



MEMORANDUM

TO Hari Kiran Vadlamani

DATE 27 November 2014

CC Neville Hamilton, Aaron Radonich, David Arnott

FROM Charlie Wilson-Clark

PROJECT No. 127613050-016-M-Rev0

INDICOAL MINING AUSTRALIA – PTY LTD LANGLOH COAL PROJECT – RETENTION LICENCE APPLICATION

Background

Golder Associates Pty Ltd (Golder) is continuing to work with Indicoal Mining Australia Pty Ltd (Indicoal) as its lead consultant on both mining and environmental components of the Langloh Coal Project's development. Golder has been requested by Indicoal to provide supporting information in relation to their proposed Retention Licence (RL) application for the Langloh Coal Project to Mineral Resources Tasmania (MRT). Indicoal is assessing the option that a RL could provide a cost effective strategy to maintain value for the Langloh Coal Project whilst at the same time allowing investment levels to be managed during the current coal price cycle. Golder has previously been engaged to support progress with the Langloh Coal Project including geological modelling, mining concept study and environmental work. This history with the project provides a good foundation for Golder to advise Indicoal on key factors to be considered as part of the proposed RL application.

Retention Licence Area Determination – Key Considerations

Consistent with the scope of work included in Golder's "Variation Request for Additional Services Related to Retention Licence Application for Langloh Coal Project", Golder has reviewed the Langloh Coal Project Concept Mining Study (Golder reference 117621029-001-R-Rev-A) and associated geological model in order to provide guidance for Indicoal in preparation of a RL Application.

The review and associated assessment has highlighted that based on the geological model and conceptual mine design, the RL application should focus on the conceptual mine plan footprint with a suitable buffer zone (Figure 1). The primary considerations in developing this recommendation include but are not limited to:

- The geological model indicates:
 - The targeted coal seams do not extend south of the Lyell Highway.
 - As the targeted coal seams extend further west, they thin and deteriorate in quality.
 - The targeted seams subcrop to the east of the conceptual mine plan and degrade to carbonaceous shales.
 - The cumulative stripping ratio to the north increases to a ratio of greater than 15:1.
- The Lyell highway provides a practicable barrier to mining in the south.
- No additional relevant exploration has been completed since the Concept Mining Study was published.
- Indicoal have indicated a desire to minimise potential RL fees in consideration of potential resource recovery, practicable mining and associated environmental management considerations.



MEMORANDUM

Figure 2 highlights the increase in cumulative stripping ratio to the north of the concept mine plan area as well as the seam subcrop location to the east. Figure 3 to Figure 5 show the trend of increasing ash levels to the east. Figures Figure 6 to Figure 8 highlight the thinning and deterioration of the seams to the west.

Recommended Retention Licence Area

The recommended area for the RL application is detailed in Figure 1 and an application and annual rent estimate is included in Table 1.

Table 1: Application and Annual Rent Fee Estimate for Proposed RL Application Area

Approximate RL Application Area (km ²)	Rent/km ²	Application Fee	Estimated Annual Rent
7.50	\$1,272.80	\$1,272.80	\$9,546.00

The recommended area:

- Includes the conceptual mine footprint designed as part of the Concept Mining Study including surface infrastructure requirements.
- Incorporates the 6.7Mt of Measured and Indicated Resource included in the conceptual mine design and associated schedule and the 1.4Mt of Inferred Resource estimated (all existing Coal Resources are estimated in accordance with the JORC Code (2004)).
- Includes a minimum estimated buffer of approximately 500 m from the designed conceptual mine footprint including out of pit waste storage areas (with the exception of the boundary with ML 1679) to provide for potential future exploration and an operational mining buffer.

Table 2 below and Figure 9 contain the boundary coordinate details of the proposed RL application area.

Table 2: Project Boundary Coordinate Points

Point ID	Northing	Easting	Point ID	Northing	Easting
0	5,291,161.29	484,827.67	14	5,288,911.19	483,073.96
1	5,288,327.62	484,187.77	15	5,288,940.91	483,094.13
2	5,288,393.92	484,140.33	16	5,289,382.85	483,086.19
3	5,288,531.94	484,044.14	17	5,289,382.85	482,829.49
4	5,288,655.99	483,957.50	18	5,290,303.78	482,834.79
5	5,288,717.25	483,911.38	19	5,290,354.06	482,588.68
6	5,288,776.90	483,851.98	20	5,290,655.74	482,583.38
7	5,288,809.60	483,780.05	21	5,290,655.74	481,850.34



