go to question 11

Prescribed ERA information

This question is only relevant to prescribed ERAs as resource activities will not trigger assessable development under the Sustainable Planning Act 2009.

6. Are there any development permits in effect or have any development applications been made under the Sustainable Planning Act 2009 to carry out the proposed amendment?

☐ No → go to question 7

☐ Yes → provide a list of applicable development permits or applications below

<table>
<thead>
<tr>
<th>DEVELOPMENT PERMIT/APPLICATION NUMBER</th>
<th>DEVELOPMENT PERMIT/APPLICATION NAME</th>
<th>ASSESSMENT MANAGER</th>
<th>DATE OF APPLICATION OR APPROVAL</th>
<th>EXPIRY DATE</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

Provide a list of all the ERAs that are to be removed from the environmental authority and identify whether the ERA has commenced.

7. Is this application to remove an ERA from your environmental authority?

☐ No → If your amendment application also involves resource activities, go to question 10. Otherwise, go to question 16.

☐ Yes → indicate which ERAs are to be removed, then go to question 8

<table>
<thead>
<tr>
<th>ERA NUMBER AND NAME</th>
<th>THRESHOLD</th>
<th>HAS THE ERA COMMENCED? (YES/NO)</th>
<th>LOCATION (INCLUDING ALL LOT ON PLAN/TENURE DETAILS)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

If you have identified above that any of the ERAs have not commenced, please complete the below:

☐ I declare that where identified, the ERAs above have not commenced.
8. Does your environmental authority contain any rehabilitation conditions that are applicable to the ERAs that you are requesting be removed from the environmental authority?

☐ Yes → you must attach a final rehabilitation report

☐ No

9. Compliance with conditions

A statement addressing compliance with environmental authority conditions must be completed by, or on behalf of the environmental authority holder.

Attach a separate document to this application form which states the extent to which:

- the ERAs being removed from the environmental authority have complied with each relevant condition of approval
- the final rehabilitation report is accurate (include the date of the final rehabilitation report). Note: The compliance statement only needs to be made for the final rehabilitation report if the answer to question 8 is ‘Yes’

Describe the qualifications and experience of the person signing the statement.
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Provide details of the date, method and evidence used to verify compliance and accuracy.

Provide the contact number of the person signing the statement

[Signature]

(insert name and position of person making the compliance statement)

• make the statement by or for the holder of the environmental authority

• confirm that, to the best of my knowledge, all information provided as part of this statement, including attachments, is true, correct and complete. I am aware that it is an offence under section 480 of the Environmental Protection Act 1994, to give the administering authority information that I know is false, misleading or incomplete

• confirm that, to the best of my knowledge, this statement, including attachments, does not include false, misleading or incomplete information

• confirm that, to the best of my knowledge, I have not knowingly failed to reveal any relevant information or document to the administering authority

• confirm that, to the best of my knowledge, all information provided in this statement, including attachments, address the relevant matters and are factually correct

• confirm that the opinions expressed in this statement, including attachments, are honestly and reasonably held

• I understand that all information supplied as part of this statement, including attachments, can be disclosed publicly in accordance with the Right to Information Act 2009 and the Evidence Act 1977.

SIGNATURE   DATE

If your amendment application also involves resource activities, go to question 10. Otherwise, go to question 16.
Resource activity information

10. Is the resource activity located anywhere within an area of regional interest?

☐ No
☐ Yes, which regional interest area, have or will you require a regional interests development approval?

☐ Priority Agricultural Areas (PAAs) application reference:
☐ Priority Living Areas (PLAs) application reference:
☐ Strategic Environmental Areas (SEAs) application reference:

☐ Strategic Cropping Area (SCA, formerly Strategic Cropping Land) application reference:

☒ No regional interests development approval required, I am an exempt activity.

11. Environmental offsets

An environmental offset may be required for an ERA where despite all reasonable measures to avoid and minimise impacts on certain environmental matters, there is still likely to be a significant residual impact on one or more of those matters.

You must verify the presence, whether temporary or permanent, of those environmental matters. For more information refer to the State Significant Impact Guideline at the Queensland Government website at: www.qld.gov.au/environment/pollution-management/offsets/index.html

Will the proposed amendment cause a significant residual impact to a prescribed environmental matter (other than a matter of local environmental significance)?

☒ No
☐ Yes, please attach supporting information that:

• details the magnitude and duration of the likely significant residual impact on each prescribed environmental matter (other than matters of local environmental significance) for the entire activity; and
• demonstrates that all reasonable measures to avoid and minimise impacts on each of those matters will be undertaken; and
• if the activity is to be staged, details of how the activity is proposed to be staged

☒ I have attached the supporting information.
This question applies if the current activity is a resource activity or the application is to add a resource activity to an existing operation.

Both the administering authority and the applicant have responsibilities to make the application notice and application documents available on a website during the public notification period. If the applicant has a website the administering authority will link to the location where the applicant will store these documents. A word searchable electronic PDF copy of the application documents must also be included.

'Resource activities' include mining, geothermal, greenhouse gas storage, petroleum or coal seam gas activities.

The administering authority will only link to the applicant's site or post the application documents if it is determined that the amendment represents a 'major amendment' and that public notification is required.

An ineligible ERA is an activity that either does not comply with the eligibility criteria or does not have any eligibility criteria in place.

12. Public notice requirements. Please select one of the options below:

☐ The application relates to a mining activity only and public notice requirements will not apply
☒ I have included details of the website where copies of the application notice and application documents will be made available during public notification stage. If the administering authority will require permission to link to this website, also provide contact details of the person who will be able to assist the administering authority in this process.

☐ I cannot make this information available on a website. All of the application information has been provided to the administering authority in an electronic format.

<table>
<thead>
<tr>
<th>WEBSITE ADDRESS</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>CONTACT NAME</th>
<th>TELEPHONE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EMAIL ADDRESS</th>
</tr>
</thead>
</table>

13. Does the application relate to an environmental authority for a coal seam gas activity that is an ineligible ERA?

☒ No → go to question 14

☐ Yes → ☐ I have determined that the amendment will not change the way that CSG water is managed.

☐ I have determined that the amendment will change the way that CSG water is managed and have provided the mandatory information set out below.

<table>
<thead>
<tr>
<th>MANDATORY INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ The quantity of CSG water the applicant reasonably expects will be generated in connection with carrying out each relevant CSG activity.</td>
</tr>
<tr>
<td>☐ The flow rate at which the applicant reasonably expects the water will be generated.</td>
</tr>
<tr>
<td>☐ The quality of the water, including changes in the water quality the applicant reasonably expects will happen while each relevant CSG activity is carried out.</td>
</tr>
<tr>
<td>☐ The proposed management of water including, for example, the use, treatment, storage or disposal of the water.</td>
</tr>
</tbody>
</table>
The measurable criteria ('management criteria') against which the applicant will monitor and assess the effectiveness of the management of the water, including, for example, criteria for each of the following:

(i) the quantity and quality of the water used, treated, stored or disposed of
(ii) protection of the environmental values affected by each relevant CSG activity
(iii) the disposal of waste, including, for example, salt, generated for the management of the water.

The action proposed to be taken if any of the management criteria are not complied with, to ensure that the criteria will be able to be complied with in the future.

If the application includes a CSG evaporation dam, an evaluation of the following must be provided:

(i) best practice environmental management for managing CSG water
(ii) alternative ways for managing CSG water
(iii) whether there is a feasible alternative to a CSG evaporation dam for managing the water. Note if the evaluation shows that there is a feasible alternative option, the CSG evaporation dam cannot form part of the water management for this amendment application.

General ERA information

Completion of an EIS process is defined in section 60 of the EP Act.

14. Has an environmental impact statement (EIS) process that includes the proposed amendment, been completed?

☑ No

☐ Yes → ☑ I have assessed the environmental risks of the proposed amendment and consider them to be the same as was assessed in the EIS. A copy of the assessment is attached. Go to question 17

☐ I have assessed the environmental risks of the proposed amendment and consider them to be different to what was assessed in the EIS. Go to question 15
The information provided here will assist the administering authority in deciding whether an EIS is required.

For further information refer to the guideline: Triggers for Environmental Impact Statements under the Environmental Protection Act 1994 for mining, petroleum and gas activities. This guideline is available at www.qld.gov.au, using the search term 'triggers for environmental impact statements'.

### 15. EIS triggers

<table>
<thead>
<tr>
<th>Questions</th>
<th>Select</th>
<th>Give details or attach documentation to support your answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only answer this question if the current ERA project is for an existing mine extracting between 2–10 million tonnes per year of run of mine (ROM) ore or coal. Is the proposed ERA amendment for an increase in the annual extraction of more than 100% or 5 million tonnes per year (whichever is the lesser)?</td>
<td>☐ YES ☑ NO ☑ N/A</td>
<td></td>
</tr>
<tr>
<td>Only answer this question if the current ERA project is for an existing mine extracting over 10 million tonnes per year of ROM ore or coal. Is the proposed ERA amendment for an increase in annual extraction of more than 10% or 10 million tonnes per year (whichever is the lesser)?</td>
<td>☐ YES ☑ NO ☑ N/A</td>
<td></td>
</tr>
<tr>
<td>Only answer this question if the current ERA project is for an existing mine extracting over 20 million tonnes per year of ROM ore or coal extraction. Is the proposed ERA amendment for an increase in annual extraction of greater than 25%?</td>
<td>☐ YES ☑ NO ☑ N/A</td>
<td></td>
</tr>
<tr>
<td>Is the proposed ERA amendment for a mining activity that will extend into a Category A or B environmentally sensitive area, unless previously authorised by the state?</td>
<td>☐ YES ☑ NO ☑ N/A</td>
<td>REFER TO THE ENVIRONMENTAL ASSESSMENT REPORT (DOC REF. 1801.620.001)</td>
</tr>
<tr>
<td>Is the proposed ERA amendment for a mining activity that would involve a substantial change in mining operations? For example: from underground to open cut, or (for underground mining) a change in operations that currently</td>
<td>☐ YES ☑ NO ☑ N/A</td>
<td>REFER TO THE ENVIRONMENTAL ASSESSMENT REPORT (DOC REF. 1801.620.001)</td>
</tr>
</tbody>
</table>
### Application form

#### Application to amend an environmental authority

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>causes little subsidence but with the proposed ERA amendment, is likely to cause substantial subsidence?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the proposed ERA amendment for a mining activity and a novel or unproven resource extraction process, technology or activity, is being proposed?</td>
<td>☒ NO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the proposed ERA amendment for a petroleum and gas activity that is likely to have a total disturbance area of greater than 2000 hectares at any 1 time during the life of the proposed project? This includes areas occupied by well pads (single or multi-directional), access tracks and roads, water storages, and process plants</td>
<td>☐ YES</td>
<td>☒ NO</td>
<td>☐ N/A</td>
</tr>
<tr>
<td>Is the proposed ERA amendment for a petroleum and gas activity that is likely to involve the construction of a high pressure pipeline over a distance of 300 kilometres or greater?</td>
<td>☐ YES</td>
<td>☒ NO</td>
<td>☐ N/A</td>
</tr>
<tr>
<td>Is the proposed ERA amendment for a petroleum and gas activity that is likely to involve the construction of a liquefied natural gas plant?</td>
<td>☐ YES</td>
<td>☒ NO</td>
<td>☐ N/A</td>
</tr>
</tbody>
</table>

#### 16. Assessment of the environmental impact and provision of specific supporting information

You must provide an assessment of the likely impact of the proposed amendment on the environmental values, including the following mandatory information in the table below, unless the not applicable check box is ticked.

Only tick the 'Not Applicable' check box if the proposed amendment does not cause a change to the environmental values, aspects and impacts as approved under the current environmental authority.

Where the ‘Not Applicable’ option is selected, sufficient information must be provided to support this determination, as the determination forms part of the required assessment.
Application form

Application to amend an environmental authority

<table>
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<tr>
<th>MANDATORY INFORMATION</th>
<th>Provided</th>
<th>N/A</th>
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</thead>
<tbody>
<tr>
<td>A description of the environmental values likely to be affected by the proposed amendment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reason for N/A:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Details of any emissions or releases likely to be generated by the proposed amendment</td>
<td></td>
<td></td>
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<tr>
<td>Reason for N/A:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A description of the risk and likely magnitude of impacts on the environmental values</td>
<td></td>
<td></td>
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<tr>
<td>Reason for N/A:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Details of the management practices proposed to be implemented to prevent or minimise adverse impacts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reason for N/A:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Details of how the land the subject of the application will be rehabilitated after each relevant activity ceases</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reason for N/A:</td>
<td></td>
<td></td>
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</table>

To provide a response to the mandatory information, specific supporting information must be provided to the administering authority, the type and detail of which will depend on your particular ERA project. Supporting material for technical information requirements is located on the business and industry website [www.business.qld.gov.au](http://www.business.qld.gov.au).
17. Provide details of the proposed measures for minimising and managing waste generated by any amendments to the relevant activity.

WASTE MANAGEMENT DETAILS. IF WASTE IS TO BE MANAGED ACCORDING TO AN EXISTING WASTE MANAGEMENT PLAN, PROVIDE THE RELEVANT PAGE OR SECTION NUMBERS.

REFER TO THE ENVIRONMENTAL ASSESSMENT REPORT (DOC REF. 1801.620.001)

18. Do you currently have financial assurance held as part of the approved environmental authority

☐ No

☒ Yes →☐ I will not need to change the financial assurance in relation to this amendment.
☐ I will be changing the financial assurance and have attached the form Application to Amend or Discharge Financial Assurance for an Environmental Authority (EM875)
☐ I will be changing the financial assurance and will be amending or replacing my Plan of Operations.

19. Is this land currently subject to an environmental protection order or a site management plan?

☒ No

☐ Yes →☐ I have an environmental protection order in place and the details are provided below.
☐ I have a site management plan in place and the details are provided below.

PROVIDE THE REFERENCE NUMBER AND BRIEF DETAILS

20. Is any part of the land currently recorded in, or previously been recorded in, the environmental management register?

☒ No
Application form

Application to amend an environmental authority

☐ Yes, complete the below table and provide the additional details

<table>
<thead>
<tr>
<th>PLEASE TICK RELEVANT BOXES</th>
<th>YES</th>
<th>NO</th>
<th>ADDITIONAL DETAILS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has the land been removed from the environmental management register?</td>
<td>☐</td>
<td>☐</td>
<td>If yes is ticked, you must attach evidence (e.g. a notice) advising that details have been removed from the environmental management register</td>
</tr>
</tbody>
</table>

21. Payment of fees

Application fee: $478.30

You may pay your fee via cheque, money order or credit card.

Select the payment method below:

☐ Payment by cheque or money order made payable to the Department of Environment and Heritage Protection (attached).

☐ Payment by cheque or money order made payable to the Department of Agriculture and Fisheries (attached).

☒ Please contact me (the applicant) for credit card payment:

Phone number: 0749559561
Application form
Application to amend an environmental authority

22. Declaration

Note: If you have not told the truth in this application you may be prosecuted.

Where an agreement is in place between all holders of the environmental authority, that 1 holder can sign on behalf of the other joint holders, please tick the below checkbox.

☒ I have the authority to sign this form on behalf of all the joint holders of the environmental authority.

I declare that:

- I am the holder of the environmental authority, or authorised signatory for the holder of the environmental authority.

- If the proposed amendment is made, the relevant activities will continue to comply with the ERA Standard (eligibility criteria and standard conditions) for all eligible ERAs, or where they cannot, I have indicated otherwise in my application and provided the required support information.

- If the proposed amendment is a minor amendment (condition conversion) that I can comply with the ERA Standard (eligibility criteria and standard conditions) for each of the ERAs authorised by the environmental authority.

- The information provided is true and correct to the best of my knowledge. I understand that it is an offence under section 480 of the Environmental Protection Act 1994 to give to the administering authority or an authorised person a document containing information that I know is false, misleading or incomplete in a material particular.

- I understand that I am responsible for managing the environmental impacts of these activities, and that approval of this application is not an endorsement by the administering authority of the effectiveness of management practices proposed or implemented.

<table>
<thead>
<tr>
<th>APPLICANT'S NAME</th>
<th>CQ DOLOMITE PTY LTD</th>
</tr>
</thead>
<tbody>
<tr>
<td>APPLICANT'S SIGNATURE</td>
<td></td>
</tr>
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<table>
<thead>
<tr>
<th>POSITION OF SIGNATORY</th>
<th>DATE</th>
</tr>
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<tbody>
<tr>
<td>DIRECTOR</td>
<td>18/07/2016</td>
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</table>

<table>
<thead>
<tr>
<th>JOINT HOLDER'S NAME (IF APPLICABLE)</th>
<th>JOINT HOLDER'S SIGNATURE (IF APPLICABLE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MACEGATE PTY LIMITED</td>
<td></td>
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Application form

Application to amend an environmental authority

<table>
<thead>
<tr>
<th>JOINT HOLDER'S NAME (IF APPLICABLE)</th>
<th>JOINT HOLDER'S SIGNATURE (IF APPLICABLE)</th>
</tr>
</thead>
</table>

Applicant checklist

☑ Application form has been signed and all questions completed.

☐ Question 11: Supporting information for environmental offsets attached (if applicable)

☐ Question 13: mandatory information for the assessment of coal seam gas activities attached (if applicable)

☑ Question 16: mandatory information for assessment of environmental impacts attached (if applicable)

☐ Question 18: Application to Amend or Discharge Financial Assurance for an Environmental Authority (EM875) is attached (if applicable).

☑ Fees paid or enclosed.

Please include a word searchable electronic PDF copy of the application documents when you lodge your application.
Please submit your completed application to:

For a mining ERA where the proposed amendment impacts upon the resource tenure:

Mining Registrar
Department of Natural Resources and Mines
DNRM have a list of office locations for mining registrars on their website
www.dnrm.qld.gov.au

For ERA 2, ERA 3 or ERA 4
Post:
Senior Environmental Scientist
Animal Industries
Department of Agriculture and Fisheries
PO Box 102
TOOWOOMBA QLD 4350

Enquiries:
Phone: (07) 4688 1374
Fax: (07) 4688 1192
Email: livestockregulator@daf.qld.gov.au

For all other ERAs
Post:
Permit and Licence Management
Department of Environment and Heritage Protection
GPO Box 2454
BRISBANE QLD 4001

Enquiries:
Website: www.business.qld.gov.au
Email: palm@ehp.qld.gov.au
Phone: 13 7Q GOV (13 74 68)

Courier or hand delivery:
Permit and Licence Management
Department of Environment and Heritage Protection
Level 3, 400 George Street
BRISBANE QLD 4000
Business hours: 8:30am–4:30pm
4. **Do you currently operate under an ERA standard?**

- [x] No → go to question 5
- [ ] Yes  
  - [ ] In making the proposed amendment, I can comply with the eligibility criteria and do not need to vary any of the standard conditions.
  - [ ] In making the proposed amendment, I can comply with the eligibility criteria but am seeking to vary one or more of the standard conditions. Details of the proposed variation are provided in the table below:

<table>
<thead>
<tr>
<th>ERA NUMBER AND THRESHOLD</th>
<th>STANDARD CONDITION TO BE VARIED</th>
<th>REQUESTED VARIATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**JUSTIFICATION FOR REQUESTED VARIATION**

- [ ] In making the proposed amendment, I cannot comply with the relevant eligibility criteria for all relevant activities. This is due to factors beyond my control. Further details have been provided below.

**DETAILS INCLUDING THE RELEVANT ELIGIBILITY CRITERIA, ERA NUMBER AND THRESHOLD, AND FACTORS AFFECTING COMPLIANCE.**
18 July 2016

Queensland Government  cc. Queensland Government
C/- Executive Director, Mining and Petroleum Operations GPO Box 2454, Brisbane Qld 4001
Department of Natural Resources and Mines
PO Box 15218, Brisbane Qld 4001

Dear Sir / Madam,

RE: Letter of Authority for Groundwork Plus Pty Ltd to Act as Authorised Holder Representative

We the undersigned, being the applicants/holders of the relevant applications/permits listed in Table 1 - Details of Applications and Permits, nominate the Authorised Holder Representatives as shown in Table 2 - Details of Authorised Holder Representative to complete applications, permit transactions, requests and receive information and statutory documents on our behalf.

This authorisation is in relation to the following permits and applications, and future submissions of applications. If an application listed below is granted the authorisation extends to the resulting permits while the permits remain current.

<table>
<thead>
<tr>
<th>Permit and or application numbers</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kennedy Creek West</td>
<td>Proposed Application (MLA)</td>
</tr>
<tr>
<td>Plain Creek West</td>
<td>Proposed Application (MLA)</td>
</tr>
<tr>
<td>ML70253 (Kennedy Creek)</td>
<td>Permit</td>
</tr>
<tr>
<td>ML70413 (Plain Creek)</td>
<td>Permit</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clayton Hill, Tegan Smith, Rodney Huntley and the employees of Groundwork Plus Pty Ltd</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Organisation name</th>
<th>Organisation number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groundwork Plus Pty Ltd</td>
<td>13 609 422 791</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Registered business address</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 Mayneview Street, Milton QLD 4064</td>
<td>(07) 3871 0411</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Postal address</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>PO Box 1779, Milton BC QLD 4064</td>
<td><a href="mailto:info@groundwork.com.au">info@groundwork.com.au</a></td>
</tr>
</tbody>
</table>

We agree if there are changes to this authority, or there are changes in the ownership of the applications or resulting permits, we will complete a new Letter of Authority and submit it to the Queensland Government, C/- Executive Director, Mining and Petroleum Operations. Unless and until such notification is received, the Queensland Government will be entitled to continue to rely on this Letter of Authority.

JV Letter of Authority – Groundwork Plus (Authorised Holder Representative) 1
The Authorised Holder Representative nominated in Table 2 - Details of Authorised Holder Representative have our explicit authority to undertake all activities and transactions under the Mineral Resources Act 1989, Mineral Resources Regulation 2013, or any other mining associated legislation, and the Environmental Protection Act 1994 and any corresponding Regulations with the Queensland Government in relation to the applications and permits listed above. Examples of these activities and transactions may include:

1. Completing and lodging the permit related applications (including mining lease applications and environmental authority applications).
2. Responding to requests for information from any Queensland Government department relating to the permit application, or if granted, the permit.
3. Being the point of contact for application and permit notices, letters or other interactions and transactions.
4. Completion and submission of notices, reports, returns, letters and other information or communication required to be completed by any Queensland Government department.
5. Completion and submission of transactions throughout the active life of the permit (if granted), including the payment of annual fees and completion of annual returns for environmental authorities.
6. Granting access to the MyMinesOnline computer system to other people to have the ability to perform authorised holder representative responsibilities, but not the ability to grant additional access.
7. Requesting and obtaining access to confidential information (as defined in the Mineral Resources Act 1989) concerning royalty obligations in relation to the permits and applications listed above.

We acknowledge that it is our responsibility to be informed of any actions undertaken by the Authorised Holder Representative and to inform the Authorised Holder Representative of any actions undertaken by us. We also acknowledge that in regard to the above activities and transactions, any legislative notification provision that refers to notifying either the applicant or the holder of a permit or authorisation may be met by notifying the Authorised Holder Representative, except where legislatively provided to the contrary, whether expressly or impliedly.

We acknowledge that both we as the undersigned, and the Authorised Holder Representative are jointly and severally liable for knowingly or having reasonably ought to have known and/or intentionally giving the administering authority under the Environmental Protection Act 1994 false, misleading or incomplete statements or documents in relation to the above permits and applications.

Applicants / Holders

Organisation name
CQ Dolomite Pty Ltd

Residential or registered business address
21 Mackay-Slade Point Road, Mackay Harbour QLD 4740

Name
Mitchell Flor, Director
(07) 4955 9554
mflor@landygroup.com.au

Signature

Organisation number
17 104 180 965

Postal address
PO Box 101, Mackay QLD 4740

Name
Larry Voltz, Company Secretary
(07) 4955 9561
lvolz@landygroup.com.au

Signature

Date
18/07/2016

JV Letter of Authority – Groundwork Plut (Authorised Holder Representative)
Authorised Holder Representative
We understand and accept the responsibilities of the Authorised Holder Representative as defined in this letter.

Yours faithfully

Larry Voltz
Company Secretary
KENNEDY CREEK WEST MINING LEASE APPLICATION
ENVIRONMENTAL ASSESSMENT REPORT

Prepared for:
CQ Dolomite Pty Ltd & Macegate Pty Ltd JV

Date:
July 2016

Reference:
1801.620.001
Environmental Assessment Report: Kennedy Creek West Mining Lease Application

Y. Dowling

CQ Dolomite Pty Ltd and Macegate Pty Ltd

1801.620.001

July 2016

Y. Dowling

T. Smith

CQ Dolomite Pty Ltd and Macegate Pty Ltd

Department of Environment and Heritage Protection

Electronic

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# Glossary of Terms

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<th>Definition</th>
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<tr>
<td><strong>Air Pollutant</strong></td>
<td>A substance in ambient atmosphere, resulting from the activity of man or from natural processes, causing adverse effects to man and the environment (also called &quot;air contaminant&quot;).</td>
</tr>
<tr>
<td><strong>Ambient Air Quality</strong></td>
<td>The quality of the ambient air near ground level, expressed as concentrations or deposition rates of air pollutants - also expressed as existing air quality.</td>
</tr>
<tr>
<td><strong>Annual Exceedance Probability (AEP)</strong></td>
<td>Means the likelihood of occurrence of a flood of a given size or larger in any one year, usually expressed as a percentage. For example, if a peak flood discharge of 500 cubic metres per second has an AEP of 5 percent, it means that there is a 5 percent risk that is the probability of 0.05 or a likelihood of 1 in 20, of a peak flood discharge of 500 cubic metres/second or larger occurring in any one year. The AEP of a flood event gives no indication of when a flood of that size will occur next.</td>
</tr>
<tr>
<td><strong>Average Recurrence Interval</strong></td>
<td>Means the average period between the recurrence of a storm event of a given rainfall intensity. The ARI represents a statistical probability. For example, a 100 year ARI indicates an average of 100 years between exceedance of a given storm magnitude.</td>
</tr>
<tr>
<td><strong>Background Noise Levels</strong></td>
<td>The level of the ambient sound indicated on a sound level meter in the absence of the sound under investigation (e.g. sound from a particular noise source; or sound generated for test purposes).</td>
</tr>
<tr>
<td><strong>Blasting</strong></td>
<td>The operation of breaking rock by means of explosives.</td>
</tr>
<tr>
<td><strong>Bund Wall</strong></td>
<td>A man-made earth mound.</td>
</tr>
<tr>
<td><strong>Catchment Area</strong></td>
<td>The area determined by topographic features within which rainfall will contribute to runoff at a particular point.</td>
</tr>
<tr>
<td><strong>Concrete Products</strong></td>
<td>Products manufactured primarily from Portland Cement concrete these include bricks, blocks, pavers, pipes and box culverts and other precast concrete sections.</td>
</tr>
<tr>
<td><strong>Conveyor</strong></td>
<td>A device fitted with an endless rubber belt used for moving crushed rock within the processing plant.</td>
</tr>
<tr>
<td><strong>Crushing</strong></td>
<td>The mechanical process of reducing rock size usually by pressure or impact.</td>
</tr>
<tr>
<td><strong>Dust</strong></td>
<td>Particles of mostly mineral origin generated by erosion of surfaces and the mining and handling of materials.</td>
</tr>
<tr>
<td><strong>Ecosystem</strong></td>
<td>The totality of biological processes and interactions within a specified physical environment.</td>
</tr>
<tr>
<td><strong>Environmental Constraints</strong></td>
<td>Limitations on a project by components of the environment.</td>
</tr>
<tr>
<td><strong>Excavator</strong></td>
<td>Item of earth moving equipment either tracked or wheeled fitted with a bucket on an articulated boom and used for digging material from a face in front of, or below the machine</td>
</tr>
<tr>
<td><strong>Fill</strong></td>
<td>Material imported and emplaced to raise the general surface level of a site.</td>
</tr>
<tr>
<td><strong>Fresh Rock</strong></td>
<td>Rock unaffected by weathering processes.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>----------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Grader</td>
<td>An item of earthmoving equipment, rubber tyred and fitted with a centrally mounted blade and rippers used to shape and trim the ground surface.</td>
</tr>
<tr>
<td>Groundwater</td>
<td>Water contained in voids such as fractures and cavities in rocks and inter-particle spaces in sediments.</td>
</tr>
<tr>
<td>Haul Road</td>
<td>Road used in quarry for haulage of rock from the face to the crusher and for general site access.</td>
</tr>
<tr>
<td>Mobile Equipment</td>
<td>Wheeled or tracked self-propelled equipment such as trucks and front end loaders.</td>
</tr>
<tr>
<td>Monitoring</td>
<td>The regular measurement of characteristics of the environment.</td>
</tr>
<tr>
<td>Operational Constraints</td>
<td>Limitations upon a project by equipment or machinery.</td>
</tr>
<tr>
<td>Particulate Matter</td>
<td>Small solid or liquid particles suspended in or falling through the atmosphere.</td>
</tr>
<tr>
<td>Processing Plant</td>
<td>A combination of crushers, screens, conveyors and chutes.</td>
</tr>
<tr>
<td>Rehabilitation</td>
<td>The preparation of a final landform after mining and its stabilisation with vegetation.</td>
</tr>
<tr>
<td>Revegetation</td>
<td>Replacement of vegetation on areas disturbed by quarrying activities.</td>
</tr>
<tr>
<td>Screening</td>
<td>A process which separates crushed rock into various sizes - this usually involves a mechanical vibration of the rock over a series of decks fitted with steel mesh, steel plate or polyurethane or rubber mats with fixed sized apertures.</td>
</tr>
<tr>
<td>Suspended Solids</td>
<td>Analytical term applicable to water samples referring to material recoverable from the sample by filtration.</td>
</tr>
<tr>
<td>Topsoil</td>
<td>The surface layer of a poorly-developed or well-developed soil profile containing a relatively high percentage of organic material.</td>
</tr>
<tr>
<td>Weathered Rock</td>
<td>Rock affected to any degree by the process of chemical or physical decomposition.</td>
</tr>
</tbody>
</table>
## Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABN</td>
<td>Australian Business Number</td>
</tr>
<tr>
<td>ACN</td>
<td>Australian Company Number</td>
</tr>
<tr>
<td>AHD</td>
<td>Australian Height Datum</td>
</tr>
<tr>
<td>EA</td>
<td>Environmental Authority</td>
</tr>
<tr>
<td>EHP</td>
<td>Department of Environment and Heritage Protection</td>
</tr>
<tr>
<td>EPBC</td>
<td>Environmental Protection and Conservation Act</td>
</tr>
<tr>
<td>EP Act</td>
<td>Environmental Protection Act 1992</td>
</tr>
<tr>
<td>EP Reg</td>
<td>Environmental Protection Regulations 2008</td>
</tr>
<tr>
<td>EPP</td>
<td>Environmental Protection Policy</td>
</tr>
<tr>
<td>ERA</td>
<td>Environmentally Relevant Activity</td>
</tr>
<tr>
<td>ESA</td>
<td>Environmentally Sensitive Areas</td>
</tr>
<tr>
<td>EVs</td>
<td>Environmental Values</td>
</tr>
<tr>
<td>LGA</td>
<td>Local Government Area</td>
</tr>
<tr>
<td>MLA</td>
<td>Mining Lease Application</td>
</tr>
<tr>
<td>MSES</td>
<td>Matters of State Environmental Significance</td>
</tr>
<tr>
<td>MRA</td>
<td>Mineral Resources Act 1989</td>
</tr>
<tr>
<td>NCA</td>
<td>Nature Conservation Act 1992</td>
</tr>
<tr>
<td>PPV</td>
<td>Peak Particle Velocity</td>
</tr>
<tr>
<td>QWQG</td>
<td>Queensland Water Quality Guidelines</td>
</tr>
<tr>
<td>RE</td>
<td>Regional Ecosystem</td>
</tr>
<tr>
<td>EMP</td>
<td>Environmental Management Plan</td>
</tr>
<tr>
<td>VMA</td>
<td>Vegetation Management Act 1999</td>
</tr>
<tr>
<td>WQO</td>
<td>Water Quality Objectives</td>
</tr>
</tbody>
</table>
1. Introduction

1.1 Background

CQ Dolomite Pty Ltd (CQD) and Macegate Pty Limited (Macegate) are the holders of several mining tenements in the Central Queensland region. CQD and Macegate are subsidiaries of the Tandy Group, an Australian owned company established in 1988 and comprises multiple entities including Kennedy Creek Lime, Tandy Concrete, Mackay Sand and Gravel Sales, Clark Drinking Water, CLH Transport and Beef Breeding Services.

