

1979 Geological Report
on Field Work Done in August, 1979
on Coal Licences 4220-4223 incl.

Held By: Shell Canada Resources Limited
Operated By: Crows Nest Resources Limited

Onion Lake (formerly Wapiti) Coal Property
Peace River Land District, N.E. B.C.

NTS. 93-I-10

OPEN FILE

October, 1979
Georgia Hoffman, P. Geol. (Alberta)
for Crows Nest Resources Limited

PROFESSIONAL VERIFICATION OF REPORT

1979 Geological Report
Onion Lake (Wapiti) Coal Property
Coal Licences 4220 to 4223 incl.
Peace River Land District, B.C.

Miss Georgia Hoffman carried out the 1979 geological field program on the Onion Lake (Wapiti) Coal Property held by Shell Canada Resources Limited, operated by Crows Nest Resources Limited. She also prepared this report. Mr. Frank Martonhegyi supervised the activity of this program under the general direction of the undersigned.

Georgia Hoffman graduated from the University of Pennsylvania in Philadelphia, Pennsylvania, U.S.A., with a Bachelor's degree in Geology. She is a member, as a Professional Geologist, of the Association of Professional Engineers, Geologists, and Geophysicists of Alberta. Her experience in Western Canadian coal exploration includes positions with:

- Denison Mines Limited, Vancouver, B.C.
- Shell Canada Resources Limited, Calgary, Alberta
- Crows Nest Resources Limited, Calgary, Alberta

She is self-employed since August 1, 1979.

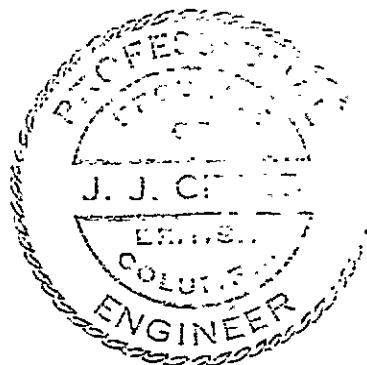
Frank Martonhegyi, M.E., graduated in Mining Geological Engineering from the University of the Heavy Industry, Hungary, in 1962; and received post-graduate training at the University of Saskatchewan, Saskatoon, in 1969-1971. His experience in Western Canadian coal exploration since 1971 includes positions with:

- CanPac Minerals Ltd., Calgary, Alberta
- Shell Canada Resources Ltd., Calgary, Alberta
- Crows Nest Resources Ltd., Calgary, Alberta

His prior experience includes underground coal mining geology, geo-technical engineering and geochemistry in Hungary, Austria and Canada.

He currently holds the position of Senior Staff Geologist for Crows Nest Resources Ltd. supervising coal exploration in British Columbia.

I consider both the aforementioned geologists to be well qualified to undertake responsibilities they were assigned for this project. I am satisfied that the attached report dated November 16, 1979 has been competently prepared and justly represents the information obtained from this project. However, the Anniversary Data of these licences was August 17, 1979, in the middle of the field activities. This report was designed to account for work done to this date only, although it includes references to later work as well. As a result of such circumstances, this report is of a preliminary nature. Its content should be viewed together with the account for the remainder of the 1979 activities including a more complete compilation and evaluation of all geological information obtained to date.



A handwritten signature in black ink, appearing to be "J. J. C.", written over the bottom portion of the professional seal.

TABLE OF CONTENTS

1	Summary	1
2	Location, Access and Tenure	2
3	The Exploration Program 1978, 1979	6
4	Stratigraphy	7
5	Geological Structure	11
6	Conclusion	12

LIST OF ILLUSTRATIONS

1	Location Map	1:4,000,000	3
2	Access Map	1:500,000	4
3	B.C. Coal Licences Tenure Standing	NO	5
4	Coal Land Disposition Map	1:50,000 in pocket	
5	Applications to Extend Term of Licences (copy) (cost accounts)	NO	13
6	Table of Formations	NO	10
7	Regional Geological Map with Coal Land Overlay	1:50,000 in pocket	
8-9	Geological Maps (2), General	1:25,000 in pockets	

VOLUME TWO:

10-29	Geological Maps (19). Detailed	1:5,000 in pockets
30-54	Structural Cross Sections (24)	1:5,000 in pockets

1 SUMMARY

The Wapiti (Onion Lake) property consists of 1425 hectares of coal licences held by Crows Nest Resources Ltd. These licences lie within the Foothills coal field of northeastern British Columbia and are located adjacent to the Rocky Mountain Ranges approximately 125 km south of Dawson Creek, B.C.

A program of geologic mapping was undertaken on the property during August of 1979. There are no~~x~~ roads or trails in the Onion Lake area at present, and the field work was carried out from Chetwynd, B.C. with helicopter support.

The 1979 program of geologic mapping confirmed the presence of Commotion Formation strata on the property. The Commotion Formation is known to contain attractive seams of metallurgical coal on adjacent properties, but drilling will be required to provide information about these seams on the Wapiti (Onion Lake) property. The Commotion Formation strata are largely covered by vegetation in this area.

2 LOCATION, ACCESS AND TENURE

Shell Canada Resources Ltd. obtained four B.C. Coal Licences on August 17, 1978 covering 1125 hectares and on April 18, 1979 acquired an additional Licence covering 300 hectares. Its wholly owned subsidiary Crows Nest Resources Ltd. is the operator. Because of prior applications Shell could capture only part of the Wapiti licences it applied for and the property was re-named after Onion Lake according to the location of the licences actually granted. All pertinent information concerning coal right tenure is tabulated on Attachment 3: B.C. Coal Land Tenure Standing and shown on Attachment 4: Coal Land Disposition Map.

This Onion Lake Property lies in the Peace River Coal Fields in the Foothills of the Rocky Mountains in northeastern British Columbia. It is some 125 km south of Dawson Creek, B.C. (Attachments 1 and 2: Location and Access Maps).

