

Capricorn Stone Products Pty Ltd Progressive Rehabilitation Closure Plan



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Capricorn Stone Products Pty Ltd – Progressive Rehabilitation
Closure Plan - Capricorn Sandstone Quarries, 227 Power
Station Road, Stanwell QLD 4702

Applicant Name: Capricorn Stone Products Pty Ltd

AR #:

Project #: Progressive Rehabilitation Closure Plan

EA Application #:

Existing EA Permit #: EPML04041216

Report Prepared by: STEER Environmental Consulting

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Abbreviations

• CSQ	- Capricorn Sandstone Quarries Pty Ltd
• CSP	- Capricorn Stone Products Pty Ltd
• DES	- Department of Environment and Science
• DoR	- Department of Resources
• EA	- Environmental Authority
• EP Act	- <i>Environmental Protection Act 1994</i>
• EPA	- Environmental Protection Agency
• ERA	- Environmentally Relevant Activity
• MERFP Act	- <i>Mineral and Energy Resources (Financial Provisioning) Act 2018</i>
• ML	- Mining lease
• NUMA	- Non use mining area
• PMLU	- Post Mining Land Use
• PRC Plan	- Progressive Rehabilitation and Closure Plan
• PRCP Schedule	- Progressive Rehabilitation and Closure Plan Schedule
• RMP	- Rehabilitation Management Plan
• The Application Form	- Submission of progressive rehabilitation and closure plan (ESR/2019/4957)
• The Guideline	- Progressive Rehabilitation and Closure Plans (ESR/2019/4964)
• The Site	- Capricorn Sandstone Quarries, 227 Power Station Road Stanwell, QLD 4702

Document Purpose

Capricorn Sandstone Quarries Pty Ltd (CSQ) operates an environmentally relevant activity (ERA) at 227 Power Station Road, Stanwell 4702 (the site) the conditions of Environmental Authority (EA) EPML04041216 (Appendix A) which is held by Capricorn Stone Products Pty Ltd (CSP). CSQ has a formal agreement with CSP to undertake the ERA at the site. The specific ERA undertaken at the site is as follows:

Schedule 3 20:

Clay pit mining, dimension stone mining or mining gemstones (including the material from which gemstones are extracted) (b) more than 100,000t but not more than 1,000,000t in a year

The *Mineral and Energy Resources (Financial Provisioning) Act 2018* (MERFP Act) was passed by Parliament on 30 November 2018. The MERFP Act amended the *Environmental Protection Act 1994* (EP Act) to include new requirements for progressive rehabilitation and closure of mined land. The amendment to the EP Act requires EA holders to develop and submit a progressive rehabilitation and closure plan. A progressive rehabilitation and closure plan consists of two parts:

1. The rehabilitation planning part (PRC plan), and
2. A progressive rehabilitation and closure plan schedule (PRCP schedule).

This document forms the rehabilitation planning part of the progressive rehabilitation and closure plan.

PRC Plan Structure

This PRC plan is structured to comply with section five of the application form “*Submission of progressive rehabilitation and closure plan*” (ESR/2019/4957) (the application form) which states:

Section 5 – PRC plan structure

The PRC plan must be prepared in accordance with the structure/format shown in Appendix 1 of this application form.

Section 6 of the application form states the following:

Section 6 – PRC plan Checklist

The PRC plan must meet the information requirements stated in section 3 of the Guideline – Progressive Rehabilitation and Closure Plans (ESR/2019/4964), and sections 126C and 126D of the EP Act (note there is a limited exception for transitional PRC plans).

This PRC plan is structured to comply with the requirements of section 5 of the application form and includes the information required in section 3 of the Guideline – “*Progressive Rehabilitation and*

Closure Plans” (ESR/2019/4964) (the Guideline), and sections 126C and 126D of the EP Act, except where exemptions apply for transitional applications.

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1 Cover Page

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EA Holder – Capricorn Stone Products Pty Ltd.

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3 Rehabilitation Planning Part

The following sections follow the structure required by Appendix 1 of the application form and contains the information required in section 3 of the Guideline and sections 126C and 126D of the EP Act, except where exemptions apply for transitional applications.

3.1 Project planning

3.1.1 Baseline information

The mining activity at the site dates to the late 1800s and the current activity dates to the mid-1990s. Given the length of time since mining began in the 1800s and from when the original approval was granted, baseline data is unable to be located. The following sections do however provide baseline information where available.

3.1.1.1 Site topography - Local topography

The site consists of a sandstone outcrop which rises to an elevation of approximately 140 m at the eastern side of the activity down to 60 m on the western side of the activity (Figure 1).



Figure 1. Topography around the site (image QLD Globe ©).

3.1.1.2 Site topography - Regional topography

In a regional context, the topography consists of extensive rugged/mountainous areas interspersed with lower lying areas associated with watercourses. Elevations reach a height of 470 m in the Dee Range to the south-east, 400 m in the Moonlight Ranges to the north-west and the Native Cat Range to the west, and 500 m in the Berserker Range to the north-east (Figure 2). The Fitzroy River runs to the east of the site through the regional centre of Rockhampton into an extensive floodplain and ultimately discharges into the Pacific Ocean (Figure 2).

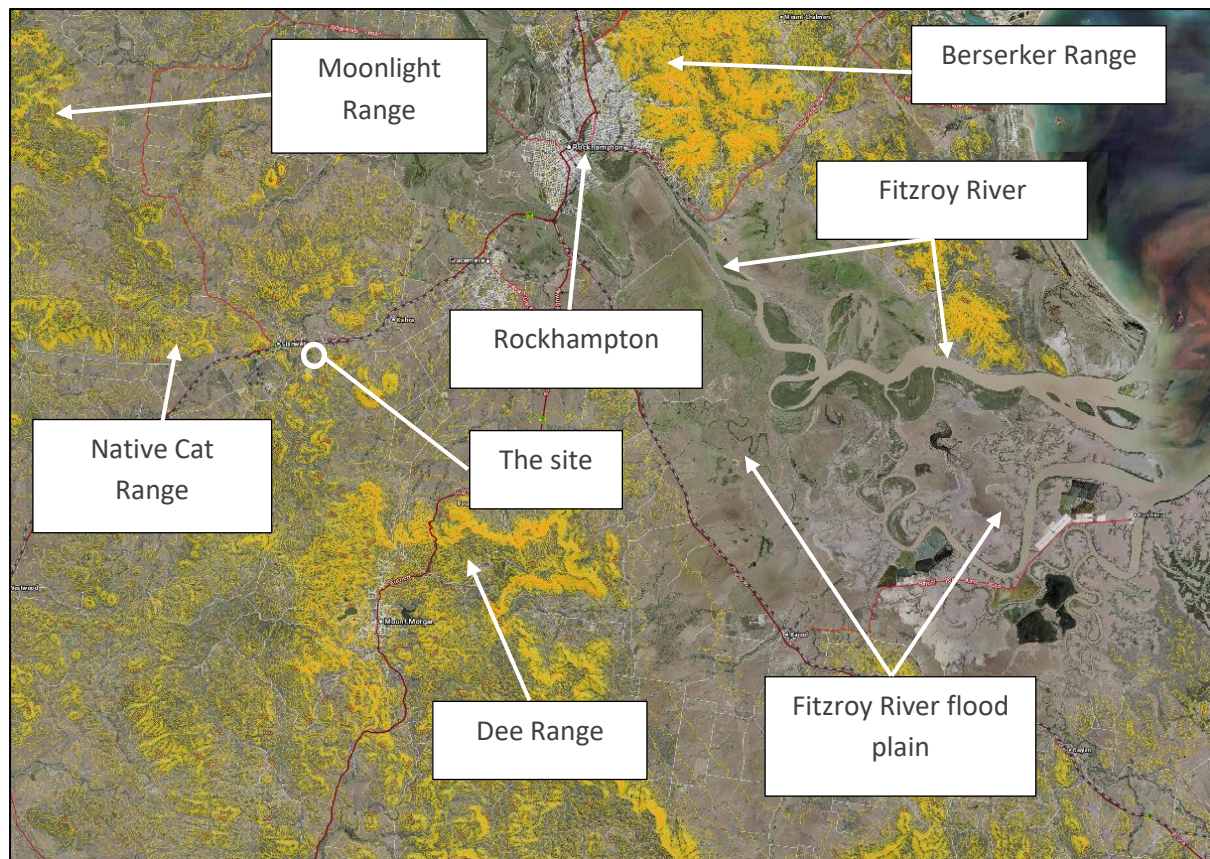


Figure 2. Regional topography (Image Qld Globe ©).