CQD and Macegate have submitted a MLA over the portion of land directly adjacent to the existing operations carried out on ML70293 to form an expansion of the surface area for the Kennedy Creek Lime Mining Project, refer to Figure 1 – Site Locality Plan for an illustration of the geographical location of the Kennedy Creek Lime mining project. Figure 2 – Site Layout Plan provides an illustration of the MLA area and adjacent existing operations.

The proposed Environmentally Relevant Activity (ERA) to be conducted is a Mining Activity as defined under Section 110 of the Environmental Protection Act 1995 (EP Act). The new mining lease once granted will form an extension to the surface area of the existing mining activity carried out on ML 70293. Therefore, under the Section 118 of EP Act, it is understood that an entity may only make a single application for a single EA for all relevant activities that form the project.

The current operations are considered a small scale, shallow pit mining operation and are subject to a Variation Environmental Authority EPVL00498813 (EA). Consultation with CQD and Macegate has confirmed that the additional tenure will not trigger an increase in the scale of the operations that would result in the operations being inconsistent with the criteria outlined in the prescribed eligibility criteria for mining activities, defined in Schedule 3A, Sections 1 and 3 of the Environmental Protection Regulation 2006 (EP Reg).

1.2 Major vs Minor Amendment

Under Section 223 of the EP Act, an amendment of an existing EA may be either minor (threshold) amendment, or a major amendment. It is understood that the amendment will be a major amendment, as the application relates to a new resource tenure for the EA that is a new mining lease.

1.3 Purpose of the Environmental Assessment Report

The purpose of this Environmental Assessment Report (EAR) is to qualify the potential environmental impacts and risks proposed by the new mining lease to assist the Department of Environment and Heritage Protection (EHP) to assess the major amendment of the existing EA. This EAR includes a summary of:

- the site the subject of the MLA and an overview of the mining project.
- the existing environment description, including an assessment of the MLA area Environmental Values.
- details of any potential emissions or releases likely to be generated by the proposed new tenure.
- any potential environmental risks and impacts proposed.
- proposed management measures to prevent or minimise adverse impacts.
- the proposed measures for minimising and managing waste generated by the relevant activity.
- how the land the subject of the application may be rehabilitated after the mining activity ceases.

1.4 Assessment against Eligibility Criteria

The threshold for which the proposed mining activity apply are subject to eligibility criteria and standard conditions under the Code of environmental compliance for Mining Lease Projects. An assessment against the applicable criteria...
prescribed in Schedule 3A, Sections 1 and 3 of the EP Reg is shown in Table 1 – Assessment of Operations against Eligibility Criteria.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Eligible</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Eligibility criteria for all mining activities (Schedule 3A, Section 1 of the EP Reg)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) the mining activity does not, or will not, at any one time, cause more than 10ha of land to be significantly disturbed;</td>
<td>✔</td>
<td>Consultation with CQD and Macegate has confirmed that the operation will not significantly disturb more than 10ha of land at any one time. Progressive rehabilitation is to be undertaken to ensure that the areas of disturbance remain below this threshold.</td>
</tr>
<tr>
<td>(b) the mining activity is not, or will not be, carried out in a category A environmentally sensitive area or a category B environmentally sensitive area;</td>
<td>✔</td>
<td>Review of the State ESA mapping has confirmed no ESAs exist within the proposed MLA area or the existing MLA. A search of the EHP ESAs mapping shows that the nearest ESA is the Category B Endangered Regional Ecosystem, approximately 575 m to the south east of the MLA area.</td>
</tr>
<tr>
<td>(c) the mining activity is not, or will not be, carried out under an environmental authority under which either of the following is, or is to be, authorised—(i) an environmentally relevant activity to which a section of schedule 2 applies and for which there is an aggregate environmental score; (ii) a resource activity, other than a mining activity, that is an ineligible ERA;</td>
<td>✔</td>
<td>Consultation with CQD and Macegate has confirmed that there are no Schedule 2 ERAs proposed for the new MLA or undertaken as part of the current mining project. The resource activity is not an ineligible ERA.</td>
</tr>
<tr>
<td>(d) the mining activity is not, or will not be, carried out in a strategic environmental area, unless—(i) the mining activity is authorised under an environmental authority for a mining activity relating to a mining claim, an environmental authority for a mining activity relating to an exploration permit, or an environmental authority for a mining activity relating to a mineral development licence; or (ii) the mining activity involves alluvial mining and is, or will be, carried out at a place that is not in a designated precinct in a strategic environmental area; or (iii) the mining activity involves clay pit mining, dimension stone mining, hard rock mining, opal mining or shallow pit mining and is, or will be, carried out at a place that is not in a designated precinct in a strategic environmental area.</td>
<td>✔</td>
<td>The MLA area is not in an area identifies as a Strategic Environmental Area under the Regional Planning Instrument Act 201.</td>
</tr>
<tr>
<td>Criteria</td>
<td>Eligible</td>
<td>Assessment</td>
</tr>
<tr>
<td>----------</td>
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</tr>
</tbody>
</table>
| (a) the mining activity does not, or will not, at any one time, cause more than 5ha of either of the following to be significantly disturbed—  
  (i) a riverine area;  
  (ii) mine workings; | ☑️ | Consultation with CQD and Macegate has confirmed that the operation will not disturb more than 5ha of mine workings at any one time. Progressive rehabilitation is to be undertaken to ensure that the areas of disturbance remain below this threshold. |
| (b) the mining activity is not, or will not, be carried out by more than 20 persons at any one time; | ☑️ | Consultation with CQD and Macegate has confirmed that the operation are, and will, be supported by less than 20 personnel (tentatively five to 10 personnel). |
| (c) only the following types of mining are, or will be, authorised under the relevant mining lease—  
  (i) alluvial mining;  
  (ii) clay pit mining;  
  (iii) dimension stone mining;  
  (iv) hard rock mining;  
  (v) opal mining;  
  (vi) shallow pit mining. | ☑️ | Consultation with CQD and Macegate has confirmed that the operation is a shallow pit mining operation, with typical depths of extraction being between two and five metres. Shallow pit mining means extracting material from an open cut pit no more than five metres deep and processing the material to extract minerals. |

Note:
mine workings means an area from which ore or overburden has been extracted, or on which waste rock is stored, that is not—

a) substantially rehabilitated to the satisfaction of the administering authority, or
b) used for constructing a camp site, road, plant, tailings dam, water storage dam or other infrastructure.
2. **Mining Project Summary**

2.1 **Site Details**

A summary of the site location details the subject of the MLA area are provided below.

**Location:** The MLA is situated on Sarina-Marlborough Road, Lotus Creek, and is approximately 98km south west of the Mackay CBD, refer to Figure 1 – Site Locality Plan.

**Access:** Access to the MLA is via the existing Kennedy Creek ML70293, which is accessed via Sarina-Marlborough Road. Refer to Figure 2 – Site Layout Plan.

**Real Property Description:** Lot 2 on WHS411

**Area:** The MLA area is 24 ha

**Tenure:** Lot 2 on WHS411 is Lands Lease and subject to ML70293

**Local Authority:** Isaac Regional Council

2.2 **Project Overview**

The new ML represents an extension to the existing Kennedy Creek Lime operations (ML70293) into an area of known resource, refer to Figure 2 – Site Layout Plan for an illustration of the tenure areas. The minerals to be mined include Clay, Dolomite, Lime, and Limestone, which are the same as the currently approved minerals for the ML70293 operations.

The new ML will be mined concurrently with the existing operations on ML70293. Both the existing Kennedy Creek ML70293 and the new ML cover a single resource deposit area of dolomite and dolomitic lime. The new ML once granted, and the existing ML70293, will collectively form a Mining Project. The primary purpose of the ML is to secure the known dolomite resources for longevity and future security of the operations.

Materials extracted from the Kennedy Creek Mining Project will be mined in combination with the separate resource situated at the CQD and Macegate Plain Creek mining lease (and new ML once granted), further south along the Sarina – Marlborough Road, Lotus Creek, refer to Figure 1 – Site Locality Plan. The resource at these two geographically separate locations contains two different grades of material. Both resources are extracted and blended at the Kennedy Creek Lime processing plant, situated in ML70293. It should be noted that CQD and Macegate intend to expand the surface area of the Plain Creek operations to an areas west of the current Plain Creek ML. An MLA for this area has been prepared and submitted. Under the former legislation, a separate EA for the Plain Creek operations was required, therefore the additional tenure is proposed to be incorporated into the Plain Creek EA (EA Ref. EPSL00463513); however, CQD and Macegate may considered applying for an amalgamated Project Authority at a later stage once the new MLs are granted.
2.2.2

The general mine development is illustrated on Figure 3 - Conceptual Mine Development Plan. Mining operations are anticipated to comprise of the following basic shallow pit mining methods:

- Cleaning of sparse vegetation and stripping of topsoil and overburden material via mechanical means (i.e. bulldozer or excavator) and stockpiling for later use in on-site rehabilitation works, or for the construction of environmental controls such as perimeter banks or bunds.
- Shallow pit extraction (i.e. pits two to five metres, dependent upon resource depth and quality) of the underlying resource using a bulldozer with line ripper, or excavator.
- Stockpiling of raw materials on the pit floor, ready for transfer via loader / truck to the mobile processing plant on ML70293.
- Processing of the raw materials by screening and pin milling.
- Stockpiling the final products within designated stockpiling area(s) before the materials are sold and loaded into road trucks for transportation off-site.
- Rehabilitating disturbed areas progressively once extraction is completed where practicable.

No blasting is required as part of the extraction process and processing will be via a pin mill, which will grind the raw materials into a very fine product. Material will be screened through a vibrating screen to segregate the various sizes of product, any oversize materials will be stockpiled for later use.

The mineral processing methods used at the mining project are a dry process, and no processing fluids are utilised as this affects the quality of the final products. Final products are stockpiled undercover in the storage shed, which is an existing structure located on ML70923. Bagging of the final products is undertaken on ML70293 and final product produced at the operations includes:

- Aglime (soil conditioner)
- Dolomite (soil sweetener)
- Zeolite (soil enhancer)
- DoloFeed (livestock supplement)
- Stonedust (explosion dust suppressant).

It is anticipated that mining on the new ML would commence in approximately mid-2017, dependent upon grant of the new tenure, market demand and equipment availability.

2.2.3

The MLA will be supported by existing infrastructure located on ML70293, which includes the following:

- Mobile processing plant (ore hopper, conveyor belt and vibrating power screen)
- Fuel storage tank
- Storage shed
- Worker's quarters
- Services (i.e. power)
- Water tanks.

Infrastructure developed on the MLA area will be limited to internal access / haul roads, mine pits and environmental controls (e.g. sump, bunds, etc.).

2.2.4 Workforce

The existing workforce currently employed for the operations on ML70293 will be maintained for the new MLA area. The workforce comprises a competent team of personnel for all stages of the mine development. It is anticipated that less than 20 employees are to be maintained for the mining operations, generally between 5 to 10 personnel will be involved in the daily operation of the project.
3. Description of Existing Environment

3.1 Local Land Use

The existing land use on Lot 2 WHS441 is rural use (grazing) and mining activities on ML70293. The land use on the adjacent properties is rural use (grazing). The land uses surrounding the MLA are summarised below based on the direction from the site.

North – Land immediately north of the MLA is lands lease, held by Hughes Pastoral and used for cattle grazing. A homestead (used as the worker’s quarters for personnel of Kennedy Creek Lime) is situated approximately 300m north of the MLA, and beyond this lies the South branch of Kennedy Creek. The Tierowoomba State Forest, which contains the Pine Mountains, is located 6.7km north east of the MLA boundary.

East – The existing Kennedy Creek ML70293 is directly adjacent to the MLA, abutting the eastern MLA boundary. ML70293 contains the infrastructure that will support the MLA. Beyond the existing is the Sarina-Marborough Road. Lot 2 WHS441 continues on the eastern side of Sarina-Marborough Road. Bordering the eastern edge of Lot 2 WHS441 is the above-mentioned Tierowoomba State Forest.

South – A road reserve which is not currently in use (identified as Joe Lodge Road) borders the southern edge of the MLA. Beyond the road reserve is freehold land used for cattle grazing.

West – The area to the west of the MLA is within Lot 2 WHS441 and used for cattle grazing. A Sunwater easement traverses the lot to the west of the MLA. To the west of Lot 2 WHS441 lies Kennedy Creek.

3.2 Environmental Sensitive Receptors, ESAs and MSES

Figure 4 – Site and Surrounds provides an illustration of the nearest residences to the MLA. The MLA is situated in a geographically isolated region of remote rural Central Queensland. A search of the EHP Environmentally Sensitive Areas (ESAs) mapping shows that the nearest ESA is the Category B Endangered Regional Ecosystem, approximately 575m to the south east of the MLA area, refer to Figure 5 – Environmentally Sensitive Areas Map Showing MLA.

The site is not mapped as containing any Matters of State Environmental Significance (MSES), refer to Figure 6 - Matters of State Environmental Significance In Proximity to MLA Area for an illustration of the nearest MSES.

A summary of the nearest sensitive receptors to the MLA is as follows:

- Existing homestead (used as a worker’s quarters for personnel of Kennedy Creek Lime) on Lot 2 WHS441, approximately 300m north.
- Category B ESA (Endangered Regional Ecosystem) 575m south east.
- Tierowoomba State Forest 6.7km north east of the MLA boundary

3.3 Regional Climate

The region is subject to a seasonally dry, subhumid tropical to subtropical climate. Most rainfall in the region occurs between December and February, with the driest month being September. The annual mean rainfall is 692 mm.

Review of the annual 9am and 3pm wind direction versus wind speed for the nearest Bureau of Meteorology climate station, being the Mackay Aero Station No. 033045, shows that winds are generally either from the south or south east, and these winds are predominantly >= 10km/hr and < 20km/hr.
A summary of the regional climatic statistics is shown in Table 2 – Regional Climatic Statistics.

<table>
<thead>
<tr>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Annual</th>
</tr>
</thead>
<tbody>
<tr>
<td>116.9</td>
<td>120.2</td>
<td>71.5</td>
<td>31.6</td>
<td>31.0</td>
<td>25.1</td>
<td>20.9</td>
<td>24.8</td>
<td>14.4</td>
<td>34.9</td>
<td>58.8</td>
<td>104.6</td>
<td>692.0</td>
</tr>
</tbody>
</table>

**Temperature (°C)**

| Mean min. | 23.0 | 22.8 | 21.4 | 18.4 | 14.3 | 12.4 | 10.7 | 11.1 | 14.6 | 17.5 | 20.3 | 22.1 | 17.4 |
| Mean max. | 31.7 | 31.3 | 30.7 | 29.1 | 26.5 | 24.0 | 23.8 | 25.1 | 27.1 | 29.0 | 30.2 | 31.5 | 26.3 |

**Wind Speed (km/h)**

| Mean 3am wind speed | 17.4 | 15.9 | 17.5 | 15.7 | 14.0 | 13.4 | 12.2 | 13.1 | 14.9 | 16.8 | 17.4 | 16.1 | 15.4 |
| Mean 3pm wind speed | 22.3 | 22.0 | 23.8 | 21.8 | 20.5 | 21.4 | 20.5 | 22.3 | 22.5 | 22.2 | 22.4 | 22.0 | 22.0 |

Source: Rainfall data from the Bureau of Meteorology’s Garwood Station No. 033083, temperature and wind data sourced from the St. Lawrence Station No. 033260.

### 3.4 Topography, Geology and Soils

#### 3.4.1 Topography

The site is relatively flat with low relief, and elevations ranging from 180 m AHD in the south eastern corner of the MLA, to 170 m AHD in the North West. Slopes on the MLA area generally range from 1% to 2%.

#### 3.4.2 Geology

The MLA local geology comprises an in situ dolomite deposit associated with weathering of volcaniclastic rock of the Lizzie Creek Volcanic Group near Kennedy Creek (Lam J., 2004). The Lizzie Creek Volcanic Group are characterised by basaltic to andesitic lava and volcaniclastic rocks (including breccia and arenite), rhyolitic to dacitic lava and volcaniclastic rocks (including ignimbrite); local siltstone, shale and polymictic conglomerate (Geoscience Australia, 2015). The region overlies the Bowen Basin synclinorium of east central Queensland and contains rock ranging from lower Permian to recent in age, of which a large portion is deeply weathered (Galloway et al., 1967).

#### 3.4.3 Soils

The dolomite resource lies beneath a thin layer of black soils, which are generally 300 mm to 600 mm thick. Review of the CSIRO Australian Soil Resource Information System (ASRIS) and the Site Report numbers NBS 118 and NBS 119 provided by the Soil and Land Information System confirms that the soil for the MLA area is a medium heavy clay, classified under the Australian Soil Classification system as a Black Vertosol. Black Vertosols are widely distributed in Eastern Australia, in regions with an annual rainfall of between 500 mm to 1,000 mm (McKenzie et al., 2004). The typical use of the soil type is grazing and some dryland cropping.

These soils are commonly referred to as Black Cracking Clays and often contain linear gilgai formations. General qualities of the soils as provided by Australian soils and landscapes are as follows:

- Infiltration rates on these soils varies from moderate to very slow, depending upon the surface condition and water content. The Agricultural Land Class for the region is C2, suitable for pasture land (native pastures).
3.4.4

A search of the Environmental Management Register (EMR) and Contaminated Land Register (CLR) has confirmed Lot 2 WHS441 is not currently listed on the EMR or CLR.

3.4.5

The MLA is not located at, or near, an area where acid sulphate soils have previously been identified or within a prospective land zone containing acid sulphate soils.

3.4.6

Erosion risk for the region based on monthly average rainfall depth in accordance with the Erosion and Sediment Control Code (LECA, 2008) is shown in Table 3 – Erosion Risk Based on Mean Rainfall.

<table>
<thead>
<tr>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>H</td>
<td>M</td>
<td>L</td>
<td>L</td>
<td>VL</td>
<td>VL</td>
<td>VL</td>
<td>VL</td>
<td>L</td>
<td>M</td>
<td>H</td>
</tr>
</tbody>
</table>

Notes: E = Extreme, H = High, M = Moderate, L = Low, VL = Very Low.

3.5 Water Quality

3.5.1

The MLA does not contain any mapped watercourses; however, Kennedy Creek south branch is situated approximately 400m north of the MLA area. The south branch of Kennedy Creek flows in a westerly direction for approximately 8km before forming the main portion of Kennedy Creek. Kennedy Creek converges with several other creeks downstream including Funnel Creek and Bee Creek, before entering the Connors River. An illustration of the nearest watercourses is shown in Figure 4 – Site and Surrounds.

3.5.2

The MLA is included in the Northern Connors Range tributaries, which form part of the Isaac River Sub-basin (Basin No.130). The Environmental Values (EVs) for this region have been sourced from the Environmental Protection (Water) Policy 2009 Isaac River Sub-basin Environmental Values and Water Quality Objectives (EPA, 2009), including all waters of the Isaac River Sub-basin (including Connors River) (EHP, 2011).

The EVs identified for the Isaac River Sub-basin are: Aquatic ecosystems, Irrigation, Farm Supply, Stock Water, Aquaculture, Human consumers, Primary, Secondary and Visual Recreation, Drinking Water, Industrial Use, and Cultural and spiritual values.

The Water Quality Objectives (WQO) for the Connors River Catchment Freshwaters (Moderately Disturbed Systems) are summarised in Table 4 – Water Quality Objectives for the Connors River Catchment Freshwaters (Moderately Disturbed Systems).

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonia N (µg/L)</td>
<td>&lt;10</td>
</tr>
<tr>
<td>Oxidised N (µg/L)</td>
<td>&lt;10</td>
</tr>
<tr>
<td>Organic N (µg/L)</td>
<td>&lt;330</td>
</tr>
<tr>
<td>Total Nitrogen</td>
<td>&lt;350</td>
</tr>
<tr>
<td>Filterable Reactive Phosphorous (FRP) (µg/L)</td>
<td>&lt;5</td>
</tr>
<tr>
<td>Total Phosphorous (µg/L)</td>
<td>&lt;10</td>
</tr>
</tbody>
</table>
### Parameter

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorophyll a (µg/L)</td>
<td>&lt;5</td>
</tr>
<tr>
<td>Dissolved Oxygen (% saturation)</td>
<td>90-110</td>
</tr>
<tr>
<td>Turbidity (NTU)</td>
<td>1-20</td>
</tr>
<tr>
<td>pH</td>
<td>6.5 to 8.0</td>
</tr>
<tr>
<td>Conductivity (no flow/basflow conditions) (µS/cm)</td>
<td>&lt;250</td>
</tr>
</tbody>
</table>

#### 3.6 Groundwater

Based on local groundwater information sourced from the Qld Globe interactive mapping system (supported by Google Earth), nearby groundwater is used predominantly for rural purposes including water supply, irrigation and stock watering. There are no registered bores located within the MLA boundary and water supply for the operations is likely to be sourced from water tanks and on-site basins/sumps. The registered groundwater bores within a 5 km radius to the MLA are summarised in Table 5 - Local Groundwater Bore Summary.

<table>
<thead>
<tr>
<th>Bore Reg. No.</th>
<th>Bore Status</th>
<th>Property/ Description</th>
<th>Lat. (°)</th>
<th>Long. (°)</th>
<th>Approx. Distance from MLA (km)</th>
<th>Bore Depth (m)</th>
<th>Standing Water Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>RN111639</td>
<td>Existing</td>
<td>2 WHS441</td>
<td>22-00-39</td>
<td>148-54-05</td>
<td>4.6 NW</td>
<td>30.48</td>
<td>-27.43 m 18/04/2000</td>
</tr>
<tr>
<td>RN13040117</td>
<td>Existing</td>
<td>3 KL22</td>
<td>22-00-39</td>
<td>148-54-05</td>
<td>5.1 SW</td>
<td>22.25</td>
<td>-11.44 m 30/06/2010</td>
</tr>
</tbody>
</table>

The EVs identified for the Isaac groundwaters are; Aquatic ecosystems, Irrigation, Farm Supply, Stock Water, Drinking Water, and Cultural and spiritual values.

### 3.7 Vegetation

The _Flora Conservation Act 1982_ (NCA) has recently been amended to include a new risk-based approach for the regulation of clearing of protected plants, which means only high risk clearing requires assessment. This new risk-based approach replaces the clearing permit exemptions provided under the _Mineral Resources Act 1989_ for new mining leases granted under the current framework. Exemptions remain for pre-existing mining leases.

To determine the risk level for the proposed MLA, a search of the EHP Flora Survey Trigger Map has been undertaken, which confirms the MLA is not located within, or near, a 'high risk area' under the NCA.
Review of the DNRM regulated vegetation mapping has determined that majority of the MLA contains vegetation that is mapped as Category B regulated vegetation (Remnant vegetation) under the Vegetation Management Act 1999 (VMA). The dominant vegetation community comprises a least concern regional ecosystem as follows:

Regulated vegetation that is a least concern regional ecosystem

11.12.2 (100%) – Eucalyptus melanophloia and Corymbia erythrophylla +/- E. populnea grassy woodland. Eucalyptus moluccana sometimes present on colluvial lower slopes. Occurs on undulating rises and low hills formed from Mesozoic to Proterozoic igneous rocks.

Refer Figure 4 – Site and Surrounds for details on the mapped vegetation communities.

No wetlands have been identified on, or adjacent to, the MLA in accordance with the EHP mapping of Referable Wetlands: Wetland Protection Areas.

3.8 Cultural Heritage

A search of the Cultural Heritage Database and Register has been undertaken for Lot 2 on WHS441, which has determined that there are a number of registered matters of Aboriginal Cultural Heritage within Lot 2. A summary of the cultural heritage items are included in Table 6 – Cultural Heritage Site Points for the Area.

<table>
<thead>
<tr>
<th>Site ID</th>
<th>Latitude</th>
<th>Longitude</th>
<th>Record Date</th>
<th>Attribute</th>
<th>Aboriginal Party</th>
</tr>
</thead>
<tbody>
<tr>
<td>HG00000115</td>
<td>-22.001922</td>
<td>148.924472</td>
<td>Sep 10, 2009</td>
<td>Resource Area</td>
<td>Barada Barna People</td>
</tr>
<tr>
<td>HH00000003</td>
<td>-21.945812</td>
<td>148.893437</td>
<td>Sep 11, 2009</td>
<td>Isolated Find</td>
<td>Barada Barna People</td>
</tr>
<tr>
<td>HH00000004</td>
<td>-21.945915</td>
<td>148.893137</td>
<td>Sep 11, 2009</td>
<td>Isolated Find</td>
<td>Barada Barna People</td>
</tr>
<tr>
<td>HH00000005</td>
<td>-21.944529</td>
<td>148.89277</td>
<td>Sep 11, 2009</td>
<td>Isolated Find</td>
<td>Barada Barna People</td>
</tr>
<tr>
<td>HH00000006</td>
<td>-21.944516</td>
<td>148.892934</td>
<td>Sep 11, 2009</td>
<td>Isolated Find</td>
<td>Barada Barna People</td>
</tr>
</tbody>
</table>

Pursuant to the Cultural Heritage Duty of Care Guidelines, mining activities are considered a 'Category 5 activity'. In accordance with these guidelines, Category 5 activities are generally a high risk activity in relation to Aboriginal cultural heritage. It is possible that archaeological materials may exist within the MLA which are presently not visible and could be uncovered during excavation.

The Cultural Heritage party for the Lot 2 on WHS441 area is:

QC Reference: QC2008/011
QUD Ref Number: QUD360/08
Party name: Barada Barna People
Contact Details: Dillon Lawyers
62 Blackwood Street
TOWNSVILLE QLD 4810
Ph (07) 4721 2477
Fax (07) 4724 5005

The Regional Coordinator for the Lot 2 on WHS441 area is:

Leigh Preston
Cultural Heritage Coordinator, North Region
07 4799 7552
0427 142 782
Leigh.Preston@datsip.qld.gov.au
3.9 Air Quality

The Environmental Protection (Air) Policy 2006 prescribes the environmental values that are to be protected or enhanced, which are:

(a) the qualities of the air environment that are conducive to protecting the health and biodiversity of ecosystems; and
(b) the qualities of the air environment that are conducive to human health and wellbeing, including the appearance of buildings, structures and other property; and
(c) the qualities of the air environment that are conducive to protecting the aesthetics of the environment, including the appearance of buildings, structures and other property; and
(d) the qualities of the air environment that are conducive to protecting the amenity of the environment.

The potential environmental sensitive receptors for noise generating activities at the mining project are described in 3.2 - Environmental Sensitive Receptors. Given the isolated, rural nature of the site locality, potential for environmental nuisance as a result of dust deposition or particulate matter from the site activities is anticipated to be low.

Due to the small scale nature of the mining activity, no baseline assessment has been conducted. It is assumed that air quality within the vicinity of the MLA is relatively typical of the rural setting for the majority of the time, with the current ambient air quality of the site potentially influenced by the existing mineral extraction and processing activities on ML70293, vehicles on unsealed roads associated with the mining operations and neighbouring rural properties.

3.10 Noise

The noise levels in the local area are expected to be consistent with the existing mining operations and representative of a rural area, with normal attributable features such as bird calls, wind in trees/ grass, insects and vehicles passing along unsealed roads, and the major road described as Sarina-Marborough Road. The MLA area represents an extension to the surface area for raw material extraction, therefore noise from the new MLA is anticipated to be generated by raw material extraction activities (e.g. stripping of topsoil and overburden, mechanical excavation of underlying resource, raw material transport, light vehicle traffic on internal roads, rehabilitation activities). Processing activities are, and will be undertaken on the pre-existing ML70293.

