Statement of Environmental Effects Silverton Sand Quarry modification two

greenedge environmental

Mindioomballa Creek, via Silverton

For Consolidated Mining and Civil Pty Ltd

C2201

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Executive Summary

The objective of this proposal is to secure a source of sand for the mining and construction industries.

A proposal for a modification (of up to 18months) to an existing consent (Licence 538988 was executed on 20 April 2017) is north-west of Broken Hill, and is located in the unincorporated area of western New South Wales, at Silverton. This licence expired on 22 April 2022. Following the expiration of the licence, significant rainfall has replenished sand within the quarry area, and quarry operations can begin again.

A licence is required for this to occur, to be issued by NSW Crown Lands following consent by NSW Department for Planning and Environment for the authorised continuation of extraction. The initial licence was consented to and approved by NSW Crown Lands, under delegation by the Western Lands Commissioner. The Minister for Planning is now the consent authority for this type of development.

All viable alternatives have been considered, including:

- trucking in sand from other areas
- opening up new sand quarries
- identifying other locations within the same property
- finding new sites in new locations for sand quarries.

All above options have been considered and costed. The preferred option is presented in this Statement of Environmental Effects (SEE). The option relevant to this proposal is favoured, as it will:

- utilise existing haulage tracks
- be undertaken in an area nearby an existing sand extraction area
- have minimal impact on the quarry environment and surrounding environment
- not cause impacts to threatened flora or fauna
- enable sand to be extracted and used where it is required.

No other existing or likely future uses or activities on or near the site would be disadvantaged by this proposal.

The proposed sand quarry modification has the following characteristics.

Quarry name	Size (Ha)	Potential resource (m^3)	Potential resource (T)	Comments
Silverton quarry modification	11.65	116,500	163,100	Modification to an expired quarry licence (licence RI538988).

The 11.65ha site will be quarried down to a maximum of 2m. A maximum of 20,000 m^3 (26,000t) will be quarried per annum.

Rehabilitation will occur prior to the end of the licence term as outlined in the Environmental Management and Rehabilitation Plan (EMRP) (Appendix I).

After undertaking database searches on threatened species and cultural heritage and a thorough onsite and offsite assessment, the following table summarises the potential impact. Overall, the impact level is expected to be low and is further reduced through the implementation of mitigation measures summarised in section 4.22.

Summary of potential impacts

Section	Potential Impact	Summary of Impacts
4.1	Natural resource use	Removal of sand
4.2	Hydrology and geomorphology	No impact through mitigation measures
4.3	Floodplain and riparian habitat	No impacts through mitigation measures
4.4	Erosion and sedimentation	Removal of sedimentation from creek bed
4.4	Surface water	No impact, maintain natural systems
4.6	Groundwater	No impact
4.7	Soils	Removal of soil
4.8	Matters of NES	No impacts, no referral required.
4.9	Flora	Will use existing disturbed areas so not impact to flora. No quarrying within the drip line of trees with the creek bed, no impact on threatened species
4.10	Fauna	No impact on threatened species or critical habitat
4.11	Weeds and pests	No impact, existing weeds to be controlled
4.12	Heritage	No impact
4.13	Air quality	Minimal impact through vehicle emissions, dust from quarrying activity
4.14	Socio and economic	No adverse impacts
4.15	Transport	Minor additional vehicle traffic, mitigation measures agreed with the Silverton Village Committee
4.16	Noise and vibration	Use of machinery to extract, load and cart sand
4.17	Bushfire hazards	No impacts
4.18	Chemical and hazardous Substance	None stored on site
4.19	Waste minimisation	No adverse impacts
4.20	Stormwater management	No off-site impacts

The cumulative environmental impacts from the proposed quarry will be minimal. As stated throughout section 4 of this SEE, each identified impact has been assessed for its potential threat to the environment. Mitigation measures will help minimise the impact the proposed quarry will have on the study area, on-site, as well as off-site impacts.

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APPENDICES

1.0 The proposal

1.1 Locality

The sand quarry modification is north-west of Broken Hill, and is located in the unincorporated area of Western New South Wales, at Silverton. The land is referred to as Mindioomballa Creek and is adjacent to a number of allotments along the creek (refer to Appendix A).

The project is adjacent to the following allotments:

- Lot 7361 DP1182573
- Lot 7327 DP1182573
- Lot 7321 DP1182573
- Lot 7341 DP1182573

1.2 Objective of the proposal

The objective of this proposal is to secure a source of sand for the mining and construction industries. The sand is proposed to be used as a construction material for the production of cement. There are limited alternative sources of sand in the area. This proposal aims to address the supply issue by making additional resources available.

Construction sand, soil, gravel or similar materials (which are not prescribed as minerals within the meaning of the *Mining Act 1992*) are defined as 'extractive materials' in the *Extractive Industries Dredging and other Extraction in Riparian Areas* (Department of Department of Planning and Infrastructure (September 1996).

The proposed sand quarry modification has the following characteristics (refer Table 1), with data gain by Geographic Information System analysis.

Table 1 Characteristics of the proposed quarry

Quarry name	Size (Ha)	Potential resource (m^3)	Potential resource (T)	Comments
Silverton quarry modification	11.65	116,500	163,100	Modification to an expired quarry licence (licence RI538988).

1.3 Characteristics of the resource

The proposed quarry area contains sand, which is ideal for the construction industry and the production of concrete. To be economically viable, the sand quarry needs to be located where there is suitable material available and within a short distance from its end use. An analysis of the material in similar creeks revealed the raw material contains 7% clay and fine silt, which after washing will be reduced to 3% clay and fine silt, which is ideal for the proposed use.

The potential resource and quality have been confirmed on site through historical quarrying upstream and through other existing quarries in the area (production and quality).

1.4 Description of extraction operations

The proposal for a modification (of up to 18months) to an existing consent (Licence 538988 was executed on 20 April 2017) is north-west of Broken Hill, and is located in the unincorporated area of western New South Wales, at Silverton. This licence expired on 22 April 2022. A modification is sought to recommence quarrying in the area of the expired licence. The modification is for a five (5) year licence to recommence quarrying. The land is referred to as Mindioomballa Creek and incorporates a number of allotments along the creek.

The operation will be undertaken in various phases as stated in Section 1.10. The phases referred to are the gradual stripping down of sand in approximately 400mm layers across the five phases.

During the extraction process, sand will be won and loaded by a front-end loader into a dump truck (Moxy), which will then transport the sand to an existing stockpile area (refer Appendix A). Sand will be stockpiled as required (no more than 1,500T for periods of up to three months). The sand will be progressively stripped in sections along the bed of the creek which may be up to 2.5m deep in places (quarrying will occur down to a maximum of 2m).

The sand will then be loaded on to road train transport and carted to Broken Hill for processing. After processing, the sand will be loaded directly onto trucks for delivery to customers.

1.5 Site layout plans

The site layout is presented in Appendix A. Coordinates for major bends of the proposed quarry are shown in Appendix A of the EMRP (Appendix I). All mapping coordinates are Geocentric Datum of Australia 1994 (GDA94), MGA Zone 54.

1.6 Site preparation

Site preparation for the proposed development will consist of:

- formally marking the proposed development area (including 'no go' zones) using flagging or bunting
- levelling the existing haulage track leading from the Silverton Road to the proposed site
- installing 'truck entering' signs and general safety signs at the quarry.

1.7 Infrastructure considerations

No permeant infrastructure will be required on site.

1.8 Potential impacts

The proposal has the potential to impact on the environment both directly and indirectly. Differing from other projects where there are construction and operation phases, this project will only include an operation phase. The direct impacts will be

minor and there will be only temporary impacts on the vegetation and fauna at stockpile areas and where there will be extraction of sand from the creek bed. These impacts are well known through previous projects in the area, and recovery on completion of the project will be high in this resilient landscape.

Indirect impacts include noise and potential raised dust during extraction campaigns. It is expected that extraction will take place in short bursts of up to a week duration as dictated by demand. As observed at other similar sites, there have been no long-term indirect impacts to fauna and flora.

1.9 Rehabilitation

Rehabilitation will occur on completion of the licence term. Rehabilitation will be undertaken as per the EMRP (Appendix I). The rehabilitation process has been discussed with the landholder, NSW Crown Lands and Department Planning and Environment (DPE).

It is expected that there will be no agricultural issues during or following quarrying activities as the proposal is in a small localised area. The landholder has been consulted with, and has had input into the rehabilitation plan.

1.10 Previous and existing operations

The only other quarry activity in the area is the existing operations (licence number RI538988) by Consolidated Mining and Civil Pty Ltd, which has now expired.

The Former Department of Industry – Lands and Water has approved an application for Consolidated Mining and Civil Pty Ltd to Request for Direct Negotiation with the department (DOC18/252648) (Appendix L).

1.11 Timeline

The proposed timeline is an estimation based on current requirements and the timeframe for removal of sand in each year of the project. It is expected that approximately 2,400T per month will be extracted.

1.12 Consideration of the alternatives and justification

All viable alternatives have been considered, including:

- trucking in sand from other areas
- using old sand quarries
- identifying other locations within the same watercourse and avoiding areas with higher environmental values
- finding new sites in new locations for sand quarries.

Many avoidance measures have been investigated as part of the planning for this project. It is necessary to strike a balance between finding a site with minimal distance to the processing point in Broken Hill and minimising impacts on the environment. Other areas with higher environmental values have been avoided.

All above options have been considered and costed. The preferred option is presented in this SEE. The option relevant to this proposal is favoured, as it:

- is close to the Silverton Road
- will utilise existing haul roads
- will have minimal impact on the quarry environment and surrounding environment
- will not cause impacts to threatened flora or fauna
- will not block fish passage
- is close enough to the processing plant to make it cost effective.

No other existing or likely future uses or activities on or near the site would be disadvantaged by this proposal. The proposal will not affect any world heritage properties, national heritage places, wetlands of international importance (Ramsar sites) or Commonwealth marine areas.

There are no other alternatives or products available to replace river sand as an additive to cement products. The substantial benefits its use provides to the local construction industry fully warrants the continued local supply of this essential product.

2.0 Planning context

2.1 Legislation and approvals required

The Department of Planning and Environment (DPE) is the consent authority to which this Statement of Environmental Effects (SEE) and other requested documentation will be lodged. The proposed location is in the unincorporated area of Western New South Wales. The NSW Crown Lands issue the extraction licence upon consent of the modification of consent.

2.1.1 Environmental Planning and Assessment Act

The overarching state legislation in relation to this activity is the *Environmental Planning and Assessment Act 1979 (EP&A Act* 1979*)* and Environmental Planning and Assessment Regulation 2021. Part 4 of the Act sets the direction for making decisions in relation to proposed developments, namely state environmental planning policies (SEPP) and local environmental plans (LEP).

This proposal is for a modification to an existing consent under Section 4.55 of the EP&A Act 1979, which states:

> (1A) Modifications involving minimal environmental impact - A consent authority may, on application being made by the applicant or any other person entitled to act on a consent granted by the consent authority and subject to and in accordance with the regulations, modify the consent if—
>
> (a) it is satisfied that the proposed modification is of minimal environmental impact, and
>
> (b) it is satisfied that the development to which the consent as modified relates is substantially the same development as the development for which the consent was originally granted and before that consent as originally granted was modified (if at all), and
>
> (c) it has notified the application in accordance with—
>
> (i) the regulations, if the regulations so require, or
>
> (ii) a development control plan, if the consent authority is a council that has made a development control plan that requires the notification or advertising of applications for modification of a development consent, and
>
> (d) it has considered any submissions made concerning the proposed modification within any period prescribed by the regulations or provided by the development control plan, as the case may be.
>
> Subsections (1), (2) and (5) do not apply to such a modification.

The proposed modification meets the above criteria. The Minister for Planning provides the consent to modification for the change of date for a five-year extension.

Under Part 4 of the *EP&A Act*, extractive industries may require development consent under a LEP or other planning instrument. Extractive industries that are located in sensitive locations, such as in or near water bodies; are greater than two hectares in area or annual/total extraction volumes are greater than regulated volumes are classed as ‘designated’ and an Environment Impact Statement (EIS) must be prepared.

In this case a SEE is required as under Schedule 3 of the Environmental Planning and Assessment Regulations 2021, states:
26 (4) This section does not apply to the following—
(a) an extractive industry facility on land to which State Environmental Planning Policy (Penrith Lakes Scheme) 1989 applies,
(b) an extractive industry facility on land in the Western Division, within the meaning of the Crown Land Management Act 2016.

2.1.2 Crown Land Management Act

Licensing of Crown land facilitates multiple uses of Crown land to support its economic, social, cultural and environmental value, while ensuring its appropriate use and management. The objectives of the act are to:

The objects of this Act are:

(a) to provide for the ownership, use and management of the Crown land of New South Wales, and

(b) to provide clarity concerning the law applicable to Crown land, and

(c) to require environmental, social, cultural heritage and economic considerations to be taken into account in decision-making about Crown land, and

(d) to provide for the consistent, efficient, fair and transparent management of Crown land for the benefit of the people of New South Wales, and

(e) to facilitate the use of Crown land by the Aboriginal people of New South Wales because of the spiritual, social, cultural and economic importance of land to Aboriginal people and, where appropriate, to enable the co-management of dedicated or reserved Crown land, and

(f) to provide for the management of Crown land having regard to the principles of Crown land management.

As outlined in 5.6 Licences of Crown Land under the Act:

(1) A licence may authorise the use or occupation of Crown land for the purposes that the Minister thinks fit.

(1A) Without limiting subsection (1), a licence may authorise the use or occupation of Crown land for the purposes of accessing water on, or transporting water from or across, the land (including the use or undertaking of any ancillary works).

(2) A licence may be granted for the term that the Minister thinks fit.

(3) Subject to section 5.25, the Minister may grant a licence for any purpose over Crown land under a lease under this Act (including for the purposes of a filming project), but only with the consent of the holder of the lease.

A licence for the use and occupation of Crown land will be applied for.

2.1.3 The Mining Act

The *Mining Act* 1992 does not apply to this proposal as the Mining Regulations (2016), Schedule 1, does not list sand as a mineral.

2.1.4 Protection of the Environment Operations Act

An EPA licence under the *Protection of the Environment Operations Act* 1997, is not required as the activity is not a scheduled activity as it will not quarry more than 30,000T per year.

2.1.5 Fisheries Management Act

The development complies with the requirements of the *Fisheries Management Act 1994*, including the aquatic habitat protection and threatened species conservation provisions in Parts 7 and 7A. No Part 2 or 7 Permit is required as the works are authorised under the *Crown Lands Management Act 2016* or by a relevant public authority (not a local government authority ie DPE).

2.1.6 Local Lands Services Act

The *Local Lands Services Act 2013* (LLS Act) identifies what is classed as native vegetation and regulates the clearing of native vegetation in rural areas. Clearing of native vegetation is defined under the Act as:

(a) cutting down, felling, uprooting, thinning or otherwise removing native vegetation,

(b) killing, destroying, poisoning, ringbarking or burning native vegetation.

A Native Vegetation Regulatory (NVR) Map has been developed and identifies rural land that is regulated under the new land management framework. The project has been designed so no impacts to native vegetation will occur.

Western Local Land Services also issues stock permits, in accordance with Part 6 of the Local Land Services Act 2013. None of the proposed work is on Travelling Stock Routes (TSR's) under the management of the LLS.

2.1.7 Biodiversity Conservation Act

The *Biodiversity Conservation Act 2016* (BC Act) has the purpose to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development. The Act contains 14 parts and 9 schedules, Part 2 establishes the offences and limited defences under the Act. It also sets out the framework for biodiversity conservation licences that provide authorisation to undertake activities that would otherwise be an offence. Part 3 identifies areas of outstanding biodiversity value and part 4 identifies threatened species and threatened ecological communities. Part 6 establishes the biodiversity offsets scheme, including provisions for establishing a method to assess biodiversity; the creation of, and dealings with, biodiversity credits, scheme for accreditation and the Biodiversity Conservation Fund. Part 7 sets out biodiversity assessment requirements for different activities, including state significant development or infrastructure and when a Minister's concurrence is required.

2.1.8 Biodiversity Conservation Regulation 2017

The Biodiversity Offsets Scheme threshold is a simple, objective, risk-based test used to determine when the biodiversity assessment method and the Biodiversity Offsets Scheme apply. The Biodiversity Offsets Scheme applies to:

- local development (assessed under Part 4 of the *Environmental Planning and Assessment Act 1979*) that triggers the Biodiversity Offsets Scheme threshold or is likely to significantly affect threatened species based on the test of significance in section 7.3 of the *Biodiversity Conservation Act 2016*
- state significant development and state significant infrastructure projects, unless the Secretary of the Department of Planning and Environment and the Chief Executive of OEH determine that the project is not likely to have a significant impact
- biodiversity certification proposals

- clearing of native vegetation in urban areas and areas zoned for environmental conservation that exceeds the Biodiversity Offsets Scheme threshold and does not require development consent
- clearing of native vegetation that requires approval by the Native Vegetation Panel under the *Local Land Services Act 2013*
- activities assessed and determined under Part 5 of the *Environmental Planning and Assessment Act 1979* (generally, proposals by government entities), if proponents choose to 'opt in' to the Scheme.

The Biodiversity Conservation Regulation 2017 sets out threshold levels for when the Biodiversity Offsets Scheme will be triggered. The threshold has two elements:

- whether the amount of native vegetation being cleared exceeds a threshold area set out below
- whether the impacts occur on an area mapped on the Biodiversity Values map published by the Minister for the Environment.

If clearing and other impacts exceeds either trigger, the Biodiversity Offset Scheme applies to the proposed development including biodiversity impacts prescribed by clause 6.1 of the Biodiversity Regulation 2017.

The area threshold applies to all proposed native vegetation clearing associated with a proposal, regardless of whether this clearing is across multiple lots. The minimum lot size in the locality is 40ha to less than 1,000ha, meaning the threshold for vegetation clearing is 1ha or more to commence the BOS.

Minimum lot size associated with the property	**Threshold for clearing, above which the BAM and offsets scheme apply**
Less than 1 ha	0.25 ha or more
1 ha to less than 40 ha	0.5 ha or more
40 ha to less than 1000 ha	**1 ha or more**
1000 ha or more	2 ha or more

The proposed development area is located on land mapped under the biodiversity values (BV) map. If development within areas on the BV Map does not involve clearing native vegetation (including groundcover, trees and understorey plants) or a prescribed impact (as set out in clause 6.1 of the Biodiversity Conservation Regulation 2017) within the mapped area, the BOS is not applied based on the BV Map.

However, the proponent must also consider other criteria for the BOS:

- whether the area of native vegetation clearing in areas not on the BV Map exceeds the clearing area thresholds as specified in clause 7.2 of the Biodiversity Conservation Regulation 2017
- whether the proposed development or activity is likely to significantly affect threatened species, or ecological communities or their habitats based on the test of significance in section 7.3 of the BC Act.

Division 6.1 of the Biodiversity Conservation Regulations lists the following additional biodiversity impacts to which scheme applies:

(1) The impacts on biodiversity values of the following actions are prescribed (subject to subclause (2)) as biodiversity impacts to be assessed under the biodiversity offsets scheme:

(a) the impacts of development on the following habitat of threatened species or ecological communities:

(i) karst, caves, crevices, cliffs and other geological features of significance

(ii) rocks

(iii) human made structures

(iv) non-native vegetation

(b) the impacts of development on the connectivity of different areas of habitat of threatened species that facilitates the movement of those species across their range,

(c) the impacts of development on movement of threatened species that maintains their lifecycle

(d) the impacts of development on water quality, water bodies and hydrological processes that sustain threatened species and threatened ecological communities (including from subsidence or upsidence resulting from underground mining or other development)

(e) the impacts of wind turbine strike on protected animals

(f) the impacts of vehicle strike on threatened species of animals or on animals that are part of a threatened ecological community.

(2) The additional biodiversity impacts prescribed by this clause:

(a) are prescribed for the purposes of assessment and biodiversity assessment reports under the Act, but are not additional biodiversity impacts for the purposes of calculating the number and class of biodiversity credits that are required under a biodiversity assessment report to be retired to offset the residual impact on biodiversity values of proposed development, proposed clearing of native vegetation or proposed biodiversity certification of land

(b) may be taken into account in the determination of the biodiversity credits required to be retired (or other conservation measures required to be taken) under a planning approval or vegetation clearing approval or under a biodiversity certification of land.

Based on additional species assessment the BOS is not triggered as no clearing of native vegetation will occur with the area mapped under the biodiversity values map. The project will also not impact any of the prescribed impacts as outlined in clause 6.1 of the Biodiversity Conservation Regulations 2017.

2.1.9 National Parks and Wildlife Act

The *National Parks and Wildlife Act 1974* (NPW Act), administered by the Office of Environment and Heritage (OEH), is the primary legislation for the protection of some aspects of Aboriginal cultural heritage in New South Wales.

Part 6 of the NPW Act provides specific protection for Aboriginal objects and declared Aboriginal places by establishing offences of harm. A due diligence process has been undertaken as per the Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW (DECCW, 2010).

2.1.10 Water Management Act and regulations

The *Water Management Act* 2000 (WM Act) is administered by the DPE -Water. The object of the Water Management Act is the sustainable and integrated management of the state's water for the benefit of both present and future generations. This act will not be triggered, as no water will be required for the proposed works. The works will occur within 40m of a waterway.

The objectives of the *Water Management Act (2000)* are to provide for the sustainable and integrated management of the water sources of NSW for the benefit of both present and future generations. One key aim is to integrate the management of water sources with the management of other aspects of the environment, including the land, its soil, its native vegetation and its native fauna.

The proposed project is not relevant to this Act as the proposed works will not require water for processing on site. The Water Management (General) Regulation 2011 sets out a number of exemptions in relation to controlled activities. Under Part 3, Division 2, Subdivision 4 and Schedule 5, Part 2 of the regulations, a controlled activity approval is not required if the controlled activity is to be undertaken in accordance with any mining, Crown lands or western lands lease, licence, permit.

The project will be undertaken in accordance with the Crown licence.

2.1.11 Environmental Protection and Biodiversity Conservation Act

Under the federally administered *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act), actions which are likely to have a significant impact on matters of National Environmental Significance (NSE) require approval from the Commonwealth Minister for Environment and Heritage. Matters of NSE include:

- World Heritage Areas
- RAMSAR Wetlands of International Importance
- nationally listed threatened species and ecological communities
- listed migratory species
- items of national heritage significance
- nuclear actions
- listed threatened species and ecological communities
- the Great Barrier Reef Marine Park
- a water resource, in relation to coal seam gas development and large coal mining development.

Further assessments undertaken as part of this SEE revealed that no matters of national significance will be impacted upon; therefore, no referral under the EPBC Act is required.

2.2 Relevant policies

2.2.1 State Environmental Planning Policy (State and Regional Development) 2011

The aims of this Policy are as follows:

(a) to identify development that is State significant development,

(b) to identify development that is State significant infrastructure and critical State significant infrastructure,

(c) to identify development that is regionally significant development

Subject to section 74 (1) of the Act, in the event of an inconsistency between this Policy and another environmental planning instrument, whether made before or after the commencement of this Policy, this Policy prevails to the extent of the inconsistency.

Schedule 1 (Part 7- Extractive Industries) of the policy lists the following as state significant development:

(1) Development for the purpose of extractive industry that:

(a) extracts more than 500,000 tonnes of extractive materials per year, or

(b) extracts from a total resource (the subject of the development application) of more than 5 million tonnes, or

(c) extracts from an environmentally sensitive area of State significance.

(2) Subclause (1) (c) does not apply to extraction:

(a) by a public authority in maintenance dredging of a tidal waterway, or

(b) in maintenance dredging of oyster lease areas, or adjacent areas, in Wallis Lake.

(3) Development for the purpose of extractive industry related works (including processing plants, water management systems, or facilities for storage, loading or transporting any construction material or waste material) that:

(a) is ancillary to or an modification of another State significant development project, or

(b) has a capital investment value of more than $30 million.

(4) This clause does not apply to development for the purpose of extractive industry or extractive industry related works that is part of a single proposed development if any other part of the development is State significant infrastructure.

(5) This clause does not apply to development specified in Schedule 1 to State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007.

The project does not exceed of impact any of the above, so is not considered State Significant Development.

Schedule 7 - Particular designated development

Development for the purposes of:

(a) extractive industries, which meet the requirements for designated development under clause 26 of Schedule 3 to the Environmental Planning and Assessment Regulation 2021.

2.2.2 State Environmental Planning Policy Resources and Energy 2021 (Resources and Energy SEPP)

The State Environmental Planning Policy Resources and Energy 2021 (Resources and Energy SEPP) consolidates and repeals the provisions of the following 2 SEPPs:

1. SEPP (Mining, Petroleum Production and Extractive Industries) 2007 (Mining SEPP)

2. Sydney Regional Environmental Plan No. 9 – Extractive Industries (No 2 – 1995) (Extractive Industries SREP).

The aims of this Chapter 2 are, in recognition of the importance to New South Wales of mining, petroleum production and extractive industries—

(a) to provide for the proper management and development of mineral, petroleum and extractive material resources for the purpose of promoting the social and economic welfare of the State, and

(b) to facilitate the orderly and economic use and development of land containing mineral, petroleum and extractive material resources, and

(c) to promote the development of significant mineral resources, and

(d) to establish appropriate planning controls to encourage ecologically sustainable development through the environmental assessment, and sustainable management, of development of mineral, petroleum and extractive material resources, and

(e) to establish a gateway assessment process for certain mining and petroleum (oil and gas) development—

(i) to recognise the importance of agricultural resources, and

(ii) to ensure protection of strategic agricultural land and water resources, and

(iii) to ensure a balanced use of land by potentially competing industries, and

(iv) to provide for the sustainable growth of mining, petroleum and agricultural industries.

The project is not at variance to the objectives and aims of the SEPP.

2.2.3 SEPP Biodiversity and Conservation (2021)

This SEPP contains:

- planning rules and controls for the clearing of native vegetation in NSW on land zoned for urban and environmental purposes that is not linked to a development application
- the land use planning and assessment framework for koala habitat
- provisions which establish a consistent and co-ordinated approach to environmental planning and assessment along the River Murray
- provisions seeking to protect and preserve bushland within public open space zones and reservations
- provisions which aim to prohibit canal estate development
- provisions to support the water quality objectives for the Sydney drinking water catchment
- provisions to protect the environment of the Hawkesbury-Nepean River system
- provisions to manage and improve environmental outcomes for Sydney Harbour and its tributaries
- provisions to manage and promote integrated catchment management policies along the Georges River and its tributaries

- provisions which seek to protect, conserve and manage the World Heritage listed Willandra Lakes property.

Chapters 2 (Vegetation in non-rural areas), and 4 (Koala habitat protection 2021) are **There are no relevant triggers under the SEPP applicable to this project.**

2.3 Local environmental plans

The proposed quarry is located within the unincorporated area of north-west New South Wales and, therefore, is not under any local environmental plan (LEP).

2.4 Relevant guidelines

A number of guidelines were consulted during the preparation of this SEE including:

- EIS Guidelines Extractive Industries - Dredging and other Extraction in Riparian Areas – (Department of Urban Affairs and Planning)
- An Environmental Management and Rehabilitation Plan (Department of Conservation and Land Management)
- Guidelines for developments adjoining land and water managed by the Department of Environment, Climate Change and Water (DECC, 2010)
- Agricultural Issues for Extractive Industries Development fact sheet (Department of Primary Industries)
- Why do fish need to cross the road? Fish Passage Requirements for Waterway Crossings (NSW Fisheries).

2.5 Zoning

A number of allotments occur adjacent to the proposal area. The proposed area is listed Common under the *Crown Lands Management Act 2016*, with the land use on the common being grazing. This Act provides for the administration and management of Crown lands in the state of New South Wales.

Other tenures include travelling stock reserve, which is Crown land managed under the *Local Lands Services Act 2013*, Silverton Common and Reserve 230089 for Urban Services.

2.6 Determining authority

The determining authority is the DPE, under delegated authority of the Minister for Planning.

2.7 Stakeholder consultation

Relevant stakeholders that have been consulted on the proposal to conduct the quarrying activity include (refer to Appendices J and K):

- The Former NSW Planning, Industry and Environment – Planning and Crown Lands
- The Former NSW Department of Industry - Natural Resources Access Regulator (NRAR)

- NSW Environment Protection Authority
- NSW Transport – Roads and Maritime Services
- Essential Water
- Broken Hill Local Aboriginal Lands Council Elders
- NSW Aboriginal Lands Council
- Neighbouring landholders
- Silverton Village Committee
- Silverton Commons Trust

3.0 Location

3.1 Site description

The proposed sand quarry is located in the bed of the Mindioomballa Creek, which runs through land that is used for grazing under Western Lands Lease (WLL), travelling stock reserve and Silverton Common.

Further details on the site assessment are provided in section 4.9. The vegetation habitat type along the creek channel is Plant Community Type (PCT) 41 River Red Gum open woodland of intermittent watercourses mainly of the arid climate zone vegetation community.

3.2 Land systems and geology

The land system is known as Nine Mile of the Downs Country. The land system is made up of lower slopes and outwash areas of the Barrier Range which total an area of approximately 1,575 square kilometres. The creeks of the downs and plains are classified as meandering tree-lined creeks, usually dry, with vegetation dominated with River Red Gum (*Eucalyptus camaldulensis*), Acacias and grasses, with soils consisting of sand and pebbles (Cowling, 1995).

The geology of the Barrier Range is known as the Willyama complex, which is characterised by sediments laid down 1800 million years ago. These sediments have subsequently been dominated by complex folding, heat and pressure and more recently erosion (Cowling, 1995).

The proposed site lies within the Murray Basin, one of the four recognised geological provinces of New South Wales. The Murray Basin is almost completely covered by quaternary material. The western part of the basin in New South Wales is characterised by gently undulating dunes and plains with soils of aeolian (windblown) deposits (Cunningham *et al.* 1981). Many of the rocks and minerals found in the region are of considerable interest and economic importance, and geology exerts strong controls on the landscape.

The proposed quarry has no aspect and a slope is not greater than 5% across its length. The elevation across the site is approximately 241m Australian Height Datum (AHD).

3.3 Hydrology and geomorphology

The Mindioomballa Creek transports gravel and sand from the hills of the surrounding range and deposits them on the flatter ground as the creek water flow decreases in velocity.

Streams in the region have cut steep-sided gorges containing sheltered waterholes through the ranges. Beyond the foot slopes the streams expand as alluvial fans, distributing sediment into sandy flood outs and clay playas (DECC 2008).

Rock-weathering processes have been operating continuously in the region for more than 90 million years and a deep weathered mantle has formed across most of the landscape. Many slopes are mantled by gibber (rounded, silica-rich boulders) derived from the breakdown of silicified sediments (silcrete duricrusts) (DECC 2008).

There are no stream gauges located in Mindioomballa Creek and no historic data on length of flow, water quality or quantity. The creek flows on average a few times per year and generally flows subside within 24 hours.

The creek has always accumulated sand in the section relevant to this proposal. The course of the creek has continued to evolve, as vegetation (River Red Gums) in the bed of the creek assist in accumulating sand, therefore, varying flows and alignment of the creek. The bed of the creek consists of 95% sand with some gravel of varying size - from 2cm to 10cm, fallen tree limbs, washout sections, eroded banks and vegetation.

3.4 Soil

Soils in the depositional basin are deep red sands with variable sandy profiles under dunes, and gradational profiles in the sandplains. Most soils have a moderate to high level of calcium carbonate in the profile. Heavy cracking clays in flood outs and on lake beds are often un-vegetated because they contain high levels of gypsum and sometimes salt (DECC 2008).

The soil in the proposed licence area consists of a variable sandy and silty soil containing between approximately 7% clay and fine silt. Once washed (to a clay and fine silt content of 3%) the quality of sand is excellent for its proposed use. Due to the chemical makeup of sand (clay content and chemical structure) its grains are highly unstable and transportable via alluvial (water) and aeolian (wind).

