1983 REPORT OF EXPLORATION ACTIVITIES

ON THE BINGAY CREEK PROPERTY

Coal Licence Nos. 7299 and 7471

Located in
Kootenay Land District and Fort Steele Mining Division

National Topographic System
Designation 82 J/2 West

Centered on Lat. 50°14'N; Long. 114°58'W

Report By R.B. Anderson
Utah Mines Ltd.

Field Work Performed Between
May 30, 1983 and June 24, 1983

Report Submitted December 1983

TABLE OF CONTENTS

ILLUSTRATIONS

ABSTRACT

Utah Mines Ltd. of Vancouver has entered into an option agreement dated May 31, 1983 with Mr. William Shenfield on coal licences 7299 and 7471 with the intent of evaluating coal potential of the property and surrounding area as a possible source of metallurgical and/or thermal coal. (N.B. consent to the transfer has not been received as of the date of writing this report but the Honorable Mr. Stephen Rogers is expected to sign in the near future).

In order to complete a preliminary assessment of the property potential, a mapping program was undertaken in May and June 1983 with the purpose of measuring and tracing all coal seams on the property. Test pits dug by hand in the period 1903 through 1911*, were located and greatly assisted in the location of previously undocumented coal seams.

The program, presented in this report provided valuable data regarding the property geology, structure and coal seams present. Although eight (8) discrete coal seams were mapped surface samples were not taken for analysis owing to the obvious oxidized nature of the coal.

As a result of this program a decision to advance to the next phase of exploration, namely preliminary core drilling was approved and should commence later this fall.

* Fernie Free Press reports

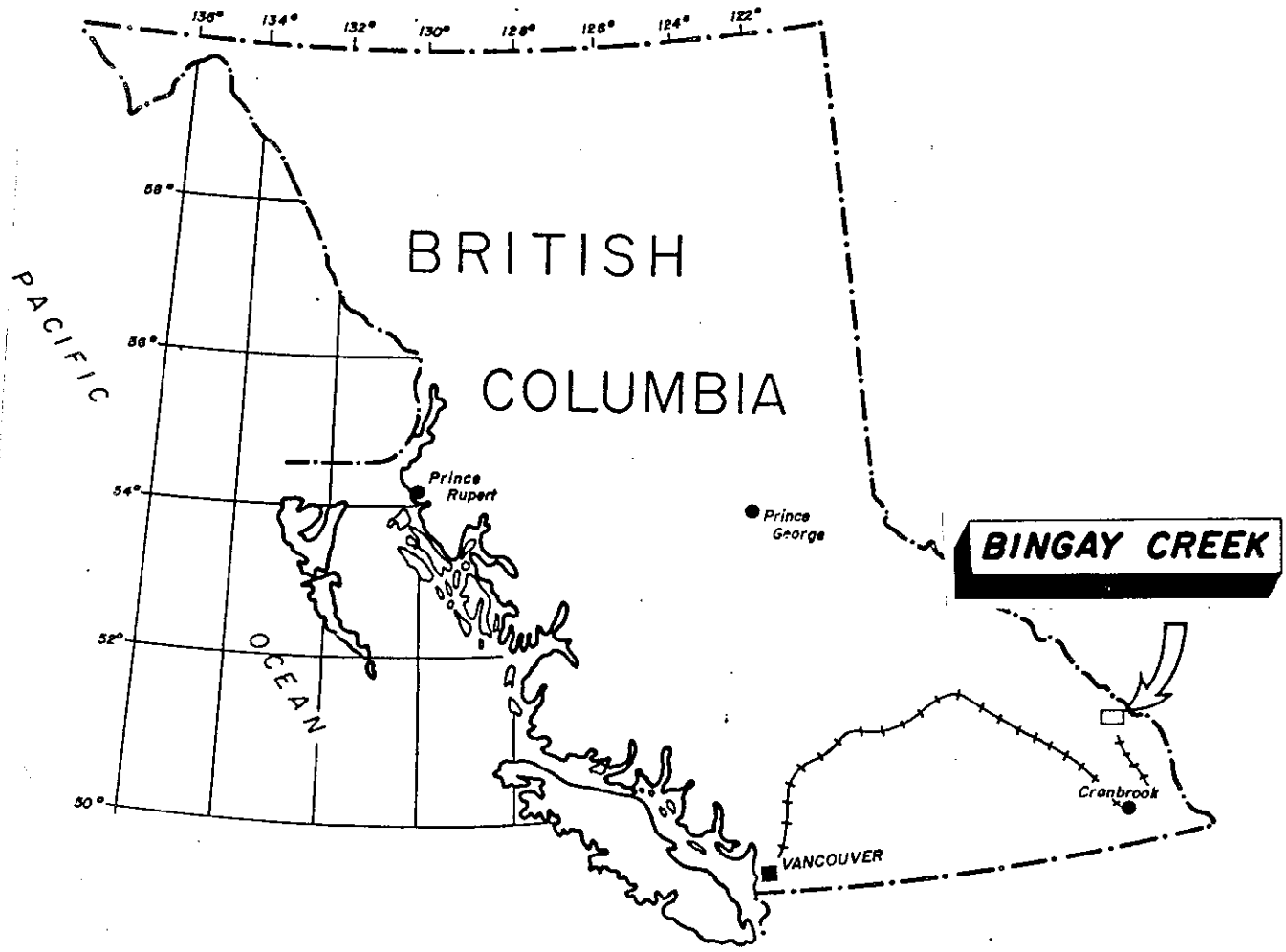

DIAGRAM – 1

LOCATION MAP

PROPERTY AND TITLE

At the time of writing (October 20, 1983) the property, held by Mr. William Shenfield of Fernie, B.C., awaits transfer to the name of Utah Mines Ltd. via an agreement between the two parties dated May 30, 1983. As the transfer has not received Ministerial consent this geologic report will be submitted for credit on the behalf of Mr. Shenfield.

Licence number 7299 was granted on January 2, 1982 and licence 7471 was granted on September 30, 1982.

LOCATION, ACCESS AND DESCRIPTION OF THE PROPERTY

The Bingay Creek Coal licences, numbers 7299 and 7471 are located in the Elk Valley coalfield of Southeastern British Columbia and cover district lots 9478 and 9480, an area of 518 hectares. The town of Elkford is located 20 km. south of the property in the Elk Valley and two operating coal mines, the Fording and Greenhills Mines, are located 8 km. east and 10 km. southeast respectively.

The property is accessed by an all weather forest access road from Elkford, a distance of approximately 21 km. to the south.

A proposed rail road right-of-way connecting Sparwood with the Elco coal property 30 km. further north lies adjacent to the property and the Kootenay Power Co. transmission line servicing the local towns and mines passes immediately east of the property boundary.

TOPOGRAPHY AND RELIEF

The property lies within the lower levels of the Elk Valley with elevations varying from 1390 to 1527 meters. The mountains confining the valley attain elevations of 2500 meters on the Greenhills, eastern valley margin and 3000 meters in the Front Ranges to the west.

The Elk River flows through the eastern edge of the property and Bingay Creek flows west to east across the southern limits of the property.

VEGETATION

The entire Bingay Creek property is densely covered by small "immature pine of no merchantable value" (Brian Cullen - Forest Ranger). Those trees that had commercial value were removed in 1980 by Elk Valley Forest Products from a large area both north and south of Bingay Creek, west of the Elk River.

PHYSIOGRAPHY

The upper Elk Valley belongs to the physiographic sub-province known as the Fernie Coal Basin. The basin's topography reflects structural and lithologic controls typical of soft, less resistant rocks found within the more regional Front Ranges province of the Rocky Mountain Physiographic region. The area is typified by the steep sided resistant thrust fault-produced Devonian limestone ranges that enclose younger softer Jurassic-Cretaceous rocks found in the valley bottoms.