The Environmental Protection (Air) Policy 2006 (EPP Air) prescribes the environmental values that are to be protected or enhanced, which are:

(e) the qualities of the acoustic environment that are conducive to protecting the health and biodiversity of ecosystems; and
(f) the qualities of the acoustic environment that are conducive to human health and wellbeing, including by ensuring a suitable acoustic environment for individuals to do any of the following:
   (i) sleep;
   (ii) study or learn;
   (iii) be involved in recreation, including relaxing and conversation; and
   (iv) the qualities of the acoustic environment that are conducive to protecting the amenity of the community.

The potential environmental sensitive receptors for noise generating activities at the mining project are described in 3.2 - Environmental Sensitive Receptors. Due to the isolated, rural nature of the site locality, potential for noise nuisance resulting from the site activities is anticipated to be low.

Although no baseline assessment has been conducted, it is assumed that noise levels within the vicinity of the Site are typical of very rural background noise levels. In accordance with the Planning for Noise Control Code of Practice (1998), the recommended outdoor background noise planning levels for rural areas are shown in Table 7 - Recommended Outdoor Background Noise Planning Levels.
### Recommended Outdoor Background Noise Planning Levels

<table>
<thead>
<tr>
<th>Receiver Land Use</th>
<th>Receiver area dominant land use (description of neighbourhood)</th>
<th>Background noise level, min $L_{A_{eq, hour}}\ (dB(A))$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purely residential</td>
<td>Very rural</td>
<td>Day* (7am - 6pm)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>35</td>
</tr>
</tbody>
</table>

Notes:
1. The dominant land use is defined by a radius of 200m from the receiver location under consideration.
2. On Sundays and public holidays, daytime is defined as from 9am to 6pm.

### 3.11 Visual Amenity

The existing mining operations are visible from the Sarina-Marlborough Road. The new MLA is located to the west of the existing operation, and will be largely shielded from view by the existing mining activities.

### 3.12 Environmentally Sensitive Areas

**Section 1.4 – Description of Existing Environment** identified that the MLA area is within 1km of a Category B ESA, which is an Endangered Regional Ecosystem in accordance with the EHP ESA mapping. It is noted that the current mining activity is conducted within 1km of this Category B ESA, and the EA proposed to be amended is a Variation EA, which includes the following conditions:

- **Additional Condition** – under Section 1.4, the environmental authority holder is authorised to carry out activities within 1km of an endangered natural system, such as being a Category B Environmentally sensitive area under the Code, provided no environmental harm is caused.

- **Additional Condition** – The environmental authority holder must consult with the Environmental Protection Agency to identify the specific values that must be preserved within the area identified as an endangered natural system.

Given the MLA area is located further from the existing ESA than the existing operations, no additional impacts not currently authorised are anticipated to occur as a result of the increased surface area of the operations.
4. Potential Environmental Risks and Impacts

4.1 Risk Assessment Methodology

The risk assessment adopted is a qualitative risk-based approach designed to assess risk based on the likelihood of an environmental impact or event occurring (Table 8 – Definitions of Likelihood), and the consequences of the occurrence on the surrounding environment (Table 9 – Definitions of Consequence). The likelihood and consequences are scored between 1 and 5 for each potential impact or event. The risk assessment has been formulated considering potential for impact without control measures put in place to manage potential risk.

<table>
<thead>
<tr>
<th>Rating</th>
<th>Descriptor</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rare</td>
<td>May occur only in exceptional circumstances</td>
<td>1</td>
</tr>
<tr>
<td>Unlikely</td>
<td>Could occur but doubtful</td>
<td>2</td>
</tr>
<tr>
<td>Possible</td>
<td>Might occur at some time in the future</td>
<td>3</td>
</tr>
<tr>
<td>Likely</td>
<td>Will probably occur</td>
<td>4</td>
</tr>
<tr>
<td>Almost Certain</td>
<td>Is expected to occur in most circumstances</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rating</th>
<th>Descriptor</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negligible</td>
<td>Impacts not requiring any treatment or management action</td>
<td>1</td>
</tr>
<tr>
<td>Minor</td>
<td>Nuisance or insignificant environmental harm requiring minor management action</td>
<td>2</td>
</tr>
<tr>
<td>Moderate</td>
<td>Serious environmental impacts, readily manageable at low cost</td>
<td>3</td>
</tr>
<tr>
<td>Major</td>
<td>Substantial environmental impacts, manageable but at considerable cost and some disruption</td>
<td>4</td>
</tr>
<tr>
<td>Catastrophic</td>
<td>Severe environmental impacts with major consequent disruption and heavy cost</td>
<td>5</td>
</tr>
</tbody>
</table>

The consequence and likelihood scores are then plotted on the risk assessment matrix (Table 10 – Risk Assessment Matrix) and the final risk level assigned is a product of the likelihood and consequence scores. The higher the risk score, the higher the priority is for management.
Table 11 – Indicative Management Option for Each Risk Assessment Rating describes the possible actions required for each risk assessment rating.

<table>
<thead>
<tr>
<th>Risk Rating</th>
<th>Risk Rating Scores</th>
<th>Indicative Management Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme</td>
<td>16 – 25</td>
<td>Manage by implementing site management and emergency procedures, plant design controls and regular monitoring.</td>
</tr>
<tr>
<td>High</td>
<td>10 – 15</td>
<td>Manage by implementing site management procedures, specific monitoring and may require some operation/plant design controls.</td>
</tr>
<tr>
<td>Medium</td>
<td>5 – 9</td>
<td>Manage by implementing specific monitoring or response procedures.</td>
</tr>
<tr>
<td>Low</td>
<td>1 – 4</td>
<td>Manage by routine procedures, unlikely to need specific application of resources.</td>
</tr>
</tbody>
</table>

4.2 Identification of Potential Environmental Impacts and Risks

Activities associated with the ERA which have the potential to cause environmental harm and/or nuisance are outlined in Table 12 – Identification of Environmental Values and Potential Impacts.

<table>
<thead>
<tr>
<th>Environmental Value</th>
<th>Potential Impacts</th>
<th>Source at Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air</td>
<td>Emission of dust to air impacting potential nuisance sensitive receptors.</td>
<td>• Extraction and handling of materials (e.g. transfer of materials and stockpiling of raw materials).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Vehicle movements on unsealed roads and access tracks.</td>
</tr>
<tr>
<td>Noise</td>
<td>Noise impacts on nearby nuisance sensitive receptors from the mining activity (e.g. traffic movements, noise and vibration from plant and equipment).</td>
<td>• Stripping and stockpiling of topsoil and overburden.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Extraction and handling of materials (e.g. transfer of materials and stockpiling of raw materials).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Vehicle movements on unsealed roads and access tracks.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Plant and equipment use.</td>
</tr>
<tr>
<td>Water</td>
<td>• Release of potentially contaminated water to the receiving environment, being surface water and groundwater.</td>
<td>• Extraction and handling of materials (e.g. transfer of materials and stockpiling of raw materials).</td>
</tr>
<tr>
<td></td>
<td>• Changes to the natural surface water flows in the receiving environment due to mining activities (e.g. void creation).</td>
<td>• Stripping and stockpiling of topsoil and overburden.</td>
</tr>
<tr>
<td></td>
<td>• Erosion and dispersion of soils as a result of increased disturbance areas / exposed soils.</td>
<td>• Capture of incidental storm waters within the mine pits.</td>
</tr>
<tr>
<td>Waste</td>
<td>Improper disposal of wastes (i.e. general and regulated waste).</td>
<td>• Storage and disposal of residual waste (i.e. general and regulated waste).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Storage of overburden.</td>
</tr>
<tr>
<td>Land</td>
<td>• Spills of hydrocarbons and fuels.</td>
<td>• Handling of chemicals and fuels onsite.</td>
</tr>
<tr>
<td></td>
<td>• Failure of progressive and/or final rehabilitated landforms.</td>
<td>• Progressive and/or post-closure implementation and management of the site rehabilitation.</td>
</tr>
<tr>
<td></td>
<td>• Impacts to the flora and fauna as a result of disturbance to environmentally sensitive areas.</td>
<td>• Weed control.</td>
</tr>
</tbody>
</table>
Site activities have been tabulated against EVs (Operational and Land Use) to determine the risk and likely magnitude of impacts and to provide a focus for management strategies, refer to Table 13 – Assessment of Environmental Risk.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Operational</th>
<th>Land Use</th>
<th>Site Suitability</th>
<th>Location on Site</th>
<th>Critical Design Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Extraction and handling of materials</strong> (e.g. transfer of materials and stockpiling of raw material)</td>
<td>3 x 3 = 9</td>
<td>Medium</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Vehicle movements on unsealed roads and access tracks.</strong></td>
<td>3 x 3 = 9</td>
<td>Medium</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Plant and equipment use.</strong></td>
<td>3 x 3 = 9</td>
<td>Medium</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Capture of incidental storm waters within the mine pits.</strong></td>
<td>3 x 3 = 9</td>
<td>Medium</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Storage and disposal of residual waste</strong> (i.e. general and regulated waste).</td>
<td>2 x 3 = 6</td>
<td>Medium</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Striping and stockpiling of topsoil and overburden.</strong></td>
<td>2 x 3 = 6</td>
<td>Medium</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activity</td>
<td>Operational</td>
<td>Land Use</td>
<td>Site Suitability</td>
<td>Location on Site</td>
<td>Critical Design Requirements</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>-------------</td>
<td>---------</td>
<td>------------------</td>
<td>------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td></td>
<td>Air</td>
<td>Water</td>
<td>Wetlands</td>
<td>Groundwater</td>
<td>Noise</td>
</tr>
<tr>
<td>Handling of chemicals and fuels onsite.</td>
<td>2 x 3 = 6</td>
<td>3 x 3 = 9</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
</tr>
<tr>
<td>Progressive and/or post-closure implementation and management of the site rehabilitation.</td>
<td>2 x 3 = 6</td>
<td>2 x 3 = 6</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
</tr>
<tr>
<td>Weed control.</td>
<td>2 x 3 = 6</td>
<td>2 x 3 = 6</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
</tr>
</tbody>
</table>

Note:
N/A - Not applicable as Table 12 - Identification of Environmental Values and Potential Impacts has not identified potential impacts.

The identification of potential environmental impacts and associated risk matrix above have informed the control measures set out in Section 5, Environmental Objectives and Management Practices.
5. Environmental Objectives and Management Practices

5.1 Purpose of Assessment
An environmental objective assessment has been undertaken to describe how the environmental objective and performance outcomes nominated in Schedule 5, Part 3 of the EP Reg will be achieved. Where the performance outcomes nominated in the EP Reg for the relevant environmental objective cannot be achieved, or are not relevant, alternative measures for the activity have been proposed.

As per the administering authority's guideline titled Assessment requirements for making a decision for an environmental authority for an environmentally relevant activity (EHP), 2015, an application for an EA for a resource activity will require both an operational assessment (Table 1, Part 3 of Schedule 5) and a land use assessment (Table 2, Part 3 of Schedule 5), which are included in Sections 5.3 to 5.9 and 5.10 to 5.12 respectively.

5.2 Environmental Management / Mitigation Measures
The operator will be responsible for ensuring that Conditions of the Code of Environmental Compliance for Mining Lease Projects are complied with at all times. The Code of Compliance includes guidance notes for the management of potential environmental impacts for small scale mining lease projects, which are to be implemented by CQD and Macegate.

5.3 Air

5.3.1 The activity will be operated in a way that protects the EVs of air.

5.3.2 All of the following—
(a) fugitive emissions of contaminants from storage, handling and processing of materials and transporting materials within the site are prevented or minimised
(b) contingency measures will prevent or minimise adverse effects on the environment from unplanned emissions and shut down and start up emissions of contaminants to air
(c) releases of contaminants to the atmosphere for dispersion will be managed to prevent or minimise adverse effects on EVs.

5.3.3 In accordance with the risk assessment for the activity, a maximum not exceeding of medium has been allocated for potential impacts to air from the activity. Therefore potential impacts to air will be managed by implementing specific monitoring practices. The following summarises general management strategies to be used at the site.

**Extraction Areas / Activities**
- Dampen down cleared areas, extraction working areas, haul roads, stockpiles and other hardstand areas by water spraying when visual surveillance indicates excessive dust generation and propagation from point or mobile sources.
- Limit clearing, topsoll and overburden removal at any one time to that necessary whilst providing for effective production of the resource. At any one time, the mine working areas are not to exceed 5ha and the cumulative area of significant disturbance is not to exceed 10ha.
- Monitor meteorological conditions to time particular activities with favourable weather conditions.
• Maintain buffers between operational areas and the Site boundaries where possible.
• Engage a water truck/cart to dampen access roads.
• Locate any on-site plant and equipment so as to maximum amenity buffering.
• Enclose plant and equipment where necessary.

Trafficable Areas

• Enforce a maximum speed limit of 30 km/hr on internal roads and tracks.
• Restrict vehicle and mobile machinery movements to designated routes and standing areas.
• Restrict vehicle movements to designated tracks and areas to the extent practicable.

5.3.4

The controls nominated will require regular monitoring and review to ensure that performance accords with design criteria and also reflect the dynamic nature and changing needs of the operation. Daily visual surveillance will be undertaken by all employees to ensure dust generation on-site is controlled appropriately.

When requested by the administering authority, monitoring of air quality must be undertaken at a place relevant to the potentially affected, nuisance-sensitive place. The following target limits will be used:

a) Dust deposition of 120 milligrams per square metre per day, averaged over one month, when monitored in accordance with the most recent version of Australian Standard AS3580.10.17 Methods for sampling and analysis of ambient air—Determination of particulate matter—Reposited matter—Gravimetric method.

b) A concentration of particulate matter with an aerodynamic diameter of less than 10 micrometres (PM10) suspended in the atmosphere of 50 micrograms per cubic metre over a 24-hour averaging time, for no more than five exceedances recorded each year, when monitored in accordance with the most recent version of either:

1. Australian Standard AS3580.9.67 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—Filter balance sampler with size-selective inlet—Gravimetric method, or


c) A concentration of particulate matter suspended in the atmosphere of 90 micrograms per cubic metre over a 1 year averaging time, when monitored in accordance with the most recent version of AS/NZS3560.9.3:2003 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—Total suspended particulate matter (TSP)—High volume sampler gravimetric method.

5.3.5

Con

In the event of an exceedance of the target limits for air quality limits, additional on-site air quality management strategies may be implemented if required. Review of the air quality monitoring results will determine the location and extent of the mitigation measures required.
5.4 Water

The activity will be operated in a way that protects EVs of water.

5.4.2 All of the following—
(a) the storage and handling of contaminants will include effective means of secondary containment to prevent or minimise releases to the environment from spillage or leaks.
(b) contingency measures will prevent or minimise adverse effects on the environment due to unplanned releases or discharges of contaminants to water.
(c) the activity will be managed so that stormwater contaminated by the activity that may cause an adverse effect on an environmental value will not leave the site without prior treatment.
(d) the disturbance of any acid sulphate soil, or potential acid sulphate soil, will be managed to prevent or minimise adverse effects on EVs.
(e) any discharge to water or a watercourse or wetland will be managed so that there will be no adverse effects due to the altering of existing flow regimes for water or a watercourse or wetland.
(f) the activity will be managed so that adverse effects on EVs are prevented or minimised.

5.4.3 In accordance with the risk assessment for the activity, a maximum risk rating of medium has been allocated for potential impacts to water from the activity. Therefore potential impacts to water will be managed by implementing specific monitoring practices. The following summarises general management strategies to be use at the site.

- Ensure the installation of erosion and sediment control measures is undertaken prior to, or concurrently with, each stage of mine development to ensure stormwater is adequately managed.
- Treat any overland flows interacting with disturbed areas as potentially contaminated with sediment / suspended solids.
- Extraction at the site will be carried out in a staged method to ensure the mine disturbance area is limited to that required for supply of raw materials at any one time.
- Divert overland flows from clean catchments away from disturbed areas by installing structures such as diversion drains, bunds up-gradient of work areas.
- Capture any waters interacting with disturbed areas within pit sumps and/or sediment basins for re-use (e.g. dust suppression, irrigation) or treatment.
- Minimise gradients of all internal access tracks / haul roads.
- Implement the management strategies for hydrocarbon and chemical handling and storage included in Section 5.9.3.3 - Hydrocarbon and Chemical Store.

5.4.4 Monitoring will consist primarily of visual inspections of the majority of on-site erosion and sediment control structures including water storages, and ameliorative action will be implemented where deficits or failures of the structures are noted. The Site Manager shall carry out monthly surveillance of on-site water storages and treatment systems to ensure these reflect the dynamic nature and changing needs of the operation.

Prior to any forecast runoff-producing rainfall, the Site Manager must undertake an inspection of the on-site water storages to ensure suitable capacity is available.

Any surface water or groundwater sampling will be undertaken in accordance with the administering authority's manual and subsequent editions. The Site Manager may engage the services of a suitably
qualified person to conduct any water quality sampling and review monitoring results required to provide advice in relation to the water quality management.

5.4.5 Con

If an uncontrolled release of site waters occurs from the activity, an investigation will be conducted and appropriate action taken to rectify the cause release. The incident will be reported in accordance with the incident notification procedure outlined in Attachment 1 – Incident and Complaint Procedure, and the administering authority will be provided a copy of any subsequent assessments undertaken by the operator. Additional mitigation measures will be implemented to prevent a recurrence of a similar incident.
5.5 Wetlands

5.5.1
The activity will be operated in a way that protects the EVs of wetlands.

5.5.2
The activity will be managed in a way that prevents or minimises adverse effects on wetlands.

5.5.3
In accordance with the risk assessment for the activity, a maximum risk rating of low has been allocated for potential impacts to wetlands as the nearest mapped wetland to the activity is 8.5 km south west of the proposed MLA. Therefore, potential for impacts to wetlands are expected to be minimised, and any potential impacts are feasibly capable of being managed through the procedures outlined in Section 5.4.3 – Management Strategies. As wetlands are not located within close proximity to the site, no site specific wetland monitoring or contingency plans have been developed.
5.6 Groundwater

5.6.1
The activity will be operated in a way that protects the EVs of groundwater and any associated surface ecological systems.

5.6.2
Both of the following apply:
(a) there will be no direct or indirect release of contaminants to groundwater from the operation of the activity
(b) there will be no actual or potential adverse effect on groundwater from the operation of the activity.

5.6.3
In accordance with the risk assessment for the activity, a maximum risk rating of medium has been allocated for potential impacts to groundwater from the activity. Based on the nearest registered groundwater bore data, the standing water levels in the area are approximately 11.44 metres below the ground surface levels. Therefore, potential for impacts to groundwater are expected to be minimised, and any potential impacts are feasibly capable of being managed through the procedures outlined in Section 5.4.3 – Management Strategies.

To prevent or minimise the potential for interaction with groundwaters, the operator must not excavate below the approved depth of five metres from the ground surface.

5.6.4
The depth of extraction is to be measured routinely with each progression of mine development to ensure the mine pits do not extend below a depth of five metres from the ground surface level.

5.6.5
Where an exceedance of the extraction depth is identified, excavation with the pit is to cease immediately. The personnel who became aware of the exceedance must immediately notify the Site Manager, who in turn must record and report the incident in accordance with the incident notification procedures included as Attachment 1 – Incident and Complaint Procedure.
5.7 **Noise**

The activity will be operated in a way that protects the EVs of the acoustic environment.

5.7.2 The release of sound to the environment from the activity is managed so that adverse effects on EVs including health and wellbeing and sensitive ecosystems are prevented or minimised.

5.7.3 In accordance with the risk assessment for the activity, a maximum rating of medium has been allocated for potential noise impacts from the activity. Therefore the potential impacts will be managed by implementing specific monitoring practices. The following summarises general management strategies to be use at the site.

- Hours of operation will be restricted to 7am to 6pm Monday to Saturday.
- No operations are to occur on Sundays and Public Holidays.
- Processing plant and ancillary equipment will be positioned away from any nuisance sensitive receptors as far as practicable.
- Where necessary, stockpiles will be positioned between noise generating sources and sensitive receptors to act as a barrier to provide noise attenuation.
- Enclose fixed engines, pumps and compressors where practicable.
- Maintain equipment in accordance with the original equipment manufacturer's specifications.
- Avoid unnecessary operation of plant or revving of mobile or stationary motors and engines.
- Shut down equipment when not in use.

5.7.4 The Site Manager will ensure regular surveillance of the site to qualitatively assess noise generation from the carrying out of the activity.

If requested by the administering authority, noise monitoring may be undertaken to investigate a complaint alleging noise nuisance. Methods for measurements and reporting of noise monitoring must comply with the current edition of the administering authority's Site Management Plan. The measurement and reporting of noise must be undertaken by a suitably qualified person.

5.7.5 In the event that monitoring of noise determines an exceedance of the noise limits prescribed by the EA, additional noise abatement measures may be implemented. The noise measures that will be implemented will be determined in consultation with the administering authority.
5.8 Waste

Any waste generated, transported, or received as part of carrying out the activity is managed in a way that protects all EVs.

5.8.2

Both of the following apply—
(a) waste generated, transported or received is managed in accordance with the waste and resource management hierarchy in the Waste Reduction and Recycling Act 2011;
(b) if waste is disposed of, it is disposed of in a way that prevents or minimises adverse effects on EVs.

5.8.3

In accordance with the risk assessment for the activity, a maximum risk rating of medium has been allocated for potential impacts from waste generated at the activity. Therefore potential impacts will be managed by implementing specific monitoring practices. No mine wastes are produced as part of the mining process, with the exception of overburden, which will be stockpiled for later use in rehabilitation activities.

The Waste Reduction and Recycling Act 2011 (WRR Act) nominates a waste management hierarchy in a preferred order of adoption. The hierarchy is as follows:

(a) AVOID unnecessary resource consumption;
(b) REDUCE waste generation and disposal;
(c) RE-USE waste resources without further manufacturing;
(d) RECYCLE waste resources to make the same or different products;
(e) RECOVER waste resources, including the recovery of energy;
(f) TREAT waste before disposal, including reducing the hazardous nature of waste; and
(g) DISPOSE of waste only if there is no viable alternative.

Strategies/mitigation measures for the management of waste materials at the Site will be implemented in accordance with the relevant conditions of approval and may include those shown in Table 14 – Waste Management Hierarchy Implementation Strategies.

<table>
<thead>
<tr>
<th>Hierarchy Level</th>
<th>Recommended measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>W-avoid</td>
<td>Input substitution (using recyclable materials instead of disposable materials, for example using oil delivered in recyclable steel drums instead of non-recyclable plastic containers).</td>
</tr>
<tr>
<td></td>
<td>Increased efficiency in the use of raw materials, energy, water or land (purchasing consumables in bulk (large containers) rather than in small quantities).</td>
</tr>
<tr>
<td></td>
<td>Improved maintenance and operation of equipment (keep equipment in good working order to reduce wear and overhaul).</td>
</tr>
<tr>
<td></td>
<td>Undertaking an assessment of waste minimisation opportunities from time to time.</td>
</tr>
<tr>
<td>W-use</td>
<td>Recovering and separating solvents, metals, oil, or components or contaminants and reusing</td>
</tr>
<tr>
<td>Hierarchy Level</td>
<td>Recommended measures</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Waste re-use refers to re-using waste, without first substantially changing its form. | separated solvents for degreasing plant and equipment.  
- Applying waste processing fines to land in a way that gives agricultural and ecological benefits (using fine sediments in rehabilitation activities).  
- Using overburden for constructing bunds and landforming.  
- Reusing soil/sediment on-site to the maximum practicable extent. |
| Waste recycling refers to treating waste that is no longer useable in its present form and using it to produce new products. |  
- Recovering oils, greases and lubricants for collection by a licensed oil recycling contractor, recovering, separating and recycling packaging (including paper, cardboard, steel and recyclable plastics).  
- Recycling used plant and equipment to the maximum practicable extent.  
- Finding alternatives to disposal of non-recyclable materials (using conveyor belts for noise attenuation, mudflaps, ute tray liners).  
- Providing suitable receptacles and storage areas for collection of materials for recycling. |
| This refers to recovering and using energy generated from waste.              |  
- Due to the scale of the operation, energy recovery is not considered viable.   |
| This refers to disposing of waste which cannot otherwise be reused, recycled or used for energy recovery. |  
- Regulated wastes must be transported and disposed of in accordance with the Environmental Protection Regulation 2008.  
- Disposal to a licensed waste disposal facility (i.e. landfill or transfer station). |
| Waste storage containers or areas to be provided and located at safe and convenient locations at the Site. |  
- Each container will be identified with the type of wastes which may be disposed of in each container.  
- Each container or area will be designed to prevent the escape of materials. |
| Regulated waste is commercial or industrial waste, whether or not it has been immobilised or treated and is of a type or contains a constituent of a type listed in the Environmental Protection Regulation 2008 (EP Reg.)  
The EP Reg also sets out substances which are trackable waste. |  
- All regulated wastes will be transported by a licensed commercial transporter.  
- If regulated waste transport occurs, it must be undertaken by a licensed commercial transporter. |

5.8.4
The Site Manager will undertake a monthly visual inspection to ensure the waste management hierarchy is being effectively implemented. All employees shall be responsible for ensuring wastes are stored and removed from the site on a regular basis (e.g. daily or weekly). The Site Manager shall ensure that waste treatment measures are
implemented at the Site. The Site Manager shall ensure waste receptacles are provided and the waste type identified and that temporary waste storage areas are signed, recycling bins are emptied when full and materials which may cause land contamination are not disposed of on the Site.

The Site Manager shall keep a record of regulated waste generated and the disposal procedures, approved contractors for transporting and disposing of waste and the location of the facility for accepting the waste. All waste docket are to be kept at the approved activity for a minimum of five years.

5.8.5

In the event that the operator becomes aware that waste is not being managed in accordance with the waste management hierarchy, an internal assessment is to be undertaken to ensure that the methods for waste management are reviewed and new methods engaged where necessary.

In the event that any site personnel become aware of the incorrect disposal of regulated wastes, the personnel who became aware of the incident must immediately notify the Site Manager, who in turn must record and report the incident in accordance with the incident notification procedures included as Attachment 1 – Incident and Complaint Procedure.
5.9 Land

The activity is operated in a way that protects the EVs of land including soils, subsoils, landforms and associated flora and fauna.

5.9.2

All of the following—
(a) activities that disturb land, soils, subsoils, landforms and associated flora and fauna will be managed in a way that prevents or minimises adverse effects on the EVs of land;
(b) areas disturbed will be rehabilitated or restored to achieve sites that are:
   (i) safe to humans and wildlife
   (ii) non-polluting
   (iii) stable
   (iv) able to sustain an appropriate land use after rehabilitation or restoration
(c) the activity will be managed to prevent or minimise adverse effects on the EVs of land due to unplanned releases or discharges, including spills and leaks of contaminants
(d) the application of water or waste to the land is sustainable and is managed to prevent or minimise adverse effects on the composition or structure of soils and subsoils.

5.9.3

In accordance with the risk assessment for the activity, a maximum risk rating of medium has been allocated for potential impacts to land from the activity. The activities that may cause potential impacts will be managed by implementing specific monitoring strategies, which are summarised below.

5.9.3.1 Site Development

Mine development strategies are as follows:

- Extraction at the site will be carried out in a staged method to ensure the mine disturbance area is limited to that required for supply of raw materials at any one time
- Extraction areas are to be demarcated to ensure mine development is limited to the proposed staged development
- Topsoil and overburden is to be stripped and stockpiled prior the commencement of each mine development stage for future use in rehabilitation activities
- Topsoil and overburden stockpiles should be no more than 2 m in height, batted to a maximum slope of 1(V):3(H) and temporarily revegetated with a cover crop
- Mine voids are not to exceed five metres in depth
- Vehicles are to use established internal roads and tracks where possible
- The progressive development is to ensure shallow slopes of approximately 1(V):3(H) are created.

5.9.3.2 Site Rehabilitation

Rehabilitation of the land is to be undertaken by CQD and Macegate in accordance with the Code of Environmental Compliance for Mining Lease Projects and Additional Conditions included in the Variation EA. The final land use is likely to be grazing, which is the predominant surrounding land use as a result of the endemic soil type of the region. Rehabilitation of the mining lease is anticipated to occur progressively as areas become available (i.e. when areas are no longer required, or where resource has been exhausted).

General rehabilitation strategies will include the following:

- Progressive rehabilitation is to occur within six months of the completion of works in those areas.
- Terminal mine voids are to be battened to a stable maximum slope of 1(V):3(H).
- Stockpiled topsoil and overburden will be spread over the reprieved landform.
- Revegetation via natural regeneration of pasture grasses. Where additional seeding is required, CQD and Macegate must consult with the administering authority and the landholder to determine a suitable seed mix.
- In the event that infrastructure is to remain post-mining, a landholder agreement will be obtained prior to the mining lease surrender.
- Water quality monitoring is to be undertaken for water storages that are to remain post closure of the mine to ensure suitability for the ongoing use.
- Water storages that are to be retained for ongoing use as livestock watering must be safe and stable, and prove safe access for livestock / animals to utilise the water storage.

Infrastructure constructed on the land for the Kennedy Creek mining project, with the exception of the screening and processing plant, is likely to be retained for ongoing beneficial use by the landholder at the cessation of the mining activity. Infrastructure that may remain includes the storage shed, roads and potentially water storages. In the event that infrastructure is to remain post-mining, a landholder agreement will be obtained prior to the mining lease surrender.

A further assessment of rehabilitation requirements will be undertaken through the financial assurance calculation process for the new tenure. It is understood that the financial assurance for any new disturbance areas on the new tenure area must be provided to the State prior to commencement of activities on the new ML. CQD and Macegate have advised that mining activities will be commenced in approximately 2017, therefore, it is understood that CQD and Macegate will first be able to obtain the EA and then give their FA at a later stage via a separate application process. This will allow the finalisation of the mining tenure approval whilst simultaneously determining the amount of FA. The FA application process will include details of the proposed disturbance areas and a rehabilitation program to achieve requirements of Section 294 of the EP Act.