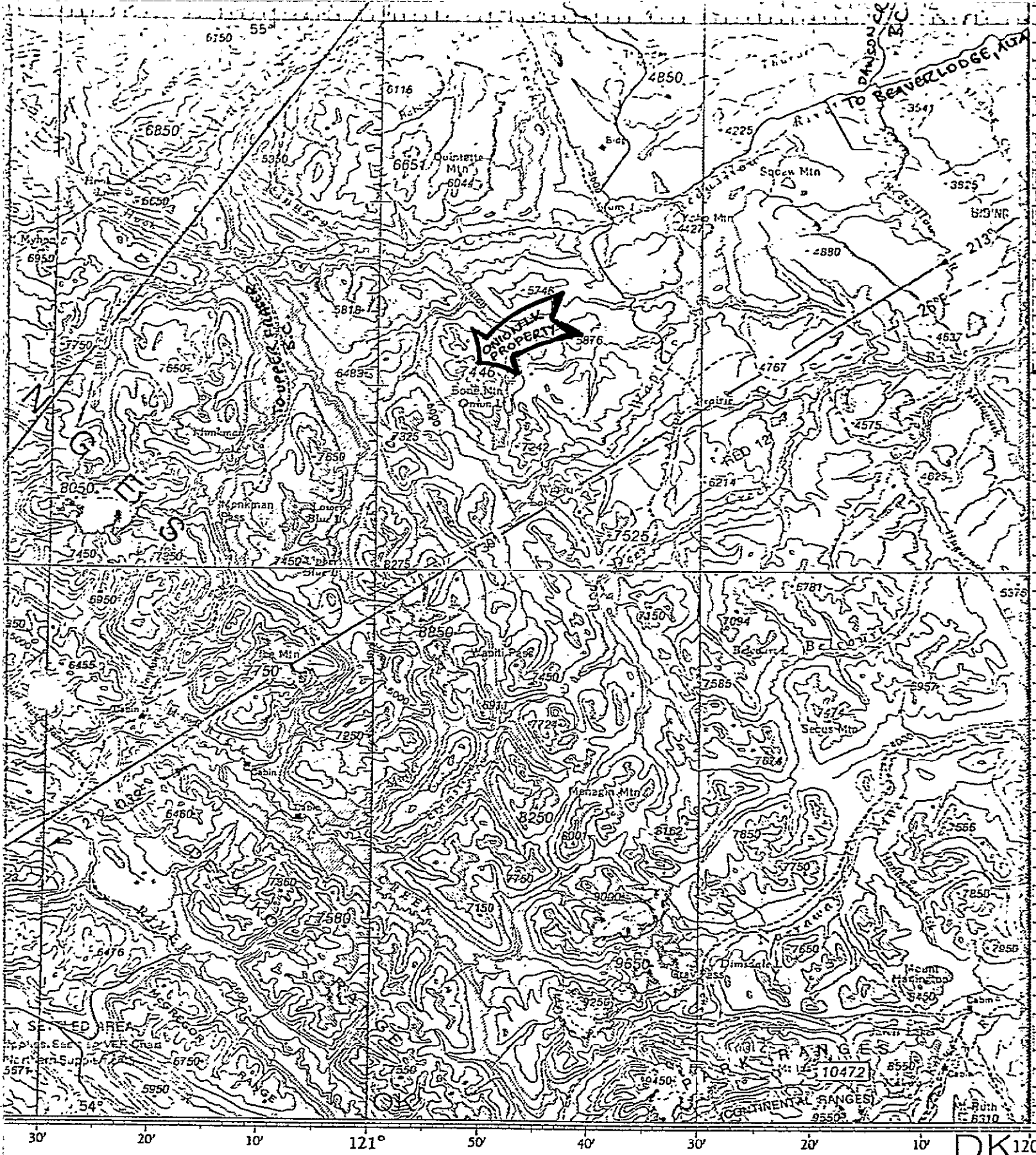
There are no roads or trails on the property itself. An old Pacific Petroleum's exploration road however, on the south reaches the property border from the Wapiti River. Access to the property was gained by means of helicopter during the 1979 exploration program.

The relief of the property varies from 1625 to 1250 metres. Most of the area is covered by spruce forest or wet meadows. There are also minor zones of alpine vegetation at higher altitudes.



Attachment 1

Location Map
 Union Lake (Wapiti) Coal Project
 Peace River Land District, B.C.
 Scale: 1:4,000,000 NTS 93-I-10-K
 November 16, 1979



ATTACHMENT 2

Access Map
 Onion Lake (Wapiti) Coal Project
 Peace River Land District, B.C.
 Scale: 1:500,000 NTS 93-I-10-K
 Crows Nest Resources Limited
 November 16, 1979

DK 120

**CROWS NEST RESOURCES LIMITED
EXPLORATION**

**B. C. COAL LICENCES
TENURE STANDING**

BLOCK: ONION LAKE (WAPITI) **PROJECT:** YEAR: 79-80
GROUP: NEW NOT GROUPED ONION LAKE (WAPITI) **DATE:** OCT 26 79

PROJECT			BLOCK			GROUP			LICENCE			ACQ/ADM		RENTALS		REQUIREMENT WORK					BUDGET		EXP	POTL	COMMITMENTS. J. V.	REMARKS	
NAME	LICS TOTAL NO.	AREA TOTAL AB/HA	NAME	LIC. TOTAL NO.	AREA TOTAL AB/HA	NO.	LICS TOTAL NO.	AREA TOTAL AB/HA	YEAR	NO.	LEGAL DESCRIPTION	AREA TOTAL AB/HA	FEES YEAR	ANNUAL	TOTAL TO DATE AND B103	EXPIRED B103	CURRENT YEAR	PRE-FULFILMENT YEAR	ANNIVERSARY DATE	CURRENT YEAR AFE	TOTAL B103	TOTAL B103	SHELL CLASS.	OTHER THAN B.C. GOVT DESCRIPTION			
ONION LAKE (WAPITI)	4	1125	ONION LAKE (WAPITI)	4	1125								78	40	5675	8	8	2	14063	-	-	AUG 17	4931 G	10	17	Y	ONE LAND MAP SHEET 1978-79 WORK REQUIRED \$8438 WORK FILED: \$8074 PAID CASH IN LIEU OF WORK \$424
											NTS. 93-1-10 RXX UNITS																
										4220	25, 26, 35, 36	300															
										4221	27, 28, 37, 38	300															
										4222	47, 48, 58	225															
										4223	49, 50, 59, 60	300															
ONION LAKE (WAPITI)	1	300	ONION LAKE (WAPITI)	1	300					4749	NTS. 93-1-10 RXX UNITS 5, 6, 15, 16	300	79	10	1500	1500	-	1	2250	-	-	APR 18	4931 G	NCL.	"	Y	CL. 4749 IS HANDLED SEPARATELY TILL ITS RES ANNIVERSARY

GENERAL REMARKS: FILL NECESSARY LINES AND COLUMNS ONLY; COAL DEVELOPMENT POTENTIAL IS "Y" (PRIME) UNLESS OTHERWISE STATED. LICENCES HELD BY SHELL CANADA RESOURCES LTD. CNRL IS THE OPERATOR.