The Elk Valley displays the broad open "U" shape typical of glaciated valleys and thick blankets of quaternary gravels terrace the valley at various levels further attesting to the glacial influences. The valley floors are generally underlain by soft Jurassic Fernie Shales that were less resistant to glacial action than the overlying sandstones of the Kootenay Formation displayed along the Greenhills Range immediately east of the Bingay Creek property.

EXPLORATION

History

The earliest known activity on the property was reported to have taken place in the early years of this century. The Fernie Free Press, in an article dated June 15, 1983, reports on activities that took place in the Upper Elk Valley from 1903 through 1911 during which various companies starting with the Elk River Coal and Oil Company, undertook surface work "on the west side of the Elk"..."south of the C.P.R. Syndicate work on Aldridge Creek.

"In 1910, another company, the Elk Valley Coal and Coke Company, emerged and, on June 10 of that year, the Free Press reported that 20 men were on the scene and "a diamond drill is being used for boring...the first...that has been taken up the Elk River". Evidence, in the form of hand tranches and coal spoil piles dating from this period are readily located.

Following this early work, the area was reportedly prospected by Cominco geologists in the late 1950's, but reports to this effect were not located and are assumed to be private.

In a report dated June 6, 1982, Stephen Gardner notes that "the property was held for a period of one year by Specific Natural Resources". No exploration was performed by this company but a report entitled "Preliminary Geological Report, Coal Licence No. 5176" was prepared by a Mr. John Jenks. This report, although not in the possession of the writer, is reported by Gardner to be on file with the Ministry of Energy, Mines and Petroleum Resources in Victoria. Gardner, however, failed to note the year that the property was held by Specific Natural Resources.

Subsequent to this activity, Mr. William Shenfield acquired the coal licences 7299 and 7471 in 1982 and undertook the opening of seams by hand trenching at three widely separated locations. Roads built in 1980 by Elk Valley Forest Products cut intervals of coal-bearing lithologies. These exposures enabled Mr. Shenfield to establish a workable correlation between surface exposures of coal and sediments. A stratigraphic interval whose lithologies changed upsection from Marine to Deltaic and correlate with the Fernie Group shale and the overlying Kootenay Group found elsewhere was established and thereby confirmed the potential of the area.

Gardner in June of 1982 reviewed available previous work at the request of Mr. Shenfield and produced a report entitled "A Geologic Overview of the Bingay Creek Coal Property, Elk River Valley". This report states that "at least three major coal zones are exposed" on

the flanks of the Bingay Creek structure and further that "preliminary observations suggest that the structure in the area may yield some surface recoverable coal reserves...".

Gardner was unable to produce a reserve potential but did suggest the possibility of a northerly extension to the structure "along the leading edge of a major thrust plane". The possibility of finding additional reserve potential led to Gardner recommending "more detailed geological investigations...in order to satisfactorily evaluate the in-situ coal resources and their mining potential".

1983 Mapping Program

Utah Mines Ltd. began its investigations of the Bingay Creek property by initiating in May 1983 a mapping program on the scale of 1:5,000 using a topographic base map produced by McElhanney on 10 metre contours. Twenty six days, including travel time from Vancouver, were spent by Utah Geologists, R.B. Anderson and Norm Duncan, on the property. Mapping was conducted on a daily basis from a base in Sparwood. A chain and compass closed loop control survey consisting of 105 stations was established using available roads and trails, an additional 202 surveyed stations were established over the course of the program in order to tie in surface geologic features. In the course of mapping a total of 38 hand dug pits and 12 hand trenches were located. The pit spoil piles were checked for coal spoil and when found an attempt using shovels was made to rejuvenate the pit and measure the coal seam.

The time available however did not allow for the complete rejuvenation of these old pits as it readily became apparent that most were either of such a depth or of such a scale (5m. deep x 5m. across) as to require mechanized equipment to uncover the in-situ seam.

Map number 1 shows the location of all coal pits found. These in total number 23 coal pits and 6 trenches. An additional 21 pits and trenches did not contain coal in the spoil, but instead the spoil tended to contain a large proportion of glacial till suggesting that bedrock may not have been reached.

Although found in 29 trenches and pits the coal was not sampled due to its obvious oxidized character.

Airphoto interpretations suggested a northward plunging synclinal style. Rock exposure, especially north of Bingay Creek, on coal licence 7299 afforded the accurate location and attitude of formational contacts. Coal pit locations when interpreted in conjunction with bedrock geometry confirmed the structural style and numerous coal seams.

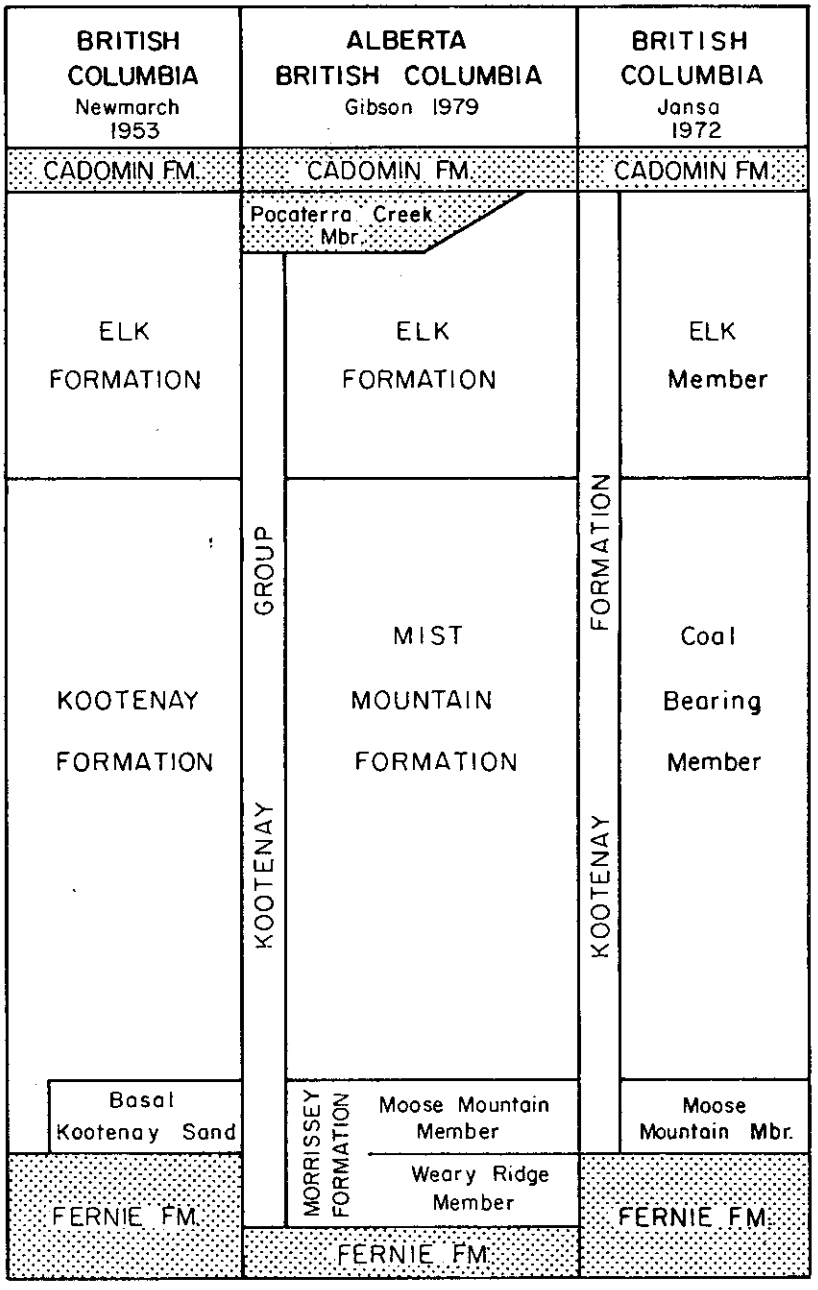

DIAGRAM – 2

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STRATIGRAPHIC COLUMN

NTS Ref. :	REVISIONS
Work by : R.B. Anderson	Work by :
Drawn by : T. Drews	Drawn by :
Date : Dec. 1983	Date :

