



Section 1

Introduction

PREAMBLE

This section introduces the Proposal to continue and extend the operations of the Bungendore Sands Quarry ("the Proposal"). The Bungendore Sands Quarry would provide washed sand products required for use in concrete manufacture, construction operations and landscaping. This section serves to:

- outline the scope of the document;*
 - describe the Project Site;*
 - introduce the Applicant and Operator;*
 - review the background to the Proposal;*
 - outline the format of the document; and*
 - record the personnel involved in project design, document preparation and specialist consultant investigations.*
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ENVIRONMENTAL IMPACT STATEMENT

Grantham Park Holdings Pty Limited
Bungendore Sands Extension Project

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1.1 Scope

This *Environmental Impact Statement* (EIS) has been prepared by R.W. Corkery & Co. Pty Limited (RWC) on behalf of Grantham Park Holdings Pty Ltd (hereafter referred to as “the Applicant”). This document has been prepared to accompany a development application for the expansion of the Bungendore Sands Quarry (the Proposal), located approximately 5km north of Bungendore and 31km northeast of Queanbeyan in NSW and 45km east-northeast of the Canberra CBD (**Figure 1.1**). **Appendix 1** presents a copy of the application form. The Bungendore Sands Quarry is operated by Tobitway Crushing Pty Limited (hereafter referred to as “the Operator”) under a commercial arrangement with the Applicant.

The Proposal would comprise:

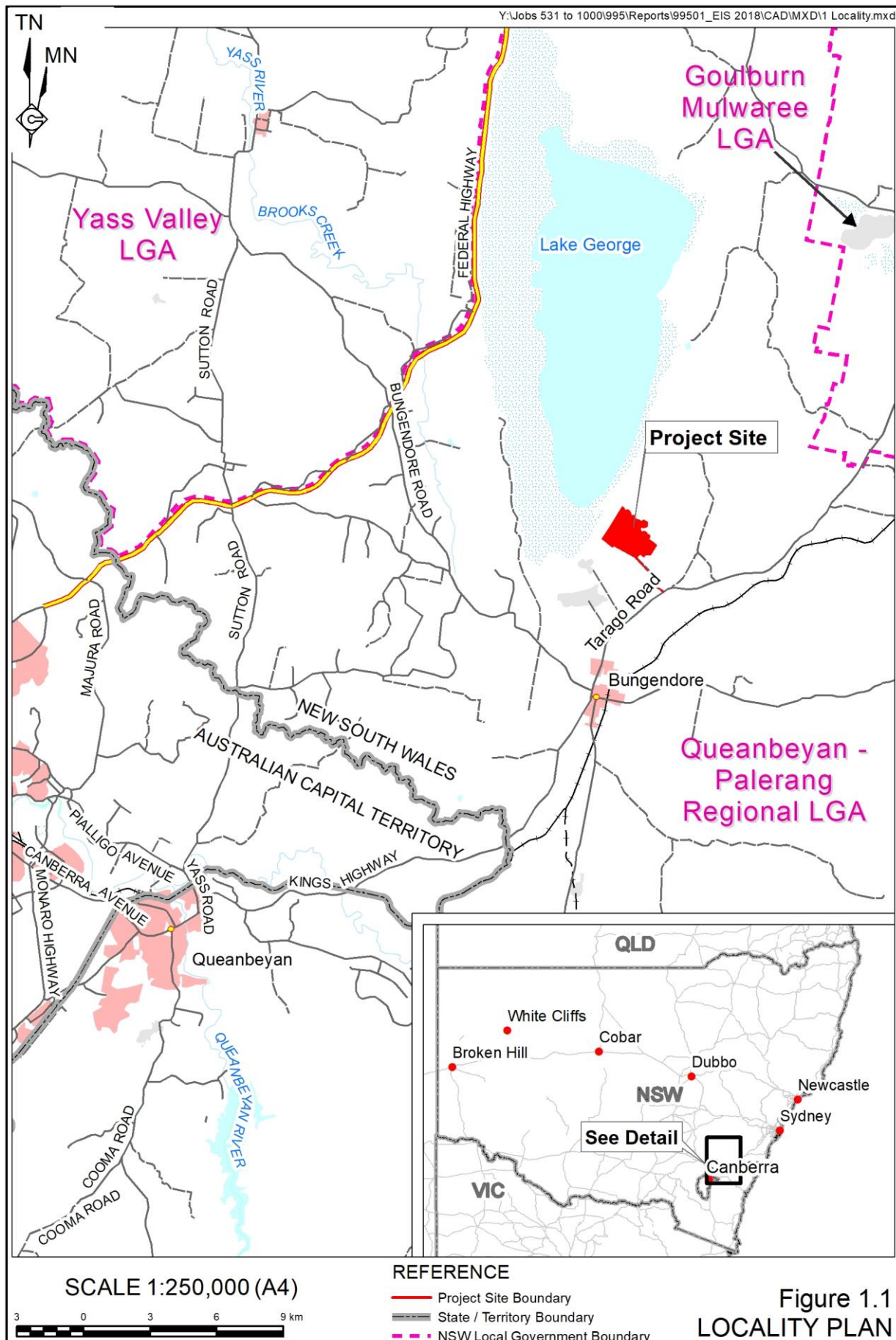
- continued extraction of sand and related material for a period of approximately 20 years from an extended Extraction Area;
- processing of that material to produce up to 400 000tpa of washed sand products;
- transportation of products from the Project Site to the Operator’s customers;
- placement of reject material, comprising material unsuitable for processing and fines washed from the sand, within completed sections of the existing and proposed Extraction Area; and
- ancillary activities, including use of the existing Quarry Access Road, Processing Area, and Stockpiling Area.