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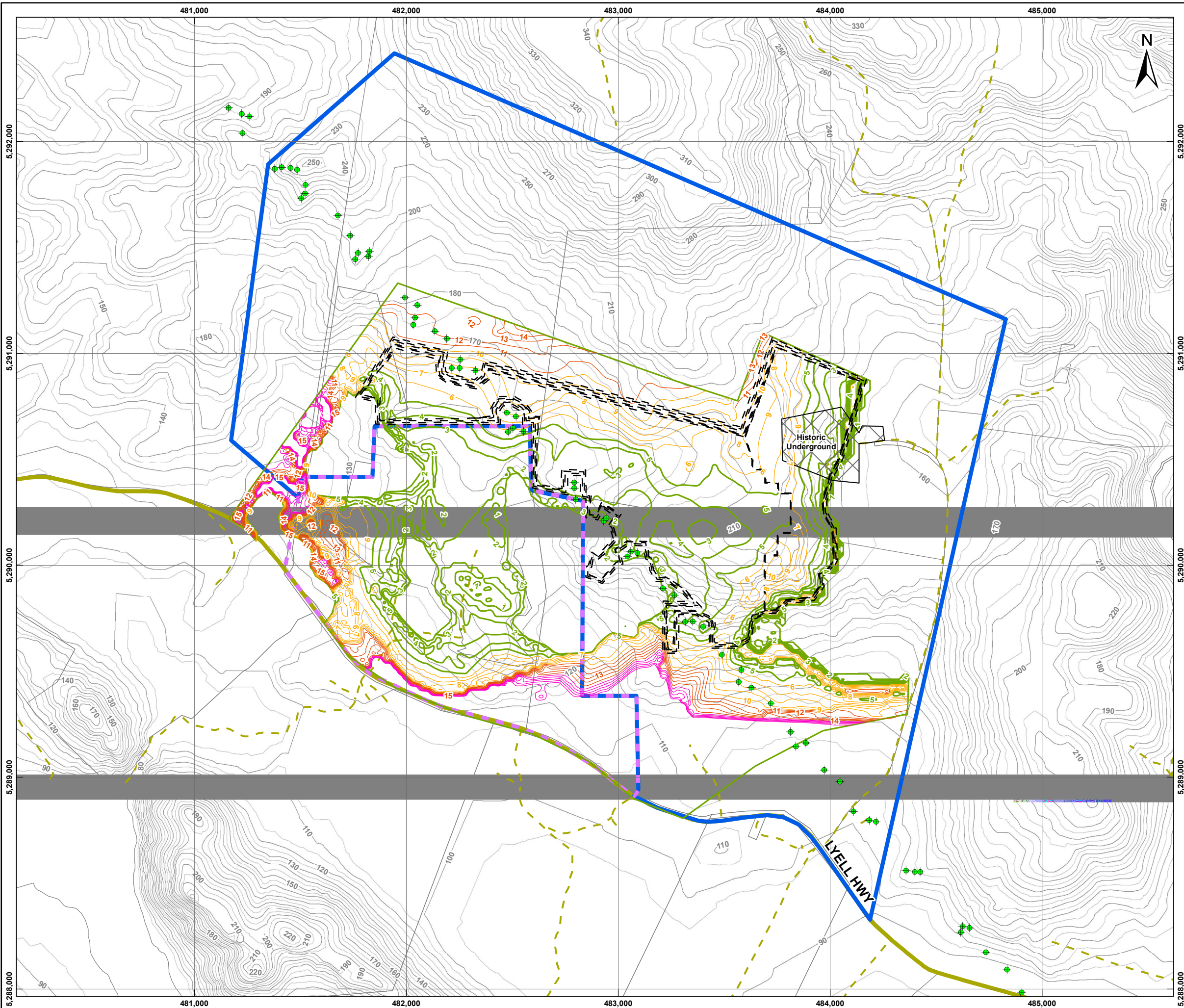
8	5,288,820.86	483,703.60	22	5,290,415.70	481,839.91
9	5,288,810.95	483,601.74	23	5,290,417.81	481,509.71
10	5,288,794.59	483,488.79	24	5,290,317.75	481,489.96
11	5,288,790.22	483,426.89	25	5,290,589.18	481,173.15
12	5,288,793.33	483,378.88	26	5,291,893.52	481,347.84
13	5,288,854.38	483,186.13	27	5,292,415.82	481,943.26

The proposed 500 m buffer zone could provide an opportunity to increase resource recovery through application of highwall mining techniques. Highwall mining has a practicable penetration limit of approximately 500 m and can target recoveries of greater than 50% in compatible geological and geotechnical conditions. As an example of the potential of highwall mining to increase resource recovery, considering 1,000 m of available highwall with an average coal thickness of 2 m, an average penetration of 400 m and a 50% recovery, approximately 0.6 Mt of additional resource could be recovered. Based on Australian experience, highwall mining costs when accessing existing highwalls are typically approximately 45-60% of open cut mining costs. Appendix A provides some basic information on the highwall mining concept.

On balance Golder believes the recommended RL application area provides a sound balance between retaining asset value and managing retention cost.

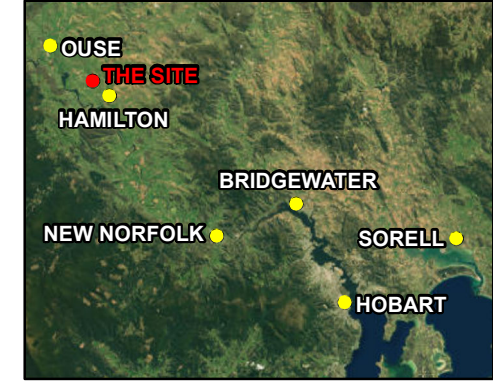
Attachments - **Figures**
 - **Highwall Mining Basics**

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LANGLOH DEPOSIT RETENTION
LICENCE APPLICATION
LANGLOH COAL PROJECT
HAMILTON, TASMANIA
INDICOAL MINING AUSTRALIA PTY LTD

CUMULATIVE ROM STRIPPING RATIO (bcm/ROM tonne)



- ### LEGEND
- #### Cumulative Strip Ratio
- 0 to 5:1
 - 6:1 to 10:1
 - 11:1 to 15:1
 - 16:1 to 20:1
- Historic Underground Mining
 - Proposed Site Boundary
 - Kimbolton Lease 1679 (held by Cornwall Coal)
 - Major Road
 - Road
 - Existing Topography Contour Interval = 10 m
 - Existing Topography Contour Interval = 5 m
 - Existing Power Pole

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Township and road data sourced from MapInfo Street Pro.