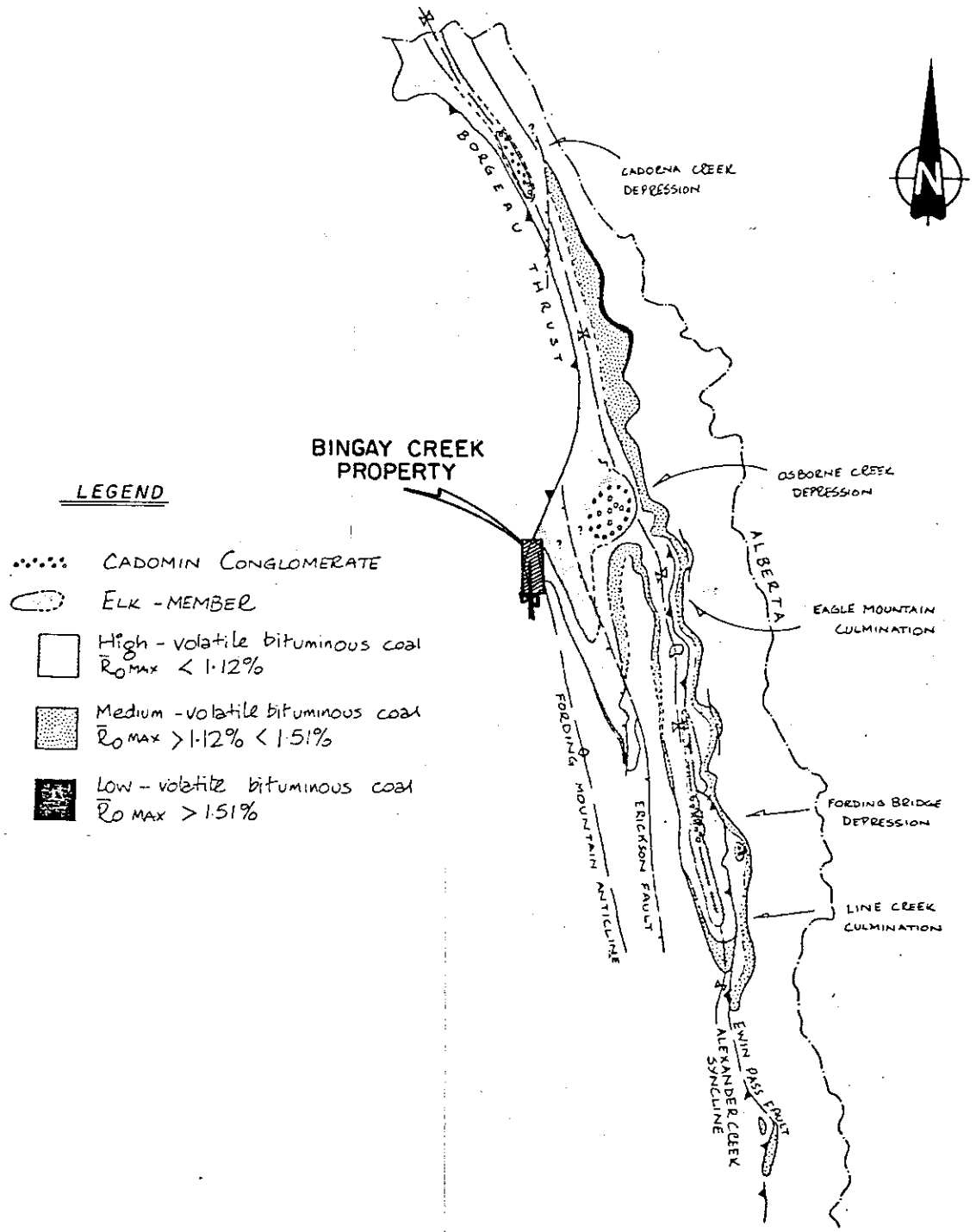

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DIAGRAM –3

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VANCOUVER, BRITISH COLUMBIA

BINGAY CREEK AREA

REGIONAL GEOLOGY
(Geology After Pearson & Grieve, 1979)

0 Kilometres 10

NTS Ref. :	REVISIONS
Work by : R.B. Anderson	Work by :
Drawn by : T. Drews	Drawn by :
Date : Dec. 1983	Date :

STRATIGRAPHY

Regional Stratigraphy

Bedrock stratigraphy representing three (3) main groups of Jurassic to Cretaceous age sediments are found widely distributed in the Elk Valley. For convenience the "middle Elk River Valley", geology will serve to represent the geology on a regional scale. This area is bounded by Weary Ridge on the north, the town of Elkford on the south, the Front Ranges on the west and the Greenhills Range on the east, an area of approximately 600 square kilometres.

The lithostratigraphic sediments and their included formations found in this area are represented by the Pre-Jurassic Spray River limestones, the Jurassic Fernie Group shales and the Jurassic-Cretaceous Kootenay Group coal-bearing sediments.

The oldest rocks in the area, the Spray River limestones are exposed along the west side of the area where the Bourgeau Thrust has emplaced the Spray River over younger rocks. The fault has been mapped along the entire length of the valley at the base of the Front Ranges.

'Passage' beds of the Upper Fernie Group represented by silty sandstones and sandstones deposited on a "storm-dominated shelf" (Hamblin and Walker) mark a change to a regressive stage of sedimentation in the area. These beds occupy the floor of Elk Valley and extend north only as far at Bingay Creek.

Kootenay Group Stratigraphy

Conformably overlying the Fernie 'passage' beds are a "nonmarine, interstratified sequence of dark grey to greyish brown weathering siltstone, sandstone, mudstone, shale, conglomerate and coal" (Gibson, 1977) belonging to the Kootenay Group.

Recent work by Gibson, 1979, produced the first significant change in nomenclature for this former "formation" since the early work of Newmarch (1953), Gibson has in ascending order recognized four main formational sub-divisions of the Kootenay Group; the Morrissey Formation sandstone, consisting of the Weary Ridge and Moose Mtn. Members, the coal-bearing Mist Mountain Formation and the capping sandstone-rich Elk Formation. Together these formations attain reported thicknesses of 1000m (3300 ft.) (Graham, 1977) in the Upper Elk Valley and a similar thickness of 1170m at Coal Creek (Newmarch) near Fernie.

a.) Morrissey Formation

Conformably overlying 'Passage bed' silty shales is the first of the Kootenay units, the Morrissey Formation. Formerly known as the "Basal Sandstone Units A and B" (Gibson, 1977), this formation consists of cliff-forming sandstones that mark the advent of non-marine depositional regimes. As described by Graham, the Morrissey is represented by a "thick, medium to light grey, very fine to medium grained quartzose sandstone". Cross-bedding, both "micro- to large-scale festoon and planar" (Gibson, 1977) as well as "trough" (Hamblin and Walker) is the major consistant sedimentary structure. Thicknesses vary from 20 metres at Line Creek to 39 metres at Weary Ridge.

Gibson has assigned both the recessive brown sandstones of the "Passage Beds" and the previously noted quartzose sandstones in to the Morrissey Formation.

Hamblin and Walker describe the Morrissey as being "salt and pepper", fine to medium grained and "moderately sorted", an observation consistant with that of the writer, when considering the Moose Mtn. Member only. However the underlying Weary Ridge Member is a lithic greywacke.

