



26 September 2013

LANGLOH COAL PROJECT NOTICE OF INTENT

Indicoal Mining Australia Pty Ltd

Submitted to:

Indicoal Mining Australia Pty Ltd and
Tasmanian Environment Protection Authority

REPORT



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1.0 INTRODUCTION

1.1 General Overview

Indicoal Mining Australia Pty Ltd (Indicoal) is proposing to develop the Langloh Coal Project (the project), near Hamilton in Tasmania.

The project consists of a thermal coal resource that could be supplied to both domestic and export consumers.

A referral under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) was submitted to the Department of Sustainability, Environment, Water, Population and Communities (SEWPaC) on 4 March 2013. The project was subsequently declared to be a controlled action by SEWPaC on 1 August 2013. The relevant controlling provisions were deemed to be the following:

- Listed threatened species and communities (Sections 18 and 18A); and
- A water resource, in relation to coal seam gas development and large coal mining development (Sections 24D and 24E).

Indicoal is in the process of applying for a Mining Lease under the Tasmanian *Mineral Resources Development Act 1995* (MRD Act). The project area is wholly within the Exploration Licence EL28/2008, which is currently held by Black Rock Energy Pty Ltd.

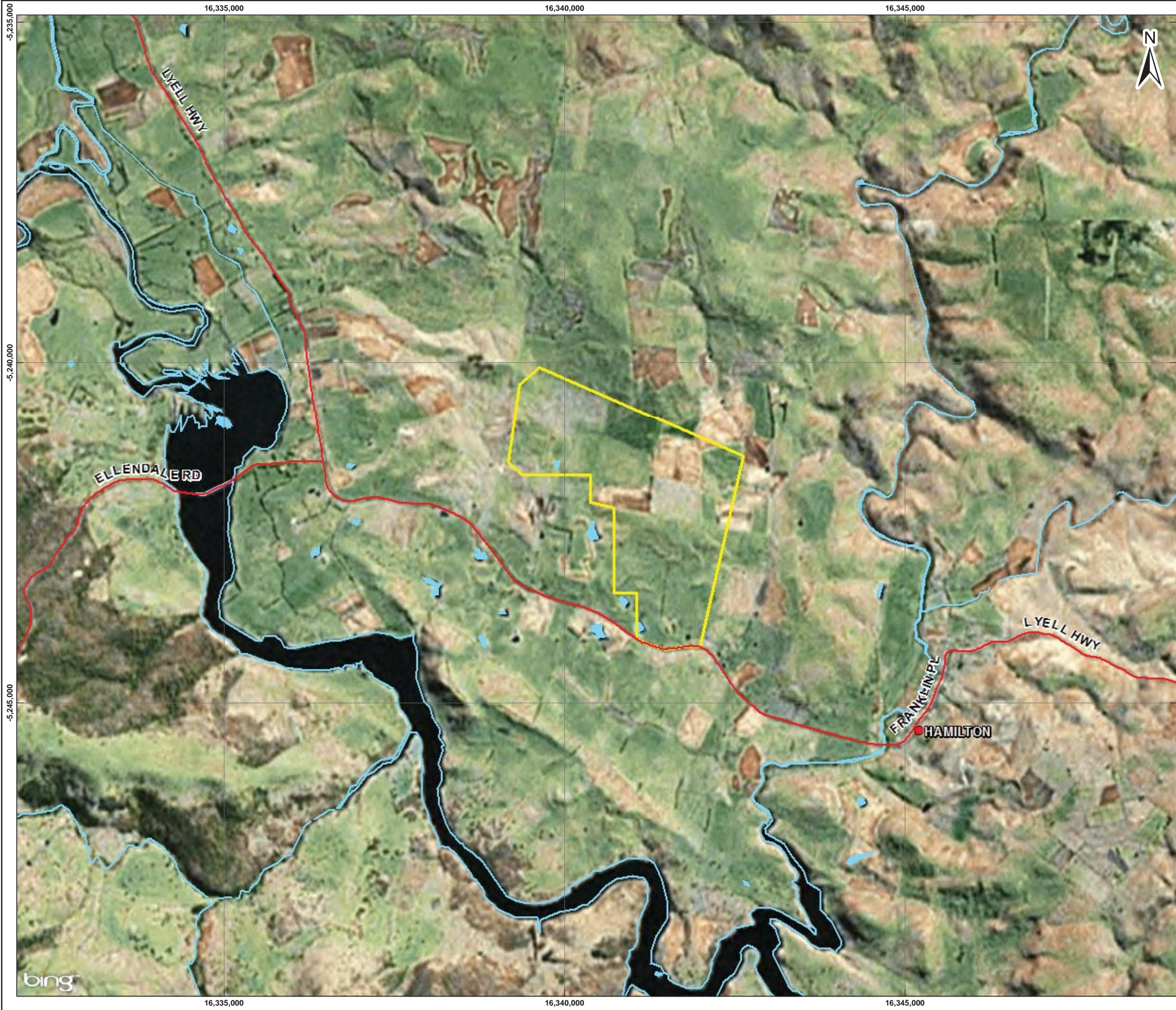
1.2 Project Area

The project is within cleared grazing land adjacent to the Lyell Highway, approximately 4 km west of the township of Hamilton and approximately 60 km northwest of Hobart, Tasmania. The project is located on gently undulating terrain. There are no surface water resources or areas of remnant native vegetation located within the project area. A small operating open cut mine, the Kimbolton mine, adjoins the western boundary of the Langloh Coal Project. The project boundary details are provided in Table 1 and location is shown on Figure 1.

Table 1: Project Boundary Coordinate Points

Latitude			Longitude		
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
-42	32	3.839	146	48	29.519
-42	33	10.602	146	48	8.83
-42	33	07.243	146	47	37.752
-42	32	51.55	146	47	38.853
-42	32	51.532	146	47	27.891
-42	32	21.729	146	47	27.992
-42	32	20.097	146	47	16.861
-42	32	10.338	146	47	16.807
-42	32	10.276	146	46	44.41
-42	32	6.147	146	46	37.938
-42	31	38.629	146	46	43.031
-42	31	32.52	146	46	52.521

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NOTICE OF INTENT LANGLOH COAL PROJECT HAMILTON, TASMANIA

INDICOAL MINING AUSTRALIA PTY LTD

LANGLOH COAL PROJECT LOCATION



LEGEND

- Approximate Site Boundary
- Major Road
- Watercourse
- Waterbody
- Township

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0 270 540 1,080 1,620 2,160 metres

SCALE (at A3) 1:54,585.69

DATUM GDA 94, PROJECTION MGA Zone 55

PROJECT: 127613050
DATE: 14 JAN 2013
DRAWN: KB
CHECKED: RP

FIGURE 1





1.3 Purpose of this Notice of Intent

Indicoal has engaged Golder Associates Pty Ltd (Golder) to draft a Notice of Intent (NOI). The purpose of this NOI is to:

- Provide formal notification of Indicoal's intention to develop the Langloh Coal Project.
- Initiate the environmental approvals process with the Environment Protection Authority Tasmania (EPA) under the *Environmental Management and Pollution Control Act 1994* (EMPC Act).
- Initiate the development assessment process with the Central Highlands Council (Council).
- Provide a brief overview of the proposed project, including its potential economic, social and environmental benefits.
- Identify potential environmental impacts and/or issues of the project.
- Identify future mining, environmental and social studies required to contribute to an Environmental Impact Assessment.
- Provide sufficient information to allow the EPA to determine the appropriate level of environmental assessment for the project.

This NOI has been prepared in accordance with Section 27B of the EMPC Act.

1.4 Contact Details

Contact details for the proponent, who is the entity lodging the application (i.e., the applicant), are as follows:

Company: Indicoal Mining Australia Pty Ltd
Primary Contact: Mr Hari Kiran Vadlamani
Registered Business Address: 15 Lovegrove Close
Mount Claremont WA
Phone: +64 6549 7116
Email: kiran@advaita.sg

The lead environmental and social consultant acting on behalf of the proponent is Golder Associates Pty Ltd. Contact details are as follows:

Primary Contact: Mr Garrett Hall, Senior Environmental Scientist

Postal Address: Golder Associates Pty Ltd

PO Box 6079

Hawthorn West VIC 3122

Phone: (03) 8862 3500

Fax: (03) 8862 3501

Email: gahall@golder.com.au



2.0 PROPONENT DETAILS

Indicoal is an Australian company registered with the Australian Securities and Investments Commission since July 2010. Indicoal's registered Australian Company Number (ACN) is 64 145 103 868.

Indicoal is an Australian company registered with the Australian Securities and Investments Commission since July 2010. Indicoal Mining Australia Pty. Ltd. is 100% owned by Advaita Group (Advaita). Advaita primarily exports coal from Australia and Indonesia to India. Advaita has made several strategic investments in resource projects and prospects, including the following:

- a Farm-In Joint Venture with Cullen Resources Limited, an Australian Securities Exchange (ASX) listed company that owns prospective coal tenements in Western Australia 15% share in Churchill Mining PLC, an Alternative Investment Market (AIM) listed company with coal assets in Indonesia; and
- 100% ownership of PT. Pratama Sumber Bumibara (Pratama), which has two coal concessions in Berau, East Kalimantan, Indonesia.

Within Australia, Indicoal has interests in the following coal tenements, which are under different stages of exploration and development:

- Liveringa Basin (E04/1930, E04/1932, E04/1945, E04/1946), Western Australia
- Galilee Basin (EPC 2404 and EPC 2410), Queensland; and
- Langloh (EL28/2008), Avoca (EL 27/2008) and Gipps Creek (EL 23/2010), Tasmania.

Indicoal Mining Australia Pty. Ltd. has sufficient financial and managerial resources to develop and run the Langloh Coal Project.



3.0 PROJECT DESCRIPTION

3.1 Background

Black Rock Energy Pty Ltd (BRE) previously engaged Golder to assess the project's geological, mining and infrastructure plans in order to support a mining lease application. The findings of that study are presented in the Langloh Deposit Concept Mining Study (Golder Ref 117621029 001 R Rev A, dated 20 March 2012) and are the basis of this project description.