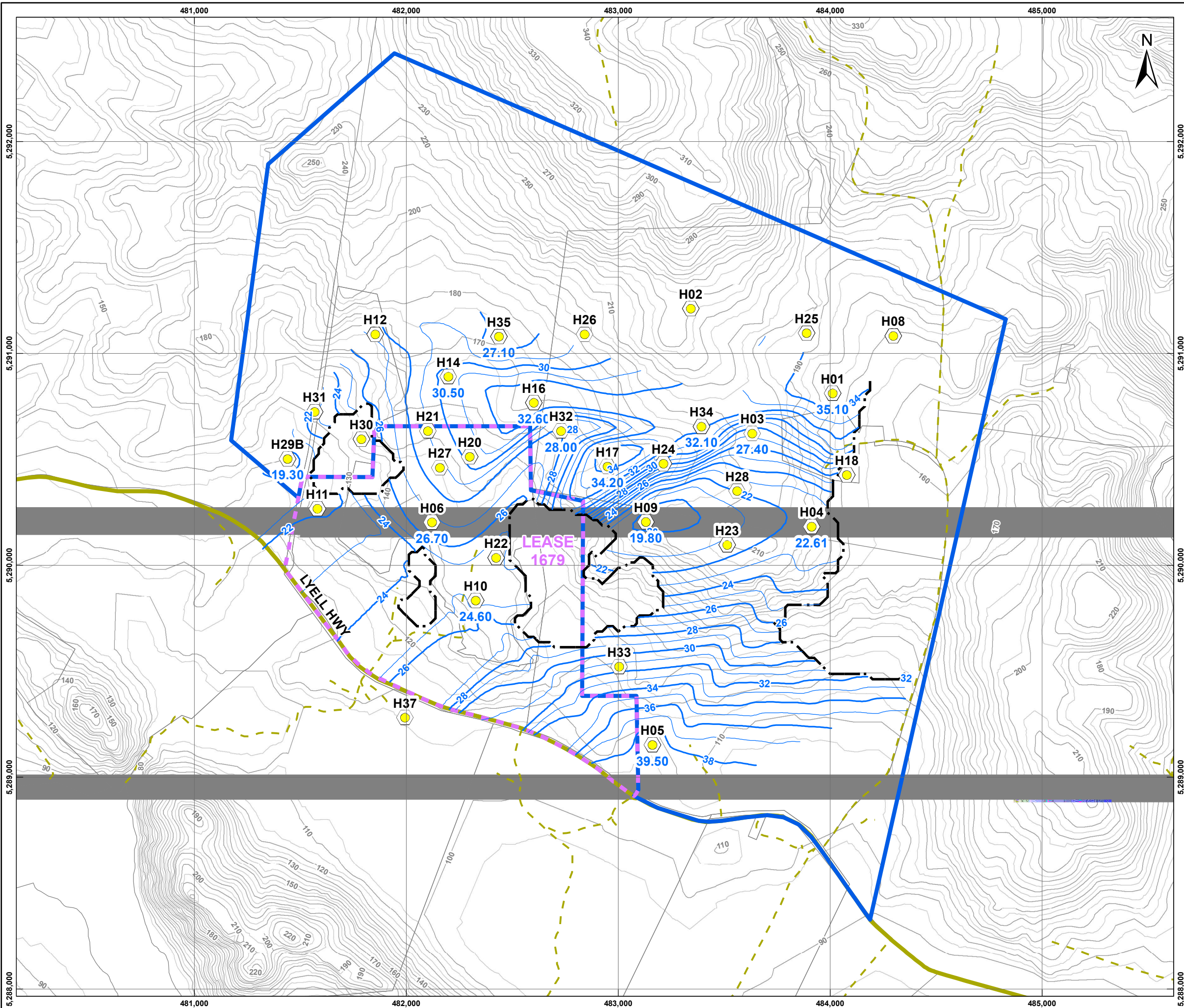
SCALE (at A3) 1:17,500
DATUM GDA 94, PROJECTION MGA Zone 55

PROJECT: 127613050
DATE: 27 NOV 2014
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FIGURE 2



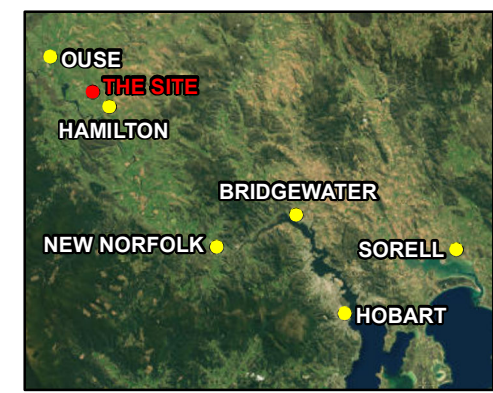
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LICENCE APPLICATION
LANGLOH COAL PROJECT
HAMILTON, TASMANIA

INDICOAL MINING AUSTRALIA PTY LTD

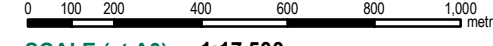
SEAM A IN SITU
ASH ISOPLETH (adb)



- LEGEND**
- Seam A Ash Content (air-dried)**
- Seam A Ash Content Contour
Interval = 2%
 - Seam A Ash Content Contour
Interval = 1%
 - Subcrop
 - Existing Drill Hole
 - Drill Hole with Ash Value
 - Proposed Site Boundary
 - Kimbolton Lease 1679 (held by Cornwall Coal)
 - Major Road
 - Road
 - Existing Topography Contour
Interval = 10 m
 - Existing Topography Contour
Interval = 5 m

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Township and road data sourced from MapInfo Street Pro.