3.1.1.3 Climate

The average annual rainfall is 773 mm with the majority falling between October and March (Figure 3). Average temperature ranges from 32.2 °C in January to 9.7 °C in July. Note, climate data is from Rockhampton Aero approximately 17 km north-east of the site.

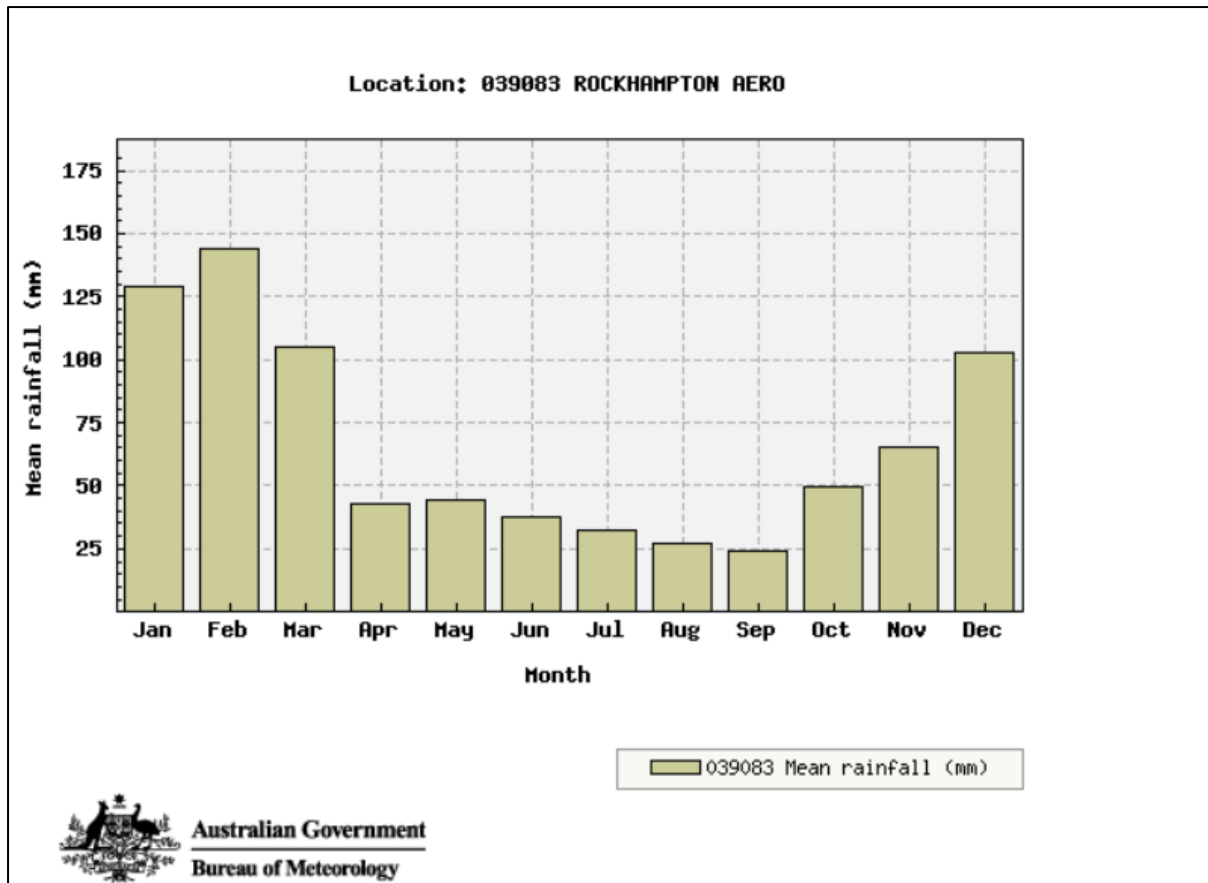


Figure 3. Average rainfall in the area (Source Australian Government Bureau of meteorology).

Annual evaporation for the area is between 2,000 mm and 2,400 mm (Figure 4).

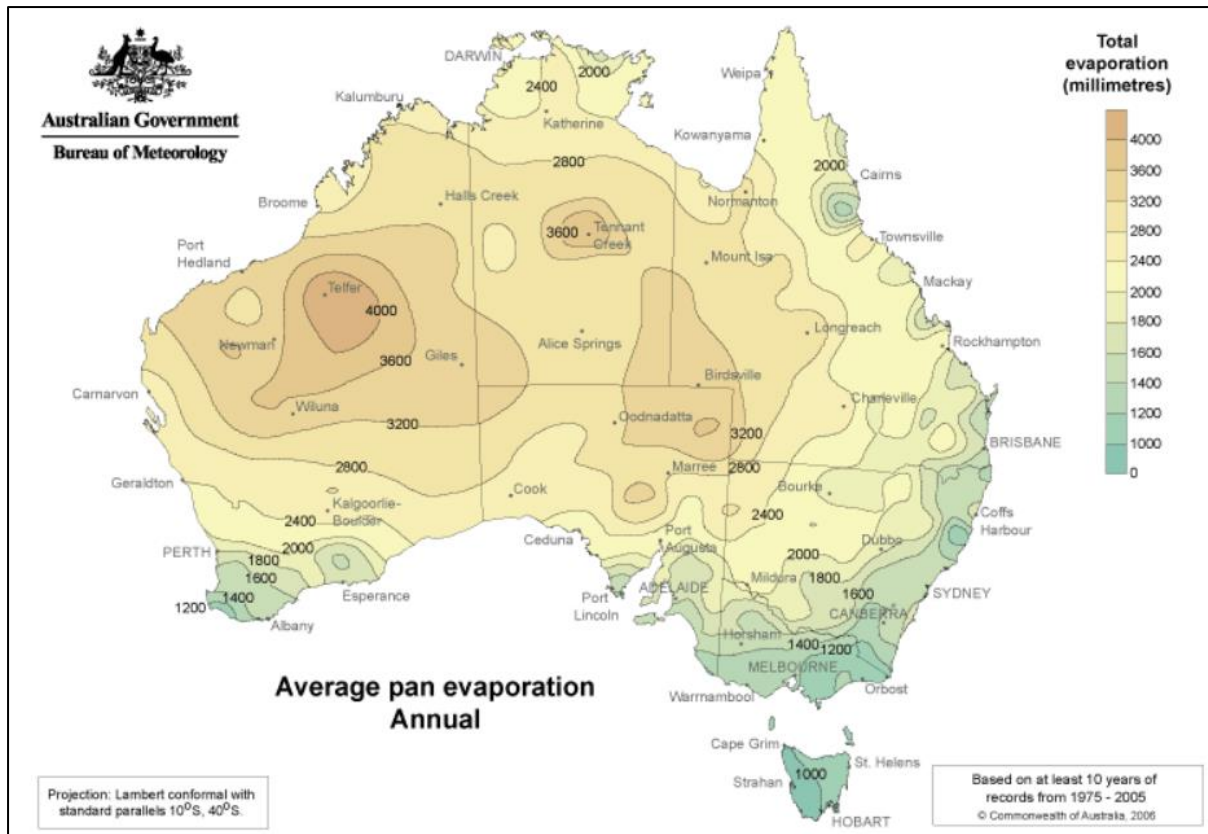


Figure 4. Average annual evaporation (Source Australian Government Bureau of meteorology).