3 THE 1979 EXPLORATION PROGRAM

The 1979 exploration program for the Wapiti (Onion Lake) property consisted of geologic mapping with the objective of confirming the stratigraphy and the presence of coal-bearing strata.

The mapping program was undertaken during the month of August from Chetwynd, B.C., and access to the property was provided by helicopters contracted from Maple Leaf Helicopters Ltd. The results of the field mapping were compiled on aerial photographs and an uncontrolled topographic map supplied by R.M. Hardy and Associates Ltd. of Calgary. The base map is currently being upgraded and expanded.

The results are temporarily presented in this report in two aerial photographs (Attachments 8, 9) and on a Regional Geological Map (Attachment 7) which is also an index to the photographs.

4 GEOLOGY

The Wapiti (Onion Lake) property includes Lower Cretaceous sediments of the Minnes Group to Commotion Formation (Attachment 6). The Paleozoic strata of the Rocky Mountains have been faulted over the Lower Cretaceous units along the southwestern edge of the property.

4.1 STRATIGRAPHY OF THE LOWER CRETACEOUS FORMATIONS

The oldest Mesozoic sediments on the property are the sandstones, siltstones, and mudstones of the Minnes Group, which are exposed in the core of the anticline along the northeastern edge of the licences. The Minnes Group strata are unconformably overlain by the Cadomin and Gething Formations of the Bullhead Group.

The extreme thickness and coarsely conglomeratic nature of the Cadomin and Gething formations in the Onion Lake area strongly reflect the presence of a major channel system which existed in this area at the time of their deposition (J.R. MacLean, 1977, Bull. Can. Soc. Petrol. Geol. V. 25, no. 4).

The Cadomin Formation is a series of conglomerate lense beds, consisting of chert and quartzite pebbles and cobbles with a quartzose sandstone matrix. This unit is unusually thick and coarse in the Onion Lake area.

The unit mapped as Gething Formation is also predominately conglomeratic, consisting of Cadomin-like cobble conglomerate, with minor thin beds of finer grained clastic and carbonaceous sediments. The first appearance of fine grained sediments was chosen as the base of the Gething Formation for the purpose of mapping. Mapping problems generated by the interfingering relationships between these two formations indicate that a more consistent mapping unit for this area is the Bullhead Group as a whole. This stratigraphic problem, however, should perhaps be considered in terms of an interfingering of a Cadomin conglomerate facies with a finer grained Gething facies, which should be mapped together as Bullhead Group.

The Moosebar Formation is believed to conformably overlies the Bullhead Group. This marine unit consists of dark gray mudstones and siltstones. These soft sediments are recessive and poorly exposed on the property, but the Moosebar Formation appears to be quite thin in this area. The Moosebar Formation is conformably overlain by the nonmarine sediments of the Commotion Formation.

The lower portion of the Commotion Formation is the most attractive coal-bearing horizon in this portion of the Foothills coal field. The presence of Commotion Formation strata in the central areas of the Onion Lake property was firmly established by outcrops of the massive basal sandstone unit lying above the Moosebar Formation. The remainder of the Commotion Formation, however, is very poorly exposed due to heavy vegetation and glacial till cover. As a result, the Commotion Formation has not been subdivided into the Gates, Hulcross, and Boulder Creek Members on the geologic map, and little information is available at

ONION LAKE PROPERTY
TABLE OF FORMATIONS

PERIOD	GROUP	FORMATION	ESTIMATED THICKNESS
LOWER CRETACEOUS	FORT SAINT JOHN	Commotion	Sandstone, conglomerate, siltstone, mudstone, and coal seams; predominately nonmarine 200 m
		Moosebar	Dark gray marine mudstone and siltstones, becoming sandy in upper portion near gradational contact with Commotion Formation. 40 m
	BULLHEAD	Gething	Chert and quartzite cobble conglomerate with quartzose sandstone matrix; minor thin beds of sandstone, siltstone, and carbonaceous mudstone. 80 m
		Cadomin	Massive chert and quartzite cobble conglomerate with quartzose sandstone matrix. 150 m
	UNCONFORMITY		
	MINNES		Nonmarine sandstone, siltstone, and carbonaceous mudstone. > 1,000 m

present concerning the coal seams. It is important to note, however, that attractive seams of metallurgical coal are known to exist along strike on properties immediately to the northwest and southeast, which provides a strong indication that these seams are also present on the Wapiti (Onion Lake) property.

4.2 GEOLOGIC STRUCTURE

The Wapiti (Onion Lake) coal licences are located to cover a portion of the Onion Syncline. This syncline plunges both northwest and southeast from the centre of the property. Bullhead Group strata are the youngest sediments that have been preserved in this portion of the syncline. The coal-bearing Commotion Formation strata occur in subcrop in the northwestern and southeastern portions of the syncline.

A large anticline lies northeast of the Onion Syncline and trends parallel to it along the northeastern edge of the property. Paleozoic marine sediments lie along the southwestern limb of the Onion Syncline and are separated from it by a major thrust fault.

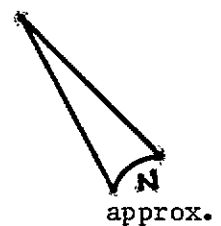


Photogeology and Reconnaissance Field Geological Mapping
by W. Drew by Georgia Hoffman August, 1979

Attachment 8 : Photograph No. 1 of 2
Scale approx. 1:25,000
Approximate extent of the photographs is shown
on Attachment : Regional Geological Map

Crows Nest Resources Limited
November 16, 1979

Onion Lake (Wapiti) Coal Project
Peace River Land District, B.C.
NTS. 93-I-10-K





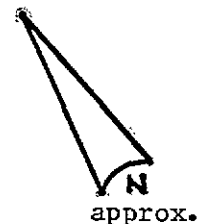
8075594 LI-394

Photogeology and Reconnaissance Field Geological Mapping
by W. Drew by Georgia Hoffman August, 1979

Attachment 9 : Photograph No. 2 of 2
Scale approx. 1:25,000
Approximate extent of the photographs is shown
on Attachment : Regional Geological Map

Crows Nest Resources Limited
November 16, 1979

Onion Lake (Wapiti) Coal Project
Peace River Land District, B.C.
NTS. 93-I-10-K



5 CONCLUSION

The presence of Commotion Formation strata has been confirmed by geological mapping on the Wapiti (Onion Lake) property, and the presence of coal seams in this formation on adjacent properties strongly indicates that such seams are also present on the Wapiti (Onion Lake) licences. The portions of this property which are underlain by Commotion Formation strata are largely covered by vegetation and glacial till, however, and a program of helicopter-supported diamond drilling will be required to establish the number of seams present and their thicknesses, as well as to provide coal quality data.