5.9.3.3 Hydrocarbon and Chemical Storage

No additional hydrocarbon storage facilities are proposed for the extension area. All fuels for the operation will be stored within the existing fuel storage tank situated on ML70293. General management strategies for hydrocarbon handling on the MLA will be as follows:

- No hydrocarbons or chemicals are to be permanently stored within the extension area;
- Spill kits are to be maintained at locations known to all employees (e.g. refuelling locations, chemical storage facilities, mobile equipment);
- Spills are to be cleaned up immediately in accordance with the Spill Response Protocol (refer to Attachment 2 - Spill Response Protocol);
- Employees are to be trained in proper fuelling and spill clean-up procedures;
- Refuelling and equipment maintenance is to be within a designated hardstand or paved area only;
- Material Safety Data Sheets (MSDS) and information relating to the storage, use and handling of chemicals used at the activity are to be stored at the Site office.
- Use the fuel or substance for its intended purpose (as nominated in the MSDS).
- checking plant and equipment daily for oil leaks;

5.9.3.4 Weed Control

By definition Specific control measures to be implemented may include, but not necessarily be limited to the following strategies:

- Weed infestations are to be controlled as soon as possible to prevent further spread of weeds;
- Groundcover is to be maintained for as long as possible by minimising land disturbance at any one time;
- An annual weed spraying campaign should be implemented, with additional spraying campaigns (e.g. spot spray, bi-annual sprays) undertaken as necessary; and
- Weeds identified on-site will be prioritised for weed management according to the class of weeds identified in accordance with the listing under the Protection of Plants and Stock Route 7 act 2002 (LP Act) as follows:
  - Class 1 - Landowners are required by law to keep their land free of Class 1 weeds. The presence of class 1 plants must be reported to Biosecurity Queensland on 132523.
- Class 2 - must be controlled by landowners on their property
- Class 3 - must be controlled by landowners whose property is adjacent to an environmentally significant area
- Non-declared - landowners are encouraged to control non-declared weeds on their property to reduce their impacts.

5.9.3.5 Cultural Heritage

It is noted that the proposed MLA is situated in close proximity to a number of cultural heritage finds. In order to meet duty of care obligations, any land use activity within the vicinity of the recorded cultural heritage, should not proceed without the agreement of the Aboriginal Party for the area or a Cultural Heritage Management Plan undertaken pursuant to Part 7 of the Aboriginal Cultural Heritage Act 2003.

5.9.4 Site Rehabilitation

Rehabilitation planning and contingency measures will be further addressed through the Rehabilitation Program to be submitted as part of the financial assurance assessment.

5.9.2 Spill Response

Refer to the Spill Response Protocol included as Attachment 2 - Spill Response Protocol.

5.9.3 Weed Control

Class 1 and Class 2 declared plants must be eradicated from the mining lease area immediately upon becoming aware of the presence of the weed. In the event that any site personnel become aware of a class 1 plant, the personnel who became aware of the plant must immediately notify the Site Manager, who in turn must report the plant to Biosecurity Queensland on 132523.
5.10 Site Suitability

The choice of the site, at which the activity is to be carried out, should minimise serious environmental harm on areas of high conservation value and special significance and sensitive land uses at adjacent places.

5.0.2

Both of the following apply—
(a) areas of high conservation value and special significance likely to be affected by the proposal are identified and evaluated and any adverse effects on the areas are minimised, including any edge effects on the areas
(b) the activity does not have an adverse effect beyond the site.

5.0.3

The proposed extension area is geographically situated in a key location adjacent to the existing mining operations, making it fundamental to the long-term security and supply of the resource to the mining activity. Obtaining the additional mining tenure will ensure longevity of the operation and will enable CQD and Macegate to utilise existing infrastructure and facilities. The proposal constitutes a logical extension to the existing operations and the pursuit of alternative locations is considered a practical or viable outcome. Securing the additional mining tenure in the proposed location will enable CQD and Macegate to utilise existing prerequisite tenure and will ensure the long-term viability for the mining operations.

Section 3 - Description of Existing Environmental Values identifies areas of high conservation value and special significance. Management strategies to mitigate potential impacts to the sensitive receptors resulting from the proposed extension to the resource activity have been discussed in Section 5.1 to 5.9.
5.11 Location on Site

The location for the activity on a site protects all environmental values relevant to adjacent sensitive uses.

5.12 Both of the following apply—

(a) the activity, and components of the activity, are carried out on the site in a way that prevents or minimises adverse effects on the use of surrounding land and allows for effective management of the environmental impacts of the activity;

(b) areas used for storing environmentally hazardous materials in bulk are located taking into consideration the likelihood of flooding.

5.13 Section 3 - Description of Existing Environmental Values identifies areas of high conservation value and special significance. Management strategies to mitigate potential impacts to the sensitive receptors resulting from the proposed extension to the resource activity have been discussed in Section 5.1 to 5.9.

Mine development within the MLA will be carried out in stages, to ensure the area of disturbance is minimised to the extent possible, whilst still allowing for effective resource utilisation.

As previously discussed, infrastructure to support the MLA area, including fuel storage and processing plant, is situated on the existing mining lease area to the east of the MLA. No permanent on-site hydrocarbon or chemical storage facilities will be established within the proposed MLA.
5.12 Critical Design Requirements

The design of the facility permits the operation of the site, at which the activity is to be carried out, in accordance with the best practice environmental management.

5.2.2

The activity does not involve the storage, production, treatment or release of hazardous contaminants, or involve a regulated structure.

5.2.3

The proposed extension to the resource activity does not involve the storage, production, treatment or release of hazardous contaminants, or involve a regulated structure in accordance with the administering authority's guideline titled *A manual for Assessing Consequence Categories and Hydraulic Performance of Structures* (EHP, 2013), therefore no management strategies are considered necessary. The only structures to be constructed on the site will be the voids created via extraction, which will hold surface waters. No release of water from the activity is proposed.
6. Concluding Remarks

The EAR has been prepared to address the major EA amendment application requirements as outlined in Section 125 of the EP Act. The EAR has determined that the potential environmental risk resulting from the amendment will be effectively regulated through the application of the standard conditions (with the inclusion of the two additional EA conditions for proximity to ESAs), and the implementation of management and monitoring procedures, to avoid potential environmental impacts.
Reference List


figures
Attachment 1

Incident and Complaint Procedure
Incident and Complaint Procedure

Overview

The objective of this Incident and Complaints Procedure is to ensure that any incidents and/or complaints are reported and investigated, and appropriate action taken. A diagrammatic overview of incident and complaints reporting procedure is provided in Diagram 1 – Incidents and Complaints Procedure Summary.

The Site Manager will be responsible for ensuring that all employees at the site are familiar with the procedure for incidents and complaint recording. All complaints received, and/or any employee becoming aware of an incident with actual or potential environmental implications, shall be reported to the Site Manager or delegate as immediately.

The following details shall be recorded at the receipt of any incident and/or complaint:

- date, time, location and nature of the incident or complaint;
- type of communication (telephone, letter, email, personal, etc.);
- name, contact address and contact telephone number of the person reporting the incident or complaint (i.e. note: if the complainant does not wish to be identified then ‘not identified’ is to be recorded);
- details (e.g. nature and extent) of the incident or complaint;
- response and initial investigation undertaken as a result of the incident or complaint;
- name of person responsible for receiving and/or investigating the complaint.

The Site Manager will liaise with any complainants to discuss the nature of the complaint, to identify possible causes and outline any actions to be taken to prevent recurrence of the incident.

When an environmental incident occurs, the Site Manager will notify the administering authority via telephone and email within 24 hours of becoming aware of the incident. A standard form for the written notification is attached as INITIAL NOTIFICATION FORM.

The contact details of the administering authority are as follows:

Department of Environment and Heritage Protection
Phone: 1300 130 372
Email: palm@ehq.qld.gov.au

All incidents and complaints should be investigated. The investigations should include:

- determining what activities were being carried out at the time of the complaint/incident and any equipment involved.
- identifying whether equipment or activities on-site were the cause of the incident or complaint
- determining what potential actions may be carried out to resolve the matter and/or minimise the likelihood of further impacts.
Corrective action is to be implemented and an assessment conducted to determine what actions are to be taken to remedy the matter and/or prevent a similar incident from occurring. All incidents and complaints recorded and reported are to be maintained for a minimum period of five years. If monitoring is to be undertaken to investigate an incident or complaint, the operator may engage the services of a suitably qualified person to undertake the assessment.

Within 14 days of the initial notification, in addition to the information provided in the initial notification form, a further written notification must be provided to the administering authority (refer to FURTHER NOTIFICATION FORM). Upon request from the administering authority, a copy of any environmental monitoring undertaken to investigate the incident shall be supplied to the administering authority within 14 days of completion.
Initial Notification Form

Date: 

Operator's name: 

Environmental Authority (EA) Number: 

Site Name and Mining Lease (ML) Number: 

Site location: 

Contact person: 

Name and telephone number of contact person: 

Location of the incident within site: 

Time of the emergency / Incident / event: 

Time that operators became aware of the emergency / incident / event: 

The suspected cause of the emergency / incident / event: 

The potential environmental harm caused, threatened, or suspected to be caused by the emergency / incident / event: 

Actions taken to prevent and/or mitigate further potential environmental harm being caused by the emergency / incident / event: 

Name: 

Signature: 

1801.630.001
Further Notification Form

Environmental Authority (EA) Number

Designated contact person:

Date of Event: ...../...../...... Time of Event: ............ am/pm

Proposed action to prevent a recurrence of the emergency / incident / event:

Outcomes of actions taken at the time to prevent or minimise environmental harm and / or environmental nuisance:

Details of any environmental monitoring undertaken:

Further comments:

Name: ........................................ Signature: ........................................
Attachment 2

Spill Response Protocol
1.0 Purpose

Obligations for management of contaminants that may result in environmental harm are prescribed under the *Environmental Protection Act 1994 (EP Act)*. All necessary preventative measures must be implemented at the operations to prevent or minimise the potential for spills, however if a spill does occur it should be contained, removed and disposed of properly.

This Spill Response Protocol provides and the steps outlined in Section 3.0 - Spill Response Procedure provides general guidance for incidental spills of hydrocarbons and chemicals at the activity.

2.0 Roles and Responsibilities

| General Manager / Site Manager | • Provide resources and continuous training for the management of spills at the site.  
|                               | • Ensure all personnel at the site are aware of the requirements of the Spill Response Protocol.  
|                               | • Undertake risk assessments for any spill incident that occurs.  
|                               | • Liaise with third parties and government agencies in relation to spills.  
|                               | • Complete necessary reporting of spills when required.  
| Personnel                     | • Be familiar with, and adhere to, the requirements of this Spill Response Protocol.  
|                               | • Implement good practice and management strategies at the site to ensure spills are prevented.  
|                               | • Notify all spills to the Site Manager.  

3.0 Spill Response Procedure

Upon becoming aware of the spill, the Site Manager is to be notified immediately.

Undertake an immediate initial assessment to identify the following:

- Type and volume of the spilled substance.
- Source of the spill and whether it can be isolated.
- Safety and Personal Protection Equipment (PPE) requirements for the substance as outlined in the Materials Safety Data Sheets (MSDS).
- Whether site personnel can contain and manage the spill, or whether third party and emergency services are required.
- The substrate of the spill surface (e.g. soil, concrete hardstand).

Spills within a waterbody or watercourse pose a higher risk of potential environmental harm and may require additional assistance from third parties / government agencies. The administering authority must be notified and professional assistance sought regarding clean-up operations.
All personnel working in the immediate vicinity of the spill should be notified and all work in that area should cease immediately.

The movement of plant/equipment has the potential to spread the spill and contaminate other areas, therefore avoid moving plant/equipment where possible.

If possible, the spill is to be contained by constructing a temporary bund and absorbing the spill with the spill kits provided, or an alternative absorbent material (e.g. clay, rags).

**DO NOT USE WATER OR OTHER LIQUIDS TO WASH THE SPILL AREA**

Major spills may require additional and / or specialist treatment, which will be determined by the Site Manager. The following general spill removal / clean-up methods may be used:

- Remove the spill by shovels and / or earthmoving equipment.
- Repair equipment at spill location if possible if mobile plant/equipment is the source of the spill.
- Where necessary or possible to do so, move plant and equipment to allow the removal of the spill.
- Contaminated soils / materials are to be disposed off-site by an approved regulated waste transport contractor in accordance with the legislated regulated waste requirements to a lawful disposal facility.
- Under no circumstances should materials containing the contaminant be disposed of on-site.

All spills of hydrocarbons and/or chemicals are to be reported to the Site Manager, who in turn will undertake a risk assessment of the spill to determine if there is potential for environmental harm to occur.

If the risk assessment determines a high or extreme level of risk of environmental harm is posed, the incident must be reported to the Pollution Hotline on 1300 130 372 within 24 hours of becoming aware of the incident. Refer to the [Corporation's Policy on Reporting](#) in relation to reporting.

### 4.0 Risk Assessment

The following provides the risk assessment framework that may be adopted by the Site Manager to undertake a qualitative risk-based assessment, based on the likelihood of an environmental harm occurring (Table 1 – Definitions of Likelihood), and the consequences of the occurrence on the surrounding environment (Table 2 – Definitions of Consequence). The likelihood and consequences are scored between 1 and 5 for each potential impact or event. The risk assessment has been formulated considering potential for impact without control measures put in place to manage potential risk.

<table>
<thead>
<tr>
<th>Rating</th>
<th>Descriptor</th>
<th>Score</th>
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<tr>
<td>Unlikely</td>
<td>Could occur but doubtful</td>
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<tr>
<td>Possible</td>
<td>Might occur at some time in the future</td>
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<tr>
<td>Likely</td>
<td>Will probably occur</td>
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</tr>
<tr>
<td>Almost Certain</td>
<td>Is expected to occur in most circumstances</td>
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Ref. Spill Response Protocol.docx
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<tr>
<th>Rating</th>
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<tr>
<td>Minor</td>
<td>Nuisance or insignificant environmental harm requiring minor management action</td>
<td>2</td>
</tr>
<tr>
<td>Moderate</td>
<td>Serious environmental impacts, readily manageable at low cost</td>
<td>3</td>
</tr>
<tr>
<td>Major</td>
<td>Substantial environmental impacts, manageable but at considerable cost and some disruption</td>
<td>4</td>
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<tr>
<td>Catastrophic</td>
<td>Severe environmental impacts with major consequent disruption and heavy cost</td>
<td>5</td>
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The consequence and likelihood scores are then plotted on the risk assessment matrix (Table 3 - Risk Assessment Matrix) and the final risk level assigned is a product of the likelihood and consequence scores. The higher the risk score, the higher the priority for management.
Mining Environmentally Sensitive Areas

Date of report: 29/07/2016

Reference no: CRMNG-CQDolomite

ml: 100101, ml: 70293
Location Layers - within found features (i.e. no buffer)

DEHP Regions

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Local Government Boundaries (DCDB)

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Mining Districts

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Mining Interests - within found features (i.e. no buffer)

Trigger for ECSU

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Indigenous Cultural Heritage
(no results)

Category A - within found features (i.e. no buffer)

National Parks
(no results)

Conservation Parks
(no results)

Forest Reserves
(no results)

Wet Tropics World Heritage Area
(no results)

Great Barrier Reef Marine Park Authority Boundary Management Areas
(no results)

State Marine Parks other than General Use Zones
(no results)

Category B - within found features (i.e. no buffer)

Koala Plan 2006 to 2016 for ECSU
(no results)

Queensland Heritage Register Boundaries
(no results)

Endangered Remnant Regional Ecosystems Biodiversity Status
(no results)

Fish Habitat Areas (QLD Fisheries Act 1994)
(no results)
Marine Plants
(no results)

Forest Special Management Areas (SMA)
(no results)

Cultural Heritage Registered Areas
(no results)

Designated Landscape Areas other than Stanbroke
(no results)

General Use Zones of Marine Parks
(no results)

World Heritage Areas (QLD)
(no results)

Ramsar Sites (QLD)
(no results)

Coordinated Conservation Areas
(no results)

Category C - within found features (i.e. no buffer)
Dams, Weirs, Barrages - QLD 100k (NRM)
(no results)

Drainage Areas
(no results)

Erosion Prone Area Plans
(no results)

State Forests and Timber Reserves
(no results)

Stanbroke Designated Landscape Area
(no results)

River Improvement Trust Areas
(no results)

Declared Irrigation Areas (boundaries)
(no results)

Declared Catchments of Dams of QLD (NRM)
(no results)

Resources Reserves
(no results)

Nature Refuges
(no results)

Coastal Management Districts
(no results)

Category A: 500 - 500 (m Buffer)
National Parks
(no results)

Conservation Parks
(no results)

Forest Reserves
(no results)

Wet Tropics World Heritage Area
(no results)

Great Barrier Reef Marine Park Authority Boundary Management Areas
(no results)

State Marine Parks other than General Use Zones
(no results)

Category B: 500 - 500 (m Buffer)
Koala Plan 2006 to 2016 for ECSU
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Queensland Heritage Register Boundaries
(no results)

Endangered Remnant Regional Ecosystems Biodiversity Status

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Fish Habitat Areas (QLD Fisheries Act 1994)
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Marine Plants
(no results)

Forest Special Management Areas (SMA)
(no results)

Cultural Heritage Registered Areas
(no results)

Designated Landscape Areas other than Stanbroke
(no results)

General Use Zones of Marine Parks
(no results)

World Heritage Areas (QLD)
(no results)

Ramsar Sites (QLD)
(no results)
Coordinated Conservation Areas
(no results)

Category C:500 - 500 (m Buffer)
Dams, Weirs, Barrages - QLD 100k (NRM)
(no results)

Drainage Areas
(no results)

Erosion Prone Area Plans
(no results)

State Forests and Timber Reserves
(no results)

Stanbroke Designated Landscape Area
(no results)

River Improvement Trust Areas
(no results)

Declared Irrigation Areas (boundaries)
(no results)

Declared Catchments of Dams of QLD (NRM)
(no results)

Resources Reserves
(no results)

Nature Refuges
(no results)

Coastal Management Districts
(no results)

Category A:1000 - 1000 (m Buffer)
National Parks
(no results)

Conservation Parks
(no results)

Forest Reserves
(no results)

Wet Tropics World Heritage Area
(no results)

Great Barrier Reef Marine Park Authority Boundary Management Areas
(no results)

State Marine Parks other than General Use Zones
(no results)
Category B: 1000 - 1000 (m Buffer)
Koala Plan 2006 to 2016 for ECSU
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Queensland Heritage Register Boundaries
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Endangered Remnant Regional Ecosystems Biodiversity Status

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(no results)

Marine Plants
(no results)

Forest Special Management Areas (SMA)
(no results)

Cultural Heritage Registered Areas
(no results)

Designated Landscape Areas other than Stanbroke
(no results)

General Use Zones of Marine Parks
(no results)

World Heritage Areas (QLD)
(no results)

Ramsar Sites (QLD)
(no results)

Coordinated Conservation Areas
(no results)

Category C: 1000 - 1000 (m Buffer)
Dams, Weirs, Barrages - QLD 100k (NRM)
(no results)

Drainage Areas
(no results)

Erosion Prone Area Plans
(no results)

State Forests and Timber Reserves
(no results)

Stanbroke Designated Landscape Area
(no results)
River Improvement Trust Areas
(no results)

Declared Irrigation Areas (boundaries)
(no results)

Declared Catchments of Dams of QLD (NRM)
(no results)

Resources Reserves
(no results)

Nature Refuges
(no results)

Coastal Management Districts
(no results)

Category A: 2000 - 2000 (m Buffer)
National Parks
(no results)

Conservation Parks
(no results)

Forest Reserves
(no results)

Wet Tropics World Heritage Area
(no results)

Great Barrier Reef Marine Park Authority Boundary Management Areas
(no results)

State Marine Parks other than General Use Zones
(no results)

Category B: 2000 - 2000 (m Buffer)
Koala Plan 2006 to 2016 for ECSU
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Queensland Heritage Register Boundaries
(no results)

Endangered Remnant Regional Ecosystems Biodiversity Status

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Fish Habitat Areas (QLD Fisheries Act 1994)
(no results)

Marine Plants
Forest Special Management Areas (SMA)
(Coordinated Conservation Areas
Category C: 2000 - 2000 m Buffer
Dams, Weirs, Barrages - QLD 100k (NRM)
Drainage Areas
Erosion Prone Area Plans
State Forests and Timber Reserves
Stanbroke Designated Landscape Area
River Improvement Trust Areas
Declared Irrigation Areas (boundaries)
Declared Catchments of Dams of QLD (NRM)
Resources Reserves
Nature Refuges
Coastal Management Districts
Lot and Plan List - within found features (i.e. no buffer)

Cadastre - Lot and Plan list

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<th>Plan</th>
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<td>2</td>
<td>WHS441</td>
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Application for Mining Lease

Permit Application (ID: 10002863) - COMPLETE
Lodged On: 20/07/2016 10:55 AM

PERMIT DETAILS

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<th>Permit name:</th>
<th>Kennedy Creek West</th>
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<tr>
<td>Permit type:</td>
<td>Mining Lease - Minerals</td>
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<tr>
<td>Permit term:</td>
<td>25 Years</td>
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<td>General locality of the application:</td>
<td>Sarina</td>
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<td>Specific minerals:</td>
<td>Clay, Dolomite, Lime / Limestone</td>
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PERMIT PRE-REQUISITE DETAILS

<table>
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## PERMIT HOLDER DETAILS

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<td>50.000000000000</td>
<td>Yes</td>
</tr>
<tr>
<td>MACEGATE PTY LIMITED</td>
<td>50.000000000000</td>
<td>No</td>
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### Holder address details:

<table>
<thead>
<tr>
<th>Holder</th>
<th>Address</th>
<th>ACN:</th>
<th>Email address</th>
<th>Town/City</th>
<th>State</th>
<th>Postcode</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>CQ DOLOMITE PTY LTD</td>
<td>PO Box 101</td>
<td>104160965</td>
<td><a href="mailto:lvoltz@tandygroup.com.au">lvoltz@tandygroup.com.au</a></td>
<td>Mackay</td>
<td>QLD</td>
<td>4740</td>
<td>Australia</td>
</tr>
<tr>
<td>MACEGATE PTY LIMITED</td>
<td>PO Box 101</td>
<td>010384424</td>
<td><a href="mailto:lvoltz@tandygroup.com.au">lvoltz@tandygroup.com.au</a></td>
<td>Mackay</td>
<td>QLD</td>
<td>4740</td>
<td>Australia</td>
</tr>
</tbody>
</table>

### Authorised Holder Representative (AHR) address details:

<table>
<thead>
<tr>
<th>Name</th>
<th>Address</th>
<th>Town/City</th>
<th>State</th>
<th>Postcode</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rodney Huntley</td>
<td>Groundwork Plus Po Box 1779</td>
<td>Milton BC</td>
<td>QLD</td>
<td>4064</td>
<td>Australia</td>
</tr>
</tbody>
</table>
PERMIT AREA

| Size of area applied for (ha): | 24.0000 |
| Size of surface area applied for (ha): | 24.0000 |
| Local government area(s): | Isaac Regional Council |
| Which datum standard have you used? | MGA94 |
| Provide coordinates for the datum post: | 701382E, 7566649N, Zone 55 |
| When was the land marked out? | 15/07/2016 11:00 AM |
| Is surface area within the permit area required? | Whole |
| Provide width of access (m): | 10.00 |
| Provide any relevant information about access including start and end points: | From Marlborough Sarina Road to permit. |

LAND INFORMATION DETAILS

| Does this application involve the surrender of a granted permit in favour of whole or part of this application? | No |
| Is there any restricted land associated with this permit application? | No |
| Is the lease area within the surface of reserve? | No |
| Is the land applied for situated within an area of a greenhouse gas (GHG) permit? | No |

Overlapping permits

<table>
<thead>
<tr>
<th>Permit type</th>
<th>Permit number</th>
<th>Authorised holder</th>
<th>Expiry date</th>
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<tr>
<td>EPC</td>
<td>2306</td>
<td>ENDOCOAL LIMITED</td>
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Land details

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<tr>
<th>Description</th>
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<th>Compensation required?</th>
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<tr>
<td>Lot Part Lot 2 on plan WHS441 - Lands lease Par Serrum Station</td>
<td>Permit</td>
<td>Grazing</td>
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ENVIROMENTAL AUTHORITY

The environmental authority application is: Application for amendment of an environmental authority

Suitable registered operator details

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<th>Suitable Operator Status</th>
<th>Registered No.</th>
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<td>CQ DOLOMITE PTY LTD</td>
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<td>593131</td>
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<tr>
<td>MACEGATE PTY LIMITED</td>
<td>Registered</td>
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NATIVE TITLE

Native title process: Exclusive Land (100%)
I confirm that when a full assessment is completed, if native title must be addressed, a native title process will be required and advertising fees will be requested by the department: Yes

OBLIGATIONS

As the authorised holder representative, I understand and agree to the obligations associated with the permit: Yes

PAYMENT DETAILS

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<td>APPMLMIN</td>
<td>Mining Lease - Minerals</td>
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<td><strong>Total Fee:</strong></td>
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## Uploaded Documents

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<td>Graphic representation of area</td>
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### Office Use Only

- Received AT: __________________
- Received BY: __________________
- DATE: __________________
- TIME: __________________
- FEE Paid: __________________
- RECEIPT no: __________________
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KENNEDY CREEK WEST
MINING PROGRAM

Prepared for:
CQ Dolomite Pty Ltd & Macegate Pty Ltd JV

Date:
July 2016

Reference:
1801.500.002
# Document Control

## Project/ Report Details

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<td>Principal Author:</td>
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<tr>
<td>Client:</td>
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<td>T. Smith</td>
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## Distribution Record

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---

Groundwork Plus  
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Queensland  
6 Mayneview Street, Milton Qld 4064  
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FIGURES

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Figure 2  Site Layout Plan (Drawing No. 1801.DRG.014)
Figure 3  Conceptual Mine Development Plan (Drawing No. 1801.DRG.017)
Figure 4  Regional Geology Map (Drawing No. 1801.DRG.012)
1. Introduction

1.1 The Proponent

CQ Dolomite Pty Ltd (CQD) and Macegate Pty Ltd (Macegate) are the holders of several mining tenements in the Central Queensland region. CQD and Macegate are subsidiaries of the Tandy Group, an Australian owned company established in 1968 and comprises multiple entities including Kennedy Creek Lime, Tandy Concrete, Mackay Sand and Gravel Sales, Clark Drinking Water, CLH Transport and Beef Breeding Services.

CQD and Macegate seek to lodge a Mining Lease Application (MLA) over the portion of land directly adjacent to the Kennedy Creek Lime operations for the expansion of the existing mining project.

1.2 The Project and Pre-Requisite Tenure

CQD and Macegate currently operate the site identified as Kennedy Creek Lime under Mining Lease (ML) 70293, which is situated on Sarina-Marlborough Road, Lotus Creek, refer to Figure 1 – Site Locality Plan.

CQD and Macegate propose to expand the current mining operations into the known resource area to the west of the existing operations onto the area currently overlain by Parcel Prospecting Permit (PPP) 10003 held by CQD as pre-requisite tenure for the MLA, refer to Figure 2 – Site Layout Plan for an illustration of the proposed expansion area. The general mine development is illustrated on Figure 3 – Conceptual Mine Development Plan.

1.3 Purpose of the Mining Program

The purpose of this Mining Program is to satisfy the requirements of Section 245 of the Mineral Resources Act 1989 (MRA). As such, this Mining Program includes:

- a description of the land parcels subject to the MLA (including current land use and landowners);
- a description / illustration of the MLA area, including boundary and surface area descriptions;
- a description of the intended purpose of the new ML;
- relationship of the new ML with existing MLs under the mining project;
- any improvements referred to in Section 230(1) of the MRA;
- access descriptions;
- justification for the size and shape of the MLA (including graphic representations);
- minerals proposed to be mined;
- proposed initial term of ML;
- methods of operations, rehabilitation and workforce to be utilised, and supporting infrastructure; and
- a summary of the estimated human, technical and financial resources.

A detailed description of the above items is included in the following report.

1.4 Views of Overlapping Permit Holders (EPC2306)

The MLA area is overlain by Exploration Permit for Coal (EPC) 2306, held by Endocoal Limited. Before the close of objection period, the written views from the overlapping EPC2306 holder will be obtained; however, it should be noted that the new ML is for minerals other than coal, therefore the mineral / purpose does not overlap.
2. Land Information

2.1 Land Parcels subject to the MLA

A summary of the land subject to the MLA is included in Table 1 – Land Information Summary, whilst the layout of the MLA is included in Figure 2 – Site Layout Plan.

<table>
<thead>
<tr>
<th>Background tenure</th>
<th>Tenure type</th>
<th>Current Use</th>
<th>Proposed Use</th>
<th>Landowner</th>
<th>Landowner Address</th>
<th>Compensation Required (y/n)</th>
<th>Date compensation finalised</th>
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<tbody>
<tr>
<td>Lot 2 on WHS441 Semin Station</td>
<td>Leases</td>
<td>Grazing and Mining</td>
<td>Mining</td>
<td>Peter Malcolm Hughes and Jane Anna Sarah Hughes</td>
<td>Hughes Pastoral PO Box 1406, Gympie Q 4670</td>
<td>Yes</td>
<td>Not yet finalised</td>
</tr>
<tr>
<td>Lot 2 on WHS441 Semin Station</td>
<td>Leases</td>
<td>Grazing and Mining</td>
<td>Access</td>
<td>Peter Malcolm Hughes and Jane Anna Sarah Hughes</td>
<td>Hughes Pastoral PO Box 1406, Gympie Q 4670</td>
<td>Yes</td>
<td>Not yet finalised</td>
</tr>
</tbody>
</table>

There is no Category A or B restricted land as defined under Schedule 2 of the MRA included in the MLA. Compensation in the form of a written agreement will be finalised between the landholder and the proposed ML holders, CQD and Macegate prior to the last objection day for the new ML.