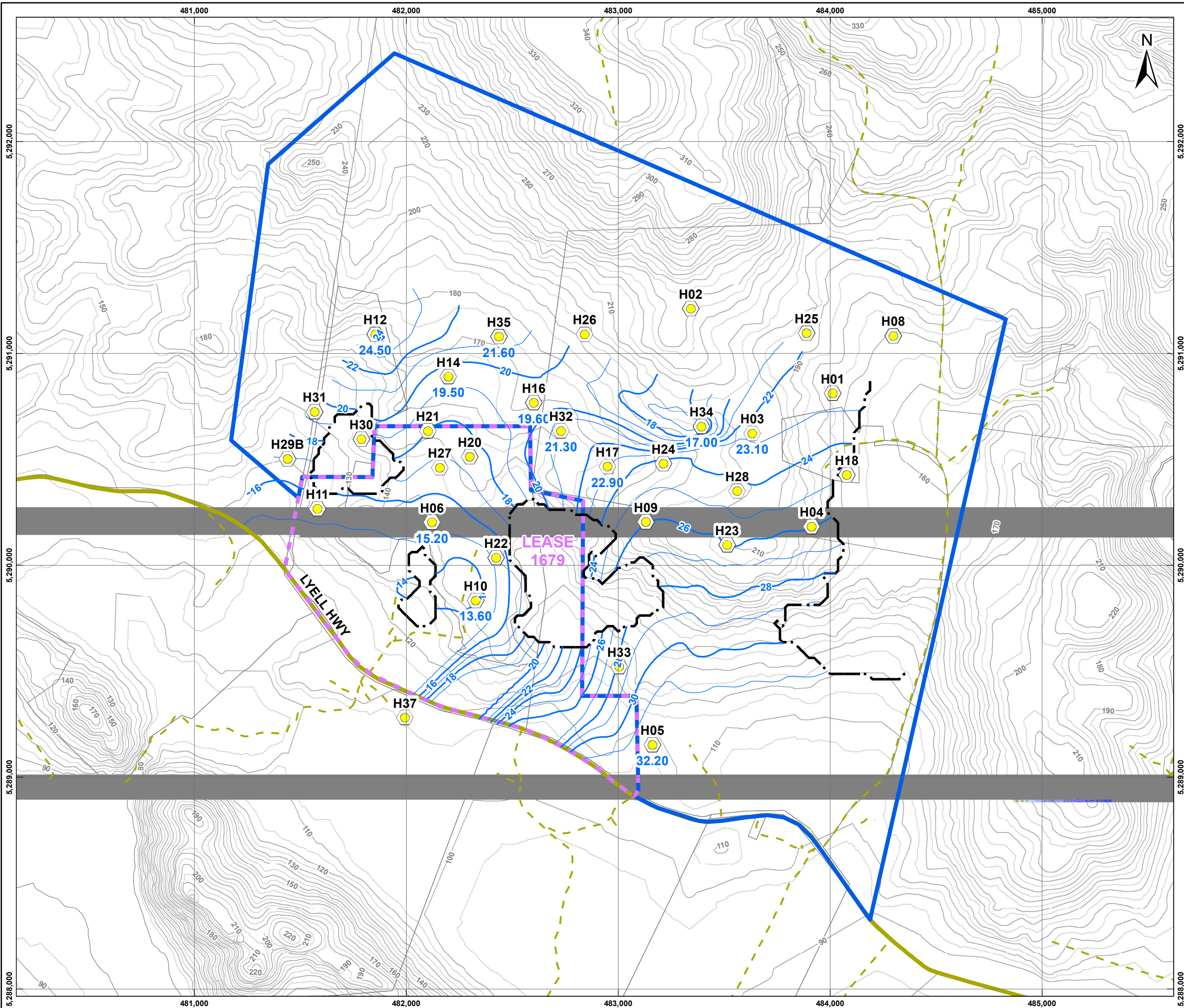
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FIGURE 3



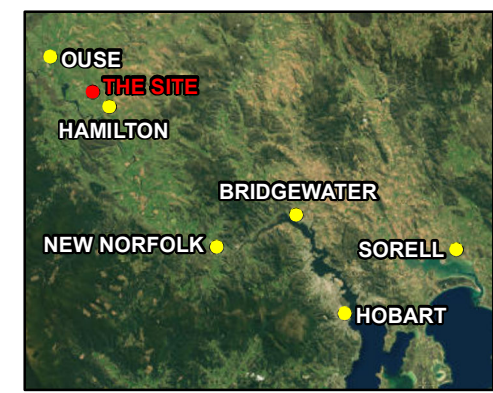
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HAMILTON, TASMANIA

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SEAM B IN SITU
ASH ISOPLETH (adb)



- LEGEND**
- Seam B Ash Content (air-dried)**
- Seam B Ash Content Contour Interval = 2%
 - Seam B Ash Content Contour Interval = 1%
 - Subcrop
 - Existing Drill Hole
 - Drill Hole with Ash Value
 - Proposed Site Boundary
 - Kimbolton Lease 1679 (held by Cornwall Coal)
 - Major Road
 - Road
 - Existing Topography Contour Interval = 10 m
 - Existing Topography Contour Interval = 5 m

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Township and road data sourced from MapInfo Street Pro.

0 100 200 400 600 800 1,000 metres

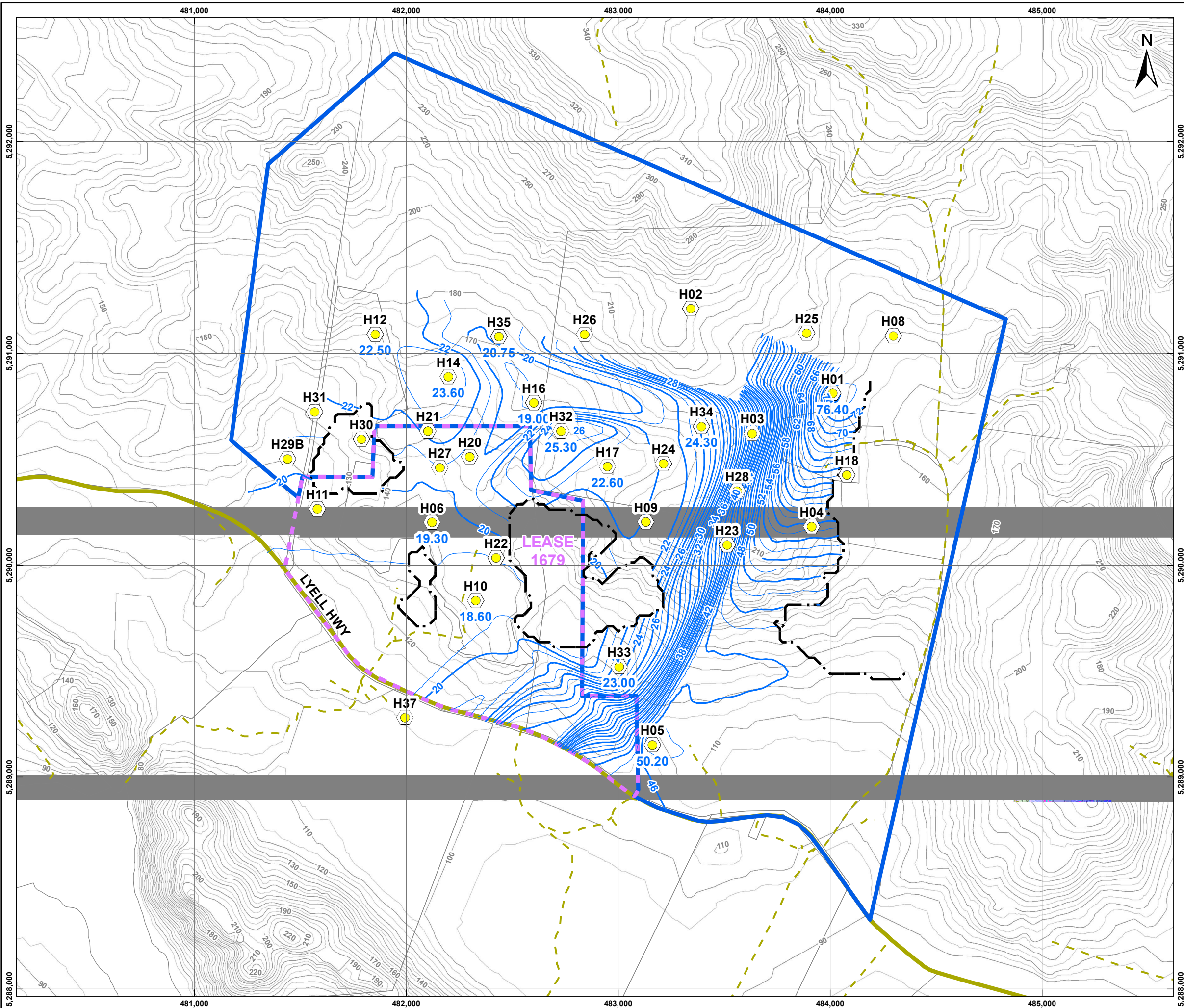
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FIGURE 4



