



MOUNT KLAPPAN COAL PROJECT

September 24th - 26th, 1984

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GULF CANADA RESOURCES INC.

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PREFACE

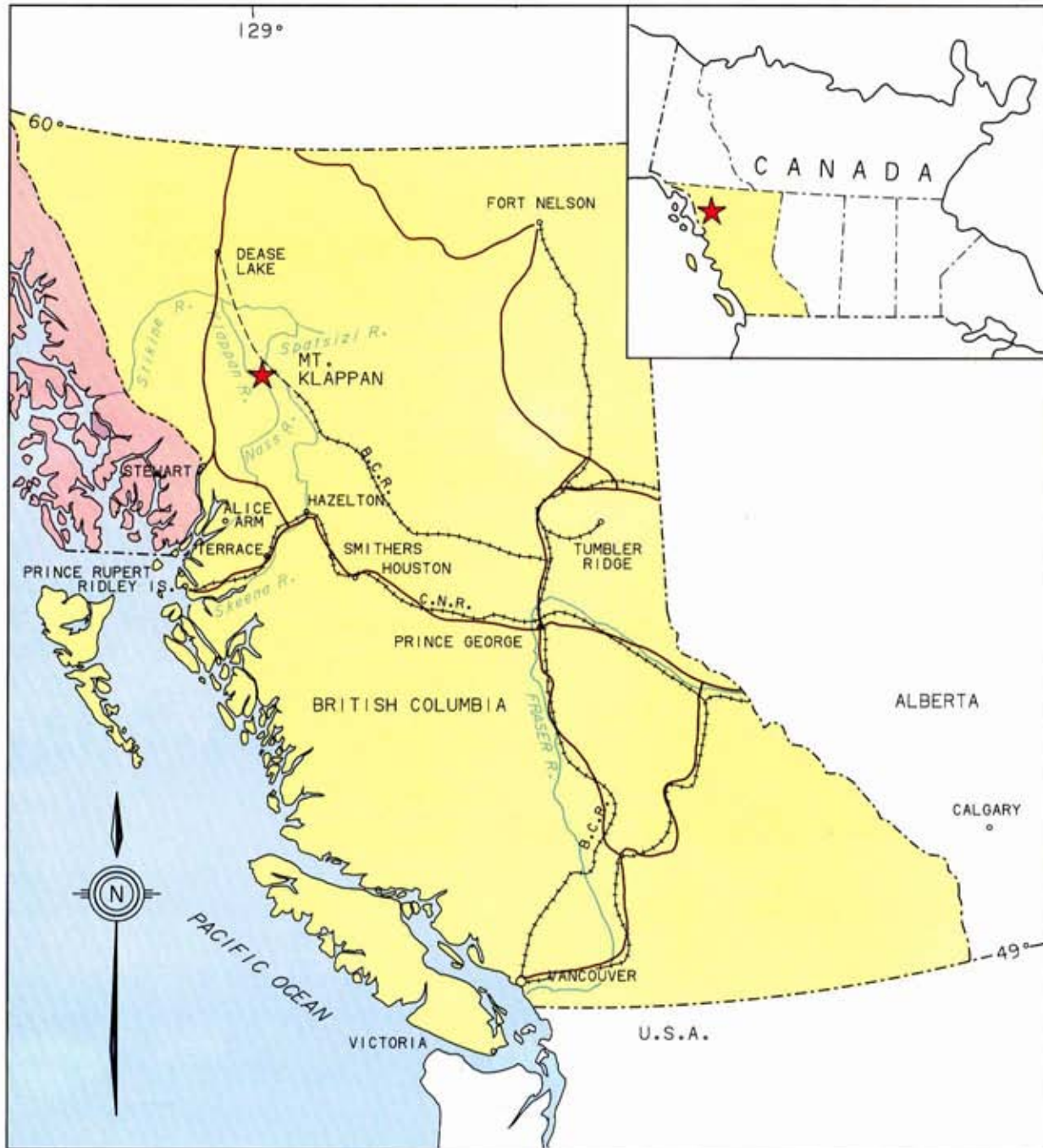
This overview of the Mount Klappan project was designed to accompany the talk given to the British Columbia Coal Geology Symposium between September 24th and 26th in Fernie, British Columbia.