2.2 Boundary Description

A summary of the boundary co-ordinates is included in Table 2 – Boundary Co-ordinates Description. The boundary is graphically represented in Figure 2 – Site Layout Plan, and a shape file containing the boundary co-ordinates in the approved form has been provided to the Department of Natural Resources and Mines (DNRM) with the MLA.

<table>
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<td>4</td>
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Note: Set out points in MGA94 Zone 55

2.3 Surface Area

The Surface Area for the new ML is defined as all land within the boundary set out points identified in Section 2.2. Boundary Description, refer to Figure 2 – Site Layout Plan for a graphical representation. The surface area applied for is consistent with the boundary of the adjacent ML 70293 to enable maximum resource utilisation and continuity. The increased surface area continuous with the existing ML 70293 will secure long term employment for the local area, indirect employment for contractors and suppliers, and raw material to feed the processing plant to enable the company to continue operations in well into the future.

2.4 Access to ML

A summary of the co-ordinates for the proposed route to access the new ML is included in Table 3 – Access Co-ordinates Description. The access is graphically represented in Figure 2 – Site Layout Plan. The access will be approximately 10 metres wide.

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<td>6 (end)</td>
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<td>7566355</td>
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Note: Set out points in MGA94 Zone 55
3. **Resource Description**

3.1 **Local and Regional Geology**

The MLA local geology comprises an in situ dolomite deposit associated with weathering of volcanioclastic rock of the Lizzie Creek Volcanic Group near Kennedy Creek (Lam, J., 2004). The Lizzie Creek Volcanic Group are characterised by basaltic to andesitic lava and volcanioclastic rocks (including breccia and arenite), rhyolitic to dacitic lava and volcanioclastic rocks (including ignimbrite); local siltstone, shale and polymictic conglomerate (Geoscience Australia, 2015).

The region overlies the Bowen Basin synclinorium of east central Queensland and contains rock ranging from lower Permian to recent in age, of which a large portion is deeply weathered (Galloway et. al, 1967). A map showing the regional geology composition is included as Figure 4 – Regional Geology Map.

3.2 **Historical Tenure and Resource Investigations**

Significant resource investigation has been undertaken on the historical Exploration Permit for Minerals (EPM) 9959 and the Mineral Development Licence (MDL) 318.

Investigations carried out under EPM9959 included literature research, air photo geological interpretable studies, reconnaissance geology, geological traverses, rock chip sampling, pitting and sampling, geological mapping, chemical analyses, market and product research and resource estimation.

Review of the historical reports for the tenure area, including the Independent Geologists Report: Kennedy Creek Dolomite Project has confirmed that test pitting undertaken on MDL318, which directly overlaid the current PPP area determined a total resource estimate of approximately 670,000 tonne of earthy dolomite. The current operations on ML70293 together with the numerous test pits constructed during the previous exploration tenures, allows for this resource estimate to be made with a high level of confidence.
4. Project Overview

4.1 Site Details

A summary of the site location details the subject of the MLA area are provided below.

Location: The MLA is situated on Sarina-Marlborough Road, Lotus Creek, and is approximately 98 km south west of the Mackay CBD, refer to Figure 1 – Site Locality Plan.

Access: Access to the MLA is via the existing Kennedy Creek ML70293, which is access via Sarina-Marlborough Road. Refer to Figure 2 – Site Layout Plan. The access road will be approximately 10 metres wide.

Real Property Description: Lot 2 on WHS441

Area: The MLA area is 24 ha

Tenure: Lot 2 on WHS441 is Lands Lease and subject to ML 70293

Local Authority: Isaac Regional Council

4.2 Minerals to be Mined

The minerals to be mined will be Clay, Dolomite and Lime / Limestone, as per the current approved minerals for ML70293.

4.3 Proposed Commencement of Operations

It is anticipated that mining on the new ML would commence in approximately mid-2017, dependent upon grant of the new tenure, market demand and equipment availability.

4.4 Proposed Term

The proposed term is to 25 years to allow maximum utilisation of resource within the permit area.

4.5 Purpose of the New ML

The new ML represents an extension to the existing Kennedy Creek Lime operations into an area of known resource, refer to Figure 2 – Site Layout Plan for an illustration of the tenure areas. The minerals to be mined include Clay, Dolomite, Lime, and Limestone, which are the same as the currently approved minerals for the ML70293 operations.

The new ML will be mined concurrently with the existing operations on ML70293. Both the existing Kennedy Creek ML70293 and the new ML cover a single resource deposit area of dolomite and dolomitic lime. The new ML once granted, and the existing ML70293, will collectively form a Mining Project. The primary purpose of the ML is to secure the known resource for longevity and future security of the operations.

Materials extracted from the Kennedy Creek Mining Project will be mined in combination with the separate resource situated at the CQD and Macegate Plain Creek mining lease (and new ML once granted), further south along the Sarina – Marlborough Road, Lotus Creek, refer to Figure 1 – Site Locality Plan. The resource at these two (2) geographically separate locations contains two different grades of material. Both resources are extracted and blended.
at the Kennedy Creek Lime processing plant, situated on ML70293. It should be noted that CQD and Macegate intend to expand the surface area of the Plain Creek operations to an area west of the current Plain Creek ML. An MLA for this area has been prepared and submitted.

Under the former Environmental Protection Act 1994 (EP Act), a separate Environmental Authority (EA) for the new Kennedy Creek West ML in addition to the existing Kennedy Creek Lime EA was required, however the legislation has changed over recent times and the additional tenure must be incorporated into the existing Kennedy Creek EA (EA Ref. EPV/L004986513). Therefore an EA amendment application has been submitted with the MLA package to add on the new tenure to the resource activity. CQD and Macegate may considered applying for an amalgamated Project Authority at a later stage once the new MLs are granted to simplify the approvals for the Mining Project.

It should be noted that CQD and Macegate intend to expand the surface area of the Plain Creek operations to an areas west of the current Plain Creek ML. An MLA for this area has been prepared and submitted concurrently with this MLA for Kennedy Creek West.

4.6 Method of Mining

The general mine development is illustrated on Figure 3 – Conceptual Mine Development Plan. Mining operations are anticipated to comprise of the following basic shallow pit mining methods:

- Clearing of sparse vegetation and stripping of topsoil and overburden material via mechanical means (i.e. bulldozer or excavator), stockpiling for later use in on-site rehabilitation works, or for the construction of environmental controls such as perimeter banks or bunds.
- Shallow pit extraction (i.e. pits two to five metres, dependent upon resource depth and quality) of the underlying resource using a bulldozer with tine ripper, or excavator.
- Stockpiling of raw materials on the pit floor, ready for transfer via loader / truck to the mobile processing plant on ML70293.
- Processing of the raw materials by screening and pin milling.
- Stockpiling the final products using within designated stockpilng area(s) before the materials are sold and loaded into road trucks for transportation off-site.
- Rehabilitating disturbed areas progressively once extraction is completed where practicable.

No blasting is required as part of the extraction process and processing will be via a pin mill, which will grind the raw materials into a very fine product. Material will be screened through a vibrating screen to segregate the various sizes of product, any oversize materials will be stockpiled for later use.

The mineral processing methods used at the mining project are a dry process, and no processing fluids are utilised as this affects the quality of the final products. Final products are stockpiled undercover in the storage shed, which is an existing structure located on ML70923. Bagging of the final products is undertaken on ML70293 and final product produced at the operations includes:

- Agline (soil conditioner)
- Dolomite (soil sweetener)
- Zeolite (soil enhancer)
- DoloFeed (livestock supplement)
- Stonedust (explosion dust suppressant).

4.7 Infrastructure

The MLA will be supported by existing infrastructure located on ML70293, which includes the following:

- Mobile processing plant (ore hopper, conveyor belt and vibrating power screen)
• Fuel storage tank
• Storage shed
• Worker's quarters
• Services (i.e. power)
• Water tanks.

Infrastructure developed on the MLA area will be limited to internal access / haul roads, mine pits and environmental controls (e.g. sump, bunds, etc.).

4.8 Workforce to be maintained
The existing workforce currently employed for the operations on ML70293 will be maintained for the new ML area. The workforce comprises a competent team of personnel for all stages of the mine development. Five to 10 employees are to be maintained for the mining operations. This includes personnel involved in logistics and transport, product processing and bagging, reporting and accounting, and senior management. Specialist consultants are engaged on an as needs basis to assist with matters such as environmental management, tenure administration and petrographic and resource investigations.

4.9 Rehabilitation Methodology
In general, rehabilitation of the land is to be undertaken by CQD and Macegate in accordance with the Code of Environmental Compliance for Mining Lease Projects and Additional Conditions included in the EA, defined as a Variation EA (Ref. EPVL004986513). The final land use is likely to be grazing, which is the predominant surrounding land use as a result of the endemic soil type of the region.

Rehabilitation of the mining lease area is anticipated to occur progressively as areas become available (i.e. when areas are no longer required, or where resource has been exhausted). The progressive pit development is anticipated to ensure shallow slopes of approximately 1(V):3(H) are created. General rehabilitation methods will include the following:

• Battering of mine voids to a stable slope where necessary (e.g. 1(V):3(H)).
• Respreading of stockpiled topsoil via scraper and spreader over the recontoured surfaces.
• Revegetation via natural regeneration of pasture grasses.

Where additional seeding is required, CQD and Macegate must consult with the administering authority and the landholder to determine a suitable seed mix.

Infrastructure constructed on the land for the Kennedy Creek mining project, with the exception of the screening and processing plant, is likely to be retained for ongoing beneficial use by the landholder at the cessation of the mining activity. Infrastructure that may remain includes the storage shed, roads and potentially water storages. In the event that infrastructure is to remain post-mining, a landholder agreement will be obtained prior to the mining lease surrender.

Further details of the rehabilitation are included in Section 5.9 – Land of the Environmental Assessment Report (EAR) (Doc ref 1801.620.001) included with the MLA package.

4.10 Potential Environmental Impacts
It is understood that an Environmental Authority (EA) for the new ML is required to be obtained from the Department of Environment and Heritage Protection (EHP) as part of the MLA process. As the new ML represents an extension to the existing Kennedy Creek mining project, CQD and Macegate must amend the existing EA (Ref. EPVL00498613). The EA amendment application is included in the MLA package. Potential environmental impacts associated with carrying out the mining activity on the new ML have been considered and are included in the EAR (Doc ref 1801.620.001) accompanying the EA amendment application.
5. Financial and Technical Resources Summary

CQD and Macegate are subsidiaries of the Tandy Group, an Australian owned company established in 1968 and comprises multiple entities including Kennedy Creek Lime, Tandy Concrete, Mackay Sand and Gravel Sales, Clark Drinking Water, CLH Transport and Beef Breeding Services. Financial and technical resource statements have been prepared and are supplied with the MLA package.
figures
**DUPLICATE COPY**

Receipt Number: TO352596
Date Payment Received: 20-JUL-2016

Received From: VOLTZ Larry
Address: PO BOX 101
           MACKAY
           QLD
           4740

Remarks:
Application fees for a mining lease, Native Title advertising and Environmental Authority.

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Totals: $3,044.09 $90.91 $3,135.00

Amount Received: $3,135.00

Cashier: Amy MCCOY

Per Authorised Accounting Officer

Cheques or other negotiable instruments accepted subject to clearance.

Contact: Townsville Regional Office (07) 4799 7677

Business use only

Total Controlled: $1,000.00
Total Administered: $2,135.00
Total Receipt: $3,135.00

* GST is a Commonwealth Government Tax; # Refund has been authorised but has not been approved
3011 - Validation Checklist – Amendment Application for a Resource Activity

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<td>Is a minor amendment indicated by Question 2 response AND</td>
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<tr>
<td>Applicant can comply with standard conditions (Question 4)</td>
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<td>(where all boxes are ticked - PaLM to issue amended EA)</td>
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Other (ES/EAU to assess)

Amendment type for initial data entry:
- Minor
- Major

Tenure No/s: TO ADD ML100101 TO EXISTING EA WHICH CONTAINS ML70293

Tenure Types:
- ☒ ML
- ☐ EPM
- ☐ EPC
- ☐ MDL
- ☐ PSL
- ☐ PFL
- ☐ ATP
- ☐ PPL
- ☐ PL

Applicant Name: CQ Dolomite Pty Ltd and Macegate Pty Limited

Email sent to debt management to pull annual return (only required where new EA number has been generated)

ERA Nos (where standard ERA/s are being added to a standard EA only):

Application Dates

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<td>Application Date in Ecotrack: 08/08/2016</td>
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<td>ALD Due Date: 22/08/2016 (10 b days from Application Date in Ecotrack)</td>
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Application Invalid (tick which applies below)
- Invalid date
  - Application is unable to be made
  - Application requirements not met within timeframe (for amendments decided by PaLM only)
  - CC DNRM into Invalid Application letter (where proposed amendment affects a mining resource tenure)

Fill for mining amendment being assessed regionally and missing fees: Fee requested

Due date:

Fill only where PaLM are deciding the EA

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Permit and Licence Management Validation Checklist
Amendment to an EA Application for a Mining Activity (not a mining lease)
### Validity Check

**Indicate by Yes ✗**

<table>
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<th>Ticked No in sections 1 and 3 of the front checklist of the application form</th>
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### Application Checks

**Indicate by Yes ✗**

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<td>✗ Correct fee paid</td>
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<td>✗ Receipt sent to client</td>
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</table>

| Amount Paid $609.00 please note this amount should only be $488.60. I have emailed DNRM to advise that they need to credit the balance. |
| Receipt No: TO352596 |
| Date Paid: 20/07/2016 |

### Other Agency Interests:

| □ Indigenous Heritage | □ Located within a Wild Rivers Area |
| □ Biodiversity Offset Policy |

List any other features found in Ecomaps: Trigger for ECSU 8099, ERREBS

### RIDA:

| □ Is the resource activity located anywhere within an area of regional interest. |
| If ✗ fill below – which regional interest area, have or will you require a Regional Interest Development Approval |
| □ Priority Agricultural Areas (PAAs) application reference |
| □ Priority Living Areas (PLAs) application reference |
| □ Strategic Environmental Areas (SEAs) application reference |
| □ Strategic Cropping Area (SCA, formerly Strategic Cropping Land) application reference |
| □ No regional interests development approval required, I am an exempt activity |

| Reference #: |
| Confirmation regional office has received application #: **Yes/No** |

### Q17 - □ EIS complete and risks unchanged. **If no to above:**

**Q19 - “Environmental Impact assessment” on application form**

**Administrative check to determine applicant has submitted:**

| □ a description of the environmental values likely to be affected by each relevant activity; and |
| □ details of any emissions or releases likely to be generated by each relevant activity; and |
| □ a description of the risk and likely magnitude of impacts on the environmental values; and |
| □ details of the management practices proposed to be implemented to prevent or minimise adverse impacts; and |
| □ details of how the land the subject of the application will be rehabilitated after each relevant activity ceases |

### Q20 - Applicable regardless of whether EIS has been completed:

**“Waste management” on application form**

**Administrative check to determine:**

| □ Applicant has indicated not applicable on application form |
| □ Applicant has given description of the proposed measures for minimising and managing waste generated by the ERA activities |

### Q21 - “Site Management Plan or Environmental Protection Order” on application form

**Administrative check to determine:**

<p>| □ Applicant has indicated there is no site management plan or environmental protection order on the application form |
| □ Applicant has given details of the site management plan |</p>
<table>
<thead>
<tr>
<th>□ Applicant has given details of the environmental protection order</th>
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<td><strong>Administrative check to determine the application includes the following:</strong></td>
</tr>
<tr>
<td>□ the quantity of CSG water the applicant reasonably expects will be generated in connection with carrying out each relevant CSG activity;</td>
</tr>
<tr>
<td>□ the flow rate at which the applicant reasonably expects the water will be generated;</td>
</tr>
<tr>
<td>□ the quality of the water, including changes in the water quality the applicant reasonably expects will happen while each relevant CSG activity is carried out;</td>
</tr>
<tr>
<td>□ the proposed management of the water including, for example, the use, treatment, storage or disposal of the water;</td>
</tr>
<tr>
<td>□ the measurable criteria (the management criteria) against which the applicant will monitor and assess the effectiveness of the management of the water for example, criteria for each of the following</td>
</tr>
<tr>
<td>(i) the quantity and quality of the water used, treated, stored or disposed of;</td>
</tr>
<tr>
<td>(ii) protection of the environmental values affected by each relevant CSG activity;</td>
</tr>
<tr>
<td>(iii) the disposal of waste, including, for example, salt, generated from the management of the water;</td>
</tr>
<tr>
<td>□ the action proposed to be taken if any of the management criteria are not complied with, to ensure the criteria will be able to be complied with in the future</td>
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**Missing Application Requirements identified at PaLM**
Permit Application (ID: 10002863) - COMPLETE

Lodged On: 20/07/2016 10:55 AM

PERMIT DETAILS

| Permit name: | Kennedy Creek West |
| Permit type: | Mining Lease - Minerals |
| Permit term: | 25 Years |
| General locality of the application: | Sarina |
| Specific minerals: | Clay, Dolomite, Lime / Limestone |

PERMIT PRE-REQUISITE DETAILS

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<th>Authorised</th>
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<td>Yes</td>
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<tr>
<td>MACEGATE PTY LIMITED</td>
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**Holder address details:**

<table>
<thead>
<tr>
<th>Holder:</th>
<th>Address:</th>
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</thead>
<tbody>
<tr>
<td>CQ DOLOMITE PTY LTD</td>
<td>PO Box 101</td>
</tr>
<tr>
<td>ACN: 104160965</td>
<td>Town/City: Mackay</td>
</tr>
<tr>
<td>Email address: <a href="mailto:lvoltz@tandygroup.com.au">lvoltz@tandygroup.com.au</a></td>
<td>State: QLD</td>
</tr>
<tr>
<td>Business number: 49559561</td>
<td>Postcode: 4740</td>
</tr>
<tr>
<td>Mobile number:</td>
<td>Country: Australia</td>
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</table>

<table>
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<tr>
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<tbody>
<tr>
<td>MACEGATE PTY LIMITED</td>
<td>PO Box 101</td>
</tr>
<tr>
<td>ACN: 010384424</td>
<td>Town/City: Mackay</td>
</tr>
<tr>
<td>Email address: <a href="mailto:lvoltz@tandygroup.com.au">lvoltz@tandygroup.com.au</a></td>
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<td>Postcode: 4740</td>
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**Authorised Holder Representative (AHR) address details:**

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<tr>
<td>Rodney Huntley</td>
<td>Groundwork Plus Po Box 1779</td>
</tr>
<tr>
<td></td>
<td>Town/City: Milton BC</td>
</tr>
<tr>
<td>Email address:</td>
<td>State: QLD</td>
</tr>
<tr>
<td><a href="mailto:info@groundwork.com.au">info@groundwork.com.au</a></td>
<td>Postcode: 4064</td>
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<td>Business number:</td>
<td>Country: Australia</td>
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PERMIT AREA

Size of area applied for (ha): 24.0000
Size of surface area applied for (ha): 24.0000
Local government area(s): Isaac Regional Council
Which datum standard have you used? MGA94
Provide coordinates for the datum post: 701382E, 7566649N, Zone 55
When was the land marked out? 15/07/2016 11:00 AM
Is surface area within the permit area required? Whole.
Provide width of access (m): 10.00
Provide any relevant information about access including start and end points: From Marlborough Sarina Road to permit.

LAND INFORMATION DETAILS

Does this application involve the surrender of a granted permit in favour of whole or part of this application? No
Is there any restricted land associated with this permit application? No
Is the lease area within the surface of reserve? No
Is the land applied for situated within an area of a greenhouse gas (GHG) permit? No

Overlapping permits

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ENVIRONMENTAL AUTHORITY

The environmental authority application is: Application for amendment of an environmental authority

Suitable registered operator details

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<td>593131</td>
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<td>MACEGATE PTY LIMITED</td>
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NATIVE TITLE

Native title process: Exclusive Land (100%)
I confirm that when a full assessment is completed, if native title must be addressed, a native title process will be required and advertising fees will be requested by the department: Yes

OBLIGATIONS

As the authorised holder representative, I understand and agree to the obligations associated with the permit: Yes

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KENNEDY CREEK WEST
MINING PROGRAM

Prepared for:
CQ Dolomite Pty Ltd & Macegate Pty Ltd JV

Date:
July 2016

Reference:
1801.500.002
# Document Control

## Project/ Report Details

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<td>Y. Dowling</td>
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<tr>
<td>Client:</td>
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<td>Ref. No.</td>
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<td>July 2016</td>
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## Distribution Record

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FIGURES

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Figure 2 Site Layout Plan (Drawing No. 1801.DRG.014)
Figure 3 Conceptual Mine Development Plan (Drawing No. 1801.DRG.017)
Figure 4 Regional Geology Map (Drawing No. 1801.DRG.012)
1. Introduction

1.1 The Proponent

CQ Dolomite Pty Ltd (CQD) and Macegate Pty Ltd (Macegate) are the holders of several mining tenements in the Central Queensland region. CQD and Macegate are subsidiaries of the Tandy Group, an Australian owned company established in 1968 and comprises multiple entities including Kennedy Creek Lime, Tandy Concrete, Mackay Sand and Gravel Sales, Clark Drinking Water, CLH Transport and Beef Breeding Services.

CQD and Macegate seek to lodge a Mining Lease Application (MLA) over the portion of land directly adjacent to the Kennedy Creek Lime operations for the expansion of the existing mining project.

1.2 The Project and Pre-Requisite Tenure

CQD and Macegate currently operate the site identified as Kennedy Creek Lime under Mining Lease (ML) 70293, which is situated on Sarina-Marlborough Road, Lotus Creek, refer to Figure 1 – Site Locality Plan.

CQD and Macegate propose to expand the current mining operations into the known resource area to the west of the existing operations onto the area currently overseen by Parcel Prospecting Permit (PPP) 100033 held by CQD as pre-requisite tenure for the MLA, refer to Figure 2 – Site Layout Plan for an illustration of the proposed expansion area. The general mine development is illustrated on Figure 3 – Conceptual Mine Development Plan.

1.3 Purpose of the Mining Program

The purpose of this Mining Program is to satisfy the requirements of Section 245 of the Mineral Resources Act 1989 (MRA). As such, this Mining Program includes:

- a description of the land parcels subject to the MLA (including current land use and landowners);
- a description / illustration of the MLA area, including boundary and surface area descriptions;
- a description of the intended purpose of the new ML;
- relationship of the new ML with existing MLs under the mining project;
- any improvements referred to in Section 230(1) of the MRA;
- access descriptions;
- justification for the size and shape of the MLA (including graphic representations);
- minerals proposed to be mined;
- proposed initial term of ML;
- methods of operations, rehabilitation and workforce to be utilised, and supporting infrastructure; and
- a summary of the estimated human, technical and financial resources.

A detailed description of the above items is included in the following report.

1.4 Views of Overlapping Permit Holders (EPC2306)

The MLA area is overseen by Exploration Permit for Coal (EPC) 2306, held by Endocoal Limited. Before the close of objection period, the written views from the overlapping EPC2306 holder will be obtained; however, it should be noted that the new ML is for minerals other than coal, therefore the mineral / purpose does not overlap.
2. Land Information

2.1 Land Parcels subject to the MLA

A summary of the land subject to the MLA is included in Table 1 – Land Information Summary, whilst the layout of the MLA is included in Figure 2 – Site Layout Plan.

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<tr>
<th>Background tenure</th>
<th>Tenure type</th>
<th>Current Use</th>
<th>Proposed Use</th>
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<th>Landowner Address</th>
<th>Compensation Require (y/h)</th>
<th>Date compensation finalised</th>
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<tbody>
<tr>
<td>Lot 2 on WHS441</td>
<td>Leases</td>
<td>Grazing and Mining</td>
<td>Mining</td>
<td>Peter Malcolm Hughes and Jane Anne Sarah Hughes</td>
<td>Hughes Pastoral PO Box 1406, Gympie Q 4670</td>
<td>Yes</td>
<td>Not yet finalised</td>
</tr>
<tr>
<td>Semuan Station</td>
<td></td>
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<td></td>
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</tbody>
</table>

There is no Category A or B restricted land as defined under Schedule 2 of the MRA included in the MLA. Compensation in the form of a written agreement will be finalised between the landholder and the proposed ML holders, CQD and Macegate prior to the last objection day for the new ML.

2.2 Boundary Description

A summary of the boundary co-ordinates is included in Table 2 – Boundary Co-ordinates Description. The boundary is graphically represented in Figure 2 – Site Layout Plan, and a shape file containing the boundary co-ordinates in the approved form has been provided to the Department of Natural Resources and Mines (DNRM) with the MLA.

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<tr>
<td>4</td>
<td>700715</td>
<td>756656</td>
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Note: Set out points in MGA94 Zone 55

2.3 Surface Area

The Surface Area for the new ML is defined as all land within the boundary set out points identified in Section 2.2. Boundary Description, refer to Figure 2 – Site Layout Plan for a graphical representation. The surface area applied for is consistent with the boundary of the adjacent ML 70293 to enable maximum resource utilisation and continuity. The increased surface area continuous with the existing ML 70293 will secure long term employment for the local area, indirect employment for contractors and suppliers, and raw material to feed the processing plant to enable the company to continue operations in well into the future.

2.4 Access to ML

A summary of the co-ordinates for the proposed route to access the new ML is included in Table 3 – Access Co-ordinates Description. The access is graphically represented in Figure 2 – Site Layout Plan. The access will be approximately 10 metres wide.

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Note: Set out points in MGA94 Zone 55
3. Resource Description

3.1 Local and Regional Geology

The MLA local geology comprises an in situ dolomite deposit associated with weathering of volcanioclastic rock of the Lizzie Creek Volcanic Group near Kennedy Creek (Lam J., 2004). The Lizzie Creek Volcanic Group are characterised by basaltic to andesitic lava and volcanioclastic rocks (including breccia and arenite), rhyolitic to dacitic lava and volcanioclastic rocks (including ignimbrite); local siltstone, shale and polymictic conglomerate (Geoscience Australia, 2015).

The region overlies the Bowen Basin synclinorium of east central Queensland and contains rock ranging from lower Permian to recent in age, of which a large portion is deeply weathered (Galloway et. al, 1967). A map showing the regional geology composition is included as Figure 4 – Regional Geology Map.

3.2 Historical Tenure and Resource Investigations

Significant resource investigation has been undertaken on the historical Exploration Permit for Minerals (EPM) 9959 and the Mineral Development Licence (MDL) 318.

Investigations carried out under EPM9959 included literature research, air photo geological interpretative studies, reconnaissance geology, geological traverses, rock chip sampling, pitting and sampling, geological mapping, chemical analyses, market and product research and resource estimation.

Review of the historical reports for the tenure area, including the Independent Geologists Report: Kennedy Creek Dolomite Project has confirmed that test pitting undertaken on MDL318, which directly overlaid the current PPP area determined a total resource estimate of approximately 670,000 tonne of earthy dolomite. The current operations on ML70293 together with the numerous test pits constructed during the previous exploration tenures, allows for this resource estimate to be made with a high level of confidence.
4. Project Overview

4.1 Site Details

A summary of the site location details the subject of the MLA area are provided below.

**Location:** The MLA is situated on Sarina-Marlborough Road, Lotus Creek, and is approximately 98km south west of the Mackay CBD, refer to Figure 1 – Site Locality Plan.

**Access:** Access to the MLA is via the existing Kennedy Creek ML70293, which is access via Sarina-Marlborough Road. Refer to Figure 2 – Site Layout Plan. The access road will be approximately 10 metres wide.

**Real Property Description:** Lot 2 on WHS441

**Area:** The MLA area is 24 ha

**Tenure:** Lot 2 on WHS441 is Lands Lease and subject to ML 70293

**Local Authority:** Isaac Regional Council

4.2 Minerals to be Mined

The minerals to be mined will be Clay, Dolomite and Lime / Limestone, as per the current approved minerals for ML70293.

4.3 Proposed Commencement of Operations

It is anticipated that mining on the new ML would commence in approximately mid-2017, dependent upon grant of the new tenure, market demand and equipment availability.

4.4 Proposed Term

The proposed term is to 25 years to allow maximum utilisation of resource within the permit area.

4.5 Purpose of the New ML

The new ML represents an extension to the existing Kennedy Creek Lime operations into an area of known resource, refer to Figure 2 – Site Layout Plan for an illustration of the tenure areas. The minerals to be mined include Clay, Dolomite, Lime, and Limestone, which are the same as the currently approved minerals for the ML70293 operations.

The new ML will be mined concurrently with the existing operations on ML70293. Both the existing Kennedy Creek ML70293 and the new ML cover a single resource deposit area of dolomite and dolomitic lime. The new ML once granted, and the existing ML70293, will collectively form a Mining Project. The primary purpose of the ML is to secure the known resource for longevity and future security of the operations.

Materials extracted from the Kennedy Creek Mining Project will be mined in combination with the separate resource situated at the COD and Macegate Plain Creek mining lease (and new ML once granted), further south along the Sarina – Marlborough Road, Lotus Creek, refer to Figure 1 – Site Locality Plan. The resource at these two (2) geographically separate locations contains two different grades of material. Both resources are extracted and blended.
at the Kennedy Creek Lime processing plant, situated on ML70293. It should be noted that CQD and Macegate intend to expand the surface area of the Plain Creek operations to an area west of the current Plain Creek MLA. An MLA for this area has been prepared and submitted.

Under the former Environmental Protection Act 1994 (EP Act), a separate Environmental Authority (EA) for the new Kennedy Creek West MLA in addition to the existing Kennedy Creek Lime EA was required, however the legislation has changed over recent times and the additional tenure must be incorporated into the existing Kennedy Creek EA (EA Ref. EPV/L004986S13). Therefore an EA amendment application has been submitted with the MLA package to add on the new tenure to the resource activity. CQD and Macegate may considered applying for an amalgamated Project Authority at a later stage once the new MLAs are granted to simplify the approvals for the Mining Project.

It should be noted that CQD and Macegate intend to expand the surface area of the Plain Creek operations to an areas west of the current Plain Creek MLA. An MLA for this area has been prepared and submitted concurrently with this MLA for Kennedy Creek West.