3.1.1.4 Geology

A representation of geological formations in the area can be seen in Figure 5. A description of the geology of the site is as follows:

- Rock unit name:
 - Stanwell Formation.
- Lithological summary:
 - Mudstone, sandstone, siltstone, minor coal.
- Dominant Rock:
 - Arenite-Mudrock.
- Rock type:
 - Stratified unit (including volcanic and metamorphic).
- Age:
 - Early Cretaceous.

Geological information sourced from QLD Globe.

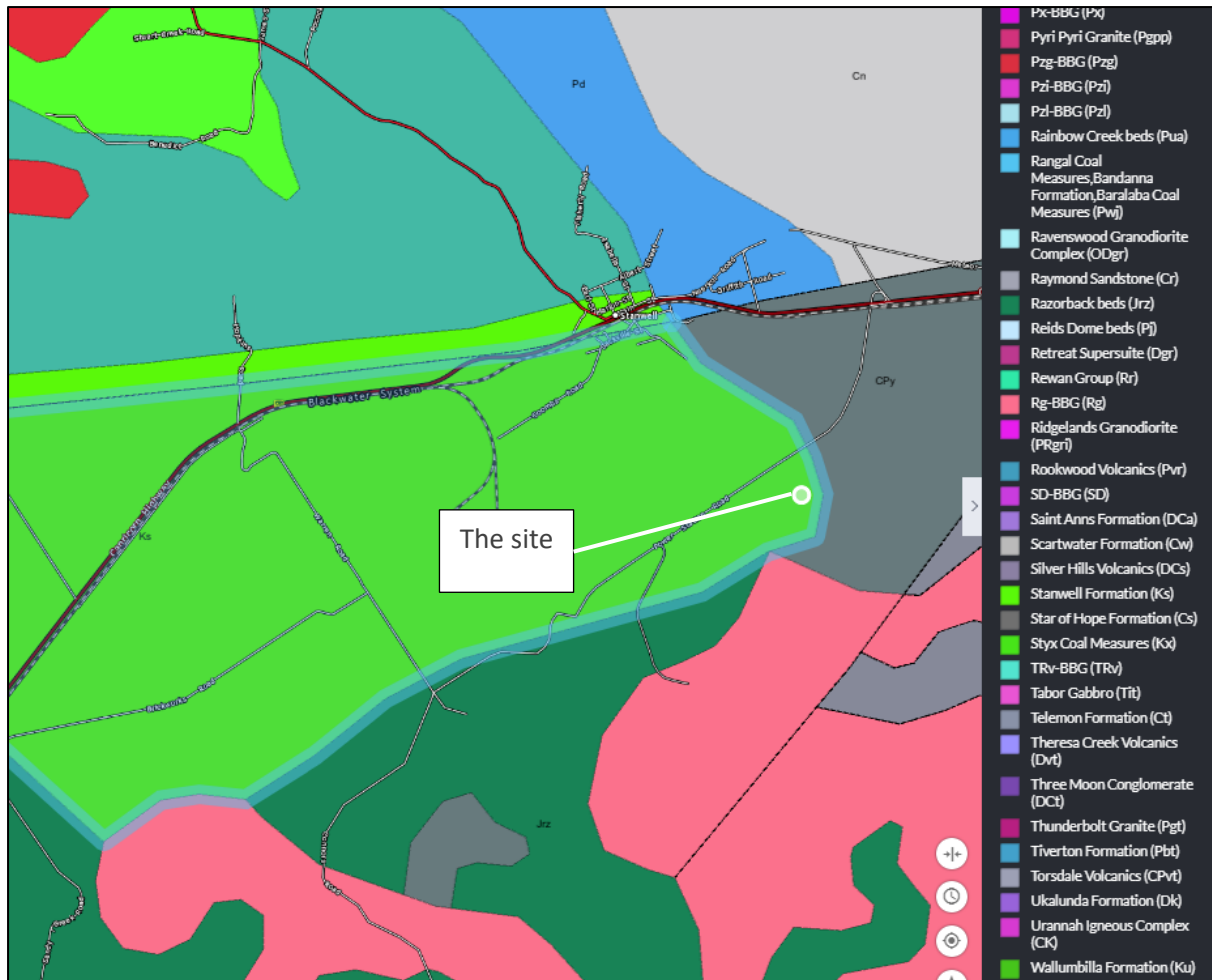


Figure 5. Local geology (Source QLD Globe).

3.1.1.5 Site hydrology and fluvial networks

As the original approval for this site dates to the mid-1990s, no information regarding assessment of site hydrology is available.

Neerkol Creek is located approximately 800 m to the north and two ephemeral tributaries are located approximately 550 m to the west and 400 m to the east (Figure 6).