DEPARTMENT OF MINES AND PETROLEUM RESOURCES

Coal Act (Sec. 19)

APPLICATION TO EXTEND TERM OF LICENCE

1. I, GLENN C. PROUDFOOT agent for SINEX CANADA RESOURCES LTD
(Name) (Name)
400 FOURTH AVENUE SW.
(Address) (Address)
CALGARY, ALBERTA T2P 0J4 (Address)

Valid FMC No. 171 929

hereby apply to the Minister to extend the term of Coal Licences No(s) 4220 to 4223 inclusive
FOUR LICENCES CALLED UNION LAKE (FORMERLY WAPITI) COAL PROSPECT
for a further period of one year. PEACE RIVER LAND DISTRICT

2. I have performed, or caused to be performed, during the period AUGUST 17, 1978 to
AUGUST 16, 1979, work to the value of at least \$ 2,014
on the location of coal licences as follows:

CATEGORY OF WORK

	Licence No(s)	Apportioned Cost
Geological mapping - - - -	<u>4220 to 4223 incl.</u>	<u>\$ 4981</u>
Surveys: Geophysical - - - -	-	-
Geochemical - - - -	-	-
Other <u>Geometric</u> - - - -	<u>4220 to 4223 incl.</u>	<u>\$ 2,133</u>
Road construction - - - -	-	-
Surface work - - - -	-	-
Underground work - - - -	-	-
Drilling - - - -	-	-
Logging, sampling, and testing - - - -	-	-
Reclamation - - - -	-	-
Other work (specify) <u>Report</u> - - - -	<u>4220 to 4223 incl.</u>	<u>\$ 900</u>

3. I wish to apply \$ 2,014 of this value of work on Coal Licence(s) 4220 to 4223 inclusive

4. I wish to pay cash in lieu of work in the amount of \$ 424 on Coal Licence(s) 4220 to 4223 inclusive

5. I wish to apply \$ _____ of this value of work to claim a refund of cash in lieu of work in the amount of \$ _____ which was paid to extend the term of Coal Licence(s) No(s) _____ from _____

to _____, 19____ Mining Receipt No. _____ for prior payment of cash in lieu of work is attached for adjustment.

6. The work performed on the location(s) is detailed in the attached report entitled Report will be submitted in ninety days

AUGUST 16, 1979
(Date)

[Signature]
(Signature and position)
LANDMAN

* Applications to group licences may be filed to apportion costs on a maximum of 10 licences.

(FORMS TO BE SUBMITTED IN DUPLICATE)

FOR DEPARTMENTAL USE ONLY

Value of work reported \$ _____ Value of work applied on licences \$ _____
Value of work approved \$ _____ Value of credit remaining \$ _____

Work performed. Yes No

The program of operations detailed hereunder was carried out during the period from August 17, 1978
 to August 16, 1979. Total costs are \$ 8,014, an average
 of \$ 2.89 per acre (\$7.12 per hectare) 2,774 acres ~ 1,125 hectares

GEOLOGICAL MAPPING Yes No Cost \$ 4,481
 Area (Acres) 3000 ac ~ 1,200 ha Scale 1:5,000 Time approx 8 man-years
 Reconnaissance _____
 Detail: Surface _____
 Underground _____
 Other (specify) _____

GEOPHYSICAL OR GEOCHEMICAL SURVEYS Yes No Cost \$ _____
 Method _____ Line miles _____

OTHER SURVEYS Yes No Cost \$ 2,133
 GEODETIC _____ Topographic photogrammetric mapping Other photometric
 Grid _____

ROAD CONSTRUCTION Yes No Cost \$ NIL
 Length: On Licences _____ Access (off licences) _____

SURFACE WORK Yes No Cost \$ NIL
 Length _____ Licence Number(s) _____
 Trenching _____
 Seam tracing _____
 Crosscutting _____
 Other _____

UNDERGROUND WORK Yes No Cost \$ NIL
 Test adits: Number _____ Average length _____ Total footage _____
 Other workings: Area _____ Total footage _____

DRILLING Yes No Cost \$ NIL
 Hole Size _____ Number of Holes _____ Total Footage _____
 Core: Diamond Wireline _____
 Rotary: Conventional _____
 Reverse circulation _____
 Other _____
 Contractor _____ Where core stored _____

LOGGING, SAMPLING, AND TESTING (check) Yes No Cost \$ _____
 Lithology: Drill samples Core samples Bulk samples
 Logs: Gamma-Neutron Density Other
 Testing: Prox. analysis FSI Washability
 Carbonization Petrographic Plasticity Other

OTHER WORK (specify details) preparation of Geol. Report Cost \$ 900 (est)

REPORTS:
 Reclamation work (Permit No. _____) Detail of work* _____
Geological Report. Cost \$ 900 (est)

OPERATIONS:
 Work was supervised by F. MARTONHEGYI Position STAFF GEOLOGIST
 Is this person a registered or licensed Professional Engineer in British Columbia? Yes No

NOTE—Where the licensee intends to perform, during the extended term of his licence, work not set out in the plan of operations filed under section 15 (2) (c), a supplemental plan of operations is to be attached.

* If reclamation work reported in separate report give details of report identification.