SUMMARY

The Mount Klappan Coal Project constitutes a major new source of anthracite to the world markets. Located in northwestern British Columbia the project is capable of producing 5 million tonnes of multiproduct anthracite per year, and can support the infrastructure necessary to mine and deliver the coal to tide water.

Gulf is presently in the fourth year of exploration and third year of marketing activity.

MT. KLAPPAN COAL PROPERTY LOCATION



SCALE: 0 200 400 km.

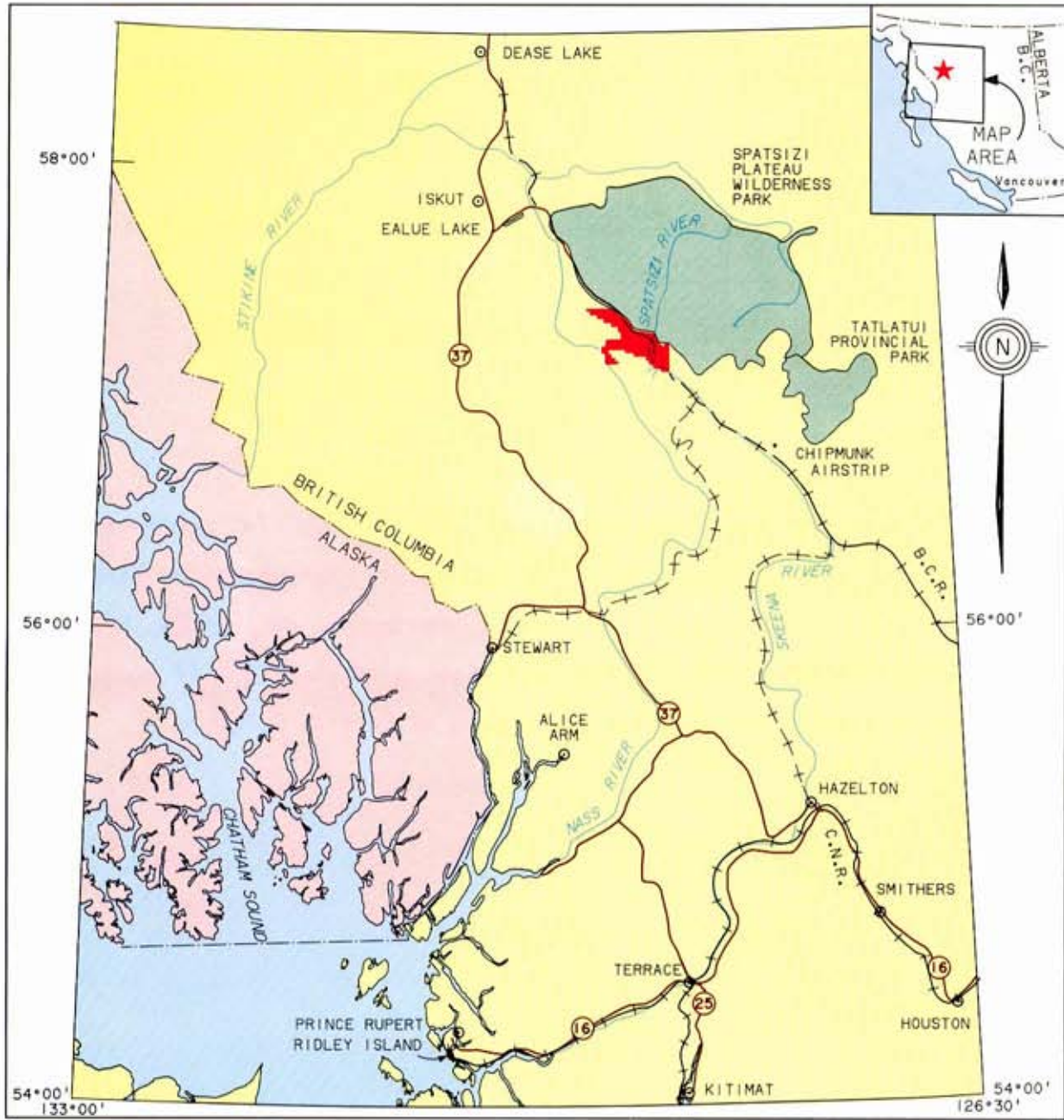
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LOCATION

The Mount Klappan coal licences are located in northwestern British Columbia, approximately 150 kilometres northeast of Stewart (population 1445) and 530 kilometres northwest of Prince George (population 69 300). The property comprises a total of 50 014 hectares of coal licences granted by the government of British Columbia.