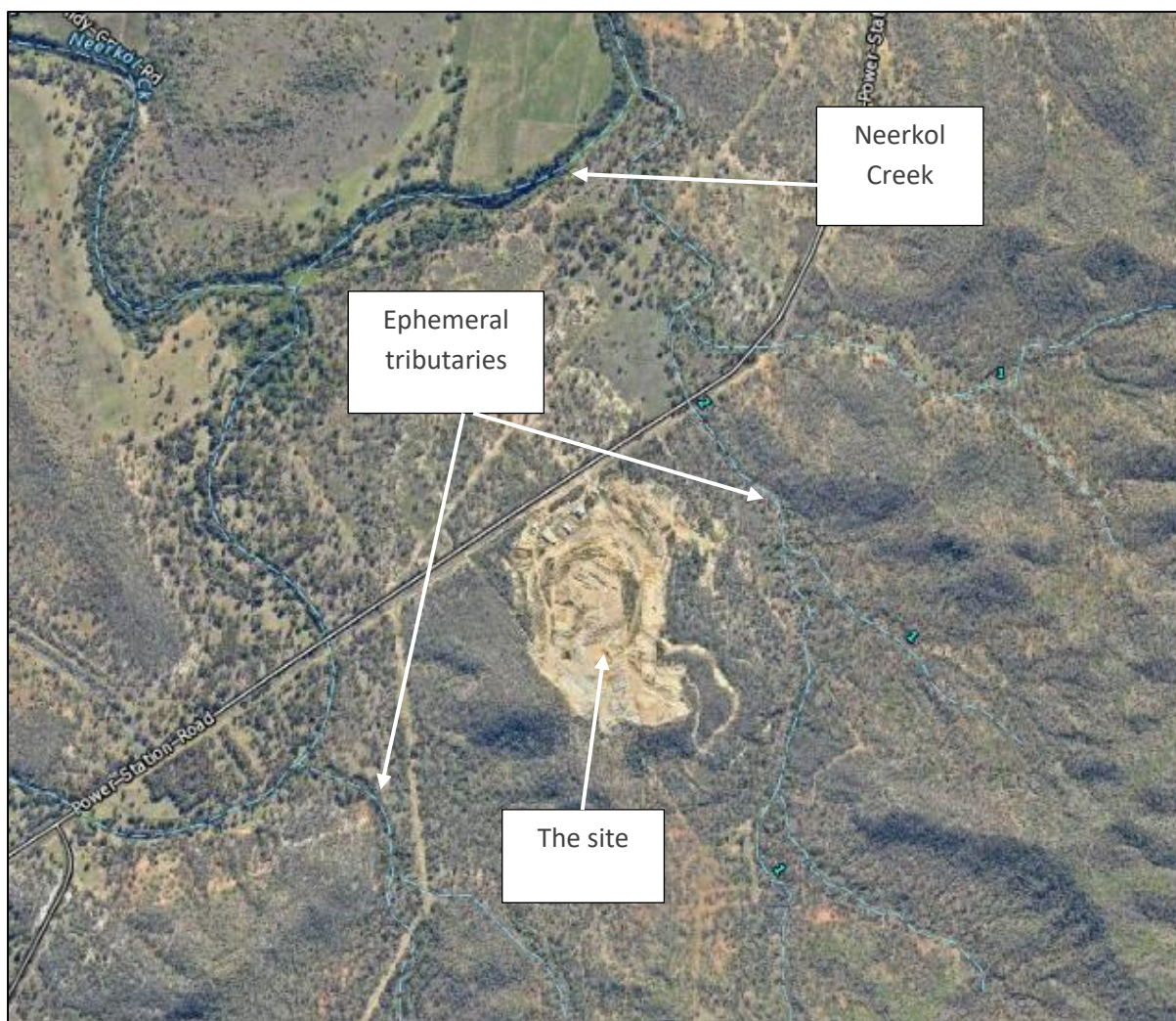


Figure 6. Fluvial networks near the site (Image Qld Globe ©).

3.1.1.6 Groundwater levels and properties

The closest bores to the site are located approximately 1.4 km to the west (RN 111668) and 1.7 km to the north (RN 91227). The bore report for RN 111668 contains no information regarding water level or quality. The bore report for RN 91227 indicates a water level of -6.0 m, however no information regarding water quality is included. As the original approval for this site dates to the mid-1990s, no information regarding assessment of groundwater is available.

3.1.1.7 Soil types, properties and productivity

The soils in the area are composed of weathered sandstone mixed with organic matter. As the original approval for this site dates to the mid-1990s, no information regarding assessment of soils at the site is available.

3.1.1.8 Land stability, vegetation communities and ecological data

The area is characterised by valleys alternating with sharply rising hills and ridges up to 150 m. The valleys are relatively stable with native ecosystems stabilising soils and preventing erosion. The steep, sharply rising hills and ridges are also stabilised by native vegetation; however the steepness of the area and the nature of the sandstone substrate render some areas relatively unstable from the perspective of potential erosion from rain events and the possibility of rockfalls. Much of the surrounding area is not considered appropriate for human traffic. The final landform design of the site will be inherently more stable than much of the surrounding area and will have no predisposition to ongoing stability issues.

3.1.1.9 Vegetation communities and ecological data (including existing regional ecosystem mapping)

The document “*Ecological Assessment Supporting Information Report Capricorn Stone Products Pty Ltd*” includes an assessment of vegetation communities and ecological data in the area and is included as Appendix B.

Regional ecosystem mapping is included as Appendix C.

3.1.1.10 Fauna presence and populations

The document “*Ecological Assessment Supporting Information Report Capricorn Stone Products Pty Ltd*” includes an assessment of fauna in the area and is included as Appendix B.

3.1.1.11 Pre-mining land use

The pre-mining land use was natural ecosystem.

3.1.1.12 Identification of underlying landholders.

Capricorn Stone Products Pty Ltd are freehold owners of the following Lots on Plans:

- 179 LN2465.
- 252 SP275125.

The following Lots on Plans are state owned reserve parcels:

- 184 LIV40877.
- 1 LIV40877.

The following Lots on Plans are state land parcels:

- 1 LIV40877.
- 2 LIV40877.
- 3 LIV40877.
- 4 LIV40877.
- 5 LIV40877.
- 6 LIV40877.

The location of the Lots on Plan can be viewed in Figure 7.

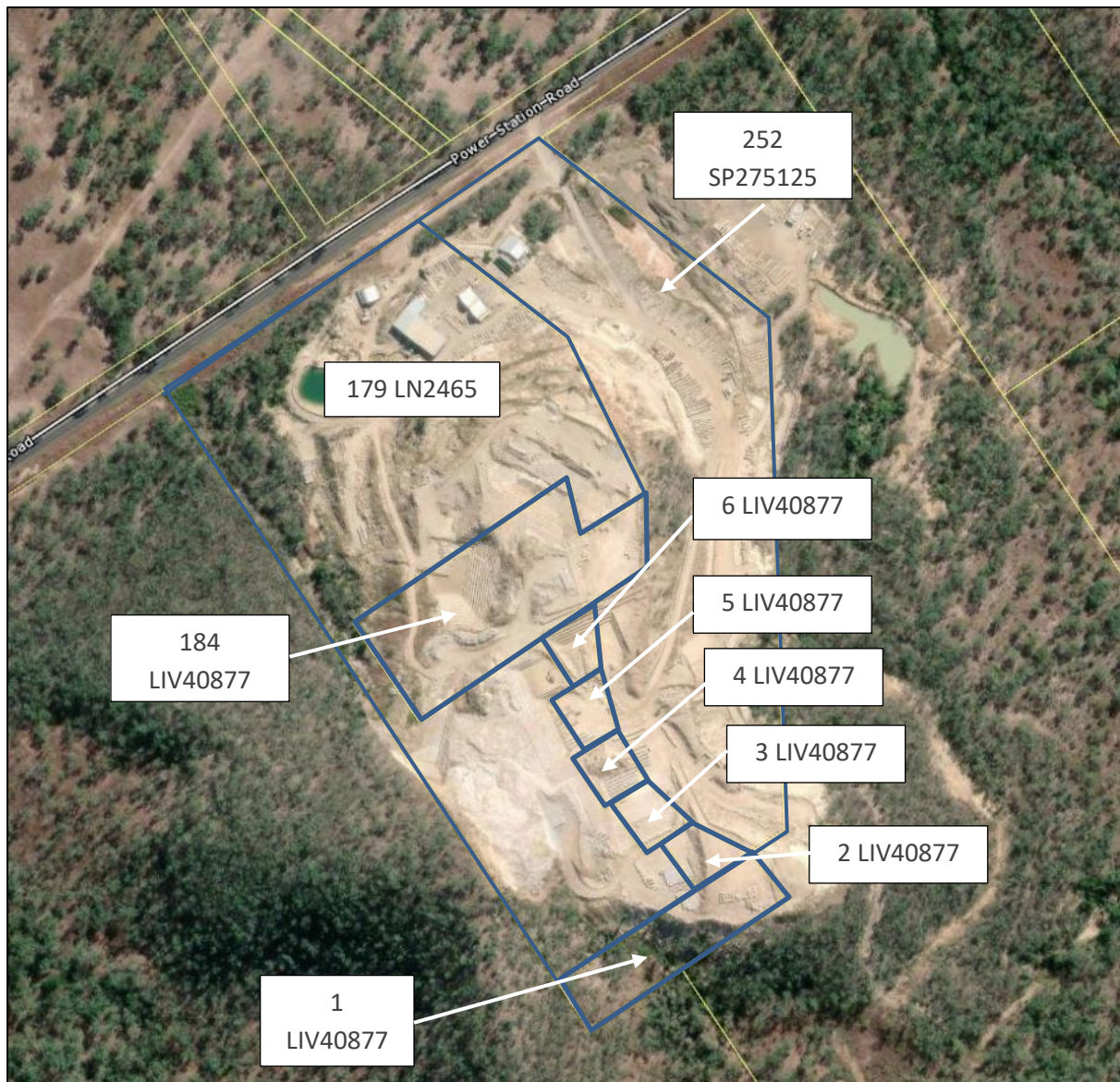


Figure 7. Lots on Plan at the site (Image QLD Globe ©).