3.2 Project Schedule

Construction of all mine infrastructure and the initial box cut would commence once all regulatory approvals are in place. Construction is expected to take approximately 12 to 15 months, after which mining of the resource will commence. Based on current resource estimates, the estimated mine life would be eight years.

3.3 Project Components

The Langloh Project is planned to be a conventional open cut mine of a thermal coal resource that could be supplied to both domestic and export consumers. Based on current conceptual mine planning, the project disturbance footprint would be approximately 385 ha. Project components are shown on Figure 2 and will include the following:

- open cut pit,
- waste rock storage,
- mine haul roads and other site roads,
- water management system,
- run-of-mine (ROM) pad, and conveyor to crusher and product stockpile,
- crusher and product stockpile; and
- support infrastructure.

3.4 Estimated Resources

The project contains an estimated 8.1 million tonnes (Mt) of coal resources (Golder, 2012). Table 2 summarises the estimated Joint Ore Resource Committee (JORC) compliant coal resources¹:

Table 2: Langloh Estimate Resource

Description	Coal Resource Tonnes	Weighted Average					
		Moisture (% adb*)	Ash (% adb)	Volatile Matter (% adb)	Fixed Carbon (% adb)	Calorific Value (MJ/kg adb)	Sulphur (% adb)
Measured	5,500,000	4.6	25.7	17.3	52.5	23.8	0.31
Indicated	1,200,000	5.2	28.9	19.2	46.7	24.1	0.32
Inferred	1,400,000	4.9	27.7	18.3	49.0	24.8	0.30
Total	8,100,000	4.7	26.5	17.7	51.0	24.0	0.31

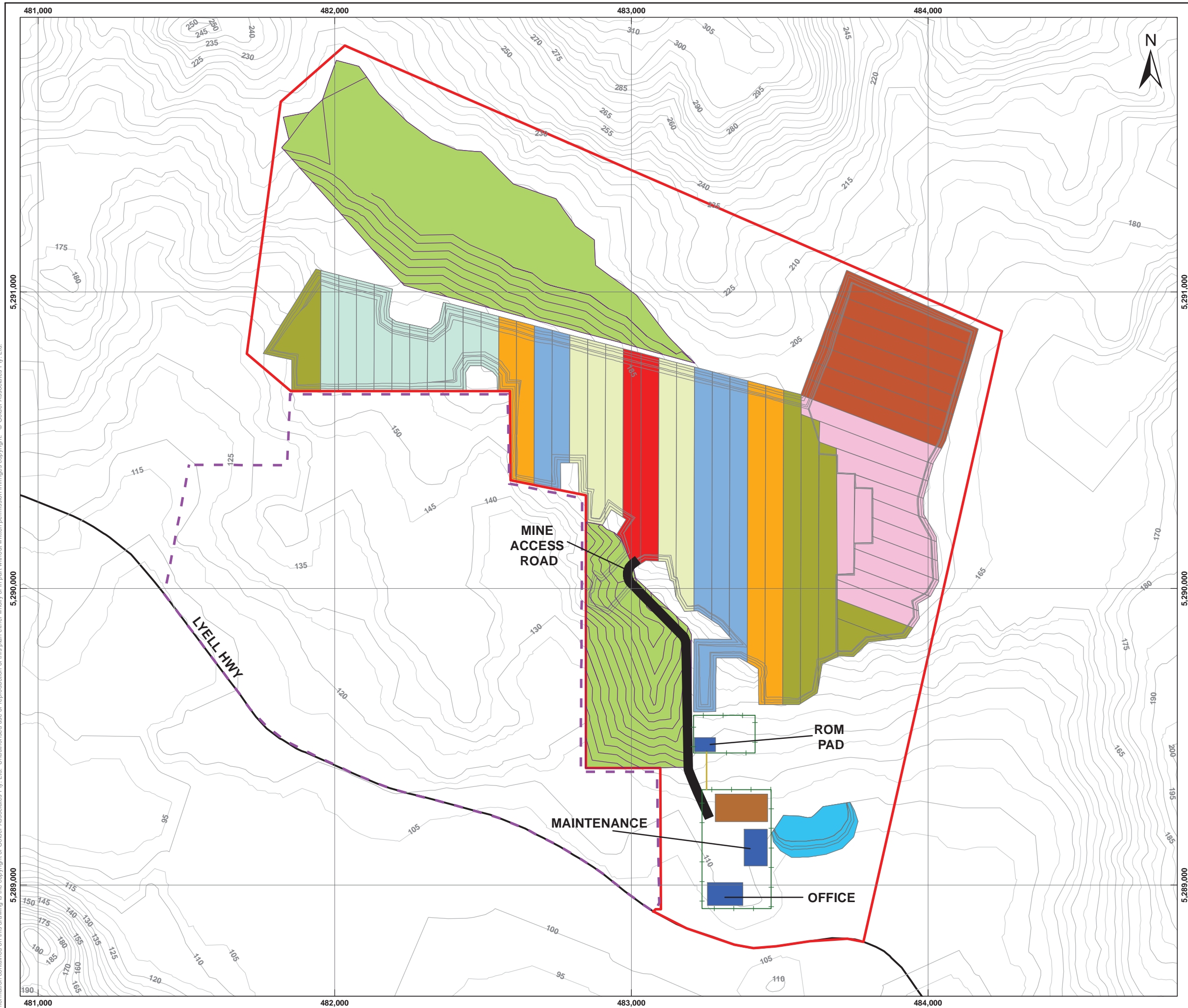
* adb = air dry basis

Note: Coal resources are estimated in accordance with JORC Code

As can be seen in Table 2, nearly 68% of the resource is within a measured confidence level and nearly 83% is of a 'measured' and 'indicated' confidence level.

¹ Australian Code for Reporting of Exploration Results, Mineral Resources and Ore Resources, The JORC Code, 2004 Edition (JORC) Guidelines.

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INDICOAL MINING AUSTRALIA PTY LTD

PROPOSED SITE LAYOUT



- LEGEND**
- Proposed Site Boundary
 - Lease 1679 - Kimbolton Mine
 - Site Infrastructure
 - Conveyor
 - Product Stockpile
 - Conceptual Dam
 - Fence
 - Contour (m AHD)
 - Waste Rock Stockpile
 - Major Road
- Mining Sequence**
- Year 1
 - Year 2
 - Year 3
 - Year 4
 - Year 5
 - Year 6
 - Year 7
 - Year 8

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0 50 100 200 300 400 500 metres

SCALE (at A3) 1:12,500
DATUM GDA 94, PROJECTION MGA Zone 55

PROJECT: 127613050
DATE: 15 JAN 2013
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CHECKED: RP

FIGURE 2





3.5 Estimated Life-of-Mine Production

Within the limits of the coal resources, Golder designed a conceptual pit shell for use in designing a life-of-mine production schedule. The average annual ROM coal production is estimated at 910,000 t. Based on this mine production schedule and the limitations of the coal resources, the project is estimated to have a mine life of eight years and produce a total of 6.7 Mt as shown in Table 3. Of this total, 5.36 Mt of coal product are estimated to be realised, at a yield of 80%.

Table 3: Mine Production Schedule

Year	Coal Tonnage (ROMt)	Waste Volume (bcm)	Stripping Ratio (bcm/ROMt)
1	400,000	1,900,000	4.8
2	850,000	4,500,000	5.3
3	910,000	5,500,000	6.0
4	910,000	5,500,000	6.0
5	910,000	5,600,000	6.2
6	910,000	5,600,000	6.2
7	910,000	5,600,000	6.2
8	900,000	5,100,000	6.2
Total	6,700,000	39,300,000	5.7

3.6 Operation of the Mine

3.6.1 Mining Process

The proposed layout of the facilities and the mine pit is shown on Figure 2. The Project will be developed using conventional open cut mining methods using dozers and an excavator/truck fleet operation to extract and transport the product to the ROM stockpile. Typically the mining process would involve removal of topsoil from areas to be disturbed for pit development and waste rock removed in benches until the ore is intercepted.

Waste rock would initially be dumped outside the pit in waste rock stockpiles. Once sufficient void space has been created within the pit, waste rock from the further progression of mining will be placed within the pit. Based on conceptual mine studies completed to date and results from exploration drilling, it is anticipated that approximately 73% of waste rock would require blasting, with the remaining material suitable for free digging. The actual drill and blast requirements will be adjusted as dictated by operational requirements.

The coal would be extracted with diesel powered hydraulic excavators matched with suitably sized dump haul trucks. Extracted coal would be hauled to a ROM stockpile. The ROM stockpile will be loaded onto a conveyor (approximately 130 m long) which would transport coal to the crushing plant. .

It is envisaged that dewatering will be required for the project. The overburden thickness within the project site varies from approximately 20 m to 80 m. The groundwater table in the area is fairly shallow and varies from 6 m below ground level (bgl) to 10 m bgl as indicated from the Tasmanian Government registered bore database and from data of the adjacent Kimbolton mine. When the mining excavation extends below the groundwater table, groundwater seepage will occur. Dewatering will be required ahead of or during mining. Dewatering will cause a cone of drawdown and lower the groundwater level within areas surrounding of the open pit. The dewatering rates and extent of the drawdown at the project site have not been estimated at this stage due to lack of site-specific data; however, a daily groundwater extraction rate of the order of 12.5 kL (15 ML per year) was estimated for the dewatering at the adjacent Kimbolton Mine (Environmental & Technical Services Pty Ltd, 1998).



3.6.2 Processing

To meet customer requirements, a raw (unwashed) coal product would be exported from the project. Coal will simply be crushed to the required size at the crushing plant. The export of raw coal eliminates the requirement for a coal handling and preparation plant, significantly reduces mine water and energy requirements and eliminates the need for a tailings disposal facility. This will also result in maximum utilisation of the resource.