MT. KLAPPAN COAL PROPERTY ACCESS



LEGEND

- ROAD ACCESS
- EXISTING RAILWAY
- EXISTING RAILWAY SUBGRADE
- POSSIBLE RAILWAY ROUTES
- MT. KLAPPAN LICENCE AREA

SCALE



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ACCESS

The Mount Klappan property straddles the partially completed British Columbia Railway line between Prince George and Dease Lake. Prior to cessation of work on the construction of the line, steel was laid to within 85 kilometres of the property, and, with the exception of a short stretch south of the licences, the subgrade was constructed through and beyond the property to the Stikine River just south of Dease Lake.

At present, road access to the property from Highway 37 via the Ealue Lake road, is provided along the British Columbia subgrade. Road distances from Terrace and Stewart to the property are 575 km and 426 km respectively. Two gravel airstrips are located on the property.

PROJECT INFRASTRUCTURE

Transportation of coal products would be either by a new rail line to Stewart or via a cut off from the British Columbia Railway's Dease Lake line to the Canadian National Railway's line and hence to Prince Rupert. This would result in rail distances of 300 and 607 kilometres respectively.



EXPLORATION

A growing data base on Mount Klappan includes information gathered by detailed geological mapping, trenching, seam tracing, drill holes, both rotary and diamond, as well as a bulk sample extracted from an adit. 1984 represents the fourth year of exploration on Mount Klappan.

- 230 Hand Trenches
- 109 Mechanical Trenches
- 24 Diamond Drill Holes
- 15 Rotary Drill Holes
- 1 Adit

EXPLORATION INFRASTRUCTURE

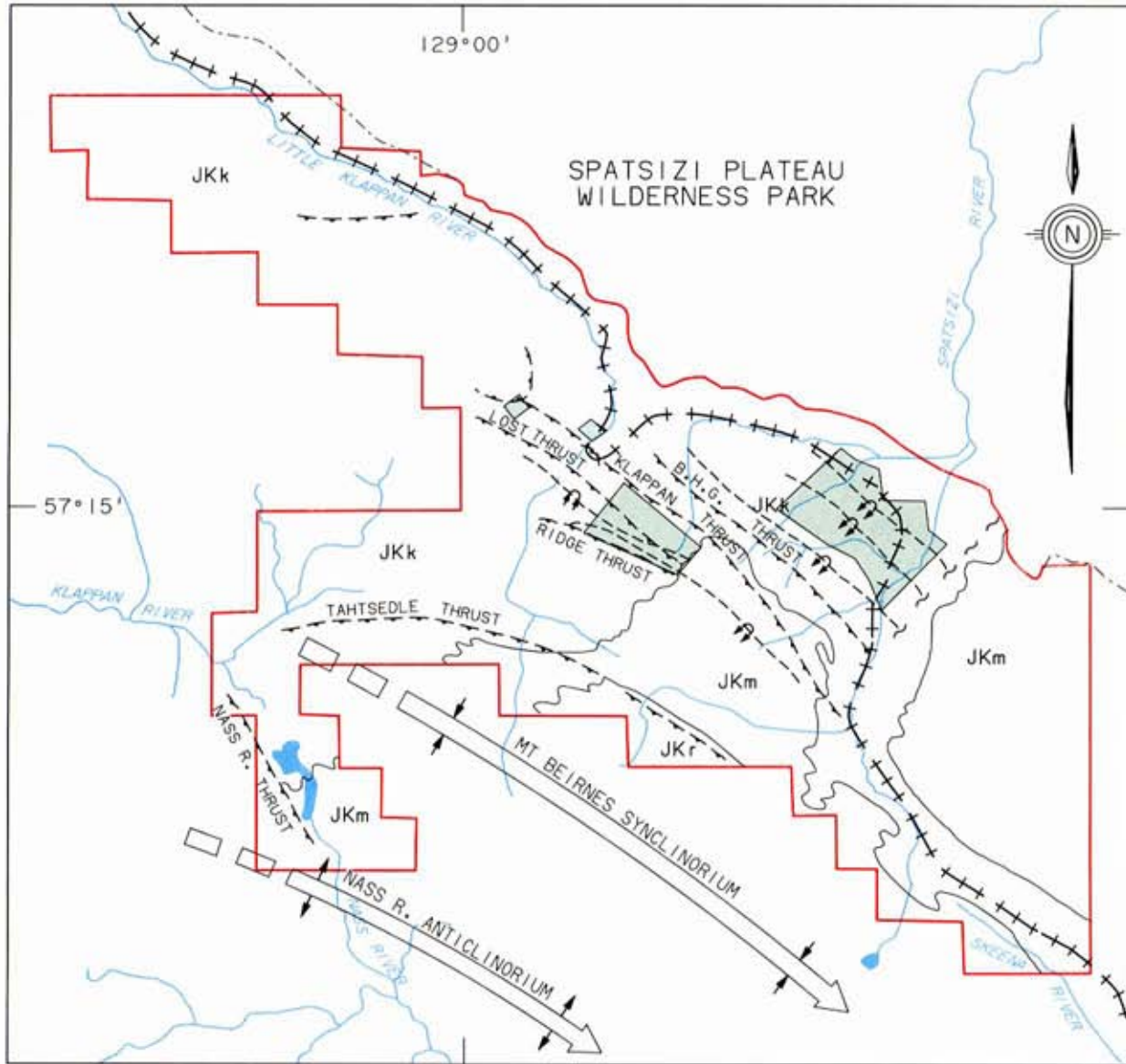
Three, 100 tonne bridges were installed to provide road access to the property. Personnel are housed at a modern facility on site.