Within the Mindioomballa Creek, the main process occurring is alluvial transportation of sand. The soil to be quarried is not known to be contaminated and not in a high-risk category to become an acid sulphate soil, as it does not undergo extended periods of inundation followed by periods of drying.

The soil profile consists of variable horizons of sand and silt 10–75mm thick. The depth to the clay creek base is variable and up to 2.5m deep. Top soil will not need to be managed differently to sub surface material.

3.5 Climate

The annual average minimum temperature is 11.6 deg C, monthly values varying from 4.9 deg C during July to 19 deg C during January. The annual average maximum temperature is 24.4 deg C - monthly values vary from 15.4 deg C in July to 33.2 deg C in January (Bureau of Meteorology, 2013).

The annual rainfall total of 242mm is fairly evenly distributed throughout the year, but is more concentrated in the winter and spring months. On average, the month of October is the year's wettest, receiving 26.3 mm (see Table 2). By contrast, the year's driest months, February and June, receive only 15 mm and 15.4 mm respectively (Bureau of Meteorology, 2013).

Table 2 Broken Hill Airport Rainfall Data

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean monthly rainfall (mm)	26	15	18.3	20.3	20.7	15.4	18.4	18.3	21.8	26.3	20	21.8
Highest monthly rainfall (mm)	165	89.0	233.6	216.3	84.2	77.2	61.6	74.5	136	109.1	129.0	106.1
Lowest monthly rainfall (mm)	0	0	0	0	0	0	0	0	0	0	0	0
Highest daily rain (mm)	75.2	69	129	85.6	53.6	58.4	29	44.5	78.4	48	57	49.8

4.0 Environmental impacts and management

Consolidated Mining and Civil (CMC) Pty Ltd are to extract the sand. CMC has been operating from various locations around New South Wales for almost 100 years. In that time the company has had minimal impact on the environment by undertaking various management activities. The company is also familiar with the requirements for compliance with relevant legislation and for ensuring implementation of the environmental safeguards deemed necessary to avoid and minimise impacts.

4.1 Natural resource use

The natural resource to be won is high quality construction sand. The adjacent quarry as shown that with further processing (washing in Broken Hill) can provide high quality cement sand to the mining and construction industry.

The quarrying and transporting of the sand will utilise existing tracks and impacts on vegetation will be minimised where possible.

4.1.1 Mitigation measures

- quarrying site to be marked out using permanent markers
- supervision of earthworks will be undertaken by a suitably qualified/experienced mines manager as per company policy
- staff trained in best practice management in all areas of sand quarrying
- no refuelling within 40m of the waterway
- staff should be trained in firefighting techniques in the event of a bushfire, or fire on plant or equipment
- compliance with the Environmental Management and Rehabilitation Plan (EM&R Plan).

4.2 Hydrology and geomorphology

Similar sand extraction in this and nearby creeks has been undertaken under licence by Consolidated Mining and Civil for many years. There will be no impact on surface flows to the creek as a result of this project. The Natural Resources Access Regulator (previously NSW Office of Water) staff have visited the operators' other licensed extraction operations nearby and are satisfied that there is no long-term impact to the environment.

The morphology of a stream channel is the result of the processes of erosion and deposition operating both locally to produce scour and fill, and more generally, within the catchment to define longer-term channel evolution (Sear, 1996).
The sustainability of a particular channel form can be defined (in basic terms) in relation to the balance between sediment supply, transport and storage:

- if sediment supply from upstream catchment > sediment transport through the reach = sediment storage and channel aggradation
- if sediment supply from upstream catchment < sediment transport through the reach = sediment scour and channel degradation.

The site assessment indicates the supply of sediment to the reach proposed for quarrying is located in an area that exceeds the transport capacity, leading to significant sediment deposition or 'sand slug.' This sand slug has led to floodwater leaving the Mindioomballa Creek and traversing the Silverton Road to the north.

Various aerial views of the subject reach are presented in Figures 1 to 1.4. The aerial images provide an overview of the geomorphic form of the Mindioomballa Creek and its tributaries and allow geomorphic processes to be inferred.

The assessment revealed the following features:

- channel banks are relatively low with shallow bank angle
- there is some mature vegetation on the channel banks
- no significant vegetation, other than River Red Gums are present in the channel
- there is a difference in composition between bed and bank sediment (identified on basis of colour), indicating in channel sediment has been transported from elsewhere to this location
- the sediment deposit appears to be flat and relatively featureless, with minimal (if any) bed diversity.

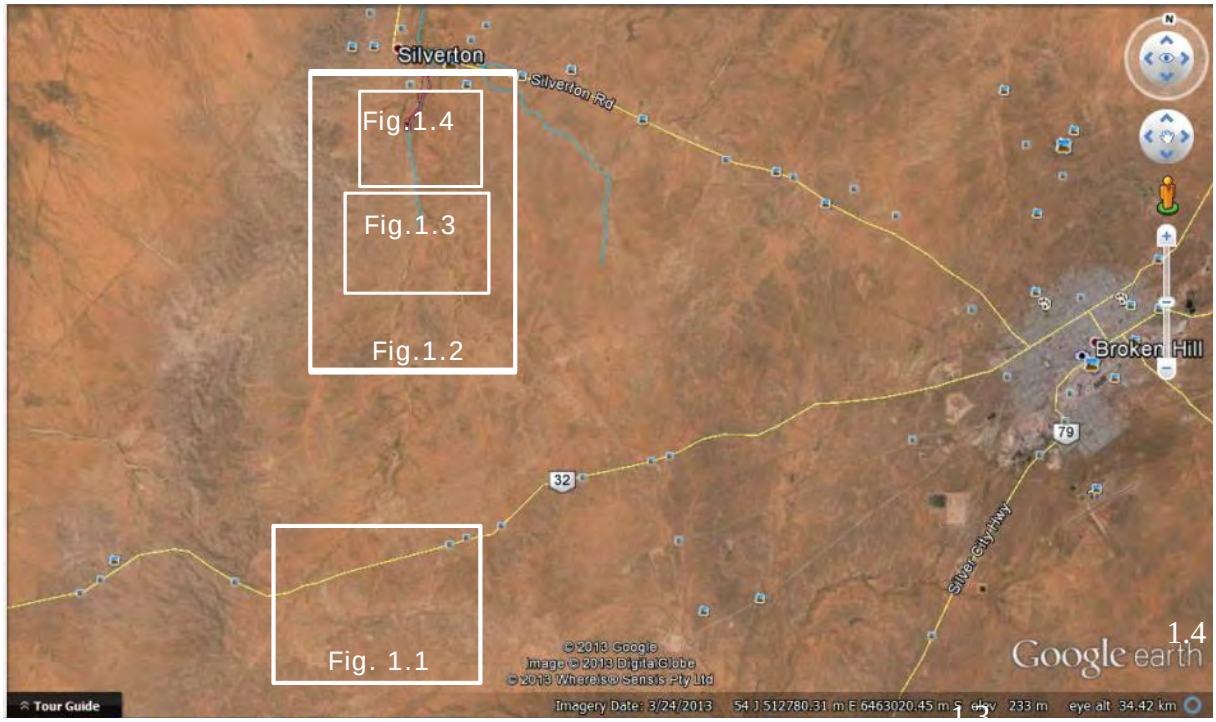

Figure 1 Geomorphic processes at Mindioomballa Creek Catchment

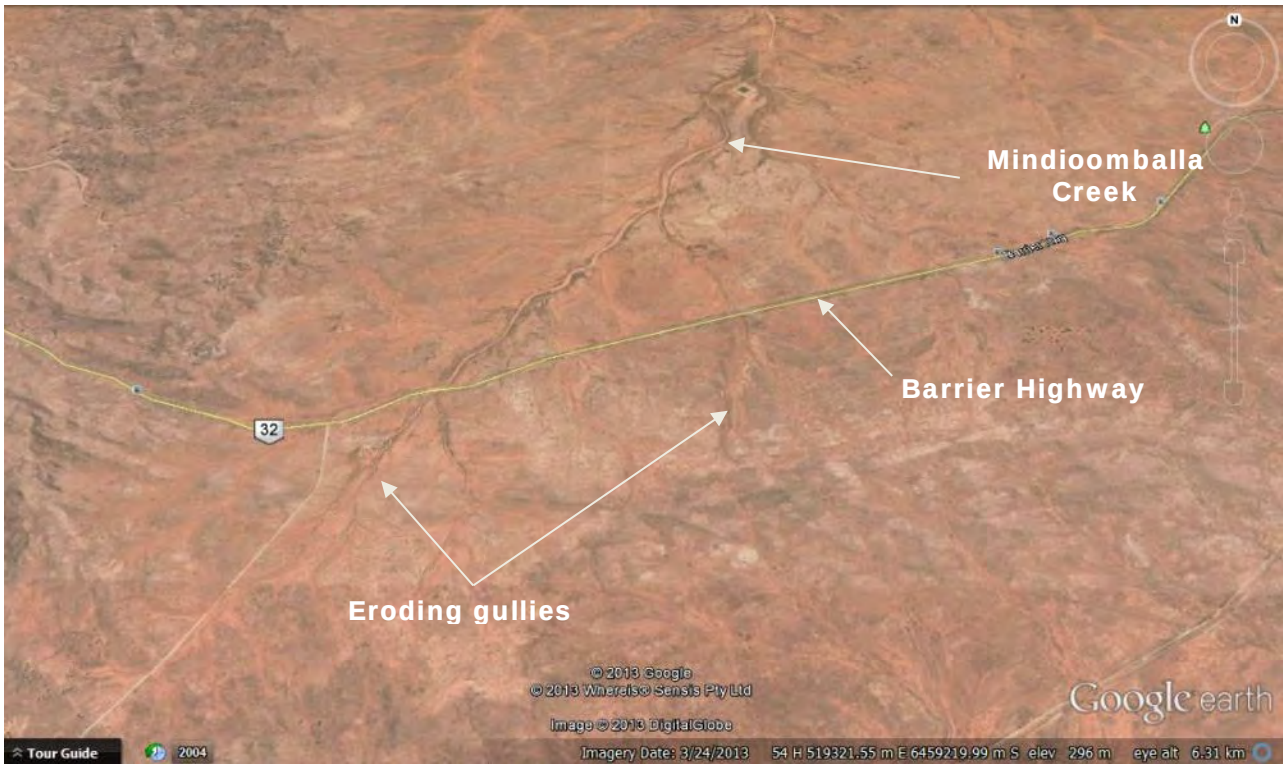

Figure 1.1 Gullies in headwaters of Mindioomballa Creek catchment

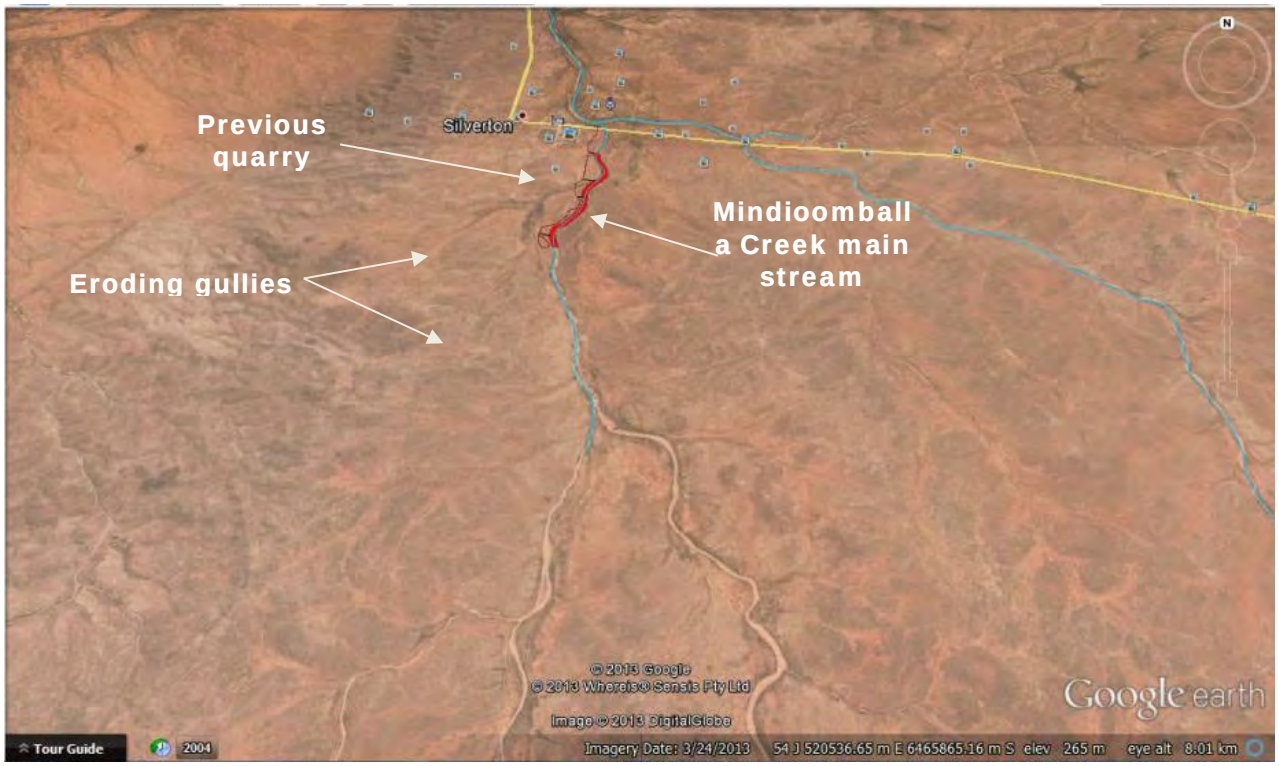

Figure 1.2 Eroding gullies discharging directly to Mindioomballa Creek

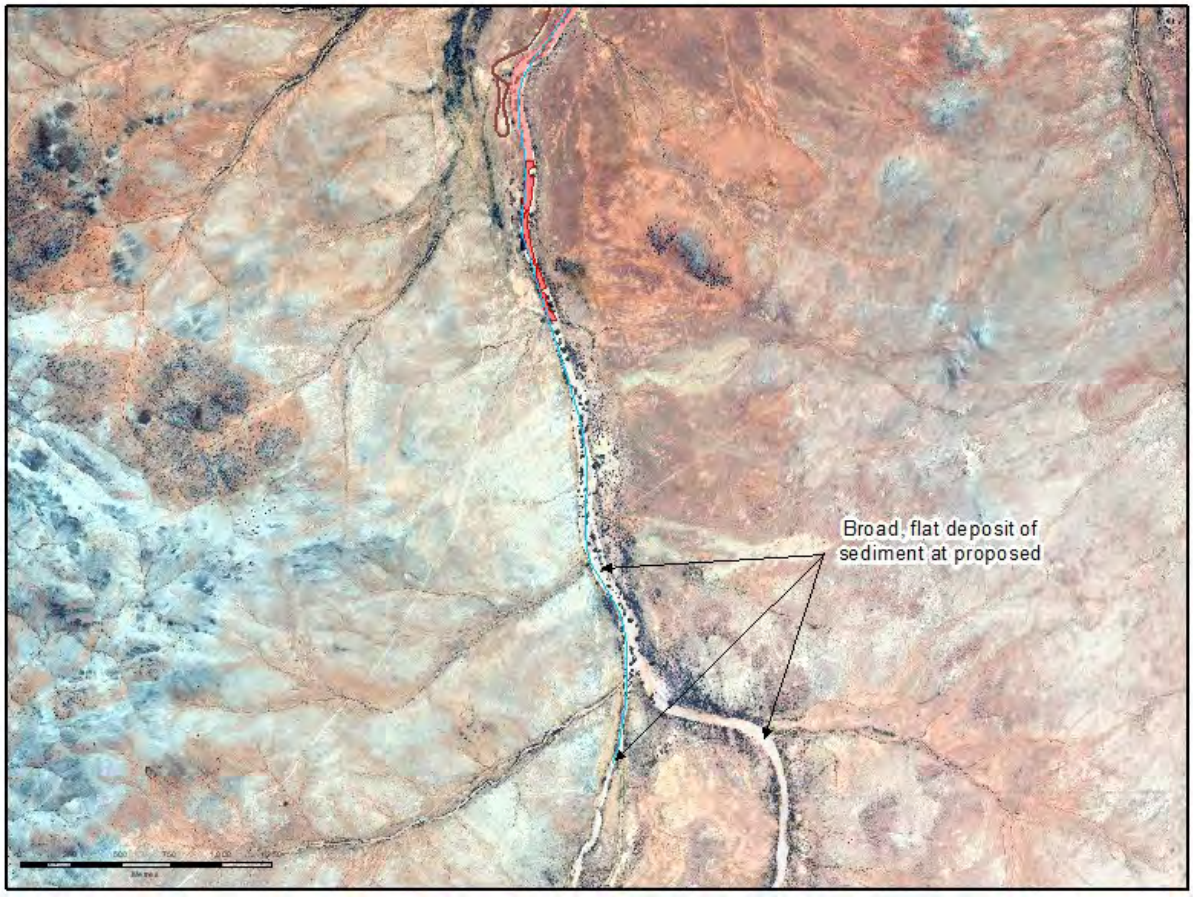

Figure 1.3 Aerial image of reach upstream of proposed quarry site

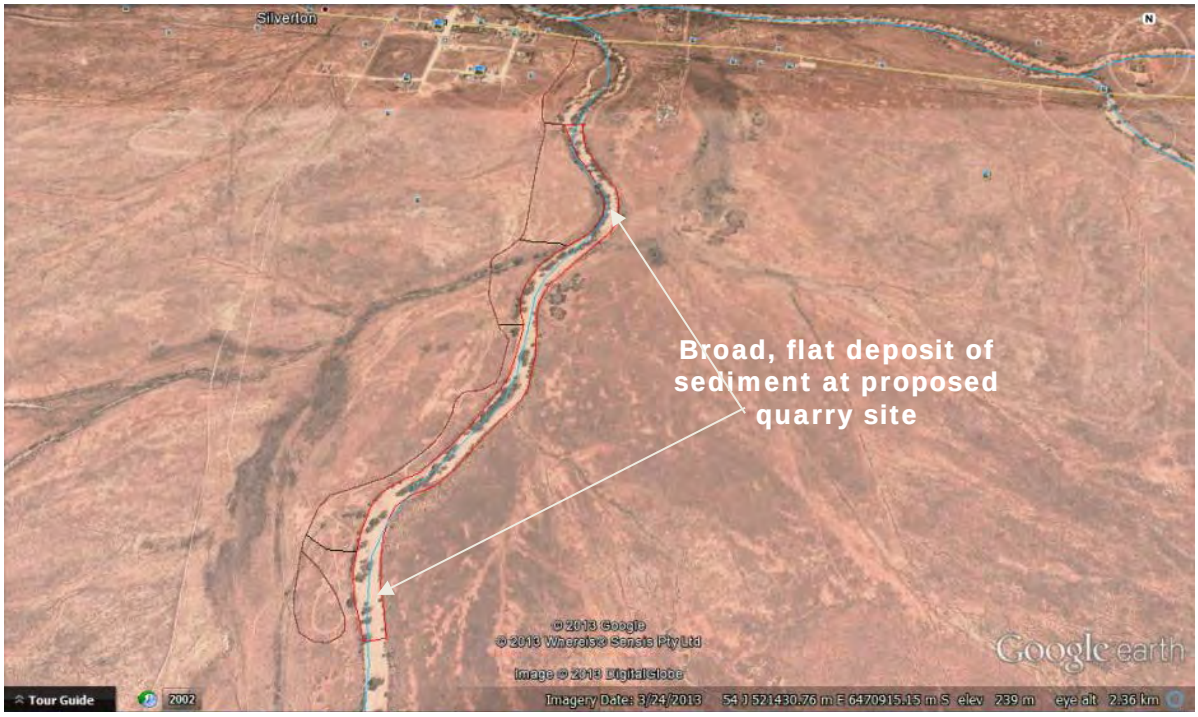

Figure 1.4 Aerial image of proposed quarry site

A range of geomorphic impacts from the in-channel sediment quarrying have been documented at the site, including:

Bank collapse

Bank collapse due to increased bank height following the sand removal has been observed in a number of systems (e.g, Rutherford and Budahazy 1996). Bank collapse can occur through mass failure processes such as cantilever failure, rotational slumping and plane failure. These processes are driven by an imbalance between gravitational forces exerted on the bank and strength of the bank material.

The removal of sand from an instream deposit, below the level that would occur without aggradation processes (i.e the supply of sediment is greater than the amount of material that the system is able to transport), can lead to increases in the height of the channel banks and consequently the forces driving mass failure processes. The instream deposit also forms a restoring pressure on the bank that resists the pressures from soil, hydraulic and other loads. When this restoring material is removed, the bank is exposed and relies solely on its material strength, reinforced by the binding effect of vegetation, to remain intact. This can be exacerbated by machinery or vehicle loading on the bank during and following the extraction activity.

A slow rate of extraction will allow the bank to batter back and reach a new stable bank angle. Quarrying the area in phases to approximately 400mm will minimise the potential for bank collapse. Not quarrying close to the bank and maintaining the bank batter will, as with the existing quarry will minimise bank scour. Minimising and utilising existing creek access tracks will also minimise impacts on vegetation.

Bank scour and exposure or raw (unvegetated) banks

Riparian vegetation is critical to bank stability in most fluvial systems. It is unknown exactly how important riparian vegetation is in maintaining stable banks in Mindioomballa Creek, but previous studies (e.g. Rutherford and Budahazy 1996) found that rapid extraction of sand in the Glenelg River catchment in south-eastern Victoria exposed raw banks before vegetation was able to become established, leading to rapid erosion of sandy benches. The key issue was identified as being the rate at which the sand is removed (Rutherford and Budahazy 1996).

The risk of bank scour of this nature occurring as a result of exposure of raw channel material in Mindioomballa Creek is dependent on the relative resistance of bank sediments to being eroded and the role of vegetation in controlling bank erosion. Riparian vegetation is present along the majority of the bank, which will protect the bank from bank scour.

Upstream and downstream bed erosion

In most streams, the major concern with sediment extraction is upstream and downstream bed degradation driven by the headward progression of a knickpoint from the extraction hole, as the sediment transport rate into the hole increases.

Deposition of sediment in the hole will lead to a reduction in supply to the reach downstream of the hole and clearwater erosion downstream of the bed (Pickup 1977; Galay 1983). However, much of the post-extraction erosion observed in Australian

streams is in 'natural' systems that do not have excessive instream sediment deposition; (Rutherford and Budahazy 1996) concluded that extraction of sediment from systems with sand slugs is likely to lead to erosion of the deposited material but not the underlying clay substrate unless there has been a significant change in the hydrologic regime in the catchment.

It is assumed that the hydrologic regime in Mindioomballa Creek has not been altered by activities such as vegetation clearance, gullying or regulation (other than since European settlement), but provided it is comparable to the regime that existed before large-scale sediment deposition occurred, it is unlikely that large-scale bed erosion will occur.

4.2.1 Mitigation measures

- quarrying site to be marked using permanent markers indicating 'no go zones'
- undertake a slow extraction rate across the site (400mm), rather than quarry each area down to the clay bed in one action
- quarrying to cease 1m from the bank, and a 1:3 batter developed
- supervision of earthworks will be undertaken by a suitably qualified/experienced mines manager as per company policies
- staff trained in best practice management in all areas of sand quarrying
- maintain existing creek access and, where required, in consultation with local fisheries officers, install crushed rock
- compliance with the Environmental Management and Rehabilitation Plan (EM&R Plan).

4.3 Floodplain and riparian habitat

As the proposal is to quarry sand from the bed of Mindioomballa Creek, the floodplain is not expected to be impacted upon directly. The indirect impacts will occur in the existing stockpiling area and in relation to the transportation of sand across the floodplain. Silt traps will be installed between the creek and the sand stockpile to minimise sand smothering floodplain vegetation.

The existing haul track will be utilised to transport the sand between the quarry area and the depot for processing. Creek sand will be spread on the track to inhibit the clay soil turning to a fine dust with increased traffic. All impacts are expected to be low. Impacts on the riparian habitat will be minimised by only quarrying down to the bed of the creek and not quarrying within the drip line of the vegetation. Depth of quarrying will vary, and will generally be down to the underlying clay base. By using a minimal number of access points to the creek, impacts of riparian habitat will be further reduced.

4.3.1 Mitigation measures

- quarrying site to be marked using permanent markers
- supervision of earthworks will be undertaken by a suitably qualified/experienced mines manager as per company policy
- staff trained in best practice management in all areas of sand quarrying
- no quarrying to occur within the drip line of trees
- riparian vegetation not to be disturbed
- maintenance of creek sand on access tracks
- no refuelling within 40m of the waterway
- compliance with the Environmental Management and Rehabilitation Plan (EM & R Plan).

4.4 Erosion and sedimentation

The proposed location is suitable as the processes of erosion and sedimentation have already occurred. Weathering and erosion has occurred in the higher rocky ranges and these sediments have been deposited in the proposed area.

The proposal has the potential to cause erosion of the creek bank and of the access track on the floodplain. The creek bank contains areas where natural erosion has occurred but the majority of the bank is in a stable, vegetated state (refer to Appendix E). To minimise erosion of the creek bank, vegetation will not be disturbed during quarrying activities and only one access point will be used to enter/exit the quarry area. The stockpile areas will have a silt trap installed to minimise the risk of quarried sand being washed or blown back into the Mindioomballa Creek.

The existing access tracks will be maintained by spreading sand over the clay soil to protect the clay soils from turning to dust.

4.4.1 Mitigation measures

- quarrying site to be marked using permanent markers indicating ‘no go zones’
- temporary sediment control structures must be maintained at all times during extraction and checked, repaired, replaced or cleaned out after any significant rainfall event
- maintenance of creek sand on access tracks
- compliance with the Environmental Management and Rehabilitation Plan (EM & R Plan).

4.5 Surface water

The proposed quarry will be located in the intermittent Mindioomballa Creek. Work will not occur when there is water in the creek and at no time will flow be impeded in the creek. There will be no alterations to the natural flow regimes through this project as shown through similar quarrying of other nearby creeks in the region. Water only flows after approximately 40mm of rainfall across the catchment. The creek historically only flows a few times each year and the water transfers downstream within 24 hours.
As Mindioomballa Creek is not a managed waterway, there are no water management plans in place. No monitoring of water quality or quantity occurs due to the low frequency of flow events.

There is no data on the quality and quantity of the surface water in the Mindioomballa Creek but it is expected to vary as it does in any waterway.

The nearest fresh water is located at Umberumberka Dam, 10km north and Stephens Reservoir, approximately 31km east from the proposed development site.

The proposed quarry area will not require any water at the extraction site. Water will only be used for processing in Broken Hill.

The proposal will not change the flooding regime in the creek. Flooding is dependent on heavy rainfall in the upper catchment area flowing down the creek. The run off patterns will not change as the floodplain area will not be impacted upon, with the exception of the stockpile area.

The proposal will not have any impact on Ramsar listed wetlands.

No hazardous materials will be stored on-site and no sewerage facilities will be established on-site that could impact on surface water flows should they occur.

Most plant and equipment will be re-fuelled either at the proponent's depot, off-site, or at another designated location. Contingency plans would be developed to deal with any spills that may occur. Machinery will be checked daily to ensure there are no leakages of oil, fuel or other liquids.

4.5.1 Mitigation measures

- access tracks will have adequate cut-off drains
- fish passage will not be blocked at any time
- the licence holder will contact the EPA on 131 555 in the event of any chemical or hydrocarbon spills that may impact on the Mindioomballa Creek
- daily machinery checks will be made for leaks of oil, fuel or other liquids
- contingency plans will be in place to deal with spills
- no refuelling within 40m of the waterway
- all vehicles to be serviced off-site
- staff inducted on refuelling procedures
- the extractive industry licence holder will ensure that no machinery, fuels, oils, chemicals, hazardous substances or other extraction equipment will be stored within the stockpile area when not in use
- compliance with the Environmental Management and Rehabilitation Plan (EM&R Plan).

4.6 Groundwater

Groundwater resources within the area are generally of varying quality (refer to Table 3) and variable yield (mostly low) (Department of Environment, Water and Heritage website 2009).

No known karst systems occur in the proposed quarry area.

The groundwater in this region is used for stock watering, where the quality allows. Due to the shallow depth of the quarry, the extraction process will not interfere with groundwater.

A search of the New South Wales Groundwater Database identified eight wells within a 10km radius (NSW Natural Resources Atlas). The nearest well lies approximately 2,000m from the proposed site.

An integrity assessment of the data provided for these wells highlighted concerns about the quality of data on all wells. Very little data could be located in relation to depth to water table, screening details or water quality. Table 3 provides an overview of the wells.

Table 3 Groundwater well data

Number	Date constructed	Depth (m)	Standing water level (m)	Salinity (EC)
GW004297	Unknown	Unknown	Not available	Unknown
GW009790	1/01/1961	29.9	Not available	Good
GW010135	1/01/1961	22.9	Not available	Good
GW010244	1/01/1961	15.2	Not available	Good
GW060068	1/01/1982	26	Not available	Unknown
GW060069	1/01/1984	19	Not available	Unknown
GW500290	02/12/1899	10	5	5120
GW009783	1/1/1961	21	Not available	Salty

The nearest groundwater wells are between 2,000m and 2,400m from the proposed sand quarry. These wells have been drilled to 19m (GW060069) and 26m (GW060068). The standing water level or depth below surface is not available. Based on the depth of the wells drilled in the area, it is expected that groundwater is at least 10m below ground surface and the quality variable. The elevation of these wells is not known.

There will be no impacts on groundwater as the depth of quarrying will be to a maximum of 2.0m, and this has been show through previous quarrying.

The groundwater is expected to be of poor quality and highly saline. The landholder does not use groundwater for any purposes.

4.6.1 Mitigation measures

- daily machinery checks for leaks of oil, fuel or other liquids
- contingency plans in place to deal with spills
- a spill kit is permanently attached to the portable fuel cart, which is brought on to site each day
- the licence holder will ensure that no machinery, fuels, oils, chemicals, hazardous substances or other construction equipment will be stored within the extraction site when not in use
- staff inducted on refuelling procedures
- compliance with the Environmental Management and Rehabilitation Plan (EM&R Plan).

4.7 Soils

The majority of the proposed licence area has been disturbed by livestock grazing and rabbits. The material to be won consists of continuous layers of sand, clay and fine silt (7% approx.). The sand will be excavated and stockpiled as required, with processing (washing) occurring off-site.

The soil will be managed to ensure that the creek is not blocked at any time to allow for in-stream flows to continue down the creek, only stockpiling the required amount of material at any given time (1,500t), installing silt traps between the stockpiled areas and the Mindioomballa Creek. Existing soil to be retained on site will be free from contamination through regularly servicing machinery off site, adhering to the proponent's refuelling policy and ensuring a spill kit is on site at all times.

The proposed site is not located within or near any World Heritage properties and would therefore not have any impact on any World Heritage property. The nearest World Heritage Area is Willandra Lakes, located approximately 250km to the south-east of the proposed quarry area.

4.7.1 Contamination

The existing soil is not known to be contaminated and no new contamination is expected as a result of undertaking the proposed activity.

4.7.2 Acid sulphate soils

There are no areas that are subjected to periods of sustained inundation followed by drying which can lead to the production of acid sulphate soils. When potential acid sulphate soils are disturbed or exposed to oxygen, the iron sulfides are oxidised to sulfuric acid and the soil becomes strongly acidic (usually below pH 4). These soils are then called actual acid sulfate soils and they have a pH of less than 4.0 (Department of Environmental Resources Management, 2009).

4.7.3 Mitigation measures

- staff to be trained in best practice management in all areas of quarrying
- staff inducted on refuelling procedures
- a spill kit is permanently attached to the portable fuel cart, which is brought on site each day
- all machinery to be serviced off-site
- supervision of earthworks will be undertaken by a suitably qualified/experienced mines manager as per company policy
- sand will only be quarried and processed as required
- quarrying and processing will only occur during suitable conditions e.g. not on days of rain, high wind or flooding.