All areas of proposed disturbance associated with the Proposal are contained within the Project Site, as described in Section 1.2.

The Applicant holds development approval D52/74 granted on 1 November 1974, namely prior to the commencement of the *Environmental Planning and Assessment Act 1979*. In addition, the Operator held DA104-92 granted on 27 October 1992 by Yarrawlumla Shire Council for a period of 20 years. That consent is no longer active and the Bungendore Sands Quarry operates under D52/74 (see Sections 1.4 and 1.5.2).

The Applicant recognises that community expectations have changed substantially in the 45 years since D52/74 was granted. As a result, the Applicant anticipates surrendering that approval within the Project Site following the receipt of Development Consent for the current Proposal. As a result, consent is sought for both the existing and approved activities, noting that the existing Bungendore Sands Quarry in an approved, lawful operation, and the proposed activities.

Notwithstanding the Applicant’s intention to surrender D52/74 within the area of the Project Site on commencement of operations under the new Development Consent, DA52/74 would continue to operate for the benefit of other operators currently operating under that approval (see Section 1.5.1).





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Areas of the Project Site are zoned as either Primary Production (Zone RU1) or Environmental Management (Zone E3) under the *Palerang Local Environmental Plan 2014* (Palerang LEP) (**Figure 1.2**). Extractive industries are permissible with consent within Zone RU1. Industries are generally prohibited within zone E3, however, as agriculture is permissible with consent in this zone, the Bungendore Sands Quarry (the Quarry) is permissible with consent under Part 2, Clause 7(3)(a) of the *State Environmental Planning Policy (Mining, Petroleum and Extractive Industries) 2007*.

As an extractive industry, the Proposal is classified as Designated Development as it would exceed the 30,000 cubic metres production rate criteria outlined under Clause 19 of Schedule 3 of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation). As a result, this *Environmental Impact Statement* has been prepared to support the application for development consent.

As Designated Development for the purpose of an extractive industry, the Proposal is also classified as Regional Development under Clause 7(a) of Schedule 7 of the *State Environmental Planning Policy (State and Regional Development) 2011*. Consequently, Queanbeyan – Palerang Regional Council (Council) is to accept, exhibit and assess the application for development consent, with the Southern Regional Planning Panel to determine the application.

In addition to development consent, the Applicant also anticipates that the following additional approvals would be required.

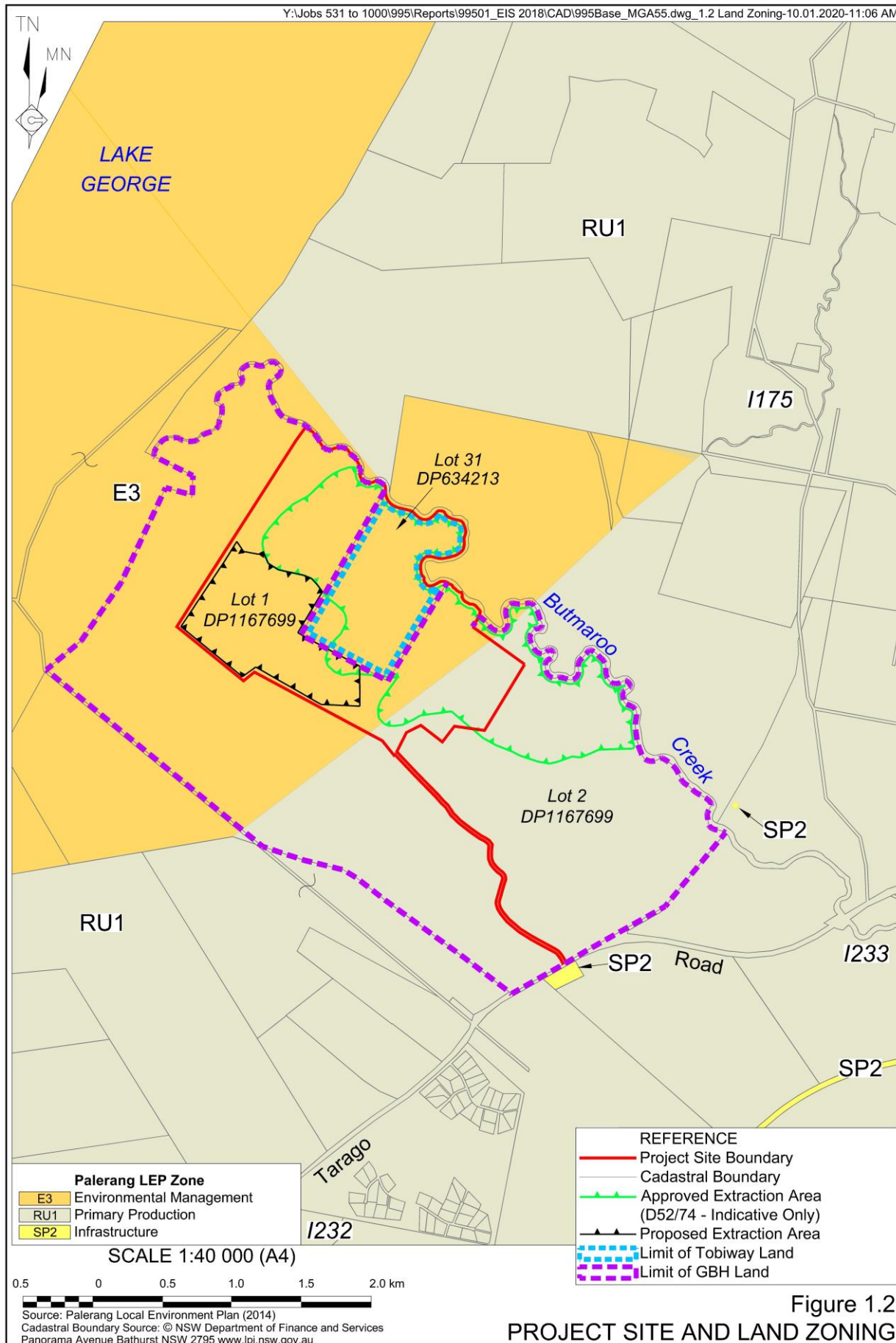
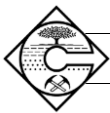
- An amendment to Environment Protection Licence (EPL) 9 under Section 58 of the *Protection of the Environment Operations Act 1997* to include the proposed extraction operations.
- An Aboriginal Heritage Impact Permit under Section 90 of the *National Parks and Wildlife Act 1974*.
- Consent from Queanbeyan – Palerang Regional Council land associated concurrence from Transport for NSW under Section 138 of the *Roads Act 1993* for works to be undertaken within the road reserve for Tarago Road.