3.7 Water Management and Use

Site surface water management will be based on the principle of diverting clean surface water runoff away from disturbed areas, and intercepting runoff from disturbed areas and directing it through sediment control structures. Water management at the mine site will require the development of water management structures. At least one dam (approximately 4 ha) for onsite water management and storage will be required (Figure 2). Mine water and dirty runoff will be directed towards either the proposed mine pit or the dam via a series of diversion drains. Other minor sediment control structures such as sediment traps and small dams may also be required.

Water will be required for dust suppression and potable water for mine staff. The potential source of water for the project is currently being investigated and may include one or more of the following options:

- water licences from purchased properties,
- onsite sources including pit water and water stored in onsite dams; or
- Meadowbank Lake.

3.8 Transport Infrastructure

3.8.1 Haul Roads and Other Site Roads

A series of internal roads will be established to provide access to the pit, ROM stockpile dumps and crushing plant. Internal access roads will be constructed of varying standards, depending upon the type of vehicle to utilise the road.

3.8.2 Transport to Market

Export Options

Product coal will be stored on a designated stockpile area prior to transport to an export facility. Indicoal is currently investigating transport options for the project. Investigations include negotiating with a Tasports in relation to existing port options and other potential port and jetty developments in Tasmania.

Two export options are currently being investigated as part of the project planning. The first is to export product from the existing Bell Bay Port, approximately 285 km northwest of the mine. Tasports are planning to expand this port facility, having secured \$5M of Commonwealth funding for a new freight terminal in early May 2013 (ABC, 2013). Tasports will be the proponent of any port upgrade and would be responsible for any required approvals associated with the expansion of the existing facility.

The second export option being investigated is for product to be barged down the Derwent River to a mid-sea transshipment vehicle, or a geared vessel. Indicoal is considering the use of existing jetty and barge infrastructure, as well as the new jetty and barge infrastructure being proposed on the Derwent River. New jetty options are not proposed to be developed by Indicoal, rather a commercial arrangement entered into between the owner/operator of the infrastructure. Any approvals required for the development of new jetties would be the responsibility of the owner/operator of the infrastructure.

Transport Options

Road Transport

Transport of ore from the mine to either Bell Bay or a jetty for transshipment will require the coal to be trucked from the mine to New Norfolk via the Lyell Highway. From New Norfolk, the transport route would divert



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depending on the export option chosen. For Bell Bay, the following road transport routes are currently being investigated:

- from New Norfolk to Bridgewater via the Boyer Road,
- from Bridgewater to Launceston via the Midland Highway; and
- from Launceston to Bell Bay via the East Tamar Highway.

The proposed transport route from the mine site to Bell Bay is approximately 285 km.

If mid-sea transshipment is chosen as the export option, the road transport route will depend upon where the product is loaded on to a barge. If existing infrastructure is used, product would be transported from New Norfolk via the Boyer Road to an existing barge loading facility on the Derwent River near Boyer. The proposed road transport route from the mine to the existing barge loading facility is approximately 48 km.

All roads within the proposed road transport routes are included within a designated heavy vehicle route and are approved for use by B-doubles. The proposed transport routes are a combination of State and National/State highways. While all roads within the road transport route are approved for heavy vehicles, no assessment has been made on the existing capacity of the roads or the requirement for any intersection upgrades.

Road and Rail Combination

TasRail operate a narrow gauge rail system that is currently undergoing redevelopment. If product is to be exported via Bell Bay, it is possible to utilise a combination of road and rail. The road and rail combination would require product coal to be transported via road to an existing rail loading facility near Boyer, following the same proposed transport route as that used for mid-sea transshipment. The existing rail system is capable of carrying a 16 t axel load. The rail distance from Boyer to Bell Bay is approximately 250 km.

An alternative rail loading facility is located near Brighton and is part of an Intermodal Freight Hub. If product were to be trucked to this facility, the road transport route would be approximately 66 km and would be along the Lyell Highway and Boyer Road.

3.9 Other Mine Infrastructure

Infrastructure for the project will be kept to a minimum. Due to a predicted short mine life, items will be temporary where possible. In addition to water management structures and transport infrastructure, the following structures and items are required for the project:

- office building for administration (portable style),
- maintenance area or shed (or a covered, free draining and compacted pad),
- ROM pad, conveyor to crusher and product stockpile; and
- park up area.

The conceptual locations for these items are shown on Figure 2. The ROM pad has been located as close as possible to the pit to minimise haulage distances and to reduce the requirement for trucks to climb the undulating terrain. The majority of the remaining infrastructure has been located towards the Lyell Highway, where the topography is flatter.

3.10 Workforce

The mine will require an estimated workforce of 39 employees (20 operations, 8 maintenance and 11 administration/support personnel). The workforce requirements assume that operations at the mine will follow a schedule of 12 hour shifts, with one shift per day, six days per week, and 48 weeks of the year.



3.11 Rehabilitation and Mine Closure

Mine closure planning is a continuous process which commences prior to project development. Closure plans will be progressively refined and adapted throughout the life of the mine. This ensures that the planning adapts to further site information that becomes available during construction and operations, and to changes in regulations, stakeholder expectations, technology, knowledge and mine planning.

Mine closure planning will be conducted in consultation with stakeholders to ensure that the final rehabilitation and mine closure objectives incorporate their requirements and keep them informed of achievement of mine closure criteria.

The mine closure plan will be developed in line with the following objectives:

- Protect human health and safety.
- Reduce the need for long term monitoring and maintenance through design of and construction of landforms that are geotechnically and geochemically stable.
- Develop landforms that are consistent with the surrounding landscape.
- Develop an environmental monitoring and reporting program which is focused towards demonstrating the achievement of closure outcomes.
- Where possible, undertake progressive rehabilitation of the site during operations.
- Understand decommissioning and rehabilitation and what mechanisms for funding exist.
- Residual risks and liabilities are identified and controlled to an acceptable level.

While rehabilitation and mine closure will continue to be refined during the life of the mine, generally the Mining Lease will be rehabilitated as follows:

- Open pit – in-pit waste material will be rehandled to rehabilitate the final pit zones, proposed to occur in the sixth and eighth years of the plan. Final pits will be designed to remain as water impoundment. Void walls and perimeter slopes will be designed to be geotechnically stable.
- Waste rock storages – at the completion of mining, waste rock stockpiles will be shaped and contoured before being spread with topsoil and revegetated with native species or other species appropriate for final land use.
- Infrastructure areas – mine infrastructure will be removed from site. Once infrastructure has been removed, any areas of contamination will be remediated and the areas will then be ripped, spread with topsoil and revegetated with native species.



4.0 ENVIRONMENTAL MANAGEMENT STAKEHOLDER CONSULTATION

Stakeholder engagement is a requirement of the State approvals process. It is also essential to the success of the project, ensuring stakeholders are informed and that stakeholder issues are identified and considered in the early stage of the project.

Indicoal is committed to establishing and maintaining relationships with its stakeholders and has put in place a framework for engagement which will be implemented during the NOI and environmental scoping phase. Targeted consultations are planned with the following identified groups or individuals:

- landholders surrounding the Mining Lease area,
- regulators – such as EPA, MRT and Central Highlands Council; and
- key government representatives – Minister for Energy and Resources and Minister for Environment, Parks and Heritage.

In late 2012 Indicoal met with the EPA and MRT to introduce the project and to discuss project permitting needs. Potential environmental issues associated with the project (e.g., noise, dust and traffic) were also discussed. Landholders have also been consulted in relation to land access for exploration activities.

Other stakeholders have been identified for consultation in subsequent stages, following the submission of the NOI and during the environmental impact assessment phase, and include the Hamilton community, Ouse community, industry groups and conservation groups.

A Stakeholder Engagement Plan has been prepared and will be regularly reviewed and revised, following each stage of consultations. During the first stage of consultation, targeted project briefings (meetings) will be held with regulators (including Council) and key government representatives. Indicoal will be represented at these briefings by key staff and personnel from its environmental consultancy, Golder Associates Pty Ltd. Summary information to be covered in this material includes:

- How will the product be mined?
- Where will the product go – potential markets?
- What are the transport routes?
- How many people will the project employ?
- What environmental studies will be completed?
- What is the overall project/approvals schedule?
- How will community / stakeholder views be considered?



5.0 EXISTING ENVIRONMENT

5.1 Land Resources

5.1.1 Topography, Landform and Drainage

The project is located on gently undulating land. The project area generally ranges from approximately 110 m Australian Height Datum (AHD) to 200 m AHD. The site generally drains in southeasterly direction towards Meadowbank Lake. Meadowbank Lake is to the south west of the project area. Ellangowan Creek is to the north east and Cartwrights Creek is to the north west of the project area.

5.1.2 Geology

The Langloh deposit consists of a dominantly lithic sandstone sequence interbedded with minor mudstone bands and coal seams, forming part of the Upper Parmeener Super Group. The lithic sandstone sequence is underlain by a quartz sandstone sequence which is devoid of coal.

The coal measures at the Langloh project are contained in a wedge shaped fault block, bounded on the west by a Tertiary graben fault, to the east by Jurassic dolerite, to the north by Tertiary basalt and by Tertiary basalt outcrops to the south. Three major seams exist throughout the Langloh deposit, each on average about 1 m thick. The three major seams (Seam A, B and C) are separated by silty mudstone units, with a typical thickness of 0.2 m between the top two seams and approximately 1 m between the bottom two seams. Seams B and C are will be mined; however, Seam A may be selectively mined based on ash content.

5.2 Land Use

The site is currently used for agricultural purposes, a mix of grazing and fodder cropping. Cropping within the surrounding area includes irrigated crops, including opium poppies. The site is adjacent to the existing Kimbolton Mine (Mining Lease 1679) and is situated approximately 2.5 km east of Meadowbank Lake on the River Derwent. Broad scale land use mapping identified the project area as agricultural land use (map classification: FAG).

5.3 Ecology

5.3.1 Ecological Assessment Objectives and Method

A desktop assessment of ecological values present at the site or likely to occur within the area immediately surrounding the site was conducted. The objectives of the desktop assessment were to identify plant species potentially occurring at the site, assessment of the conservation significance of species identified and to identify requirements for a detailed ecological assessment of the site. Information review as part of the assessment included relevant databases, literature and analysis of available site imagery.

