

**DATE** 12 July 2012**REFERENCE No.** 127613050 002 TM RevA**TO** Hari Kiran Vadlamani  
Indicoal Mining Australia Pty Ltd**CC** Rebecca Powlett, Alice Greenhill, Cameron Robertson, Grant Fleming**FROM** Cary Ehrman**EMAIL** cehrman@golder.com.au**DRAFT PROJECT DESCRIPTION – LANGLOH PROJECT**

This document has been prepared by Golder Associates Pty Ltd (Golder) to provide the draft Project Description for the Langloh Project for review by Indicoal Mining Australia Pty Ltd (Indicoal).

When authorised for use by Indicoal, the Project Description will be used in the Notice of Intent and EIA scoping process, as well as to support consultation with consultation with regulators such as the MRT, EPA and Central Highlands Council.

Much of the information presented herein has been sourced from the Langloh Concept Mining Study prepared by Golder for the Black Rock Energy Australia Pty Ltd (Golder Ref 117621029 001 R Rev A dated 20 March 2012).

This submittal is provided in accordance with our proposal P17613396 001 L Rev 4 dated 23 March 2012.

**Background**

Indicoal Mining Australia Pty Ltd (Indicoal) is proposing to develop the Langloh coal deposit (the Langloh Project) within the Langloh Exploration Lease (EL) 28/2008, located approximately 3km west of Hamilton, Tasmania. Black Rock Energy Pty Ltd (BRE) is the holder of EL 28/2008.

BRE engaged Golder Associates Pty Ltd (Golder) to undertake a study of this deposit addressing the geological, mining and infrastructure plans in order to support a mining lease application. The findings of this study are presented in the Langloh Deposit Concept Mining Study (Golder Ref 117621029 001 R Rev A dated 20 March 2012). Much of the information presented herein has been sourced from this study.

**Project Components**

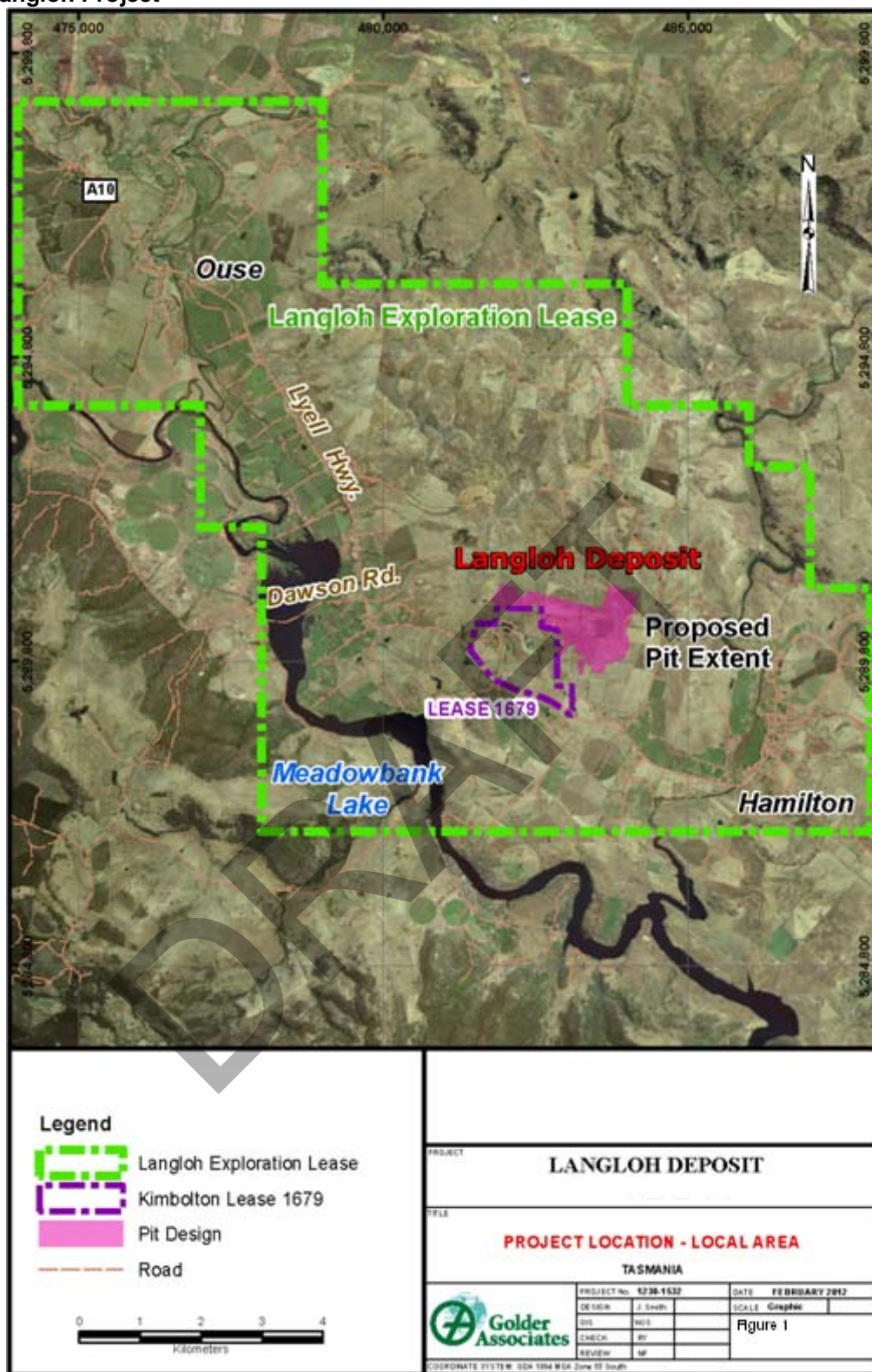
The Langloh Project is planned to be a conventional open cut mine of a thermal coal resource that could be supplied to both domestic and export consumers. The project is estimated from known, indicated and inferred coal reserves to have an area of 870 hectares. Ground disturbance is expected to occur over this total area.