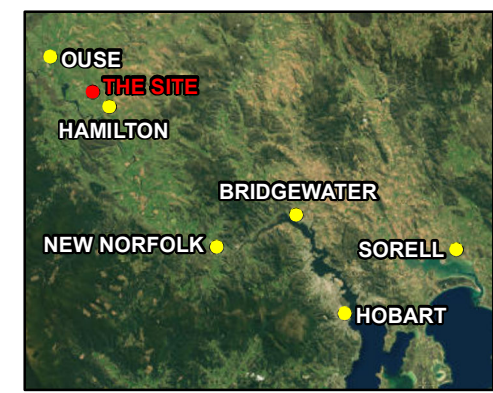
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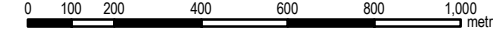
SEAM C IN SITU ASH ISOPLETH (adb)



- ### LEGEND
- Seam C Ash Content (air-dried)**
- Seam C Ash Content Contour
Interval = 2%
 - Seam C Ash Content Contour
Interval = 1%
 - Subcrop
 - Existing Drill Hole
 - Drill Hole with Ash
 - Proposed Site Boundary
 - Kimbolton Lease 1679 (held by Cornwall Coal)
 - Major Road
 - Road
 - Existing Topography Contour
Interval = 10 m
 - Existing Topography Contour
Interval = 5 m

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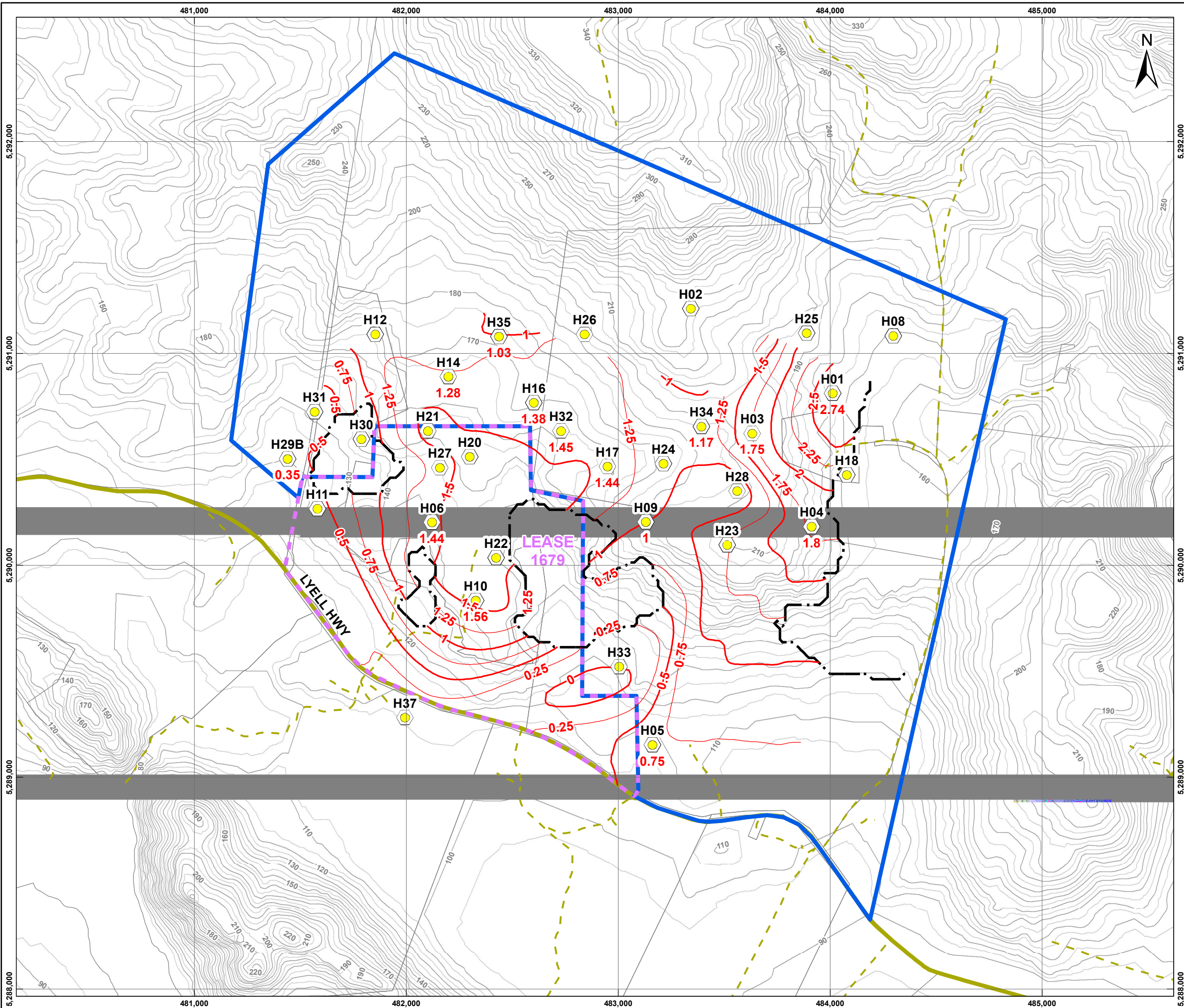
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FIGURE 5