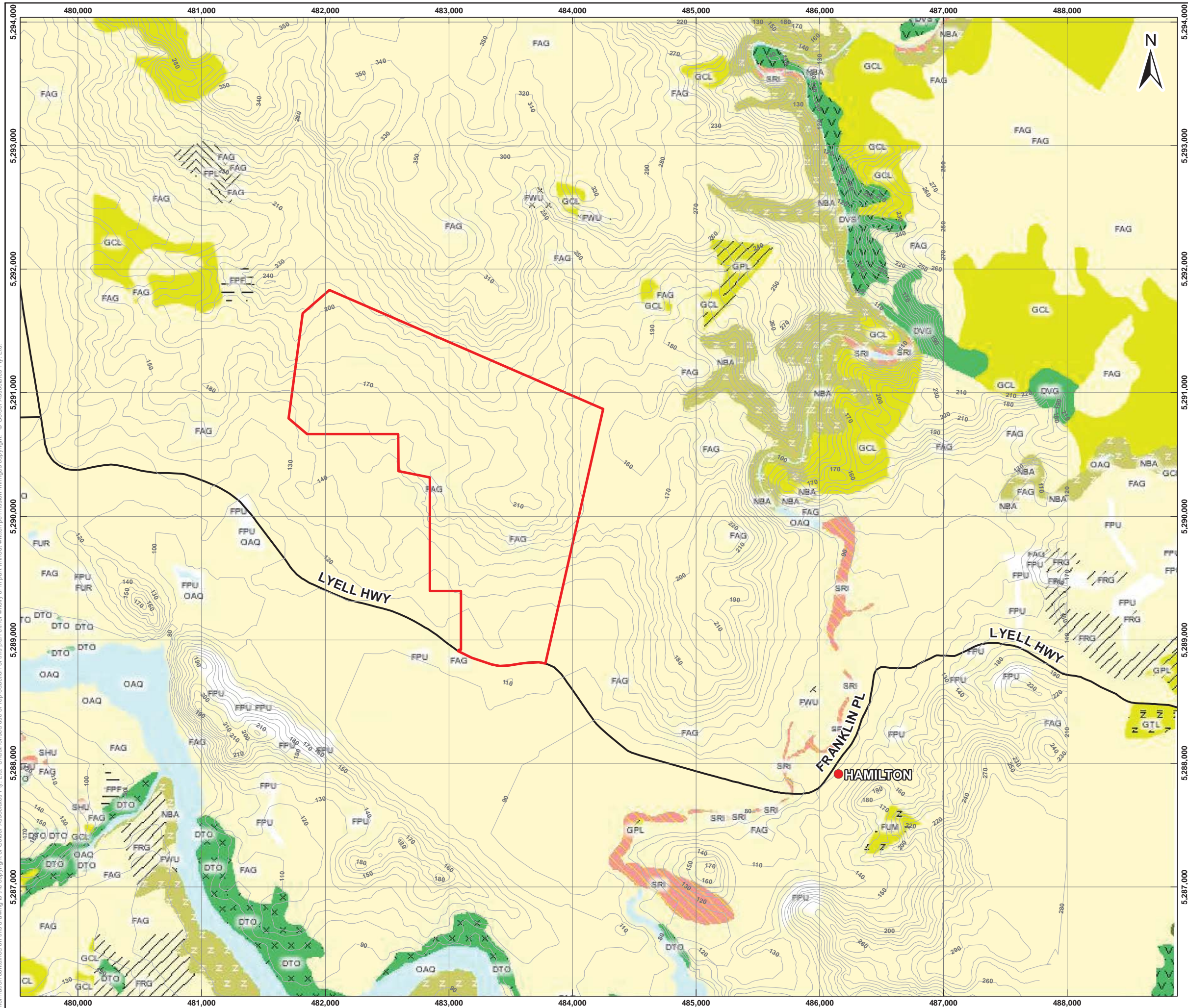
The desktop environmental baseline assessment included a data review area (DRA) that was formed by adding approximate 5 km buffer to the proposed Mining Lease for the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and Natural Values Atlas (NVA) searches.

A search of the NVA was conducted to obtain a report on the mapped distribution of TASVEG vegetation communities (Harris and Kitchener, 2005) (Figure 3), the presence of threatened flora and fauna, individual records of flora and fauna, including weed and pest animal species (Figure 4). A DRA was formed by including a 5 km buffer around the Project area. This is necessary so that potential off-site environmental impacts and fauna movements in and out of the DRA can be considered.

5.3.2 Vegetation

There were no threatened plant species recorded within the DRA and the site has been cleared for agriculture and is classified as agricultural land (map classification: FAG) in accordance with Harris and Kitchener (2005). No remnant native vegetation exists within the DRA. Of the plant species identified by the search for matters of national environmental significance listed under the EPBC Act, *Rytidosperma popinensis* (roadside wallaby grass) is considered to be the most likely to occur within the DRA in particular within the roadside reserve, although it had not been recorded previously from the DRA.

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LANGLOH COAL PROJECT
HAMILTON, TASMANIA
INDICOAL MINING AUSTRALIA PTY LTD

MAPPED DISTRIBUTION OF TASVEG VEGETATION COMMUNITIES (HARRIS AND KITCHENER 2005) - DRA



- LEGEND**
- Proposed Site Boundary
 - Contour (m AHD)
 - Major Road
 - Township
- Vegetation Community Key**
- | | |
|-----|--|
| DVG | E. viminalis grassy forest and woodland |
| DTO | E. tenuiramis forest and woodland on sediments |
| DVS | E. viminalis shrubby/heathy woodland |
| NBA | Bursaria–Acacia woodland and scrub |
| SHU | Inland heathland (undifferentiated) |
| SRI | Riparian scrub |
| GCL | Lowland grassland complex |
| GPL | Lowland Poa labillardierei grassland |
| GTL | Lowland Themeda triandra grassland |
| FAG | Agricultural land |
| FPU | Pteridium esculentum fernland |
| FRG | Regenerating cleared land |
| FPL | Plantations for silviculture |
| FWU | Weed infestation |
| FUM | Extra-urban miscellaneous |
| FUR | Urban areas |
| QAQ | Water |

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Township data sourced from MapInfo StreetPro.

0 100 200 400 600 800 1,000 metres

SCALE (at A3) 1:30,000

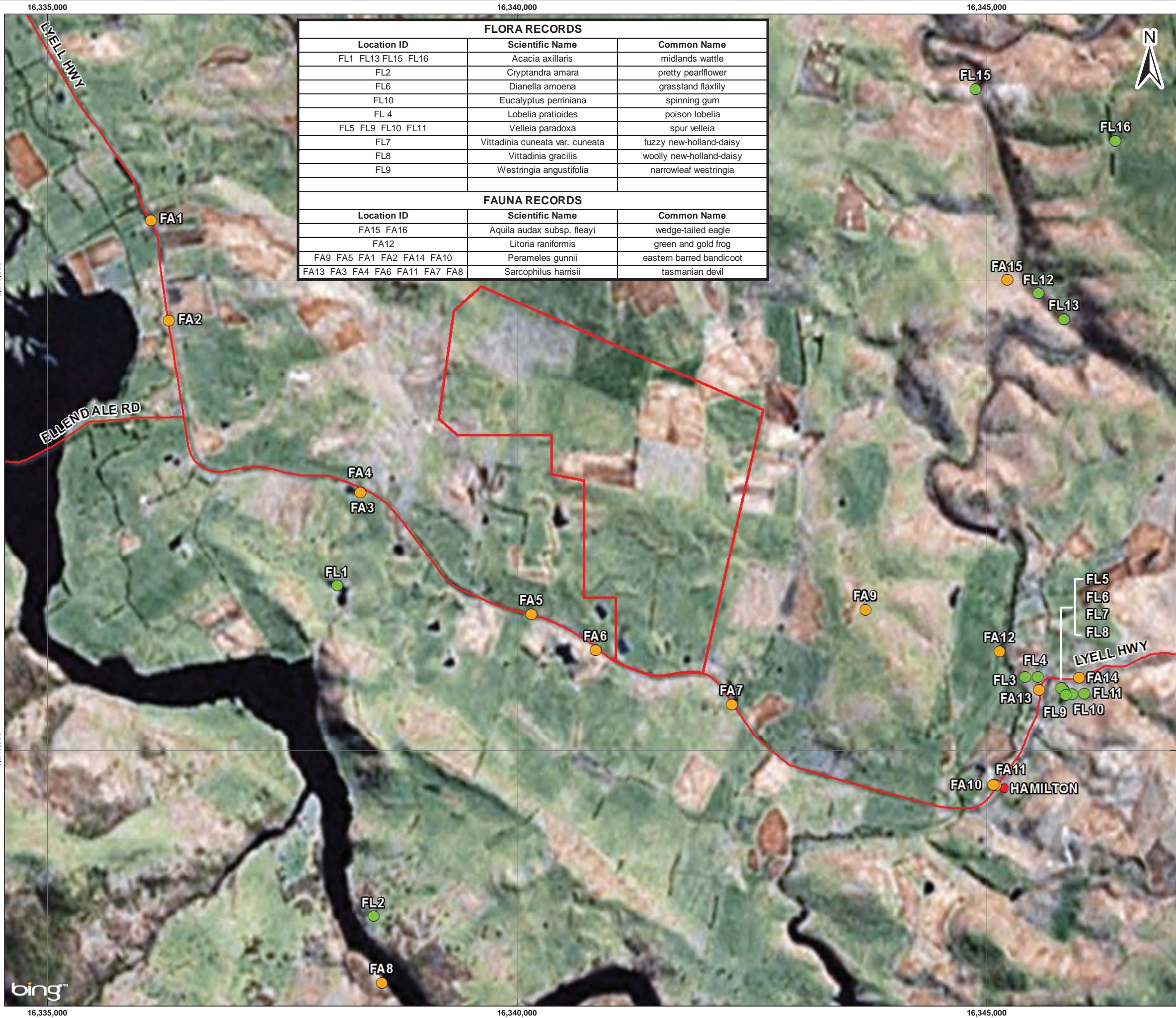
DATUM GDA 94, PROJECTION MGA Zone 55

PROJECT: 127613050
DATE: 09 SEP 2013
DRAWN: KB
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FIGURE 3