As a result, the Proposal is also classified as Integrated Development under Section 4.46 of *Environmental Planning and Assessment Act 1979* (EP&A Act).

This EIS outlines the Proposal and its resources, identifies the aspects of the environment that could be adversely impacted by the Proposal and, for each aspect, provides a description of the existing environment and presents an assessment of residual impact. The assessment of environmental impacts is presented together with design and operational safeguards and mitigation measures to ensure the level of impact upon the surrounding environment meets specified criteria, accepted industry standards or reasonable community expectations.

The environmental issues assessed and general content of the EIS reflect:

- the Secretary's Environmental Assessment Requirements (SEARs) issued by the Department of Planning and Environment (DPE) on 5 August 2019 (**Appendices 2 and 3**);





- matters identified in Schedule 2 of the EP&A Regulation and Section 4.15 of the EP&A Act; and
- the experience of RWC in the preparation of documentation for similar projects throughout NSW.

1.2 Project Site

All activities associated with the Proposal would be undertaken within the following lots (the Project Site) (**Figure 1.2**).

- Lot 31 DP 634213 – including the existing Extraction Area and facilities for the processing, stockpiling and loading of extracted material and ancillary infrastructure required for Quarry operations.
- A section of Lot 2 DP 1167699 – comprising the existing Quarry Access Road.
- A section of Lot 1 DP 1167699 – containing the proposed Extraction Area.

The Project Site comprises approximately 314.5ha of land, all of which is either leased by the HPG Osborne Family Unit Trust, of which the Applicant is the trustee, or is owned by Tobitway Crushing Pty Ltd, the Operator of the Quarry.

1.3 The Applicant and Operator

1.3.1 The Applicant

The Applicant, Grantham Park Holdings Pty Ltd, is the Trustee for the HPG Osborne Family Unit Trust. The Trust unit holders comprise five members of the Osborne family, namely Mrs Sally Osborne and her four adult children. The Trust was established by Mrs Osborne and her husband Mr Pat Osborne. Mr Osborne started the sand extraction industry in the 1970's when he approached Readymix Concrete with a sample dug up by burrowing foxes. The resulting development approval, namely D52/74 remains valid and current operations within the Project Site are undertaken under that approval.

Mr Osborne extracted sand within Lot 31, DP634213 until 1981 when that land was sold, before eventually being purchased by the Operator (see below).

The Osborne family has a long association with the southern Lake George area and community via previous and ongoing farming operations and landholdings. The Applicant's (and the Operator's) ties to and appreciation of the region is evidenced by its funding for an Australian Research Council Linkage Project which focused on an integrated study of Lake George. This study occurred within the vicinity of the Quarry and examined the tectonic, sedimentary, hydrological, vegetation, climatic, and archaeological history of the Lake George area through the application of new and improved methods in geochronology, remote sensing, and geophysics. The contribution included both substantial funding, as well as in-kind support.



1.3.2 The Operator

The Operator, Tobiway Crushing Pty Limited (Tobiway), trading as Bungendore Sands, is a wholly owned subsidiary of Canberra Sand and Gravel Pty Limited (CSG). CSG has operated in the area surrounding Queanbeyan and Canberra since 1963. It is the largest landscape supplier in the region, providing products to commercial and retail customers throughout the Queanbeyan Palerang Local Government Area and the ACT, as well as surrounding areas. CSG has tens of millions of dollars invested in the region and employs over 70 people directly and in excess of 185 people through related business interests. The Company estimates that it returns in excess of \$16 million annually to the local economy through wages and purchase of goods and services.

Tobiway has been operating the Bungendore Sands Quarry since 1982. Quarrying operations extended onto Lot 1, DP1167699 under a commercial agreement with the Applicant in 2010. The Quarry supplies over 50% of the washed sand requirement to the ready mixed concrete companies in Queanbeyan, Bungendore and Canberra. The Company directly employs 12 people on site and a further 10 truck drivers transporting product from the Quarry. The Company estimates that it returns in excess of \$900,000 annually to the local economy through wages paid.

Both CSG and Tobiway are owned and managed by Wayne Gregory and Tom Trevillian who both have over 40 years' experience in the quarrying industry. The Quarry has been operated since 1982 without any environmental incidents. Indeed, EPL9 was issued for the Quarry on 27 September 1999. There have been no non-compliances with the conditions of the licence since it was granted.

The Operator would, subject to ongoing commercial arrangements with the Applicant, continue to operate the Quarry following granting of development consent.

1.4 Existing Approvals and Licences

Table 1.1 presents the approvals and licences held for the Quarry.

