

# OPEN FILE

FLATHEAD RIDGE COAL LICENCES

(4188-4189)

80A

PROGRESS REPORT

APRIL, 1981

EAST KOOTENAY LAND DISTRICT

N.T.S. Sheet: 82 G/7

Centering approx:  $114^{\circ} 19'$  N. Lat.

$49^{\circ} 17' 30''$  E. Long.

Held and Operated by B.C. Coal

For work completed September, 1980

JOHN A. HURYN

GEOLOGIST

B.C. COAL LTD.

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

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## INTRODUCTION

### Location and Access

Coal licences 4188 and 4189 are located on Flathead Ridge along the southwest flank of the Crowsnest Coal Field of southeastern British Columbia. Lodgepole Creek lies to the south and McLatchie Creek to the east of Flathead Ridge. The licences are approximately 30 kilometres southeast of Fernie, B.C. and approximately 26 km. west of Elko, B.C.

Access to the area is by logging roads either from the north through Corbin and Flathead or from the west through Morrisey along the Lodgepole drainage.

Entry to the coal licences can be gained at the intersection of the Lodgepole Creek road and North Lodgepole Creek via the B.C. Coal exploration access.

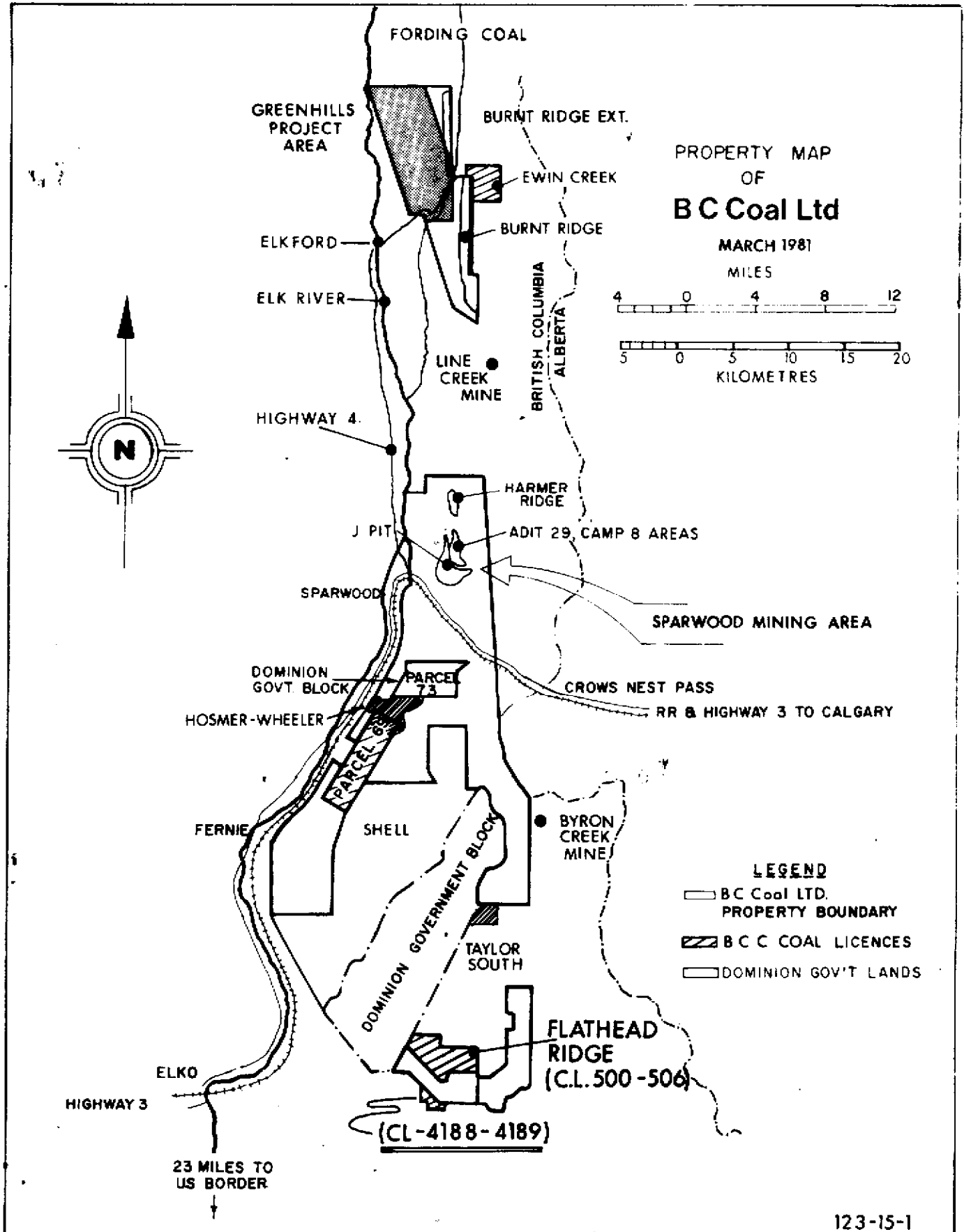
### Land Description and Ownership

During February of 1968, Kaiser Resources Ltd. acquired the coal rights to 43, 725 hectares of coal-bearing lands from Crowsnest Industries Ltd. The Flathead Ridge area is approximately 4040 ha. of which approximately 50% or 2023 ha. is coal-bearing. The Flathead Ridge area is composed of coal licences as well as freehold land. Coal Licences 4188-4189 make up 176 ha. of the total Flathead Ridge Area. During February of 1981, Kaiser Resources Ltd. became B.C. Coal Ltd. a member of the B.C. Resources Group, and is the owner and operator of these licences.

### Exploration Work

From June to September of 1980, exploration work was conducted on or about coal licences 4188-4189. Access to the licences were cleared and upgraded with a D-7 Caterpillar tractor. A portion of this time was spent on the licences. Geologic mapping was carried out during this period of time. Mapping was conducted on both the freehold land and the coal licences and the charges have been properly distributed.

The mapping party consisted of one geologist and his helper as well as a supervisor. A baseline was established along the exploration road and traverses led from this baseline up and down the section being mapped. The outcrops were plotted on a surface geology plan of 1:5000 (pocket).



## GENERAL GEOLOGY

The stratigraphy within coal licences 4188-4189 is made up of Juro-Cretaceous beds of the Fernie and Kootenay Formations. The contact between the Jurassic and Lower Cretaceous is gradational and difficult to pick out. The lower Cretaceous Kootenay Formation was divided into three members, the Moose Mountain, the coal-bearing and the Elk (Jansa, 1972).