VALUATION OF WORK: COST STATEMENT
(Sec. 27, B.C. Reg. 436/75)

ON-PROPERTY COSTS: For period from AUGUST 17, 1978 to AUGUST 16, 1979

1. OPERATOR'S FEES, SALARIES, AND WAGES:

	Average Number of Employees	Average Rate	Average Number of Days	Amount
Professional and technical	1	125	4	500
Machine operators and support				
Miners				
Other				
Total operator's costs \$				500

2. CONTRACTORS AND CONSULTANTS:

Name	Service	Contract Amount
P. D'SOUZA CONSULTANTS & HOLDINGS LTD	GEOLOGICAL CONSULTING	300
G. HOFFMAN CONSULTING LTD.	GEOLOGICAL CONSULTING	862
Total contractor and consultant costs \$		1,162

3. EQUIPMENT AND INSTRUMENTS USED: Owned _____ Rented _____

Type	Rented From	Amount
Total equipment and instrument rentals \$		NIL

4. FIELD CAMP COSTS:

	Amount	
Food	320	
Accommodation		
Fuel	100	
Other		
Total field camp costs \$		420

5. SAMPLING, ANALYSIS, AND TESTING:

Service	Performed by	Amount
Totals, samplings, analysis, and testing \$		NIL

6. SUPPLIES AND MATERIALS COSTS:

	Amount	
Process supplies		
Operating and maintenance supplies		
Office and technical supplies		
Other supplies and materials		
Total, supplies and materials \$		NIL

7. TRANSPORTATION COSTS (Ground transportation details):

Vehicles	Other	Annual Rate	Amount
one truck	Rentrite	\$1,500/month	375

Air support details:

Aircraft Type	Owner	Charter
HELICOPTER 206 B	MAPLE LEAF HELICOPTERS	1,411

Total transportation costs \$ 1,786

8. RECLAMATION WORK:

\$ Nil

9. TRAVEL EXPENDITURES (operator's costs only):

Number of Personnel	Number of Trips	Amount
4	4	700

Total travel expenditures \$ 700
Total costs \$ 4,068

(Secs. 28 and 29, B.C. Reg. 436/75)

OFF-PROPERTY COSTS: Period from August 17, 1978 to August 16, 1979

- | | Amount |
|---|--------|
| (a) Logistics and field support PROSPECT EVALUATION WORK | \$ 913 |
| (b) Technical and feasibility studies (SPRINT & ASSOC) | 700 |
| (c) Preparation of reports ESTIMATED TOTAL COST \$250 to date | 2,133 |
| (d) Supplies and services PREPARATION OF PROSPECT SAMPLING TARGET ZONE MAP AND DISTANCE Mosaic FROM EXISTING PHOTOGRAPHS (R.M. HARRY'S ASSET) | |
| (e) Mobilization and demobilization of equipment | |
| (f) Travelling expenses (Items) | |