Table 1.1
Existing Approvals and Licences

Approval/ Licence	Number	Date Granted	Regulatory Authority	Comment
Development Approval	D52/74	1/11/1974	Queanbeyan-Palerang Regional Council	To be surrendered within the Project Site following granting of Development Consent
Development Approval	D104/92	30/10/1992	Yarrowlumla Shire Council	Granted to Tobiway Crushing Pty Ltd for the continuation of sand extraction within Lot 31, DP634213.
Environment Protection Licence	EPL9	27/9/1999	Environment Protection Authority	
Works Authority	40WA413508	4/10/2012	WaterNSW	Permits installation of a 100mm centrifugal pump to extract water from Butmaroo Creek.
Water Access Licence	WAL33014	unknown	WaterNSW	Permits extraction of up to 3ML of water from Butmaroo Creek.



1.5 Background to the Proposal

1.5.1 Local History of Quarrying

The Project Site and surrounding areas have been a source of sand for the local construction and landscaping industries since approximately 1975. Indeed, approval for each of the current operations was originally granted in 1974 (D52/74) and 1975 (D95/75). Currently three operators produce washed or screened sand under these approvals as follows (**Figure 1.3**).

- Bungendore Sands Quarry (the subject of the current application) (DA52/74) – operated by Tobirway Crushing Pty Limited since 1982. Section 1.5.2 describes the history of the Quarry.
- Corkhill Quarry (DA52/74) - operated by Corkhill Bros Pty Ltd, this operation is a dry extraction operation (no use of dredging), with extracted material dry screened and transported from site.
- Holcim Bungendore Sand Quarry – comprising two separate sections, Leonie (DA52/74) and Monier (DA95/75). This Quarry is operated by Holcim Australia Pty Limited and is a dry extraction operation, with extracted material washed on site and completed cells used for storage of settled fines.

The majority of products produced by each of the quarries has been used for concrete manufacture, construction and landscaping operations, with the majority of the produced material transported to Queanbeyan and Canberra. Smaller quantities have been used locally in Bungendore and surrounds, as well as areas towards Goulburn and Braidwood.

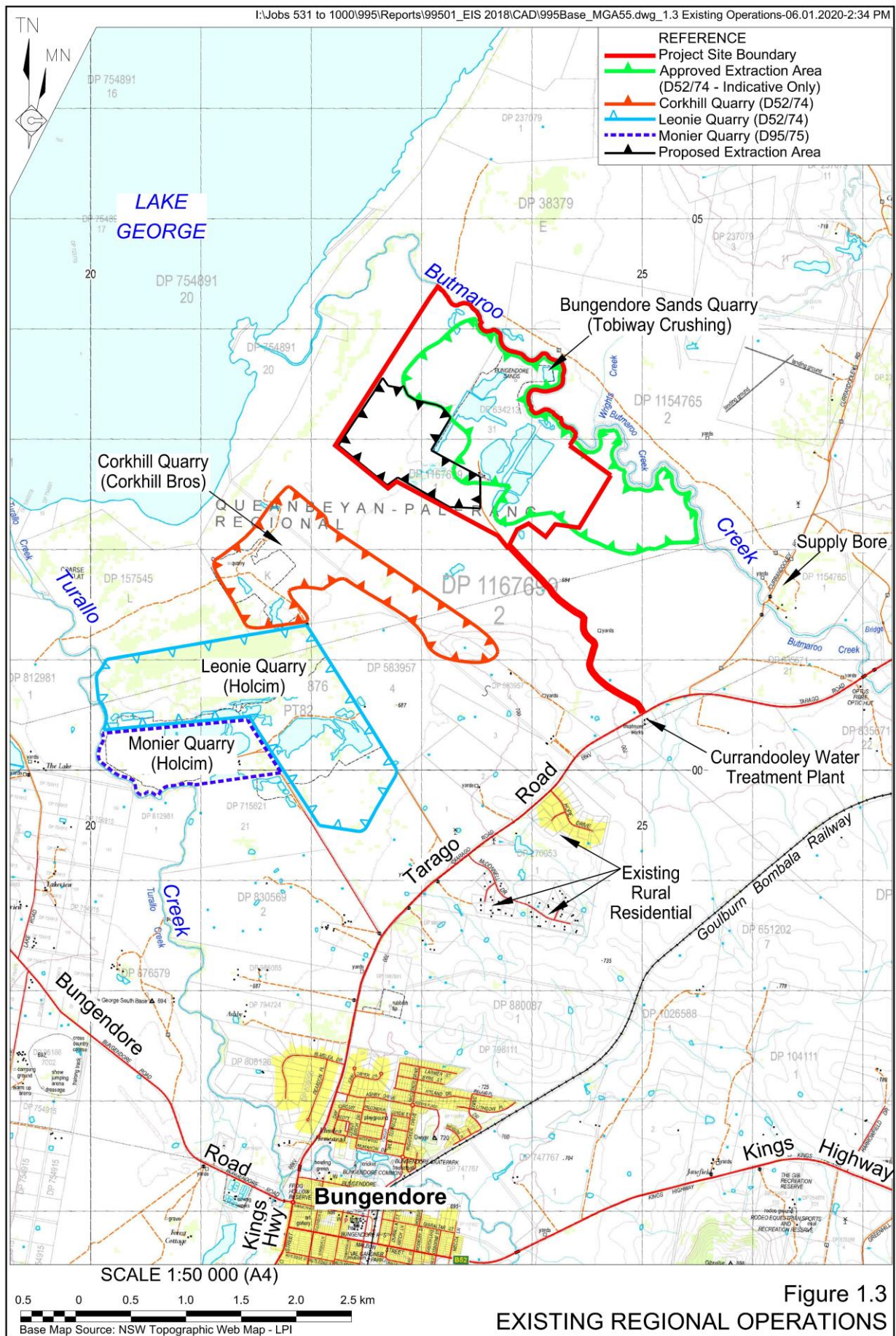
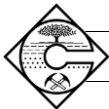
1.5.2 Operation of the Existing Quarry

Existing and proposed extraction operations are described in detail in Section 2. However, for the purposes of this Section, the following provides a brief overview of the existing Quarry operations.