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FLORA RECORDS		
Location ID	Scientific Name	Common Name
FL1 FL13 FL15 FL16	Acacia axillaris	midlands wattle
FL2	Cryptandra amara	pretty pearflower
FL6	Dianella amoena	grassland flaxlily
FL10	Eucalyptus perriniana	spinning gum
FL 4	Lobelia pratioides	poison lobelia
FL5 FL9 FL10 FL11	Velleia paradoxa	spur velleia
FL7	Vittadinia cuneata var. cuneata	fuzzy new-holland-daisy
FL8	Vittadinia gracilis	woolly new-holland-daisy
FL9	Westringia angustifolia	narrowleaf westringia
FAUNA RECORDS		
Location ID	Scientific Name	Common Name
FA15 FA16	Aquila audax subsp. fleayi	wedge-tailed eagle
FA12	Litoria raniformis	green and gold frog
FA9 FA5 FA1 FA2 FA14 FA10	Perameles gunnii	eastern barred bandicoot
FA13 FA3 FA4 FA6 FA11 FA7 FA8	Sarcophilus harrisii	tasmanian devil

NOTICE OF INTENT
LANGLOSH COAL PROJECT
HAMILTON, TASMANIA

INDICOAL MINING AUSTRALIA PTY LTD

NATURAL VALUES ATLAS
(NVA) FLORA AND FAUNA
RECORDS - THREATENED
SPECIES (DRA 5KM)



LEGEND

- Proposed Site Boundary
- Flora
- Fauna
- Township
- Major Road

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0 195 390 780 1,170 1,560 1,950 metres
SCALE (at A3) 1:40,000
DATUM GDA 94, PROJECTION MGA Zone 55

PROJECT: 127613050
DATE: 09 SEP 2013
DRAWN: KB
CHECKED: RP

FIGURE 4





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The Protected Matters Report is provided in Appendix A. The Protected Matters Report lists matters of national environmental significance (NES) that have been recorded or that are potentially present within the DRA, including threatened species and endangered communities. No threatened ecological communities were listed as occurring within the DRA. Table 4 details the EPBC Act threatened plant species that may occur on site based on potential habitat.

Table 4: Summary of EPBC Act Threatened Ecological Communities and Species That May Occur on Site

Scientific Name	Common Name	EPBC Act Status	Preferred Habitat	Potential to Occur on Site
<i>Caladenia anthracina</i>	Black-tipped Spider-orchid	Critically Endangered	Grassy Woodland on well drained sandy soil is the preferred habitat (Threatened Species Unit 2001), with this species strongly associated with basalt (DSEWPaC, 2012a).	Occurs in grassland and grassy woodland (DSEWPaC, 2012a). Suitable habitat has potential to occur within introduced grassland in the project area. Due to agricultural development this species is unlikely to occur at site.
<i>Colobanthus curtisiae</i>	Curtis' colobanth	Vulnerable	Grassy Woodland on gentle slopes. Commonly found on soils derived from sandstone or dolerite and basalt (DSEWPaC, 2012b).	The species is known to occur in Culny (approximately 9 km west) (DSEWPaC, 2012b). Suitable habitat has potential to occur within the introduced grassland within the project area.
<i>Dianella amoena</i>	Matted flax-lily	Endangered	Native grasslands and grassy woodlands, found mainly in the Midlands (Threatened Species Section, 2008).	The species is known to occur on the Hamilton Plains. Known remnant stands are generally restricted to roadsides (DSE, 2005). Suitable habitat may occur within the introduced grassland within the project area. There are no known remnant stands within the project area.

Invasive Plant Species

The Protected Matters Report also identified four invasive plant species, *Chrysanthemoides monilifera* (boneseed), *Rubus fruticosus* aggregate (blackberry), *Salix spp.* (willows) and *Ulex europaeus* (gorse) that either occur in the DRA or for which suitable habitat may occur. It is possible that these species occur within the DRA.

Chrysanthemoides monilifera (Boneseed)

There are no records of this species within the DRA (ALA, 2012a; DPIPW, 2009a) and within Tasmania it occurs in coastal areas, within the Tamar Valley and in and around Hobart (DPIPW, 2012a). Elsewhere in Tasmania boneseed occurs occasionally as a weed of disturbed bushland and coastal vegetation (DPIPW, 2012a). The DRA occurs in an area in which occasional occurrences of boneseed occur and therefore while the potential exists for this species to occur, it is unlikely.



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Rubus fruticosus aggregate (Blackberry)

While the closest record of this species is from approximately 14 km northwest of the DRA near Lake Repulse (ALA, 2012b), it is likely that *Rubus fruticosus* aggregate (blackberry) occurs within the DRA, in particular associated with watercourses, disturbed bushland, roadsides and neglected farmland (DPIPWE, 2012b). The DRA is located within an area designated as potential habitat for this species (DPIPWE, 2009b). Blackberries are declared weeds under the Tasmanian *Weed Management Act 1999* and commonly occur in settled areas (DPIPWE, 2012b).

Salix spp. (Willows)

The mapped distribution of *Salix* spp. (willows) indicates it may occur within the DRA (DPIPWE, 2009c). Willows are a declared weed under the Tasmanian *Weed Management Act 1999* (DPIPWE, 2012c). Principally a weed species associated with waterways it is considered unlikely that this species occurs within the DRA.

Ulex europaeus (Gorse)

Gorse is known to occur in the Hamilton area (DPIPWE, 2009d) and is considered a major agricultural weed within Tasmania (DPIPWE, 2012d). It is likely that Gorse occurs within the project area.

5.3.3 Fauna

The NVA has no records of threatened fauna within the site. *Aquila audax* subsp. *fleayi* (wedge tailed eagle) and *Tyto novaehollandiae castanops* (masked owl) may also utilise the site as part of a much wider home range. The site however does not contain suitable trees for either of these threatened bird species to nest. The occurrence of road kills of both *Sarcophilus harrisii* (Tasmanian devils) and *Perameles gunnii* (eastern barred bandicoots) along the Lyell Highway suggests that these species may forage within the DRA and have the potential to occur at the site (Figure 4). However neither species is likely to be restricted to the project area.

The Protected Matters Report is provided in Appendix A and lists matters of NES that have been recorded or that may potentially occur within the DRA, including ten threatened fauna species comprised of five bird species, one fish species, one frog species and three species of mammal. Table 5 details the EPBC Act threatened fauna species that may occur on site based on potential habitat.

Table 5: Summary of EPBC Act Threatened Fauna Species That May Occur on Site

Scientific Name	Common Name	EPBC Act Status	Preferred Habitat	Potential to Occur on Site
Birds				
<i>Aquila audax fleayi</i>	Wedge-tailed Eagle	Endangered	Preferred nesting habitat is mature old growth Eucalypt forest. Wedge-tailed Eagles will forage across all habitat types, in particular open areas including agricultural land (DSEWPaC, 2012c).	Potential exists for this species to forage within the DRA. It is considered unlikely that this species would nest at the site as the species does not like to be disturbed while nesting and lack of suitable trees at site (DSEWPaC, 2012c).
<i>Tyto novaehollandiae castanops</i>	Masked Owl	Vulnerable	This species is commonly associated with forests and woodlands in particular where they adjoin cleared open areas that facilitate hunting (DSEWPaC, 2012d).	Suitable nesting habitat does not occur at the site; however, the site could form part of a broader home range.



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Scientific Name	Common Name	EPBC Act Status	Preferred Habitat	Potential to Occur on Site
Mammals				
<i>Parameles gunnii gunnii</i>	Eastern barred Bandicoot	Vulnerable	The preferred historical habitat was native grasslands and grassy woodlands, however improved pasture with remnant native vegetation is increasingly important habitat (DPIPWE, 2009e).	It is possible that this species occurs within the DRA due to pasture presence.
<i>Sarcophilus harrisii</i>	Tasmanian Devil	Endangered	A wide range of habitats can be exploited by Tasmanian Devils including coastal heath, open dry sclerophyll forest and mixed sclerophyll-rainforest (DPIPWE, 2012e).	There is potential for the species to transit through the site due to the wide ranging nature of potential habitats.

Pest Animals

The introduced pest species *Lepus capensis* (brown hare) and *Oryctolagus cuniculus subsp. cuniculus* (rabbit) occur within the DRA and are likely to occur at the site.

5.3.4 Central Highlands Planning Scheme

The site is located within the Rural Zone of the Central Highlands Planning Scheme 1998 – 2004. There are no specific controls that relate to flora and fauna within the Rural Zone, although the general objectives of the planning scheme apply.

The most relevant general objectives of the planning scheme are as follows:

- 2.1(a) – To promote the sustainable development of natural and physical resources and the maintenance of ecological processes and genetic diversity.
- 2.1(e) – To give effect to the relevant objectives of the Central Plateau, Midlands and Southern Midlands Strategic Plan and the Council Strategic Plan as follows:
 - 2.1(e)(i) – To encourage sustainable long term use of appropriate areas for agricultural, pastoral and forestry activities.
 - 2.1(e)(iii) – To conserve significant vegetation, habitat and scenic resources.

5.3.5 Conservation Areas

The largest conservation area within 10 km of the DRA is Mount Field National Park that arcs from south of the DRA to the north west of the DRA. Birds of prey, such as the wedge-tailed eagle and masked owl, could use areas within this national park for nesting and forage over the DRA. Animals dispersing from Mount Field National Park would need to cross the Meadowbank Lake to access the DRA.