3.1.2 Project description

The following sections provide a description of the project as per the Guideline.

3.1.2.1 Mining tenements

The mining leases on the subject parcels of land are ML 80102 (18.84 ha) and ML 7341 (5.97 ha). The extent of these leases can be seen in Figure 8.



Figure 8. Mining leases at the site (Image QLD Globe ©).

3.1.2.2 Primary mine features

The mining operation consist of mechanically sawing sandstone blocks from the hillside. There are no chemical processes used at any point in the mining process. The resource being extracted exists as a sandstone outcrop rising to approximately 140 m. As such there is no interference with any aquifers (saline or otherwise) and there is no interaction with acid forming rock or acid sulphate soils. Given these characteristics, there are no waste rock dumps, heap leach pads, contaminated water storages, tailings dams, pits, voids or any other hazardous features associated with the mine.

Primary mine features include the following:

- Buildings including.
 - Staff amenities.
 - Administration.
 - Workshops.
 - Processing.
- Stormwater management dams.
- Minor fuel storage (max 12,000 L).

The location of these items as well as the approximate location of the extraction and laydown areas can be seen in Figure 9.



Figure 9. Approximate locations of stormwater management dams (blue polygons), buildings (purple polygons), lay down areas (white polygon), extraction area (yellow polygon) and minor fuel storage (red circle) (Image QLD Globe ©).

3.1.2.3 Type of mining operation

The mining operation at the site is a simple process. The resource which is being extracted is purely sandstone which exists as an outcrop that rises from the surrounding area to a height of approximately 140 m. The sandstone is cut into large blocks using large circular saws mounted on excavators (Figures 10 and 11). The sandstone blocks may be sold whole or further processed into smaller value-added products (Figure 12). The further processing of sandstone blocks is essentially identical to the

extraction process as it consists of mechanically sawing larger sandstone blocks into smaller ones. There are no chemical processes involved at any stage of the activity and therefore there is no production of contaminants which have the potential to cause environmental harm. The only contaminant produced as a result of the mining process is sediment from disturbed areas and from the sawing of sandstone blocks. Sediment from disturbed areas and from the sawing of sandstone blocks is managed by onsite stormwater management infrastructure.

There are no exploration permits, mineral development licences, mining claims or petroleum tenures associated with the activity.



Figure 10. Excavator mounted saw.



Figure 11. Excavator mounted saw cutting blocks at the site.



Figure 12. Smaller value-added products in storage at the site.

3.1.2.4 Proposed duration of operation as a whole

The sandstone resource at the site is a highly valuable commodity which is extracted at an extremely slow rate when compared to common mining operations of minerals and coal. The most recent lidar

investigation (2012) identified in excess of 4,897,000 m³ of winnable sandstone remaining in the ML area. This volume of sandstone equates to approximately 11,500,000 tonnes of sandstone. Annual extraction at the mine ranges 20,000-50,000 tonnes. Therefore, even at maximum extraction rates of 50,000 tonnes per annum the mine would have a life of 230 years. However, for discussion relating to the life of the mine a much more conservative figure of 80-100 years is generally used.

Sandstone from the mine is of extremely high quality and is in demand for new works and restoration of historic structures. It is fully expected that the mine will continue to operate on exactly the same footprint as it currently occupies for at least the next century.

3.1.3 Design for closure

The Guideline identifies one of the main purposes of the PRC plan is for applicants to plan how ERAs will be carried out in way that maximises progressive rehabilitation. The characteristics of the resource and the mining activity at the site makes planning for progressive rehabilitation impractical. This is explained in detail in section 3.1.13.1 “*Maximising progressive rehabilitation*”.

In regard to design for closure, the Guideline states the following:

*To demonstrate that rehabilitation will be maximised for the mine site, the rehabilitation planning part of the PRC plan **for new or expanding sites** must include a description of how the following aspects have been designed for closure:*

- *location of mine features/infrastructure, having regard to the following considerations:*
 - *protection of environmental values of the site and receiving environment, including matters of National Environmental Significance, matters of State Environmental Significance and matters of Local Environmental Significance*
 - *surrounding land uses and proximity to sensitive receptors*
 - *proximity to the open-pit exit or exits*
 - *the gradient of the footprint area, both for the direction of drainage from the landform and for the dumping costs*
 - *local and regional topography*
 - *surface and ground water features (quality, quantity and seasonal variation)*
 - *geotechnical conditions (i.e. soil/rock characteristics) and suitability for the structure type (i.e. presence of structural features that may transmit seepage)*
 - *competing water and land uses*
 - *visual impact*
- *size, shape and design of mine features/infrastructure (e.g. waste rock dump design)*
- *mining methods (such as utilising underground methods versus extraction via an open cut pit).*

As the site is **neither new nor expanding**, information regarding these items has not been included.

3.1.3.1 *Maximising progressive rehabilitation*

The sandstone resource which is the focus of the mining activity at the site is highly variable, with different colours and grades of sandstone existing at different locations across the site. This results in

multiple active extraction faces existing simultaneously across the site (Figure 13) as operations move between different areas depending on customer requirements. This effectively results in the entire extractive area being active for the entire life of the mine. As discussed in section 3.1.12.4 *“Proposed duration of operation as a whole”*, the volume of available material at the site will last for approximately 80 to 100 years. There is no way to foresee what customer demands will be that far into the future, therefore there is no realistic way to know in which order different areas will be exhausted. This makes planning for progressive rehabilitation impractical until the activity draws closer to exhausting the resource. The maximum approved disturbance area at the site is only 23 hectare’s which is extremely small for a mining operation. Given there will be no exhausted areas available for rehabilitation until many decades into the future and the relatively small size of the disturbed area, rehabilitation will be planned for the entire site upon exhaustion of all winnable resource.