4.6 Method of Mining

The general mine development is illustrated on Figure 3 - Conceptual Mine Development Plan. Mining operations are anticipated to comprise of the following basic shallow pit mining methods:

- Clearing of sparse vegetation and stripping of topsoil and overburden material via mechanical means (i.e. bulldozer or excavator), stockpiling for later use in on-site rehabilitation works, or for the construction of environmental controls such as perimeter banks or bunds.
- Shallow pit extraction (i.e. pits two to five metres, dependent upon resource depth and quality) of the underlying resource using a bulldozer with tine ripper, or excavator.
- Stockpiling of raw materials on the pit floor, ready for transfer via loader / truck to the mobile processing plant on ML70293.
- Processing of the raw materials by screening and pin milling.
- Stockpiling the final products using within designated stockpiling area(s) before the materials are sold and loaded into road trucks for transportation off-site.
- Rehabilitating disturbed areas progressively once extraction is completed where practicable.

No blasting is required as part of the extraction process and processing will be via a pin mill, which will grind the raw materials into a very fine product. Material will be screened through a vibrating screen to segregate the various sizes of product, any oversize materials will be stockpiled for later use.

The mineral processing methods used at the mining project are a dry process, and no processing fluids are utilised as this affects the quality of the final products. Final products are stockpiled under cover in the storage shed, which is an existing structure located on ML7023. Bagging of the final products is undertaken on ML70293 and final product produced at the operations includes:

- Aginline (soil conditioner)
- Dolomite (soil sweetener)
- Zeollite (soil enhancer)
- DoloFeed (livestock supplement)
- Stonedust (explosion dust suppressant).

4.7 Infrastructure

The MLA will be supported by existing infrastructure located on ML70293, which includes the following:

- Mobile processing plant (ore hopper, conveyor belt and vibrating power screen)
• Fuel storage tank
• Storage shed
• Worker’s quarters
• Services (i.e. power)
• Water tanks.

Infrastructure developed on the MLA area will be limited to internal access / haul roads, mine pits and environmental controls (e.g. sump, bunds, etc.).

4.8 Workforce to be maintained

The existing workforce currently employed for the operations on ML70293 will be maintained for the new MLA area. The workforce comprises a competent team of personnel for all stages of the mine development. Five to 10 employees are to be maintained for the mining operations. This includes personnel involved in logistics and transport, product processing and bagging, reporting and accounting, and senior management. Specialist consultants are engaged on an as needs basis to assist with matters such as environmental management, tenure administration and petrographic and resource investigations.

4.9 Rehabilitation Methodology

In general, rehabilitation of the land is to be undertaken by CQD and Macegate in accordance with the Code of Environmental Compliance for Mining Lease Projects and Additional Conditions included in the EA, defined as a Variation EA (Ref. EPVL004986513). The final land use is likely to be grazing, which is the predominant surrounding land use as a result of the endemic soil type of the region.

Rehabilitation of the mining lease area is anticipated to occur progressively as areas become available (i.e. when areas are no longer required, or where resources have been exhausted). The progressive pit development is anticipated to ensure shallow slopes of approximately 1(V):3(H) are created. General rehabilitation methods will include the following:

• Battering of mine voids to a stable slope where necessary (e.g. 1(V):3(H)).
• Respreading of stockpiled topsoil via scraper and spreader over the recontoured surfaces.
• Revegetation via natural regeneration of pasture grasses.

Where additional seeding is required, CQD and Macegate must consult with the administering authority and the landholder to determine a suitable seed mix.

Infrastructure constructed on the land for the Kennedy Creek mining project, with the exception of the screening and processing plant, is likely to be retained for ongoing beneficial use by the landholder at the cessation of the mining activity. Infrastructure that may remain includes the storage shed, roads and potentially water storages. In the event that infrastructure is to remain post-mining, a landholder agreement will be obtained prior to the mining lease surrender.

Further details of the rehabilitation are included in Section 5.9 – Land of the Environmental Assessment Report (EAR) (Doc ref 1801.620.001) included with the MLA package.

4.10 Potential Environmental Impacts

It is understood that an Environmental Authority (EA) for the new ML is required to be obtained from the Department of Environment and Heritage Protection (EHP) as part of the MLA process. As the new ML represents an extension to the existing Kennedy Creek mining project, CQD and Macegate must amend the existing EA (Ref. EPVL00498613). The EA amendment application is included in the MLA package. Potential environmental impacts associated with carrying out the mining activity on the new ML have been considered and are included in the EAR (Doc ref 1801.620.001) accompanying the EA amendment application.
5. **Financial and Technical Resources Summary**

CQD and Macegate are subsidiaries of the Tandy Group, an Australian owned company established in 1968 and comprises multiple entities including Kennedy Creek Lime, Tandy Concrete, Mackay Sand and Gravel Sales, Clark Drinking Water, CLH Transport and Beef Breeding Services. Financial and technical resource statements have been prepared and are supplied with the MLA package.
figures
KENNEDY CREEK WEST MINING LEASE APPLICATION
ENVIRONMENTAL ASSESSMENT REPORT

Prepared for:
CQ Dolomite Pty Ltd & Macegate Pty Ltd JV

Date:
July 2016

Reference:
1801.620.001
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<td><strong>Air Pollutant</strong></td>
<td>A substance in ambient atmosphere, resulting from the activity of man or from natural processes, causing adverse effects to man and the environment (also called &quot;air contaminant&quot;).</td>
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<td><strong>Ambient Air Quality</strong></td>
<td>The quality of the ambient air near ground level, expressed as concentrations or deposition rates of air pollutants - also expressed as existing air quality.</td>
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<td><strong>Annual Exceedance Probability (AEP)</strong></td>
<td>Means the likelihood of occurrence of a flood of a given size or larger in any one year, usually expressed as a percentage. For example, if a peak flood discharge of 500 cubic metres per second has an AEP of 5 percent, it means that there is a 5 percent risk that is the probability of 0.05 or a likelihood of 1 in 20, of a peak flood discharge of 500 cubic metres/second or larger occurring in any one year. The AEP of a flood event gives no indication of when a flood of that size will occur next.</td>
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<td><strong>Average Recurrence Interval</strong></td>
<td>Means the average period between the recurrence of a storm event of a given rainfall intensity. The ARI represents a statistical probability. For example, a 100 year ARI indicates an average of 100 years between exceedance of a given storm magnitude.</td>
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<td><strong>Background Noise Levels</strong></td>
<td>The level of the ambient sound indicated on a sound level meter in the absence of the sound under investigation (e.g. sound from a particular noise source; or sound generated for test purposes).</td>
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<td><strong>Blasting</strong></td>
<td>The operation of breaking rock by means of explosives.</td>
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<td><strong>Bund Wall</strong></td>
<td>A man-made earth mound.</td>
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<td><strong>Catchment Area</strong></td>
<td>The area determined by topographic features within which rainfall will contribute to runoff at a particular point.</td>
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<td><strong>Concrete Products</strong></td>
<td>Products manufactured primarily from Portland Cement concrete these include bricks, blocks, pavers, pipes and box culverts and other precast concrete sections.</td>
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<td><strong>Conveyor</strong></td>
<td>A device fitted with an endless rubber belt used for moving crushed rock within the processing plant.</td>
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<td><strong>Crushing</strong></td>
<td>The mechanical process of reducing rock size usually by pressure or impact.</td>
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<td><strong>Dust</strong></td>
<td>Particles of mostly mineral origin generated by erosion of surfaces and the mining and handling of materials.</td>
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<td><strong>Ecosystem</strong></td>
<td>The totality of biological processes and interactions within a specified physical environment.</td>
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<td><strong>Environmental Constraints</strong></td>
<td>Limitations on a project by components of the environment.</td>
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<td><strong>Excavator</strong></td>
<td>Item of earth moving equipment either tracked or wheeled fitted with a bucket on an articulated boom and used for digging material from a face in front of, or below the machine.</td>
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<tr>
<td><strong>Fill</strong></td>
<td>Material imported and emplaced to raise the general surface level of a site.</td>
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<tr>
<td><strong>Fresh Rock</strong></td>
<td>Rock unaffected by weathering processes.</td>
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Grader
An item of earthmoving equipment, rubber tyred and fitted with a centrally mounted blade and rippers used to shape and trim the ground surface.

Groundwater
Water contained in voids such as fractures and cavities in rocks and inter-particle spaces in sediments.

Haul Road
Road used in quarry for haulage of rock from the face to the crusher and for general site access.

Mobile Equipment
Wheeled or tracked self-propelled equipment such as trucks and front end loaders.

Monitoring
The regular measurement of characteristics of the environment.

Operational Constraints
Limitations upon a project by equipment or machinery.

Particulate Matter
Small solid or liquid particles suspended in or falling through the atmosphere.

Processing Plant
A combination of crushers, screens, conveyors and chutes.

Rehabilitation
The preparation of a final landform after mining and its stabilisation with vegetation.

Revegetation
Replacement of vegetation on areas disturbed by quarrying activities.

Screening
A process which separates crushed rock into various sizes – this usually involves a mechanical vibration of the rock over a series of decks fitted with steel mesh, steel plate or polyurethane or rubber mats with fixed sized apertures.

Suspended Solids
Analytical term applicable to water samples referring to material recoverable from the sample by filtration.

Topsoil
The surface layer of a poorly-developed or well-developed soil profile containing a relatively high percentage of organic material.

Weathered Rock
Rock affected to any degree by the process of chemical or physical decomposition.
## Abbreviations

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<td>Australian Business Number</td>
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<tr>
<td>ACN</td>
<td>Australian Company Number</td>
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<td>AHD</td>
<td>Australian Height Datum</td>
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<td>EA</td>
<td>Environmental Authority</td>
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<td>EHP</td>
<td>Department of Environment and Heritage Protection</td>
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<td>EPBC</td>
<td>Environmental Biodiversity and Conservation Act</td>
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<td>EP Act</td>
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<td>ERA</td>
<td>Environmentally Relevant Activity</td>
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<td>Matters of State Environmental Significance</td>
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<td>PPV</td>
<td>Peak Particle Velocity</td>
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<td>QWQG</td>
<td>Queensland Water Quality Guidelines</td>
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<td>EMP</td>
<td>Environmental Management Plan</td>
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1. **Introduction**

1.1 **Background**

CQ Dolomite Pty Ltd (CQD) and Macegate Pty Limited (Macegate) are the holders of several mining tenements in the Central Queensland region. CQD and Macegate are subsidiaries of the Tandy Group, an Australian owned company established in 1968 and comprises multiple entities including Kennedy Creek Lime, Tandy Concrete, Mackay Sand and Gravel Sales, Clark Drinking Water, CLH Transport and Beef Breeding Services.

CQD and Macegate have submitted a MLA over the portion of land directly adjacent to the existing operations carried out on ML70293 to form an expansion of the surface area for the Kennedy Creek Lime Mining Project, refer to Figure 1 – Site Locality Plan for an illustration of the geographical location of the Kennedy Creek Lime mining project. Figure 2 – Site Layout Plan provides an illustration of the MLA area and adjacent existing operations.

The proposed Environmentally Relevant Activity (ERA) to be conducted is a Mining Activity as defined under Section 110 of the **Environmental Protection Act 1994** (EP Act). The new mining lease once granted will form an extension to the surface area of the existing mining activity carried out on ML 70293. Therefore, under the Section 118 of EP Act, it is understood that an entity may only make a single application for a single EA for all relevant activities that form the project.

The current operations are considered a small scale, shallow pit mining operation and are subject to a Variation Environmental Authority EPVL00498613 (EA). Consultation with CQD and Macegate has confirmed that the additional tenure will not trigger an increase in the scale of the operations that would result in the operations being inconsistent with the criteria outlined in the prescribed eligibility criteria for mining activities, defined in Schedule 3A, Sections 1 and 3 of the **Environmental Protection Regulation 2008** (EP Reg).

1.2 **Major vs Minor Amendment**

Under Section 223 of the EP Act, an amendment of an existing EA may be either minor (threshold) amendment, or a major amendment. It is understood that the amendment will be a major amendment, as the application relates to a new resource tenure for the EA that is a new mining lease.

1.3 **Purpose of the Environmental Assessment Report**

The purpose of this Environmental Assessment Report (EAR) is to qualify the potential environmental impacts and risks proposed by the new mining lease to assist the Department of Environment and Heritage Protection (EHP) to assess the major amendment of the existing EA. This EAR includes a summary of:

- the site the subject of the MLA and an overview of the mining project.
- the existing environment description, including an assessment of the MLA area Environmental Values.
- details of any potential emissions or releases likely to be generated by the proposed new tenure.
- any potential environmental risks and impacts proposed.
- proposed management measures to prevent or minimise adverse impacts.
- the proposed measures for minimising and managing waste generated by the relevant activity.
- how the land the subject of the application may be rehabilitated after the mining activity ceases.

1.4 **Assessment against Eligibility Criteria**

The threshold for which the proposed mining activity apply are subject to eligibility criteria and standard conditions under the Code of environmental compliance for Mining Lease Projects. An assessment against the applicable criteria
prescribed in Schedule 3A, Sections 1 and 3 of the EP Reg is shown in Table 1 – Assessment of Operations against Eligibility Criteria.

### Table 1 – Assessment of Operations against Eligibility Criteria

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Eligible</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Eligibility criteria for all mining activities (Schedule 3A, Section 1 of the EP Reg)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) the mining activity does not, or will not, at any one time, cause more than 10ha of land to be significantly disturbed;</td>
<td>✔</td>
<td>Consultation with CQD and Macegate has confirmed that the operation will not significantly disturb more than 10ha of land at any one time. Progressive rehabilitation is to be undertaken to ensure that the areas of disturbance remain below this threshold.</td>
</tr>
<tr>
<td>(b) the mining activity is not, or will not be, carried out in a category A environmentally sensitive area or a category B environmentally sensitive area;</td>
<td>✔</td>
<td>Review of the State ESA mapping has confirmed no ESAs exist within the proposed ML area or the existing ML. A search of the EHP ESAs mapping shows that the nearest ESA is the Category B Endangered Regional Ecosystem, approximately 575 m to the south east of the MLA area.</td>
</tr>
<tr>
<td>(c) the mining activity is not, or will not be, carried out under an environmental authority under which either of the following is, or is to be, authorised— (i) an environmentally relevant activity to which a section of schedule 2 applies and for which there is an aggregate environmental score; (ii) a resource activity, other than a mining activity, that is an ineligible ERA;</td>
<td>✔</td>
<td>Consultation with CQD and Macegate has confirmed that there are no Schedule 2 ERAs proposed for the new MLA or undertaken as part of the current mining project. The resource activity is not an ineligible ERA.</td>
</tr>
<tr>
<td>(d) the mining activity is not, or will not be, carried out in a strategic environmental area, unless— (i) the mining activity is authorised under an environmental authority for a mining activity relating to a mining claim, an environmental authority for a mining activity relating to an exploration permit or an environmental authority for a mining activity relating to a mineral development licence; or (ii) the mining activity involves alluvial mining and is, or will be, carried out at a place that is not in a designated precinct in a strategic environmental area; or (iii) the mining activity involves clay pit mining, dimension stone mining, hard rock mining, opal mining or shallow pit mining and is, or will be, carried out at a place that is not in a designated precinct in a strategic environmental area.</td>
<td>✔</td>
<td>The MLA area is not in an area identifies a as Strategic Environmental Area under the <em>Regional Planning Interests Act 2014</em>.</td>
</tr>
</tbody>
</table>
Environmental Assessment Report

Criteria | Eligible | Assessment
--- | --- | ---
3 Eligibility criteria for mining activities relating to a mining lease (Schedule 3A, Section 1 of the EP Reg)

(a) the mining activity does not, or will not, at any one time, cause more than 5ha of either of the following to be significantly disturbed—
   (i) a riverine area;
   (ii) mine workings;

Consultation with CQD and Macegate has confirmed that the operation will not disturb more than 5ha of mine workings at any one time. Progressive rehabilitation is to be undertaken to ensure that the areas of disturbance remain below this threshold.

(b) the mining activity is not, or will not, be carried out by more than 20 persons at any one time;

Consultation with CQD and Macegate has confirmed that the operation are, and will, be supported by less than 20 personnel (tentatively five to 10 personnel).

(c) only the following types of mining are, or will be, authorised under the relevant mining lease—
   (i) alluvial mining;
   (ii) clay pit mining;
   (iii) dimension stone mining;
   (iv) hard rock mining;
   (v) opal mining;
   (vi) shallow pit mining.

Consultation with CQD and Macegate has confirmed that the operation is a shallow pit mining operation, with typical depths of extraction being between two and five metres. **shallow pit mining** as defined under the EP Reg means extracting material from an open cut pit no more than five metres deep and processing the material to extract minerals.

Note:

**mine workings** means an area from which ore or overburden has been extracted, or on which waste rock is stored, that is not—

a) substantially rehabilitated to the satisfaction of the administering authority; or

b) used for constructing a camp site, road, plant, tailings dam, water storage dam or other infrastructure.
2. Mining Project Summary

2.1 Site Details

A summary of the site location details the subject of the MLA area are provided below.

**Location:** The MLA is situated on Sarina-Marlborough Road, Lotus Creek, and is approximately 98km south west of the Mackay CBD, refer to Figure 1 – Site Locality Plan.

**Access:** Access to the MLA is via the existing Kennedy Creek ML70293, which is accessed via Sarina-Marlborough Road. Refer to Figure 2 – Site Layout Plan.

**Real Property Description:** Lot 2 on WHS441

**Area:** The MLA area is 24 ha

**Tenure:** Lot 2 on WHS441 is Lands Lease and subject to ML70293

**Local Authority:** Isaac Regional Council

2.2 Project Overview

2.2.1 Purpose of the new ML and Minerals to be mined

The new ML represents an extension to the existing Kennedy Creek Lime operations (ML70293) into an area of known resource, refer to Figure 2 – Site Layout Plan for an illustration of the tenure areas. The minerals to be mined include Clay, Dolomite, Lime, and Limestone, which are the same as the currently approved minerals for the ML70293 operations.

The new ML will be mined concurrently with the existing operations on ML70293. Both the existing Kennedy Creek ML70293 and the new ML cover a single resource deposit area of dolomite and dolomitic lime. The new ML once granted, and the existing ML70293, will collectively form a Mining Project. The primary purpose of the ML is to secure the known dolomite resource for longevity and future security of the operations.

Materials extracted from the Kennedy Creek Mining Project will be mined in combination with the separate resource situated at the CQD and Macegate Plain Creek mining lease (and new ML once granted), further south along the Sarina – Marlborough Road, Lotus Creek, refer to Figure 1 – Site Locality Plan. The resource at these two geographically separate locations contains two different grades of material. Both resources are extracted and blended at the Kennedy Creek Lime processing plant, situated in ML70293. It should be noted that CQD and Macegate intend to expand the surface area of the Plain Creek operations to an areas west of the current Plain Creek ML. An MLA for this area has been prepared and submitted. Under the former legislation, a separate EA for the Plain Creek operations was required, therefore the additional tenure is proposed to be incorporated into the Plain Creek EA (EA Ref. EPSL00463913); however, CQD and Macegate may considered applying for an amalgamated Project Authority at a later stage once the new MLs are granted.
2.2.2 **Mining Methodologies**

The general mine development is illustrated on **Figure 3 – Conceptual Mine Development Plan**. Mining operations are anticipated to comprise of the following basic shall pit mining methods:

- Clearing of sparse vegetation and stripping of topsoil and overburden material via mechanical means (i.e. bulldozer or excavator) and stockpiling for later use in on-site rehabilitation works, or for the construction of environmental controls such as perimeter banks or bunds.
- Shallow pit extraction (i.e. pits two to five metres, dependent upon resource depth and quality) of the underlying resource using a bulldozer with tine ripper, or excavator.
- Stockpiling of raw materials on the pit floor, ready for transfer via loader / truck to the mobile processing plant on ML70293.
- Processing of the raw materials by screening and pin milling.
- Stockpiling the final products using within designated stockpiling area(s) before the materials are sold and loaded into road trucks for transportation off-site.
- Rehabilitating disturbed areas progressively once extraction is completed where practicable.

No blasting is required as part of the extraction process and processing will be via a pin mill, which will grind the raw materials into a very fine product. Material will be screened through a vibrating screen to segregate the various sizes of product, any oversize materials will be stockpiled for later use.

The mineral processing methods used at the mining project are a dry process, and no processing fluids are utilised as this affects the quality of the final products. Final products are stockpiled undercover in the storage shed, which is an existing structure located on ML70923. Bagging of the final products is undertaken on ML70293 and final product produced at the operations includes:

- Aglime (soil conditioner)
- Dolomite (soil sweetener)
- Zeolite (soil enhancer)
- DoloFeed (livestock supplement)
- Stonedust (explosion dust suppressant).

It is anticipated that mining on the new ML would commence in approximately mid-2017, dependent upon grant of the new tenure, market demand and equipment availability.

2.2.3 **Infrastructure**

The MLA will be supported by existing infrastructure located on ML70293, which includes the following:

- Mobile processing plant (ore hopper, conveyor belt and vibrating power screen)
- Fuel storage tank
- Storage shed
- Worker’s quarters
- Services (i.e. power)
- Water tanks.

Infrastructure developed on the MLA area will be limited to internal access / haul roads, mine pits and environmental controls (e.g. sump, bunds, etc.).

2.2.4 **Workforce to be maintained**

The existing workforce currently employed for the operations on ML70293 will be maintained for the new ML area. The workforce comprises a competent team of personnel for all stages of the mine development. It is anticipated that less than 20 employees are to be maintained for the mining operations, generally between 5 to 10 personnel will be involved in the daily operation of the project.
3. **Description of Existing Environment**

### 3.1 Local Land Use

The existing land use on Lot 2 WHS441 is rural use (grazing) and mining activities on ML70293. The land use on the adjacent properties is rural use (grazing). The land uses surrounding the MLA are summarised below based on the direction from the site.

**North** – Land immediately north of the MLA is lands lease, held by Hughes Pastoral and used for cattle grazing. A homestead (used as the worker’s quarters for personnel of Kennedy Creek Lime) is situated approximately 300m north of the MLA, and beyond this lies the South branch of Kennedy Creek. The Tierawoomba State Forest, which contains the Pine Mountains, is located 6.7km north east of the MLA boundary.

**East** – The existing Kennedy Creek ML70293 is directly adjacent to the MLA, abutting the eastern MLA boundary. ML70293 contains the infrastructure that will support the MLA. Beyond the existing is the Sarina-Marlborough Road. Lot 2 WHS441 continues on the eastern side of Sarina-Marlborough Road. Bordering the eastern edge of Lot 2 WHS441 is the above-mentioned Tierawoomba State Forest.

**South** – A road reserve which is not currently in use (identified as Joe Lodge Road) borders the southern edge of the MLA. Beyond the road reserve is freehold land used for cattle grazing.

**West** – The area to the west of the MLA is within Lot 2 WHS441 and used for cattle grazing. A Sunwater easement traverses the lot to the west of the MLA. To the west of Lot 2 WHS441 lies Kennedy Creek.

### 3.2 Environmental Sensitive Receptors, ESAs and MSES

**Figure 4 – Site and Surrounds** provides an illustration of the nearest residences to the MLA. The MLA is situated in a geographically isolated region of remote rural Central Queensland. A search of the EHP Environmentally Sensitive Areas (ESAs) mapping shows that the nearest ESA is the Category B Endangered Regional Ecosystem, approximately 575m to the south east of the MLA area, refer to **Figure 5 – Environmentally Sensitive Areas Map Showing MLA**.

The site is not mapped as containing any Matters of State Environmental Significance (MSES), refer to **Figure 6 - Matters of State Environmental Significance in Proximity to MLA Area** for an illustration of the nearest MSES.

A summary of the nearest sensitive receptors to the MLA is as follows:

- Existing homestead (used as a worker’s quarters for personnel of Kennedy Creek Lime) on Lot 2 WHS441, approximately 300m north.
- Category B ESA (Endangered Regional Ecosystem) 575m south east.
- Tierawoomba State Forest 6.7km north east of the MLA boundary

### 3.3 Regional Climate

The region is subject to a seasonally dry, subhumid tropical to subtropical climate. Most rainfall in the region occurs between December and February, with the driest month being September. The annual mean rainfall is 692 mm.

Review of the annual 9am and 3pm wind direction versus wind speed for the nearest Bureau of Meteorology climate station, being the Mackay Aero Station No. 033045, shows that winds are generally either from the south or south east, and these winds are predominantly >= 10km/hr and < 20km/hr.
A summary of the regional climatic statistics is shown in Table 2 – Regional Climatic Statistics.

Table 2 – Regional Climatic Statistics

<table>
<thead>
<tr>
<th></th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Annual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rainfall (mm)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>116.9</td>
<td>120.2</td>
<td>71.5</td>
<td>31.6</td>
<td>31.0</td>
<td>25.1</td>
<td>20.9</td>
<td>24.8</td>
<td>14.4</td>
<td>34.9</td>
<td>58.8</td>
<td>104.6</td>
<td>692.0</td>
</tr>
<tr>
<td>Temperature (°C)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean min.</td>
<td>23.0</td>
<td>22.8</td>
<td>21.4</td>
<td>18.4</td>
<td>14.3</td>
<td>12.4</td>
<td>10.7</td>
<td>11.1</td>
<td>14.6</td>
<td>17.6</td>
<td>20.3</td>
<td>22.1</td>
<td>17.4</td>
</tr>
<tr>
<td>Mean max.</td>
<td>31.7</td>
<td>31.3</td>
<td>30.7</td>
<td>29.1</td>
<td>26.5</td>
<td>24.0</td>
<td>23.8</td>
<td>25.1</td>
<td>27.1</td>
<td>29.0</td>
<td>30.2</td>
<td>31.5</td>
<td>28.3</td>
</tr>
<tr>
<td>Wind Speed (km/h)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean 9am</td>
<td>17.4</td>
<td>15.9</td>
<td>17.8</td>
<td>15.7</td>
<td>14.0</td>
<td>13.4</td>
<td>12.2</td>
<td>13.1</td>
<td>14.9</td>
<td>16.8</td>
<td>17.4</td>
<td>16.1</td>
<td>15.4</td>
</tr>
<tr>
<td>Mean 3pm</td>
<td>22.3</td>
<td>22.0</td>
<td>23.8</td>
<td>21.8</td>
<td>20.5</td>
<td>21.4</td>
<td>20.5</td>
<td>22.3</td>
<td>22.5</td>
<td>22.2</td>
<td>22.4</td>
<td>22.0</td>
<td>22.0</td>
</tr>
</tbody>
</table>

Source: Rainfall data from the Bureau of Meteorology’s Cardowan Station No. 033083, temperature and wind data sourced from the ST. Lawrence Station No. 033210.

3.4 Topography, Geology and Soils

3.4.1 Topography
The site is relatively flat with low relief, and elevations ranging from 180 mAHD in the south eastern corner of the MLA, to 170mAHD in the North West. Slopes on the MLA area generally range from 1 % to 2 %.

3.4.2 Geology
The MLA local geology comprises an in situ dolomite deposit associated with weathering of volcaniclastic rock of the Lizzie Creek Volcanic Group near Kennedy Creek (Lam.J, 2004). The Lizzie Creek Volcanic Group are characterised by basaltic to andesitic lava and volcaniclastic rocks (including breccia and arenite), rhyolitic to dacitic lava and volcaniclastic rocks (including ignimbrite); local siltstone, shale and polymictic conglomerate (Geoscience Australia, 2015). The region overlies the Bowen Basin synclinorium of east central Queensland and contains rock ranging from lower Permian to recent in age, of which a large portion is deeply weathered (Galloway et. al, 1967).

3.4.3 Soils
The dolomite resource lies beneath a thin layer of black soils, which are generally 300 mm to 600 mm thick. Review of the CSIRO Australian Soil Resource Information System (ASRIS) and the Site Report numbers NBS 118 and NBS 119 provided by the Soil and Land Information System confirms that the soil for the MLA area is a medium heavy clay, classified under the Australian Soil Classification system as a Black Vertosol. Black Vertosols are widely distributed in Eastern Australia, in regions with an annual rainfall of between 500 mm to 1,000 mm (McKenzie et al., 2004). The typical use of the soil type is grazing and some dryland cropping.

These soils are commonly referred to as Black Cracking Clays and often contain linear gilgai formations. General qualities of the soils as provided by Australian soils and landscapes are as follows:

Infiltration rates on these soils varies from moderate to very slow, depending upon the surface condition and water content. The Agricultural Land Class for the region is C2, suitable for pasture land (native pastures).
3.4.4 **Contaminated Land**
A search of the Environmental Management Register (EMR) and Contaminated Land Register (CLR) has confirmed Lot 2 WHS441 is not currently listed on the EMR or CLR.

3.4.5 **Acid Sulphate Soil**
The MLA is not located at, or near, an area where acid sulphate soils have previously been identified or within a prospective land zone containing acid sulphate soils.

3.4.6 **Erosion Risk Based on Rainfall**
Erosion risk for the region based on monthly average rainfall depth in accordance with the *Best Practice Erosion and Sediment Control Book 1* (IECA, 2008) is shown in Table 3 – Erosion Risk Based on Mean Rainfall.

<table>
<thead>
<tr>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>H</td>
<td>M</td>
<td>L</td>
<td>L</td>
<td>VL</td>
<td>VL</td>
<td>VL</td>
<td>VL</td>
<td>L</td>
<td>M</td>
<td>H</td>
</tr>
</tbody>
</table>

Notes: E = Extreme, H = High, M = Moderate, L = Low, VL = Very Low.

3.5 **Water Quality**

3.5.1 **Watercourses**
The MLA does not contain any mapped watercourses; however, Kennedy Creek south branch is situated approximately 400m north of the MLA area. The south branch of Kennedy Creek flows in a westerly direction for approximately 8km before forming the main portion of Kennedy Creek. Kennedy Creek converges with several other creeks downstream including Funnel Creek and Bee Creek, before entering the Connors River. An illustration of the nearest watercourses is shown in Figure 4 – Site and Surrounds.