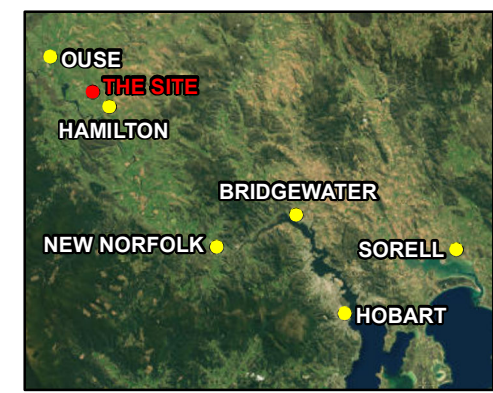
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HAMILTON, TASMANIA

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SEAM A IN SITU COAL THICKNESS ISOPACHS



LEGEND

- Seam A Isopach**
- Seam A Thickness Contour Interval = 0.5 m
 - Seam A Thickness Contour Interval = 0.25 m
 - Subcrop
 - Existing Drill Hole
 - Drill Hole with Thickness Value (m)
 - Proposed Site Boundary
 - Kimbolton Lease 1679 (held by Cornwall Coal)
 - Major Road
 - Road
 - Existing Topography Contour Interval = 10 m
 - Existing Topography Contour Interval = 5 m

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Township and road data sourced from MapInfo Street Pro.

0 100 200 400 600 800 1,000 metres

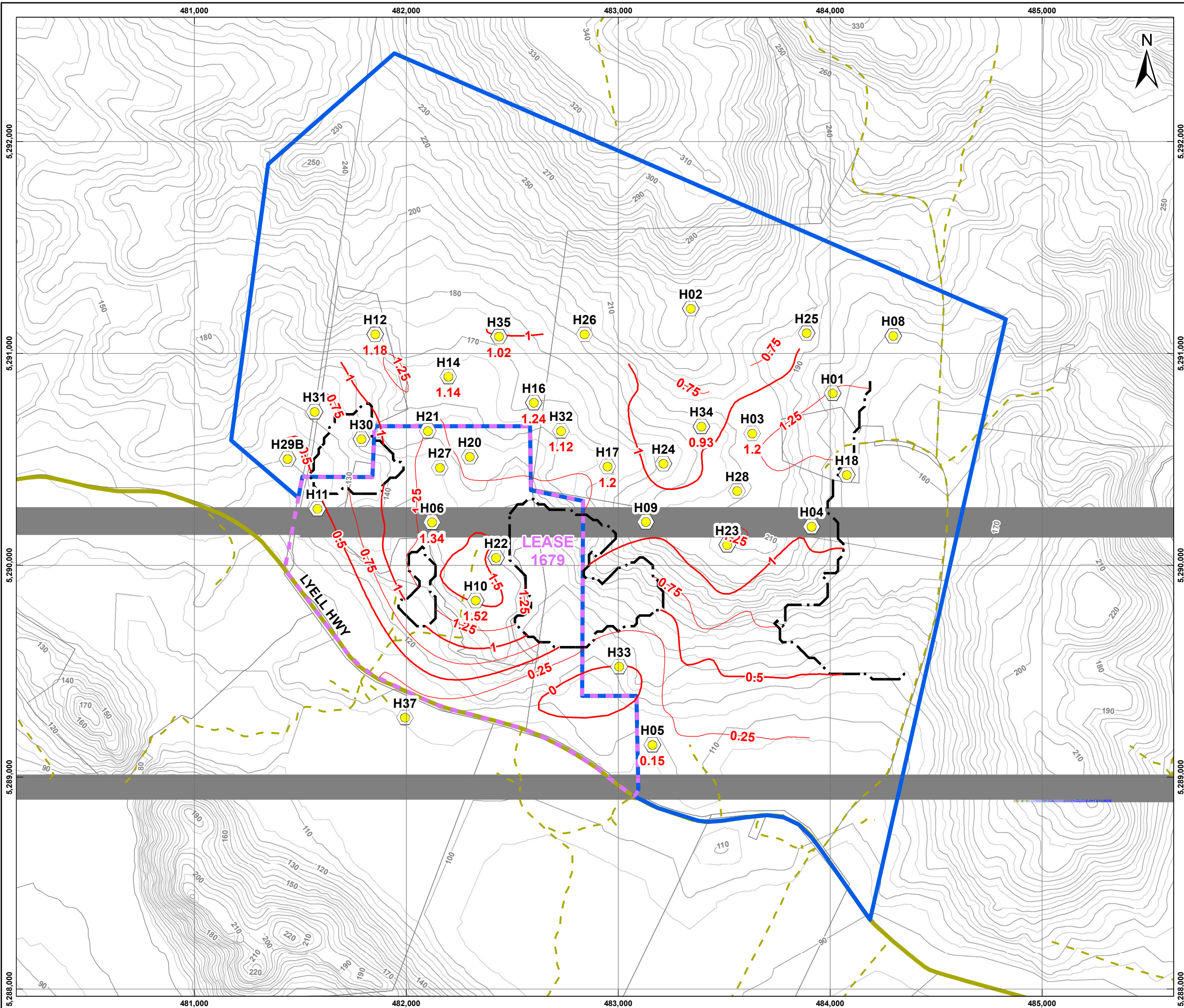
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FIGURE 6