The Blairmore Group, which overlies the Kootenay Formation, was not observed within the boundary of the coal licences.

### Stratigraphy

#### Jurassic-Fernie Formation

In the Flathead Ridge area the Fernie Formation is 381 metres thick and is composed of dark gray silty shale, containing thin layers of ankeritic siltstone in the lower part of the formations (Price, 1965).

The upper part of the formation is composed of rhythmically interbedded fine grained sandstone, siltstone and shale. Sandstones in the upper part of the Fernie Formation are ankeritic or calcareous and are commonly laminated. Beds up to 0.30 metres in thickness occur within the Fernie formation but they are more commonly, 10 to 70 millimetres thick (Jansa, 1972).

#### Cretaceous - Kootenay Formation

The Kootenay Formation is divided by Jansa (1972) into three members, the Moose Mountain Member, the coal-bearing member and the Elk Member.

The Moose Mountain Member is the lowest member of the Kootenay Formation. It ranges in thickness from 43 meters on the western end of Flathead Ridge to over 120 metres on the ridge between McLatchie and Foisey Creeks. The Moose Mountain Member is medium to fine grained sandstone with occasional shale or siltstone interbeds. The sandstone is generally cross-bedded and occasionally shows ripple marks.

The coal-bearing member in the Flathead Ridge area is 425 to 550 metres of sandstone, siltstone, mudstone and coal. Conglomerate occurs as lenses up to 1 metre thick and a few hundred metres long in the upper part of the coal-bearing member. The sandstones are fine to coarse grained, are usually cross-bedded, and occur in beds from 0.6 to 12 metres thick.

The siltstones are finely laminated and show occasional cross-bedding. The mudstones range from light gray to black in colour with the darker mudstones having plant detritus preserved along the bedding planes. Thin, limonitic shale bands occur near the top of the coal-bearing member. Coal seams of commercial quality occur throughout the coal-bearing member.

In the Flathead Ridge area the Elk Member outcrops along the top of the ridge to form a resistant cap. The lower 210 metres of the Elk is composed of interbedded medium to coarse grained sandstone, siltstone, and silty mudstone with conglomerate lenses in some localities. West of the B.C. Coal licence boundary a cut has been made through the Elk Member where the Alberta Natural Gas pipeline crosses Flathead Ridge. No coal seams greater than 1 metre thick were observed in the pipeline cut and it can be assumed that seams of commercial thickness do not occur within the Elk Member on Flathead Ridge.