The footprint of the Langloh Project is shown in Figure 1.

A small open cut mine, the Kimbolton Mine owned by Cornwall Crown Company (CCC), currently operates adjacent to the Langloh Project area within ES 28/2008 (Lease 1679).



Figure 1 Langloh Project



Source: Langloh Deposit Concept Mining Study (Golder Ref 117621029 001 R Rev A dated 20 March 2012).

## Estimated Resources

Based on current drilling information, the project contains an estimated 8.1 million tonnes (Mt) of in situ coal resources (Golder Ref 117621029-001-R-RevA, 20 March 2012). Table 1 summarises the estimated JORC compliant coal resources<sup>1</sup>:

**Table 1 Langloh Estimate Resources**

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

Note: Coal resources are estimated in accordance with JORC Code.

As can be seen in Table 1, nearly 68% of the resources are within a measured confidence level. Nearly 83% of the total is of a measured and indicated status.

## 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 run-of-mine (ROM) coal production is estimated at 910 000 tonnes. Based on our mine production schedule and the limitations of the coal resources, the project could have a mine life of 8 years and produce a total of 6.7 Mt as shown in Table 2:

| 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          | 5.7                        |
| <b>Total</b> | <b>6,700,000</b>    | <b>39,300,000</b>  | <b>5.9</b>                 |

Of this total, 5.36 million tonnes of coal product are estimated to be realised, at a yield of 80 per cent.