The existing extraction operations within the Project Site were commenced in 1975 under D52/74 by Mr Pat Osborne (see Section 1.3). With the sale of the land in 1981, the Operator eventually assumed control of the Quarry. Since that date, sand has been extracted using a mixture of dry extraction and dredging (**Figure 1.4**). Extraction operations are currently being undertaken within Lot 1, DP1167699.

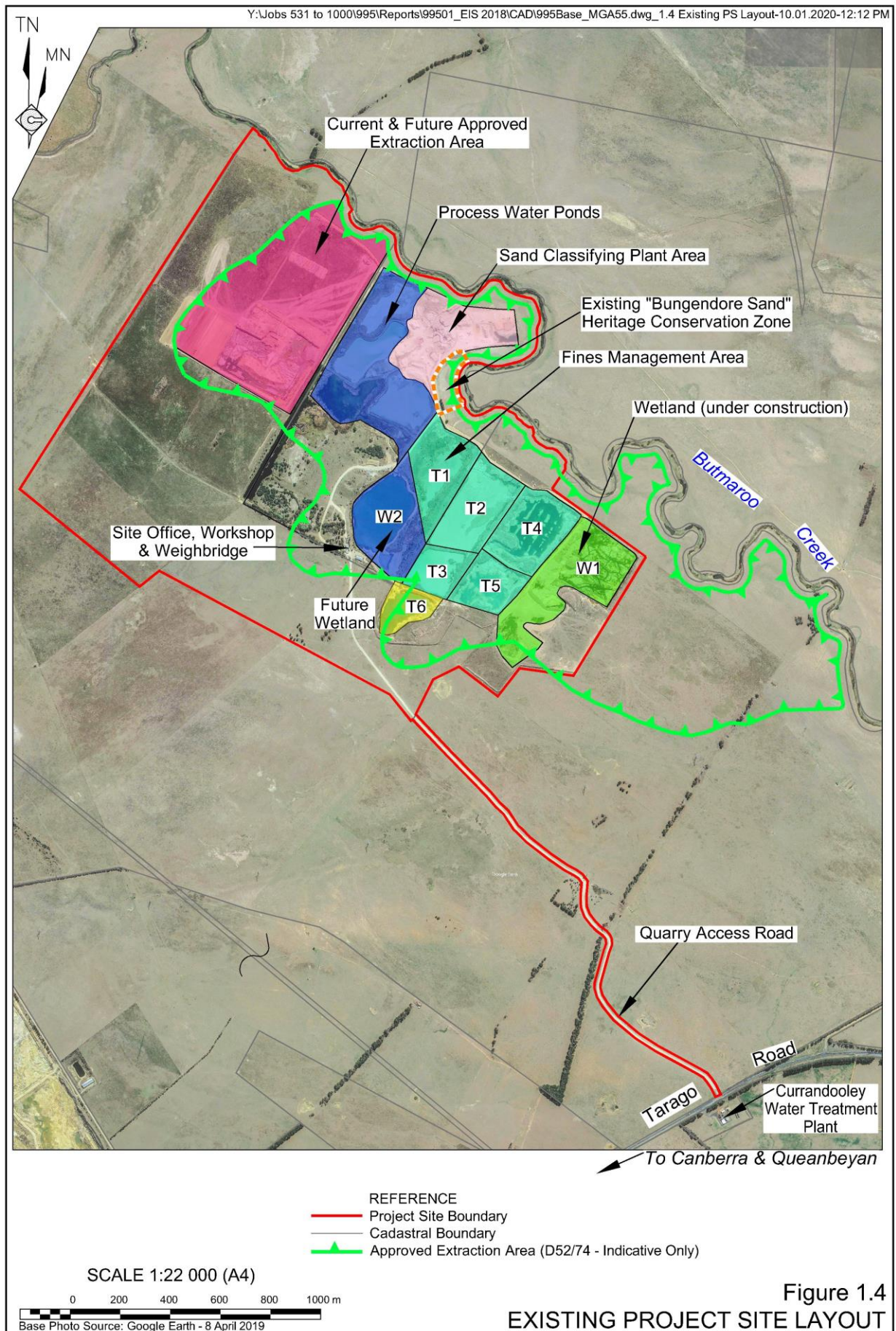
DA104/92 was sought by the Operator in 1992 under the mistaken belief that further approval was required for the operations as they were then undertaken. That consent was permitted to expire and the Quarry currently operates under D52/74.

Extracted product is processed using an onsite Sand Classifying Plant. Extracted material is loaded into a hopper using a front-end loader, mixed with water and processed using a range of screens, cyclones and wash tanks.





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Bungendore Sands Extension Project





Washed and select unwashed product is transported from the Project Site using road-registered vehicles typically up to truck and dog size. Occasional semi-trailer trucks may access the Site. Approximately 85% of produced material is transported to Queanbeyan or Canberra or surrounds via Tarago Road, Molonglo Street and the Kings Highway. A small proportion of the produced material is transported and used in Bungendore and surrounds and transported via the Kings Highway towards Braidwood. Finally, limited volumes of material are transported towards Goulburn via Tarago Road.

Fine material removed from the sand by the Sand Classifying Plant is permitted to flow to the Fines Management Area. This area comprises a number of completed Extraction Areas. Fine material is permitted to settle within the completed voids, with one void largely backfilled and two more approaching maximum capacity. Once the current voids reach capacity, the Operator will commence filling of the two completed voids at the eastern end of the Fine Management Area. Water with the fines largely settled out is permitted to return to the process water pond from where it is extracted for reuse within the Sand Classifying Plant.