Supporting Cost Statements Attached Total \$ 3,746

Total supporting costs \$

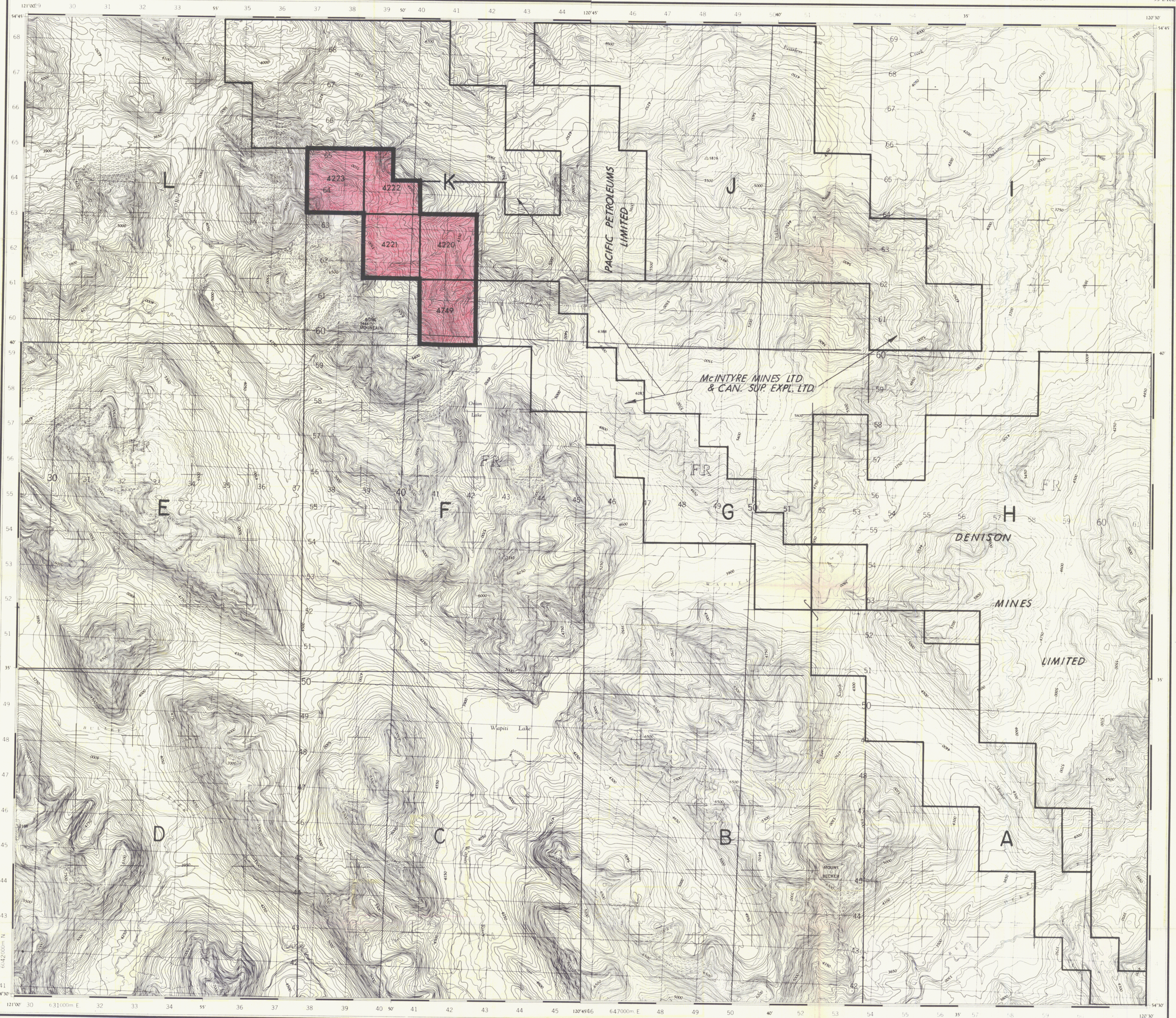
SUMMARY

On-property costs	\$ 4,068
Off-property costs	\$ 3,746
Total costs	\$ 8,014

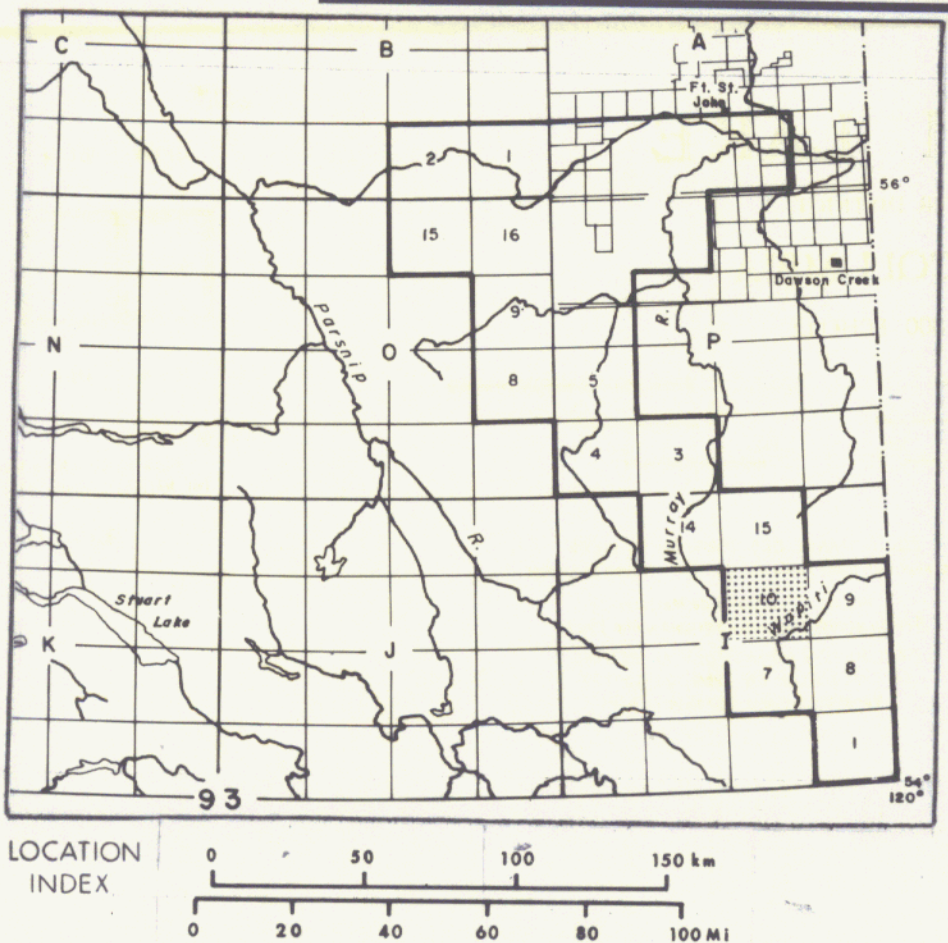
Statement of costs verified by

Aug 17/79
(Date)

M. J. Kamel
(Signature and position)
Chief Accountant



184.53
184.57
184.60
184.64
184.68
184.72
184.76
184.80
184.83
184.87
184.91
184.95
184.98
185.02
185.05
185.09
185.13
185.17
185.21
185.25
185.28
185.32
185.36
185.40
185.43
185.47
185.51
185.55
185.59
185.63



WAPITI LAKE
PEACE RIVER DISTRICT
BRITISH COLUMBIA
SCALE 1:50,000 ÉCHELLE

CONTOUR INTERVAL 50 FEET
Elevations in Feet above Mean Sea Level
Transverse Mercator Projection
North American Datum 1927
MAGNETIC DECLINATION 25°42' EAST
AT CENTRE OF MAP 1965
Annual change decreasing 4.0'

ÉQUIDISTANCE DES COURBES 50 PIEDS
Élévations en pieds au-dessus du niveau moyen de la mer
Projection transverse de Mercator
Réseau géodésique nord-américain unifié 1927
DÉCLINAISON MAGNÉTIQUE AU CENTRE
DE LA FEUILLE EN 1965: 25°42' EST
Variation annuelle décroissante 4.0'