4.8 Matters of National Environmental Significance

An Environmental Protection and Biodiversity Conservation (EPBC) Act Protected Matters Search Tool report was generated (on 11 February 2020) for the study area on a 10km buffer. The report indicated:

- no World Heritage Areas within the proposed site
- no items of National Heritage Significance within the proposed site
- no wetlands of international importance
- no Commonwealth Marine areas within the proposed site

- no threatened ecological community to exist within the proposed site
- potential for eight (8) threatened species to occur in the vicinity of the proposed site
- potential for eight (8) migratory species to occur within the vicinity of the proposed site.

Further assessments undertaken as part of this project revealed that no matters of national significance will be impacted upon, and therefore, no referral under the EPBC Act is required.

4.9 Flora

4.9.1 Bioregion and plant community types

The proposed quarry site is located in the Broken Hill Bioregion Complex, covering an area of 5,691,042ha across New South Wales and South Australia. The Broken Hill Complex Bioregion in western New South Wales is geologically unique in the state. The western half is composed of ancient basement rocks of the Adelaide Fold Belt, and the eastern half is the edge of the much younger rocks of the Tasman Fold Belt. Many of the rocks and minerals found in the region are of considerable interest and economic importance, and geology exerts strong controls on the landscape (Cowling, 1995).

The New South Wales plant community type (PCT) classification was developed in 2011 to establish an unambiguous master community-level classification for use in vegetation mapping programs, biometric-based regulatory decisions, and as a standard typology for other planning and data gathering programs. The biometric vegetation type by catchment management authority region descriptions were used to classify the vegetation on site.

River Red Gum open woodland

The area proposed to be quarried is classed as *River Red Gum open woodland of intermittent watercourses mainly of the arid climate* (PCT 41). This vegetation community consists of open woodland to about 15m tall, composed of the arid zone sub-species of River Red Gum (*Eucalyptus camaldulensis* subsp. arida) sometimes with Coolabah (*Eucalyptus coolabah*) in northern areas. The understorey shrub layer is sparse and includes, River Cooba (*Acacia salicina*), (*Acacia stenophylla*), Western Boobialla (*Myoporum montanum*), Thorny Saltbush (*Rhagodia spinescens*), Prickly Wattle (*Acacia victoriae*), Emubush (*Eremophila longifolia*) and *Senna* form taxon *artemisioides*. Chenopod shrubs such as Black Bluebush (*Maireana pyramidata*) and Bladder Saltbush (*Atriplex vesicaria*) may occur on the edge of this community. Ground species include the small shrubs such as *Enchylaena tomentosa*, and *Salsola kali var. kali*; grasses such as *Enneapogon avenaceus, Cymbopogon ambiguus, Eragrostis dielsii, Aristida echinata* and *Aristida contorta*; forbs include *Tetragonia eremaea, Nicotiana velutina, Pterocaulon spacelatum, Daucus glochidiatus, Einadia nutans subsp. linifolia, Ptilotus obovatus, Ptilotus atriplicifolius var. atriplicifolius* and various daisies.

Occurs on sandy or loamy soils in sandy creeks on sandplains of lower slopes of rises or hills in the arid climate zone of far north western NSW in the Broken Hill Complex, Simpson-Strzlecki Dunefields, western Mulga Lands and Channel Country Bioregions. The trees are more spaced and shorter and the ground cover more sparse than in the River Red Gum communities in wetter climes. This community is moderately well

represented in protected areas and not threatened by clearing but may be threatened in some areas if flooding regimes change. Overgrazing by stock and feral animals along with some local weed infestations remain the major threats this community.

Bluebush shrubland

The area from which the site would be accessed and the stockpile areas (existing cleared areas) is classed as *Bluebush shrubland on stony rises and downs in the arid and semi-arid zones* (PCT 155).

Mid-high open shrubland dominated several species of bluebushes but mainly Black Bluebush (*Maireana pyramidata*) with Pearl Bluebush (*Maireana sedifolia*) occurring in more calcareous sites. Other shrubs include Thorny Saltbush (*Rhagodia spinescens*), Low Bluebush (*Maireana astrotricha*) and Bladder Saltbush (*Atriplex vesicaria sens lat*).

The proposed project will utilise an existing stockpile area and access to the creek bed will be via the existing access track. No indirect impacts associated with this activity are expected.

Within the quarrying area, little impact is expected. No stripping will occur within the dripline of trees. The stripping of sand layers over time, leaving a 1:3 batter on the creek walls, maintains wall integrity. The indirect impacts such as noise and dust are limited by the fact that the material is not fine-grained soil (minimising potential to be blown away) and the activity will occur in a creek bed which is lower in the landscape, effectively trapping noise in the landscape.

The flora assessment revealed no vegetation species; population or communities, which are of local, regional or state conservation significance (refer to Appendix C).

4.9.2 Threatened species

A database search was undertaken on 11 February 2020 of the DPIE - Environment, Energy and Science (EES) and the Department of the Environment and Energy, (DEE) websites to identify threatened species that may be found within the proposed development site as listed under the *Biodiversity Conservation Act* 2016 (*BC* Act) and the *Environmental Protection and Biodiversity Act* 1999 (EPBC Act).

A desktop search of the online databases was undertaken as follows:

- DPIE – EES *Atlas of NSW Wildlife* (refer to Appendix B)
- Department of the Environment and Energy, *Protected Matters Report* (refer to Appendix B).

Table 4 lists the flora species with either state or national conservation significance that have the potential to occur within the study area. Potential habitat exists for these species but they were not recorded on site, and are unlikely to during this project, so they have not been assessed for significance as set out in Section 7.3 of the BC Act.

Table 4 Listed threatened flora species

Scientific name	Common name	State	National	Suitable habitat
Acacia carneorum	Purple-wood wattle	Vulnerable	Vulnerable	Potential habitat, not recorded on site
Swainsona murryana	Slender Darling pea	Vulnerable	Vulnerable	Potential habitat on the floodplain, not in the quarry area
Frankenia plicata	Frankenia		Endangered	Potential, not recorded on site

4.9.3 Threatened communities

Two threatened ecological communities were identified as potentially being present in the study area, including *Acacia loderi* shrublands and *Porcupine grass - red mallee - gum coolabah hummock grassland/low sparse woodland*. None of these ecological communities were found within the proposed quarry area.

4.9.4 Flora site assessment

A general flora assessment was conducted across the proposed area by Chris Alderton (B. Applied Science), including the surrounding area on 18 November 2018 and 5 February 2020. Weather conditions included clear sky, a maximum temperate of 30ºC and winds from the north-west of approximately 10km/h. The half day assessments, adhering to Table 5.1 Survey effort (DEC, 2004) focused on areas of likely higher vegetation values and active searches of likely habitat for reptiles and hollow bearing trees.

According to the DEC field survey methods (DEC, 2004), the study area was random stratified based on vegetation type, aerial imagery information and the site assessment. The survey method undertaken is described as a stratified ramble assessment, where the whole site was assessed, with particular focus on areas of higher quality habitat and offset areas that could be potentially impacted. Two vegetation types occur within the study site. The stratification units included (refer to Appendix A):

- the creek, bed and banks (River Red Gum)
- the floodplain area proposed for sand stockpiling and loading activities (Black Blue-bush)
- upstream and downstream of the proposed quarry area (River Red Gum)

The study area does form part of a corridor and has high connectivity value along the creek. Some hollow bearing trees were observed within the study area. The vegetation condition on site was observed as ‘not low’ according to DEC (2004).

The habitat assessment was undertaken as per the Draft DEC guidelines (DEC, 2004) where a comprehensive habitat assessment was undertaken across the whole site, identifying key habitat features for both flora and fauna. The features of the study area included:

- the Mindioomballa Creek and tall eucalypt vegetation
- sandy sediments in the base of the creek
- floodplain vegetation containing low chenopod shrubland.

The flora assessment revealed no vegetation species; populations or communities, which are of local, regional or state conservation significance (refer to Table 5).

No native vegetation will be impacted by this proposal, it has been designed to avoid all native vegetation by using the existing stockpile area and creek access.

Table 5 Flora recorded on site

Species name	Common name	Location	Threatened
Acacia victoriae	Prickly acacia	Creek/floodplain	No
Astrostipa sp.	Spear grass	Creek/floodplain	No
Atriplex nummularia	Old man saltbush	Floodplain	No
Atriplex stipitata	Bitter saltbush	Floodplain	No
Atriplex vecicaria	Bladder saltbush	Floodplain	No
Chamaesyce drummondii	Caustic weed	Floodplain	No
Chloris truncate	Windmill grass	Floodplain	No
Datura leichhardtii	Native thornapple	Creek/floodplain	No
Enchylaena tomentosa	Ruby saltbush	Creek	No
Enneapogon avenaceus	Bottlewashers	Creek	No
Eragrostis dielsii	Mulka	Creek	No
Eucalyptus camaldulensis	River red gum	Creek	No
Maireana brevifolia	Yanga bush	Floodplain	No
Maireana prymidata	Black bluebush	Floodplain	No
Maireana sedifolia	Pearl bluebush	Floodplain	No
Medicargo minima	Wooly burr medic	Floodplain	No
Myoporum montanum	Western boobialla	Creek/floodplain	No
Rhagodia spinescens	Thorny saltbush	Floodplain	No
Sclerolaena decurrens	Green copperburr	Floodplain	No
Sclerolaena diacantha	Grey copperburr	Floodplain	No
Sclerolaena lanicuspus	Woolly copperburr	Floodplain	No
Sencio sp.	Shrubby groundsel	Creek/floodplain	No
* *Asphodelus fistulosus*	Onion weed	Floodplain	No
* *Carrichtera annua*	Wards weed	Floodplain	No
* *Lycium ferocissimum*	African boxthorn	Creek/floodplain	No/WoNS
* *Salvia verbenaca*	Wild sage	Floodplain	No
* *Sisymbrium irio*	London rocket	Creek	No
* *Schinus areira*	Pepper corn tree	Creek	No

4.9.5 Mitigation measures

- Use existing stockpile area and creek access
- to ensure the stability and health of instream River Red Gum trees, there will be no quarrying in the drip line of these trees

- to protect the bank from scour, quarrying will not occur close to the bank to ensure it remain stable
- Environmental Management and Rehabilitation Plan (EM&RP) will be followed at all times.

4.10 Fauna

4.10.1 Threatened species

A database search was undertaken on 11 February 2020 of the DPIE - EES and the Department of the Environment and Energy (DEE) websites to identify threatened species that may be found within the proposed development site as listed under the *Biodiversity Conservation Act* 2016 (*BC* Act) and the *Environmental Protection and Biodiversity Act* 1999 (EPBC Act).

A desktop search of the online databases was undertaken as follows:

- DPIE -EES *Atlas of NSW Wildlife* (refer to Appendix B)
- Department of the Environment and Energy (DEE) Environmental Protection and Biodiversity Conservation (EPBC) *Protected Matters Report* (refer to Appendix B).

None of these species were recorded during the site assessment.

Table 6 lists the fauna species with state and national conservation significance that have the potential to occur within the study area. The column in Table 6 headed 'comment', identifies the suitability of the site for the particular species, such as for habitat utilisation, nesting/burrowing requirements, food and water requirements and the vegetation type preferred by the species. One of those species, Ringed Brown-snake has 'potential habitat' so is subject to 'test of significance', as set out in Section 7.3 of the BC Act (Appendix C)

None of these species were recorded during the site assessment.

Table 6 Listed fauna species

Scientific Name	Common Name	Status State	Status Federal	Comment
Birds				
Calamanthus campestris	Rufous Fieldwren	Vulnerable		No habitat impact by the quarry, potential habitat away from quarry area, inhabits low shrublands, particularly saltbush and bluebush communities, and also areas around inland saline lakes.
Amytornis textilis modestus	Thick-billed Grasswren	Critically Endangered		No potential impact by the quarry, potential habitat away from quarry area, usually inhabiting dense, low saltbush, cottonbush, bluebush and nitre-bush areas on sandy plains or depressions in gibber; also occurs along watercourses.
Calidris ferruginea	Curlew Sandpiper	Critically Endangered		No potential habitat, it generally occupies littoral and estuarine habitats, and in New South Wales is mainly found in intertidal mudflats of sheltered coasts. It also occurs in non-tidal swamps, lakes and lagoons on the coast and sometimes inland.
Pezoporus occidentalis	Night parrot	Endangered		Unlikely habitat nearby, known to occur within Spinifex grasslands in stony or sandy areas and samphire and chenopod associations on floodplains, salt lakes and clay pans. Suitable habitat is characterized by the presence of large and dense clumps of Spinifex, and it may prefer mature spinifex that is long and unburnt.
Pedionomus torquatus	Plains-wanderer	Endangered	Vulnerable	No potential habitat, inhabits short, sparsely grassed plains, fallow and stubble fields inland of the Great Dividing Range to the Murray-Darling Basin.
Rostratula australis	Australian Painted Snipe	Endangered	Vulnerable	No potential habitat, prefers fringes of swamps, dams and nearby marshy areas where there is a cover of grasses, lignum, low scrub or open timber.
Reptiles				

Scientific Name	Common Name	Status State	Status Federal	Comment
Pseudonaja modesta	Ringed Brown Snake	Endangered		Potential habitat, the species inhabits drier areas, including rocky outcrops and dry watercourses.
Mammals				
Notomys fuscus	Dusky Hopping Mouse	Endangered	Vulnerable	No potential habitat in the quarry but is habitat on the floodplain surrounding the quarry. In the Broken Hill Complex Bioregion, the species has been collected in Bluebush chenopod shrubland near a drainage line with River Red Gums, Prickly Wattle and Western Boobialla.

4.10.2 Fauna site assessment

A general fauna assessment was conducted across the proposed area by Chris Alderton 18 November 2018 and 5 February 2020. The assessment also focused on the access to the site and surrounding habitat.

It is noted that the Silverton Common Trust has cattle accessing the site from time to time. Stock management has been discussed and the proponent will not operate the quarry during times of mustering. No additional mitigation measures are required as the cattle will naturally move on during operations.

The fauna assessment revealed no species; population or communities, which are of local, regional or state conservation significance (refer to Table 7).

Table 7 Fauna species recorded on site

Scientific name	Common name	Threatened
Carpa Hircus	*Goats	No
Boss sp.	*Cows	No
Dromaius novaehollandiae	Emu	No
Eolophus roseicapilla	Galah	No
Ocyphaps lophotes	Crested Pigeon	No
Rhipidura leucophrys	Willie Wagtail	No
Grallina cyanoleuca	Magpie lark	No
Psephotus varius	Mulga Parrot	No
Macropus fuliginosus	Western Grey Kangaroo	No

*Denotes introduced species

4.10.3 Assessment of significance

An assessment of significance (refer to Appendix C) was conducted for:

- Ringed Brown Snake *(Pseudonaja modesta)*

The assessment revealed that the potential impacts of the proposed quarry on the Ringed Brown Snake are extremely unlikely and where there could be potential impacts, they will be very low. Potential minor impacts are not expected to increase the likelihood of a threatened or endangered species from becoming extinct, due to the construction or operation of the proposed quarry.

The assessment of significance for these threatened species does not trigger the requirement for a species impact statement (SIS) or EPBC referral to be carried out.

The proposal is deemed to be non-significant for the assessed species. In determining the significance of the proposed quarry on threatened species, the following matters were taken into consideration:

- pre-quarry, quarrying and rehabilitation phases
- all onsite and off-site impacts, including location and operation
- all direct and indirect impacts
- the frequency and duration of each known or likely impact/action
- the total impact which can be attributed to that action over the entire geographic area affected - initially and over time

- the sensitivity of the receiving environment
- the degree of confidence with which the impacts of the action are known and understood.

4.10.4 Mitigation measures

- Use existing stockpile area and creek access
- quarrying and stockpiles are to be examined prior to work starting each day to remove any reptiles or other fauna that may be within the work site
- no quarrying to occur during times of mustering, consultation between the proponent and stock owners will occur through the Silverton Common Trust
- the Environmental Management and Rehabilitation Plan (EM&RP) will be followed at all times
- threatened species information sheets to be available to staff to assist in positive identification of a potential threatened species.

4.11 Weeds and pests

Weed and pest animal assessments were conducted within the proposed sand quarry area on 18 November 2018 and 5 February 2020 by Chris Alderton, recording weed and pest attributes. Six weed species were identified, including the African Boxthorn which is a 'listed weed' in NSW under the *Biosecurity Act 2015* and 2017 Regulations and a nationally listed Weed of National Significance. This species will be mechanically removed as per the Essential Energy requirements. Ongoing monitoring will occur as per the listed mitigation measures. Only one pest (goats) was recorded as present.

4.11.1 Mitigation measures

- All extractive industry processing machinery will be thoroughly cleaned down (with water or compressed air) prior to entering the quarry
- the extractive industry licence area will be monitored regularly for the presence of noxious weeds to avoid spreading weeds in sand transported to other areas of the property
- pests will be controlled within the quarrying area by annually undertaking surveys to assess impacts and undertake control actions
- the Environmental Management and Rehabilitation Plan (EM&RP) will be followed at all times.

4.12 Heritage

4.12.1 Aboriginal heritage

An Aboriginal Heritage Information Management System (AHIMS) database search was undertaken on 1 February 2020 of the proposed quarry and buffer of 1,000m (refer Appendix D). One Aboriginal objects or Aboriginal places were recorded (SWF SU280/L1), approximately 60m west of the quarry and 160m south of the existing stockpile area. As no vehicles associated with the quarry will access this area, no management measures are required. A contingency plan in the event that cultural heritage material is discovered is provided in Appendix G.

The proposed quarrying area was assessed by Dulcie O'Donnell and Raymond J O'Donnell, members of the Broken Hill Local Aboriginal Lands Council on 28 March 2019 (refer Appendix F). The assessment took into consideration Aboriginal cultural sites, including artefacts such as hearths, burial sites and scar trees.

The Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW (DECCW, 2010) was reviewed to determine if an Aboriginal Heritage Impact Permit (AHIP) is required. Section 8 of this document provides a flow chart of the due diligence process. It was determined that appropriate due diligence has been undertaken and that an AHIP is not required.

As outlined in the Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW, a number of assessments and tests have been undertaken to ensure no harm is caused to places of Aboriginal significance.

This code sets out the reasonable and practicable steps which individuals and organisations need to take in order to:

1. Identify whether or not Aboriginal objects are, or are likely to be, present in an area
2. Determine whether or not their activities are likely to harm Aboriginal objects (if present)
3. Determine whether an AHIP application is required.

In following the generic due diligence process, the following processes have occurred, including engagement with the Aboriginal Community:

Step 1 – The activity will disturb the ground surface.

Step 2a – a search of the Aboriginal Heritage and Information Management Service (AHIMS) database was completed, with one cultural heritage sites being identified outside the activity area (SWF SU280/L1).

Step 2b – No other sources of information suggest Aboriginal objects occur within the activity area.

Step 2c - The activity is being undertaken in an area where landscape features do indicate the presence of Aboriginal objects.

Step 3 – Yes, Aboriginal objects listed on AHIMS can be avoided.

Step 4 –A visual inspection was undertaken by a person with expertise in locating and identifying Aboriginal objects, with no objects being recorded in areas proposed to be impacted upon.

Result - proceed with the activity without an Aboriginal Heritage Impact Permit (AHIP) if you have found no evidence of Aboriginal objects using this due diligence code.

4.12.2 Other cultural heritage

The State Heritage Register (NSW Environment and Heritage) database was used to determine if any areas of historic value were located on or nearby the site. There are no other known cultural heritage sites within the proposed quarrying area. This was to be expected due to the remoteness of the proposed quarry and the fact that no visible remnants were discovered during the on-site assessment.

4.12.3 Mitigation measures

- The three identified Aboriginal hearth sites will be cordoned off using high visibility bunting to ensure they are not impacted upon prior to works commencing.
- Access to the quarry site by Aboriginal people for cultural gatherings is permitted and quarrying works will not be undertaken at this time.
- If an unidentified cultural heritage site is discovered during quarrying, work will cease immediately and the Broken Hill office of the National Parks and Wildlife Service will be contacted. Consolidated Mining and Civil Pty Ltd will then wait for further advice.
- A contingency plan in the event that cultural heritage material is discovered is provided in Appendix G.

4.13 Air quality

The nearest receptor is approximately 2km from the quarry site and the nearest all-weather public road is approximately 2.4km away. Given the distances from any receptors (Silverton School Museum and residences east and west of the Creek and no complaints from the existing quarry, there is not expected to be any impact.

Practices associated with quarrying of sand that could affect air quality include wildfire, exhaust emissions from vehicles and plant and windblown dust from loading sand. Crushed rock will be applied to the haul road as required to minimise raised dust from transport activities. Dust from the activity is expected to be minimal due to the nature of the material to be processed. Where dust becomes an issue, despite the laying of crushed rock, water may be sprayed over the tracks to reduce the impact.

4.13.1 Mitigation measures

- no burning of timber or other combustible materials will occur on site
- all plant and equipment will be equipped with fire extinguishers
- all vehicles and plant will be regularly serviced, be in good working order and emissions will be kept within manufacturers standards
- materials transported in trucks will be appropriately covered and contained by tarpaulins
- haulage roads will be maintained to a high standard allowing efficient and safe operation
- maintain existing fords, where required, and in consultation with local fisheries officers, install crushed rock on tracks
- water to be sprayed to minimise raised dust where activity cannot be immediately stopped
- quarrying/carting operations will cease if severe wind conditions are present.

4.14 Socio and economic

The sand is proposed to be used in the construction industry to make cement. The quarry is required as other local sand resources in the area are limited and would have a

larger environmental impact, adding additional expense and greenhouse gas emissions if used.

4.14.1 Economic

The expected cost of the development is approximately $70,000. Additional costs include the maintenance of plant and equipment required for quarrying activities.

The proposal will employ local drivers and operators throughout the life of the quarrying activities. The economic returns to the local economy will be by way of income through employment and development. The flow on effects are important to the Broken Hill area.

4.14.2 Social

The proposed quarry will not disadvantage any individuals or communities and consultation with all known affected groups has been undertaken. The quarry may well assist the community through development of safer roads.

As required by any construction site in NSW, appropriate signage will be placed around the quarries, including 'trucks turning'; 'PPE' and general safety signs. No safety fencing will be required due to the shallow depth of the quarry.

4.14.3 Impact on the community

Although the character of the area would be slightly affected by the proposal, by minimising the extent of the impact and undertaking rehabilitation, there would be minimal long-term impacts.

4.14.4 Visual impact

The proposed quarry site will have low visual impact relative to both the location of the development, which is difficult to view from any public location.

4.14.5 Mitigation measures

the Environmental Management and Rehabilitation Plan (EM&RP) will be followed at all times.

4.15 Transport

The proposed quarry will utilise existing tracks from the quarry area to other required areas on the property.

A front-end loader, two articulated tip trucks and up to four light vehicles will be required on site. The light vehicles will travel from the company depot in Broken Hill to the quarrying site and back to the company depot at the end of the day. It is expected that up to four staff will travel to the site in the morning and return at the end of the day to the company depot.

Internal parking facilities will be contained within the stockpile areas.

Sand will be transported from the set down area to the depot for processing in Broken Hill by road train. It is expected that up to two road trains will operate and make up to eight movements each per day.

In negotiation with the NSW Roads and Maritime Service, appropriate signage and intersection treatments will be developed at the existing gravel track and the Silverton Road. The capacity, efficiency and safety of the road network have been assessed and

the access track to the stockpile area provides for all of these elements. Sight distances in either direction from the access track is at least 500m and in a town speed zone.

This project will be undertaken with adherence to relevant legislation and best practice management.

4.15.1 Mitigation measures

- the Environmental Management and Rehabilitation Plan (EM&RP) will be adhered to at all times.

4.16 Noise and vibration

The main source of noise may arise from the use of heavy machinery to extract, crush and load gravel; and trucks to cart the material from the site to its use location. Considering the distance of the extractive industry licence from the nearest receptor is over 2km away no noise or vibrations nuance is expected.

The OEH Interim Construction Noise Guideline (DECC, 2009) details that standard construction working hours are as follows:

- Monday to Friday: 7.00am to 6.00pm
- Saturday: 8.00am to 1.00pm
- Sunday and public holidays: No work

The noise impacts for the modification comply with the NSW Industrial Noise Policy (2000). The NSW Industrial Noise Policy still applies when assessing noise from existing developments that have licence or consent conditions that refer to that policy. The modification would also comply with the existing noise criteria as outlined in the current development consent.

4.16.1 Mitigation measures

- plant and equipment serviced and using manufacturer specified mufflers
- quarrying operations and sand carting to occur on-site only during business hours (7am-6pm Monday to Friday and 8am -12noon Saturday)
- In consultation with the Silverton Village Committee, reversing beepers will be disconnected to further reduce noise
- Truck air brakes not to be used by trucks entering the access track from the Silverton-Broken Hill Road.
- staff trained in best practice in all areas of sand quarrying.

4.17 Bushfire hazards

Due to the nature of the proposed quarry and the composition of vegetation species at the site, it is highly unlikely that the vegetation would carry a fire. The wide spacing of individual shrubs and the limited amount of dry matter of grass species present (due to the arid climate) would not be conducive to the spread of fire.

4.17.1 Mitigation measures

- no burning of timber or other combustible materials will occur on site
- all plant and equipment will be equipped with fire extinguishers

- all vehicles and plant will be regularly serviced, be in good working order and emissions to be kept within manufacturers standards
- the Environmental Management and Rehabilitation Plan (EM&RP) will be followed at all times.

4.18 Chemical and hazardous substance management

No hazardous substances will be stored on site. Limited hazardous substances will be brought on site, in particular, fuels and lubricants, e.g. oil, grease and distillate for the heavy equipment will be transported as required on utility, trailer or fuel truck. Best management practices will be followed when these substances are transferred and in use as stipulated by the proponent's work practices. Empty containers will be taken from the site and suitably disposed of to landfill or for recycling.

4.18.1 Mitigation measures

- staff trained in best practice in all areas of sand quarrying
- all vehicles and machinery to be regularly serviced, be in good working order and emissions to be kept within manufacturers standards
- all vehicles serviced off-site
- staff inducted on refuelling procedures and no oils, fuels or lubricants to be stored on site
- no refuelling within 40m of the waterway
- in the event of unexpected breakdown of heavy machinery on the site, appropriate measures will be put in place to prevent leakage of petroleum products to the soil
- any discarded oils, worn machinery parts, damaged tyres, broken hoses or empty containers will be removed to a waste storage area on the day they are generated.

4.19 Waste minimisation and management

The work site will operate in a tidy, rubbish-free state. Any wastes generated will be contained and removed from the site for recycling or safe disposal. No environmental problems are anticipated with the disposal of potential waste. Works will cease during major rainfall events.

4.19.1 Mitigation measures

- staff will be trained in best practice in all areas of sand quarrying
- waste storage site to be marked out and known to all employees
- waste at storage site to be removed monthly for processing or safe disposal.

4.20 Stormwater management

The proponent has a stormwater management plan in place, which will be implemented throughout the life of the project. The aim of this plan is to ensure that all stormwater is retained on site at the stockpile location by incorporating a lower lying area to act as a sump. This will allow water to naturally infiltrate and evaporate. Within the creek, the aim is to allow natural stormwater to flow downstream without being impeded. After heavy rainfall events, stormwater can flow for up to 24 hours. No works will occur within

the creek until this water has moved downstream or infiltrated sufficiently to allow the creek bed to be trafficable. The plan includes measures for maintaining current roads and quarried areas. Due to the porous nature of sand, stormwater infiltrates quickly through the soil profile and rarely causes a waterlogging problem.

Roads will be maintained by cutting a table drain on the downside slope adjacent to the road. The cut-off drains will be placed as dictated by catchment size and slope, directing the run-off stormwater to small natural containment areas. This action will ensure water is directed away from the road formation and retained in depressions without erosion.

4.20.1 Mitigation measures

- maintain current stormwater management plan
- install cut-off drains as required
- install silt fences and erosion control as required.

4.21 Cumulative environmental impacts

The cumulative environmental impacts from the proposal will be minimal. As stated throughout Section 4, each identified impact has been assessed for its potential threat to the environment. Mitigation measures will help minimise the impact the proposed quarry will have on the immediate quarrying area, as well as offsite impacts.

4.22 Summary of mitigation measures

A range of mitigation measures will be put in place to ensure the proposal has minimal impact on the environment, both on-site and offsite, including:

- all machinery to be serviced off-site
- all plant and equipment will be equipped with fire extinguishers
- staff should be trained in firefighting techniques in the event of a bushfire, or fire on plant or equipment
- all vehicles and machinery to be regularly serviced, be in good working order and emissions to be kept within manufacturers standards
- all vehicles serviced off-site
- All machinery will be thoroughly cleaned down (with water or compressed air) prior to entering the quarry
- any discarded oils, worn machinery parts, damaged tyres, broken hoses or empty containers will be removed to a waste storage area on the day they are generated
- compliance with the Environmental Management and Rehabilitation Plan (EM & R Plan)
- appropriate signage will be installed as required under legislation and adherence with best practice management
- contingency plans will be in place to deal with spills
- a spill kit is permanently attached to the portable fuel cart, which is brought on site each day
- Use existing stockpile and creek access
- daily machinery checks will be made for leaks of oil, fuel or other liquids
- the Environmental Management and Rehabilitation Plan (EM&RP) will be followed at all times
- sand will only be quarried and used as required

- haulage roads will be maintained to the proponent's quality standards, allowing efficient and safe operation
- if an unidentified cultural heritage site is discovered during quarrying, work will cease immediately and the NSW Office of Environment and Heritage (Broken Hill) will be contacted - CMC will then wait for further advice
- in the event of unexpected breakdown of heavy machinery on the site, appropriate measures will be put in place to prevent leakage of petroleum products to the soil
- install cut-off drains as required
- install silt fences and erosion control as required
- machinery will be washed down off-site prior to entering the proposed sand quarries, to ensure they are weed free
- maintain current stormwater management plan
- materials transported in trucks will be appropriately covered and contained by tarpaulins as per company policy
- no burning of timber or other combustible materials will occur on-site
- to ensure the stability and health of instream River Red Gum trees, there will be no quarrying in the drip line of these trees
- to protect the bank from scour, quarrying will not occur close to the bank to ensure it remain stable
- pests will be controlled within the quarrying area by annually undertaking surveys by the proponent's weeds officer to assess impacts and undertake control actions
- plant and equipment serviced and using manufacturers specified mufflers
- quarrying and processing will only occur during suitable conditions e.g. not on days of rain, high wind or flooding
- quarrying and sand carting operations to occur on-site only during business hours (7am-6pm Monday to Friday and 8am -12noon Saturday)
- quarrying pits and stockpiles are to be examined prior to work starting each day to remove any reptiles or other fauna that may be within the work site
- quarrying site to be marked out using permanent markers
- quarrying/carting operations will cease if severe wind conditions are present
- species profiles to be kept on site of threatened species that have potential to inhabit the site
- staff inducted on refuelling procedures
- staff inducted on refuelling procedures and no oils fuels or lubricants to be stored on-site
- no refuelling within 40m of the waterway
- staff trained in best practice in all areas of sand quarrying
- supervision of earthworks will be undertaken by a suitably qualified/experienced mines manager, as per company policy
- temporary sediment control structures must be maintained at all times during extraction and checked, repaired, replaced or cleaned out after any significant rainfall event
- the extractive industry licence holder will ensure that no machinery, fuels, oils, chemicals, hazardous substances or other construction equipment will be stored within the stockpile area when not in use
- the extractive industry licenced areas will be monitored regularly for the presence of noxious weeds to avoid spreading weeds in sand transported to other areas of the property

- the licence holder will ensure that no machinery, fuels, oils, chemicals, hazardous substances or other construction equipment will be stored within the extraction site when not in use.
- quarrying to cease 1m from the bank and a 1:3 batter developed
- no quarrying to occur during times of mustering, consultation between the proponent and stock owners will occur through the Silverton Common Trust
- the three identified Aboriginal hearth sites will be cordoned off using high visibility bunting to ensure they are not impacted upon prior to works commencing
- access to the quarry site by Aboriginal people for cultural gatherings is permitted and quarrying works will not be undertaken at this time
- in consultation with the Silverton Village Committee, reversing beepers will be disconnected to further reduce noise
- truck air brakes not to be used by trucks entering the access track from the Silverton-Broken Hill Road.