#### Cretaceous - Blairmore Group

The Blairmore Group lies unconformably on the Kootenay Formation. In the centre of the coal basin 140 to 170 metres of conglomeratic sandstone occur at the base of the Blairmore group. The middle and upper beds are composed of interbedded conglomerate, sandstone, varicoloured siltstones, mudstone and shale (Price, 1962). No Blairmore Group was mapped within the Flathead Ridge area.

#### Structure

The beds within the licences lie on the west limb of the McEvoy Syncline. The general strike of the beds is northwest southeast and dip between 10 and 35 degrees to the northeast. Variations do occur in individual attitudes, especially in faulted areas. Some minor faults were observed in the area and are probably due to adjustments made during the formation of the McEvoy Syncline.

#### Interpretation

The outcrops mapped within coal licences 4188-4189 belong to the Jurassic (Fernie Formation) and lower Cretaceous (Kootenay Formation) periods. The contact between the Jurassic and lower Cretaceous was not observed. The lower Cretaceous Kootenay Formation is represented by the Moose Mountain Member and the lower portion of the coal-bearing member.

Very little coal was mapped within the licence boundary, however there were areas having deep surface cover and subcrop was not exposed. The sequence of deposition appears to be cyclic and may have caused pinch outs in the coal seams. Further investigation should be undertaken to expose the covered areas. A mapping and trenching program would help in delineating the potential of these coal licences.

STATEMENT OF COSTS

Flathead Ridge C.L. 4188-4189

Period: June - September, 1980

On Licences	Salaries (\$147.00/day. Burden included)	\$ 3,087.00
	Wages (Including Burden)	1,851.00
	D-7 Caterpillar dozer @ 63.00/hr. x 27 hrs.	1,701.00
	3/4 ton 4x4 pickup (dozer operator)	61.00
	3/4 ton 4x4 pickup (geologist)	305.00
	Radio communications	27.00
	Fuel	160.00
Off Licences	Report writing and preparation including drafting.	555.00
		<hr/>
	TOTAL EXPENDITURES	\$ 7,192.00

*A.D. Wall*

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Manager, Mines Accounting  
A.D. WALL



STATEMENT OF QUALIFICATIONS

J.A. Huryn

B.Sc., Geology, University of Calgary,  
Calgary, Alberta 1979.

Practical: 3 summers coal mapping experience as  
a student and 2 years in coal mapping, structural  
interpretations and reserve estimations with  
Kaiser Resources Ltd.