The nearest conservation areas to the DRA include:

- Mount Bethune Conservation Area (324 ha) approximately 6.6 km south,
- Mount Field National Park (15,881 ha) approximately 10 km south west,



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- Waddles Creek Conservation Area (420 ha) approximately 17 km east,
- Harry Walker Tier Conservation Area (512 ha) approximately 24 km east south east,
- Anderson's Nature Reserve (403 ha) approximately 26 km east south east,
- Den Hill Forest Reserve (950 ha) approximately 24 km north east,
- Mount Dromedary Forest Reserve (680 ha) approximately 22 km south east,
- Mount Faulkner Conservation Area (470 ha) approximately 40 km south east; and
- Ouse River Forest Reserve (360 ha) approximately 26 km north.

5.4 Groundwater

The Langloh Project site is located in the Tasmanian Unincorporated Area - Central South East Groundwater Management Unit (ID TAS_GW_T16) (NWC, 2005).

No cap has been placed on groundwater usage / abstraction in this groundwater management unit at the time of accessing data.

Previous groundwater studies for the adjacent Kimbolton Mine (Environmental & Technical Services Pty Ltd, 1998) indicate that:

- sedimentary rocks above coal seams form unconfined fractured-rock aquifer,
- the water table varies from 6.0 m bgl to 10.0 m bgl and is roughly parallel to topography except for the areas near valleys (shallower water table) and hills (deeper water table),
- annual water table fluctuations are approximately 2 m,
- the coal seam is the most significant water-producing unit in the area. Groundwater seepage to the Kimbolton pit is mainly through fractures in coal seams. Coal seams exhibit a high transmissivity of $60 \text{ m}^2/\text{day}$ and a storage coefficient of approximately 1×10^{-4} . The coal seams are considered to be confined units locally,
- the mudstone and shale inter-burdens between the coal seams are considered to be impermeable,
- it was interpreted that sandstone-coal interface could be the main line of the water movement,
- groundwater is an issue for coal mining operations at Kimbolton Mine and dewatering was required ahead of and/or during the open cut mining. The estimated dewatering rate is 12.5 kL per day or 15 ML per annum (Environmental & Technical Services Pty Ltd, 1998); and
- drawdowns during the pumping test were observed in test pits located 300 m from the pumped bores.

5.5 Surface Water

The project is located within the Clyde River catchment, which has an area of approximately $1,120 \text{ km}^2$. The Clyde River catchment is within the driest region of Tasmania and contains two significant water storages, Lake Sorell and Lake Crescent, both approximately 54 km to the northeast of the project area. These storages provide water for irrigation and domestic purposes for the towns of Bothwell and Hamilton. The catchment flows into Lake Meadowbank to the southwest of the project area (DPIWE, 2005).

This catchment is located within the Lower Derwent Hydro-Electric District and Hydro Tasmania has rights to access all unallocated water within the catchment (DPIWE, 2005).

The project site generally drains in southeasterly direction towards Lake Meadowbank. Ellangowan Creek is to the north east and Cartwrights Creek is to the north west of the project area.



5.6 Cultural Heritage and Archaeological Sites

5.6.1 Previous Research in the Project Area

No archaeological assessments have taken place within the Project Area; however, one previous archaeological assessment was undertaken at the then proposed mine at Kimbolton by Aboriginal Heritage Officer Chris Green (Green, 1998). The project brief was reviewed by the Tasmanian Aboriginal Land Council and a field survey was recommended. No Aboriginal material was found during the site field survey however, it was noted that there are a number of Aboriginal sites (rock shelters and stone artefact scatters) located approximately 3 km south of the Project Area. While there was no evidence of Aboriginal material, the report commented on the amount of historic material present including; fragments of old china, historic artefacts, old farm cottages, dams, irrigation channels, pits and other mining and farming infrastructure. The report recommended no further Aboriginal assessment was required.

5.6.2 TASI Search

A search of the Tasmanian Aboriginal Site Index (TASI) data base was undertaken by Golder for the area covered by Exploration Licence EL28/2008 and a 10 km buffer around EL28/2008. This search showed that there are a total of 40 registered Aboriginal heritage sites located within a 10 km radius of EL28/2008 (Figure 5). The sites are comprised of isolated artefact finds, artefact scatters, quarry sites, rock shelter sites and an art engraving/painting site.

In communication with Aboriginal Heritage Tasmania (AHT) regarding the TASI review, the AHT archaeologist noted that there are likely to be more aboriginal sites in the region, especially along the banks of Meadowbank Lake and that the lack of sites can likely be attributed to the fact that the area has not yet been surveyed (Smith pers. comm., 2012). The results of the TASI search are located in Appendix B.

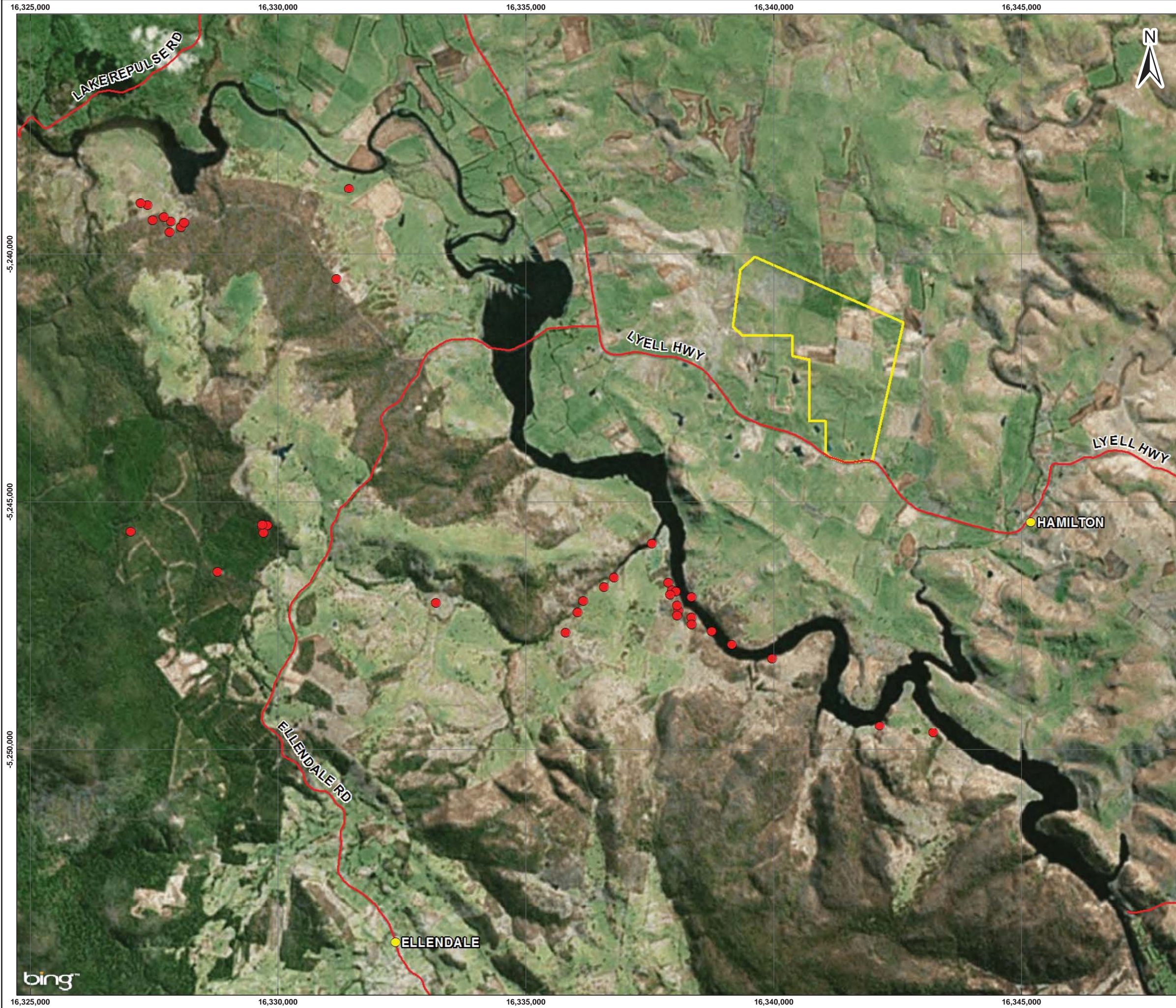
5.6.3 Summary of Historic Heritage

In April 2001 a survey was undertaken for the Langloh Colliery, which is within the proposed Mining Lease Boundary (Webster, 2001). MRT commissioned an archaeological historic assessment of the area, in order to record the heritage features of the site prior to mining activities commencing.

The report notes that the mine and associated infrastructure offer one of the only complete examples of a small steam-powered underground colliery. As such, the report states that it is likely the most significant coal mine to operate in the southern part of the Tasmania. The report concludes that the mine a very well preserved example of a steam (and possibly horse) powered mine giving it regional, if not state significance (Webster, 2001). The report recommended that there be an ongoing liaison between the company and MRT about the progress of mining at the Langloh mine dump.

5.7 Socio-Economic Environment – Hamilton Profile

Hamilton (the State suburb) has a population of 476 and a population density in of 1.1 persons per square kilometre. The median age of residents is the same as the State's median of 40 years. The majority of residents within Hamilton are aged between 5 – 14 years. The median weekly household income is \$836, which is slightly lower than the Tasmanian median of \$948 (ABS, 2011).



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LANGLOH COAL PROJECT
HAMILTON, TASMANIA

INDICOAL MINING AUSTRALIA PTY LTD

REGISTERED ABORIGINAL
HERITAGE SITES WITHIN
10 KM OF THE STUDY
AREA



LEGEND

- Proposed Site Boundary
- Archaeological Sites
- Township
- Major Road

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Township data sourced from MapInfo StreetPro.

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

SCALE (at A3) 1:75,000

DATUM GDA 94, PROJECTION MGA Zone 55

PROJECT: 127613050
DATE: 09 SEP 2013
DRAWN: KB
CHECKED: RB

FIGURE 5





6.0 PROPOSED STUDIES

The development of the project has the potential to impact on the local environment; however, it is expected that these impacts can be managed or mitigated through careful planning of the project and through consultation with relevant stakeholders. In order to establish the nature of these impacts and to develop management and mitigation measures, further specialist studies will be undertaken and incorporated into the environmental permitting documents. The following sections outline studies proposed to be undertaken at this point in the project development. The potential issues associated with the project and associated studies will be continually reviewed during project development to see that relevant issues are being addressed and take into account any changes in project design, stakeholder consultation or legislative requirements.