5.0 Risk Management

Table 8 provides an overview of the risks associated with the proposed sand quarry. The table should be read down the left-hand side column to identify the issues at the site and then the activities, processes or facilities are listed across the top of the table.

The table has been completed using a risk assessment of low (L), medium (M) and high (H) and not applicable (n/a).

Table 8 Environmental risk identification matrix

Issue	Activity, Process or Facility															
	Land preparation, vegetation & topsoil	All construction activities including earth moving	Mine development and mining, surface &	Use/maintenance of roads, tracks and	Waste rock emplacement management	Mineral processing facilities and operations	Ore/product stockpiling and handling	Tailings impoundment management	water management including storm event	Hazardous materials & fuel, handling/spills	Sewerage	Other infrastructure use and operation	Rubbish disposal	Rehabilitation activities	Rehabilitation maintenance, pending	Rehabilitated land and remaining features
Natural resources use	L	L	L	L	L	L	L	n/a	L	L	n/a	L	L	L	L	L
Hydrology and geomorphology	L	M	M	L	L	L	L	n/a	M	L	n/a	L	L	M	L	L
Floodplain and riparian habitat	L	L	L	L	L	L	L	n/a	L	L	n/a	L	L	L	L	L
Erosion and sedimentation	L	L	L	L	L	L	L	n/a	L	L	n/a	L	L	L	L	L
Surface water	L	L	L	L	L	L	L	n/a	L	L	n/a	L	L	L	L	L
Groundwater	L	L	L	L	L	L	L	n/a	L	L	n/a	L	L	L	L	L
Soils	M	M	M	M	L	L	L	n/a	L	L	n/a	L	L	L	L	L
Flora	M	L	L	L	L	L	L	n/a	L	L	n/a	L	L	L	L	L
Fauna	L	L	L	L	L	L	L	n/a	L	L	n/a	L	L	L	L	L
Weeds and pests	L	L	L	L	L	L	L	n/a	L	L	n/a	L	L	L	L	L
Heritage	L	L	L	L	L	L	L	n/a	L	L	n/a	L	L	L	L	L
Air quality	L	L	L	L	L	L	L	n/a	L	L	n/a	L	L	L	L	L
Socio and economic	L	L	L	L	L	L	L	n/a	L	L	n/a	L	L	L	L	L
Transport	L	L	L	L	L	L	L	n/a	L	L	n/a	L	L	L	L	L
Noise and vibration	L	L	L	L	L	L	L	n/a	L	L	n/a	L	L	L	L	L
Bushfire hazards	L	L	L	L	L	L	L	n/a	L	L	n/a	L	L	L	L	L
Chemical and hazardous substance management	L	L	L	L	L	L	L	n/a	L	L	n/a	L	L	L	L	L
Waste minimisation and mgt	L	L	L	L	L	L	L	n/a	L	L	n/a	L	L	L	L	L
Stormwater management	L	L	L	L	L	L	L	n/a	L	L	n/a	L	L	L	L	L

6.0 Rehabilitation works

Rehabilitation will occur prior to the end of the extractive industry license term.

No other rehabilitation works will be required as the project will have minimal impacts on the licence area and the surrounding environment. Refer to the Environmental Management and Rehabilitation Plan (EM&RP) for more information on rehabilitation.

7.0 Summary of impacts and conclusions

After undertaking various database searches on threatened species and cultural heritage and a thorough on-site and off-site assessment, Table 9 summarises the impacts listed in Section 4. Overall, the impact level is expected to be low and this is further reduced through the implementation of mitigation measures summarised in section 4.22.

Table 9 Summary of potential impacts

Section	Potential Impact	Summary of Impacts
4.1	Natural resource use	Removal of sand
4.2	Hydrology and geomorphology	No impact through mitigation measures
4.3	Floodplain and riparian habitat	No impacts through mitigation measures
4.4	Erosion and sedimentation	Removal of sedimentation from creek bed
4.4	Surface water	No impact, maintain natural systems
4.6	Groundwater	No impact
4.7	Soils	Removal of soil
4.8	Matters of NES	No impacts, no referral required
4.9	Flora	No native vegetation will be removed. No quarrying within the drip line of trees within the creek bed, no impact on threatened species
4.10	Fauna	No impact on threatened species or critical habitat
4.11	Weeds and pests	No impact, existing weeds to be controlled
4.12	Heritage	No impact
4.13	Air quality	Minimal impact through vehicle emissions, dust from quarrying activity
4.14	Socio and economic	No adverse impacts
4.15	Transport	Minor additional vehicle traffic, mitigation measures agreed with the Silverton Village Committee
4.16	Noise and vibration	Use of machinery to extract, load and cart sand
4.17	Bushfire hazards	No impacts
4.18	Chemical and hazardous Substance	None stored on site
4.19	Waste minimisation	No adverse impacts
4.20	Stormwater management	No off-site impacts

8.0 References

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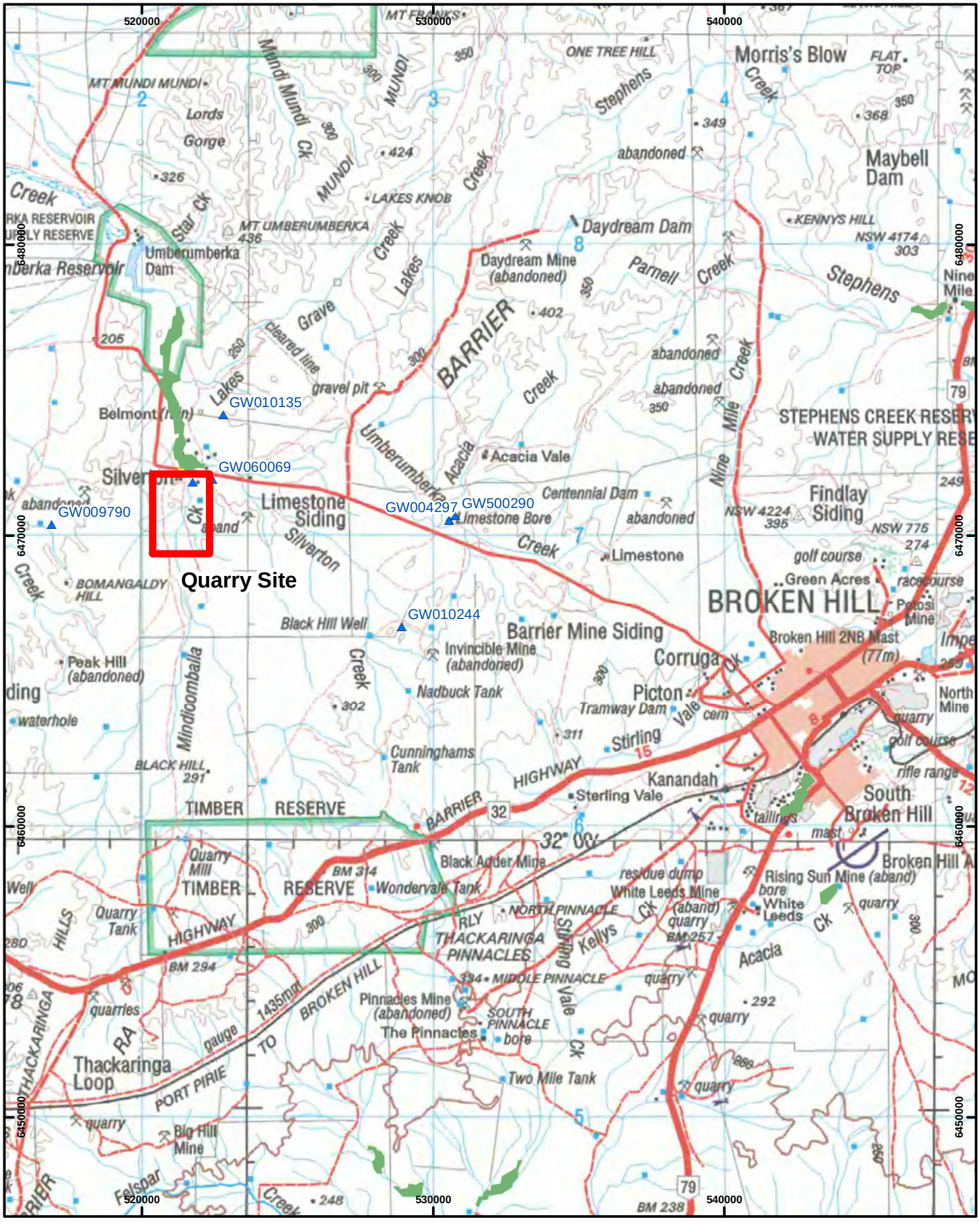
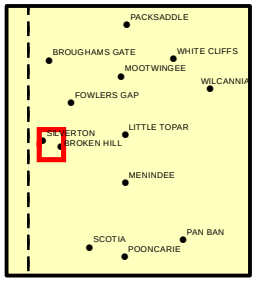
Appendix A
Map series





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Metres

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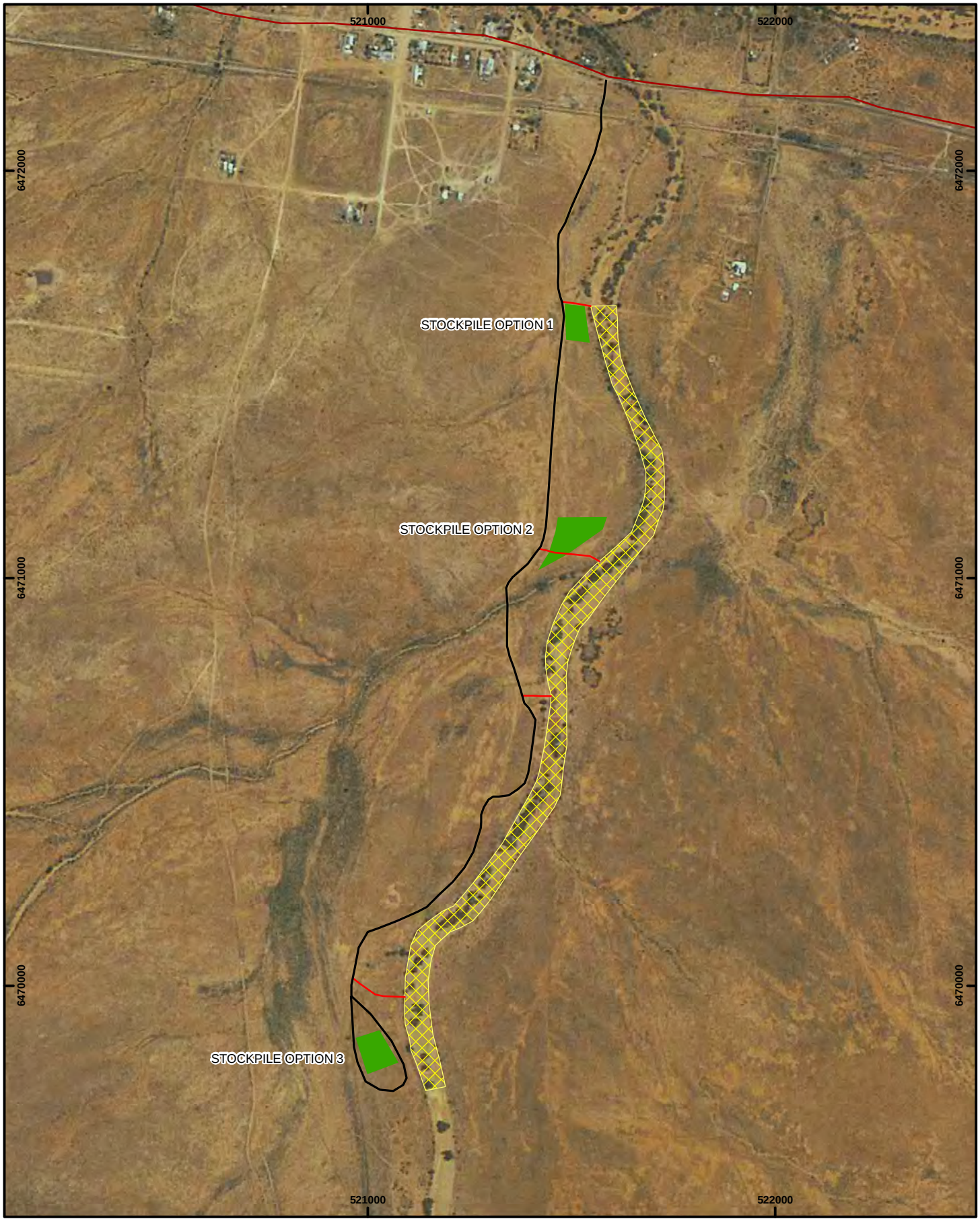
GDA 1994 MGA Zone 54

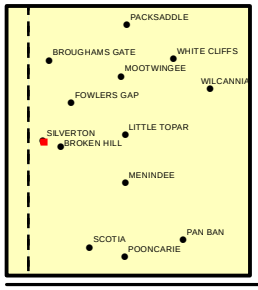
Legend

- NoW Bore
- Native Vegetation Area
- Quarry Site

greenedge environmental

Silverton Quarry Site Location Map





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Metres

Scale 1:12,500 @ A3

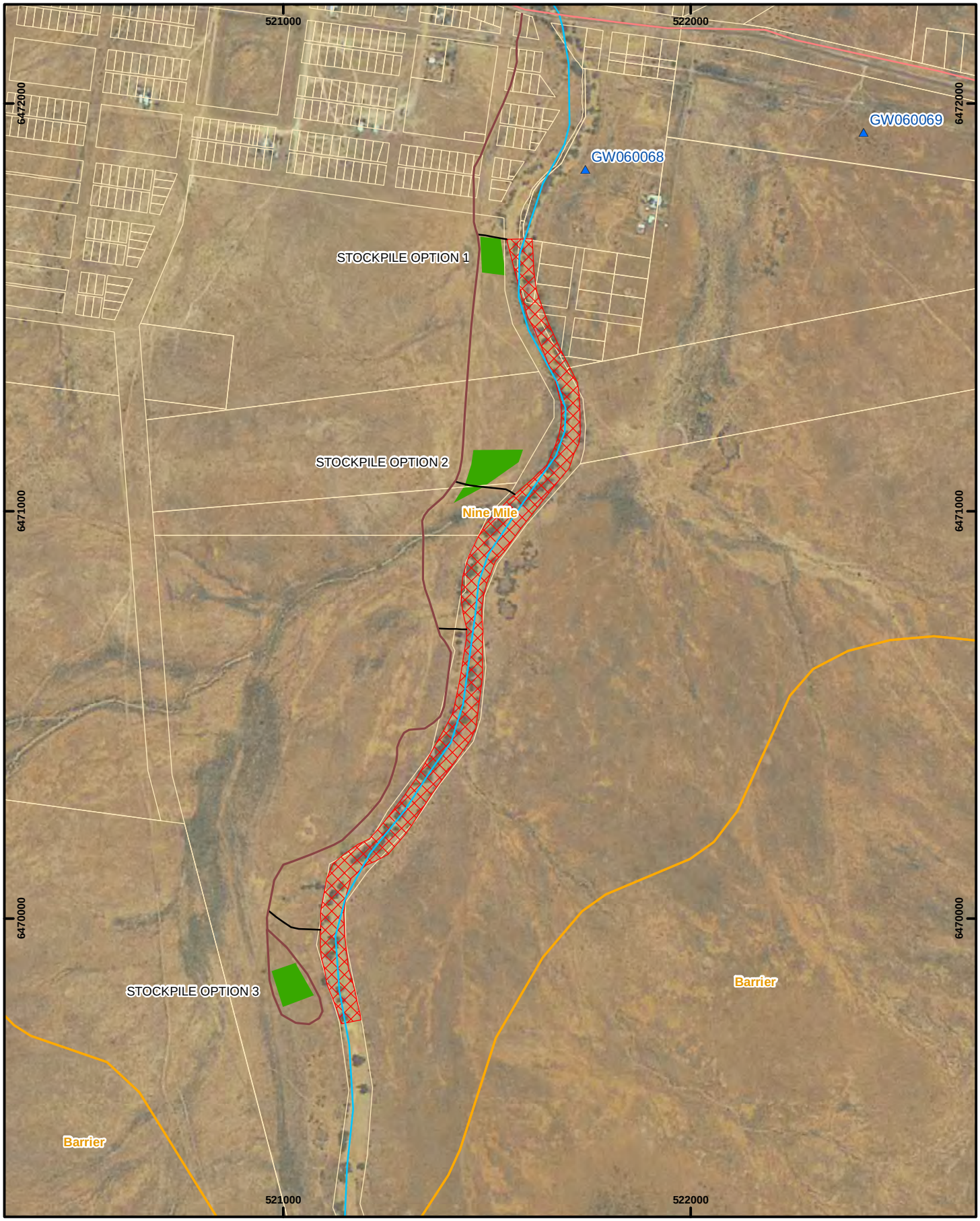
GDA 1994 MGA Zone 54

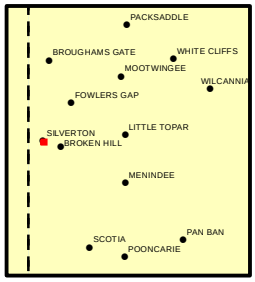
Legend

- Haul Road
- Highway
- Existing Access Track
- Stockpile Area Option
- Quarry Site

greenedge environmental

Silverton Quarry Site Location Map





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GDA 1994 MGA Zone 54

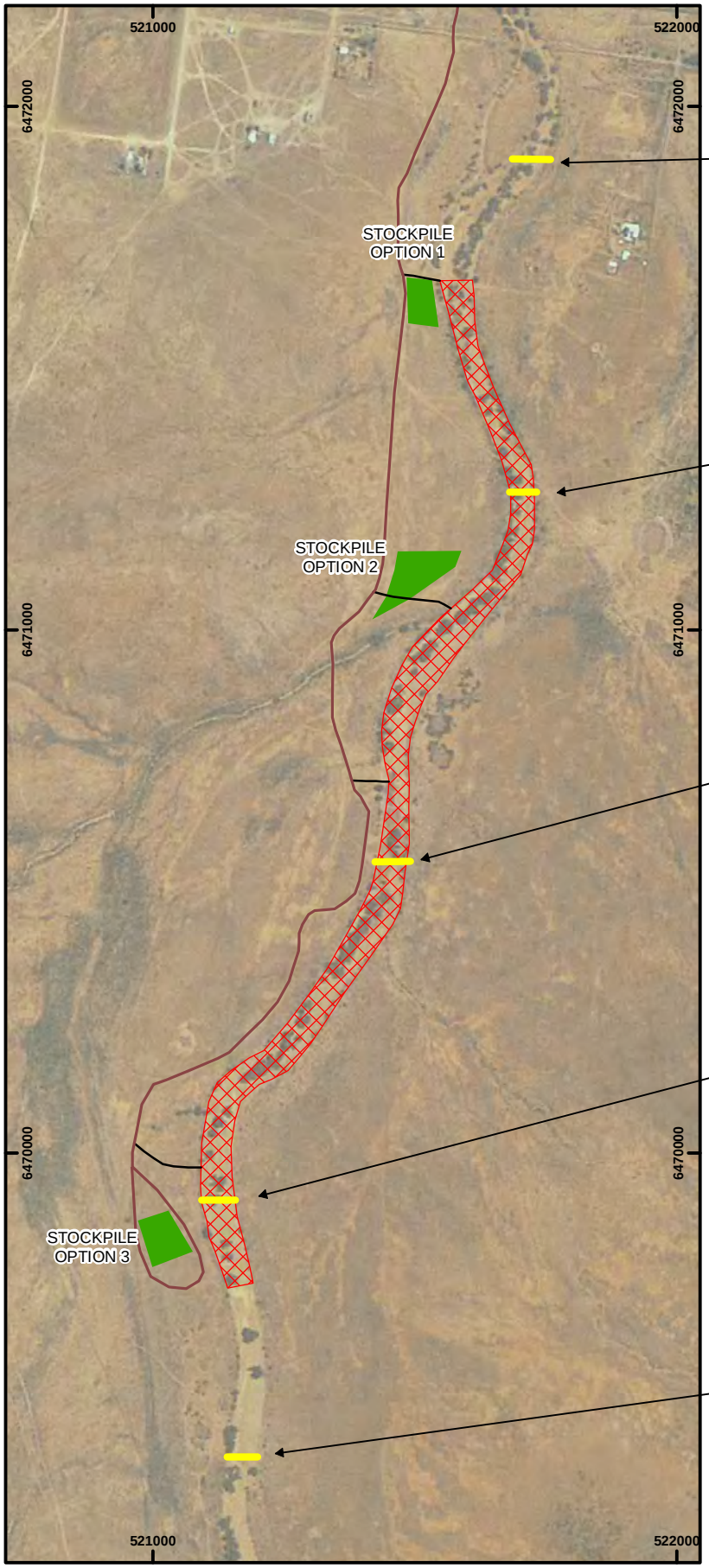
Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission.
Please verify the accuracy of all information prior to use.

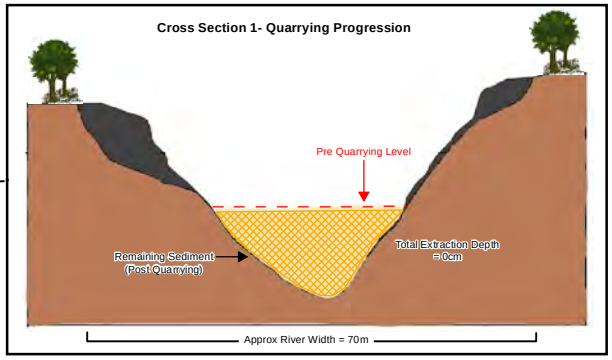
Legend

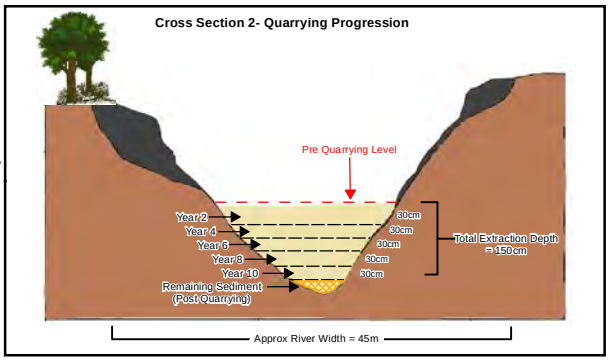
- NoW Bore
- Haul Road
- Highway
- Existing Access Track
- Drainage
- Cadastre
- Stockpile Area Option
- Quarry Site
- Landsystem

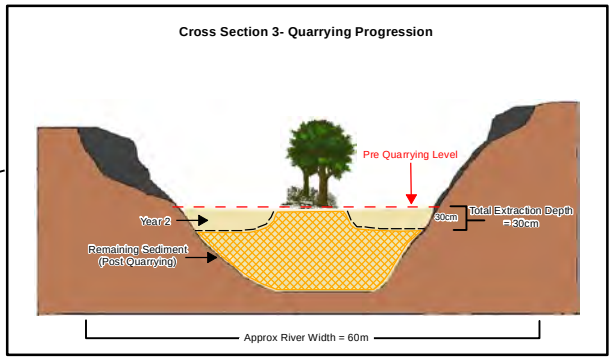
greenedge environmental

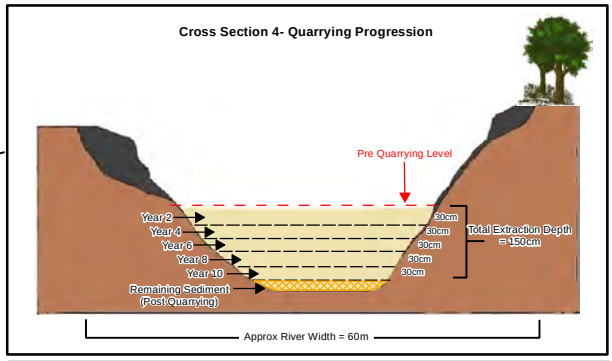
Silverton Quarry Site Location Map

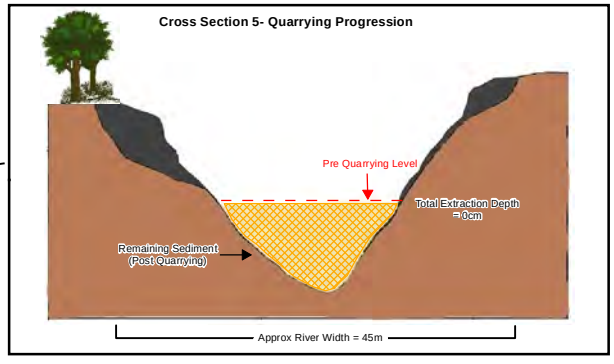


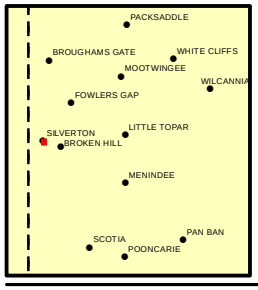












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Metres

Scale 1:12,500 @ A3

GDA 1994 MGA Zone 54

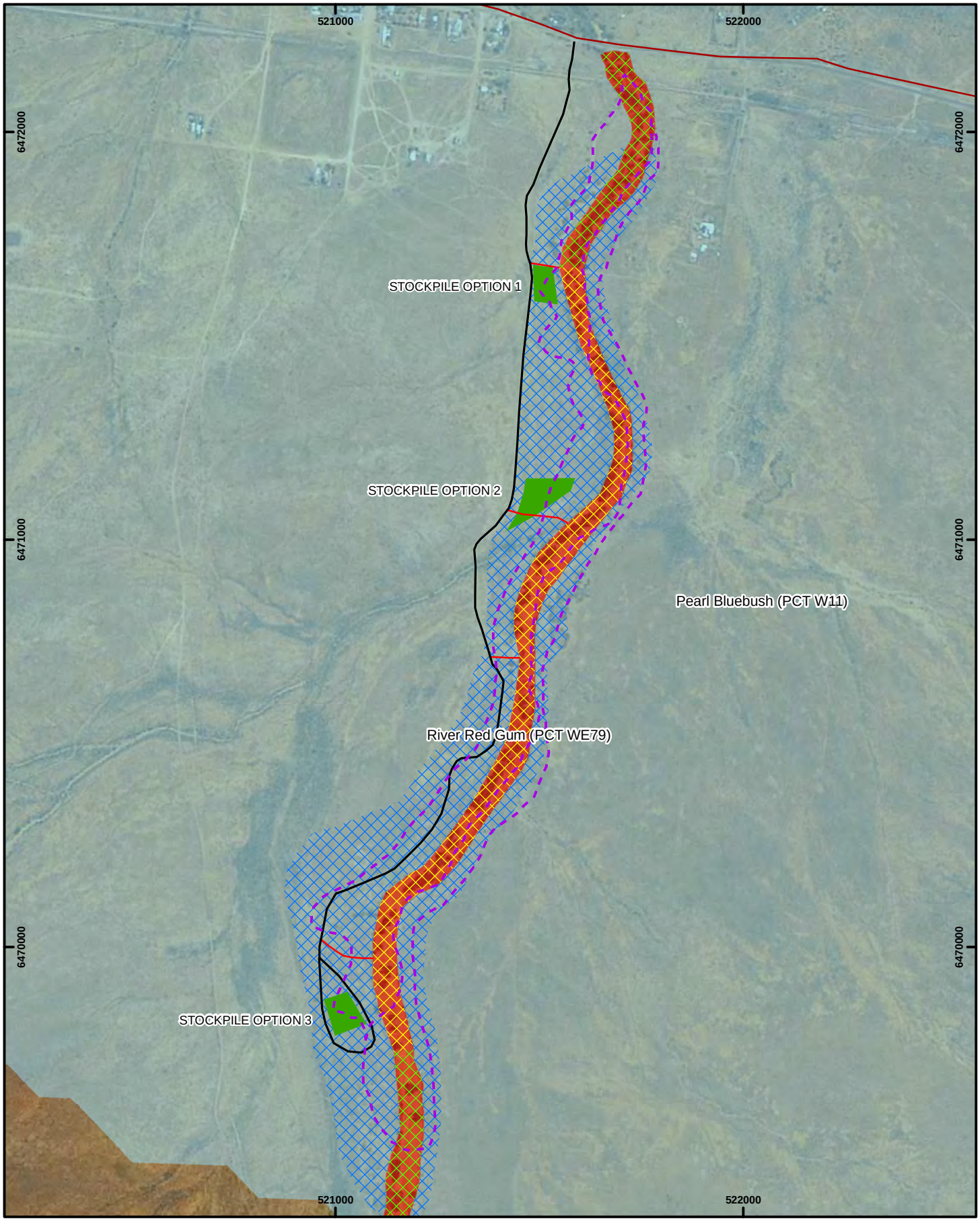
Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission.
Please verify the accuracy of all information prior to use.

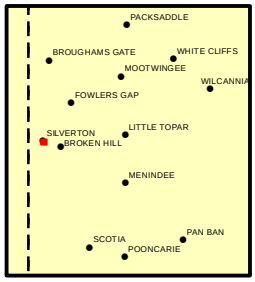
Legend

- Haul Road
- Cross Section
- Existing Access Track
- Stockpile Area Option
- Quarry Site

greenedge environmental

Silverton Quarry Site Quarry Progression Conceptual Map





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Metres

Scale 1:12,500 @ A3

GDA 1994 MGA Zone 54

Legend

- Tracklog
- Haul Road
- Highway
- Existing Access Track
- Stockpile Area Option

Stratification Units

- Creek Bed & Banks
- Floodplain
- Upstream & Downstream Areas

Vegetation Type

- Pearl Bluebush (PCT W11)
- River Red Gum (PCT WE79)

greenedge environmental

Silverton Quarry Site Stratification Units

Appendix B
Threatened species database searches

NSW State Threatened Flora Search

Data from the BioNet Atlas of NSW Wildlife website, which holds records from a number of custodians. The data are only indicative and cannot be considered a comprehensive inventory, and may contain errors and omissions.
Species listed under the Sensitive Species Data Policy may have their locations denatured (^ rounded to 0.1°; ^^ rounded to 0.01°).

Search criteria : Public Report of all Valid Records of Plants in selected area [North: -31.86 West: 141.16 East: 141.26 South: -31.96] returned a total of 100 records of 75 species.
Report generated on 29/09/2013 6:29 PM

Kingdom	Class	Family	Species Code	Scientific Name	Exotic	Common Name	NSW status	Comm. status	Records	Info
Plantae	Flora	Fabaceae (Faboideae)	3048	*Swainsona murrayana*		Slender Darling Pea	V,P	V	1	
Plantae	Flora	Fabaceae (Mimosoideae)	10061	*Acacia carneorum*		Purple-wood Wattle	V,P	V	4	

NSW State Threatened Fauna Search

Data from the BioNet Atlas of NSW Wildlife website, which holds records from a number of custodians. The data are only indicative and cannot be considered a comprehensive inventory, and may contain errors and omissions.
Species listed under the Sensitive Species Data Policy may have their locations denatured (^ rounded to 0.1°; ^^ rounded to 0.01°).