Finally, the Operator is currently rehabilitating the easternmost Extraction Areas. These areas will be shaped to form a number of raised areas and will be permitted to fill with water. The raised areas will form islands and the filled voids will form wetlands suitable for use by a range of species, including threatened and migratory species.

1.5.3 Geology and Resources

1.5.3.1 Local Geological Setting

Figure 1.5 presents the local geological setting of the Project Site. In summary, the Project Site is located to the southeast of Lake George. Lake George was formed through faulting on the western side of the Lake which disrupted pre-existing drainage patterns, resulting in the Lake becoming internally draining. The water level within the Lake at various times throughout its geological past has varied extensively and, as a result a complex system of deposits has accumulated, including:

- alluvial and colluvial sediments;
- lake sediments;
- strandline sediments associated with former lakeshore deposits; and
- aeolian or wind-blown deposits.

1.5.3.2 Project Site Geological Setting

Douglas Partners (2006) and (2017) and undertook a geotechnical investigation of the surface and subsurface deposits within and surrounding the Project Site.

Figure 1.6 provides an overview of the surface geology of the Project Site. In summary, Douglas Partners (2006) identified two deposits of coarse sand and gravel, separated by alluvial deposits of gravel, sand, silt and clay. The coarse sand and gravel units are interpreted to represent strandlines deposited on the shore of a water-filled Lake George during periods of wetter climate.

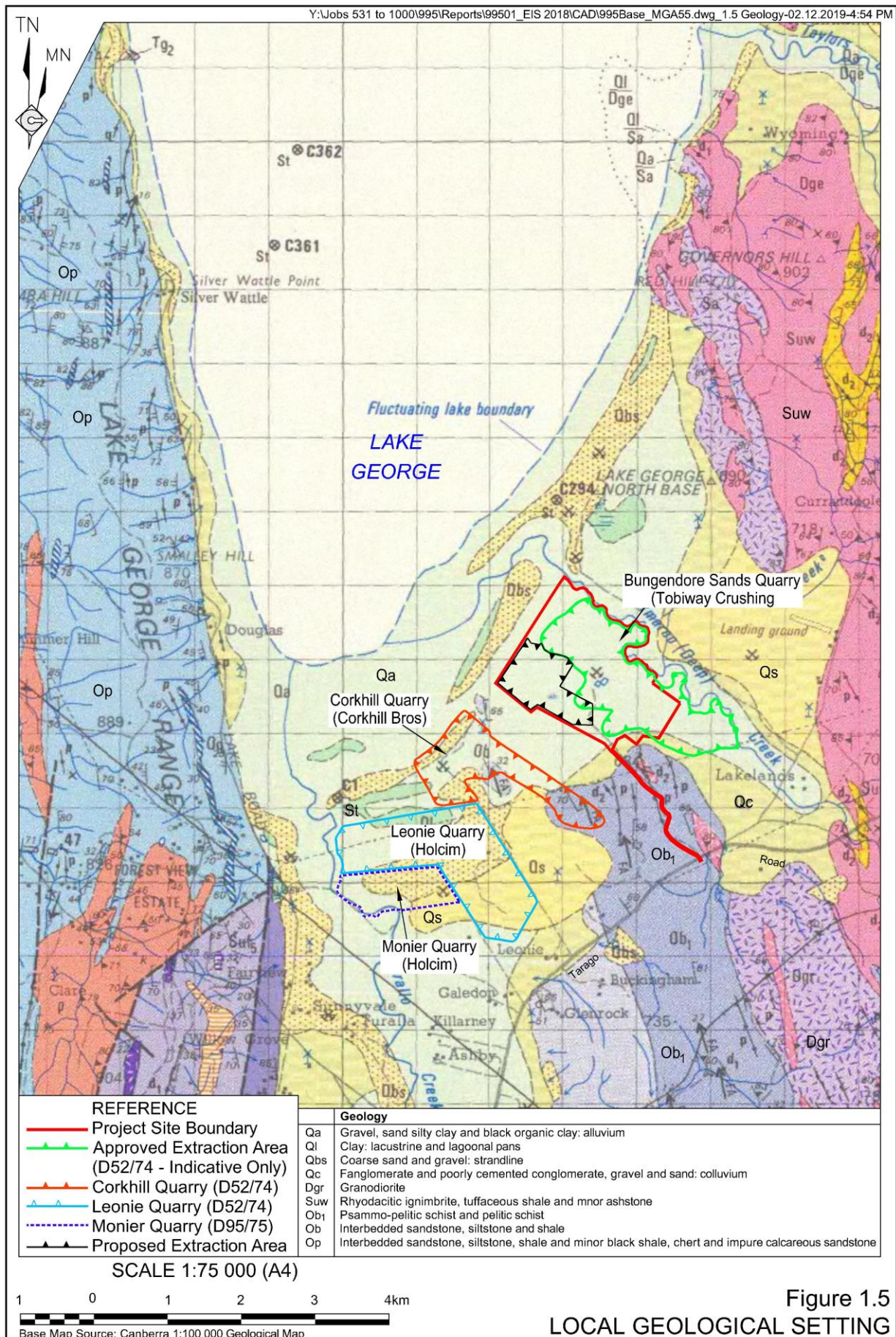
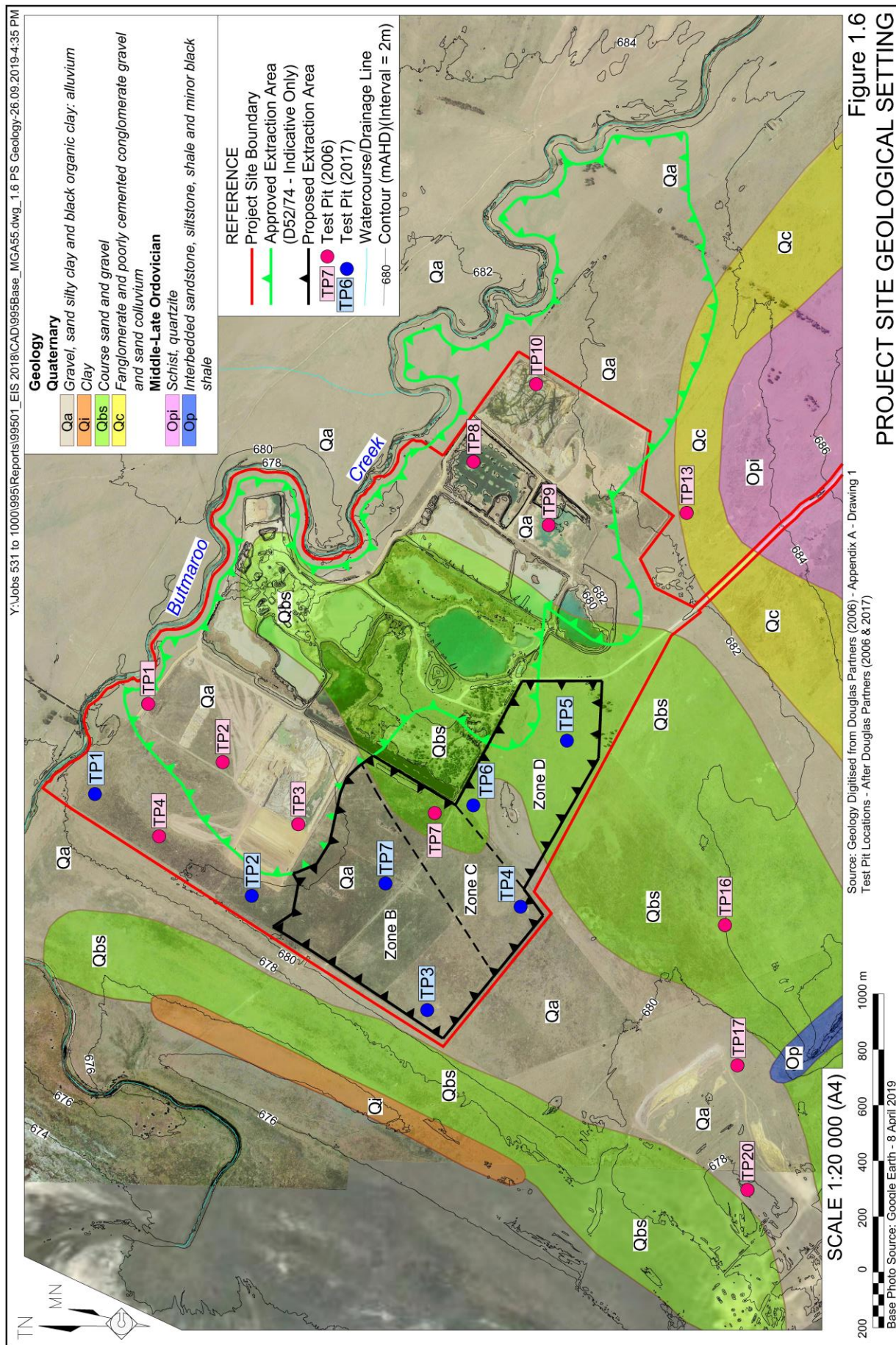
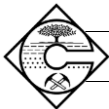