Gibson, citing others, supports the interpretation that the Morrissey "was deposited as part of a delta-front sheet sand, or as part of an elongate interdeltaic beach-barrier island system, similar to that found today along the Atlantic, Texas and Georgia coasts".

b.) Mist Mountain Formation

The "economically important" Mist Mountain formation, "comprises a thick succession of light to dark grey...interbedded siltstone, mudstone, sandstone and thin to thick seams of low- to high-volatile bituminous coal" (Gibson, 1977) deposited conformably upon the sheet wash Morrissey formation sandstone. The formation represents numerous upward fining sequences culminating in the accumulation of peat swamps which were ultimately covered and preserved.

The Mist Mountain formation is found to average about 500 metres in thickness at both Line Creek and at Fording River (Gibson and Grieve, 1979).

The more resistant sandstone facies observed within the Mist Mountain Formation on the west side of the Greenhills Range were generally lenticular, cross-bedded channel deposits. These sands were siliceous in nature and, like the sandstone Morrissey formation,

weathered out as cliff-formers. Generally, these channel sandstones had an observed thickness up to ten (10) metres and appeared persistant over a length of up to 0.5 km in cross-section. These channel deposits, owing to their lenticularity "generally cannot be used for correlation purposes on a regional or even a local basis" (Gibson, 1977).

Other finer grained, graded upward sandstone units typical of bay-fill type deposits were observed to grade laterally into finer grained facies.

Coal seams in the Mist Mountain Formation have been mined since the 1800's from both open cut and underground operations. Today one hydraulic underground and 4 open pit, single-or multiple seam, mines actively recover large volumes of coal from the Mist Mountain formation. More than 50 distanct seams are recorded by Graham ranging in thickness from 0.12m to 5.5m in his northern Elk Valley area and it is known that more than 15 seams in excess of 0.5m are reported from Fording operations.

The lowermost thick seam, the "No. 10" or "Balmer" seam is found throughout the area positioned very near the contact with the underlying Morrissey formation. In the past this has been the single most important of seams both in thickness (up to 20m) and rank (low volatile Bituminous metallurgical).

At the Greenhills operation of Fording 18 individual seams are mined to produce 3 metallurgical products varying in volatile content from low to high. "The coal seams generally increase in volatile matter from the bottom seam at 20% V.C.M. to 32% V.C.M. in the uppermost seam" (Gaspe) at Fording.

Although coal seams are randomly distributed throughout the Mist Mountain, the bottom half of the section generally appears to contain the better quality thicker seams as well as a bulk of the mineable reserves.

The Mist Mountain formation is a product of delta building processes and contains sedimentary features and relationships typical of "deltaic, interdeltaic and alluvial plain depositional environments" (Gibson). Hamblin and Walker suggest that plant material accumulated "in coastal swamps or on an alluvial plain", which doesn't explain obvious deltaic features and can only be considered to be a partial answer. In fact the Mist Mountain formation probably represents the seaward advance of numerous delta lobes into the then present Jura-Cretaceous seaway.

c.) Elk Formation

Conformable with and grading into the underlying coal-bearing Mist Mountain formation is a 300+ metre thick unit that marks the upper delta alluvial plain advance of the Kootenay delta systems called the Elk Formation. Grieve states that "strata of the Elk Formation are similar in most respects to those of the Mist Mountain formation, and further observes that "the presence of Elk coal, an alginite-rick cannel coal, is used to distinguish the Elk Formation from the Mist Mountain Formation.

Sedimentary structures such as festoon and planar crossbedded sandstones, the high sandstone to siltstone ratio and the presence of conglomeratic sandstones tend to suggest deposition in an alluvial plain environment.

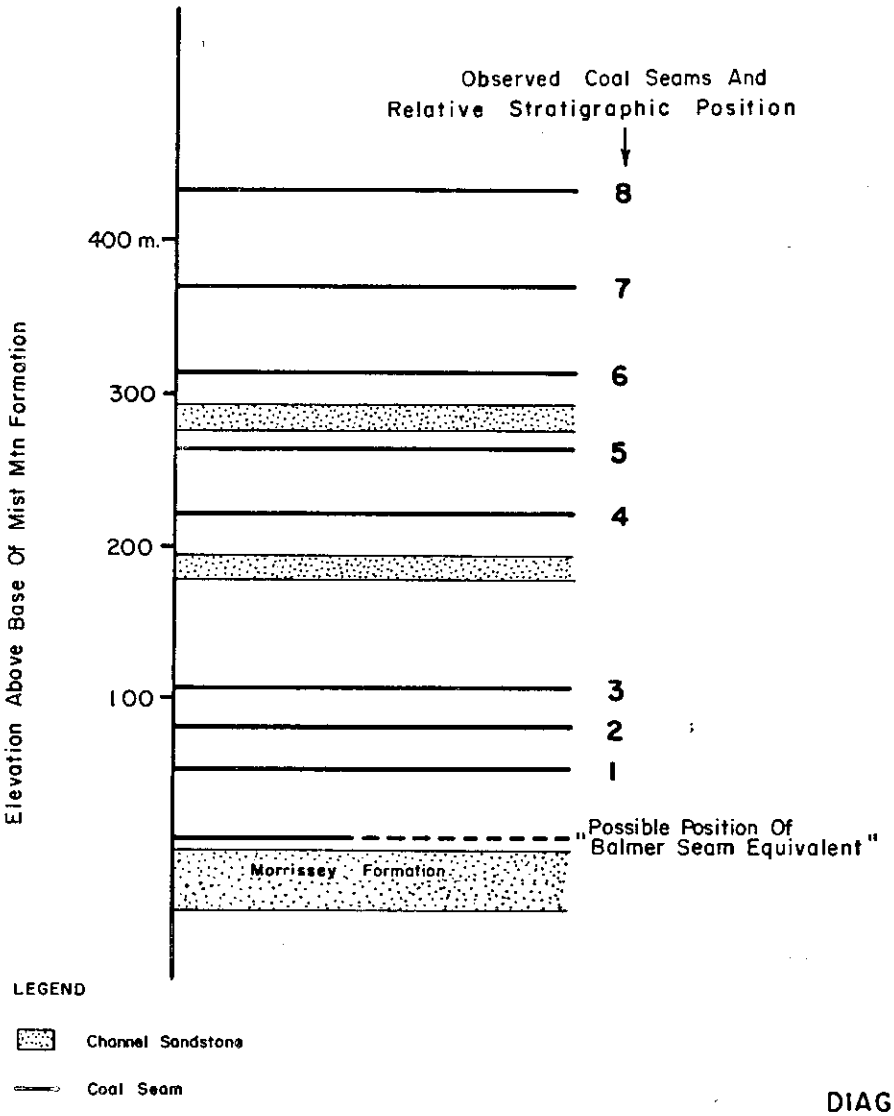

DIAGRAM - 4

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VANCOUVER, BRITISH COLUMBIA

BINGAY CREEK PROPERTY

MIST MTN. FORMATION
COAL SEAMS AND CHANNEL SANDSTONES

Vertical Scale – 1:5000

NTS Ref. : 82 / G	REVISIONS
Work by : R.B. Anderson	Work by :
Drawn by : T. Drews	Drawn by :
Date : Dec. 1983	Date :

LOCAL STRATIGRAPHY (Bingay Creek Property)

Stratigraphic lithofacies representative of the upper Fernie Group and lower Kootenay Group are found underlying the Bingay Creek Property.