Search criteria : Public Report of all Valid Records of Animals in selected area [North: -31.86 West: 141.16 East: 141.26 South: -31.96] returned a total of 17 records of 14 species.
Report generated on 29/09/2013 6:28 PM

Kingdom	Class	Family	Species Code	Scientific Name	Exotic	Common Name	NSW status	Comm. status	Records	Info
Animalia	Reptilia	Elapidae	2697	*Pseudonaja modesta*		Ringed Brown Snake	E1,P		1	

Australian Government

Department of Sustainability, Environment, Water, Population and Communities

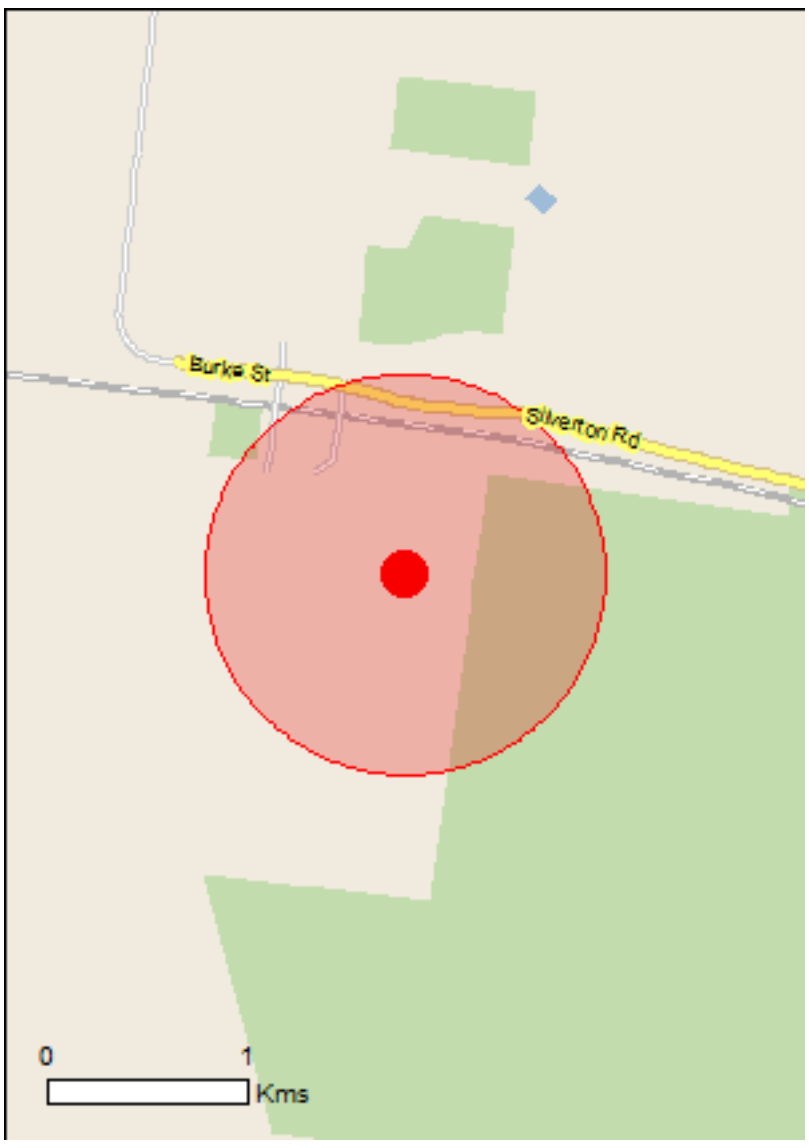
EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about Environment Assessments and the EPBC Act including significance guidelines, forms and application process details.

Report created: 29/09/13 18:18:13



This map may contain data which are ©Commonwealth of Australia (Geoscience Australia), ©PSMA 2010

Coordinates

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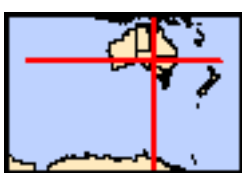

Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Areas:	None
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	4
Listed Migratory Species:	7

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place and the heritage values of a place on the Register of the National Estate.

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	6
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Commonwealth Reserves Marine	None

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

Place on the RNE:	2
State and Territory Reserves:	None
Regional Forest Agreements:	None
Invasive Species:	16
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Listed Threatened Species		[Resource Information]
Name	Status	Type of Presence
Birds		
Amytornis modestus		
Thick-billed Grasswren [84121]	Vulnerable	Species or species habitat likely to occur within area
Leipoa ocellata		
Malleefowl [934]	Vulnerable	Species or species habitat may occur within area
Rostratula australis		
Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
Plants		
Acacia carneorum		
Needle Wattle, Dead Finish, Purple-wood Wattle [66685]	Vulnerable	Species or species habitat likely to occur within area

Listed Migratory Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Leipoa ocellata		
Malleefowl [934]	Vulnerable	Species or species habitat may occur within area
Merops ornatus		
Rainbow Bee-eater [670]		Species or species habitat may occur within area
Migratory Wetlands Species		

Name	Threatened	Type of Presence
Ardea alba		
Great Egret, White Egret [59541]		Species or species habitat likely to occur within area
Ardea ibis		
Cattle Egret [59542]		Species or species habitat may occur within area
Gallinago hardwickii		
Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Rostratula benghalensis (sensu lato)		
Painted Snipe [889]	Endangered*	Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Birds		
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba		
Great Egret, White Egret [59541]		Species or species habitat likely to occur within area
Ardea ibis		
Cattle Egret [59542]		Species or species habitat may occur within area
Gallinago hardwickii		
Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Merops ornatus		
Rainbow Bee-eater [670]		Species or species habitat may occur within area
Rostratula benghalensis (sensu lato)		
Painted Snipe [889]	Endangered*	Species or species habitat may occur within area

Extra Information

Places on the RNE [Resource Information]

Note that not all Indigenous sites may be listed.

Name	State	Status
Historic		
Former Municipal Chambers	NSW	Registered
Silverton	NSW	Registered

Invasive Species [Resource Information]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit, 2001.

Name	Status	Type of Presence
Birds		
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Turdus merula Common Blackbird, Eurasian Blackbird [596]		Species or species habitat likely to occur within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Capra hircus Goat [2]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		

Name	Status	Type of Presence
Carrichtera annua Ward's Weed [9511]		Species or species habitat may occur within area
Chrysanthemoides monilifera subsp. monilifera Boneseed [16905]		Species or species habitat likely to occur within area
Opuntia spp. Prickly Pears [82753]		Species or species habitat likely to occur within area
Parkinsonia aculeata Parkinsonia, Jerusalem Thorn, Jelly Bean Tree, Horse Bean [12301]		Species or species habitat likely to occur within area

Coordinates

-31.89222 141.22862

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World Heritage and Register of National Estate properties, Wetlands of International Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

For species where the distributions are well known, maps are digitised from sources such as recovery plans and detailed habitat studies. Where appropriate, core breeding, foraging and roosting areas are indicated under 'type of presence'. For species whose distributions are less well known, point locations are collated from government wildlife authorities, museums, and non-government organisations; bioclimatic distribution models are generated and these validated by experts. In some cases, the distribution maps are based solely on expert knowledge.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Department of Environment, Climate Change and Water, New South Wales
-Department of Sustainability and Environment, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment and Natural Resources, South Australia
-Parks and Wildlife Service NT, NT Dept of Natural Resources, Environment and the Arts
-Environmental and Resource Management, Queensland
-Department of Environment and Conservation, Western Australia
-Department of the Environment, Climate Change, Energy and Water
-Birds Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-SA Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Atherton and Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
-State Forests of NSW
-Geoscience Australia
-CSIRO
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact Us page.

Department of Sustainability, Environment, Water, Population and Communities
GPO Box 787
Canberra ACT 2601 Australia
+61 2 6274 1111

Appendix C
Test of significance

Assessment of significance for sand quarry, Mindioomballa Creek, Silverton

Introduction

This assessment of significance is part of the environmental impact assessment for a sand quarry, proposed for in the Mindioomballa Creek, at Silverton, NSW.

The proposal is to extract sand up to 1.5m deep over a 11.65ha (approx.) site. The quarry proponent has discussed the proposal with the landholders and their input has been included in the proposal.

In respect to terrestrial biodiversity values, the area is modified (through grazing) and contains the species commonly found in such environments, including native grasses and colonising small shrubs.

The proposed works lie within the unincorporated area and also within the Western Local Lands Service (LLS) region. The local area is classified as the Barrier Range in respect to biodiversity and the vegetation is described as *'Bluebush shrubland on stony rises and downs of the arid zone* (PCT WE8) (stockpile area) and the extraction area is described as *River Red Gum open woodland of intermittent watercourses manly of the arid climate zone vegetation community* (PCT WE 79).

A database search was undertaken on 29 September 2013 of the NSW Office of Environment and Heritage and the Department of Sustainability, Environment, Water, Populations and Communities (SEWPaC) websites to identify threatened species that may be found within the proposed development site as listed under the *Threatened Species Conservation Act* 1995 (*TSC* Act) and the *Environmental Protection and Biodiversity Act* 1999 (EPBC Act).

The following threatened species have potential to occupy the site and have triggered a seven part test of significance:

- Purple wood wattle *(Acacia carneorum)*
- Creek Wattle (*Acacia rivals*)
- Slender Darling pea *(Swainsona murryana)*
- Black-breasted buzzard *(Hamirostra melanosternon)*
- Little Eagle *(Hieraaetus morphnoides)*
- Square-tailed *Kite (Lophoictinia isura)*
- Barking Owl *(Ninox connivens)*
- Halls Babbler *(Pomatostomus halli)*
- Red Throat *(Pyrrholaemus brunneus)*
- Thick-billed *grasswren (Amytornis modestus)*
- Stimpsons Python *(Antaresia stimsoni)*
- Collared Whip Snake (*Demansia torquare*)
- Ringed Brown Snake *(Pseudonaja modesta)*
- Yellow-bellied Sheathtail-bat *(Saccolaimus flaviventris)*
- Stripped faced Dunnart *(Sminthopsis macroura)*

Assessment of significance

<u>Purple-wood wattle (Vulnerable – NSW and Commonwealth)</u>

(a) In the case of a threatened species, state whether the life cycle of the species is likely to be disrupted such that a viable local population of the species is likely to be placed at risk of extinction.

Due to the small nature of the proposal and the lack of critical habitat for this species, the life-cycle of the species is not likely to be disrupted such that a viable local population of the species is likely to be at risk of extinction.

(b) In the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction.

N/A – The Purple-wood wattle is not considered an endangered population at this location.

(c) In the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:
(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or
(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.

N/A – The Purple-wood wattle is not considered an endangered ecological community, but a single species.

(d) In relation to the habitat of a threatened species, population or ecological community:
(i) the extent to which habitat is likely to be removed or modified as a result of the action proposed, and
(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and
(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality.

This species has been recorded in colonies of 30 -70 at around 30 locations. It is not recorded at this site, it is therefore unlikely that critical habitat is likely to be removed or modified as a result of the proposal, no habitat is likely to become fragmented or isolated from other areas of habitat and the area is not of importance to the long term survival of the species.

(e) Whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly).

The action is not likely to have an adverse effect on critical habitat at this location as it has not been recorded in site.

(f) Whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan.

The action proposed does not contravene the objectives of the recovery plan for this species.

(g) Whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process

The action constitutes part of the following key threatening processes as listed in the TSC Act 1995 Schedule 3:

- Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands (as described in the final determination of the Scientific Committee to list the threatening process)
- Clearing of native vegetation (as defined and described in the final determination of the Scientific Committee to list the key threatening process)

<u>Creek wattle (Endangered – NSW)</u>

(a) In the case of a threatened species, state whether the life cycle of the species is likely to be disrupted such that a viable local population of the species is likely to be placed at risk of extinction.

Due to the small nature of the proposal and the lack of critical habitat for this species, the life-cycle of the species is not likely to be disrupted such that a viable local population of the species is likely to be at risk of extinction.

(b) In the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction.

N/A – The Creek wattle is not considered an endangered population at this location.

(c) In the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:
(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or
(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.

N/A – The Creek wattle is not considered an endangered ecological community, but a single species.

(d) In relation to the habitat of a threatened species, population or ecological community:
(i) the extent to which habitat is likely to be removed or modified as a result of the action proposed, and
(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and
(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality.

This species is confined to woodland communities bordering ephemeral creeks and streams and along watercourses. It grows in a variety of stony soils, often with limestone content.. It is not recorded at this site, it is therefore unlikely that critical habitat is likely to be removed or modified as a result of the stockpile areas, no habitat is likely to become fragmented or isolated from other areas of habitat and the area is not of importance to the long term survival of the species.

(e) Whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly).

The action is not likely to have an adverse effect on critical habitat at this location as it has not been recorded in site.

(f) Whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan.

The action proposed does not contravene the objectives of the recovery plan for this species.

(g) Whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process

The action constitutes part of the following key threatening processes as listed in the *TSC Act 1995* Schedule 3:

- Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands (as described in the final determination of the Scientific Committee to list the threatening process)
- Clearing of native vegetation (as defined and described in the final determination of the Scientific Committee to list the key threatening process)

<u>Slender Darling-pea (Vulnerable – NSW and Commonwealth)</u>

(a) In the case of a threatened species, state whether the life cycle of the species is likely to be disrupted such that a viable local population of the species is likely to be placed at risk of extinction.

Due to the small nature of the proposal and the lack of critical habitat for this species, the life-cycle of the species is not likely to be disrupted such that a viable local population of the species is likely to be at risk of extinction.

(b) In the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction.

N/A – Slender Darling-pea is not considered an endangered population at this location.

(c) In the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:
(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or
(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.

N/A – Slender Darling-pea is not considered an endangered ecological community, but a single species.

(d) In relation to the habitat of a threatened species, population or ecological community:
(i) the extent to which habitat is likely to be removed or modified as a result of the action proposed, and
(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and
(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality.

This species has been recorded as infrequent to locally common. It is not recorded at this site, it is therefore unlikely that critical habitat is likely to be removed or modified as a result of the proposal, no critical habitat is likely to become fragmented or isolated from other areas of critical habitat and the area is not of importance to the long term survival of the species.

(e) Whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly).

The action is not likely to have an adverse effect on critical habitat at this location as it has not been recorded in site.

(f) Whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan.

The action proposed does not contravene the objectives of the recovery plan for this species.

(g) Whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process

The action constitutes part of the following key threatening processes as listed in the TSC Act 1995 Schedule 3:

- Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands (as described in the final determination of the Scientific Committee to list the threatening process)
- Clearing of native vegetation (as defined and described in the final determination of the Scientific Committee to list the key threatening process)

<u>Black-breasted Buzzard (Vulnerable – NSW)</u>

(a) In the case of a threatened species, state whether the life cycle of the species is likely to be disrupted such that a viable local population of the species is likely to be placed at risk of extinction.

Due to the small nature (relative to the surrounding area) of the proposed quarrying site and the lack of critical habitat for this species, the life-cycle of the species is not likely to be disrupted such that a viable local population of the species is likely to be at risk of extinction.

(b) In the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction.
N/A – The Black-breasted Buzzard is not considered an endangered population at this location.

(c) In the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:
(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or
(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.
N/A – The Black-breasted Buzzard is not considered an endangered ecological community, but a single species.

(d) In relation to the habitat of a threatened species, population or ecological community:
(i) the extent to which habitat is likely to be removed or modified as a result of the action proposed, and
(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and
(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality.
Due to the small nature of the proposed quarrying site, only minor modification to potential habitat will occur. The proposed quarry will not cause fragmentation or isolations from other potential habitats. The habitat proposed to be modified is not critical to the long-term survival of the species.

(e) Whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly).
No critical habitat has been identified for The Black-breasted Buzzard.

(f) Whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan.
The action proposed does not contravene the objectives of the recovery plan for this species.

(g) Whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process
The action constitutes part of the following key threatening processes as listed in the *TSC Act 1995* Schedule 3:

- Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands (as described in the final determination of the Scientific Committee to list the threatening process)

- Clearing of native vegetation (as defined and described in the final determination of the Scientific Committee to list the key threatening process)

Little Eagle (Vulnerable NSW)

(a) In the case of a threatened species, state whether the life cycle of the species is likely to be disrupted such that a viable local population of the species is likely to be placed at risk of extinction.

Due to the small nature (relative to the surrounding area) of the proposed quarrying site and the lack of critical habitat for this species (inhabits drier areas including rocky outcrops and dry watercourses), the life-cycle of the species is not likely to be disrupted such that a viable local population of the species is likely to be at risk of extinction.

(b) In the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction.

N/A – The Little Eagle is not considered an endangered population at this location.

(c) In the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:
(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or
(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.

N/A – The Little Eagle is not considered an endangered ecological community, but a single species.

(d) In relation to the habitat of a threatened species, population or ecological community:
(i) the extent to which habitat is likely to be removed or modified as a result of the action proposed, and
(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and
(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality.

Due to the small nature of the proposed quarrying site, only minor modification to potential habitat will occur. The proposed quarry will not cause fragmentation or isolations from other potential habitats. The habitat proposed to be modified is not critical to the long-term survival of the species.

(e) Whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly).

No critical habitat has been identified for the Little Eagle.

(f) Whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan.
The action proposed does not contravene the objectives of the recovery plan for this species.

(g) Whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process
The action constitutes part of the following key threatening processes as listed in the *TSC Act 1995* Schedule 3:

- Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands (as described in the final determination of the Scientific Committee to list the threatening process)
- Clearing of native vegetation (as defined and described in the final determination of the Scientific Committee to list the key threatening process)

Square-tailed Kite (Vulnerable – NSW)

(a) In the case of a threatened species, state whether the life cycle of the species is likely to be disrupted such that a viable local population of the species is likely to be placed at risk of extinction.
Due to the small nature (relative to the surrounding area) of the proposed quarrying site and the lack of critical habitat for this species, the life-cycle of the species is not likely to be disrupted such that a viable local population of the species is likely to be at risk of extinction.

(b) In the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction.
N/A – The Square-tailed Kite is not considered an endangered population at this location.

(c) In the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:
(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or
(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.
N/A – The Square-tailed Kite is not considered an endangered ecological community, but a single species.

(d) In relation to the habitat of a threatened species, population or ecological community:
(i) the extent to which habitat is likely to be removed or modified as a result of the action proposed, and
(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and

(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality.
Due to the small nature of the proposed quarrying site, only minor modification to potential habitat will occur. The proposed quarry will not cause fragmentation or isolations from other potential habitats. The habitat proposed to be modified is not critical to the long-term survival of the species.

(e) Whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly).
No critical habitat has been identified for the Square-tailed Kite.

(f) Whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan.
The action proposed does not contravene the objectives of the recovery plan for this species.

(g) Whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process
The action constitutes part of the following key threatening processes as listed in the *TSC Act 1995* Schedule 3:

- Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands (as described in the final determination of the Scientific Committee to list the threatening process)
- Clearing of native vegetation (as defined and described in the final determination of the Scientific Committee to list the key threatening process)

Barking Owl *(Vulnerable)*
(a) In the case of a threatened species, state whether the life cycle of the species is likely to be disrupted such that a viable local population of the species is likely to be placed at risk of extinction.
Due to the small nature (relative to the surrounding area) of the proposed quarrying site and the lack of critical habitat for this species (inhabits drier areas including rocky outcrops and dry watercourses), the life-cycle of the species is not likely to be disrupted such that a viable local population of the species is likely to be at risk of extinction.

(b) In the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction.
N/A – The Barking Owl is not considered an endangered population at this location.

(c) In the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:
(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.
N/A – The Barking Owl is not considered an endangered ecological community, but a single species.

(d) In relation to the habitat of a threatened species, population or ecological community:
(i) the extent to which habitat is likely to be removed or modified as a result of the action proposed, and
(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and
(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality.
Due to the small nature of the proposed quarrying site, only minor modification to potential habitat will occur. The proposed quarry will not cause fragmentation or isolations from other potential habitats. The habitat proposed to be modified is not critical to the long-term survival of the species.

(e) Whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly).
No critical habitat has been identified for the Barking Owl.

(f) Whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan.
The action proposed does not contravene the objectives of the recovery plan for this species.

(g) Whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process
The action constitutes part of the following key threatening processes as listed in the *TSC Act 1995* Schedule 3:

- Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands (as described in the final determination of the Scientific Committee to list the threatening process)
- Clearing of native vegetation (as defined and described in the final determination of the Scientific Committee to list the key threatening process)

<u>Hall's Babbler (Vulnerable – NSW)</u>

(a) In the case of a threatened species, state whether the life cycle of the species is likely to be disrupted such that a viable local population of the species is likely to be placed at risk of extinction.
Due to the small nature relative to the surrounding area of the proposed quarrying site and the lack of critical habitat for this species, the life-cycle of the species is not likely to be disrupted such that a viable local population of the species is likely to be at risk of extinction.

(b) In the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction.
N/A – Hall's Babbler is not considered an endangered population at this location.

(c) In the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:
(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or
(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.
N/A – Hall's Babbler is not considered an endangered ecological community, but a single species.

(d) In relation to the habitat of a threatened species, population or ecological community:
(i) the extent to which habitat is likely to be removed or modified as a result of the action proposed, and
(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and
(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality.
Due to the small nature of the proposed quarrying site, only minor modification to potential habitat will occur. The proposed quarry will not cause fragmentation or isolations from other potential habitats. The habitat proposed to be modified is not critical to the long-term survival of the species.

(e) Whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly).
No critical habitat has been identified for Hall's Babbler.

(f) Whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan.
The action proposed does not contravene the objectives of the recovery plan for this species.

(g) Whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process
The action constitutes part of the following key threatening processes as listed in the *TSC Act 1995* Schedule 3:

- Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands (as described in the final determination of the Scientific Committee to list the threatening process)
- Clearing of native vegetation (as defined and described in the final determination of the Scientific Committee to list the key threatening process)

Red Throat (Vulnerable)

(a) In the case of a threatened species, state whether the life cycle of the species is likely to be disrupted such that a viable local population of the species is likely to be placed at risk of extinction.

Due to the small nature (relative to the surrounding area) of the proposed quarrying site and the lack of critical habitat for this species (inhabits drier areas including rocky outcrops and dry watercourses), the life-cycle of the species is not likely to be disrupted such that a viable local population of the species is likely to be at risk of extinction.

(b) In the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction.

N/A – The Red Throat is not considered an endangered population at this location.

(c) In the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:
(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or
(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.

N/A – The Red Throat is not considered an endangered ecological community, but a single species.

(d) In relation to the habitat of a threatened species, population or ecological community:
(i) the extent to which habitat is likely to be removed or modified as a result of the action proposed, and
(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and
(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality.

Due to the small nature of the proposed quarrying site, only minor modification to potential habitat will occur. The proposed quarry will not cause fragmentation or isolations from other potential habitats. The habitat proposed to be modified is not critical to the long-term survival of the species.

(e) Whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly).

No critical habitat has been identified for the Red Throat.

(f) Whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan.

The action proposed does not contravene the objectives of the recovery plan for this species.

(g) Whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process

The action constitutes part of the following key threatening processes as listed in the *TSC Act 1995* Schedule 3:

- Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands (as described in the final determination of the Scientific Committee to list the threatening process)
- Clearing of native vegetation (as defined and described in the final determination of the Scientific Committee to list the key threatening process)

Thick-billed grasswren (Critically endangered – NSW and vulnerable - Commonwealth)

(a) In the case of a threatened species, state whether the life cycle of the species is likely to be disrupted such that a viable local population of the species is likely to be placed at risk of extinction.

The Thick-billed grasswren inhabits low, sparse or dense chenopod shrublands, samphire and heathland with nests generally found in low shrubs (DSEWPC, 2012). The subspecies also inhabited gibber plains with chenopod shrubs growing along watercourses (McAllan, 1987). Although some of this habitat will be modified through this proposal, it will not disrupt the life cycle of the species.

(b) In the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction.

N/A – the Thick-billed grasswren is not considered an endangered population at this location.

(c) In the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:
(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or
(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.

N/A – The Thick-billed grasswren is not considered an endangered ecological community, but a single species.

(d) In relation to the habitat of a threatened species, population or ecological community:
(i) the extent to which habitat is likely to be removed or modified as a result of the action proposed, and
(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and

(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality.

Due to the small nature of the proposal only minor modification to potential foraging and nesting habitat will occur. The proposal will not cause fragmentation or isolations from other potential foraging nesting habitats. The habitat proposed to be modified is not critical to the long term survival of the species.

(e) Whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly).

No critical habitat has been identified for the Thick-billed grasswren.

(f) Whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan.

A number of recovery actions have been proposed, including:

- identify extant populations of the Thick-billed grasswren
- increase awareness and community participation
- monitor the results of future fauna surveys in NSW
- develop an extended records reporting system
- recovery plan co-ordination.

The proposed quarry does not contravene these recovery actions.

(g) Whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process

The action constitutes part of the following key threatening processes as listed in the TSC Act 1995 Schedule 3:

- Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands (as described in the final determination of the Scientific Committee to list the threatening process)
- Clearing of native vegetation (as defined and described in the final determination of the Scientific Committee to list the key threatening process)

<u>Stimsons Python (Vulnerable – NSW)</u>

(a) In the case of a threatened species, state whether the life cycle of the species is likely to be disrupted such that a viable local population of the species is likely to be placed at risk of extinction.

Due to the small nature (relative to the surrounding area) of the proposed quarrying site and the lack of critical habitat for this species (inhabits a wide range of arid and semi-arid environments including rock outcrops, sandy plains and dunefields where it is associated with larger trees and termite mounds), the life-cycle of the species is not likely to be disrupted such that a viable local population of the species is likely to be at risk of extinction.

(b) In the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered

population such that a viable local population of the species is likely to be placed at risk of extinction.
N/A – Stimsons Python is not considered an endangered population at this location.

(c) In the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:
(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or
(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.
N/A – Stimsons Python is not considered an endangered ecological community, but a single species.

(d) In relation to the habitat of a threatened species, population or ecological community:
(i) the extent to which habitat is likely to be removed or modified as a result of the action proposed, and
(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and
(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality.
Due to the small nature of the proposed quarrying site, only minor modification to potential habitat will occur (inhibits a wide range of habitats). The proposed quarry will not cause fragmentation or isolations from other potential habitats. The habitat proposed to be modified is not critical to the long-term survival of the species.

(e) Whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly).
No critical habitat has been identified for Stimsons Python.

(f) Whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan.
The action proposed does not contravene the objectives of the recovery plan for this species.

(g) Whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process
The action constitutes part of the following key threatening processes as listed in the *TSC Act 1995* Schedule 3:

- Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands (as described in the final determination of the Scientific Committee to list the threatening process)
- Clearing of native vegetation (as defined and described in the final determination of the Scientific Committee to list the key threatening process)

Ringed Brown Snake (Endangered – NSW)

(a) In the case of a threatened species, state whether the life cycle of the species is likely to be disrupted such that a viable local population of the species is likely to be placed at risk of extinction.

Due to the small nature (relative to the surrounding area) of the proposed quarrying site and the lack of critical habitat for this species (inhabits drier areas including rocky outcrops and dry watercourses), the life-cycle of the species is not likely to be disrupted such that a viable local population of the species is likely to be at risk of extinction.

(b) In the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction.

N/A – The Ringed Brown Snake is not considered an endangered population at this location.

(c) In the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:
(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or
(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.

N/A – The Ringed Brown Snake is not considered an endangered ecological community, but a single species.

(d) In relation to the habitat of a threatened species, population or ecological community:
(i) the extent to which habitat is likely to be removed or modified as a result of the action proposed, and
(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and
(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality.

Due to the small nature of the proposed quarrying site, only minor modification to potential habitat will occur. The proposed quarry will not cause fragmentation or isolations from other potential habitats. The habitat proposed to be modified is not critical to the long-term survival of the species.

(e) Whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly).

No critical habitat has been identified for the Ringed Brown Snake.

(f) Whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan.

The action proposed does not contravene the objectives of the recovery plan for this species.

(g) Whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process

The action constitutes part of the following key threatening processes as listed in the *TSC Act 1995* Schedule 3:

- Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands (as described in the final determination of the Scientific Committee to list the threatening process)
- Clearing of native vegetation (as defined and described in the final determination of the Scientific Committee to list the key threatening process)

Collared Whip Snake (Vulnerable – NSW)

(a) In the case of a threatened species, state whether the life cycle of the species is likely to be disrupted such that a viable local population of the species is likely to be placed at risk of extinction.
Due to the small nature (relative to the surrounding area) of the proposed quarrying site and the lack of critical habitat for this species (habitats include open forests, woodlands or shrublands with an understorey of grass, shrubs or hummock grasslands on the slopes and plains), the life-cycle of the species is not likely to be disrupted such that a viable local population of the species is likely to be at risk of extinction.

(b) In the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction.
N/A – The Collared Whip Snake is not considered an endangered population at this location, if is generally collected further north in Tibooburra and the vicinity of Sturt National Park.

(c) In the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:
(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or
(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.
N/A – The Collared Whip Snake is not considered an endangered ecological community, but a single species.

(d) In relation to the habitat of a threatened species, population or ecological community:
(i) the extent to which habitat is likely to be removed or modified as a result of the action proposed, and
(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and
(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality.
Due to the small nature of the proposed quarrying site, only minor modification to potential habitat will occur (stockpile sites). The proposed quarry will not cause fragmentation or isolations

from other potential habitats. The habitat proposed to be modified is not critical to the long-term survival of the species.

(e) Whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly).
No critical habitat has been identified for the Collared Whip Snake.

(f) Whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan.
The action proposed does not contravene the objectives of the recovery plan for this species.

(g) Whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process
The action constitutes part of the following key threatening processes as listed in the *TSC Act 1995* Schedule 3:

- Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands (as described in the final determination of the Scientific Committee to list the threatening process)
- Clearing of native vegetation (as defined and described in the final determination of the Scientific Committee to list the key threatening process)

<u>Yellow-bellied Sheathtail-bat (Vulnerable</u>

(a) In the case of a threatened species, state whether the life cycle of the species is likely to be disrupted such that a viable local population of the species is likely to be placed at risk of extinction.
Due to the small nature (relative to the surrounding area) of the proposed quarrying site and the lack of critical habitat for this species (inhabits drier areas including rocky outcrops and dry watercourses), the life-cycle of the species is not likely to be disrupted such that a viable local population of the species is likely to be at risk of extinction.

(b) In the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction.
N/A – The Yellow-bellied Sheathtail Bat is not considered an endangered population at this location.

(c) In the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:
(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or
(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.
N/A – The Yellow-bellied Sheathtail Bat is not considered an endangered ecological community, but a single species.

(d) In relation to the habitat of a threatened species, population or ecological community:
(i) the extent to which habitat is likely to be removed or modified as a result of the action proposed, and
(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and
(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality.
Due to the small nature of the proposed quarrying site, only minor modification to potential habitat will occur. The proposed quarry will not cause fragmentation or isolations from other potential habitats. The habitat proposed to be modified is not critical to the long-term survival of the species.

(e) Whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly).
No critical habitat has been identified for the Yellow-bellied Sheathtail Bat.

(f) Whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan.
The action proposed does not contravene the objectives of the recovery plan for this species.

(g) Whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process
The action constitutes part of the following key threatening processes as listed in the *TSC Act 1995* Schedule 3:

- Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands (as described in the final determination of the Scientific Committee to list the threatening process)
- Clearing of native vegetation (as defined and described in the final determination of the Scientific Committee to list the key threatening process)

Stripped faced Dunnart *(Vulnerable)*

(a) In the case of a threatened species, state whether the life cycle of the species is likely to be disrupted such that a viable local population of the species is likely to be placed at risk of extinction.
Due to the small nature (relative to the surrounding area) of the proposed quarrying site and the lack of critical habitat for this species (inhabits drier areas including rocky outcrops and dry watercourses), the life-cycle of the species is not likely to be disrupted such that a viable local population of the species is likely to be at risk of extinction.

(b) In the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction.
N/A – The Stripped-faced Dunnart is not considered an endangered population at this location.

(c) In the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:
(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or
(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.
N/A – The Stripped-face Dunnart is not considered an endangered ecological community, but a single species.

(d) In relation to the habitat of a threatened species, population or ecological community:
(i) the extent to which habitat is likely to be removed or modified as a result of the action proposed, and
(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and
(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality.
Due to the small nature of the proposed quarrying site, only minor modification to potential habitat will occur. The proposed quarry will not cause fragmentation or isolations from other potential habitats. The habitat proposed to be modified is not critical to the long-term survival of the species.

(e) Whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly).
No critical habitat has been identified for the Stripped-faced Dunnart.

(f) Whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan.
The action proposed does not contravene the objectives of the recovery plan for this species.