Figure 1.5
LOCAL GEOLOGICAL SETTING





Douglas Partners (2006) undertook a program of 15 test pits within and surrounding the Project Site, with a further 7 test pits excavated by Douglas Partners (2017). Douglas Partners (2017) describe the typical subsurface geological profile as follows.

- Topsoil – typically from surface to between 0.2m and 0.3m below surface. The topsoil is described as “moist, brown fine-grained silty sand with abundant rootlets.”
- Interbedded clay, silt, sand and gravel – typically from the base of the topsoil to between 1.4m and 5.2m below surface. The proportion of each of the clay, sand and gravel varied between test pits.
- Sand – typically from the base of the interbedded clay, sand and gravel to the base of the test pits at 7m depth. This unit is variably described as comprising loose to medium dense, light grey, fine grained silty sand. Laboratory testing of three samples from this unit indicates that the silt content is typically between 15% and 22%. Notwithstanding this, the Operator notes that it processes material with much higher silt content within the current Extraction Area, largely as a result of incorporation of interbedded clay, silt, sand and gravel material.

The Applicant and Operator note that the sediments within and surrounding the existing and proposed Extraction Areas are typically highly variable over short distances, with sand, silt and clay-rich layers from several centimetres to several metres thick common. Each layer may also vary laterally over scales of several metres to many tens of metres. **Plate 1.1** presents a typical extraction face, with interbedded, light-coloured sandy units separated by darker, clay-rich units. This variability is typical of lacustrine, alluvial and wind-blown deposits and reflect the changing depositional environment during formation of the deposits.

1.5.3.3 Resource Estimate

Douglas Partners (2017) estimated three zones within the proposed Extraction Area. **Table 1.2** presents the contained resources within each of those zones. In summary, the estimated sand resource within the proposed Extraction Area is approximately 3.6Mt.