93 1/10W	93 1/10E	93 1/10W
93 1/10W	93 1/10E	93 1/10W
93 1/10W	93 1/10E	93 1/10W

INDEX TO ADJOINING MAPS OF THE NATIONAL TOPOGRAPHIC SYSTEM
93 1/10

Crows Nest Resources Limited
EXPLORATION

WAPITI LAKE
NORTHEASTERN B.C.
PEACE RIVER LAND DISTRICT

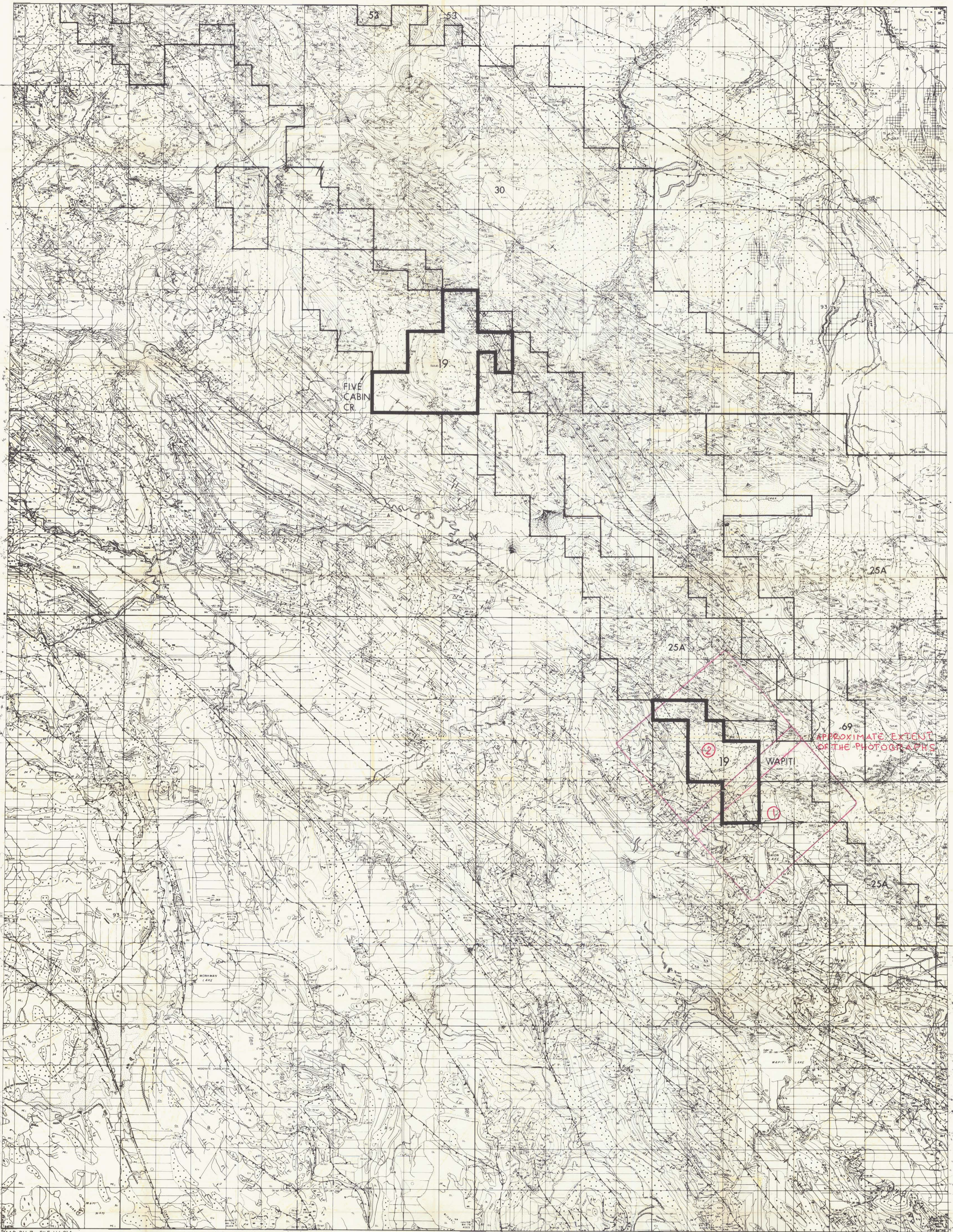
COAL LAND DISPOSITION MAP

SHELL - CNRL LICENCES - ONION LAKE (WAPITI)
NTS 93-1-10 BLK K
MAP 1 OF 1
PR-ONION LAKE 79(2)A NTS 93 1/10

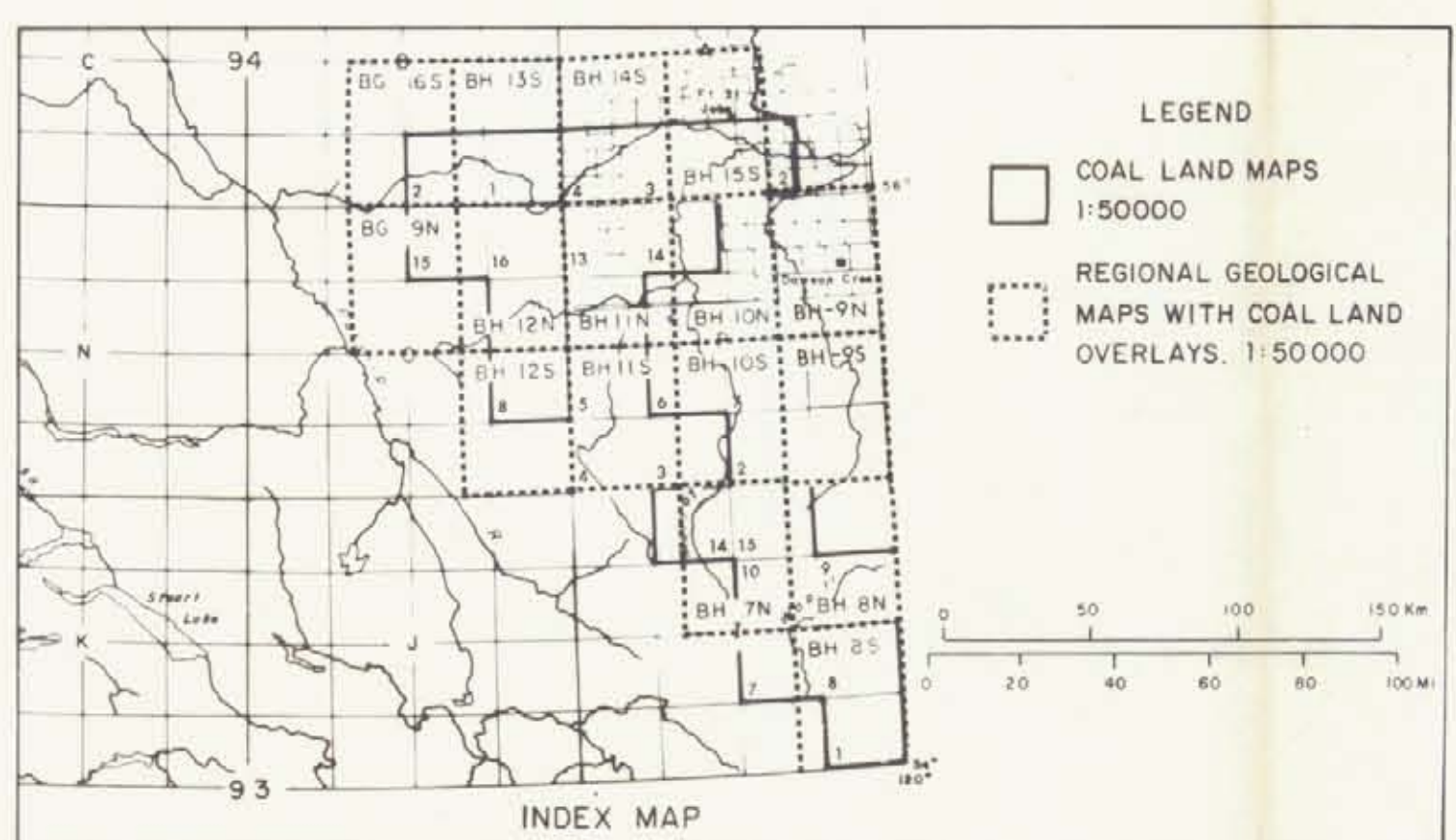
AUTHOR: OLSON-MARTONHEGYI	SCALE: 1:50,000	ENCLOSURE No:
DATE: FEB. 1979	REVISED:	DRAWING No: HC-18B