"Passage beds" of the Fernie, now named the "Weary Ridge Member of the Morrissey Formation", consisting of soft, light greenish grey planar bedded sandstones and silty sandstones can be found outcropping both in Bingay Creek, 90m east of the Bingay Creek bridge and again from survey stations 4 through 6 on the east side of the access road immediately north of Bingay Creek (see Geology Map). Only one additional outcrop of "passage bed" sandstone was found. At survey station #337, on coal licence 7471, approximately 150m east of the Forestry Access Road a 'passage bed' outcrop of easily weathered dirty brownish grey planar bedded sandstone was found contacting the overlying resistant massive trough cross-bedded Moose Mtn. sandstone. At this location only did the two units marking the marine transition appear in contact, in this case by virtue of the fact that the resistant Moose Mtn. had preserved the underlying Weary Ridge 'Passage beds' from glacial influences.

The single most readily mappable continuous unit on the property is the Moose Mtn. Member sandstone. Its light colour, massive, resistant character and trough cross-bedding characterize this facies and distinguish it from sands of the overlying Mist Mountain formation. Sands of both units stand out in relief but the Moose Mtn. Member is everywhere harder, trough cross-bedded, more siliceous and consequently lighter grey in colour than Mist Mountain sandstone units.

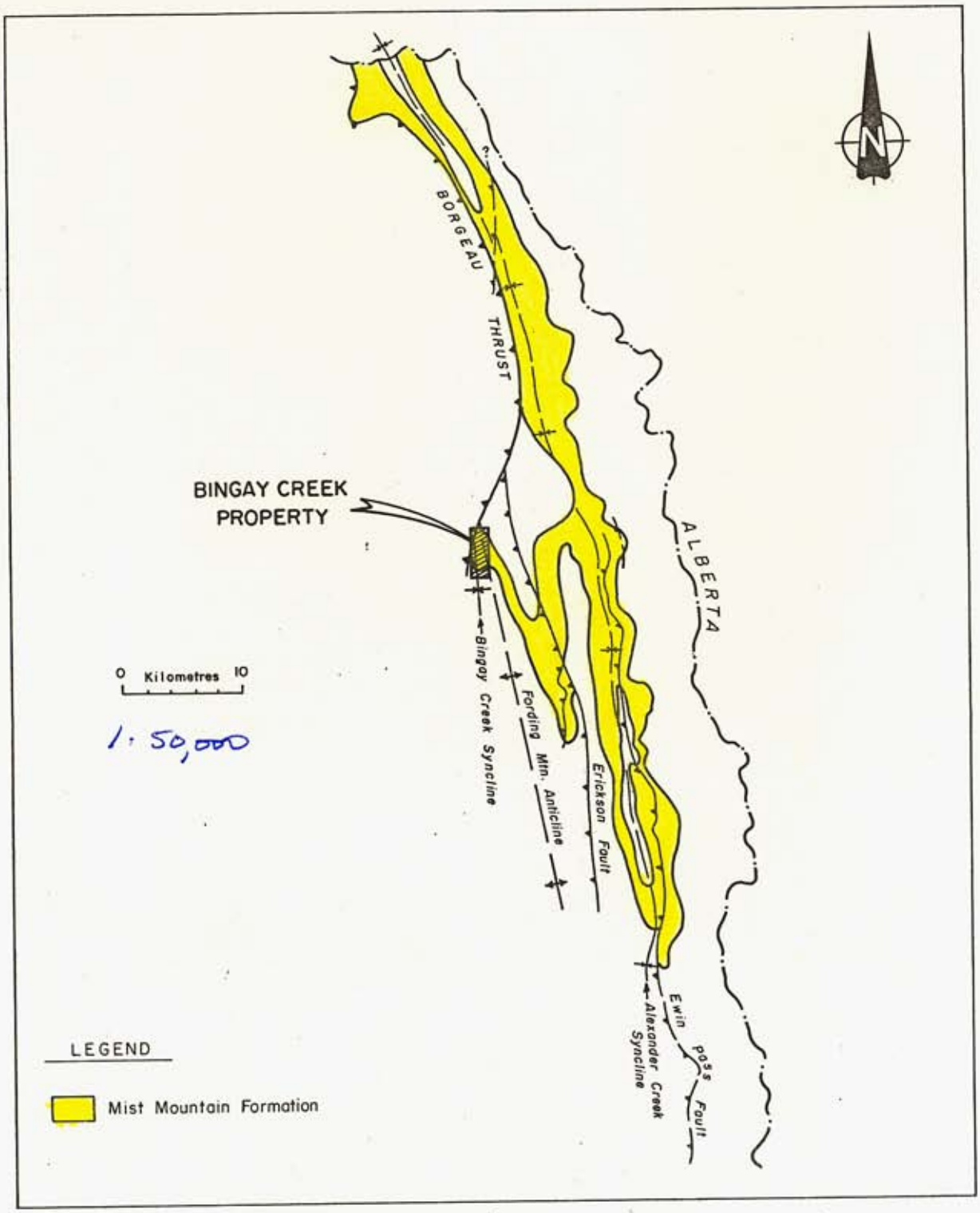
Numerous outcrops of Morrissey Formation, Weary Ridge and Moose Mtn. Member sandstones were exposed in the building of Bingay Creek Access Road by Elk Valley Forest Products. When plotted these outcrops define accurately the synclinal structure associated with the property.

Although a complete Morrissey section was not observed at any one location, the Morrissey appeared to measure an average 40 to 50m thick.

Conformably overlying the basal Morrissey were facies of interbedded mudstone, siltstone, sandstones and coal of the Mist Mountain formation. Outcrop exposure was limited to the leading and trailing edges of "Bingay Hill" which appears like an island in the surrounding thick glacial gravel deposits common to the floor of the Elk Valley.

A total of 435 metres of Mist Mountain formation sediment have been measured on this hill from the top of the Morrissey to the highest traceable coal seam. Within this section were found three (3) prominant, traceable but discontinuous sandstone units that displayed distanct cross-bedding typical of channel deposits. These channel sandstones up to 12m in thickness served as convenient local markers and greatly assisted in the structural interpretation of the property. All three are readily identified on aerial photos as either the cliff forming members in the nose region of the "Bingay syncline" or as exposed ridges with little or no cover on the limbs. The mappable extent of these channel deposits can be seen on the enclosed geology map.

Less resistant facies were difficult to locate in outcrop except where preserved beneath ledges or adjacent to the previously mentioned channel sandstones. In general coal seams were located beneath sand bodies. Pits dug by early investigators were located primarily by tracing the toe region of sandstone ridges or by systematically traversing the area across regional strike. Coals appear distributed randomly throughout the mappable section. Eight (8) individually mappable seams of thicknesses varying from less than 1.0m to greater than 4.2m were traced from pit to pit along strike and plotted on the geology map.



DIAGRAM— 5

REGIONAL STRUCTURAL STYLE
ELK VALLEY COALFIELD
(After Pearson And Grieve, 1979)

STRUCTURAL GEOLOGY

The structural style of the Bingay Creek property is dominated by a north-east plunging assymetric syncline, the axial trace of which parallels the adjacent regional Fording Mountain Anticline. The axial trace of the Bingay Creek syncline gradually changes azimuth from near north-south on the southern end of licence 7299 to north-east in coal licence 7471. Plunge of the syncline in the axial nose region at station #11 was measured at 42° north. It is assumed that the plunge flattens in the northerly down plunge direction. This assumption is based on the observation that the plunge of other syncline-anticline pairs in the area tend to flatten away from the nose.

Limb dips on the syncline average 43° north-west on the west dipping limb; to from 64° to near vertical on the east dipping limb. Bedding dips appeared to steepen with increased proximity to the trace of the regional Bourgeau Thrust. The syncline is undoubtedly genetically related to tectonics that generated the thrust.

A regional structural diagram #4 illustrates the relationship of the Bingay Creek syncline to the bracketing Bourgeau Thrust on the west and the Fording Mountain Anticline on the east. In fact the west dipping limb of the Bingay syncline corresponds with the west dipping limb of the Fording Mountain Anticline. It is assumed that the Bingay syncline persists for some distance north beneath the floor of the Elk Valley, however supporting evidence could not be found in outcrop within the property boundary but shallow dips and axial plunge angles were found in the Elk River approximately 5 km. north of Bingay Creek.