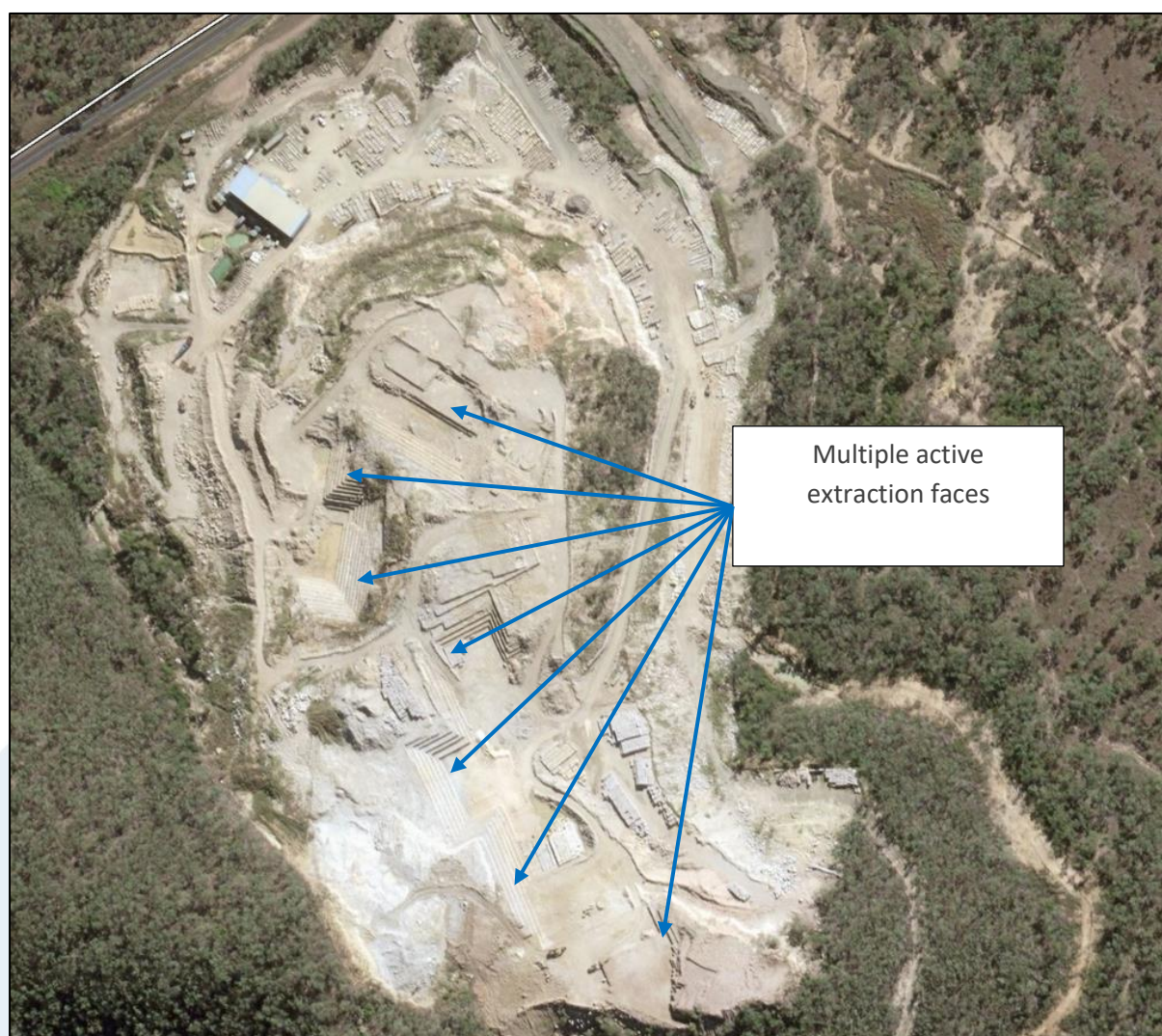


Figure 13. Multiple active extraction faces at the site (Image QLD Globe ©).

3.1.4 Rehabilitation/improvement planning

As discussed in section 3.1.12.1 “*Maximising progressive rehabilitation*”, the characteristic of the resource and the resulting multiple active extraction faces across the site makes progressive rehabilitation of the site impractical. Given this, the current PRC plan will consider the site as a whole for rehabilitation purposes.

The Guideline states:

In order to meet the legislative requirements in sections 126C(1)(b) and (c)(ii) of the EP Act, the rehabilitation planning part must include:

- *identification of all relevant activities on the mine site*
- *the predicted duration of each of the relevant activities proposed for the mine site*
- *the size/extent of the relevant activities*
- *whether the different relevant activities can be progressively rehabilitated.*

The activities at the mine site are relatively simple and include the following:

- Extraction areas.
- Lay down areas.
- Administration and staff amenities.
- Workshops and processing area.
- Stormwater management infrastructure.

All of the above activities will continue for the entire duration of the mine site which is estimated to be approximately 80 to 100 years. The size/extent of these activities can be seen in section 3.1.12.2 “*Primary mine features*”. As previously stated, the multiple active extraction faces at the site does not allow for the progressive rehabilitation of the site.

3.1.5 Spatial information

Spatial information for the following has been provided:

- The location and maximum extent of disturbance footprint for the mine life.
- The post mining land uses (PMLU) for the area within the resource tenures.

Spatial information which has not been included and justification for doing so is as follows:

- Spatial information for non-use mining areas (NUMA) has not been included as there are no NUMAs associated with the activity.
- Spatial information for sensitive receptors has not been included as the nearest sensitive receptor is approximately 1.7 km from the site.
- Spatial information for floodplains has not been included as there are no floodplains associated with the site.
- Spatial information for existing rehabilitation areas has not been included as there is no existing rehabilitation associated with the site.

The mining activity at the site is an extremely slow process with all extraction areas expected to remain active for the entire life of the mine which is approximately 80 to 100 years. Given this, no spatial information regarding rehabilitation for the next ten years has been included.

3.2 Post mining land use

Land outcome documents for the site include the following:

- EA EPML04041216 (Appendix A).
- Capricorn Stone Products PL Rehabilitation Management Plan (9.11.16) (Appendix E).
- Landholder Agreement (Appendix F).

EA EPML04041216 includes conditions relating to rehabilitation at the site. Condition C3 of the EA states the following:

Rehabilitation

A Rehabilitation Management Plan (RMP) must be developed by an appropriately qualified person and include at least the following;

- a) The post-mining land use;*
- b) Rehabilitation must comply with the Guideline Resource Activities — Rehabilitation requirements for mining resources activities (EM1122);*
- c) State the rehabilitation objectives proposed to achieve the rehabilitation goals of;*
 - i. safe to humans and wildlife;*
 - ii. non-polluting;*
 - iii. stable;*
 - iv. able to sustain an agreed post-mining land use;*
- d) Describe the methods of rehabilitation needed to achieve the rehabilitation objectives and goals;*
- e) State the completion criteria proposed to measure the success of rehabilitation objectives and goals.*

Condition C4 of EA EPML04041216 states the following:

The RMP must be submitted to the administering authority by 9 November 2016.

The RMP was submitted as per conditions C3 and C4 of the EA on 16 November 2016 and subsequently accepted by the administering authority.

Regarding PMLUs, the Guideline states the following:

Where a PMLU has been previously addressed in a land outcome document and is able to be transitioned into the PRCP schedule, the holder is not required to complete the information requirements under section 126C(1)(j) of the EP Act in this section for those PMLUs.

The RMP which was provided to the administering authority on 16 November 2016 identifies and addresses the PMLUs which are applicable to the site. Given this, there is no requirement to complete the information requirements under section 126C(1)(j) of the EP Act for those PMLUs.

The PMLUs for the site include native ecosystem and future industry. The site is located at 227 Power Station Road, Stanwell 4702. This site is within the special management area directly adjacent to the Stanwell-Gladstone Infrastructure Corridor State Development Area. The area is zoned to allow for future development of high and low impact industry with the Stanwell Power Station already operating in the special industry zone immediately to the west of the site (Figure 14). The PMLU of future industry is consistent with local and state government plans.