To Accompany

563



MAP BH-7n, FILE HJ-21A

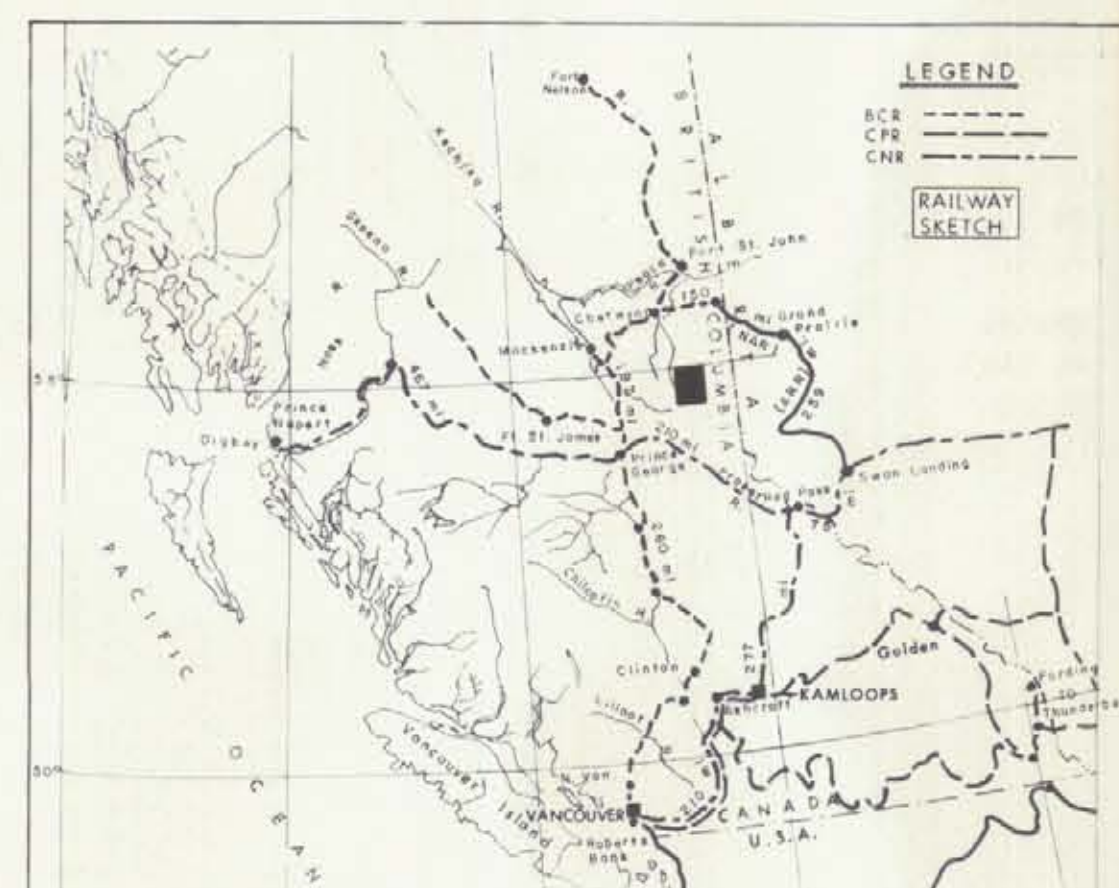


LEGEND

19	SHARPER EXPLORATIONS LTD. (MANALITA COAL LTD.)	448	BP EXPLORATION CANADA LIMITED (BP CANADA LIMITED AND BP CANADIAN HOLDINGS LTD.) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
20	SHELL CANADA RESOURCES LIMITED - CROWS NEST RESOURCES LIMITED OPERATOR	449	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
21	BRAMDA RESOURCES LTD.	450	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
22	BRAMDA RESOURCES LTD. AND/OR DENISON MINES LTD.	451	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
23A	BRAMDA RESOURCES LTD. (OPTIONED TO RANGER OIL CANADA LIMITED) (OIL CARBIDE INTEREST TO BRAMDA RESOURCES LTD.) (RANGER OIL PROPERTY AND RANGER OIL CANADA LIMITED)	452	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
24	BRAMDA RESOURCES LTD. & TECK CORPORATION LTD.	453	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
25	MONTYRE MINES LIMITED	454	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
25A	MONTYRE MINES LIMITED - BRAMDA RESOURCES LTD. (OPTIONED TO PACIFIC PROLEUMS LTD.)	455	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
26	CINABAR PAK MINES LTD.	456	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
28	UTAH MINES LTD. - BP PROPERTY	457	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
29	BRAMDA COAL LIMITED (DENISON COAL LTD. - 80% GULF OIL CANADA LIMITED - 20%)	458	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
30	QUARTER COAL LIMITED (DENISON COAL LTD. - 38% WITH PARTNERS MITSUBISHI MINING CO. LTD. - 22% TOKYO MITSUBISHI MINING CO. LTD. - 20% AND IMPERIAL OIL LIMITED - 10%)	459	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
31	BAKON COAL LIMITED (DENISON COAL LTD. WITH PARTNERS HURON OIL & GAS LTD. AND CO. LTD. UNION MINIER (SOCIETE EN PARTENARIAT) DU NORD ET DE L'EST SA (LA FRANCE))	460	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
33	DENISON COAL LIMITED (DENISON COAL LTD.)	461	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)

LEGEND

462	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
463	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
464	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
465	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
466	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
467	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
468	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
469	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
470	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
471	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
472	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
473	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
474	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
475	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
476	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
477	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
478	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
479	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
480	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
481	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
482	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
483	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
484	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
485	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
486	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
487	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
488	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
489	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
490	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
491	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
492	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
493	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
494	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
495	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
496	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
497	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
498	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
499	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)
500	BP EXPLORATION CANADA LIMITED (SHELL CANADA LIMITED) (UTAH COAL MEASURES - BRAMDA RESOURCES LTD.)



SHOWING ALSO THE APPROXIMATE EXTENT OF THE PHOTOGRAPHS (PHOTO GEOLOGY AND RECONNAISSANCE FIELD GEOLOGICAL MAPPING)

Crows Nest Resources Limited
EXPLORATION

N.E. BRITISH COLUMBIA

REGIONAL GEOLOGICAL MAPS WITH COAL LAND OVERLAYS

BH-7N

SHELL-CNSL PROJECTS
NORTH-FIVE CABIN CR. (SEE DRAWING 79(2)) NTS 931/04/16 146 1500

AUTHOR: MARTONHEGYI	SCALE: 1:50 000	ENCLOSURE No.
DATE: MAY 1979	REVISED:	DRAWING No: HJ-21A

To Accompany