Clockwise:

- Seam trenching in potential Lost-Fox pit
- Helicopter supported diamond drilling in Summit area
- Didene Creek Camp
- Geological mapping by modified plane table method
- Logging and sampling of hand trenched seam in potential Hobbit-Broatch pit

MT. KLAPPAN COAL PROPERTY

GEOLOGY



LEGEND

- ++++ PREPARED RAILBED/ROAD
- PROVINCIAL PARK BOUNDARY
- _____ LICENCE AREA
- JKr RHONDDA SEQUENCE
- JKm MALLOCH SEQUENCE
- JKk KLAPPAN SEQUENCE
- INFERRED RESOURCE AREAS

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GEOLOGY

The coal measures of the Mount Klappan property are contained within a series of sediments deposited in the Bowser Basin during Middle Jurassic to Early Cretaceous time. Gulf geologists have subdivided the Upper Jurassic - Lower Cretaceous sediments locally into four exploration sequences, which, in ascending order are: the Klappan, Malloch, Rhondda and Spatsizi Sequences. The Klappan Sequence is the main coal-bearing unit.

Two fold patterns are prevalent, the first trending northwest-southeast and the second generally northeast-southwest.

RESOURCES

Based on 1983 data, inferred resources of 960 million tonnes have been calculated to occur within four areas, which together, comprise less than 20% of the property.

The two largest areas, in terms of resources, are the Hobbit-Broatch and Lost-Fox areas, with 620 million tonnes and 330 million tonnes respectively. Both areas contain surface mineable coal and are, at present, being developed in tandem.