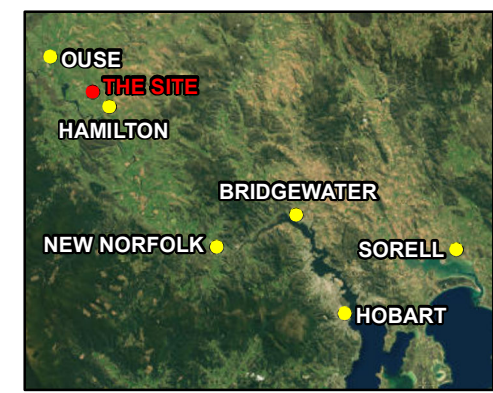
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HAMILTON, TASMANIA

INDICOAL MINING AUSTRALIA PTY LTD

SEAM B IN SITU COAL
THICKNESS ISOPACHS



LEGEND

- Seam B Isopach**
- Seam B Thickness Contour
Interval = 0.5 m
 - Seam B Thickness Contour
Interval = 0.25 m
 - Subcrop
 - Existing Drill Hole
 - Drill Hole with Thickness Value (m)
 - Proposed Site Boundary
 - Kimbolton Lease 1679 (held by Cornwall Coal)
 - Major Road
 - Road
 - Existing Topography Contour
Interval = 10 m
 - Existing Topography Contour
Interval = 5 m

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Township and road data sourced from MapInfo Street Pro.

0 100 200 400 600 800 1,000 metres

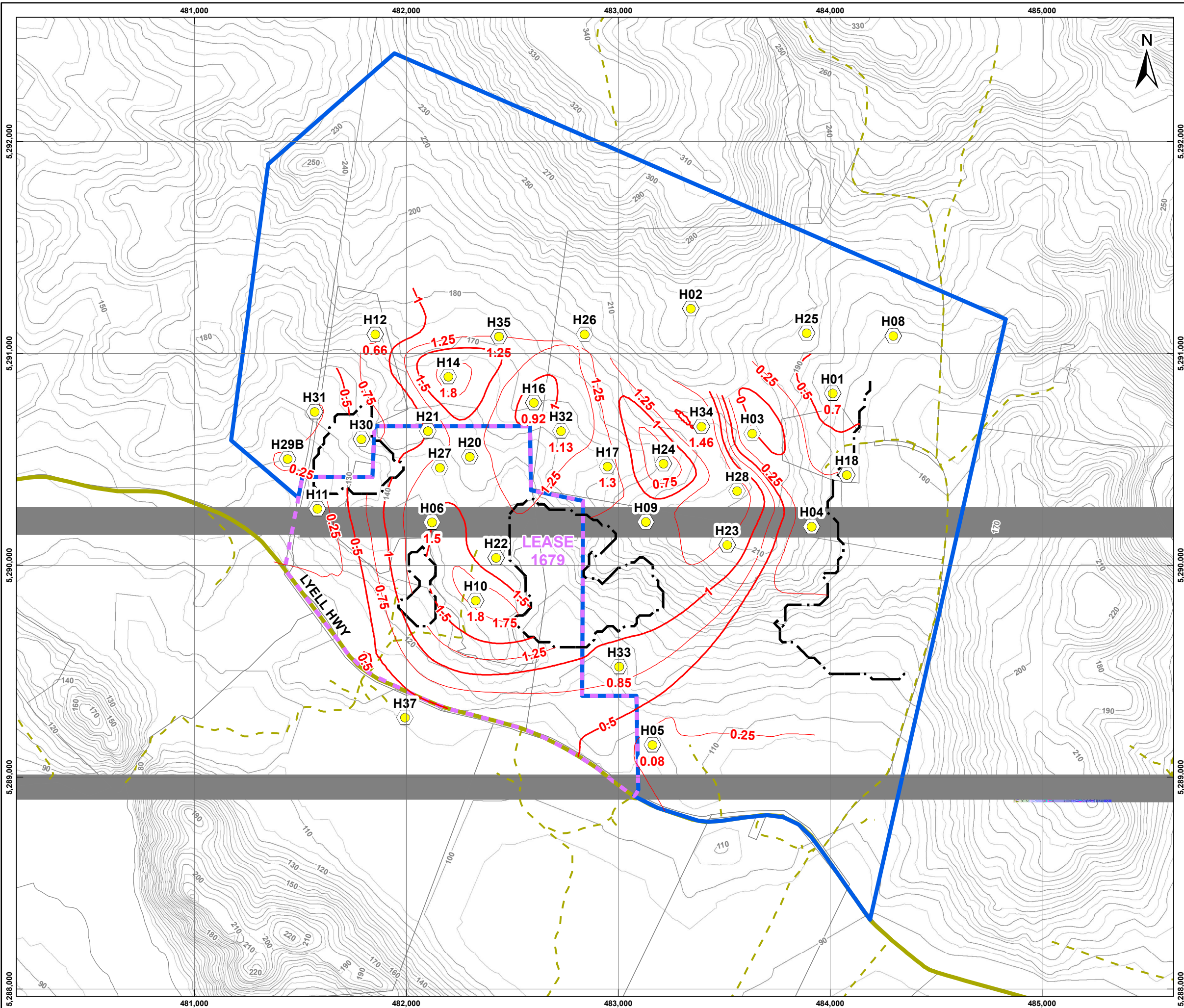
SCALE (at A3) 1:17,500
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FIGURE 7



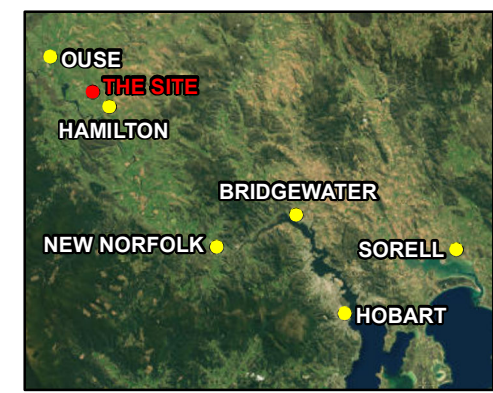
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SEAM C IN SITU COAL THICKNESS ISOPACHS