COAL GEOLOGY

Coal seams of varying thicknesses were located on both coal licence 7299 and 7471 north of Bingay Creek and west of the Elk River. In total 8 individual seams of thicknesses varying from less than 1.0m to 4.2m were observed in outcrop either in trenches dug by Mr. Shenfield or in pits dug between 1903 and 1911 by early investigators.

The coal on surface appeared bright and banded, with very well developed cleat surfaces. Although bright the coal was not sampled for analytical purposes owing to its expected oxidized character.

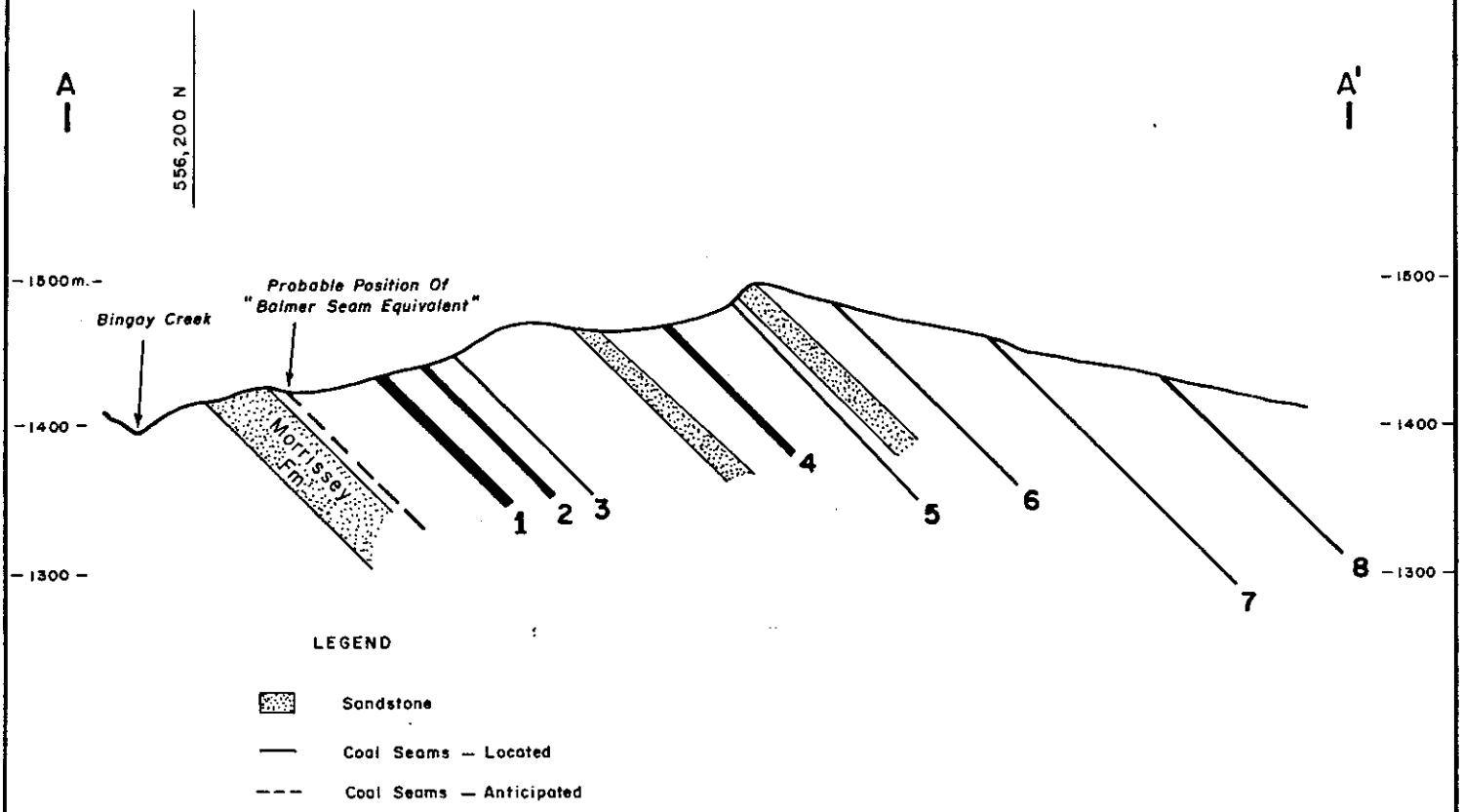
Paleogeographic indicators such as channel sandstone orientations tend to suggest a general northerly depositional flow regime at the time of coal swamp deposition (Hamblin and Walker 1979, Gibson 1977). The present Fording operations and the Bingay Creek property were located on approximately the same area of the lower delta plain. In light of the fact that Fording coals are thick, having developed on a lower delta plain environment, it must be expected that deposits developed in a similar depositional regime will be alike both in number and thickness. The Bingay Creek deposit therefore has the potential of containing numerous thick seams not yet uncovered on surface.

In ascending order the coal seams actually found and anticipated to be found are labelled on diagram # 3.

The following chart illustrates seam thicknesses where measured or inferred and the relative interburden thicknesses.

	Seam #	Observed Seam Thickness	Interburden
	8	?	
			63m
	7	?	
			55m
	6	?	
			49m
Mist	5	?	
Mountain			38m
Formation	4	4.0m	
			110m
	3	?	
			16m
	2	3.25m	
			18m
	1	4.2m	

MORRISSEY BASAL SANDSTONE



LEGEND

Sandstone

Coal Seams — Located

Coal Seams — Anticipated

DIAGRAM - 6

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EXPLORATION DEPARTMENT
VANCOUVER, BRITISH COLUMBIA

BINGAY CREEK PROPERTY

N. — S. AXIAL PLANE X-SECTION
THROUGH BINGAY HILL

Horizontal Scale — 1:5000
Vertical Scale — 1:5000

NTS Ref. : 82 / G	REVISIONS
Work by : R.B. Anderson	Work by :
Drawn by : T. Drews	Drawn by :
Date : Dec. 1983	Date :

COAL SEAM QUALITY

Recent work by the B.C. Ministry of Energy, Mines and Petroleum Resources (D. Pearson and Grieve, 1979) has published the first indication of coal quality to date. A sample taken from "one of the lower three seams" (personal communication with Dave Grieve) was reported to have a mean maximum reflectance (Ro max.) of 0.97; a value typical of high volatile bituminous coals, indicating the likelihood that volatile matter should exceed 31% on a dry mineral matter free basis.

Coal of this quality makes an excellent thermal product that is readily traded in international markets.

It is likely that the overall coal quality will be similar to that of thermal high volatile coals presently being mined at nearby Fording Coal.

CONCLUSIONS AND RECOMMENDATIONS

Field mapping has confirmed the existance of 8 and possibly more coal seams or zones underlie coal licences 7299 and 7471 in seams anticipated to exceed the already measured thickness of 4.2m. An incomplete stratigraphic column represents the 435 metres of Mist Mountain section known to be present on the property. No attempt has been made to estimate the reserve potential based on existing available data.

Additional work in the form of diamond drilling and surface trenching are required to fully ascertain the reserve potential and possible mineability of the property. Diamond drill holes will provide required information regarding seam thickness and number; the possibility for seam thickening along the synclinal axis; the presence or absence of the "Balmer Seam"; the magnitude of angle of plung of the synclinal axis and provide coal samples for analytical purposes.