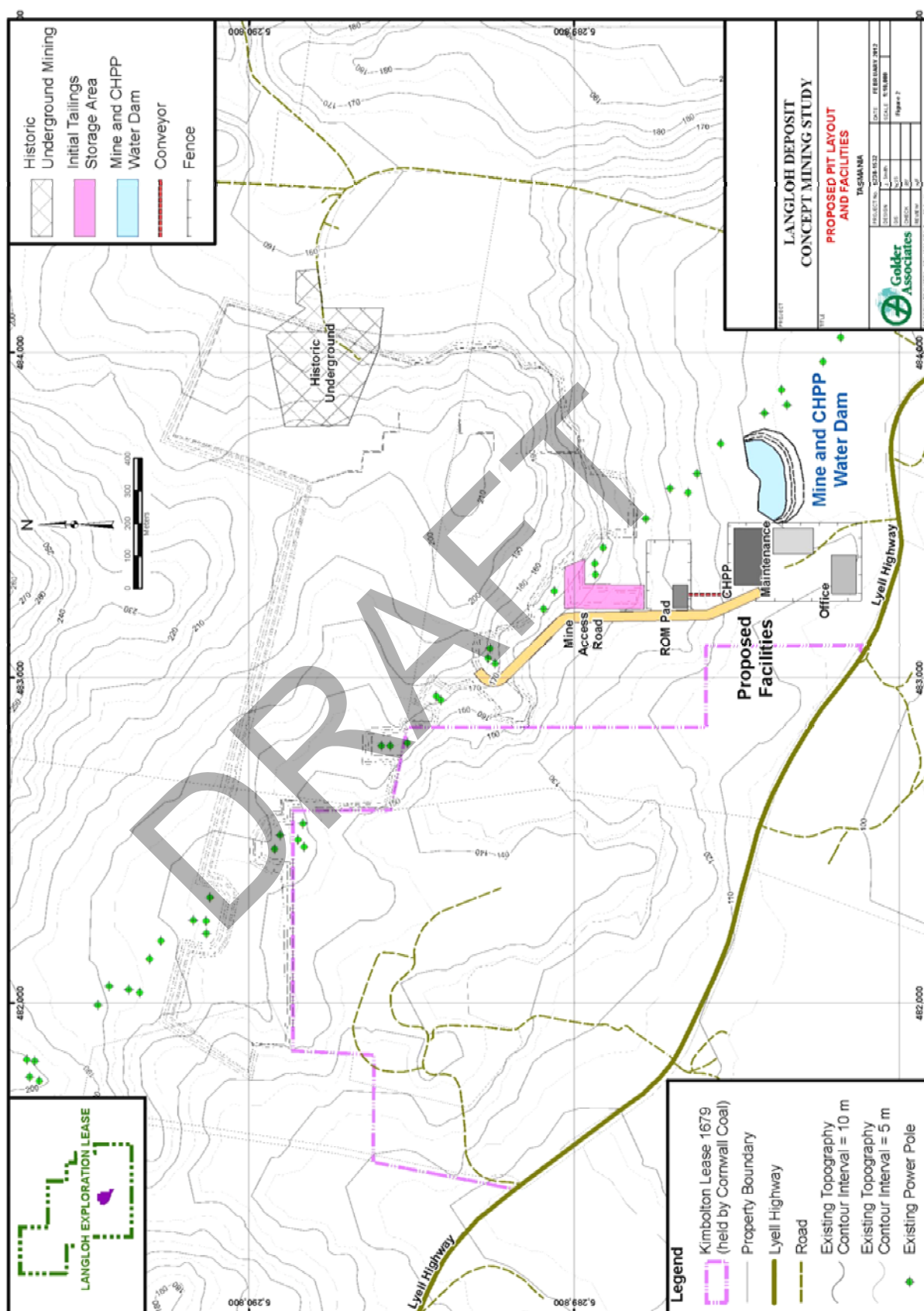
## Operation of the Mine

The coal will be extracted with diesel powered hydraulic excavators matched with suitably sized dump haul trucks. Extracted coal is planned to be hauled to a coal handling and preparation plant (CHPP), which could produce approximately 700 000 product tonnes per annum at full production. The proposed layout of the facilities and the mine pit is shown in Figure 2:

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



Figure 2 Proposed Pit Layout and Facilities



## Mining Process

We propose an open cut excavator/truck fleet operation that is supported by production dozers as the mining method for the project.

## Regulatory approvals

In Tasmania, a mining lease is obtained via approvals under three pieces of State legislation.

A permit application is required to be submitted to the Central Highlands Council (Council) in compliance with the *Land Use Planning and Approvals Act 1993* (LUPA Act). This application will initiate the referral to the EPA for assessment of the project under the *Environmental Management and Pollution Control Act 1994* (EMPC Act).

A Notice of Intent (NOI) to Council is required under the EMPC Act, which is essentially a scoping study that outlines the project, describes the environment, identifies potential impacts and presents the scope of the environmental and social investigations.

A mining lease application is required under the *Mining Resources Development Act 1995* (MRD Act), which requires an assessment of environmental impact. In order for mining to take place however, a permit must be first approved by the EPA.

A desktop environmental baseline study will be completed as part of the approvals process. This will involve the review of existing data to identify the key environmental factors likely to be impacted by the project. A site walkover will be conducted by the specialist ecologist to provide preliminary flora and fauna descriptions for the study area and to determine likely impacts.

Stakeholder engagement is a requirement of the 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. The processes involved in this stage will include:

- Identification of the key stakeholders
- Preparation of a stakeholder engagement strategy
- Coordination, preparation and attendance of stakeholder meetings
- Completion of a site visit which will include a meeting with the MRT, EPA and other key stakeholders, as appropriate.