3.5.2 **Water Quality Objectives**
The MLA is included in the Northern Connors Range tributaries, which form part of the Isaac River Sub-basin (Basin No.130). The Environmental Values (EVs) for this region have been sourced from the *Environmental Protection (Water) Policy 2009 Isaac River Sub-basin Environmental Values and Water Quality Objectives Basin No. 130 (part)*, including all waters of the Isaac River Sub-basin (including Connors River) (EHP, 2011).

The EVs identified for the Isaac River Sub-basin are; Aquatic ecosystems, Irrigation, Farm Supply, Stock Water, Aquaculture, Human consumers, Primary, Secondary and Visual Recreation, Drinking Water, Industrial Use, and Cultural and spiritual values.

The Water Quality Objectives (WQO) for the Connors River Catchment Freshwaters (Moderately Disturbed Systems) are summarised in Table 4 – Water Quality Objectives for the Connors River Catchment Freshwaters (Moderately Disturbed Systems).

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonia N (µg/L)</td>
<td>&lt;10</td>
</tr>
<tr>
<td>Oxidised N (µg/L)</td>
<td>&lt;10</td>
</tr>
<tr>
<td>Organic N (µg/L)</td>
<td>&lt;330</td>
</tr>
<tr>
<td>Total Nitrogen</td>
<td>&lt;350</td>
</tr>
<tr>
<td>Filterable Reactive Phosphorous (FRP) (µg/L)</td>
<td>&lt;5</td>
</tr>
<tr>
<td>Total Phosphorous (µg/L)</td>
<td>&lt;10</td>
</tr>
</tbody>
</table>
### Parameter Limits

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorophyll a (µg/L)</td>
<td>&lt;5</td>
</tr>
<tr>
<td>Dissolved Oxygen (% saturation)</td>
<td>90-110</td>
</tr>
<tr>
<td>Turbidity (NTU)</td>
<td>1-20</td>
</tr>
<tr>
<td>pH</td>
<td>6.5 to 8.0</td>
</tr>
<tr>
<td>Conductivity (no flow/baseflow conditions) (µS/cm)</td>
<td>&lt;250</td>
</tr>
</tbody>
</table>

#### 3.5.3 Flooding

Review of the Queensland Floodplain Assessment Overlay mapping provide by the Queensland Reconstruction Authority has identified that the western / south western corner of the MLA area is within an area mapped as a potential flood hazard area.

#### 3.6 Groundwater

Based on local groundwater information sourced from the Qld Globe interactive mapping system (supported by Google Earth), nearby groundwater is used predominantly for rural purposes including water supply, irrigation and stock watering. There are no registered bores located within the MLA boundary and water supply for the operations is likely to be sourced from water tanks and on-site basins/sumps. The registered groundwater bores within a 5 km radius to the MLA are summarised in Table 5 – Local Groundwater Bore Summary.

<table>
<thead>
<tr>
<th>Bore Reg. No.</th>
<th>Bore Status</th>
<th>Property/Description</th>
<th>Lat. (°)</th>
<th>Long. (°)</th>
<th>Approx. Distance from MLA (km)</th>
<th>Bore Depth (m)</th>
<th>Standing Water Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>RN111639</td>
<td>Existing</td>
<td>2 WHS441</td>
<td>22-00-39</td>
<td>148-54-05</td>
<td>4.6 NW</td>
<td>30.48</td>
<td>-27.43 m 18/04/2000</td>
</tr>
<tr>
<td>RN13040117</td>
<td>Existing</td>
<td>3 KL22</td>
<td>22-00-39</td>
<td>148-54-05</td>
<td>5.1 SW</td>
<td>22.25</td>
<td>-11.44 m 30/06/2010</td>
</tr>
</tbody>
</table>

The EVs identified for the Isaac groundwaters are; Aquatic ecosystems, Irrigation, Farm Supply, Stock Water, Drinking Water, and Cultural and spiritual values.

#### 3.7 Vegetation

The *Nature Conservation Act 1992* (NCA) has recently been amended to include a new risk-based approach for the regulation of clearing of protected plants, which means only high risk clearing requires assessment. This new risk-based approach replaces the clearing permit exemptions provided under the *Mineral Resources Act 1989* for new mining leases granted under the current framework. Exemptions remain for pre-existing mining leases.

To determine the risk level for the proposed MLA, a search of the EHP Flora Survey Trigger Map has been undertaken, which confirms the MLA is not located within, or near, a 'high risk area’ under the NCA.
Review of the DNRM regulated vegetation mapping has determined that majority of the MLA contains vegetation that is mapped as Category B regulated vegetation (Remnant vegetation) under the Vegetation Management Act 1999 (VMA). The dominant vegetation community comprises a least concern regional ecosystem as follows:

Regulated vegetation that is a least concern regional ecosystem

11.12.2 (100%) – *Eucalyptus melanophloia* and *Corymbia erythrophloia* +/- *E. populnea* grassy woodland. *Eucalyptus moluccana* sometimes present on colluvial lower slopes. Occurs on undulating rises and low hills formed from Mesozoic to Proterozoic igneous rocks.

Refer Figure 4 – Site and Surrounds for details on the mapped vegetation communities.

No wetlands have been identified on, or adjacent to, the MLA in accordance with the EHP mapping of Referable Wetlands: Wetland Protection Areas.

### 3.8 Cultural Heritage

A search of the Cultural Heritage Database and Register has been undertaken for Lot 2 on WHS441, which has determined that there are a number of registered matters of Aboriginal Cultural Heritage within Lot 2. A summary of the cultural heritage items are included in Table 6 – Cultural Heritage Site Points for the Area.

**Table 6 – Cultural Heritage Site Points for the Area**

<table>
<thead>
<tr>
<th>Site ID</th>
<th>Latitude</th>
<th>Longitude</th>
<th>Record Date</th>
<th>Attribute</th>
<th>Aboriginal Party</th>
</tr>
</thead>
<tbody>
<tr>
<td>HG000000115</td>
<td>-22.001922</td>
<td>148.924472</td>
<td>Sep 10, 2009</td>
<td>Resource Area</td>
<td>Barada Barna People</td>
</tr>
<tr>
<td>HH000000003</td>
<td>-21.945912</td>
<td>148.893347</td>
<td>Sep 11, 2009</td>
<td>Isolated Find</td>
<td>Barada Barna People</td>
</tr>
<tr>
<td>HH000000004</td>
<td>-21.945915</td>
<td>148.893137</td>
<td>Sep 11, 2009</td>
<td>Isolated Find</td>
<td>Barada Barna People</td>
</tr>
<tr>
<td>HH000000005</td>
<td>-21.944529</td>
<td>148.89277</td>
<td>Sep 11, 2009</td>
<td>Isolated Find</td>
<td>Barada Barna People</td>
</tr>
<tr>
<td>HH000000006</td>
<td>-21.944518</td>
<td>148.892934</td>
<td>Sep 11, 2009</td>
<td>Isolated Find</td>
<td>Barada Barna People</td>
</tr>
</tbody>
</table>

Pursuant to the Cultural Heritage Duty of Care Guidelines, mining activities are considered a ‘Category 5 activity’. In accordance with these guidelines, Category 5 activities are generally a high risk activity in relation to Aboriginal cultural heritage. It is possible that archaeological materials may exist within the MLA which are presently not visible and could be uncovered during excavation.

The Cultural Heritage party for the Lot 2 on WHS441 area is:

QC Reference: QC2008/011
QUD Ref Number: QUD380/08
Party name: Barada Barna People
Contact Details: Dillon Lawyers
62 Blackwood Street
TOWNSVILLE QLD 4810
Ph (07) 4721 2477
Fax (07) 4724 5005

The Regional Coordinator for the Lot 2 on WHS441 area is:

Leigh Preston
Cultural Heritage Coordinator, North Region
07 4799 7562
0427 142 782
Leigh.Preston@datsip.qld.gov.au
3.9 Air Quality

The *Environmental Protection (Air) Policy 2008* prescribes the environmental values that are to be protected or enhanced, which are:

(a) the qualities of the air environment that are conducive to protecting the health and biodiversity of ecosystems; and
(b) the qualities of the air environment that are conducive to human health and wellbeing; and
(c) the qualities of the air environment that are conducive to protecting the aesthetics of the environment, including the appearance of buildings, structures and other property; and
(d) the qualities of the air environment that are conducive to protecting agricultural use of the environment.

The potential environmental sensitive receptors for noise generating activities at the mining project are described in 3.2 - Environmental Sensitive Receptors. Given the isolated, rural nature of the site locality, potential for environmental nuisance as a result of dust deposition or particulate matter from the site activities is anticipated to be low.

Due to the small scale nature of the mining activity, no baseline assessment has been conducted. It is assumed that air quality within the vicinity of the MLA is relatively typical of the rural setting for the majority of the time, with the current ambient air quality of the site potentially influenced by the existing mineral extraction and processing activities on ML70293, vehicles on unsealed roads associated with the mining operations and neighbouring rural properties.

3.10 Noise

The noise levels in the local area are expected to be consistent with the existing mining operations and representative of a rural area, with normal attributable features such as bird calls, wind in trees / grass, insects and vehicles passing along unsealed roads, and the major road described as Sarina-Marlborough Road. The MLA area represents an extension to the surface area for raw material extraction, therefore noise from the new ML once granted is anticipated to be generated by raw material extraction activities (e.g. stripping of topsoil and overburden, mechanical excavation of underlying resource, raw material transport, light vehicle traffic on internal roads, rehabilitation activities). Processing activities are, and will be undertaken on the pre-existing ML70293.

The *Environmental Protection (Noise) Policy 2008* (EPP (Noise)) prescribes the environmental values that are to be protected or enhanced, which are:

(e) the qualities of the acoustic environment that are conducive to protecting the health and biodiversity of ecosystems; and
(f) the qualities of the acoustic environment that are conducive to human health and wellbeing, including by ensuring a suitable acoustic environment for individuals to do any of the following—
   - (i) sleep;
   - (ii) study or learn;
   - (iii) be involved in recreation, including relaxation and conversation; and
(g) the qualities of the acoustic environment that are conducive to protecting the amenity of the community.

The potential environmental sensitive receptors for noise generating activities at the mining project are described in 3.2 - Environmental Sensitive Receptors. Due to the isolated, rural nature of the site locality, potential for noise nuisance resulting from the site activities is anticipated to be low.

Although no baseline assessment has been conducted, it is assumed that noise levels within the vicinity of the Site are typical of very rural background noise levels. In accordance with the *Planning for Noise Control guideline* (EHP, 2004), the recommended outdoor background noise planning levels for rural areas are shown in Table 7 – Recommended Outdoor Background Noise Planning Levels.
Table 7 – Recommended Outdoor Background Noise Planning Levels

<table>
<thead>
<tr>
<th>Receiver Land Use</th>
<th>Receiver area dominant land use (description of neighbourhood)</th>
<th>Background noise level, min $L_{A90,1hour}$ (dB(A))</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Day (7am – 6pm)</td>
</tr>
<tr>
<td>Purely residential</td>
<td>Very rural</td>
<td>35</td>
</tr>
</tbody>
</table>

Notes:
1. The dominant land use is defined by a radius of 200m from the receiver location under consideration
2. On Sundays and public holidays, daytime is defined as from 9am to 6pm

3.11 Visual Amenity

The existing mining operations are visible from the Sarina-Marlborough Road. The new MLA is located to the west of the existing operation, and will be largely shielded from view by the existing mining activities.

3.12 Environmentally Sensitive Areas

Section 1.4 – Description of Existing Environment identified that the MLA area is within 1km of a Category B ESA, which is an Endangered Regional Ecosystem in accordance with the EHP ESA mapping. It is noted that the current mining activity is conducted within 1km of this Category B ESA, and the EA proposed to be amended is a Variation EA, which includes the following conditions:

G5 – Additional Condition – Notwithstanding Condition 14 of the Code of Environmental Compliance for Mining Lease Projects (January 2001), the environmental authority holder is authorised to carry out Activities within 1km of an endangered regional ecosystem, such as being a Category B environmentally sensitive area under the Code, providing no environmental harm is caused.

G6 – Additional Condition – The environmental authority holder must consult with the Environmental Protection Agency to identify the specific values that must be preserved within the area identified as an endangered regional ecosystem.

Given the MLA area is located further from the existing ESA than the existing operations, no additional impacts not currently authorised are anticipated to occur as a result of the increased surface area of the operations.
4. Potential Environmental Risks and Impacts

4.1 Risk Assessment Methodology

The risk assessment adopted is a qualitative risk-based approach designed to assess risk based on the likelihood of an environmental impact or event occurring (Table 8 – Definitions of Likelihood), and the consequences of the occurrence on the surrounding environment (Table 9 – Definitions of Consequence). The likelihood and consequences are scored between 1 and 5 for each potential impact or event. The risk assessment has been formulated considering potential for impact without control measures put in place to manage potential risk.

Table 8 – Definitions of Likelihood

<table>
<thead>
<tr>
<th>Rating</th>
<th>Descriptor</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rare</td>
<td>May occur only in exceptional circumstances</td>
<td>1</td>
</tr>
<tr>
<td>Unlikely</td>
<td>Could occur but doubtful</td>
<td>2</td>
</tr>
<tr>
<td>Possible</td>
<td>Might occur at some time in the future</td>
<td>3</td>
</tr>
<tr>
<td>Likely</td>
<td>Will probably occur</td>
<td>4</td>
</tr>
<tr>
<td>Almost Certain</td>
<td>Is expected to occur in most circumstances</td>
<td>5</td>
</tr>
</tbody>
</table>

Table 9 – Definitions of Consequence

<table>
<thead>
<tr>
<th>Rating</th>
<th>Descriptor</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negligible</td>
<td>Impacts not requiring any treatment or management action</td>
<td>1</td>
</tr>
<tr>
<td>Minor</td>
<td>Nuisance or insignificant environmental harm requiring minor management action</td>
<td>2</td>
</tr>
<tr>
<td>Moderate</td>
<td>Serious environmental impacts, readily manageable at low cost</td>
<td>3</td>
</tr>
<tr>
<td>Major</td>
<td>Substantial environmental impacts, manageable but at considerable cost and some disruption</td>
<td>4</td>
</tr>
<tr>
<td>Catastrophic</td>
<td>Severe environmental impacts with major consequent disruption and heavy cost</td>
<td>5</td>
</tr>
</tbody>
</table>

The consequence and likelihood scores are then plotted on the risk assessment matrix (Table 10 – Risk Assessment Matrix) and the final risk level assigned is a product of the likelihood and consequence scores. The higher the risk score, the higher the priority is for management.

Table 10 – Risk Assessment Matrix

<table>
<thead>
<tr>
<th>Likelihood</th>
<th>Negligible</th>
<th>Minor</th>
<th>Moderate</th>
<th>Major</th>
<th>Catastrophic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Almost Certain</td>
<td>5</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>25</td>
</tr>
<tr>
<td>Likely</td>
<td>4</td>
<td>8</td>
<td>12</td>
<td>16</td>
<td>20</td>
</tr>
<tr>
<td>Possible</td>
<td>3</td>
<td>6</td>
<td>9</td>
<td>12</td>
<td>15</td>
</tr>
<tr>
<td>Unlikely</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Rare</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Table 11 – Indicative Management Option for Each Risk Assessment Rating describes the possible actions required for each risk assessment rating.

<table>
<thead>
<tr>
<th>Risk Rating</th>
<th>Risk Rating Scores</th>
<th>Indicative Management Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme</td>
<td>16 – 25</td>
<td>Manage by implementing site management and emergency procedures, plant design controls and regular monitoring.</td>
</tr>
<tr>
<td>High</td>
<td>10 – 15</td>
<td>Manage by implementing site management procedures, specific monitoring and may require some operation/plant design controls.</td>
</tr>
<tr>
<td>Medium</td>
<td>5 – 9</td>
<td>Manage by implementing specific monitoring or response procedures.</td>
</tr>
<tr>
<td>Low</td>
<td>1 – 4</td>
<td>Manage by routine procedures, unlikely to need specific application of resources.</td>
</tr>
</tbody>
</table>

4.2 Identification of Potential Environmental Impacts and Risks

Activities associated with the ERA which have the potential to cause environmental harm and/or nuisance are outlined in Table 12 – Identification of Environmental Values and Potential Impacts.

<table>
<thead>
<tr>
<th>Environmental Value</th>
<th>Potential Impacts</th>
<th>Source at Activity</th>
</tr>
</thead>
</table>
| Air                 | Emission of dust to air impacting potential nuisance sensitive receptors.          | • Extraction and handling of materials (e.g. transfer of materials and stockpiling of raw materials).  
                      |                                                                                   | • Vehicle movements on unsealed roads and access tracks. |
| Noise               | Noise impacts on nearby nuisance sensitive receptors from the mining activity (e.g. traffic movements, noise and vibration from plant and equipment). | • Stripping and stockpiling of topsoil and overburden.  
                      |                                                                                   | • Extraction and handling of materials (e.g. transfer of materials and stockpiling of raw materials).  
                      |                                                                                   | • Vehicle movements on unsealed roads and access tracks.  
                      |                                                                                   | • Plant and equipment use. |
| Water               | • Release of potentially contaminated water to the receiving environment, being surface water and groundwater.  
                      | • Changes to the natural surface water flows in the receiving environment due to mining activities (e.g. void creation).  
                      | • Erosion and dispersion of soils as a result of increased disturbance areas / exposed soils. | • Extraction and handling of materials (e.g. transfer of materials and stockpiling of raw materials).  
                      |                                                                                   | • Stripping and stockpiling of topsoil and overburden.  
                      |                                                                                   | • Capture of incidental storm waters within the mine pits.  
                      |                                                                                   | • Extraction and handling of materials (e.g. transfer of materials and stockpiling of raw materials). |
| Waste               | Improper disposal of wastes (i.e. general and regulated waste).                   | • Storage and disposal of residual waste (i.e. general and regulated waste).  
                      |                                                                                   | • Storage of overburden. |
| Land                | • Spills of hydrocarbons and fuels.  
                      | • Failure of progressive and/or final rehabilitated landforms.  
                      | • Impacts to the flora and fauna as a result of disturbance to environmentally sensitive areas. | • Handling of chemicals and fuels onsite.  
                      |                                                                                   | • Progressive and/or post-closure implementation and management of the site rehabilitation.  
                      |                                                                                   | • Weed control. |
Site activities have been tabulated against EVs (Operational and Land Use) to determine the risk and likely magnitude of impacts and to provide a focus for management strategies, refer to **Table 13 – Assessment of Environmental Risk**.

### Table 13 – Assessment of Environmental Risk

<table>
<thead>
<tr>
<th>Activity</th>
<th>Impact Risk Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Operational</td>
</tr>
<tr>
<td></td>
<td>Air</td>
</tr>
<tr>
<td>Extraction and handling of materials (e.g. transfer of materials and stockpiling of raw materials)</td>
<td>3x3 = 9 Medium</td>
</tr>
<tr>
<td>Vehicle movements on unsealed roads and access tracks.</td>
<td>3 x 3 = 9 Medium</td>
</tr>
<tr>
<td>Plant and equipment use.</td>
<td>3x3 = 9 Medium</td>
</tr>
<tr>
<td>Capture of incidental storm waters within the mine pits.</td>
<td>1 x 1 = 1 Low</td>
</tr>
<tr>
<td>Storage and disposal of residual waste (i.e. general and regulated waste).</td>
<td>1 x 2 = 2 Low</td>
</tr>
<tr>
<td>Stripping and stockpiling of topsoil and overburden.</td>
<td>1 x 2 = 2 Low</td>
</tr>
<tr>
<td>Activity</td>
<td>Impact Risk Rating</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>--------------------</td>
</tr>
<tr>
<td></td>
<td><strong>Operational</strong></td>
</tr>
<tr>
<td></td>
<td>Air</td>
</tr>
<tr>
<td>Handling of chemicals and fuels onsite.</td>
<td>2 x 3 = 6 Medium</td>
</tr>
<tr>
<td>Progressive and/or post-closure implementation and management of the site rehabilitation.</td>
<td>2 x 3 = 6 Medium</td>
</tr>
<tr>
<td>Weed control.</td>
<td>2 x2 = 4 Low</td>
</tr>
</tbody>
</table>

Notes:
N/A – Not applicable as Table 12 – Identification of Environmental Values and Potential Impacts has not identified potential impacts.

The identification of potential environmental impacts and associated risk matrix above have informed the control measures set out in Section 5, Environmental Objectives and Management Practices.
5. Environmental Objectives and Management Practices

5.1 Purpose of Assessment
An environmental objective assessment has been undertaken to describe how the environmental objective and performance outcomes nominated in Schedule 5, Part 3 of the EP Reg will be achieved. Where the performance outcomes nominated in the EP Reg for the relevant environmental objective cannot be achieved, or are not relevant, alternative measures for the activity have been proposed.

As per the administering authority’s guideline titled Assessment requirements for making a decision for an environmental authority for an environmentally relevant activity (EHP), 2015), an application for an EA for a resource activity will require both an operational assessment (Table 1, Part 3 of Schedule 5) and a land use assessment (Table 2, Part 3 of Schedule 5), which are included in Sections 5.3 to 5.9 and 5.10 to 5.12 respectively.

5.2 Environmental Management / Mitigation Measures
The operator will be responsible for ensuring that Conditions of the Code of Environmental Compliance for Mining Lease Projects are complied with at all times. The Code of Compliance includes guidance notes for the management of potential environmental impacts for small scale mining lease projects, which are to be implemented by CQD and Macegate.

5.3 Air

5.3.1 Environmental Objective
The activity will be operated in a way that protects the EVs of air.

5.3.2 Performance Outcomes
All of the following—
(a) fugitive emissions of contaminants from storage, handling and processing of materials and transporting materials within the site are prevented or minimised
(b) contingency measures will prevent or minimise adverse effects on the environment from unplanned emissions and shut down and start up emissions of contaminants to air
(c) releases of contaminants to the atmosphere for dispersion will be managed to prevent or minimise adverse effects on EVs.

5.3.3 Management Strategies
In accordance with the risk assessment for the activity, a maximum risk rating of medium has been allocated for potential impacts to air from the activity. Therefore potential impacts to air will be managed by implementing specific monitoring practices. The following summarises general management strategies to be use at the site.

Extraction Areas / Activities
- Dampen down cleared areas, extraction working areas, haul roads, stockpiles and other hardstand areas by water spraying when visual surveillance indicates excessive dust generation and propagation from point or mobile sources.
- Limit clearing, topsoll and overburden removal at any one time to that necessary whilst providing for effective production of the resource. At any one time, the mine working areas are not to exceed 5ha and the cumulative area of significant disturbance is not to exceed 10ha.
- Monitor meteorological conditions to time particular activities with favourable weather conditions.
• Maintain buffers between operational areas and the Site boundaries where possible.
• Engage a water truck/cart to dampen access roads.
• Locate any on-site plant and equipment so as to maximum amenity buffering.
• Enclose plant and equipment where necessary.

Trafficable Areas

• Enforce a maximum speed limit of 30 km/hr on internal roads and tracks.
• Restrict vehicle and mobile machinery movements to designated routes and standing areas.
• Restrict vehicle movements to designated tracks and areas to the extent practicable.

5.3.4 Monitoring

The controls nominated will require regular monitoring and review to ensure that performance accords with design criteria and also reflect the dynamic nature and changing needs of the operation. Daily visual surveillance will be undertaken by all employees to ensure dust generation on-site is controlled appropriately.

When requested by the administering authority, monitoring of air quality must be undertaken at a place relevant to the potentially affected, nuisance-sensitive place. The following target limits will be used:

a) Dust deposition of 120 milligrams per square metre per day, averaged over one month, when monitored in accordance with the most recent version of *Australian Standard AS3580.10.1 Methods for sampling and analysis of ambient air—Determination of particulate matter—Deposited matter—Gravimetric method*.

b) A concentration of particulate matter with an aerodynamic diameter of less than 10 micrometres (PM$_{10}$) suspended in the atmosphere of 50 micrograms per cubic metre over a 24-hour averaging time, for no more than five exceedances recorded each year, when monitored in accordance with the most recent version of either:

   1. *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*, or

   2. *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*.

c) A concentration of particulate matter suspended in the atmosphere of 90 micrograms per cubic metre over a 1 year averaging time, when monitored in accordance with the most recent version of AS/NZS3580.9.3:2003 *Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—Total suspended particulate matter (TSP) — High volume sampler gravimetric method*.

5.3.5 Contingency Plans

In the event of an exceedance of the target limits for air quality limits, additional on-site air quality management strategies may be implemented if required. Review of the air quality monitoring results will determine the location and extent of the mitigation measures required.
5.4 Water

5.4.1 Environmental Objective
The activity will be operated in a way that protects EVs of waters.

5.4.2 Performance Outcomes
All of the following—
(a) the storage and handling of contaminants will include effective means of secondary containment to prevent or minimise releases to the environment from spillage or leaks.
(b) contingency measures will prevent or minimise adverse effects on the environment due to unplanned releases or discharges of contaminants to water.
(c) the activity will be managed so that stormwater contaminated by the activity that may cause an adverse effect on an environmental value will not leave the site without prior treatment.
(d) the disturbance of any acid sulphate soil, or potential acid sulphate soil, will be managed to prevent or minimise adverse effects on EVs.
(e) any discharge to water or a watercourse or wetland will be managed so that there will be no adverse effects due to the altering of existing flow regimes for water or a watercourse or wetland.
(f) the activity will be managed so that adverse effects on EVs are prevented or minimised.

5.4.3 Management Strategies
In accordance with the risk assessment for the activity, a maximum risk rating of medium has been allocated for potential impacts to water from the activity. Therefore potential impacts to water will be managed by implementing specific monitoring practices. The following summarises general management strategies to be use at the site.

- Ensure the installation of erosion and sediment control measures is undertaken prior to, or concurrently with, each stage of mine development to ensure stormwater is adequately managed.
- Treat any overland flows interacting with disturbed areas as potentially contaminated with sediment / suspended solids.
- Extraction at the site will be carried out in a staged method to ensure the mine disturbance area is limited to that required for supply of raw materials at any one time.
- Divert overland flows from clean catchments away from disturbed areas by installing structures such as diversion drains, bunds up-gradient of work areas.
- Capture any waters interacting with disturbed areas within put sumps and/or sediment basins for re-use (e.g. dust suppression, irrigation) or treatment.
- Minimise gradients of all internal access tracks / haul roads.
- Implement the management strategies for hydrocarbon and chemical handling and storage included in Section 5.9.3.3 - Hydrocarbon and Chemical Storage.

5.4.4 Monitoring
Monitoring will consist primarily of visual inspections of the integrity of on-site erosion ad sediment control structures including water storages, and ameliorative action will be implemented where deficits or failures of the structures are noted. The Site Manager shall carry out monthly surveillance of on-site water storages and treatment systems to ensure these reflect the dynamic nature and changing needs of the operation.

Prior to any forecast runoff-producing rainfall, the Site Manager must undertake an inspection of the on-site water storages to ensure suitable capacity is available.

Any surface water or groundwater sampling will be undertaken in accordance with the administering authority's Monitoring and Sampling Manual, or subsequent editions. The Site Manager may engage the services of a suitably
qualified person to conduct any water quality sampling and review monitoring results required to provide advice in relation to the water quality management.

5.4.5 Contingency Plans

If an uncontrolled release of site waters occurs from the activity, an investigation will be conducted and appropriate action taken to rectify the cause release. The incident will be reported in accordance with the incident notification procedure outlined in Attachment 1 – Incident and Complaint Procedure, and the administering authority will be provided a copy of any subsequent assessments undertaken by the operator. Additional mitigation measures will be implemented to prevent a recurrence of a similar incident.
5.5 Wetlands

5.5.1 Environmental Objective
The activity will be operated in a way that protects the EVs of wetlands.

5.5.2 Performance Outcomes
The activity will be managed in a way that prevents or minimises adverse effects on wetlands.

5.5.3 Management Strategies
In accordance with the risk assessment for the activity, a maximum risk rating of low has been allocated for potential impacts to wetlands as the nearest mapped wetland to the activity is 8.5 km south west of the proposed MLA. Therefore, potential for impacts to wetlands are expected to be minimised, and any potential impacts are feasibly capable of being managed through the procedures outlined in Section 5.4.3 – Management Strategies. As wetlands are not located within close proximity to the site, no site specific wetland monitoring or contingency plans have been developed.
5.6 Groundwater

5.6.1 Environmental Objective
The activity will be operated in a way that protects the EVs of groundwater and any associated surface ecological systems.

5.6.2 Performance Outcomes
Both of the following apply—
(a) there will be no direct or indirect release of contaminants to groundwater from the operation of the activity
(b) there will be no actual or potential adverse effect on groundwater from the operation of the activity.

5.6.3 Management Strategies
In accordance with the risk assessment for the activity, a maximum risk rating of medium has been allocated for potential impacts to groundwater from the activity. Based on the nearest registered groundwater bore data, the standing water levels in the area are approximately 11.44 metres below the ground surface levels. Therefore, potential for impacts to groundwater are expected to be minimised, and any potential impacts are feasibly capable of being managed through the procedures outlined in Section 5.4.3 – Management Strategies.

To prevent or minimise the potential for interaction with groundwaters, the operator must not excavate below the approved depth of five metres from the ground surface.

5.6.4 Monitoring
The depth of extraction is to be measured routinely with each progression of mine development to ensure the mine pits do not extend below a depth of five metres from the ground surface level.

5.6.5 Contingency Plans
Where an exceedance of the extraction depth is identified, excavation with the pit is to cease immediately. The personnel who became aware of the exceedance must immediately notify the Site Manager, who in turn must record and report the incident in accordance with the incident notification procedures included as Attachment 1 – Incident and Complaint Procedure.
5.7 Noise

5.7.1 Environmental Objective
The activity will be operated in a way that protects the EVs of the acoustic environment.

5.7.2 Performance Outcomes
The release of sound to the environment from the activity is managed so that adverse effects on EVs including health and wellbeing and sensitive ecosystems are prevented or minimised.

5.7.3 Management Strategies
In accordance with the risk assessment for the activity, a maximum risk rating of medium has been allocated for potential noise impacts from the activity. Therefore the potential impacts will be managed by implementing specific monitoring practices. The following summarises general management strategies to be use at the site.