(g) Whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process
The action constitutes part of the following key threatening processes as listed in the *TSC Act 1995* Schedule 3:

- Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands (as described in the final determination of the Scientific Committee to list the threatening process)
- Clearing of native vegetation (as defined and described in the final determination of the Scientific Committee to list the key threatening process)

Conclusions

The assessment of significance for:

- Purple wood wattle *(Acacia carneorum)*
- Creek Wattle *(Acacia rivalis)*

- Slender Darling pea *(Swainsona murryana)*
- Black-breasted buzzard *(Hamirostra melanosternon)*
- Little Eagle *(Hieraaetus morphnoides)*
- Square-tailed Kite *(Lophoictinia isura)*
- Barking Owl *(Ninox connivens)*
- Halls Babbler *(Pomatostomus halli)*
- Red Throat *(Pyrrholaemus brunneus)*
- Thick-billed grasswren *(Amytornis modestus)*
- Stimpsons Python *(Antaresia stimsoni)*
- Ringed Brown Snake *(Pseudonaja modesta)*
- Collared Whip Snake *(Demansia torquate)*
- Yellow-bellied Sheathtail-bat *(Saccolaimus flaviventris)*
- Stripped faced Dunnart *(Sminthopsis macroura)*

revealed that the potential impacts of the proposal on these threatened species are extremely unlikely and where there could be potential impacts they will be very low. Potential minor impacts resulting from the proposed quarry are not expected to increase the likelihood of a threatened or endangered species becoming extinct.

The assessment of significance for these threatened species does not trigger the requirement for a species impact statement (SIS). The proposal is deemed to be non-significant for the assessed species. In determining the significance of the proposed works on threatened species, the following matters were taken into consideration:

- implementation of the proposed works
- activities to be undertaken in the area following the proposed works
- all direct and indirect impacts
- the frequency and duration of each known or likely impact/action
- the total impact which can be attributed to that action over the entire geographic area affected initially and over time
- the sensitivity of the receiving environment
- the degree of confidence with which the impacts of the action are known and understood.

References

Benson, J.S., Allen, C., Togher, C. & Lemmon, J, (2006). *New South Wales Vegetation Classification and Assessment: Part 1 Plant communities of the NSW Western Plains*. *Cunninghamia* 9(3): 383-451.

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Appendix D
AHIMS database search

AHIMS Web Services (AWS)

Extensive search - Site list report

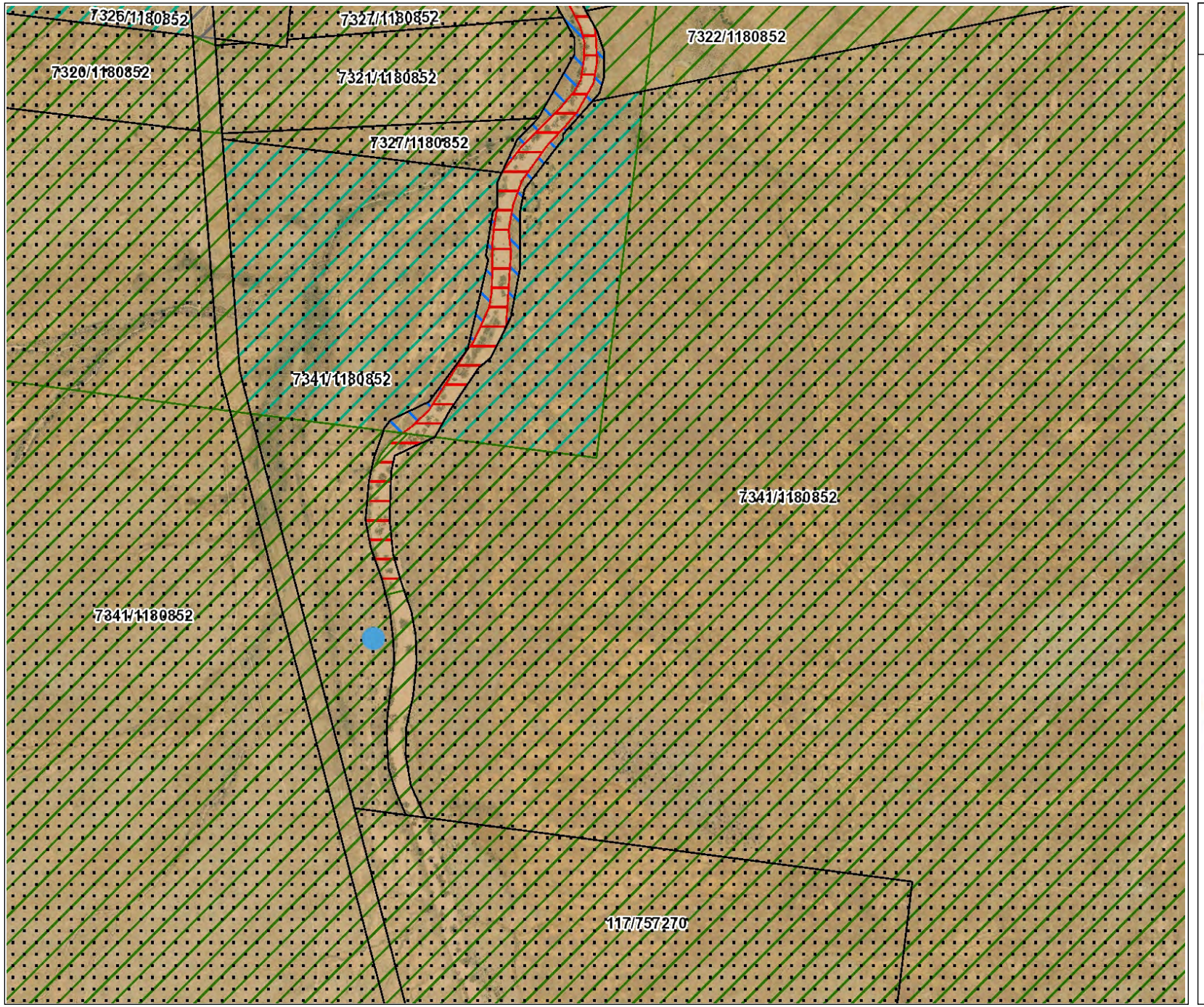
Your Ref/PO Number : Li 538988

Client Service ID : 498388

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
23-4-0681	Mindioomballa Stone Circle	GDA	54	521099	6469607	Open site	Valid	Stone Arrangement : -		

Contact **Recorders** Mr.John Gilding,DPIE **Permits**

Report generated by AHIMS Web Service on 21/04/2020 for Natalie Ryan for the following area at Lot : 7341, DP:DP1180852 with a Buffer of 50 meters. Additional Info : Grant Licence for sand extraction. Number of Aboriginal sites and Aboriginal objects found is 1



Mindioomballa Stone Circle
Zone 54 E521099 N 6469607

Legend

- Aboriginal Land Claim Boundary
- Licence (Structure Point)
- Licence (Structure Line)
- Licence (Structure Polygon)
- Licence (Land Area)
- Crown Lease
- Enclosure Permit
- Crown Reserve
- Crown Land (Other)
- Crown Land
- Crown Land - Status Unknown
- Non Crown Land
- Crown Land - Undefined Status
- Crown Road
- Shared Crown / Council Road
- Crown Road - Undefined Status
- Crown Waterway
- All Crown (Land, Road & Water)
- Local Government Area
- Suburb
- National Parks Reserve
- State Forest

Crown Account Details

Parish: BRAY
County: YANCOWINNA
LGA: UNINCORPORATED
Suburb: SILVERTON

Author: DPI\ryanna
Map Created: 21/04/2020 9:26:42 AM

NSW GOVERNMENT | Planning, Industry & Environment

N

0 183 367 550 734 m

Scale 1: 18056

Projection: WGS_1984_Web_Mercator_Auxiliary_Sphere

Appendix E
Colour plates

Photo 1: Typical ground cover at the proposed stockpile sites.

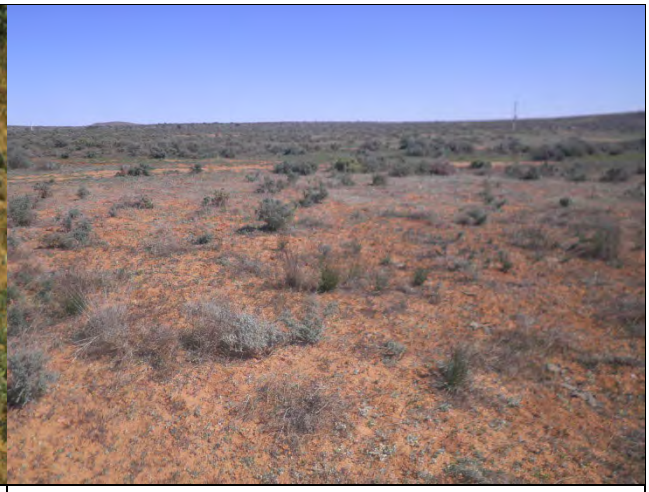


Photo 2: Typical landscape across the proposed stockpile sites.

Photo 3: Typical sandy surface along the creek bed.

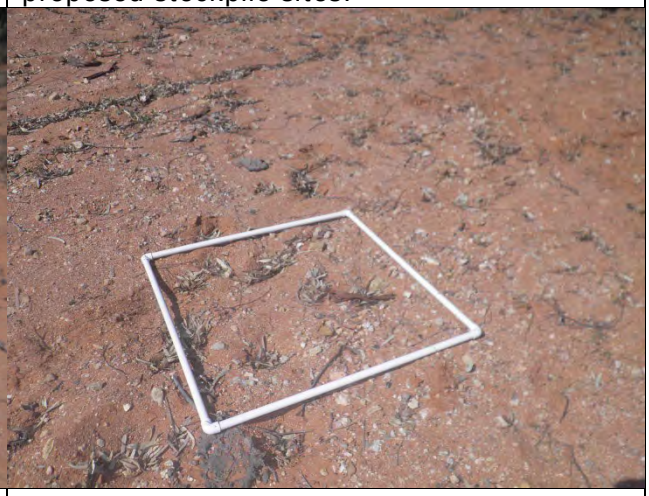


Photo 4: Some small rocky areas within the creek bed.

Photo 5: Typical landscape within the creek bed.

Photo 6: Minor erosion on banks of the creek and buildup of litter from upstream.

Photo 7: Existing access track into the creek from the Haul Road.

Photo 8: Stable bank, with good vegetative cover at the proposed quarrying site.

Photo 9: Typical river red gum vegetation within the creek bed, no quarrying will occur within the drip line of the tree.

Photo 10: Sand to be quarried within the creek bed.

Appendix F
Letter of consent – Traditional Owner

BROKEN HILL LOCAL ABORIGINAL LAND COUNCIL

ABN: 65 422 854 650
84 Oxide Street. PO Box 392, BROKEN HILL NSW 2880
Telephone: 08 8087 7413 / 8087 7310
Email: admin@bhlalc.org.au

Monday 27th May 2019

CMC Consolidated
PO Box 5079
Broken Hill NSW 2880

To whom it may concern,

The Broken Hill Local Aboriginal Land Council confirm that an Aboriginal Cultural Sites survey was completed on the 28th March 2019. The survey was conducted by Dulcie O'Donnell and Raymond J O'Donnell. The Broken Hill LALC Sites Officers have confirmed that no Aboriginal artefacts were found in the surveyed area.

The Broken Hill LALC board endorse your license application although request that the following protocols be adhered to.

1. That no work is to be conducted within an unsurveyed area
2. All ground surface disturbance in the license area should cease immediately if any suspected Aboriginal artefacts are uncovered.
    a) The discoverer of the find(s) will notify machinery operators in the immediate vicinity of the find(s) so that work can be halted and ensure that there is no further harm to the object;
    b) Secure the area and prevent equipment or personnel from entering the area except in accordance with this protocol; and
    c) The site supervisor will be informed of the find(s).
3. If there is substantial doubt regarding an Aboriginal origin for the finds, then gain a qualified opinion from an archaeologist and the Broken Hill Local Aboriginal Land Council as soon as possible.
4. Immediately notify the following authorities or personnel of the discovery:
    a) Office of Environment and Heritage (Environment Line: 131 555); and
    b) Broken Hill Local Aboriginal Land Council and the Wilyakali Aboriginal Corporation Representatives;
5. Where the find(s) are determined to be Aboriginal Objects, any re-commencement of construction related ground surface disturbance may only resume in the area of the find(s) following compliance with any consequential legal requirements and gaining written approval from Office of Environment and Heritage.

Kind Regards

Amanda Stone
Acting Chief Executive Officer

Appendix G
Cultural heritage contingency plan

Contingency plan in the event of Aboriginal material being found

If any Aboriginal object is discovered and/or harmed in, or under the land, while undertaking gravel pit development activities, the proponent must:

1. Not further harm the object;
2. Immediately cease all work at the particular location;
3. Secure the area so as to avoid further harm to the Aboriginal object;
4. Notify DPIE-EES as soon as practical on 131 555, providing any details of the Aboriginal object and its location; and
5. Not recommence any work at the particular location unless authorised in writing by DPIE-EES.

Appendix H
Sand analysis

CIVIL TEST PTY. LTD
A.B.N. 91 006 855 509
SOIL TESTING & GEOTECHNICAL CONSULTANTS
A.C.N. 006 855 509
Unit 2 48 Tenth Street Mildura Vic 3500 Telephone: (03) 5023 2870 Facsimile: (03) 5023 2866
Head Office: 10 Latham Street (PO Box 537) Mornington 3931 Tel: (03) 5975 6644 Fax: (03) 5975 9689 and Mitcham (03) 9874 5844

AGGREGATES AND SANDS

CLIENT:	Sunraysia Environmental	REPORT No.	3090341.0	DATE SAMPLED:	Delivered by Client 06.10.09
ADDRESS:	3 The Crescent	REPORT DATE:	13.10.09	SAMPLED BY:	N/K
	MILDURA VIC 3500	CHECKED BY:	MB	TESTED BY:	CVB / TP
PROJECT:	Laboratory Testing Sands				

Sample Details:			SIEVE ANALYSIS Percentage (%) Passing															CLAY & FINE
Sample Number	Source	MC %	75.0 mm	53.0 mm	37.5 mm	26.5 mm	19.0 mm	13.2 mm	9.50 mm	6.70 mm	4.75 mm	2.36 mm	1.18 mm	0.600 mm	0.425 mm	0.300 mm	0.150 mm	0.075 mm	SILT (%)
2644093	N/K	0.1	-	-	-	-	-	-	100	99	99	96	85	57	39	22	5	2	5
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Sampling Method Not known - by Client
Moisture Content : AS 1289.2.1.1
Sieve Analysis : AS 1141.11 - Washed & Dry Sieved
Clay & Fine Silt : AS 1141.33

NATA

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CIVILTEST PTY LTD
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  10 Latham Street Mornington Vic 3931
- ☐ Mitcahm Laboratory - Accreditation Number 790
  7/38 Thornton Crescent Mitcham Vic 3132
- ☑ Mildura Laboratory - Accreditation Number 10784
  2/48 Tenth Street Mildura 3500
- ☐ Mobile Laboratory - Accreditation Number 13660

M A BATE
APPROVED SIGNATORY
REF: Client / MB

Appendix I
Environmental Management and Rehabilitation Plan

Environmental management and rehabilitation plan

Silverton Sand Quarry

Mindioomballa Creek, Silverton

Business name	Green Edge Environmental P/L
ABN	35 894 909 188
Postal address	PO Box 1665 Mildura, Victoria, 3502
Principle Point of contact	Chris Alderton
Email and Mobile	chris@geenvironmental.com.au 0438 345 109

Rev	Purpose of Document	Author	Reviewer	Issue Date
A	Draft EMRP	C. Alderton	L. Alderton	14/10/2013
B	Final EMRP	C. Alderton	C. Alderton	04/05/2014

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TABLES

FIGURES

APPENDICIES

1.0 Introduction

This Environmental Management and Rehabilitation Plan (EMRP) has been prepared in support of an extractive industries licence application and Environmental Impact Statement (EIS) for sand extraction by Basin Sands Logistics Pty Ltd to be lodged with the Department of Primary Industries (DPI) – Catchments and Lands.

The proposal is to quarry sand from Mindioomballa Creek, Silverton.

Although the Western Division Regional Environmental Plan No. 1 - Extractive Industries, has been repealed, advice sought from DPI recommended extractive industries proposals within the Western Division prepare an EMRP to assist in the assessment of the proposal.

1.1 Location of the site

The proposed sand quarry site is located approximately 22km north-west of Broken Hill, near the town of Silverton. Access to the proposed site is via an existing track from Silverton Road (refer to Appendix A).

The proposed sand quarry is located in the unincorporated area of Western New South Wales. The proposal covers a number of allotments and land tenures identified in the Environmental Impact Statement (EIS).

Geographic positions system (GPS) coordinates for the proposed quarry are shown in Table 1.

Table 1 Coordinates for the quarry.

Location	Easting	Northing
Northern end	521566	6471674
Southern end	521182	6469748

Note: Coordinates are in GDA 94, MGA Zone 54.

1.2 Objective of the proposal

The objective of this proposal is to secure a source of construction sand. The sand is proposed to be used as construction material for the production of cement. There are limited alternative sources of sand in the area. This proposal aims to address the supply issue by making additional resources available.

Construction sand, soil, gravel or similar materials (which are not prescribed as minerals within the meaning of the *Mining Act 1992*) are defined as 'extractive materials' in the Extractive Industries Quarries – EIS Guideline (Department of Urban Affairs and Planning (September 1996).

2.0 Description of the environment

2.1 Landform and topography

The land system consists of peneplain to plain with meandering stream channels that flow south to north, from the nearby range. The creeks of the downs and plains are classified as meandering tree-lined creeks, usually dry, with vegetation dominated with river red gum (*Eucalyptus camaldulensis*), acacias and grasses, with soils consisting of sand and pebbles (Cowling, 1995).

The topography of the land is flat to gently undulating. The proposed quarry area is located in the Mindioomballa Creek, which is ephemeral.

Figure 1 Typical landform of the proposed quarry.

2.2 Geology and soils

The geology of the Barrier Range is known as the Willyama complex, which is characterised by sediments laid down 1800 million years ago. These sediments have subsequently been dominated by complex folding, heat and pressure and more recently, erosion (Cowling 1995).

The proposed site lies within the Murray Basin, one of the four recognised geological provinces of New South Wales. The Murray Basin is almost completely covered by Quaternary material. The western part of the basin in NSW is characterised by gently undulating dunes and plains with soils of aeolian (windblown) deposits (Cunningham *et al.* 1981). Many of the rocks and minerals found in the region are of considerable interest and economic importance, and geology exerts strong controls on the landscape.

Soils in the depositional basin are deep red sands with variable sandy profiles under dunes, and gradational profiles in the sandplains. Most soils have a moderate to high level of calcium carbonate in the profile. Heavy cracking clays

in floodouts and on lake beds are often unvegetated because they contain high levels of gypsum and sometimes salt (DECC 2008).

2.3 Water resources and drainage

The Mindioomballa Creek transports gravel and sand from the hills of the surrounding range and deposits them on the flatter ground as the creek water flow decreases in velocity.

Streams in the region have cut steep-sided gorges containing sheltered waterholes through the ranges. Beyond the footslopes the streams expand as alluvial fans, distributing sediment into sandy floodouts and clay playas (DECC 2008).

Rock-weathering processes have been operating continuously in the region for more than 90 million years and a deep weathered mantle has formed across most of the landscape. Many slopes are mantled by gibber (rounded, silica-rich boulders) derived from the breakdown of silicified sediments (silcrete duricrusts) (DECC 2008).

There are no stream gauges located in Mindioomballa Creek and no historic data on length of flow, water quality or quantity. The creek flows on average a few times per year and generally flows subside within 24 hours.

The creek has always accumulated sand in the section relevant to this proposal. The course of the creek has continued to evolve, as vegetation (river red gums) in the bed of the creek assist in accumulating sand, therefore varying flows and alignment of the creek. The bed of the creek consists of 95% sand with some gravel of varying size material from 2cm to 10cm, fallen tree limbs, washout sections, eroded banks and vegetation.

2.4 Flora and fauna

According to the NSW Vegetation Classification and Assessment Project, the area proposed to be quarried is classed as river red gum open woodland of intermittent watercourses mainly of the arid climate (vegetation community ID 41). This vegetation community consists of open woodland to about 15m tall, comprised of the arid zone sub-species of river red gum and understorey composed of river cooba (*Acacia salicina*) western boobialla (*Myoporum montanum*), prickly wattle (*Acacia victoriae*) and black bluebush (*Maireana pyramidata*).

A database search was undertaken on 29 September 2013 of the NSW Office of Environment and Heritage and the Department of Sustainability, Environment, Water, Populations and Communities (SEWPaC) websites to identify threatened species that may be found within the proposed development site as listed under the *Threatened Species Conservation Act 1995* (TSC Act) and the *Environmental Protection and Biodiversity Act 1999* (EPBC Act). The proposed quarry site is located in the Broken Hill Complex Bioregion.

A desktop search of the online databases was undertaken as follows:

- NSW Office of Environment and Heritage Atlas of NSW, Wildlife
  Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC) Environmental Protection and Biodiversity Conservation (EPBC) Protected Matters Report

A general flora and fauna assessment was conducted across the proposed area on 11 June and 28 August 2013, including approximately 100m upstream and downstream and the immediate edge of the riparian zone. The survey focused on areas where access to the creek bed could occur and identified the vegetation on the bank, bed, access track and stockpile area. The vegetation characteristics of the study area consisted of a typical intermittent watercourse of the semi-arid plain and is of various ages from mature hollow bearing trees to juveniles.

The flora and fauna assessment revealed no vegetation species; population or compunities, which are of local, regional or state conservation significance. An assessment of significance was undertaken for the following flora and fauna species:

- Purple wood wattle (*Acacia carneorum*)
- slender darling pea (*Swainsona murryana*)
- thick-billed grass-wren (*Amytornis modestus)*

This assessment revealed that the potential impacts of the proposal on these threatened flora and fauna species are extremely unlikely and where there could be potential impacts they will be very minor. Potential minor impacts are not expected to increase the likelihood of a threatened or endangered species from becoming extinct, due to the construction or operation of the proposed quarry.

2.5 Archaeological assessment

An Aboriginal Heritage Information Management System (AHIMS) database search was undertaken of the proposed quarry and surrounding area. No Aboriginal objects or Aboriginal places were recorded within 10km of the proposed area (refer to Appendix A).

The proposed quarrying area was assessed by Dulcie O'Donnell, traditional owner of the Willyakali area and member of the Broken Hill Local Aboriginal Lands Council on 9 April 2014. The assessment took into consideration Aboriginal cultural sites, including artefacts such as hearths, burial sites and scar trees.

2.6 Land ownership and landuse

The proposed sand quarry is located in the unincorporated area of Western New South Wales. The land is referred to as Mindioomballa Creek and incorporates a number of allotments along the creek (refer to Appendix A).

The proposal covers the following allotments:

- Lot 7361 DP1182573
- Lot 7327 DP1182573
- Lot 7321 DP1182573 – Travelling stock reserve and Reserve 230089 for Urban Services
- Lot 7341 DP1182573 – Silverton Common

2.7 Historical significance

There are no visible ruins on or near the site. The Australian Heritage Commission National Estate Register has no listings for any feature of historical significance in the proposed quarry area.

3.0 Details of proposed activity

3.1 Background to the operation

The site assessment reveals historical quarrying activity downstream of the proposed quarry. Grazing is occuring and a sand slug is present, washed down slope from the nearby hills.

DPI have undertaken a search to determine other similar operations in the area. The search did not reveal any current extractive operations in the area.

3.2 Background to the developer

Mr Steve Radford has been operating in the extractive industries business throughout the Western Division for many years. Mr Radford is also Managing Director of Consolidated Mining and Civil, whose major role is the transportation of heavy metal laden sands in the western division of New South Wales and western Victoria.

3.3 Material to be won

The proposed quarry area contains high quality sand, which is ideal for use as construction sand for the production of cement. An analysis of similar areas has revealed the material contains 7% clay and fine silt. After washing in Broken Hill, this percentage will be reduced to 3% clay and fine silt, which is ideal for the proposed use.

3.4 Size of the extraction

The area of the proposed extraction is 11.65ha and is proposed to be quarried down to a maximum of 1.5m.

3.5 Method of extraction

The proposed location of the extraction operation is contained within the Mindioomballa Creek. Prior to sripping of sand, logs within the creek bed will be identified with flagging tape and moved to the bank of the creek. The stockpile areas will have its topsoil windrowed and the one access to the creek will be identified with high visibility rope flagging. The operation will be undertaken in various phases. The phases are the gradual stripping down of sand in approximately 300mm layers across the five phases.

During the extraction process, sand will be won and loaded by a front-end loader into a dump truck, which will then transport the sand to the stockpile area (refer Appendix A). Sand will be stockpiled as required in quantities of no more than 1,000t for periods of up to four weeks. The sand will be progressively stripped in

sections along the bed of the creek which may be up to 2.5m deep in places (quarrying will occur down to a maximum of 1.5m).

The sand will then be loaded on to road train transport and carted to Broken Hill for processing.

3.6 Type and form of on-site processing

No-on site processing is proposed to occur.

3.7 Access to and from the site

Access to the proposed site is via an existing road that runs north-south for approximately 2,500m from Silverton Road (refer to appendix A). No new tracks will be created, as access to the site will be via an existing road.

3.8 Hours of operation

The proposed quarry will operate only during business hours, being 7am-6pm Monday to Friday and 8am to12noon on Saturdays.

3.9 Rate of extraction

The 11.65ha site will be quarried down on average maximum of 1.5m, with an estimated potential resource of 116, 500 m^3 (163, 100t). A maximum of 18,580m^3 (28,799t) will be quarried per annum, highly dependent of demand.

3.10 Life expectancy of the quarry

The proposed life of the sand quarry is ten (10) years. The proposed timeline is an estimation based on current requirements and the timeframe for removal of sand in each year of the project.

4.0 Details of operational controls

Consolidated Mining and Civil (CMC) Pty Ltd to extract the sand. CMC has been operating from various locations around NSW for almost 100 years. In that, time the company has had minimal impact on the environment by undertaking various management activities. The company is also familiar with the requirements for compliance with relevant legislation and for ensuring implementation of the environmental safeguards deemed necessary to avoid and minimise impacts.

4.1 Air pollution

The nearest residence (the holder of the property where part of the quarry is proposed) is located more than 500m from the quarry site and the nearest public road is approximately 500m away. Given the distance from any residence there will be no impact from the expected minor raised dust that may occur from time to time during heavy vehicle movements and plant operation.

Practices associated with quarrying of gravel that could affect air quality include exhaust emissions from vehicles and plant and windblown dust from the site.

4.2 Water pollution

The proposed quarry will be located in the intermittent Mindioomballa Creek. Work will not occur when there is water in the creek and at no time will flow be impeded. Water only flows after approximately 40mm of rainfall in the catchment. The creek historically only flows a few times each year and the water transfers downstream within 24 hours.

As Mindioomballa Creek is not a managed waterway there are no water management plans in place. No monitoring of water quality or quantity occurs due to the low frequency of flow events.

There is no data on the quality and quantity of the surface water in the creek but it is expected to vary within the Mindioomballa Creek as it does in any waterway.

The nearest fresh water is located at Stephens Resevoir, approximately 31km east of the proposed development site.

The proposed quarry area will not require any water at the extraction site. Water will only be used for processing in Broken Hill.

The proposal will not change the flooding regime in the creek. Flooding is dependent on heavy rainfall in the upper catchment area flowing down the creek. The run off patterns will not change as the floodplain area will not be impacted upon, with the exception of the stockpile area.

The proposal will not have any impact on Ramsar listed wetlands.

No hazardous materials will be stored on-site and no sewerage facilities will be established that could impact on surface water flows should they occur.

Most plant and equipment will be re-fuelled either at the company's depot off-site, or at another designated location. Contingency plans would be developed to deal with any spills that may occur. Machinery will be checked daily to ensure there are no leakages of oil, fuel or other liquids.

4.3 Visual controls

The proposed quarry site will have low visual impact relative to both the location of the development (low down in a creek bed), and the stockpile area, which is 300m from any public location. The natural terrain and vegetation between the Silverton Road and the proposed quarry site provides a natural visual control.

4.4 Noise level controls

The main source of noise may arise from the use of heavy machinery to extract and load sand and trucks to cart the material from the site to its use location. Considering the distance of the extractive industry licence from the nearest residence and the hours of operation (7am to 6pm Monday to Friday and 8am to 12noon Saturday), any noise created will not cause a significant detrimental impact on the surrounding land users.

4.5 Soil erosion control

Weathering and erosion has occurred in the higher rocky ranges and these sediments have been deposited in the proposed area.

The proposal has the potential to cause erosion to the creek bank and to the access track on the floodplain. The creek bank contains areas where natural erosion has occurred but the majority of the bank is in a stable, vegetated state. To minimise erosion to the creek bank vegetation will not be disturbed during quarrying activities and existing access tracks will be used to enter/exit the quarry area. The stockpile areas will have a silt trap installed to minimise the risk of quarried sand being washed or blown back into the Mindioomballa Creek.

The existing haul road will be maintained by spreading sand over the clay soil to protect the soils from turning to dust.

5.0 Description of rehabilitation

5.1 Proposed end landuse

It is proposed that the site will be returned as near as possible to its original condition at the end of quarrying activities. When the site is vacated the land will be used for grazing by domestic livestock.

5.2 Techniques for proposed rehabilitation

5.2.1 Proposed quarry area

Rehabilitation will occur prior to the end of the extractive industry licence term (10 years is being applied for). The objectives of rehabilitaion inclue:

- developing a final landform with minimal necessary earthworks suitable for the existing land use
- producing quarry faces and benches (if required) that provide a safe final land form with long term stability and low future maintenance requirements
- ensuring the site does not impact on the surrounding environment through gullying and other erosion processes.

The landform is unlikely to change, as during the life of the quarry recharging of sand will occur from upstream reaches, bringing in new material. Athough quarrying is proposed to a maxium of 1.5m, it is highly unlikley that it will reach this depth due to new material being washed down following rainfall in the upper reaches.

No toposil will need to be managed, as no vegetation exists in the bed of the creek, so it is not required for regeneration purposes. Logs that were identifed prior to quarrying and placed on the creek bank will be moved back to the bed of the creek.

The base of the quarriy is not proposed to be ripped as recommended by Gee (1991). This is due to the fact that the base is unlikley to be reached and there is no need to create a zone for vegetation regeneration as no vegetation exists in the bed of the creek in its natural state.

Management of off-site impacts will include ensuring erosion does not impact on other undisturbed land through surface water run-off management. Ongoing monitoring will ensure that if erosion starts to occur, management activites can be implemented to stop the erosion. This monitoring will be undertaken by the landholder and the proponent.

5.2.2 Proposed stockpile areas

Prior to quarrying operations, topsoil will be windrowed in the stockpile areas (3). This topsoil contains vegetation seed that will readily grow following disturbance and rainfall. On completion of quarrying, this area will be cross-ripped as

recommended in Gee (1991) and windrowed topsoil will be re-spread across the site. This site is flat and unlikely to be at risk of erosion.

5.3 Schedule for rehabilitation

Rehabilitation for the proposed quarry will occur at the end of the licence period. However, during the quarrying period the site will be managed to ensure erosion does not occur. This could include engineering solutions and earthworks, such as installing rock or straw bales to divert water flow away from gully heads should they develop as a result of the proposed activity.

5.4 Measures to ensure stability of the area

Ongoing monitoring will ensure that if erosion starts to occur, management activites can be implemented to stop the erosion. This monitoring will be undertaken by the proponent and advice taken from the landholder.

5.5 Erosion rehabilitation measures

As mentioned above, erosion has the most potential to inhibit sucessful rehabilitation. All measures above are designed to minimise or mitigate erosion potential.

6.0 Authorisation

I, Steve Radford, state that the information presented in the EMRP is accurate to the best of my knowledge and that I will adhere to the schedules and methods outlined by this plan.