LOST-FOX AREA

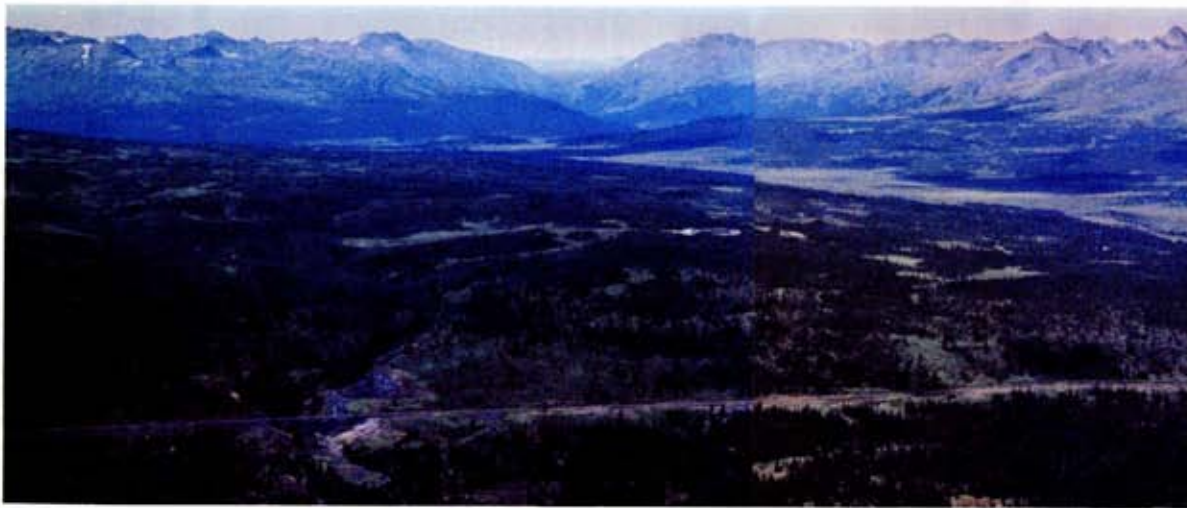
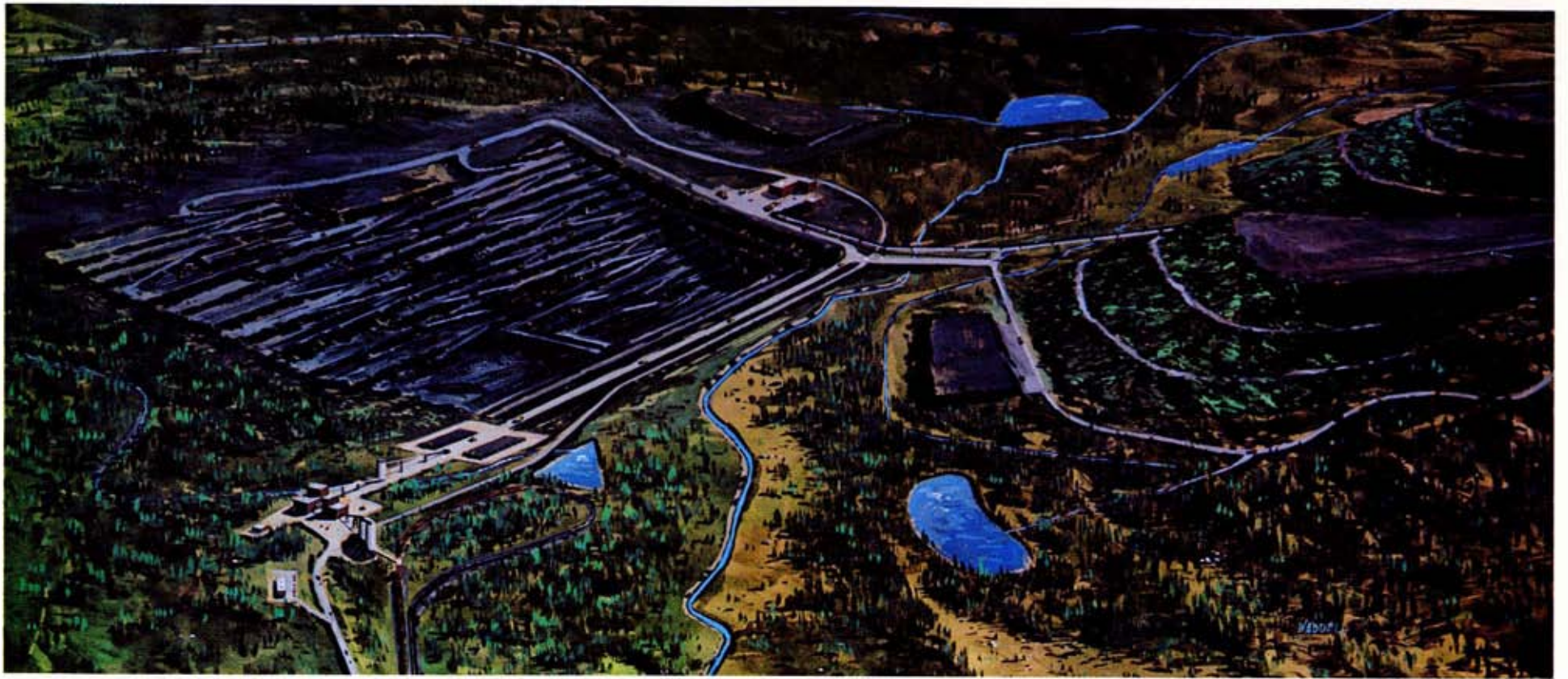
The Lost-Fox area is predominantly underlain by Klappan Sequence sediments. A cumulative thickness of 43 metres of anthracite has been intersected by drilling and seam tracing over 400 metres of stratigraphic section.