COST STATEMENT

On Property Costs

1.)	Salaries and Wages	$ 6,152.25
2.)	Accomodation, Food, etc.	4,131.10
3.)	Transportation Costs (Vehicle rental, fuel and maintenance)	1,050.00
	Total On Property Costs	$11,303.35

Off Property Costs

1.)	Drafting and Report Preparation	$ 1,320.00
2.)	Supplies and Services (i.e. McElhanney Surveys)	1,080.00
	Total Off Property Costs	$ 2,400.00
	Total Project Costs	$13,703.35

STATEMENT OF QUALIFICATIONS

I, Robert Brent Anderson, of 6532 Cypress Street, Vancouver, British Columbia, do hereby certify that:

I am a graduate of the University of British Columbia, with a Bachelor of Science Degree in Geology, 1970.

Since graduation I have been engaged in Minerals and Coal exploration for Utah Mines Ltd. in Alaska, Alberta, British Columbia, the Yukon, Northwest Territories and Montana.

I am a Fellow of the Geological Association of Canada and an Active Member of the American Association of Petroleum Geologists.

Vancouver, B.C.
November 15, 1983

R.B. Anderson
District Geologist, Coal

SELECTED BIBLIOGRAPHY

Gardner, S.L. (1982) — A Geologic Overview of the Bingay Creek Coal Property, Elk River Valley.

Gaspe, D.L. (1983) — Eagle Mountain Development, Fording River Operations - C.I.M. Paper No. 6 presented at Smithers, B.C. October 1983.

Gibson, D.W. (1977) — Sedimentary facies in the Jura-Cretaceous Kootenay Formation, Crowsnest Pass area, southwestern Alberta and southeastern British Columbia; Bull. Can. Petrol. Geol., special guidebook issue, Waterton Lakes.

(1979) — Morrissey and Mist Mountain Formations. Newly defined lithostratigraphic units of the Jura-Cretaceous Kootenay Group, Alberta and British Columbia; Bull. Can. Petrol. Geol. (Volume 27, No. 2) pp. 183 - 208.

Graham, P.G. (1977) — Geological investigations of the Coal Bearing Kootenay Formation in the subsurface of the Upper Elk River Valley, British Columbia; Report of Activities, Part B, Geol. Surv. Can., Paper 77-1B.

Grieve, D.A. (1981) — Elk Valley Coalfield, B.C. Ministry of Energy, Mines and Pet. Res., Geological Fieldwork, 1980. Paper 1981-1, pp. 70 - 72.

(1982) — Line Creek and Crown Mountain Areas, Elk Valley Coalfield, B.C. Ministry of Energy, Mines and Pet. Res., Geological Fieldwork, 1982, Paper 1982-1, pp. 21 - 26.

Hamblin, A.P. and Walker, R.G. (1979) — Storm dominated shallow marine deposits: the Fernie-Kootenay (Jurassic) transition, southern Rocky Mountains; Can. Jour. Earth Sci., Vol 16, 1979; pp. 1673 - 1690.

Holland, S.S. (1964) — Landforms of British Columbia. A Physiographic Outline; British Columbia Dept. of Mines and Pet. Res., Bull. No. 48.

Newmarch, C.B. (1953) — Geology of the Crowsnest Coal Basin with Special reference to The Fernie Area, British Columbia Department of Mines, Bull. No. 33.

Pearson, D.E. and Grieve, D.A. (1980a) Elk Valley Coalfield, B.C. Ministry of Energy Mines and Pet. Res., Geological Fieldwork, 1979, Paper 1980-1, pp. 91 - 96.

(1980b) The quality of Western Canadian Coking Coal, The Can. Mining and Metal Bull. January 1980.

(1980c) Geology and Rank Distribution of the Elk Valley Coalfield, Southwestern British Columbia, Geol. Assoc. Can., Annual Meeting, Halifax, May 1980.

Rpt #	NTS	Property	Report Title	Rpt. Date	Items To Be Copied From Report
309	82J/2	C-P.O-G Fording River	Report on Fording River Project, 1968	Dec, 1968	All Text including Addendum. - Map G-1 - reduce to 60% of original - Correlation chart - C1 - reduce to 50% of original - " " - C2 - " " " " " - " " - C3 - " " " " " - " " - C4 - " " " " " - Section 2000N - G2 - " " 60% " " - Columnar Section - S1 @ 100% - " " - S2 @ " - " " - S3 @ " - Adit Plan - P1 - reduce to 50% of original - " " - P2 - " " " " " - " " - P3 - " " " " " - " " - P4 - " " " " " - " " - P5 - " " " " " - " " - P6 - " " " " " - " " - P7 - " " " " " - " " - P8 - " " " " " - " " - P9 - " " " " " - " " - P10 - " " " " " - " " - P11 - " " " " " - " " - P12 - " " " " "
312	82J/2	Fording River	Summary Report of 1970 Exploration & Dev.	Feb, 1971	All Text of Report - Note: - file contains 2 copies of same General Geology Map - reduce to 60% of orig.
315	82J/2	Fording River	Sum. Rpt of 1973 Exp. & Dev	Mar, 1974	Gen. Geology Map only - Plate G-G-1 - reduce to 60%
314	82J/2	Fording River (Cominco)	Rpt. on Fording Operations Relative to Sec. 7 of The Coal Mines Reg. Act	Jan, 1972	All Text to page 8-3 - Appendix I - Figure 4 - " 5 ? missing?