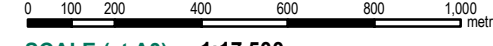


LEGEND

- Seam C Isopach**
- Seam C Thickness Contour Interval = 0.5 m
 - Seam C Thickness Contour Interval = 0.25 m
 - Subcrop
 - Existing Drill Hole
 - Drill Hole with Thickness Value (m)
 - Proposed Site Boundary
 - Kimbolton Lease 1679 (held by Cornwall Coal)
 - Major Road
 - Road
 - Existing Topography Contour Interval = 10 m
 - Existing Topography Contour Interval = 5 m

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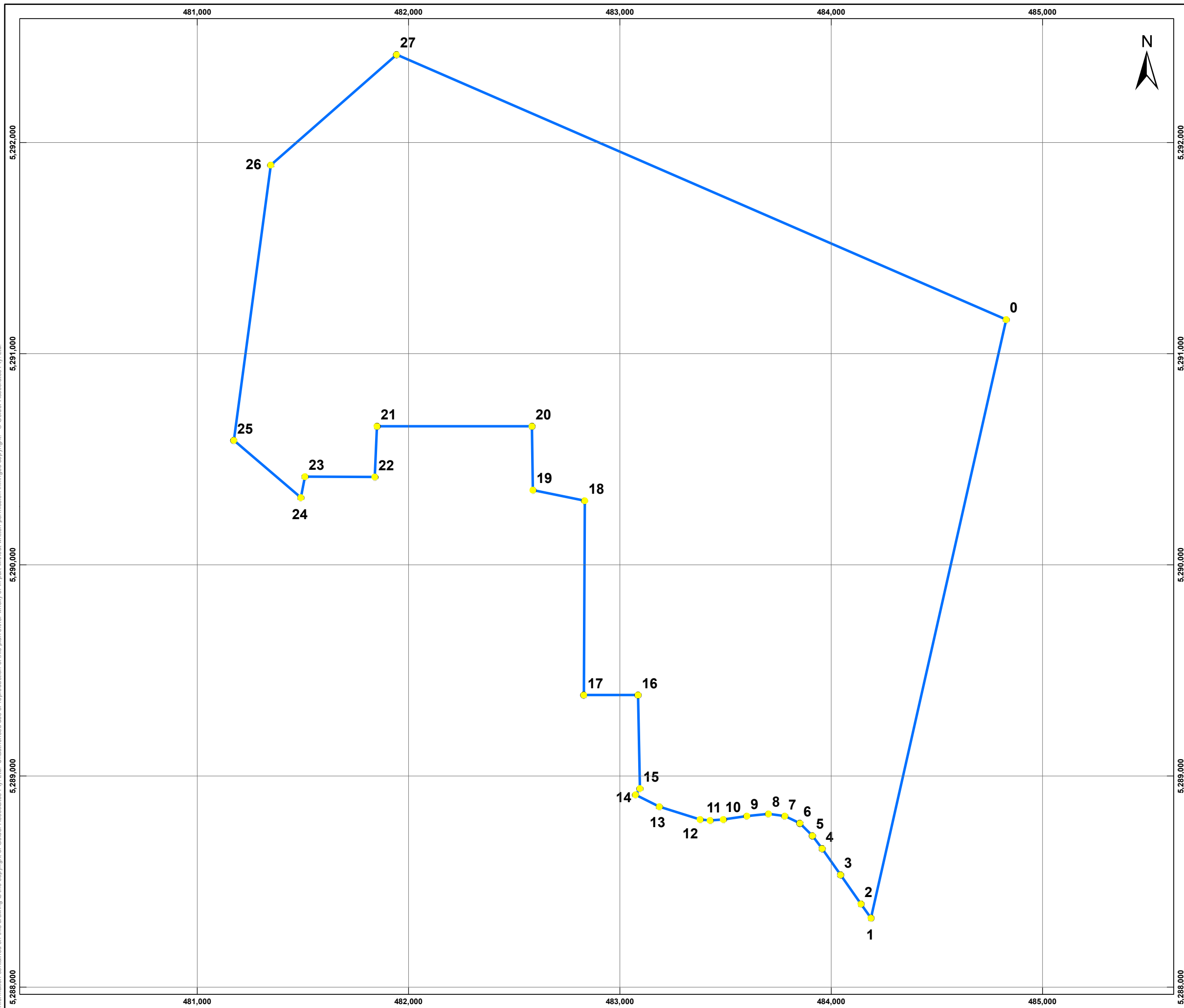
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FIGURE 8



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LANGLOH DEPOSIT RETENTION
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PROPOSED RETENTION LICENCE BOUNDARY DETAILS



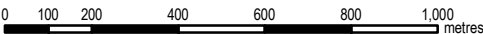
LEGEND

Proposed Site Boundary

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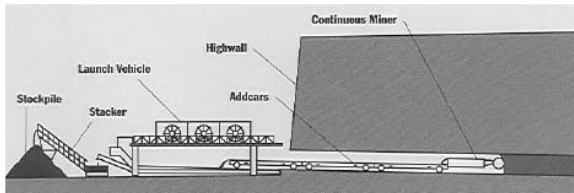
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FIGURE 9



Highwall Mining Basics

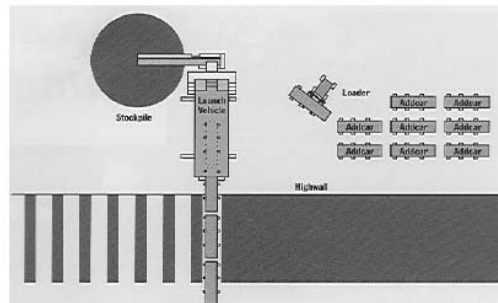


System that uses a "launch vehicle", continuous miner and a series of "Addcars"™ to extract coal from an exposed Highwall.

No personnel enter the underground operations... all equipment is operated remotely from the surface launch facility.



Side View



Plan View