To date, 13 diamond and 15 rotary drill holes, 101 hand trenches and a cumulative total of 7 kilometres of seam tracing has been undertaken.

The Lost-Fox area is capable of sustaining an open pit mine producing 5 million tonnes per year of multiproduct anthracite coal, for a 20 year period.

Clockwise:

- Lost ridge looking northwest showing results of seam tracing
- Diamond drilling on Lost Ridge
- Portal of adit in 1 seam on north face of Lost Ridge
- Lower 2 metres of 5 metre 1 seam in adit
- View of Lost Ridge looking southeast illustrating overturned Lost Ridge anticline-syncline pair



ANTHRACITE PRODUCTS

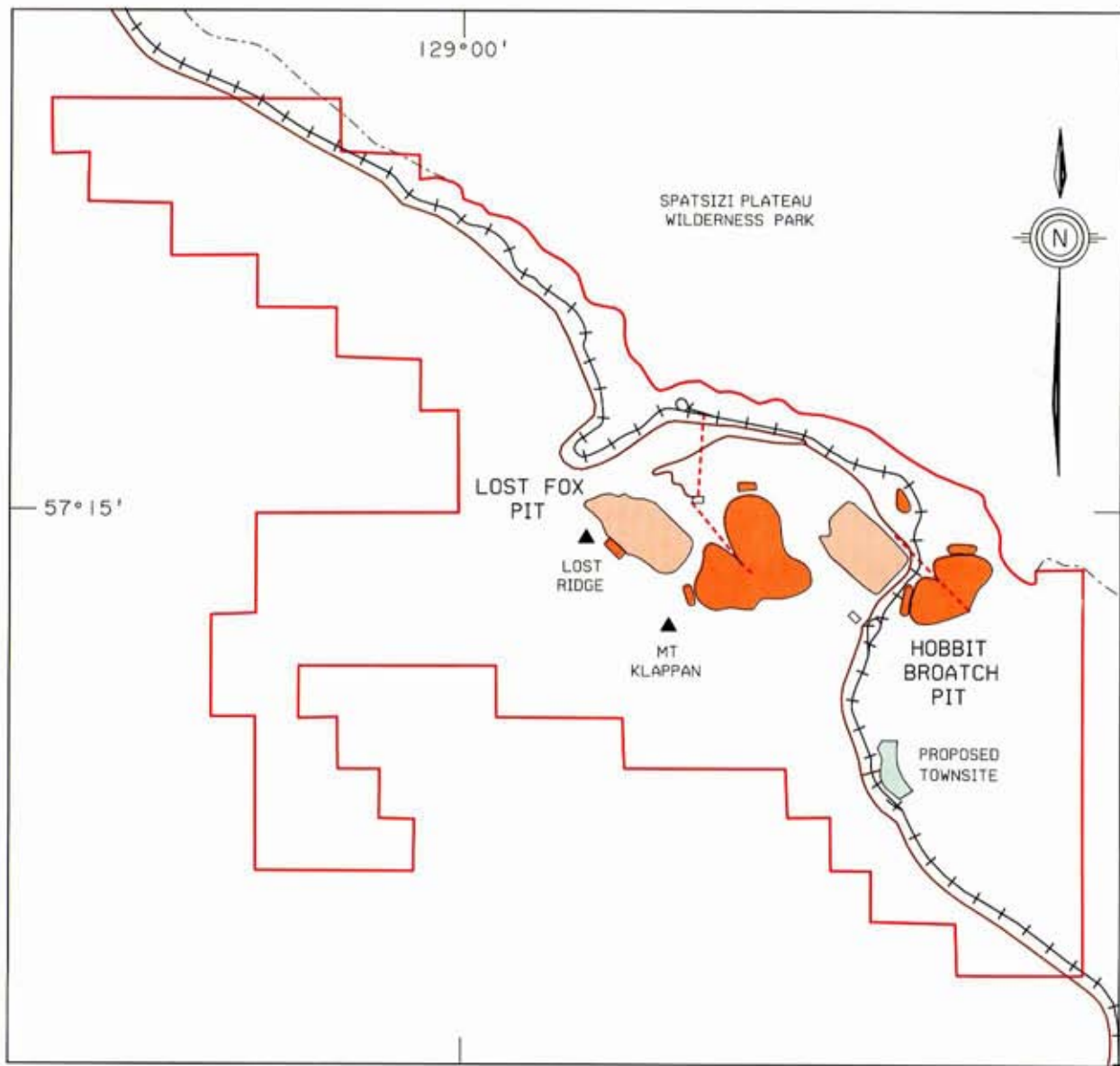
The coal can be sized and washed to simultaneously produce a wide range of products. The most common anthracite products have ash levels of 5, 10 and 25% ash with an upper size limit of 80 mm for the low ash anthracite.