- Hours of operation will be restricted to 7am to 6pm Monday to Saturday.
- No operations are to occur on Sundays and Public Holidays.
- Processing plant and ancillary equipment will be positioned away from any nuisance sensitive receptors as far as practicable.
- Where necessary, stockpiles will be positioned between noise generating sources and sensitive receptors to act as a barrier to provide noise attenuation.
- Enclose fixed engines, pumps and compressors where practicable.
- Maintain equipment in accordance with the original equipment manufacturer’s specifications.
- Avoid unnecessary operation of plant or revving of mobile or stationary motors and engines.
- Shut down equipment when not in use.

5.7.4 Monitoring
The Site Manager will ensure regular surveillance of the site to qualitatively assess noise generation from the carrying out of the activity.

If requested by the administering authority, noise monitoring may be undertaken to investigate a complaint alleging noise nuisance. Methods for measurements and reporting of noise monitoring must comply with the current edition of the administering authority’s Noise Measurement Manual. The measurement and reporting of noise must be undertaken by a suitably qualified person.

5.7.5 Contingency Plan
In the event that monitoring of noise determines an exceedance of the noise limits prescribed by the EA, additional noise abatement measures may be implemented. The noise measures that will be implemented will be determined in consultation with the administering authority.
5.8 Waste

5.8.1 Environmental Objective

Any waste generated, transported, or received as part of carrying out the activity is managed in a way that protects all EVs.

5.8.2 Performance Outcomes

Both of the following apply—

(a) waste generated, transported or received is managed in accordance with the waste and resource management hierarchy in the Waste Reduction and Recycling Act 2011

(b) if waste is disposed of, it is disposed of in a way that prevents or minimises adverse effects on EVs.

5.8.3 Management Strategies

In accordance with the risk assessment for the activity, a maximum risk rating of medium has been allocated for potential impacts from waste generated at the activity. Therefore potential impacts will be managed by implementing specific monitoring practices. No mine wastes are produced as part of the mining process, with the exception of overburden, which will be stockpiled for later use in rehabilitation activities.

The Waste Reduction and Recycling Act 2011 (WRR Act) nominates a waste management hierarchy in a preferred order of adoption. The hierarchy is as follows:

(a) AVOID unnecessary resource consumption;
(b) REDUCE waste generation and disposal;
(c) RE-USE waste resources without further manufacturing;
(d) RECYCLE waste resources to make the same or different products;
(e) RECOVER waste resources, including the recovery of energy;
(f) TREAT waste before disposal, including reducing the hazardous nature of waste; and
(g) DISPOSE of waste only if there is no viable alternative.

Strategies/mitigation measures for the management of waste materials at the Site will be implemented in accordance with the relevant conditions of approval and may include those shown in Table 14 – Waste Management Hierarchy Implementation Strategies.

<table>
<thead>
<tr>
<th>Hierarchy Level</th>
<th>Recommended measures</th>
</tr>
</thead>
</table>
| **Waste Avoidance** | • Input substitution (using recyclable materials instead of disposable materials, for example using oil delivered in recyclable steel drums instead of non-recyclable plastic containers).  
• Increased efficiency in the use of raw materials, energy, water or land (purchasing consumables in bulk (large containers) rather than in small quantities).  
• Improved maintenance and operation of equipment (keep equipment in good working order to reduce wear and overhaul).  
• Undertaking an assessment of waste minimisation opportunities from time to time. |
<p>| <strong>Waste Reuse</strong> | • Recovering and separating solvents, metals, oil, or components or contaminants and reusing |</p>
<table>
<thead>
<tr>
<th>Hierarchy Level</th>
<th>Recommended measures</th>
</tr>
</thead>
</table>
| Waste re-use refers to re-using waste, without first    | separated solvents for degreasing plant and equipment.  
| substantially changing its form.                        | - Applying waste processing fines to land in a way that gives agricultural and ecological benefits (using fine sediments in rehabilitation activities).  
|                                                          | - Using overburden for constructing bunds and landforming.  
|                                                          | - Reusing silt/sediment on-site to the maximum practicable extent.  
| Waste Recycling                                          | - Recovering oils, greases and lubricants for collection by a licensed oil recycling contractor, recovering, separating and recycling packaging (including paper, cardboard, steel and recyclable plastics).  
| Waste recycling refers to treating waste that is no     | - Recycling used plant and equipment to the maximum practicable extent.  
| longer useable in its present form and using it to      | - Finding alternatives to disposal of non-recyclable materials (using conveyor belts for noise attenuation, mudflaps, ute tray liners).  
| produce new products.                                    | - Providing suitable receptacles and storage areas for collection of materials for recycling. |
| Energy Recovery from Waste                               | - Due to the scale of the operation, energy recovery is not considered viable.  
| This refers to recovering and using energy generated    |                                                                                                                                                        |
| from waste.                                              |                                                                                                                                                        |
| Waste Disposal                                           | - Regulated wastes must be transported and disposed of in accordance with the Environmental Protection Regulation 2008.  
| This refers to disposing of waste which cannot otherwise | - Disposal to a licensed waste disposal facility (i.e. landfill or transfer station).                                                                |
| be reused, recycled or used for energy recovery.         |                                                                                                                                                        |
| Waste Storage                                            | - Each container will be identified with the type of wastes which may be disposed of in each container.  
| Waste storage containers or areas to be provided and    | - Each container or area will be designed to prevent the escape of materials.  
| located at safe and convenient locations at the Site.   |                                                                                                                                                        |
| Regulated Waste and Trackable Waste                     | - All regulated wastes will be transported by a licensed commercial transporter.  
| Regulated waste is commercial or industrial waste,      | - If regulated waste transport occurs, it must be undertaken by a licenced commercial transporter.                                                      |
| whether or not it has been immobilised or treated and is |                                                                                                                                                        |
| of a type or contains a constituent of a type listed in  |                                                                                                                                                        |
| the Environmental Protection Regulation 2008 (EP Reg).   |                                                                                                                                                        |
| The EP Reg also sets out substances which are trackable  |                                                                                                                                                        |
| waste.                                                  |                                                                                                                                                        |

5.8.4 Monitoring

The Site Manager will undertake a monthly visual inspection to ensure the waste management hierarchy is being effectively implemented. All employees shall be responsible for ensuring wastes are stored and removed from the site on a regular basis (e.g. daily or weekly). The Site Manager shall ensure that waste treatment measures are
implemented at the Site. The Site Manager shall ensure waste receptacles are provided and the waste type identified and that temporary waste storage areas are signed, recycling bins are emptied when full and materials which may cause land contamination are not disposed of on the Site.

The Site Manager shall keep a record of regulated waste generated and the disposal procedures, approved contractors for transporting and disposing of waste and the location of the facility for accepting the waste. All waste dockets are to be kept at the approved activity for a minimum of five years.

5.8.5 Contingency Plans

In the event that the operator becomes aware that waste is not being managed in accordance with the waste management hierarchy, an internal assessment is to be undertaken to ensure that the methods for waste management are reviewed and new methods engaged where necessary.

In the event that any site personnel become aware of the incorrect disposal of regulated wastes, the personnel who became aware of the incident must immediately notify the Site Manager, who in turn must record and report the incident in accordance with the incident notification procedures included as Attachment 1 – Incident and Complaint Procedure.
5.9  Land

5.9.1  Environmental Objective
The activity is operated in a way that protects the EVs of land including soils, subsoils, landforms and associated flora and fauna.

5.9.2  Performance Outcomes
All of the following—
(a) activities that disturb land, soils, subsoils, landforms and associated flora and fauna will be managed in a way that prevents or minimises adverse effects on the EVs of land;
(b) areas disturbed will be rehabilitated or restored to achieve sites that are:
   (i)  safe to humans and wildlife
   (ii)  non-polluting
   (iii)  stable
   (iv)  able to sustain an appropriate land use after rehabilitation or restoration
(c)  the activity will be managed to prevent or minimise adverse effects on the EVs of land due to unplanned releases or discharges, including spills and leaks of contaminants
(d)  the application of water or waste to the land is sustainable and is managed to prevent or minimise adverse effects on the composition or structure of soils and subsoils.

5.9.3  Management Strategies
In accordance with the risk assessment for the activity, a maximum risk rating of medium has been allocated for potential impacts to land from the activity. The activities that may cause potential impacts will be managed by implementing specific monitoring strategies, which are summarised below.

5.9.3.1  Staged Mine Development
Mine development strategies are as follows:

- Extraction at the site will be carried out in a staged method to ensure the mine disturbance area is limited to that required for supply of raw materials at any one time
- Extraction areas are to be demarcated to ensure mine development is limited to the proposed staged development
- Topsoil and overburden is to be stripped and stockpiled prior the commencement of each mine development stage for future use in rehabilitation activities
- Topsoil and overburden stockpiles should be no more than 2 m in height, battered to a maximum slope of 1(V):3(H) and temporarily revegetated with a cover crop
- Mine voids are not to exceed five metres in depth
- Vehicles are to use established internal roads and tracks where possible
- The progressive development is to ensure shallow slopes of approximately 1(V):3(H) are created.

5.9.3.2  Site Rehabilitation
Rehabilitation of the land is to be undertaken by CQD and Macegate in accordance with the Code of Environmental Compliance for Mining Lease Projects and Additional Conditions included in the Variation EA. The final land use is likely to be grazing, which is the predominant surrounding land use as a result of the endemic soil type of the region. Rehabilitation of the mining lease area is anticipated to occur progressively as areas become available (i.e. when areas are no longer required, or where resource has been exhausted).
General rehabilitation strategies will include the following:

- Progressive rehabilitation is to occur within six months of the completion of works in those areas.
- Terminal mine voids are to be battered to a stable maximum slope of 1(V):3(H).
- Stockpiled topsoil and overburden will be spread over the reprieved landform.
Revegetation via natural regeneration of pasture grasses. Where additional seeding is required, CQD and Macegate must consult with the administering authority and the landholder to determine a suitable seed mix.

In the event that infrastructure is to remain post-mining, a landholder agreement will be obtained prior to the mining lease surrender.

Water quality monitoring is to be undertaken for water storages that are to remain post closure of the mine to ensure suitability for the ongoing use.

Water storages that are to be retained for ongoing use as livestock watering must be safe and stable, and prove safe access for livestock / animals to utilise the water storage.

Infrastructure constructed on the land for the Kennedy Creek mining project, with the exception of the screening and processing plant, is likely to be retained for ongoing beneficial use by the landholder at the cessation of the mining activity. Infrastructure that may remain includes the storage shed, roads and potentially water storages. In the event that infrastructure is to remain post-mining, a landholder agreement will be obtained prior to the mining lease surrender.

A further assessment of rehabilitation requirements will be undertaken through the financial assurance calculation process for the new tenure. It is understood that the financial assurance for any new disturbance areas on the new tenure area must be provided to the State prior to commencement of activities on the new ML. CQD and Macegate have advised that mining activities will be commenced in approximately 2017, therefore, it is understood that CQD and Macegate will first be able to obtain the EA and then give their FA at a later stage via a separate application process. This will allow the finalisation of the mining tenure approval whilst simultaneously determining the amount of FA. The FA application process will include details of the proposed disturbance areas and a rehabilitation program to achieve requirements of Section 294 of the EP Act.

5.9.3.3 Hydrocarbon and Chemical Storage

No additional hydrocarbon storage facilities are proposed for the extension area. All fuels for the operation will be stored within the existing fuel storage tank situated on ML70293. General management strategies for hydrocarbon handling on the MLA will be as follows:

- No hydrocarbons or chemicals are to be permanently stored within the extension area;
- Spill kits are to be maintained at locations known to all employees (e.g. refuelling locations, chemical storage facilities, mobile equipment);
- Spills are to be cleaned up immediately in accordance with the Spill Response Protocol (refer to Attachment 2 - Spill Response Protocol);
- Employees are to be trained in proper fuelling and spill clean-up procedures;
- Refuelling and equipment maintenance is to be within a designated hardstand or paved area only;
- Material Safety Data Sheets (MSDS) and information relating to the storage, use and handling of chemicals used at the activity are to be stored at the Site office.
- Use the fuel or substance for its intended purpose (as nominated in the MSDS).
- checking plant and equipment daily for oil leaks;

5.9.3.4 Weed Management

By definition Specific control measures to be implemented may include, but not necessarily be limited to the following strategies:

- Weed infestations are to be controlled as soon as possible to prevent further spread of weeds;
- Groundcover is to be maintained for as long as possible by minimising land disturbance at any one time;
- An annual weed spraying campaign should be implemented, with additional spraying campaigns (e.g. spot spray, bi-annual sprays) undertaken as necessary; and
- Weeds identified on-site will be prioritised for weed management according to the class of weeds identified in accordance with the listing under the Land Protection (Pest and Stock Route Management) Act 2002 (LP Act) as follows:
  - Class 1 - landowners are required by law to keep their land free of Class 1 weeds. The presence of class 1 plants must be reported to Biosecurity Queensland on 13 25 23.
- Class 2 - must be controlled by landowners on their property
- Class 3 - must be controlled by landowners whose property is adjacent to an environmentally significant area
- Non-declared - landowners are encouraged to control non-declared weeds on their property to reduce their impacts.

5.9.3.5 Cultural Heritage

It is noted that the proposed MLA is situated in close proximity to a number of cultural heritage finds. In order to meet duty of care obligations, any land use activity within the vicinity of the recorded cultural heritage, should not proceed without the agreement of the Aboriginal Party for the area or a Cultural Heritage Management Plan undertaken pursuant to Part 7 of the Aboriginal Cultural Heritage Act 2003.

5.9.4 Contingency Plans

5.9.4.1 Site Rehabilitation

Rehabilitation planning and contingency measures will be further addressed through the Rehabilitation Program to be submitted as part of the financial assurance assessment.

5.9.4.2 Spill Response

Refer to the Spill Response Protocol included as Attachment 2 - Spill Response Protocol.

5.9.4.3 Weed Control

Class 1 and Class 2 declared plants must be eradicated from the mining lease area immediately upon becoming aware of the presence of the weed. In the event that any site personnel become aware of a class 1 plant, the personnel who became aware of the plant must immediately notify the Site Manager, who in turn must report the plant to Biosecurity Queensland on 13 25 23.
5.10 Site Suitability

5.10.1 Environmental Objective
The choice of the site, at which the activity is to be carried out, minimise serious environmental harm on areas of high conservation value and special significance and sensitive land uses at adjacent places.

5.10.2 Performance Outcomes
Both of the following apply—
(a) areas of high conservation value and special significance likely to be affected by the proposal are identified and evaluated and any adverse effects on the areas are minimised, including any edge effects on the areas
(b) the activity does not have an adverse effect beyond the site.

5.10.3 Management Strategies
The proposed extension area is geographically situated in a key location adjacent to the existing mining operations, making it fundamental to the long term security and supply of the resource to the mining activity. Obtaining the additional mining tenure will ensure longevity of the operation and will enable CQD and Macegate to utilise existing infrastructure and facilities. The proposal constitutes a logical extension to the existing operations and the pursuit of alternative locations is not considered a practical or viable outcome. Securing the additional mining tenure in the proposed location will enable CQD and Macegate to utilise existing prerequisite tenure and will ensure the long term viability for the mining operations.

Section 3 - Description of Existing Environmental Values identifies areas of high conservation value and special significance. Management strategies to mitigate potential impacts to the sensitive receptors resulting from the proposed extension to the resource activity have been discussed in Section 5.1 to 5.9.
5.11 Location on Site

5.11.1 Environmental Objective

The location for the activity on a site protects all environmental values relevant to adjacent sensitive uses.

5.11.2 Performance Outcomes

Both of the following apply—
(a) the activity, and components of the activity, are carried out on the site in a way that prevents or minimises adverse effects on the use of surrounding land and allows for effective management of the environmental impacts of the activity;
(b) areas used for storing environmentally hazardous materials in bulk are located taking into consideration the likelihood of flooding.

5.11.3 Management Strategies

Section 3 - Description of Existing Environmental Values identifies areas of high conservation value and special significance. Management strategies to mitigate potential impacts to the sensitive receptors resulting from the proposed extension to the resource activity have been discussed in Section 5.1 to 5.9.

Mine development within the MLA will be carried out in stages, to ensure the area of disturbance is minimised to the extent possible, whilst still allowing for effective resource utilisation.

As previously discussed, infrastructure to support the MLA area, including fuel storage and processing plant, is situated on the existing mining lease area to the east of the MLA. No permanent on-site hydrocarbon or chemical storage facilities will be established within the proposed MLA.
5.12 Critical Design Requirements

5.12.1 Environmental Objective

The design of the facility permits the operation of the site, at which the activity is to be carried out, in accordance with the best practice environmental management.

5.12.2 Performance Outcomes

The activity does not involve the storage, production, treatment or release of hazardous contaminants, or involve a regulated structure.

5.12.3 Management Strategies

The proposed extension to the resource activity does not involve the storage, production, treatment or release of hazardous contaminants, or involve a regulated structure in accordance with the administering authority’s guideline titled *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures* (EHP, 2013), therefore no management strategies are considered necessary. The only structures to be constructed on the site will be the voids created via extraction, which will hold surface waters. No release of water from the activity is proposed.
6. Concluding Remarks

The EAR has been prepared to address the major EA amendment application requirements as outlined in Section 125 of the EP Act. The EAR has determined that the potential environmental risk resulting from the amendment will be effectively regulated through the application of the standard conditions (with the inclusion of the two additional EA conditions for proximity to ESAs), and the implementation of management and monitoring procedures, to avoid potential environmental impacts.
Reference List


attachments
Incident and Complaint Procedure

Overview

The objective of this Incident and Complaints Procedure is to ensure that any incidents and/or complaint is reported and investigated, and appropriate action taken. A diagrammatic overview of incident and complaints reporting procedure is provided in Diagram 1 – Incidents and Complaints Procedure Summary.

Diagram 1 – Incidents and Complaints Procedure Summary

The Site Manager will be responsible for ensuring that all employees at the site are familiar with the procedure for incidents and complaint recording. All complaints received, and/or any employee becoming aware of an incident with actual or potential environmental implications, shall be reported to the Site Manager or delegate as immediately.

Recording

The following details shall be recorded at the receipt of any incident and/or complaint:

- date, time, location and nature of the incident or complaint;
- type of communication (telephone, letter, email, personal, etc.);
- name, contact address and contact telephone number of the person reporting the incident or complaint (i.e. note: if the complainant does not wish to be identified then "not identified" is to be recorded);
- details (e.g. nature and extent) of the incident or complaint;
- response and initial investigation undertaken as a result of the incident or complaint;
- name of person responsible for receiving and/or investigating the complaint.

The Site Manager will liaise with any complainants to discuss the nature of the complaint, to identify possible causes and outline any actions to be taken to prevent recurrence of the incident.

Initial Notification

When an environmental incident occurs, the Site Manager will notify the administering authority via telephone and email within 24 hours of becoming aware of the incident. A standard form for the written notification is attached as INITIAL NOTIFICATION FORM.

The contact details of the administering authority are as follows:

Department of Environment and Heritage Protection
Phone: 1300 130 372
Email: palm@ehp.qld.gov.au

Investigation

All incidents and complaints should be investigated. The investigations should include:

- determining what activities were being carried out at the time of the complaint/incident and any equipment involved.
- identifying whether equipment or activities on-site were the cause of the incident or complaint.
- determining what potential actions may be carried out to resolve the matter and/or minimise the likelihood of further impacts.
Corrective action is to be implemented and an assessment conducted to determine what actions are to be taken to remedy the matter and/or prevent a similar incident from occurring. All incidents and complaints recorded and reported are to be maintained for a minimum period of five years. If monitoring is to be undertaken to investigate an incident or complaint, the operator may engage the services of a suitably qualified person to undertake the assessment.

**Reporting**

Within 14 days of the initial notification, in addition to the information provided in the initial notification form, a further written notification must be provided to the administering authority (refer to [FURTHER NOTIFICATION FORM](#)). Upon request from the administering authority, a copy of any environmental monitoring undertaken to investigate the incident shall be supplied to the administering authority within 14 days of completion.
Initial Notification Form

Date: ...................................................................................................................................................................................
Operator’s name: ..............................................................................................................................................................
Environmental Authority (EA) Number: ............................................................................................................................
Site Name and Mining Lease (ML) Number: ....................................................................................................................
Site location: ....................................................................................................................................................................
Contact person: ..............................................................................................................................................................
Name and telephone number of contact person: ............................................................................................................
Location of the incident within site: ................................................................................................................................
Time of the emergency / incident / event: .......................................................................................................................
Time that operators became aware of the emergency / incident / event: ........................................................................
The suspected cause of the emergency / incident / event: ..............................................................................................
The potential environmental harm caused, threatened, or suspected to be caused by the emergency / incident / event:
Actions taken to prevent and/or mitigate further potential environmental harm being caused by the emergency / incident / event:

Name: ................................................................................................................. Signature: ..............................................................
Further Notification Form

Environmental Authority (EA) Number ................................................................................................................................

Designated contact person: ..................................................................................................................................................

Date of Event: ....../....../...... Time of Event: .......... am/pm

Proposed action to prevent a recurrence of the emergency / incident / event:
...............................................................................................................................................................................................
...............................................................................................................................................................................................
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Outcomes of actions taken at the time to prevent or minimise environmental harm and / or environmental nuisance:
...............................................................................................................................................................................................
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Details of any environmental monitoring undertaken:
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Further comments:
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Name: .................................................... Signature: ..........................................................
Attachment 2

Spill Response Protocol
figures
Figure 1 - Site Locality Plan

Kennedy Creek West

CQ Dolomite Pty Ltd and Macegate Pty Ltd

Legend:
- Site
- Cadastral Boundary
- Easement Boundary
- Cadastral Boundary - Watercourse
Progressive lime extraction with the product to be screened and graded at the company’s nearby plant.
Figure 5 - Environmentally Sensitive Areas Map Showing MLA

Kennedy Creek West
CQ Dolomite Pty Ltd and Macegate Pty Ltd

Legend:
- Mining Lease Boundary
- Cadastral Boundary
- Easement Boundary
- Endangered Regional Ecosystems
- Mining Lease Application (MLA) Area
Figure 6 - Matters of State Environmental Significance in Proximity to MLA Area

Kennedy Creek Project
CQ Dolomite Pty Ltd and Macegate Pty Ltd

Legend:
- Mining Lease Boundary
- Cadastral Boundary
- Easement Boundary
- Mining Lease Application (MLA)

Area of Interest
- 12 kilometre buffer
- Towns
- Freeways/Highways
- Secondary roads
- Major watercourses
- Matters of State Environmental Significance (watercourses)
- Matters of State Environmental Significance (areas)
attachments
Attachment 1

Incident and Complaint Procedure
Incident and Complaint Procedure

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Environmental Authority (EA) Number: ............................................................................................................................. 
Site Name and Mining Lease (ML) Number: ......................................................................................................................
Site location: ...................................................................................................................................................................... 
Contact person: .................................................................................................................................................................
Name and telephone number of contact person: ................................................................................................................ 
Location of the incident within site: ..................................................................................................................................  
Time of the emergency / incident / event: ..........................................................................................................................
Time that operators became aware of the emergency / incident / event: ..........................................................................
The suspected cause of the emergency / incident / event: ................................................................................................... 
The potential environmental harm caused, threatened, or suspected to be caused by the emergency / incident / event:  
Actions taken to prevent and/or mitigate further potential environmental harm being caused by the emergency / incident / event:

Name: ................................................................. Signature: .................................................................
Further Notification Form

Environmental Authority (EA) Number

Designated contact person:

Date of Event:      ....../....../......  Time of Event:  ..........  am/pm

Proposed action to prevent a recurrence of the emergency / incident / event:

Outcomes of actions taken at the time to prevent or minimise environmental harm and / or environmental nuisance:

Details of any environmental monitoring undertaken:

Further comments:

Name:  ........................................  Signature:  ........................................
Attachment 2

Spill Response Protocol
1.0 Purpose

Obligations for management of contaminants that may result in environmental harm are prescribed under the Environmental Protection Act 1994 (EP Act). All necessary preventative measures must be implemented at the operations to prevent or minimise the potential for spills, however if a spill does occur it should be contained, removed and disposed of properly.

This Spill Response Protocol provides and the steps outlined in Section 3.0 - Spill Response Procedure provides general guidance for incidental spills of hydrocarbons and chemicals at the activity.

2.0 Roles and Responsibilities

| General Manager / Site Manager | • Provide resources and continuous training for the management of spills at the site.  
|                              | • Ensure all personnel at the site are aware of the requirements of the Spill Response Protocol.  
|                              | • Undertake risk assessments for any spill incident that occurs.  
|                              | • Liaise with third parties and government agencies in relation to spills.  
|                              | • Complete necessary reporting of spills when required.  

| Personnel | • Be familiar with, and adhere to, the requirements of this Spill Response Protocol.  
|           | • Implement good practice and management strategies at the site to ensure spills are prevented.  
|           | • Notify all spills to the Site Manager.  

3.0 Spill Response Procedure

Upon becoming aware of the spill, the Site Manager is to be notified immediately.

Undertake an immediate initial assessment to identify the following:

- Type and volume of the spilled substance.
- Source of the spill and whether it can be isolated.
- Safety and Personal Protection Equipment (PPE) requirements for the substance as outlined in the Materials Safety Data Sheets (MSDS).
- Whether site personnel can contain and manage the spill, or whether third party and emergency services are required.
- The substrate of the spill surface (e.g. soil, concrete hardstand).

Spills within a waterbody or watercourse pose a higher risk of potential environmental harm and may require additional assistance from third parties / government agencies. The administering authority must be notified and professional assistance sought regarding clean-up operations.
All personnel working in the immediate vicinity of the spill should be notified and all work in that area should cease immediately.

The movement of plant/equipment has the potential to spread the spill and contaminate other areas, therefore avoid moving plant/equipment where possible.

If possible, the spill is to be contained by constructing a temporary bund and absorbing the spill with the spill kits provided, or an alternative absorbent material (e.g. clay, rags).

**DO NOT USE WATER OR OTHER LIQUIDS TO WASH THE SPILL AREA**

Major spills may require additional and / or specialist treatment, which will be determined by the Site Manager. The following general spill removal / clean-up methods may be used:

- Remove the spill by shovels and / or earthmoving equipment.
- Repair equipment at spill location if possible if mobile plant/equipment is the source of the spill.
- Where necessary or possible to do so, move plant and equipment to allow the removal of the spill.
- Contaminated soils / materials are to be disposed off-site by an approved regulated waste transport contractor in accordance with the legislated regulated waste requirements to a lawful disposal facility.
- Under no circumstances should materials containing the contaminant be disposed of on-site.

All spills of hydrocarbons and/or chemicals are to be reported to the Site Manager, who in turn will undertake a risk assessment of the spill to determine if there is potential for environment harm to occur.

If the risk assessment determines a high or extreme level of risk of environmental harm is posed, the incident must be reported to the Pollution Hotline on 1300 130 372 within 24 hours of becoming aware of the incident. Refer to the **Incident and Complaint Procedure** for further information in relation to reporting.

### 4.0 Risk Assessment

The following provides the risk assessment framework that may be adopted by the Site Manager to undertake a qualitative risk-based assessment, based on the likelihood of an environmental harm occurring (**Table 1 – Definitions of Likelihood**), and the consequences of the occurrence on the surrounding environment (**Table 2 – Definitions of Consequence**). The likelihood and consequences are scored between 1 and 5 for each potential impact or event. The risk assessment has been formulated considering potential for impact without control measures put in place to manage potential risk.

**Table 1 – Definitions of Likelihood**

<table>
<thead>
<tr>
<th>Rating</th>
<th>Descriptor</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rare</td>
<td>May occur only in exceptional circumstances</td>
<td>1</td>
</tr>
<tr>
<td>Unlikely</td>
<td>Could occur but doubtful</td>
<td>2</td>
</tr>
<tr>
<td>Possible</td>
<td>Might occur at some time in the future</td>
<td>3</td>
</tr>
<tr>
<td>Likely</td>
<td>Will probably occur</td>
<td>4</td>
</tr>
<tr>
<td>Almost Certain</td>
<td>Is expected to occur in most circumstances</td>
<td>5</td>
</tr>
</tbody>
</table>
Table 2 – Definitions of Consequence

<table>
<thead>
<tr>
<th>Rating</th>
<th>Descriptor</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negligible</td>
<td>Impacts not requiring any treatment or management action</td>
<td>1</td>
</tr>
<tr>
<td>Minor</td>
<td>Nuisance or insignificant environmental harm requiring minor management action</td>
<td>2</td>
</tr>
<tr>
<td>Moderate</td>
<td>Serious environmental impacts, readily manageable at low cost</td>
<td>3</td>
</tr>
<tr>
<td>Major</td>
<td>Substantial environmental impacts, manageable but at considerable cost and some disruption</td>
<td>4</td>
</tr>
<tr>
<td>Catastrophic</td>
<td>Severe environmental impacts with major consequent disruption and heavy cost</td>
<td>5</td>
</tr>
</tbody>
</table>

The consequence and likelihood scores are then plotted on the risk assessment matrix (Table 3 – Risk Assessment Matrix) and the final risk level assigned is a product of the likelihood and consequence scores. The higher the risk score, the higher the priority is for management.

Table 3 – Risk Assessment Matrix

<table>
<thead>
<tr>
<th>Likelihood</th>
<th>Negligible</th>
<th>Minor</th>
<th>Moderate</th>
<th>Major</th>
<th>Catastrophic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Almost Certain</td>
<td>5</td>
<td>5</td>
<td>10</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>High</td>
<td>High</td>
<td>Extreme</td>
<td>Extreme</td>
</tr>
<tr>
<td>Likely</td>
<td>4</td>
<td>4</td>
<td>8</td>
<td>12</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>Medium</td>
<td>High</td>
<td>High</td>
<td>Extreme</td>
</tr>
<tr>
<td>Possible</td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>Medium</td>
<td>Medium</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Unlikely</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>Low</td>
<td>Medium</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td>Rare</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Medium</td>
</tr>
</tbody>
</table>