6.1 Environmental

The key environmental issues that are expected to require detailed study and analysis include the following:

- native flora and fauna,
- groundwater impacts,
- coal and waste geochemistry,
- surface water and site water management,
- air quality,
- greenhouse gas,
- infrastructure and transport; and
- rehabilitation and mine closure.

6.1.1 Flora and Fauna

The project has the potential to impact upon flora and fauna within the project area. Key issues are as follows:

- **Loss of Vegetation.** The site has been extensively cleared in the past for agricultural use; however, development of the project could remove individual flora species from the broader regional population. This has the potential to impact on the distribution, dispersal and genetic diversity of populations of species in the region. The removal of vegetation also has the potential to fragment and reduce the area of habitat available for fauna species dependent on it for resources.
- **Introduction of Weeds.** Project-related vehicles and equipment (especially earth-moving equipment) have the potential to introduce and/or spread weed species within and around the project site.
- **Loss or fragmentation of habitat, breeding areas or foraging area.** Consequences of such loss or fragmentation of these areas includes increased inter- and intra-specific competition for resources due to reduced foraging areas, increased hunting pressure from prey species, and the isolation of breeding populations.
- **Increase in abundance of introduced fauna.** The project could also increase the abundance of introduced fauna through increased artificial food sources (due to the presence of rubbish) and water sources as a result of the project.

A desktop flora and fauna assessment has defined the species and communities that are likely to occur in the project area. Flora and fauna surveys will target locations of known or suspected species, communities and habitats of state or national conservation significance. The information will also assist in planning of mine infrastructure locations so as to minimise potential impacts and allow mitigation and management plans to be developed.



6.1.2 Geochemistry

A geochemical characterisation and predictive acid rock drainage assessment will be undertaken on waste rock and coal.

6.1.3 Groundwater

Groundwater has the potential to be impacted by the project via extraction of groundwater as part of mining activities and contamination of groundwater resources. Groundwater extraction can adversely impact regional groundwater resources and affect existing operating wells. Assessment of potential impacts derived from the project's groundwater consumption therefore need to be assessed in terms of the predicted impact on the source aquifer and implications for associated groundwater systems and the likely impacts on regional groundwater users.

Mining and processing activities may also have potential to contaminate groundwater. The potential for groundwater contamination is determined by assessing the ability of surface waters to become contaminated within the project area and the potential for seepage of contaminants from the surface to the groundwater resource and aquifer recharge points.

Further groundwater investigation will be undertaken to provide detailed analysis of the local and regional aquifers, identify existing groundwater users and potential impacts on users and the environment if development were to proceed. Existing groundwater quality will also be investigated and potential contamination sources within the operation identified.

6.1.4 Surface Water and Site Water Management

Mining activities have the potential to contaminate surface water resource in the region. Sources of contaminated water in the project area could potentially include process water, storm water, acid rock drainage and pit water.

Discharges from the project could potentially affect the environmental values associated with downstream surface waters, particularly due to suspended sediment or other contaminants from point sources or runoff. Development of a conceptual mine water management plan and predicted downstream impacts is required.

Further surface water investigations would include assessment of existing hydrological conditions, characterisation of the values of receiving waters, develop a site water balance and develop a site water management plan.

6.1.5 Air Quality

The key potential issue is dust. Baseline dust/particulate matter levels need to be established to assess existing conditions and to gauge changes that may occur through project development and operation. An air quality assessment of the capacity of operations to generate dust emissions (e.g., from mine methods, equipment, materials to be mined and associated infrastructure) is required. The assessment will consider site specific factors will also enable project specific decisions (e.g. mining techniques, positioning of site infrastructure and haulage routes) to be made with due consideration to total emissions and outfall direction.

Prediction of emissions will enable measures for mitigating and managing potential impacts to be developed.

6.1.6 Greenhouse Gas

The construction, operation of the project will increase the greenhouse gas emissions for the region. The export of coal will increase the greenhouse gas emissions for end users of the product. Of the main greenhouse gases, carbon dioxide and nitrogen oxide are the most significant in relation to the project. Direct greenhouse gas emissions from the project will be generated from the combustion of fuel from the project vehicles and equipment. The coal produced from the project will also contribute to the total worldwide production of greenhouse gas.

The project will assess the implications for greenhouse gas emissions associated with the project and impacts and potential greenhouse gas reporting requirements. Further investigation into greenhouse gas emissions will assess sources and quantities of greenhouse gas from equipment, as well as for emissions



associated with transportation of the ore. The energy consumption and greenhouse gas emissions resulting from the construction and operation of the mine will be calculated.

The greenhouse gas report will assess the direct implications of the mine for greenhouse gas emissions and energy consumption associated with the project. The requirements and/or measures to be implemented for minimisation and management of greenhouse gas emissions and energy consumption will be outlined, in the context of relevant legislation and strategies.

6.1.7 Infrastructure and Transport

The project has the potential to impact upon existing infrastructure (including roads) and users of that infrastructure. There will be potential increases to local and regional traffic volumes and traffic type during both construction and operations. Further investigations into infrastructure and transport will include identification of a transport route for construction and operations. The study will also identify the existing traffic load and capacity of the existing road network and assessment of the project's impact on the existing network.

6.1.8 Rehabilitation and Mine Closure

Final land use and landform options will need to be considered so that rehabilitation measures and mine closure requirements can be defined. Project landforms will need to be designed to take into account water movements over time and the geochemical nature of the materials. During mine planning preliminary final land use objectives for completed mine areas and conceptual mine closure and rehabilitation plan will be developed. During the life of the mine the conceptual mine closure and rehabilitation plan can be further refined through trials of rehabilitated landforms and through consultation with stakeholders.

6.1.9 Heritage

Indigenous Cultural Heritage

Taking into consideration the 40 Aboriginal sites within 10 km of the project area, Indicoal will meet with Aboriginal Heritage Tasmania and a qualified archaeologist to provide a briefing on the project, review the results of the TASI search and discuss the recommendation that no further field investigations are required.

Post-Contact Heritage

According to the assessment for the Langloh Colliery by Lithos Consultants, the old mine and infrastructure is of high regional significance. The project has the potential to impact the Langloh Colliery. The impact of on the Langloh Colliery, or particular aspects of it, will be dependent upon the significance of the site. Indicoal will meet with MRT and a qualified archaeologist to discuss the findings of the report and whether mitigation measures are required.

6.1.10 Socio-Economic

The construction and operation of the project has the potential to impact upon available accommodation and infrastructure. The development of the project however, provides an opportunity to contribute significantly to the regional economy. Local employment and business opportunities will be created both directly and indirectly as a result of the project.

Further studies will include an assessment of existing social conditions, including settlement pattern, demography and residents within the Central Highlands region and Hamilton. This study will assess impacts on the existing socio-economic environment, including an assessment on the capacity of existing infrastructure to accommodate the increase in use, potential impacts to other users and future requirements of the project. The study will also assess how and where employees will be accommodated, including implications for the existing accommodation and housing markets.

The results of the socio-economic study will also feed into the continued development of the stakeholder consultation plan for the project.



7.0 GLOSSARY

ARD	Acid rock drainage
CCC	Cornwall Crown Company
CHPP	Coal handling and preparation plant
DPIPWE	Department of Primary Industries, Parks, Water and Environment
e	Endangered
EN	Endangered
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
ESIA	Environmental and social impact assessment
GSP	Gross State Product
IBRA	Interim Biogeographic Regionalisation for Australia
NC Act	<i>Nature Conservation Act 2002</i>
r	rare
SEP	Stakeholder Engagement Plan
%	Percent
ABS	Australian Bureau of Statistics
ACN	Australian Company Number
Adb	Air dry basis
AHD	Australian Height Datum
AHT	Aboriginal Heritage Tasmania
AIM	Alternative Investment Market
AXS	Australian Securities Exchange
bcm	Billion cubic meters
bgl	Below ground level
BRE	Black Rock Energy Pty Ltd
Council	Central Highlands Council
DRA	Data review area
EL	Exploration Licence
EMPC Act	<i>Environmental Management and Pollution Control Act 1994</i>
EPA	Environmental Protection Authority
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
Golder	Golder Associates Pty Ltd
ha	hectare
Indicoal	Indicoal Mining Australia Pty Ltd



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JORC	Joint Ore Resource Committee
km	Kilometer
km ²	Square kilometers
L/s	Litres per second
LUPA Act	<i>Land Use Planning and Approvals Act 1993</i>
m	meters
mg/L	Milligrams per litre
MJ/kg	Megajoules per kilogram
ML	Mega litres
MRD Act	<i>Mining Resources Development Act 1995</i>
MRT	Mineral Resources Tasmania
Mt	Million tonnes
NC Act	<i>Nature Conservation Act 2002</i>
NES	National environmental significance
NOI	Notice of Intent
NVA	Natural Values Atlas
ROM	Run-of-mine
DSEWPaC	Department of Sustainability, Environment Water, Population and Communities
t	Tonnes
TASI	Tasmanian Aboriginal Site Index



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Report Signature Page

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A handwritten signature in blue ink, appearing to read 'R. Powlett'.

Rebecca Powlett
Senior Environmental Planner

A handwritten signature in blue ink, appearing to read 'C. Ehrman'.