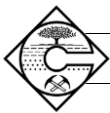
Table 1.2
Resources Estimate

Zone	Area (ha)* ¹	Average Sand Thickness (m)* ²	Volume of contained sand (m ³)	Assumed Density (t/m ³)	Contained tonnes	Assumed silt content (%)* ³	Contained sand (t)
B	36	3.0	1,080,000	1.6	1,728,000	20%	1,382,400
C	18	4.0	720,000	1.6	1,152,000	20%	921,600
D	23	4.5	1,035,000	1.6	1,656,000	20%	1,324,800
						Total	3,628,800

Note 1: Areas based on Figure 1.6.

Note 2: Sand thickness from Douglas Partners (2017)

Note 3: Douglas Partners (2017) assumed a silt content of 20%. The Operator notes that the silt content of material processed within the current Extraction Area is substantially higher than 20%. As a result, this resource estimate is likely to overestimate the volume of saleable sand within the proposed Extraction Area.



1.5.4 Quarry Products and Markets

The principal quarry products produced by the Bungendore Sands Quarry include fine and coarse sand aggregates, as well as smaller quantities of general fill and unwashed brickies sand. Canberra Sand and Gravel, the parent company of the Operator, supplies a substantial proportion of the washed sand products used in concrete batching plants throughout the Queanbeyan – Palerang Local Government Area and the ACT. As a result, washed sand from the Project Site is a critical input for the concrete that supports the construction industry within the Queanbeyan – Palerang Local Government Area and the ACT.

1.6 Format of the Statement

This EIS has been prepared in five sections with a set of accompanying appendices as follows.

- Section 1:** (this section) introduces the Proposal and the Applicant and Operator, provides background information on the Proposal, and outlines the management of investigations for this document.
- Section 2:** provides a description of the Proposal including the objectives. Section 2 also describes the proposed operations including extraction, processing and transportation operations. Finally, an overview is provided of proposed infrastructure, utilities and services, hours of operation, employment, Proposal life, the progressive rehabilitation strategy and the alternatives considered and rejected during preparation of this document.



Section 3: describes the consultation undertaken throughout the preparation of the document, discusses relevant planning and permissibility issues, identifies the relative priority of applicable environmental issues.

Section 4: commences by describing the general environmental setting within which the Proposal is located, with particular reference to aspects of the local environment likely to constrain the Proposal. The Section then presents:

- the relevant design goals or assessment criteria relating to components such as air quality, noise, surface water, groundwater and visual amenity;
- an evaluation of any environmental impacts of the current site activities;
- the additional design and operational safeguards proposed to manage the environmental impacts arising from the Proposal; and
- an analysis of the potential impacts the Proposal would have once all design and operational safeguards and procedures are implemented.

Section 5: briefly evaluates the Proposal in terms of biophysical and socio-economic impacts and the principles of Ecologically Sustainable Development and justifies the Proposal in terms of biophysical, economic and social considerations and the consequences of not proceeding.

References: Lists the various source documents referred to for information and data used during the preparation of the EIS.

Glossary: Presents a list of the acronyms, symbols and units and technical terms used throughout the EIS.

Appendices:

1. A copy of the development application for the Proposal.
2. A copy of the SEARs issued on 5 August 2019.
3. Coverage of Secretary's Environmental Assessment Requirements and Requirements of Consulted Government Agencies.
4. Heritage Assessment prepared by Dr Amy Way
5. Traffic and Transport Assessment prepared by Constructive Solutions Pty Ltd
6. Biodiversity Development Assessment prepared by EnviroKey Pty Ltd
7. Noise and Vibration Impact Assessment prepared by Spectrum Acoustics Pty Limited
8. Air Quality Impact Assessment prepared by Todoroski Air Sciences Pty Ltd

1.7 Management of Investigations

This EIS has been prepared by Mr Mitchell Bland (BSc(Hons), MEconGeol, LLB(Hons)) Principal and Managing Director with RWC, assisted by Mr Jack Flanagan (M.Env.Sc, B.Sc.), Graduate Environmental Consultant with the same company.



Mr Jim Osborne of the Applicant and Mr Wayne Gregory of the Operator provided information in relation to the existing and proposed activities and reviewed and approved this document for release.

A range of environmental investigations were initiated to identify the environmental constraints associated with the Proposal. These studies were undertaken by a team of specialist consultants managed by RWC including the following key individuals and companies.

- Biodiversity – EnviroKey Pty Ltd
 - Mr Steven Sass (Director / Principal Ecologist) (B.App.Sci (Env.Sci) (Hons), GradCert.Capt.Vert.Mgt.)
 - Mr Mark Harris (Senior Botanist / GIS Analyst) (B.App.Sci (Env.Res.Mgt))
 - Mr Harrison Warne (Ecologist) (B.Sc. (Zoology and Ecology))
- Aboriginal Heritage
 - Dr. Amy Way (Ph.D., M.Arch.Sci., B.A. (H1), B.A.S)
- Noise and Vibration – Spectrum Acoustics Pty Ltd
 - Mr Neil Pennington (Principal / Director) (B.Sc., B.Math. (Hons))
- Road Transport – Constructive Solutions Pty Ltd
 - Mr Michael Bloem (B.E. (Civil), NSW Road Safety Auditor – Level 3 (Lead Auditor))
 - Mr Doug Seymour (B.E. (Civil), MIEAust, NPER)
 - Mr Jerome Malvern (B.E. (Civil), NSW Road Safety Auditor – Level 2)
 - Mr Lucas Young (A.D.Eng)
- Air Quality – Todoroski Air Sciences Pty Ltd
 - Ellie McDougall (Environmental Scientist) (B.Sc. (Advanced) (Chemistry and Environmental Sciences))
 - Mr Philip Henschke (Senior Atmospheric Physicist) (B.Sc. (Physics and Ecology))

The results of the studies from each of the above consultancies have been incorporated into this document and full copies of their reports are included as **Appendices 4 to 8**.