## Environmental and Social Impact Assessment Study

The NOI is used by the EPA to determine the class of environmental and social impact assessment (ESIA) for the project and to prepare the guidelines to be addressed. ESIA will be undertaken to address the EPA guidelines.

## Proposed Development Schedule

We expect that securing the environmental and mining permit consents necessary to begin development and mining activities will require the most critical lead time in the development of the new mine. Due to the overall size of the project, we do not anticipate that much lead time will be necessary to purchase, erect, install or commission any of the fixed and mobile equipment. We also anticipate that little lead time will be required for the development of haul roads, topsoil removal, drainage control and associated activities.

## Treatment Process

We propose that a CHPP be developed for washing extracted coal in order to reduce ash content. From samples sent for test burns, we have determined that it is unlikely that an unwashed coal product would be acceptable for the export thermal coal market, containing approximately 20 percent ash (adb).

We recommend that all coal seams be washed after extraction. This will reduce ash content to between fifteen and eighteen percent and increase the ability of the coal to combust in a power station, thereby maximising resource utilisation.

This produced coal could technically be suitable for the export thermal coal market. However, it is most likely that coal from the project will be best suited as a blending product with other coals, which will increase the ability of the coal to combust in a power station.

## Mining Schedule

To operate, maintain and supervise the mine, we have estimated that a workforce size of 39 employees (refer to Section 1.10). This assumes that operations at the mine will follow a schedule of twelve hours per shift, one shift per day and six days per week for a total of 313 days per year.

## Water Management and Use

Water management at the mine site will require the development of water management structures. It is a common mining practice to have at least one sizable dam for onsite water management and storage purposes, and we propose the establishment of a water storage dam for water from both the mine and the CHPP. The proposed location of the dam can be viewed in Figure 2 above.

Mine water and dirty runoff is to be directed towards either the proposed mine pit or the dam. Clean water runoff should be directed away from the water management system where possible. Drains will have to be moved as the mine progresses in order to separate clean and dirty water. Other minor sediment control structures such as traps and small dams may also be required.

We have verified that any of the following water sources are available for the operations of the project:

- Water licences from purchased properties
- Onsite sources including pit water and water stored in onsite dams
- Meadowbank Lake.

## Transport Infrastructure

We have identified the following three potential alternatives for hauling the product coal from the mine to a port:

- Truck haulage only
- Truck haulage combined with rail haulage
- Truck haulage combined with barging.

Most options would eventually transport the coal to the port at Bell Bay on the north-central coast of Tasmania, approximately 250 km from the project.

Another option would involve barging the coal down the river to a ship loading off the coast near Hobart.

We also propose the establishment of a park up area and mine road to allow access from the pit to run-of-mine (ROM) and maintenance areas. This park up area could either combine with a ROM pad or add space around the maintenance area for small amount of trucks.

## Other Mine Infrastructure

We propose that the infrastructure for the project to be kept to a minimum in order to control capital costs. Due to a predicted short mine life, we recommend that items be temporary and non-permanent, and that second hand items be sourced to assist in saving costs. We propose that 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)
- CHPP for coal washing
- ROM pad, conveyor to CHPP and crusher
- Initial tailings storage area.

## Workforce

To operate, maintain and supervise the mine, we have estimated that approximately 20 operations personnel, eight maintenance personnel and eleven salaried personnel for a total of 39 employees would be required to sustain operations.

## Rehabilitation and Mine Closure

Final rehabilitation is assumed to be required after mining ceases.

In regards to environmental rehabilitation, we have assigned a Cat D9T dozer for 100 percent of our scheduled shifts to perform land shaping and finish grading activities in the spoil areas. The dozer can also assist with upper level spoil bench spreading as time permits.

In addition to this, a Cat 16M motor grader and a Cat CS-56 compactor are assigned to assist with preparation work on the final grading activities.

For the environmental drainage maintenance, we have assumed that a Komatsu PC-200-8 would be used to accomplish drainage construction and maintenance. This equipment will be shared with operations support.

We have nominated and allocated sufficient ex-pit waste dump storage for box cut waste material. Waste material from these dumps will be rehandled to assist with rehabilitating the final pit zones, which are proposed to occur in the sixth and eight years of the plan. We have assumed that the final pits can be designed to remain as water impoundment with the perimeter side slopes graded to accommodate stable slopes, revegetation and access.

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