Cary Ehrman
Principal Environmental Scientist

RP/CLE/NF/ld

A.B.N. 64 006 107 857

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APPENDIX A

EPBC Act Protected Matters Search



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 about the EPBC Act including significance guidelines, forms and application process details can be found at <http://www.environment.gov.au/epbc/assessmentsapprovals/index.html>

Report created: 02/07/12 12:34:22

[Summary](#)

[Details](#)

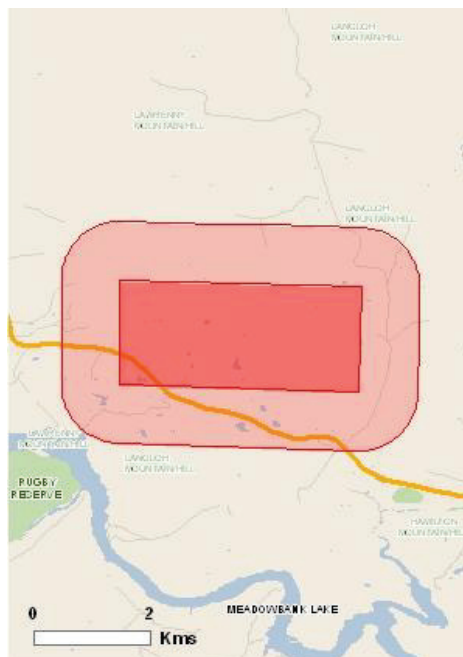
[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

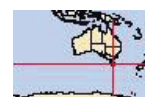
[Acknowledgements](#)



This map may contain data which are
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[Coordinates](#)

Buffer: 1.0Km



Summary

Matters of National Environment 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 - see <http://www.environment.gov.au/epbc/assessmentsapprovals/guidelines/index.html>

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Areas:	None
Threatened Ecological Communities:	None
Threatened Species:	19
Migratory Species:	9

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. Information on the new heritage laws can be found at <http://www.environment.gov.au/heritage/index.html>

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. Information on EPBC Act permit requirements and application forms can be found at <http://www.environment.gov>.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	8
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves:	None

Extra Information

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

Place on the RNE:	None
State and Territory Reserves:	None
Regional Forest Agreements:	1
Invasive Species:	7
Nationally Important Wetlands:	None

Details

Matters of National Environmental Significance

Threatened Species		[Resource Information]
Name	Status	Type of Presence
BIRDS		
Aquila audax fleayi		
Wedge-tailed Eagle (Tasmanian) [64435]	Endangered	Breeding likely to occur within area

Name	Status	Type of Presence
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat may occur within area
Ceyx azureus diemenensis Tasmanian Azure Kingfisher [25977]	Endangered	Species or species habitat may occur within area
Lathamus discolor Swift Parrot [744]	Endangered	Species or species habitat may occur within area
Tyto novaehollandiae castanops (Tasmanian population) Masked Owl (Tasmanian) [67051]	Vulnerable	Species or species habitat known to occur within area
FISH		
Prototroctes maraena Australian Grayling [26179]	Vulnerable	Species or species habitat may occur within area
FROGS		
Litoria raniformis Growling Grass Frog, Southern Bell Frog, Green and Golden Frog, Warty Swamp Frog [1828]	Vulnerable	Species or species habitat known to occur within area
MAMMALS		
Dasyurus maculatus maculatus (Tasmanian population) Spotted-tail Quoll, Spot-tailed Quoll, Tiger Quoll (Tasmanian population) [75183]	Vulnerable	Species or species habitat likely to occur within area
Perameles gunnii gunnii Eastern Barred Bandicoot (Tasmania) [66651]	Vulnerable	Species or species habitat likely to occur within area
Sarcophilus harrisii Tasmanian Devil [299]	Endangered	Species or species habitat likely to occur within area
PLANTS		
Acacia axillaris Midlands Mimosa, Midlands Wattle [13563]	Vulnerable	Species or species habitat likely to occur within area
Barbarea australis Native Wintercress, Riverbed Wintercress [12540]	Critically Endangered	Species or species habitat likely to occur within area
Caladenia anthracina Black-tipped Spider-orchid [64855]	Critically Endangered	Species or species habitat may occur within area
Carex tasmanica Curly Sedge [9101]	Vulnerable	Species or species habitat likely to occur within area
Lepidium hyssopifolium Basalt Pepper-cress [16542]	Endangered	Species or species habitat likely to occur within area
Prasophyllum apoxychilum Tapered Leek-orchid [64947]	Endangered	Species or species habitat may occur within area
Pterostylis commutata Midland Greenhood [64535]	Critically Endangered	Species or species habitat may occur within area
Pterostylis wapstrarum Fleshy Greenhood [66694]	Critically Endangered	Species or species habitat likely to occur within area

Name	Status	Type of Presence
Rytidosperma popinensis Roadside Wallaby Grass [84360]	Endangered	Species or species habitat may occur within area

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 may occur within area

[Ardea alba](#)

Great Egret, White Egret [59541]

Species or species habitat may occur within area

[Ardea ibis](#)

Cattle Egret [59542]

Species or species habitat may occur within area

Migratory Terrestrial Species

[Haliaeetus leucogaster](#)

White-bellied Sea-Eagle [943]

Species or species habitat likely to occur within area

[Hirundapus caudacutus](#)

White-throated Needletail [682]

Species or species habitat may occur within area

[Myiagra cyanoleuca](#)

Satin Flycatcher [612]

Breeding likely to occur within area

Migratory Wetlands Species

[Ardea alba](#)

Great Egret, White Egret [59541]

Species or species habitat may 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

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 may occur within area

[Ardea alba](#)

Great Egret, White Egret [59541]

Species or species habitat may 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

Name	Threatened	Type of Presence
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		habitat may occur within area Species or species habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat may occur within area
Lathamus discolor Swift Parrot [744]	Endangered	Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Breeding likely to occur within area

Extra Information

Regional Forest Agreements [\[Resource Information \]](#)

Note that all areas with completed RFAs have been included.

Name	State
Tasmania RFA	Tasmania

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 Resources Audit,

Name	Status	Type of Presence
Mammals		

Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		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

Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat likely to occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Ulex europaeus Gorse, Furze [7693]		Species or species habitat likely to occur within area

Coordinates

-42.52952 146.80743,-42.54596 146.80712,-42.54475 146.77012,-42.52845 146.77012,
-42.52952 146.80743,-42.52952 146.80743

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

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

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](#)
- 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.

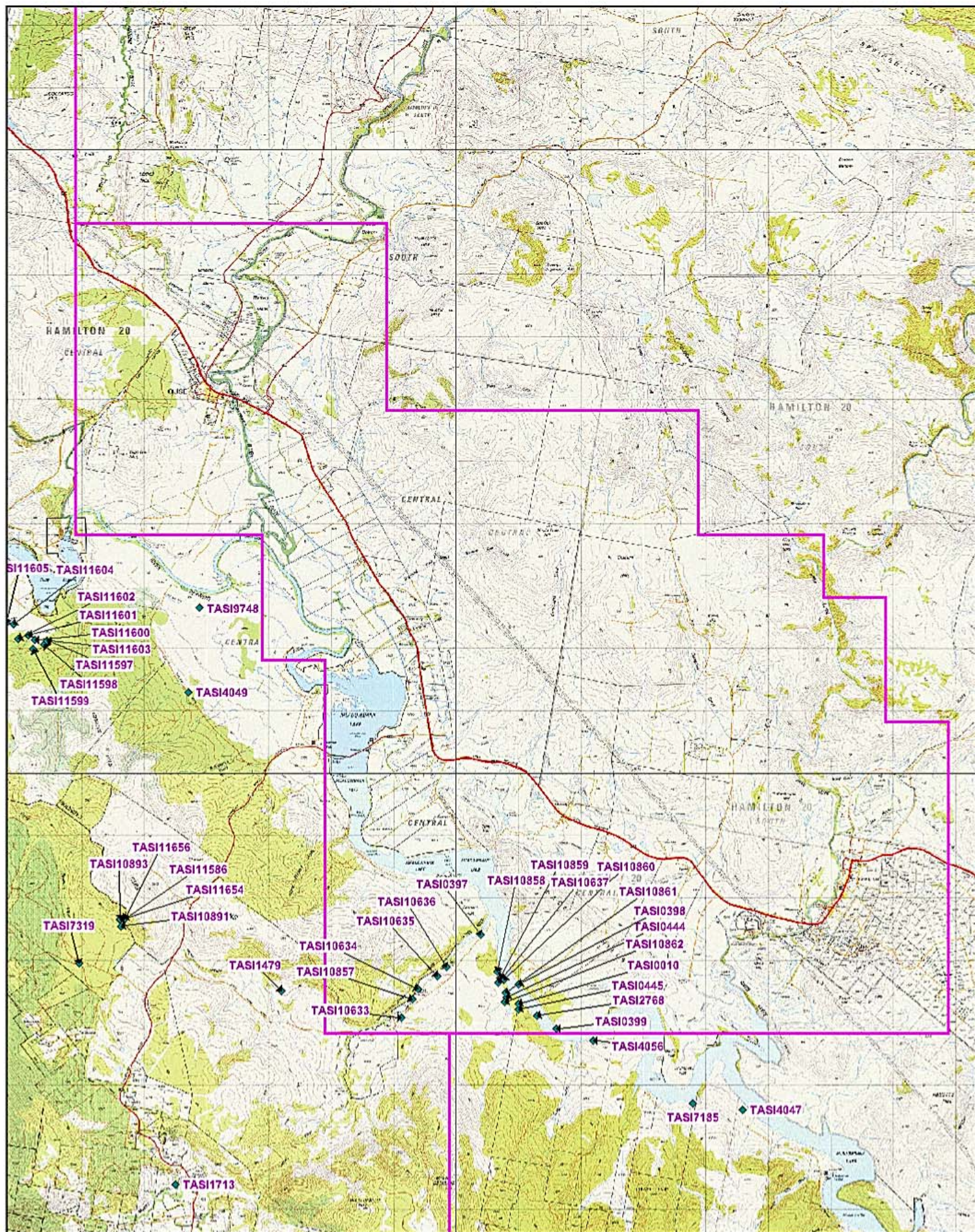
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APPENDIX B

TASI Search



GDA94 - Zone 55

Scale 1:55,690

EL28/2008

TASI Search - Golder Assoc.

Produced by Emily Smith - Aboriginal Heritage Tasmania

Printed on 26/06/2012

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