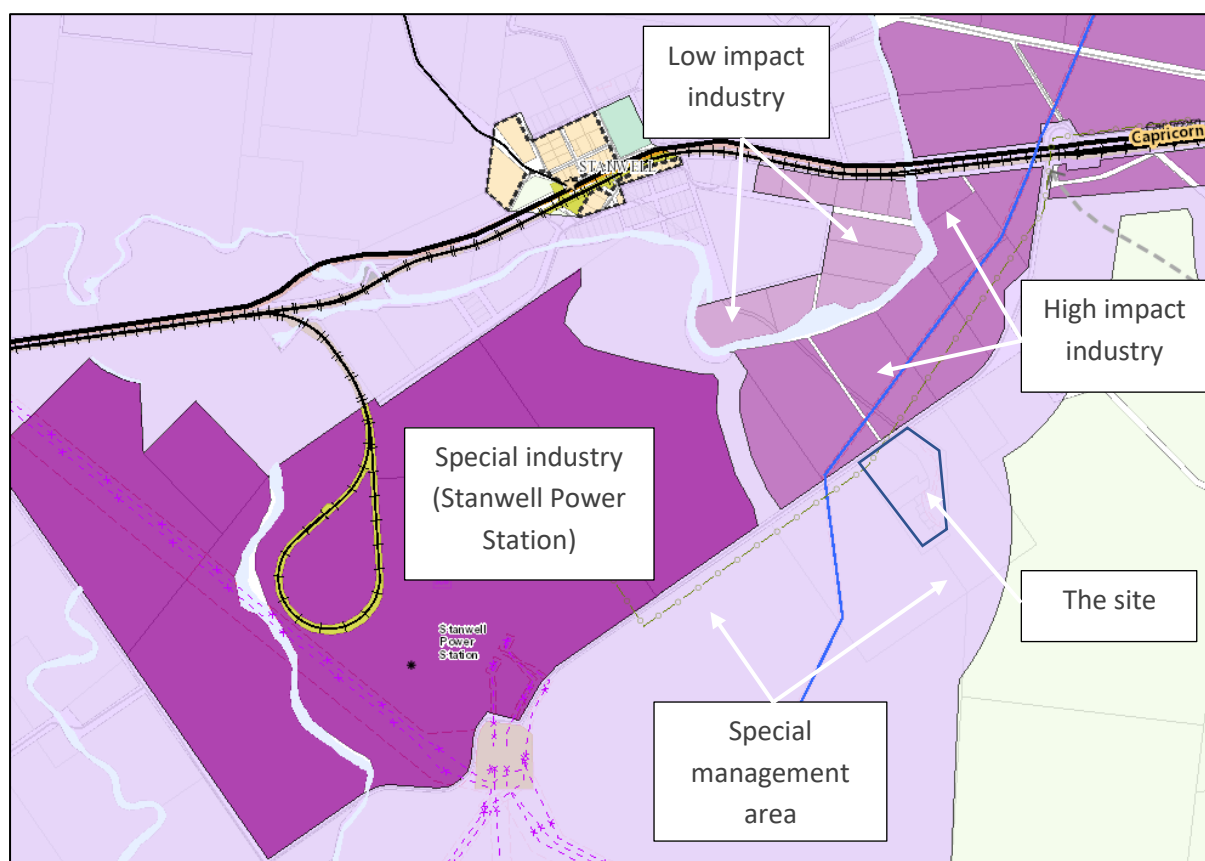


Figure 14. Zones within the Stanwell-Gladstone Infrastructure Corridor State Development Area surrounding the site.

3.3 Non-use management areas

There are no NUMAs associated with the activity.

3.4 Voids in flood plains

There are no voids associated with the activity.

3.5 Community consultation

3.5.1 Community consultation register

Section 126C (1)(c)(iii) of the EP Act requires a proposed PRC plan include details of consultation undertaken by the applicant in developing the proposed PRC plan. Section 3.5 of the Guideline requires the rehabilitation planning part must include a community consultation register identifying the consultation which was carried out. The Guideline requires the community consultation register include the following details:

- Consultation date(s)
- Identification of each community member
- Description of consultation type (workshop, quarterly meetings, etc.)
- Information provided to the community
- Issues raised/discussed by the community
- How issues have been considered
- Decisions/outcomes of engagement
- Commitments made by the applicant.

The mining operation at the site began in the late 1800s and has continued from this time. As the current mining activity was approved in the mid-1990s, no specific details regarding community consultation which was undertaken at the time is available. A summary of the consultation which would have been necessary to gain approval for the project is as follows:

- Consultation with local government to secure land use approvals as required by the relevant planning instrument of the time.
- Consultation with DES (then EPA) to secure approval for the activity.
- Consultation with local government to secure a compensation agreement.
- Consultation with the state to secure a sales permit for resources and to negotiate royalties payable for extraction of resources.

Consultation with DES resulted in the land use document EA EPML0401212 being approved on 4 August 2016. Condition C4 required a Rehabilitation Management Plan (RMP) be developed and submitted to DES by 9 November 2016. The RMP was submitted as per the requirements of the EA and subsequently accepted by DES. The PMLUs in this PRC plan are consistent with the PMLUs identified in the RMP which was provided to DES on 9 November 2016.

3.5.2 Community consultation plan

Section 126C (1)(c)(iv) of the EP Act requires a proposed PRC plan include details of how the applicant will undertake ongoing consultation in relation to the rehabilitation to be carried out under the plan. This community consultation plan is intended to address the requirements of Section 126C (1)(c)(iv) of the EP Act.

The Guideline includes information regarding items which the applicant of a PRC plan is expected/must address as part of the community consultation plan. These items are as follows:

- Identification relevant members of the community.
- Objectives of community consultation.

- Proposed consultation frequency.
- Information to be released for community consultation.
- How feedback/comments will be considered.

The following sections will address the items required by the Guideline.

3.5.2.1 Community identification

Identified relevant members of the community are as follows:

- Rockhampton Regional Council.
 - CSP has a compensation agreement with RRC for ML7341.
- Stanwell Corporation
 - Operators of the Stanwell Power Station which is approved by EA EPPR00708913 on the adjoining Lot on Plan 177 LN2465.
 - Stanwell corporation also own adjoining Lots on Plan which are not associated with EA EPPR00708913. These are as follows:
 - Lot 1 SP140242.
 - Lot 3 RP604041.
 - Lot 3 RP604044.
- Traditional owners.
 - Darumbal People Aboriginal Corporation Registered Native Title Body.
- Capricorn Conservation Council.
 - Local community environmental advocacy group.
- Fitzroy Basin Association.
 - Non-profit natural resource management organisation operating in the Fitzroy Region. The Fitzroy Basin Association provides environmental advice and assistance to landholders, community members and organisations, traditional owners, and government agencies.

3.5.2.2 Objectives of community consultation

The objectives of the community consultation include the following:

- Inform community members of the intended rehabilitation activities at the site.
- Address concerns which community members may have regarding rehabilitation activities.
- Access local knowledge from community members regarding enhancements which could be made to proposed rehabilitation activities.
- Inform community members of any proposed changes to rehabilitation at the site.

3.5.2.3 Proposed consultation frequency

The mining operation at the site will continue for the next 80 to 100 years, and there is currently no intention to alter the approved rehabilitation plan for the site. As rehabilitation of the site will not occur for another 80 to 100 years, The following community consultation frequencies are proposed:

- First community consultation process to take place within twelve months of the PRCP schedule being approved.

- Community consultation will take place every fifteen years following the first consultation.
- Additional community consultation will take place where there are changes to rehabilitation plans, final outcomes or the timing of progressive rehabilitation.

Significant areas of land to the north, west and northeast are zoned as high, medium and low impact industry. There is the potential for significant industrial activities to occur in the area over the life of the mine. Given the length of time the mine will be operational, the potential for considerable change in the makeup of the local community and environmental values, and the intention for the rehabilitation plan for the site to remain unchanged, there is little to be gained by more frequent community consultation at this time. Considering this, a fifteen-year consultation frequency will allow CSP to consider any changes in the community and industry in the local area over the life of the mine and make appropriate adjustments to the rehabilitation plan if required.

3.5.2.4 Information to be released

Information to be released will include the following:

- Details of the approved rehabilitation plan.
- Details of any proposed changes to the approved rehabilitation plan.
- Details of comments or submissions from previous community consultation.
- Details of any actions/proposed actions resulting from comments or submissions from previous community consultation.