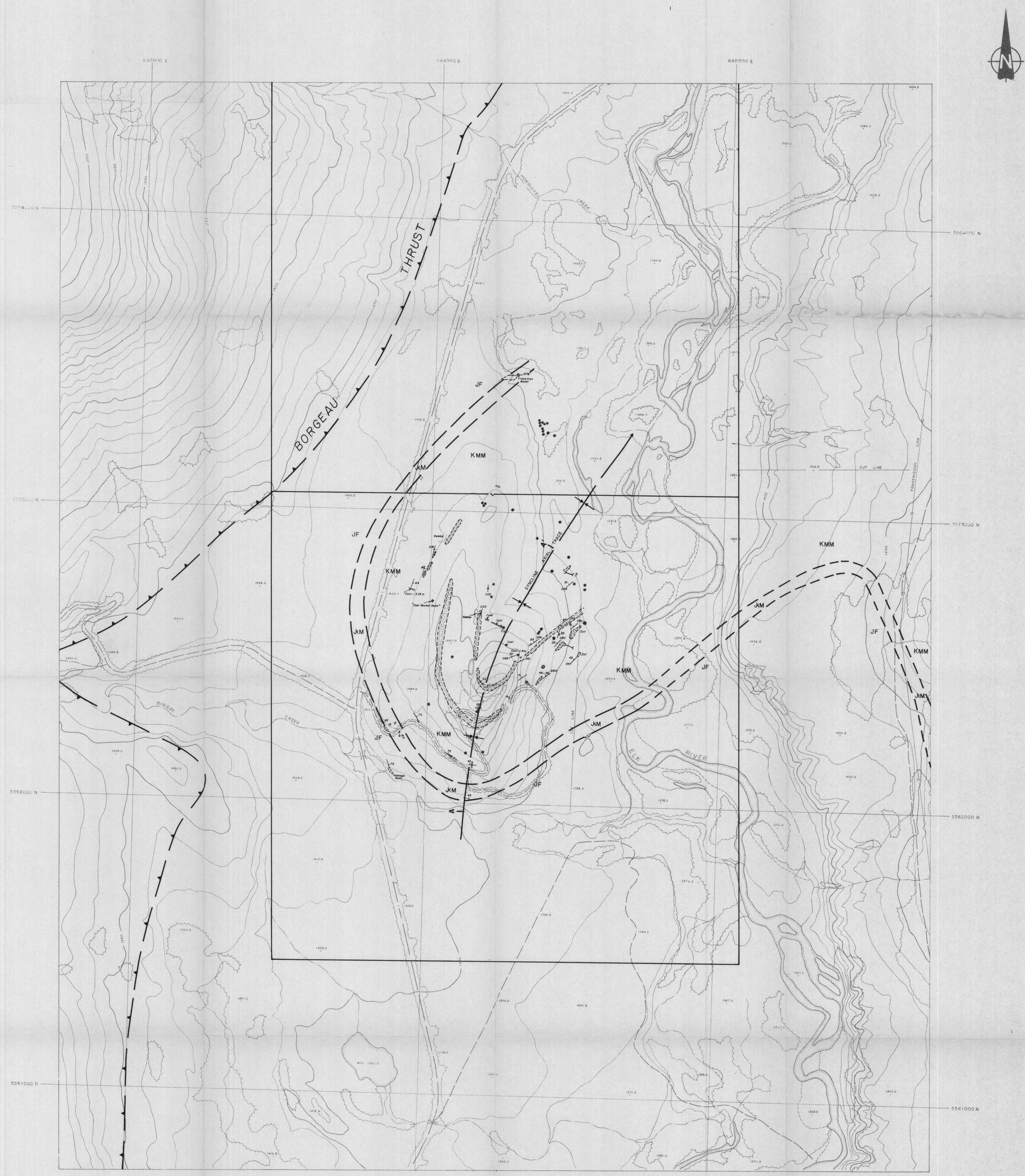
Rpt.#	NTS	Property	Report Title	Rpt. Date	Items To Be Copied From Report
316	82J/2	Fording River	Information for Lease Application	Dec. 6, 1974	~~Text~~ - pages 0 - 16
317	82J/2	Fording River	Summary Report, 1974 Exploration Prog.	Feb, 1975	~~Text~~ - pages 0 - 4 ~~Map~~ - Plate 74-1 - reduce to 60% of original ~~"~~ - " 74-2 @ 100% - Sections: ~~491,000N~~ - reduce to 50% ~~494,800N~~ - " " " - 496,000N - " " " ~~486,000N~~ @ 100% - 486,250N @ " ~~X-X'~~ @ " ~~Y-Y'~~ @ " ~~Dwg. H-1~~ @ " ~~Dwg. H-2~~ @ "
318	82J/2	Fording River Fording Coal Ltd.	Summary Report, 1975 Exploration Program	Feb, 1976	- Section 494,800N - reduce to 50% - Map - Gen. Geol. & Coal Prop. - Elk Valley, Map #5 of 5 @ 100%
320	82J/2	Fording River/ Elk Valley Fording Coal Ltd	Summary Report, 1977 Coal Reserve Development Program.	Jan 27, 1978	~~Text~~ - pages 0 - 7 ~~Illustration No. 3 - Map - @ 100%~~
322	82J/2	Fording River/ Elk Valley Fording Coal Ltd.	Summary Report, 1978 Coal Reserve Development Program	Mar 28, 1979	~~Text~~ - pages 0 - 7 ~~Illustration~~: - No. 3 @ 100% - No. 4 @ " - No. 5 @ " - No. 6 @ " - No. 7 @ " ~~- from package labeled "Added Bonus Maps"~~ - Map sheet 15, titled "Geological Mapping & Exploration Drilling, Aldridge Creek Area" @ 100%

Rpt. #	NTS	Property	Report Title	Rpt. Date	Items To Be Copied From Report?
323	82J/7	Fording Coal Ltd Elk Valley	Summary Rpt 1979 on Crown Grant Lots 6825 E½ & 6824 W½	March 31, 1980	✓ All Text including all enclosed figures or Appendices, drill logs, etc. ✓ Illustration 2 - (map) @ 100%
326	82J/2	Fording Coal Ltd Fording River	Summary Rpt, 1981 Expl. & Dev. Prog.	Nov. 18, 1982	✓ Text - p. 0-26 - Maps: - Illus. 2 - reduce to 50% ✓ " 3a - " " " ✓ " 3b - " " " ✓ " 4a - " " " ✓ " 4b - " " " ✓ " 5a - " " " ✓ " 5b - " " " ✓ " 6a - " " " ✓ " 7a - " " " ✓ " 7b - " " " ✓ " 8a - " " " ✓ " 8b - " " " ✓ " 9a - " " " ✓ " 9b - " " "
254	82J/7	Bingay Creek Elk River Valley W. Shenfield	A Geologic Overview of The Bingay Ck. Coal Property,	June, 1982	✓ copy complete text, including all figures & maps.
255	82J/7	Bingay Creek	1983 Report of Exploration Activities on The Bingay Creek Property	Dec., 1983	✓ All text - Map - reduce to 50%
256	82J/7	Bingay Creek	1983 Report of Exploration Activities (Drilling Report) on the Bingay Creek Property	July, 1984	✓ All Text including figures, tables, etc. - Maps: Map 1. - @ 100% ✓ Map 2 - reduce to 50% ✓ Map 3 - " " 50% ✓ Map 4 - " " 50%

continue next page

Rpt.#	NTS	Property	Report Title	Rpt. Date	Items To Be Copied From Report
256 continued from page 7.					Map 5 - reduce to 50% -3 drillhole columnar sections - reduce to 50% -3 geophysical well logs - " " " -3 Drillhole lithologic Description - copy dark enough to read.
261		Elk Vally Cominco	Data Submitted Dec. 1974 For Cominco Crown Grants, Elk Valley	Dec, 1974	- All Text & figures, etc of the 1967 portion of the report plus the 3 pages of the appended 1974 report. Do not include cost statement & backup invoices. -2 geophysical well logs, EV4 & EV6 -Maps: (2nd binder) - Sheet 1 @ 100% -Dwg #5 @ 100% -Section 3 @ 100% -" 4 @ " -" 5 @ " -" 6 @ "
356 (069K)		Parcel 82, Dom. Gov't Coal Block Mitsui Mining Ltd.	The Interim Report on The Field Investigation of the Flathead Ridge P.C.I. Property.	Mar., 1970	- All text
295		Hosmer-Fernie Ridge Columbia Iron Mining Co.	Progress Report on The Examination of The Holdings of The Crowsnest Pass Coal Co. Ltd.	April, 1961 Filed - June/79	- All text including figures, tables, etc - Map @ 100%
296		Hosmer-Fernie Ridge Columbia Iron Mining Co.	Progress Report, CROPCO PROJECT, 1961	June, 1962	- All text, including figures, tables etc. - All Drillhole logs, Bc-1 to Bc-7 - Maps - 2 drillhole correlation Sections, GL-161 & GL-162 @ 100% - 11 geologic Sections @ 100%

Rpt.#	NTS	Property	Report Title	Rpt. Date	Items To Be Copied From Report
292	82G/7	Dom. Coal Block-h Part - Pacific Coal Ltd.'s holdings	Survey Report on Fernie Coal Mine, B.C.	May, 1968	~~Text~~ including all small maps, figures, tables, etc. ~~Maps~~: Figure No. 2 @ 100% " No. 3 @ 100%
288	82G/7	Fernie Coal Basin	C. Newmarch - Phd Thesis		~~All Text~~ including all enclosed figures ~~All maps @ 100%~~
454	82J/6,7, 10&11	Upper Elk Valley Vincent Option (Rio Tinto)	Vincent Option Geological Report	Nov, 1971	~~All text~~ - Please use original copy ~~Appendix~~ I - all coal analyses " II, III & IV - all drill logs & geophysical logs



KMM — MIST MOUNTAIN FORMATION (Channel Sandstones)

JkM — MORRISSEY FORMATION

(KMM and JkM: KOOTENAY GROUP; CRETACEOUS / JURASSIC)

JF — FERNIE FORMATION

255

K-Bingay Creek 83*(2)A *(1) MAP-1

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

BINGAY CREEK

GEOLOGY

Work by: R.B. Anderson & N. Duncan	Date:	NTS Ref. 82/J/2	
Drawn by: T. Drews	Revised:		

Scale: 100 50 0 100 200 300 METRES