Signed:_____ Steve Radford Date:_____

7.0 References

Benson, J.S., Allen, C., Togher, C. & Lemmon, J, (2006). *New South Wales Vegetation Classification and Assessment: Part 1 Plant communities of the NSW Western Plains*. *Cunninghamia* 9(3): 383-451.

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Cunningham, G.M., W.E. Mulham, P.L. Milthorpe, & J.H. Leigh, (1992). *Plants of Western New South Wales.* Inkata Press, Melbourne.

Department of Environment, Climate Change and Water NSW (2008). [Online, accessed 26 May 2012] www.environment.nsw.gov.au/bioregions/BrokenHillComplex

Department of Lands NSW – Western Lands Commission (1989) *Western Division Regional Environmental Plan No 1 – Extractive Industries, Guideline Manual – First Edition*, New South Wales Government.

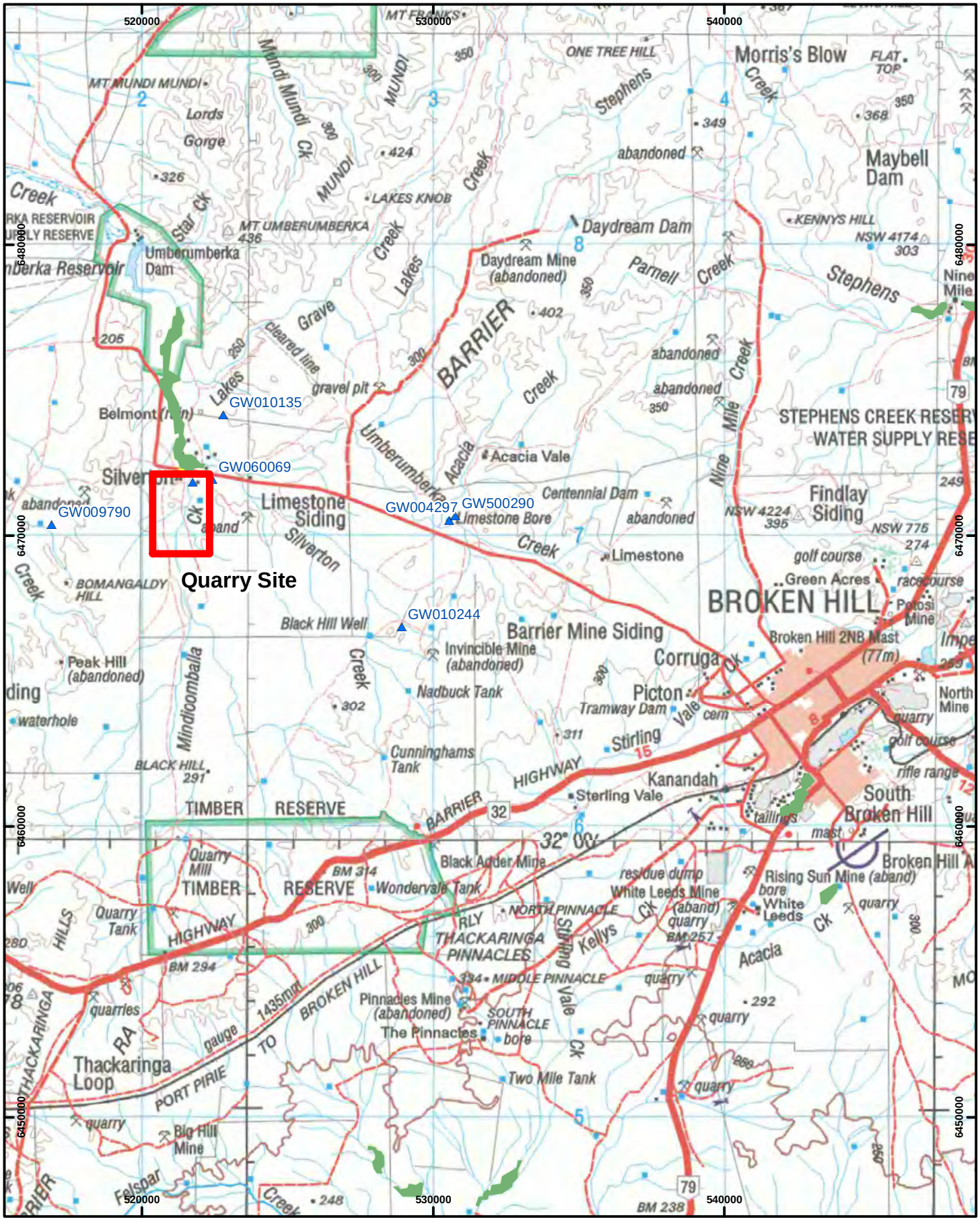
Department of Primary Industies, (2009). *Saving Soil: A Landholders Guide to Preventing and Reparining Soil Erosion.*

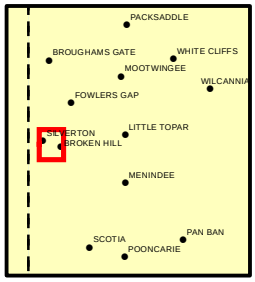
Department of Urban Affairs and Planning, (1996). *Extractive Industry Quarries: EIS Guidelines*.

DSEWPaC (2009). [Online, accessed 28 September 2013] http://www.environment.gov.au/water/publications/environmental/groundwater/broken-hill.html

Gee, D. (1991) *An Environmental Management and Rehabilitation Plan.* The Department of Conservation and Land Management. Western Lands Commission.

Appendix A
Map series





N

0 500 1,000 2,000 3,000 4,000 5,000

Metres

Scale 1:175,000 @ A3

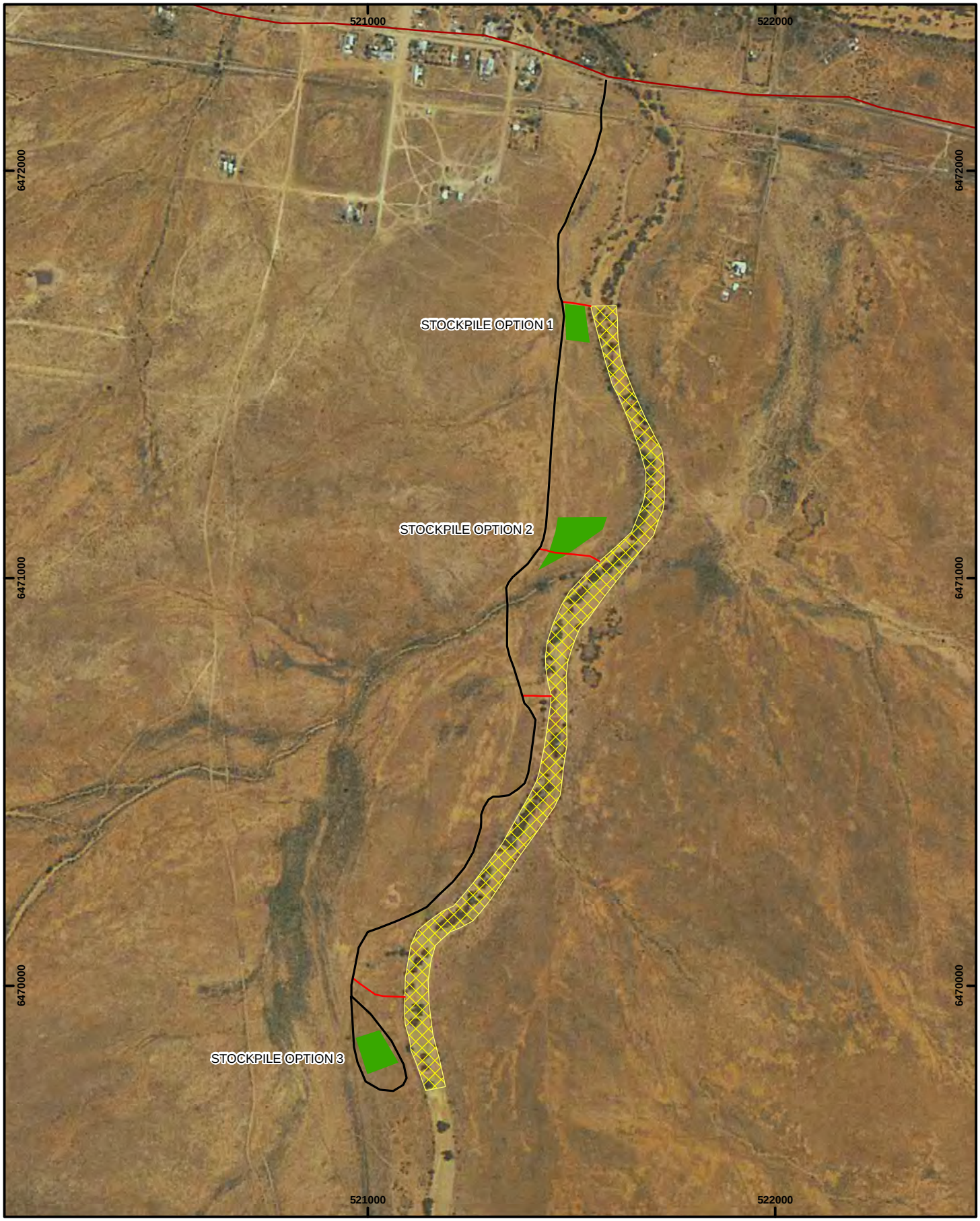
GDA 1994 MGA Zone 54

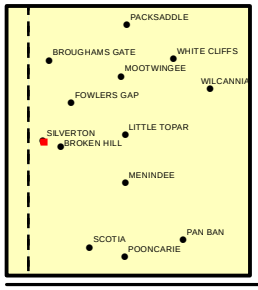
Legend

- NoW Bore
- Native Vegetation Area
- Quarry Site

greenedge environmental

Silverton Quarry Site Location Map





N

0 25 50 100 150 200 250

Metres

Scale 1:12,500 @ A3

GDA 1994 MGA Zone 54

Legend

- Haul Road
- Highway
- Existing Access Track
- Stockpile Area Option
- Quarry Site

greenedge environmental

Silverton Quarry Site Location Map

Appendix J
Government Agency Comments on draft EIS

Transport Roads & Maritime Services

WST13/00064

Chris Alderton
Green Edge Environmental
C/ Springton Post Office
SPRINGTON SA 5235

Dear Sir

Silverton Sand Quarry Silverton Road (MR81), Silverton

Thank you for your email received 25 June 2014 requesting comments from Roads and Maritime Services for Silverton sand quarry. The key concern for Roads and Maritime is the impact upon the safety and efficiency of the classified road network. It is noted that a traffic study was not included in the application. The proposal is for haulage of up to 20,000m^3 of sand from Silverton to Broken Hill for processing. Traffic generation is expected to be 16 trucks per day.

Crown Lands should consider a condition to require the preparation and implementation of a code of conduct relating to transport of materials on public roads as part of the considerations under Clause 16(1) of the *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007*. Consideration should also be given to an approved haulage route to minimise traffic impacts.

The documentation submitted in support of the development application has been reviewed and Roads and Maritime provides the following recommended conditions of consent for Crown Lands' consideration:

- The access from Silverton Road is to be sealed for a minimum of 20 metres from the edge of the travel lane, match existing road levels and not interfere with existing road drainage;
- Safe Intersection Sight Distance (SISD) requirements outlined in the *Austroads Guide to Road Design Part 4A* and relevant Roads and Maritime Supplements shall be provided in both directions at the vehicular access point servicing the quarry from Silverton Road. For a 100 km/h speed zone the minimum SISD is 250 metres;
- Details of the haulage destination are not provided in the application. The applicant needs to ensure that the destination is on a designated road train route. Please refer to the Roads and Maritime restricted access vehicle (RAV) map for more information http://www.rms.nsw.gov.au/heavyvehicles/ravmap/
- Advance truck warning (W5-22) and distance plate (W8-5) signage is to be provided at appropriate locations to give approaching motorists suitable warning of the slowing, stopping and turning manoeuvres associated with vehicles entering and leaving the development.

Please forward a copy of the determination of the application to Roads and Maritime at the same time it is sent to the applicant.

Should you require further information, please contact Fiona Francis on (02) 6861 1688.

Yours faithfully

Susie Mackay
Network & Safety Manager
Western

11 JUL 2014

Office of Environment & Heritage

Your reference:
Our reference: DOC14/113372
Contact: Sonya Ardill 02 6883 5313
Date: 4 July 2014

Chris Alderton
Greenedge Environmental
c/o Springton Post Office
Springton SA 5235

Dear Chris

RE Silverton Sand Quarry, Mindioomballa Creek

I refer to your email dated 25 June 2014 requesting comments from the Office of Environment and Heritage (OEH) on the Environmental Impact Statement (EIS) for the Silverton Sand Quarry.

OEH has responsibilities under the:

- *National Parks and Wildlife Act 1974* - namely the protection and care of Aboriginal objects and places, the protection and care of native flora and fauna and the protection and management of reserves; and the
- *Threatened Species Conservation Act 1995* which aims to conserve threatened species of flora and fauna, populations and ecological communities to promote their recovery and manage processes that threaten them.
- *Native Vegetation Conservation Act 2003* – ensuring compliance with the requirements of this legislation.

OEH understands from the correspondence that the proposed activity is a Part 4 application pursuant to the *Environmental Planning and Assessment Act 1979* (*EP&A Act)*, and has not been classified as State Significant Development. As such OEH only has a statutory role in assessing such an activity if the consent authority determines that:

a) the activity is likely to significantly affect a threatened species, population, ecological community, or its habitat, as listed under the *Threatened Species Conservation (TSC) Act 1995*; and/or

b) An Aboriginal Heritage Impact Permit is required.

The OEH can provide advice on the EIS where the EIS deals with natural and cultural heritage conservation issues. OEH may also comment on the legitimacy of the conclusions reached regarding the significance of impacts by the proposed development to these components of the environment.

The *EP&A Act* requires that the EIS should fully describe the proposal, the existing environment and impacts of the proposal. It is the responsibility of the proponent and consent authority to adequately consider the requirements under the *EP&A Act and Regulation* and *Environmental Planning and*

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Assessment Regulation 2000 including flora, fauna, threatened species, populations and ecological communities and their habitats, and cultural heritage.

It is also up to the proponent (and later the consent authority after appropriate consultation) to determine the detail and comprehensiveness of the surveys and level of assessment required to form legally defensible conclusions regarding the impact of the proposal. The scale and intensity of the proposed development should dictate the level of investigation, with all conclusions supported by adequate data.

The OEH environmental assessment requirements for this proposal (dated 15 October 2013) are included in Attachment B for your information.

Biodiversity

OEH advice regarding the adequacy of the EIS in relation to biodiversity matters is contained in Attachment A.

Cultural Heritage

The *NP&W Act* clearly establishes that Aboriginal objects and places are protected and may not be harmed, disturbed or desecrated without appropriate authorisation. Importantly, approvals under Parts 4 and 5 of the *EP&A Act 1979* do not absolve the proponent of their obligations under the *NP&W Act 1974*.

Under the *NP&W Act 1974*, it is the responsibility of each individual proposing to conduct ground disturbance works to ensure that they have conducted a due diligence assessment to avoid harming Aboriginal objects by the proposed activity.

The proponent indicates that the OEH generic due diligence process has been applied. OEH does not review individual proponents' due diligence assessments as it is the responsibility of the proponent to ensure compliance with the requirements of the NP&W Act.

Should you require further information regarding issues that are the responsibility of the OEH please contact myself on (02) 6883 5313.

Yours sincerely,

SONYA ARDILL
Senior Team Leader Planning, North West Region
Regional Operations

Broadly, the OEH environmental assessment requirements for this proposal (dated 15 October 2013, see Attachment B) contained reference to the need to:

- Supply adequate data regarding the subject site and the assessment undertaken;
- Describe direct and indirect and construction and operation impacts on biodiversity;
- Identify the avoidance, mitigation and management measures that will be put in place to avoid or minimise impacts, including the alternative options considered; and
- Following avoidance and mitigation measures offset any residual biodiversity impacts.

Overall, the OEH considers that these requirements have not been fully addressed.

1. Assessment of Significance (Seven Part Test)

OEH notes that targeted surveys have not been completed for species that are known or predicted to be present in the area to be impacted. However, the EIS shows seven part tests have been completed for each of these species under the assumption that they are present.

However table 6 Page 29 of the EIS states that the area to be impacted contains potential habitat for the Collared Whip Snake *(Demansia torquate).* No seven part test has been conducted for this species. Additionally OEH's EIS requirements (Attachment B) recommended that targeted surveys be completed for Creek Wattle *(Acacia rivalis).* In the absence of these surveys being completed a seven part test should be undertaken for this species.

Recommendation:

1.1. That a seven part test of significance be undertaken for the Collared Whip Snake *(Demansia torquate) and* Creek Wattle *(Acacia rivalis)* and documented in the EIS.

2. Site and Impact Assessment

OEH is unable to comment on the suitability of the site assessment undertaken and the degree to which this assessment has been conducted in accordance with the OEH EIS requirements (Attachment B) and the relevant OEH survey and assessment guidelines[1], as the EIS does not present any information on the methodologies or survey effort employed.

In the absence of a specified site assessment methodology, vegetation mapping and plot data for the site, OEH has taken the EIS's conclusions regarding the likely threatened species, habitats and vegetation type and condition present across the impact site at face value. For this reason, OEH assumes that the proposed 11.65ha footprint in its entirety consists of *'River Red Gum open woodland of intermittent watercourses mainly of the arid climate'* (vegetation community ID 41).

Page IV of the EIS in the summary of potential impacts table states *"minor lopping of vegetation"* as an impact. There is no further information provided anywhere else in the report detailing what vegetation will be impacted, how much vegetation will be impacted and whether the vegetation to be impacted is native or exotic.

The EIS should include a description of the likely impacts of the proposal on biodiversity and wildlife corridors, including direct and indirect construction and operation impacts. The EIS does not include an adequate assessment of the likely direct and indirect (including noise and dust) impacts of construction and operational phases of the project on flora and fauna. Where ever possible, theses impacts, such as

[1] *Threatened Species Survey and Assessment Guidelines: Field Survey Methods for Fauna -Amphibians* (DECCW, 2009); *Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities - Working Draft* (DEC, 2004);

the amount of each vegetation community or species habitat to be cleared or impacted or any fragmentation of a wildlife corridor, should be quantified. The EIS should also include a map identifying the vegetation communities located in the study area and the areas of each vegetation community to be impacted.

With regard to flow regimes, page 17 of the EIS states; *work will not occur when there is water in the creek and at no time will flow be impeded in the creek.* However the Assessment of Significance for threatened species states that the proposed action constitutes the key threatening process *'Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands'.* The EIS needs to clarify whether or not there will be an impact on surface flows and the degree to which the quarry is likely to reduce surface flows to Mindioomballa Creek.

Recommendation:

The EIS should be amended to:

2.1 provide details of the site assessments undertaken, including flora and fauna survey and habitat assessment methodologies employed, as well as a summary of how the relevant OEH survey and assessment guidelines have been applied and how the OEH EIS requirements have been satisfied,

2.2 include a detailed description of vegetation communities (including classification and methodology used to classify) and include all plot data. Plot data should be supplied to the OEH in electronic format (eg MS-Excel) and organised by vegetation community,

2.3 provide an assessment of the likely direct and indirect impacts of construction and operation of the proposal on flora and fauna, supported by appropriate project specific noise and air quality assessments and a full description and map of the vegetation that is to be impacted by the proposal both at construction and during operation and

2.4 Clarify the impact of the proposal on surface flows to Mindioomballa Creek;

3. Avoidance, mitigation and offsetting measures

OEH is unable to comment on the adequacy of avoidance for the proposal, as there is no discussion of avoidance measures in the EIS

The OEH requirements recommended that an offset be proposed for any residual biodiversity impacts. Similarly the Director-General's requirements required *'a detailed description of the measures to maintain or improve the biodiversity values within the site in the medium to long term; and consideration of a Biodiversity Offset Strategy'.* These requirements and recommendations are not referred to in the EIS.

Recommendation:

The EIS should be amended to:

3.1 Clarify all avoidance measures implemented in the design of the proposal

3.2 Consider requiring a suitable offset which meets the OEH *'Prinicples for the use if Biodiversity offsets in NSW',* which can be found at

http://www.environment.nsw.gov.au/biocertification/offsets.htm

Office of Environment & Heritage

NSW GOVERNMENT

Your reference: DGR ID No. 779
Our reference: DOC13/67668
Contact: Sonya Ardill 02 6683 5313

Mr Matthew Di Maggio
Student Planner
Department of Planning and Infrastructure
GPO Box 39
Sydney NSW 2001

Dear Matthew

RE Mindioomballa Creek Sand Quarry

Thank you for your email (dated 1st October 2013) seeking the requirements of the Office of Environment and Heritage (OEH) for the preparation of an Environmental Impact Statement (EIS) for the above proposal.

In summary, the OEH's key information requirements for the proposal include an adequate assessment of:

1. Impacts to Aboriginal cultural heritage objects; and
2. Impacts on flora, fauna, threatened species, populations, communities and their habitats.

OEH can provide advice on the EIS where the EIS deals with natural and cultural heritage conservation issues. OEH may also comment on the legitimacy of the conclusions reached regarding the significance of impacts by the proposed development to these components of the environment.

The *Environmental Planning and Assessment Act 1979* (EP&A Act) requires that the EIS should fully describe the proposal, the existing environment and impacts of the proposal.

This letter directs you primarily to our generic guidance material. However please note that it is up to the proponent (and later the consent/determining authority after appropriate consultation) to determine the detail and comprehensiveness of the surveys and level of assessment required to form legally defensible conclusions regarding the impact of the proposal. The scale and intensity of the proposed development should dictate the level of investigation. It is important that all conclusions are supported by adequate data.

The OEH has responsibilities under the:

- *National Parks and Wildlife Act 1974* - namely the protection and care of Aboriginal objects and places, the protection and care of native flora and fauna and the protection and management of reserves; and the
- *Threatened Species Conservation Act 1995* which aims to conserve threatened species of flora and fauna, populations and ecological communities to promote their recovery and manage processes that threaten them.

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- *Native Vegetation Conservation Act 2003* – ensuring compliance with the requirements of this legislation.

It is the responsibility of the proponent and consent authority to adequately consider the requirements under the *Environmental Planning and Assessment Act 1979* (EP&A Act), including flora, fauna, threatened species, populations and ecological communities and their habitats, and cultural heritage.

OEH understands from the correspondence that the proposed activity is a Part 4 application pursuant to the *EP&A Act 1979*. As such OEH only has a statutory role in assessing such an activity if the determining authority determines that:

a) the activity is likely to significantly affect a threatened species, population, ecological community, or its habitat, as listed under the *Threatened Species Conservation (TSC) Act 1995*; and/or

b) An Aboriginal Heritage Impact Permit is required.

Flora, Fauna and Threatened Species

A copy of our generic Environmental Assessment Guidelines are included in Attachments A and B These guidelines address requirements under the *Environmental Planning and Assessment Act 1979* and OEH's areas of responsibility relating to flora, fauna and threatened species, populations and ecological communities and their habitats.

In addition to these guidelines, we also recommend that the EIS specifically addresses the following issues:

1. The area to be impacted is potentially important roosting habitat for the Vulnerable Yellow-bellied Sheathtail-bat *(Saccolaimus flaviventris)* which has been recorded within 20 kilometres of the proposed development. If hollow-bearing trees are present within the area, it is recommended that targeted surveys be conducted for this species, in accordance with the Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities – Working Draft (DEC, 2004).

2. The endangered Ringed Brown Snake (*Pseudonaja modesta)* has been previously recorded within 10 kilometres of the proposed development. The proposed development site contains potential habitat for the snake as this species inhabits drier areas including rocky outcrops and dry watercourses. It is recommended that targeted surveys be conducted for this species, in accordance with the Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities – Working Draft (DEC, 2004)

3. The vulnerable Purple-wood Wattle *(Acacia carneorum)* and endangered Creek Wattle *(Acacia rivalis)* have previously been recorded within 20 kilometres of the area to be impacted. The proposed development site contains potential habitat for both species as both are known to occur along watercourses. It is recommended that targeted surveys be conducted for this species, in accordance with the Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities – Working Draft (DEC, 2004)

4. The project is located within an intermittent watercourse, Mindioomballa Creek. The EIS should identify and assess any potential direct or indirect impacts on Mindioomballa Creek and any associated groundwater dependent ecosystems.

Cultural Heritage

The importance of protecting Aboriginal Cultural Heritage is reflected in the provisions under Part 6 of the *NP&W Act 1974*, as amended. That Act clearly establishes that Aboriginal objects and places are protected and may not be harmed, disturbed or desecrated without appropriate authorisation. Importantly, approvals under Parts 4 and 5 of the *EP&A Act 1979* do not absolve the proponent of their obligations under the *NP&W Act 1979*.

Under the *NP&W Act 1974*, it is the responsibility of each individual proposing to conduct ground disturbance works to ensure that they have conducted a due diligence assessment to avoid harming Aboriginal objects by the proposed activity. OEH has produced a generic due diligence process, which is not mandatory to follow, however any alternative process followed must be able to demonstrate their process was reasonable and practicable in attempts to avoid harm to Aboriginal objects.

Consultation must also be in accordance with the *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW 2010) as set by OEH if impact to cultural heritage is unavoidable.

Further advice regarding Aboriginal cultural heritage can be found on the OEH web-site at: http://www.environment.nsw.gov.au/licences/achregulation.htm and within guidance documents listed in Attachment 2.

Should you require further information on flora, fauna or cultural heritage please contact Sonya Ardill, Senior Team Leader Planning on (02) 68835313.

Yours sincerely,

SONYA ARDILL
Senior Team Leader Planning
North West Region

ATTACHMENT A: EIS REQUIREMENTS FOR THE MINDIOOMBALLA CREEK SAND QUARRY

1 Environmental impacts of the project

1.1. Impacts related to the following environmental issues need to be assessed, quantified and reported on:

- Aboriginal cultural heritage
- Biodiversity

The Environmental Impact Statement (EIS) should address the specific requirements outlined under each heading below and assess impacts in accordance with the relevant guidelines mentioned. A full list of guidelines is at **Attachment C**.

2. Aboriginal cultural heritage

The EIS report should contain:

- A description of the Aboriginal objects and declared Aboriginal places located within the area of the proposed development.
- A description of the cultural heritage values, including the significance of the Aboriginal objects and declared Aboriginal places, that exist across the whole area that will be affected by the proposed development, and the significance of these values for the Aboriginal people who have a cultural association with the land.
- A description of how the requirements for consultation with Aboriginal people as specified in clause 80C of the National Parks and Wildlife Regulation 2009 have been met.
- The views of those Aboriginal people regarding the likely impact of the proposed development on their cultural heritage. If any submissions have been received as a part of the consultation requirements, then the report must include a copy of each submission and your response.
- A description of the actual or likely harm posed to the Aboriginal objects or declared Aboriginal places from the proposed activity, with reference to the cultural heritage values identified, and the need apply for a Aboriginal Heritage Impact Permit (AHIP).
- A description of any practical measures that may be taken to protect and conserve those Aboriginal objects or declared Aboriginal places.
- A description of any practical measures that may be taken to avoid or mitigate any actual or likely harm, alternatives to harm or, if this is not possible, to manage (minimise) harm.
- A specific Statement of Commitment that the proponent will complete an Aboriginal Site Impact Recording Form and submit it to the Aboriginal Heritage Information Management System (AHIMS) Registrar, for each AHIMS site that is harmed through the proposed development.

In addressing these requirements, the proponent must refer to the following documents:

a) *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW, 2010) - http://www.environment.nsw.gov.au/licences/consultation.htm. This document further explains the consultation requirements that are set out in clause 80C of the National Parks and Wildlife Regulation 2009. The process set out in this document must be followed and documented in the Environmental Assessment Report.

b) *Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW, 2010) - http://www.environment.nsw.gov.au/licences/archinvestigations.htm. The process described in this Code should be followed and documented where the assessment of Aboriginal cultural heritage requires an archaeological investigation to be undertaken.

Notes:

1. An Aboriginal Site Impact Recording Form (http://www.environment.nsw.gov.au/licences/DECCAHIMSSiteRecordingForm.htm) must be completed and submitted to the Aboriginal Heritage Information Management System (AHIMS) Registrar, for each AHIMS site that is harmed through archaeological investigations required or permitted through these environmental assessment requirements.
2. Under section 89A of the *National Parks and Wildlife Act* 1974, it is an offence for a person not to notify OEH of the location of any Aboriginal object the person becomes aware of, not already recorded on the Aboriginal Heritage Information Management System (AHIMS). An AHIMS Site Recording Form should be completed and submitted to the AHIMS Registrar (http://www.environment.nsw.gov.au/contact/AHIMSRegistrar.htm), for each Aboriginal site found during investigations.

3 Biodiversity

Biodiversity impacts can be assessed using **either** the BioBanking Assessment Methodology (scenario 1) or a detailed biodiversity assessment (scenario 2). The requirements for each of these approaches are detailed below.

The BioBanking Assessment Methodology can be used **either** to obtain a BioBanking statement, or to assess impacts of a proposal and to determine required offsets without obtaining a statement. In the latter instances, if the required credits are not available for offsetting, appropriate alternative options may be developed in consultation with OEH officers and in accordance with the 'NSW OEH interim policy on assessing and offsetting biodiversity impacts of Part 3A, State significant development (SSD) and State significant infrastructure (SSI) projects.'

Scenario 1 - Where a proposal is assessed using the BioBanking Assessment Methodology (BBAM)

1. Where a BioBanking Statement is being sought under Part 7A of the *Threatened Species Conservation* Act 1995 (TSC Act), the assessment must be undertaken by an accredited BioBanking assessor (as specified under Section 142B (1)(c) of the TSC Act 1995) and done in accordance with the *BioBanking Assessment Methodology and Credit Calculator Operational Manual* (DECCW, 2008). To qualify for a BioBanking Statement a proposal must meet the 'improve or maintain' standard.

1a. The Environmental Impact Statement (EIS) should include a specific Statement of Commitments that reflects all requirements of the BioBanking Statement including the number of credits required and any DG approved variations to impact on Red Flags.

2. Where the BioBanking Assessment Methodology is being used to assess impacts of a proposal and to determine required offsets, and a BioBanking Statement is not being obtained, the EIS should contain a detailed biodiversity assessment and all components of the assessment must be undertaken in accordance with the *BioBanking Assessment Methodology and Credit Calculator Operational Manual* (DECCW, 2008).

2a. The EIS should include a specific Statement of Commitments which:

- is informed by the outcomes of the proposed BioBanking assessment offset package;
- sets out the ecosystem and species credits required by the BioBanking Assessment Methodology and how these ecosystem and/or species credits will be secured and obtained;
- if the ecosystem or species credits cannot be obtained, provides appropriate alternative options to offset expected impacts, noting that an appropriate alternative option may be developed in consultation with OEH officers and in accordance with OEH policy;
- demonstrates how all options have been explored to avoid red flag areas; and

- includes all relevant 'BioBanking files (e.g. *.xml output files), data sheets, underlying assumptions (particularly in the selection of vegetation types from the vegetation types database), and documentation (including maps, aerial photographs, GIS shape files, other remote sensing imagery etc.) to ensure that the OEH can conduct an appropriate review of the assessment.

3. Where the 'NSW OEH interim policy on assessing and offsetting biodiversity impacts of Part 3A, State significant development (SSD) and State significant infrastructure (SSI) projects' is being used then the proponent must stipulate which level(s) of offset is being offered in relation to each of the vegetation communities and threatened species that require species credits. In accordance with the interim policy, justification must be provided as to why it is appropriate to apply the Tier 2 ('no net loss') or Tier 3 ('mitigated net loss') outcomes. In considering whether the mitigated net loss standard is appropriate, justification must be provided on: (i) whether the credits required by the calculator are available on the market; (ii) whether alternative offset sites (other than credits) are available on the market; and (iii) the overall cost of the offsets and whether these costs are reasonable given the circumstances'. This must be to satisfaction of, and in consultation with, OEH.