REFERENCES CITED

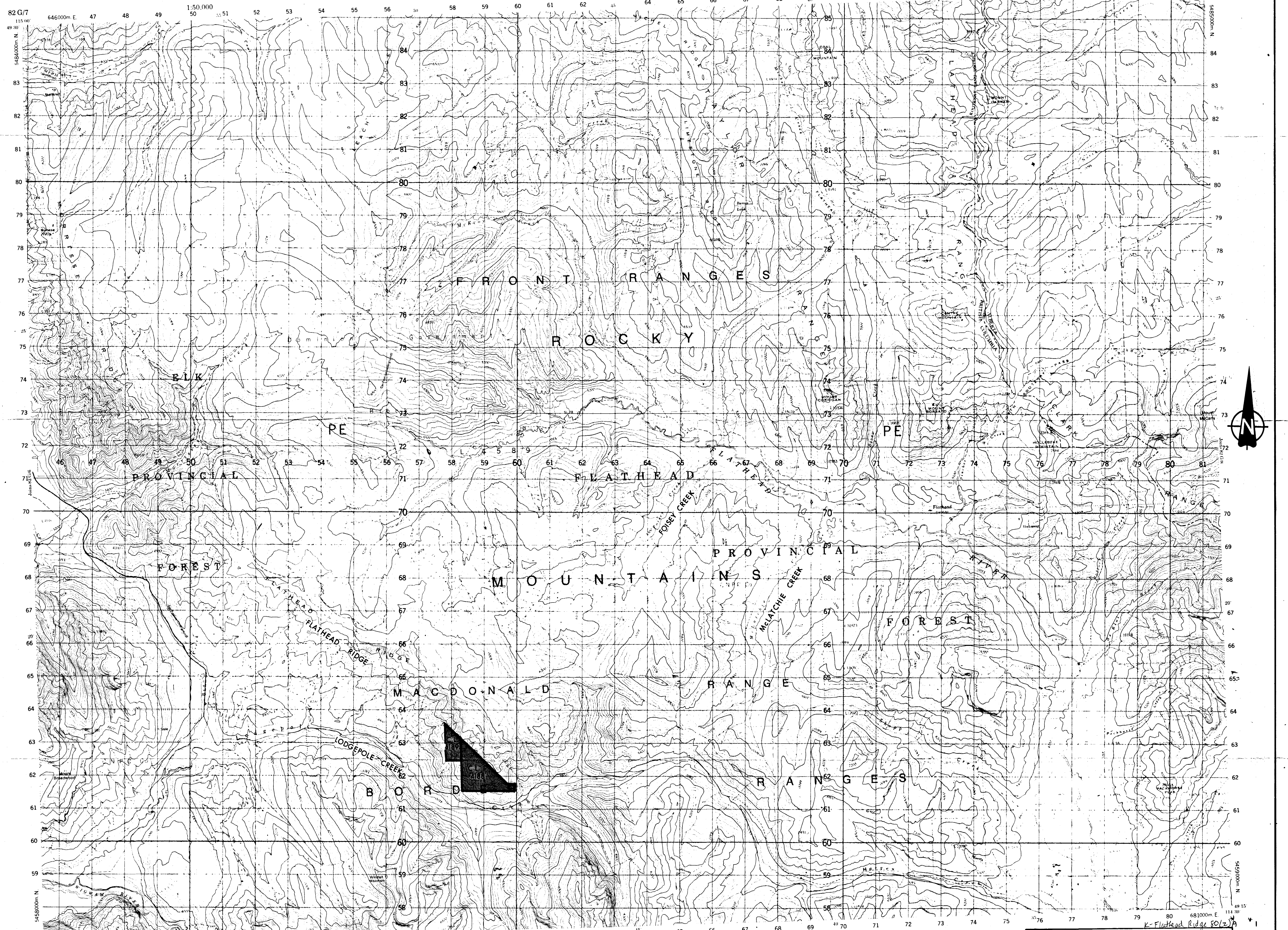
Jansa, Lubomir

- 1972 - Depositional History of the Coal-Bearing  
Upper Jurassic-Lower Cretaceous Kootenay  
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Geologic Society of America, V. 83 pp. 3199-3222

Price, R.A.

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Canada, Paper 61-24.
- 1965 - Flathead Map-Area, British Columbia and  
Alberta, Geological Survey of Canada  
Memoir 336, pp. 55-64.

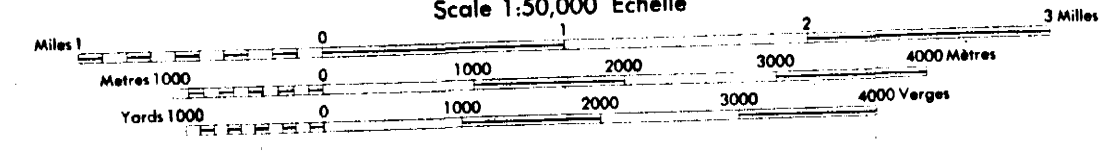




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680000m E. 114 30' 5494000m N 84 83 82 81 80 79 78 77 76 75 74 73 72 71 70 69 68 67 66 65 64 63 62 61 60 59 58 57 56 55 54 53 52 51 50 49 48 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 5494000m N