Mount Klappan anthracite, which has been tested by 25 companies in eight countries covering Asia, North America and Europe, compares very favourably with leading anthracites of the world.

A comparison of the Lost-Fox I seam with Vietamese Hongay #4 and Pennsylvania anthracite is provided.

MT. KLAPPAN COAL PROPERTY

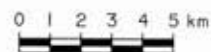
PROPOSED OPEN PIT MINES AND SITE INFRASTRUCTURE



LEGEND

- | | |
|---|-------------------------|
|  | OPEN PIT MINE |
|  | WASTE AND TOPSOIL DUMPS |
|  | CONVEYOR BELT |
|  | RAILROAD |
|  | ROAD |

SCALE



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HOBBIT-BROATCH AREA

The Hobbit-Broatch area is underlain by Klappan Sequence sediments which contain 11 seams with a cumulative thickness of 22 metres over 240 metres of section.

Exploration of this area has comprised detailed mapping, the drilling of 9 diamond drill holes and the excavation of 92 trenches, both by hand and mechanical means.

The area contains an inferred resources of 620 million tonnes in a 2 by 3 kilometre area, and is capable of sustaining an open pit mine producing 3 to 5 million tonnes of coal per year over a 20 year period.

Clockwise:

- Area conception of potential Hobbit-Broatch open pit mine in year five
- Hand trench in 1 seam
- Panorama of Hobbit-Broatch potential open pit mine area

MOUNT KLAPPAN

VIETNAM

Size	35 x 15 mm	35 x 15 mm
Residual Moisture	1.9	1.2
Ash	4.2	4.2
Volatile Matter	6.5	5.8
Volatile Matter (dmmf)	6.4	5.6
Fixed Carbon	87.4	88.8
Calorific Value cal/g.	7830	8250
Combustible Sulphur	0.5	0.4
Nitrogen	0.9	1.0

PENNSYLVANIA

MOUNT KLAPPAN

U.S.A.

Size	1 x 6 mm	1 x 6 mm
Residual Moisture	1.1	1.8
Ash	8.9	9.8
Volatile Matter	5.4	4.3
Volatile Matter (dmmf)	5.0	3.8
Fixed Carbon	84.6	84.1
Calorific Value cal/g.	7430	7170
Combustible Sulphur	0.50	0.57
Nitrogen	0.8	0.6

PROJECT DEVELOPEMENT

ENGINEERING

Prefeasibility studies, on two potential open pit mines, were undertaken in the early stages of exploration to access the viability of the project as a whole. Geotechnical studies were initiated in 1984.

ENVIRONMENTAL

Fish and Wildlife, vegetation, surficial geology, hydrology and air quality studies were also initiated in 1984 to provide data for a Stage I submission under the Coal Guideline process.

TRIAL CARGOS

At present, the shipment of trial cargoes, of 30,000 tonnes or more of anthracite, to the market place is being examined. Such trial cargoes would be transported by truck to the port of Stewart for shipment.