3.5.2.5 How feedback/comments will be considered.

Feedback/comments will be considered using the following criteria:

- Is the source of feedback/comments considered to be a reliable source?
- Can the content of feedback/comments be verified using appropriate scientific principles?
- Are recommendations contained in feedback/comments likely to enhance rehabilitation outcomes?
- Are recommendations contained in feedback/comments likely to have a positive or negative impact on adjacent or downstream land uses and environmental values?
- Are recommendations contained in feedback/comments likely to be cost effective?

3.5.2.6 Community consultation tables

The information sheet 'Common Issues with Progressive Rehabilitation and Closure Plan Applications (PRCP applications)' published by DES contains advice regarding the recommended format of a community consultation register and plan. The information sheet highly recommends providing both the community consultation register and plan in tables and provides examples of appropriately formatted tables. As discussed in section 3.2.1, the current activity was approved in the mid 1990s and no specific information regarding community consultation from that time is available. Given this, there is no information available to populate a community consultation register table with therefore, no table has been included for a community consultation register. As the community consultation plan relates to future activities, a table containing the proposed details of the community consultation plan is included as Appendix D.

3.6 Rehabilitation management methodology

3.6.1 General rehabilitation practices

See RMP – Appendix D.

3.6.2 Tailings storage facilities

The activity does not generate mine tailings and therefore there are no tailings storage facilities associated with the activity.

3.6.3 Voids

There are no voids associated with the activity.

3.6.4 Underground mining

There is no underground mining associated with the activity.

3.6.5 Built infrastructure

See RMP – Appendix D.

3.7 Risk assessment

See Appendix G.

3.8 Monitoring and maintenance

See RMP – Appendix D.

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4 Appendices

Appendix A – EA EPML04041216

**Appendix B - Ecological Assessment - Supporting Information Report -
Capricorn Stone Products Pty Ltd, Aurecon, 27 August 2014**

See attached document

Appendix C – Regional Ecosystems Biodiversity Status Report

Appendix D – Community consultation plan table

Community consultation plan				
Objective	Engagement type	Proposed consultation frequency	Released information	How feedback/comments are considered
Inform community members of the intended rehabilitation activities at the site. Address concerns which community members may have regarding rehabilitation activities. Access local knowledge from community members regarding enhancements which could be made to proposed rehabilitation activities. Inform community members of any proposed changes to rehabilitation at the site.	Contact by mail/email to identified community members to determine interest and invite initial feedback/comments. Reply to feedback/comments from interested community members including the provision of further information as detailed in column 4 of this table where appropriate and invite further feedback/comment. Consideration will be given to further feedback/comments as detailed in column 5 of this table. Inform submitters of feedback/comments or actions taken as a result of the engagement process.	Every fifteen years.	Details of the approved rehabilitation plan. Details of any proposed changes to the approved rehabilitation plan. Details of comments or submissions from previous community consultation. Details of any actions/proposed actions resulting from comments or submissions from previous community consultation.	Is the source of feedback/comments considered to be a reliable source? Can the content of feedback/comments be verified using appropriate scientific principles? Are recommendations contained in feedback/comments likely to enhance rehabilitation outcomes? Are recommendations contained in feedback/comments likely to have a positive or negative impact on adjacent or downstream land uses and environmental values? Are recommendations contained in feedback/comments likely to be cost effective?

**Appendix E – Capricorn Stone Products - Rehabilitation Management Plan –
STEER Environmental Consulting, 09 November 2016**

Appendix F – Landholder Agreement

PMLU – Rehabilitation Area Risk Assessment						
Risk Identified	Source of Risk	Ability to Control	Consequences	Cumulative Affect	Control Measures	Level of Risk to achieving Rehabilitation Milestones
Lack of substrate	Erosion from Stormwater	High	Vegetation does not establish	Rehabilitation milestone not achieved Unable to sustain post mining land use	See RMP for erosion management See RMP for monitoring requirements	Low
			Loss of pioneer species	Rehabilitation milestone not achieved Unable to sustain post mining land use	See RMP for erosion management See RMP for monitoring requirements	Low
			Loss of propagules, organic matter, nutrients and soil microorganism	Rehabilitation milestone not achieved Unable to sustain post mining land use	See RMP for erosion management See RMP for monitoring requirements	Low
Moisture deficit	Low rainfall	Low	Vegetation does not establish	Rehabilitation milestone not achieved Unable to sustain post mining land use	See RMP for water retention strategy.	Medium
					See RMP for watering requirements	
	Loss of water from site due to runoff	High	Vegetation does not establish	Rehabilitation milestone not achieved Unable to sustain post mining land use	See RMP for land contouring strategy	Low
					See RMP for watering requirements	
Suitable species do not colonise	Inappropriate species planted	High	Vegetation community does not resemble reference site	Rehabilitation milestone not achieved Unable to sustain post mining land use	Ensure suitably qualified personnel undertake initial assessment of reference sites	Low
	Inappropriate species planted		Vegetation community does not resemble reference site	Rehabilitation milestone not achieved Unable to sustain post mining land use	Ensure suitably qualified personnel source plants	Low

PMLU – Rehabilitation Area Risk Assessment						
Risk Identified	Source of Risk	Ability to Control	Consequences	Cumulative Affect	Control Measures	Level of Risk to achieving Rehabilitation Milestones
	Inappropriate placement of plants	High	Vegetation community does not resemble reference site	Rehabilitation milestone not achieved Unable to sustain post mining land use	Ensure suitably qualified personnel undertake landscape design	Low
			Vegetation community does not resemble reference site	Rehabilitation milestone not achieved Unable to sustain post mining land use	Ensure suitably qualified personnel undertake planting	
Unstable landform	Erosion from Stormwater	High	Vegetative species unable to effectively colonise	Rehabilitation milestone not achieved Unable to sustain post mining land use	See RMP for erosion management	Low
Unsafe to humans and wildlife	Voids, pits or sheer walls in final design	High	Does not meet rehabilitation criteria	Rehabilitation milestone not achieved Unable to sustain post mining land use	No voids, pits or sheer walls in final design	Low
	Slope on western side unstable	High	Does not meet rehabilitation criteria	Rehabilitation milestone not achieved Unable to sustain post mining land use	Qualified engineer to design final slope	Low
Non polluting	Contamination of environmental values from chemicals used onsite	High	Does not meet rehabilitation criteria	Rehabilitation milestone not achieved Unable to sustain post mining land use	No chemical processes used onsite	Low
	Contamination of environmental values from acid forming rock waste dumps and acid sulphate soils drainage	High	Does not meet rehabilitation criteria	Rehabilitation milestone not achieved Unable to sustain post mining land use	The activity does not interact with acid forming rock or acid sulphate soils	Low
	Contamination of environmental values from interaction with saline aquifers	High	Does not meet rehabilitation criteria	Rehabilitation milestone not achieved Unable to sustain post mining land use	The activity does not interact with saline aquifers	Low

PMLU – Landholder Agreement Area Risk Assessment						
Risk Identified	Source of Risk	Ability to Control	Consequences	Cumulative Affect	Control Measures	Level of Risk to achieving Rehabilitation Milestones
Unstable Landscape	Erosion from Stormwater	High	Area not suitable for future industry	Unable to sustain post mining land use	Erosion control measures continue to operate during post mining land use	Low
Unsafe to humans and wildlife	Buildings and equipment not maintained	High	Injury to humans and wildlife	Unable to sustain post mining land use	Future industry operated as per site management plans and applicable legislation	Low
Pollution of surrounding environmental values	Future industrial activities	High	Environmental harm	Unable to sustain post mining land use	Future industry operated as per site management plans and applicable legislation	Low