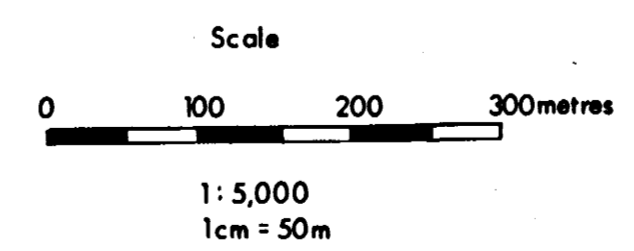
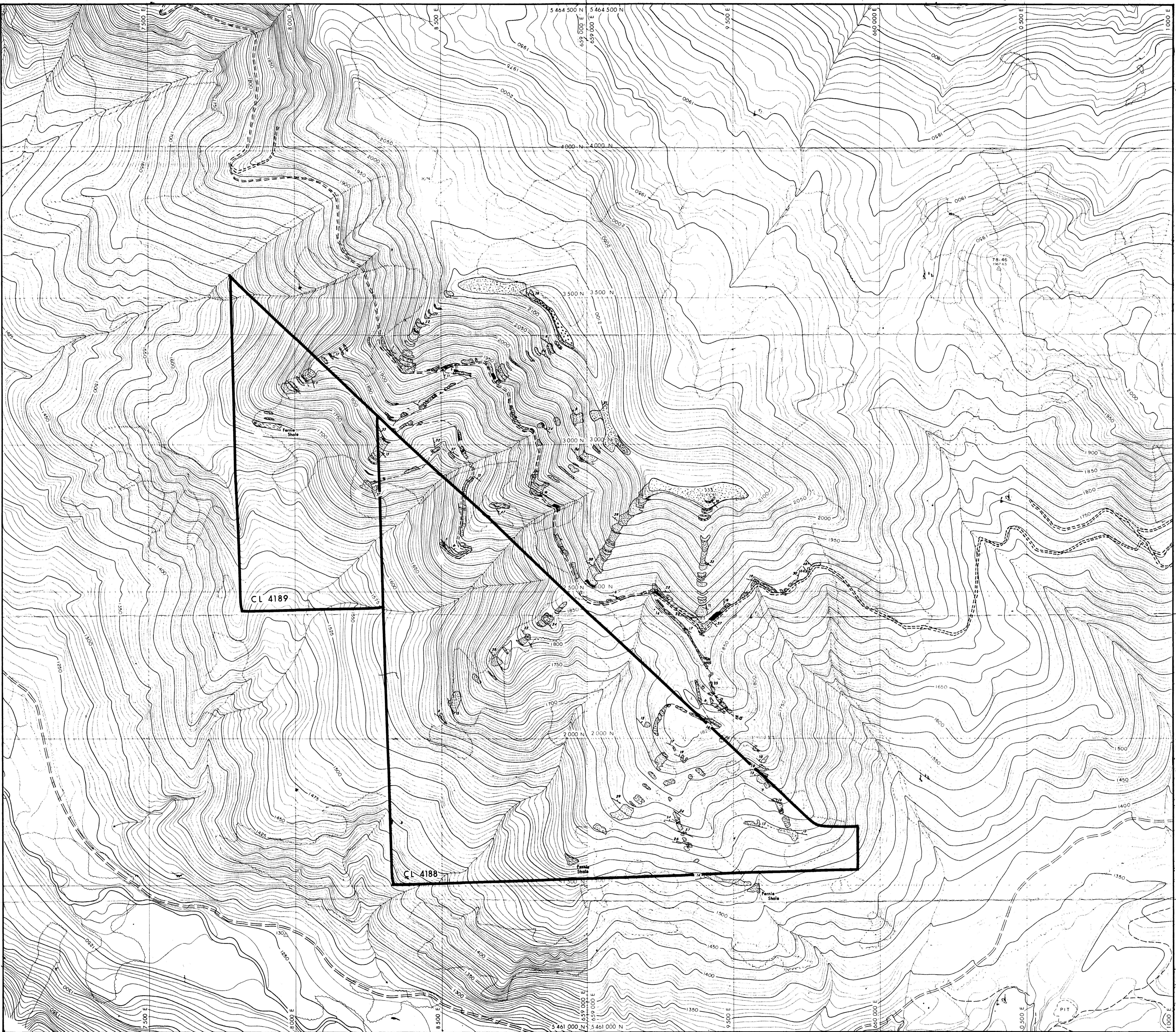
UPPER FLATHEAD  
BRITISH COLUMBIA - ALBERTA  
WEST OF FIFTH MERIDIAN - OUEST DU CINQUIEME MERIDIEN



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<b>BC Coal</b>		SPARWOOD B.C.	
FLATHEAD RIDGE			
C.L. 4188 - 4189			
INDEX MAP			
DESIGNED JAH	DATE APRIL, 1981		
DRAWN S.J.G.	SCALE 1:50,000		
CHECKED	123-15-2		
APPROVED			





- LEGEND:
- Coal
  - ▨ Fernie Shale
  - ▩ Sandstone
  - ▧ Mudstone
  - ▦ Siltstone
  - ▤ Conglomerate

**303 BC Coal** SPARWOOD B.C.

*k-Flathead Ridge 80(2)A*

**FLATHEAD RIDGE**  
CL 4188 - 4189  
SURFACE GEOLOGY

DESIGNED AGK	DATE OCT 1990
DRAWN SJK	SCALE 1cm=50
CHECKED	123-15-3
APPROVED	(2)