4. Where appropriate, likely impacts (both direct and indirect) on any adjoining and/or nearby OEH estate reserved under the *National Parks and Wildlife Act 1974* or any marine and estuarine protected areas under the *Fisheries Management Act 1994* or the *Marine Parks Act 1997 s*hould be considered. Please refer to the *Guidelines for developments adjoining land and water managed by the Department of Environment, Climate Change and Water* (DECCW, 2010).

5. With regard to the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*, the assessment should identify and assess any relevant Matters of National Environmental Significance and whether the proposal has been referred to the Commonwealth or already determined to be a controlled action.

1. The EIS should include a detailed biodiversity assessment, including assessment of impacts on threatened biodiversity, native vegetation and habitat. This assessment should address the matters included in the following sections.

2. A field survey of the site should be conducted and documented in accordance with relevant guidelines, including:

   - the *Threatened Species Survey and Assessment Guidelines: Field Survey Methods for Fauna - Amphibians* (DECCW, 2009);
   - *Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities - Working Draft* (DEC, 2004); and
   - Threatened species survey and assessment guideline information on www.environment.nsw.gov.au/threatenedspecies/surveyassessmentgdlns.htm.
   - Commonwealth survey requirements (birds, bats, reptiles, frogs, fish and mammals): http://www.environment.gov.au/epbc/publications/guidelines.html. These are relevant when species or communities listed under the *Environment Protection and Biodiversity Conservation Act* are present.

   It is preferable for proponents to use the Interim Vegetation Mapping Standard data form to collect the vegetation plot data for the project site, and any offset site associated with the project. This will provide data that is useful for vegetation mapping as well as in the BioBanking Assessment Methodology. This is available at http://www.environment.nsw.gov.au/research/VISplot.htm.

   If a proposed survey methodology is likely to vary significantly from the above methods, the proponent should discuss the proposed methodology with the OEH prior to undertaking the EIS, to determine whether the OEH considers that it is appropriate.

   Recent (less than five years old) surveys and assessments may be used. However, previous surveys should not be used if they have:

- been undertaken in seasons, weather conditions or following extensive disturbance events when the subject species are unlikely to be detected or present, or
- utilised methodologies, survey sampling intensities, timeframes or baits that are not the most appropriate for detecting the target subject species,

unless these differences can be clearly demonstrated to have had an insignificant impact upon the outcomes of the surveys. If a previous survey is used, any additional species listed under the TSC Act since the previous survey took place, must be surveyed for.

Determining the list of potential threatened species for the site must be done in accordance with the *Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities - Working Draft* (DEC, 2004) and the *Guidelines for Threatened Species Assessment* (Department of Planning, July 2005). The OEH Threatened Species website http://www.environment.nsw.gov.au/threatenedspecies/ and the *Atlas of NSW Wildlife* database must be the primary information sources for the list of threatened species present. The BioBanking Threatened Species Database, the Vegetation Types databases (available on OEH website at http://www.environment.nsw.gov.au/biobanking/biobankingtspd.htm and http://www.environment.nsw.gov.au/biobanking/vegtypedatabase.htm, respectively) and other data sources (e.g. PlantNET, Online Zoological Collections of Australian Museums (http://www.ozcam.org/), previous or nearby surveys etc.) may also be used to compile the list.

3. The area to be impacted is potentially important roosting habitat for the Vulnerable Yellow-bellied Sheathtail-bat *(Saccolaimus flaviventris)* which has been recorded within 20 kilometres of the proposed development. If hollow-bearing trees are present within the area, it is recommended that targeted surveys be conducted for this species, in accordance with the Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities – Working Draft (DEC, 2004).

   The endangered Ringed Brown Snake (*Pseudonaja modesta)* has been previously recorded within 10 kilometres of the proposed development. The proposed development site contains potential habitat for the snake as this species inhabits drier areas including rocky outcrops and dry watercourses. It is recommended that targeted surveys be conducted for this species, in accordance with the Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities – Working Draft (DEC, 2004)

   The vulnerable Purple-wood Wattle *(Acacia carneorum)* and endangered Creek Wattle *(Acacia rivalis)* have previously been recorded within 20 kilometres of the area to be impacted. The proposed development site contains potential habitat for both species as both are known to occur along watercourses. It is recommended that targeted surveys be conducted for this species, in accordance with the Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities – Working Draft (DEC, 2004)

4. The EIS should contain the following information as a minimum:

   a. The requirements set out in the *Guidelines for Threatened Species Assessment* (Department of Planning, July 2005);
   b. Description and geo-referenced mapping of study area (and associated spatial data files), e.g. overlays on topographic maps, satellite images and /or aerial photos, including details of map datum, projection and zone, all survey locations, vegetation communities (including classification and methodology used to classify), key habitat features and reported locations of threatened species, populations and ecological communities present in the subject site and study area. Separate spatial files (.shp format) to be provided to the OEH should include, at a minimum, shapefiles of the project site, impact footprint, vegetation mapping and classification for both the impact and any offset site(s);
   c. Description of survey methodologies used, including timing, location and weather conditions;
   d. Detailed description of vegetation communities (including classification and methodology used to classify) and including all plot data. Plot data should be supplied to the OEH in electronic format (eg MS-Excel) and organised by vegetation community;

e. Details, including qualifications and experience of all staff undertaking the surveys, mapping and assessment of impacts as part of the EIA;

f. Identification of national and state listed threatened biota known or likely to occur in the study area and their conservation status;

g. Description of the likely impacts of the proposal on biodiversity and wildlife corridors, including direct and indirect and construction and operation impacts. Wherever possible, quantify these impacts such as the amount of each vegetation community or species habitat to be cleared or impacted, or any fragmentation of a wildlife corridor;

h. Identification of the avoidance, mitigation and management measures that will be put in place as part of the proposal to avoid or minimise impacts, including details about alternative options considered and how long term management arrangements will be guaranteed;

i. Description of the residual impacts of the proposal. If the proposal cannot adequately avoid or mitigate impacts on biodiversity, then a biodiversity offset package is expected (see the requirements for this at point 6 below); and

j. Provision of specific Statement of Commitments relating to biodiversity.

5. An assessment of the significance of direct and indirect impacts of the proposal must be undertaken for threatened biodiversity known or considered likely to occur in the study area based on the presence of suitable habitat. This assessment must take into account:

   a. the factors identified in s.5A of the EP&A Act; and

   b. the guidance provided by *The Threatened Species Assessment Guideline – The Assessment of Significance (DECCW, 2007)* which is available at: http://www.environment.nsw.gov.au/resources/threatenedspecies/tsaguide07393.pdf

6. Where an offsets package is proposed by a proponent for impacts to biodiversity (and a BioBanking Statement has not been sought) this package should:

   a) Meet either the OEH's *Principles for the use of biodiversity offsets in NSW*[1], which are available at: www.environment.nsw.gov.au/biocertification/offsets.htm, or the *OEH Interim policy on assessing and offsetting biodiversity impacts of part 3A developments*;

   b) Identify the conservation mechanisms to be used to ensure the long term protection and management of the offset sites; and

   c) Include an appropriate Management Plan (such as vegetation or habitat) that has been developed as a key amelioration measure to ensure any proposed compensatory offsets, retained habitat enhancement features within the development footprint and/or impact mitigation measures (including proposed rehabilitation and/or monitoring programs) are appropriately managed and funded.

7. Where appropriate, likely impacts (both direct and indirect) on any adjoining and/or nearby OEH estate reserved under the *National Parks and Wildlife Act 1974* or any marine and estuarine protected areas under the *Fisheries Management Act 1994* or the *Marine Parks Act 1997 s*hould be

[1] Please note that the OEH's *Principles for the use of biodiversity offsets in NSW* ('the Principles') and the *Interim policy on assessing and offsetting biodiversity impacts of Part 3A developments* ('the Interim policy') require offsets to be based on a quantitative assessment of the loss in biodiversity from the proposal and the gain in biodiversity from the offset. The methodology must be based on the best available science, be reliable, and used for calculating both the impact and offset sites. Even where a proponent does not intend to use the BioBanking Assessment Methodology and Credit Calculator (Scenario 1), use of a suitable alternative metric, justified in the EA, is necessary to demonstrate that the proposal is consistent with the Principles or the Interim policy. Ultimately the proponent is expected to demonstrate quantitatively that the biodiversity losses associated with the project will be adequately compensated for by the improvement in vegetation condition and security expected from the offset site. This cannot be properly determined by a hectare comparison alone.

considered. Refer to the *Guidelines for developments adjoining land and water managed by the Department of Environment, Climate Change and Water* (DECC, 2010).

8. With regard to the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*, the assessment should identify any relevant Matters of National Environmental Significance and whether the proposal has been referred to the Commonwealth or already determined to be a controlled action.

ATTACHMENT B: EIA REQUIREMENTS - FLORA AND FAUNA

INTRODUCTION

The *Environmental Planning and Assessment Act (1979)* (*EP&A Act*) requires that proponents of a development/activity and the Consent/Determining Authorities adequately assess the impact of a development or activity in any Environmental Impact Assessment (EIA) documents. These EIA documents include:

- Statement of Environmental Effects (SoEE), or
- Review of Environmental Factors (REF), or
- Environmental Impact Statement (EIS).

These are introductory, generic specifications of the Office of Environment and Heritage (OEH) for an adequate assessment of the impacts of a development proposal on native flora and fauna (ie including protected and threatened species). However, OEH recognises that the scale and complexity of the project will to some extent, dictate the level of information that is required to address the questions posed below. Consequently, flora and fauna assessments need to be tailored to suit the proposal. For example, a development which is proposed on land which has already been totally (or substantially) cleared should address the issues raised below but the amount of work required to address these issues may be substantially less than if the area comprised undisturbed bushland and, therefore, of more significant wildlife habitat value. A preliminary assessment, including a desktop investigation and a preliminary site inspection, may indicate the need for a detailed survey of the site.

It is up to the proponent (and later the consent and/or determining authorities after appropriate consultation) to determine the detail and comprehensiveness of assessment required to form legally defensible conclusions regarding the impact of the proposal. The scale and intensity of the proposed development should dictate the detail of investigation.

It is important that all conclusions are supported by adequate data and that these data are clearly presented in EIA documentation.

OEH will consider the following issues when reviewing an EIA document:

1. **Concerns** - What are OEH's concerns regarding the conservation of natural and cultural heritage in accordance with the relevant legislation? Is the proposal likely to affect natural and cultural heritage? How?
2. **Provision of Information** - Is adequate information provided for a valid assessment of the impacts?
3. **Validity of Conclusions** - Has the proponent arrived at valid conclusions as a result of the assessment of impacts?
4. **Recommended Conditions to Consent** - Should Consent or Approval be granted, what conditions (if any) are required to ensure that the project is developed, and thereafter managed in accordance with natural and cultural heritage conservation and the provisions of legislation administered by OEH?

Thus the EIA document should fully describe the existing environment including flora and fauna, so that future impacts can be properly assessed and then reviewed (eg during the public participation phase).

FLORA

Background

The Australian flora comprises many endemic taxa and is therefore unique in the world.

OEH is concerned at the extent to which vegetation has been cleared and otherwise modified in north-western NSW. This high level of modification has been highlighted in the National State of the Environment Reports (1996 and 2001). Evidence strongly suggests that many plant species and communities are threatened with extinction.

Although the proposed site may be disturbed by various landuses, any remnants of native vegetation are of significant natural heritage value, including riparian and wetland areas. The area of vegetation and habitat at the proposed site may provide an area of high biological diversity, high conservation value or may not be well represented or protected elsewhere. It may also act as a corridor or migratory route for wildlife, drought refuge habitat or have other important values.

The NSW community places a high value on those areas of native vegetation that remain. OEH is committed to the protection, appropriate management, and where necessary, rehabilitation of native vegetation. For these reasons, OEH considers that careful planning should precede any development that involves further vegetation clearance or other significant impact within areas of remnant vegetation.

Negative impacts to native vegetation (eg clearing) should be avoided where possible. Where impacts cannot be avoided, the EIA should detail how a "maintain or improve" outcome for biodiversity will be achieved. Biobanking provides a voluntary mechanism through which this can be achieved. The Biobanking assessment methodology allows quantification of impacts and assessment of the value of offset areas and associated management regimes for those areas. The biobanking scheme provides an alternative path for proponents to the current threatened species assessment of significance process.

Information about Biobanking is located on OEH's website at http://www.environment.nsw.gov.au/biobanking/

Report Requirements

The EIA documentation should include a report on the flora that includes the following:

- detailed location map and identification of the area surveyed (including the location of photographs, transects, areas of significance etc),
- at least one of the following: a land satellite image, vegetation communities map, aerial photograph, or a remnant vegetation map,
- A map identifying the vegetation communities located in the study area and the areas of each vegetation community to be impacted.
- a complete plant list (including scientific names of those plants) of all tree, shrub, ground cover and aquatic species, categorised according to country of origin (ie., native versus exotic),
- a detailed description of vegetation structure (in terms of a scientifically accepted classification system) and spatial distribution (i.e. plant densities and patterning) on the site, including a vegetation map,
- describe the condition and integrity of the vegetation including a description of any past disturbance,
- an account of the likely original vegetation communities (pre-, or at early settlement), and an assessment of the likely regional distribution of the original communities,
- an assessment of whether the plant communities are adequately represented in conservation reserves or otherwise protected,

- an account of the hydrology of the area and how this relates to the dynamics of the vegetation communities,
- a list of **known** and **likely** threatened species as listed under Schedules 1 & 2 (*Threatened Species Conservation Act 1995*) which might occur at the site. The OEH database needs to be accessed and the likelihood of occurrence of threatened flora species determined,
- an assessment of the impacts of the proposal on flora, on-site and off-site (eg siltation, water availability or drainage changes) and measures to mitigate these impacts,
- an assessment of the significance of the impact of the development at both the site and at the regional scale,
- a detailed rehabilitation/management plan including a list of the plant species to be used during rehabilitation (if required),
- detail methodologies used and a list of the reference literature cited, and
- any other issues that may be considered relevant.

The above guidelines will provide some of the information necessary to conduct an Assessment of Significance required for threatened flora and fauna under Section 5a of the *EP&A Act*, should threatened species be likely or known to occur in the locality of the subject development proposal. Similarly, it will provide some of the information required if an application is found to be necessary under the *Native Vegetation Act (2003)*. However the above relates mostly to the specific environmental assessment processes under the *EP&A Act* and does not constitute an Assessment of Significance.

Similarly, the above guidelines will provide some of the information required for Biobanking, but may not be sufficient for Biobanking offset calculations. Please refer to the Biobanking website or contact OEH for specific information relating to Biobanking assessment requirements. The Biobanking scheme provides an alternative path for proponents to the current threatened species assessment of significance process.

FAUNA

Background

Evidence suggests that Western NSW has suffered the highest extinction rate for indigenous mammals of any region in the world. Many other vertebrate species are currently threatened. One of the major reasons for such a high level of extinction has been the destruction of habitat. Native vegetation including wetland, riparian and remnant environments are very significant areas of fauna habitat. Therefore any development in such areas should fully consider the impact on fauna and its habitat.

Report Requirements

The EIA document should include a report on the fauna (including protected and threatened species), that includes the following:

- detailed location map and identification of the area surveyed (including the location of photographs, transects, areas of significance etc),
- at least one of the following: a land satellite image, vegetation communities map, aerial photograph, or a remnant vegetation map,
- a complete list of all **known** and **likely** terrestrial and aquatic species (eg birds, mammals, reptiles and amphibians including scientific names). It is suggested that invertebrates also be considered as they form part of the food chain for many fauna species,
- those species which are protected, threatened or listed under any international agreements, as well as introduced species,
- those species known or likely to breed in the area,

- any species which have specific habitat requirements found within the project area,
- those species or populations which may be near the limit of their geographic range or are a disjunct/isolated population,
- assessment of the importance or otherwise of the location as a corridor, migratory route or drought refuge, in relation to other remnant vegetation, riparian and wetland areas or habitat in the region,
- assessment of the impacts of the proposal on all fauna and its habitat, at both the site and at the regional scale,
- identification of any mitigation measures proposed to limit or ameliorate the impact of the proposal,
- detailed methodologies used and a list of the reference literature cited, and,
- any other issues that may be considered relevant.

Again, the above guidelines will provide some of the information required for the Threatened Species component of Biobanking, but may not be sufficient for Biobanking offset calculations. Please refer to the Biobanking website or contact OEH for specific information relating to Biobanking assessment requirements

SEPP No. 44 - Koala Habitat Protection

The Shire may be listed in Schedule 1 of SEPP No. 44 - Koala Habitat Protection. If so, the requirements of the SEPP regarding Koala habitat protection should be considered by the proponents.

THREATENED SPECIES OF FAUNA AND FLORA

Background

Apart from the need to consider the impact on protected species, the proponent will need to address the requirements of legislation that currently governs threatened species protection and impact assessment in NSW.

The *Threatened Species Conservation Act (1995)* (*TSC Act*) protects all threatened flora and fauna native to NSW (excluding fish and marine plants). The proponent will need to consider the provisions of this Act.

The *TSC Act* contains lists of threatened species, which are divided into a number of categories – those presumed extinct, endangered species, critically endangered species and vulnerable species. It also contains lists of endangered populations, endangered ecological communities, critically endangered ecological communities and vulnerable ecological communities. This Act also allows for the declaration of critical habitat, key threatening processes and the preparation of both Recovery Plans and Threat Abatement Plans. These listings and plans must be considered as part of the EIA process.

If an activity or development is proposed in a locality likely or known to be occupied by a threatened species, population, ecological community or critical habitat, any potential impact to that threatened species must be taken into account during the development assessment process. However under the *EP&A Act*, some types of development are not required to go through approval processes. Please note that a licence may still be required under the *TSC Act* if such a development/activity is likely to harm a threatened species, population or ecological community.

Proponents can voluntarily use BioBanking to minimise and offset their impacts on biodiversity. The scheme provides an alternative path for proponents to the current threatened species assessment of significance process.

Assessment of Significance & Species Impact Statements

If during the flora or fauna assessment or survey, threatened species are **found** or are **likely** to occur in the area, the proponents must undertake an Assessment of Significance as outlined in section 5A of the *EP&A Act* to determine whether or not the development would be likely to have a significant impact upon threatened species.

The Assessment of Significance is a statutory mechanism which allows decision makers to assess whether a proposed development or activity is likely to have a significant effect on threatened species, populations or ecological communities, or their habitats.

The Assessment of Significance is contained within section 5A of the *EP&A Act* and consists of seven factors which need to be addressed for informed decisions to be made regarding the effect of a proposed development or activity on threatened species, populations or ecological communities, or their habitats. A copy of OEH's *Threatened species assessment guidelines: The assessment of significance* can be obtained from the OEH website at:

http://www.environment.nsw.gov.au/resources/threatenedspecies/tsaguide07393.pdf

Following threatened species assessment via the Assessment of Significance, it may be necessary to prepare a Species Impact Statement (SIS). The proponent will need to prepare a SIS in the following circumstances:

- If (after having addressed Section 5A) the flora/fauna assessment concludes that there is likely to be a significant impact to threatened species, or
- The proposed development is likely to affect critical habitat declared under the TSC Act.

If a SIS is required, the proponent (not the consultant) must write to OEH for any formal requirements for the SIS that he might deem appropriate. The SIS must then be prepared in accordance with these requirements and provided to the OEH. In some instances the Minister for the Environment will also need to be consulted for approval.

Methods to reduce the impact on the protected and threatened species should be considered fully, and are considered an integral requirement within any SIS document.

The OEH advises that conducting an Assessment of Significance or an SIS according to the provisions of the *EP&A Act* and the *TSC Act* is a complex task and should be undertaken by suitably qualified person(s).

AVAILABLE DATA

OEH can supply, at the standard cost, fauna prediction data and recorded fauna sightings data (Wildlife Atlas of NSW) to help in the investigation. The following information on site recordings of Flora and Fauna is available from OEH:

- A general search for flora and fauna records can be conducted through the Atlas of NSW Wildlife at: http://www.bionet.nsw.gov.au/

  Please note that not all the information associated with the individual records is available on this website. You can apply to the Office of Environment and Heritage for more detailed information about individual sightings (terms and conditions apply). Contact the Wildlife Data Unit for more information on (02) 9995 5000.
- Detailed information relating to threatened species, populations, ecological communities and their habitats can be obtained from the OEH Threatened Species website at:

  http://www.threatenedspecies.environment.nsw.gov.au/index.aspx

Other reference literature may be available for the subject locality/region. The proponent should explore this possibility thoroughly.

ATTACHMENT C – GUIDANCE MATERIAL

Title	Web Address
Commonwealth Environment Protection & Biodiversity Conservation Act 1999	http://www.austlii.edu.au/au/legis/cth/consol_act/epabca1999588/
Environmental Planning and Assessment Act 1979	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+203+1979+cd+0+N
Fisheries Management Act 1994	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+38+1994+cd+0+N
National Parks and Wildlife Act 1974	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+80+1974+cd+0+N
Threatened Species Conservation Act 1995	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+101+1995+cd+0+N
Water Management Act 2000	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+92+2000+cd+0+N
Aboriginal Cultural Heritage	
Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation (2005)	Available from DoP.
Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW, 2010)	http://www.environment.nsw.gov.au/licences/consultation.htm
Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW, 2010)	http://www.environment.nsw.gov.au/licences/archinvestigations.htm
Due Diligence Code for the Protection of Aboriginal Objects in NSW (DECCW 2010)	http://www.environment.nsw.gov.au/resources/cultureheritage/ddcop/10798ddcop.pdf
Aboriginal Site Impact Recording Form	http://www.environment.nsw.gov.au/licences/DECCAHIMSSiteRecordingForm.htm
Aboriginal Heritage Information Management System (AHIMS) Registrar	http://www.environment.nsw.gov.au/contact/AHIMSRegistrar.htm
Biodiversity	
BioBanking Assessment Methodology (DECC, 2008)	http://www.environment.nsw.gov.au/resources/biobanking/08385bbassessmethod.pdf
BioBanking Assessment Methodology and Credit Calculator Operational Manual (DECCW, 2008)	http://www.environment.nsw.gov.au/biobanking/calculator.htm
Threatened Species Survey and Assessment Guidelines: Field Survey Methods for Fauna –Amphibians (DECCW, 2009)	http://www.environment.nsw.gov.au/resources/threatenedspecies/09213amphibians.pdf
Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities – Working Draft (DEC, 2004)	http://www.environment.nsw.gov.au/resources/nature/TBSAGuidelinesDraft.pdf
Survey requirements (birds, bats, reptiles, frogs, fish and mammals) for	http://www.environment.gov.au/epbc/publications/guidelines.html

species listed under the EPBC Act	
DECCW Threatened Species website	http://www.environment.nsw.gov.au/threatenedspecies/
Atlas of NSW Wildlife	http://www.environment.nsw.gov.au/wildlifeatlas/about.htm
BioBanking Threatened Species Database	http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/home_species.aspx
Vegetation Types databases	http://www.environment.nsw.gov.au/biobanking/vegtypedatabase.htm
PlantNET	http://plantnet.rbgsyd.nsw.gov.au/
Online Zoological Collections of Australian Museums	http://www.ozcam.org/
Threatened Species Assessment Guideline - The Assessment of Significance (DECCW, 2007)	http://www.environment.nsw.gov.au/resources/threatenedspecies/tsaguide07393.pdf
Principles for the use of biodiversity offsets in NSW	http://www.environment.nsw.gov.au/biocertification/offsets.htm

Hi Chris,

We have reviewed the EIS and based on the information provided have determined that the proposed quarry is not a scheduled activity under the Protection of the Environment Operation Act 1997 and does not require an environment protection licence. Please see the attached letter confirming this in writing to the Department of Planning and Environment.

The EPA has no objection to the proposed activity or any further comments.

Please don't hesitate to contact me if you have any further queries.

Regards,

Stephanie Todd
Operations Officer | **NSW Environment Protection Authority** |
☎: (02) 6969 0708 | 🖷: (02) 6969 0710 | 🖱: Stephanie.Todd@epa.nsw.gov.au

From: Chris Alderton [mailto:chris@geenvironmental.com.au]
Sent: Wednesday, 25 June 2014 10:15 PM
To: 'rob.gregory@lls.nsw.gov.au'; 'peter.ewin@environment.nsw.gov.au'; 'joe.sulicich@rms.nsw.gov.au'; 'darren.wallet@epa.nsw.gov.au'; jane.taylor@water.nsw.gov.au
Subject: Silverton proposed sand quarry agency comment request

Hi All,

As per the email below, Crown Lands now require proponents to seek comment on environmental assessments within the unincorporated area of NSW, prior to lodging applications for Crown Land licence under the act.

As such we now seek agency comment in relation this the proposal. Apologies if you are not the appropriate person to comment on projects in this part of the state, but would you kindly advise who is the appropriate within your organisation?

We are seeking comments by 16 July 2014. If you have any queries please contact me on 0438 345109.

Regards

Chris

Chris Alderton
Ph: 0438 345 109
chris@geenvironmental.com.au

greenedge environmental

From: Shaun Barker [mailto:shaun.barker@crownland.nsw.gov.au]
Sent: Monday, 26 May 2014 2:15 PM

To: chris@geenvironmental.com.au
Cc: Cedelia Robertson; Jarrod Smith; Vanessa Woodham; Tiff Brown; Sharon Hawke
Subject: Silverton sand quarry

Chris,

The process that must be followed is that proponents or their consultants must submit an application for a Crown Lands Licence, which must be accompanied by the following:

- Application fee;
- Written correspondence from all relevant government agencies (including, but not limited to, Local Land Services- weeds and clearing of native vegetation, Office of Environment and Heritage- threatened species and cultural heritage- both European and Aboriginal, EPA- Protection of the Environment Operation Act licences, Roads and Maritime Services- traffic management and road construction, NSW Office of Water- water approvals including controlled activity licences) providing their comments/conditions/concurrence to the proposed activities as outlined in the EIS or SEE (including any changes/alterations required to these documents), or that they have no comment;
- Final EIS or SEE which must make include comments / changes as requested by the agencies;
- Image/diagram/map showing access tracks, stockpiles, hard stand areas, fuel and machinery storage areas, quarrying areas etc.; and
- GPS coordinates for all corners/vertices for these areas; and.

Until these have been received, the Department will not be in a position to progress any applications, and these applications will be placed in abeyance until all appropriate documentation is received.

Please ensure this process is followed from here-in.

Regards,
Shaun.

Please note that my email has changed to shaun.barker@crownland.nsw.gov.au.

Regards,
Shaun.

Shaun Barker | Group Leader- Natural Resources and Property Management
Far West Area | West Region | Crown Lands Division
NSW Trade and Investment
45 Wingewarra Street, Dubbo NSW 2830 - PO Box 2185, Dangar NSW 2309
T: 02 6883 5411 | M: 0428 467 190 | E: shaun.barker@crownland.nsw.gov.au
T: 1300 886 235 | E: clwestern.region@crownland.nsw.gov.au

Appendix K
Silverton Village Committee, Silverton Trust Essential Water Correspondence

CONSOLIDATED MINING & CIVIL PTY. LTD.
18 KANANDAH ROAD, BROKEN HILL NSW 2880
PO BOX 5079, BROKEN HILL NSW 2880
PHONE:- 08 8088 2688 FAX: 08 8088 5810
EMAIL: consolidated@conmc.net.au
www.conmc.net.au
ABN: 34 094 428 109

John Taplin
Secretary
Silverton Village Commitee
PO Box 1006
Broken Hill NSW 2880

20th November 2014

RE: Environmental Impact Statement Review – Silverton Sand Quarry – Mindioomballa

Dear John,

In reference to our meeting today at 1pm, to discuss comments raised by Crown Lands in regards to the Environmental Impact Statement – Silverton Sand Quarry.

Please find listed below points that were discussed with agreement reached on each of the following raised:

- Noise Impacts
- Mitigation measures for noise and nearby residents
- Visual Impacts
- Cultural Values
- Areas of cultural significance
- Increase of Heavy Vehicles
- Flood study report & recommendations
- Stock Management

Could you please respond with correspondence to confirm that there are no objections in relation to the above mentioned EIS for a Sand Quarry at Mindioomballa Creek, and in particular to the above listed concerns.

Yours Sincerely
Consolidated Mining & Civil Pty Ltd.

Charisse Jones
Business Manager

Charisse Jones
Business Manager
Consolidated Mining & Civil Pty ltd.
PO Box 5079
Broken Hill NSW 2880

25th November 2014

Dear Charisse,

I would like to confirm that your letter dated 21st November 2014 is correct.

We have no objection to the EIS related to CMC's Sand Quarry Application for Mindioomballa Creek.

We look forward to working with you and your team in the future.

Kind regards

John Taplin

Secretary
Silverton Village Committee

CONSOLIDATED MINING & CIVIL PTY. LTD.
18 KANANDAH ROAD, BROKEN HILL NSW 2880
PO BOX 5079, BROKEN HILL NSW 2880
PHONE:- 08 8088 2688 FAX: 08 8088 5810
EMAIL: consolidated@conmc.net.au
www.conmc.net.au
ABN: 34 094 428 109

Maxine Taplin
Secretary
Silverton Common Trust
PO Box 1006
Broken Hill NSW 2880

20th November 2014

RE: Environmental Impact Statement Review – Silverton Sand Quarry – Mindioomballa

Dear Maxine,

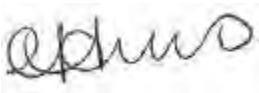
In reference to our meeting today at 1pm, to discuss comments raised by Crown Lands in regards to the Environmental Impact Statement – Silverton Sand Quarry.

Please find listed below points that were discussed with agreement reached on each of the following raised:

- Noise Impacts
- Mitigation measures for noise and nearby residents
- Visual Impacts
- Cultural Values
- Areas of cultural significance
- Increase of Heavy Vehicles
- Flood study report & recommendations
- Stock Management

Could you please respond with correspondence to confirm that there are no objections in relation to the above mentioned EIS for a Sand Quarry at Mindioomballa Creek, and in particular to the above listed concerns.

Yours Sincerely
Consolidated Mining & Civil Pty Ltd.



Charisse Jones
Business Manager

Charisse Jones
Business Manager
Consolidated Mining & Civil Pty ltd.
PO Box 5079
Broken Hill NSW 2880

25th November 2014

Dear Charisse,

I would like to confirm that your letter dated 21st November 2014 is correct.

We have no objection to the EIS related to CMC's Sand Quarry Application for Mindioomballa Creek.

We look forward to working with you and your team in the future.

Kind regards

Maxine Taplin M K Taplin

Secretary
Common Trust Committe

Ref:

4 December 2014

Mr C Alderton
Green Edge Environmental
C/ Springton Post Office
SPRINGTON SA 5235

Dear Chris

Silverton Sand Quarry, Mindioomballa Creek

We refer to your email dated 1 December 2014 requesting a review of the Environmental Impact Assessment (EIS) and any additional mitigation measures.

The proposed sand quarry is located within the Rural Portion of the Umberumberka Special Area as defined in Clause 166 of the *Water Management (General) Regulation 2011*. Specifically, Essential Water requires the following conditions to be complied with during the development and operation of the sand quarry, that:

- no tree or shrub is destroyed, cut or removed;
- no waste or pollutant, as defined under the *Protection of the Environment Operations Act 1997,* are used or left in the rural portion of the special area; and
- no pesticide, herbicide or other toxic material are brought into, used or kept in the rural portion of the special area.

Any variation to the above stated conditions will require the written consent of Essential Water.

Essential Water also recommends that Crown Lands consider appropriate sediment and erosion control conditions to minimise the impact of any sedimentation from the sand quarry operations on the nearby Umberumberka Dam, from which Mindioomballa Creek is a tributary.

Please note that on page 18 of the EIS, under section 4.5 Surface Water, the document references that the nearest fresh water is located at Stephens Reservoir, approximately 31 km east of the site. This statement is incorrect, with the nearest water storage being located at Umberumberka Dam, 8 km north of the proposed sand quarry.

Essential Water also requests a copy of the determination of the application to be provided for our records once finalised.

If you have any questions please do not hesitate to contact me on 08 8082 5316.

Yours sincerely

Daniel Stokes
Manager Water Business