Arrowsmith
Vancouver Island - B.C.

Preliminary Field Reconnaissance
June, 1979

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SUMMARY AND RECOMMENDATIONS

Summary

The following points may be made to briefly summarize the findings of this report which is based on an E.M.C. preliminary field reconnaissance.

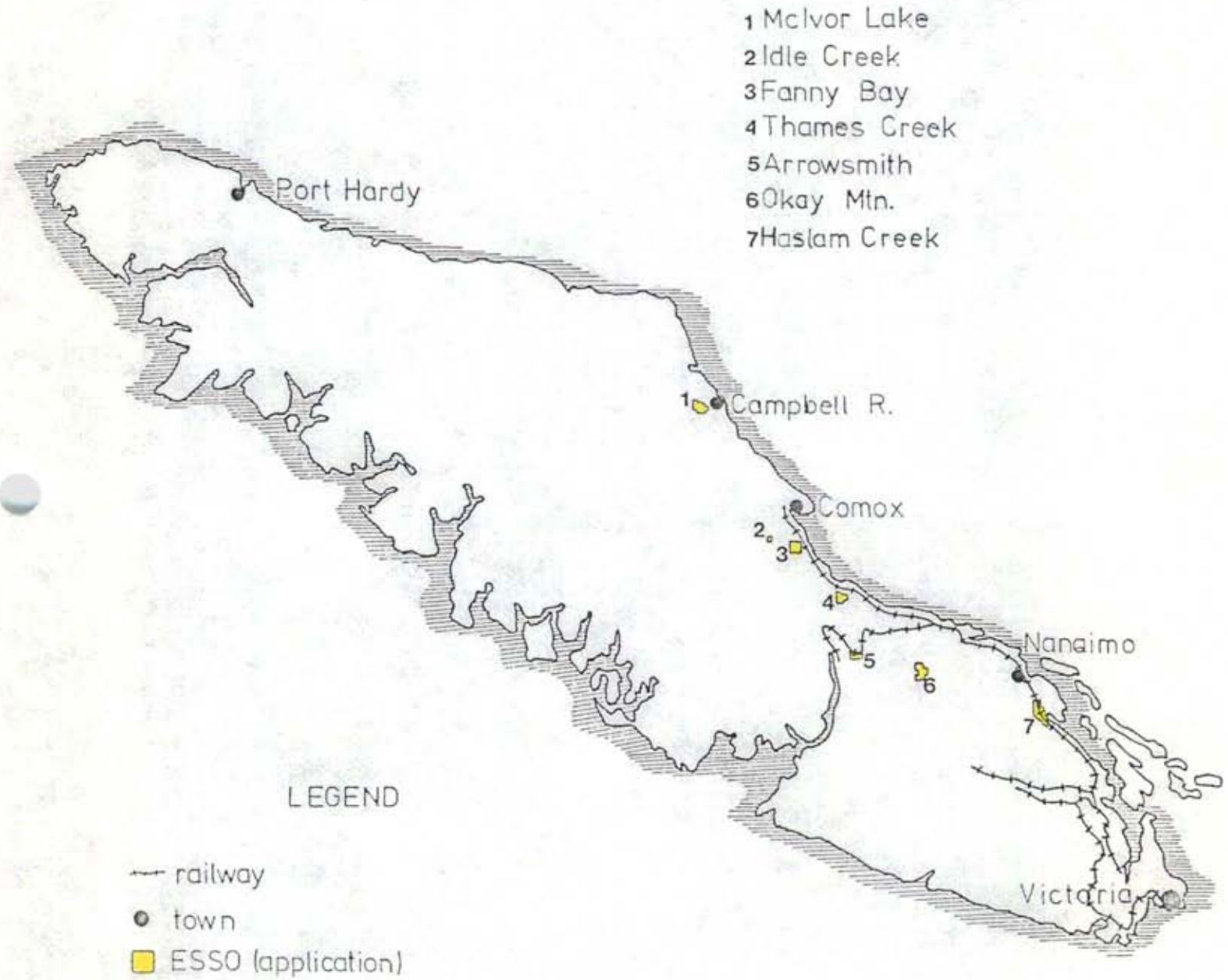
1) The structure is quite simple consisting of an uplift fault block tilted to the north at 5^{o} to 12^{o}.
2) The property is close to existing infrastructure and access by road as well as rail is excellent.
3) Only the basal Benson Conglomerate of the Comox formation is present and this is barren of coal.

Recommendations

1) The applications for coal licenses have already been withdrawn and no further exploratory work is required on this prospect.

VANCOUVER ISLAND

Index Map 1



INTRODUCTION

Purpose and Scope

The purpose of this report is to document and summarize the findings of the preliminary field reconnaissance of the Arrowsmith prospect on Vancouver Island.

Location and Access

The Arrowsmith prospect is located in the south-central part of Vancouver Island. The Port Alberni-Comox highway (#4) runs east-west along the northern boundary as does the Esquimalt and Nanaimo Railway (Map 1). Many all-weather gravelled lumbering roads criss-cross the prospect where active lumbering is still going on (Map 2).

Infrastructure

The major town of Port Alberni is located approximately 3 miles to the west. The major industries in this town are lumbering, pulp and paper, and fishing. It has all the facilities for supporting a coal mine. This townsite is also the nearest tidewater.

Geography

The property is mostly of low relief with the central portions being on a plateau which varies between 1200 and 1400 feet a.s.l. The edges of the property drop off to 600 feet a.s.l. to Rogers Creek in the south. This creek runs east-west along the southern boundary of the property, flowing into the inlet at Port Alberni (Map 3).

GEOLOGY

Till and Gravel

Till and gravel cover is variable throughout the property but what was observable in road cuts and stream banks was a thickness of 10 to 50 feet.

Regional Stratigraphy

The stratigraphy encountered at Arrowsmith was only the Basal Benson-type fluvial facies of the Comox formation which is upper Cretaceous age. The dark green and brown conglomerates are composed of subangular boulders, pebbles and grit made up of pre-Cretaceous volcanic material which makes up the basement and surrounding hillsides. This material composing the conglomerates has only been transported a short distance and was probably formed along shoreline cliffs during a transgression of the oceans. The coal forming lagoonal facies which would occur above this congomerate was not in evidence from the reconnaissance and was either eroded off or never was deposited.

Since this appears to be an upthrust fault block the coal measures have probably been eroded off.

An outcrop of the overlying Haslam Creek shales was found at location 21 to the west (Map 2). These are marine shales and contain no coal.

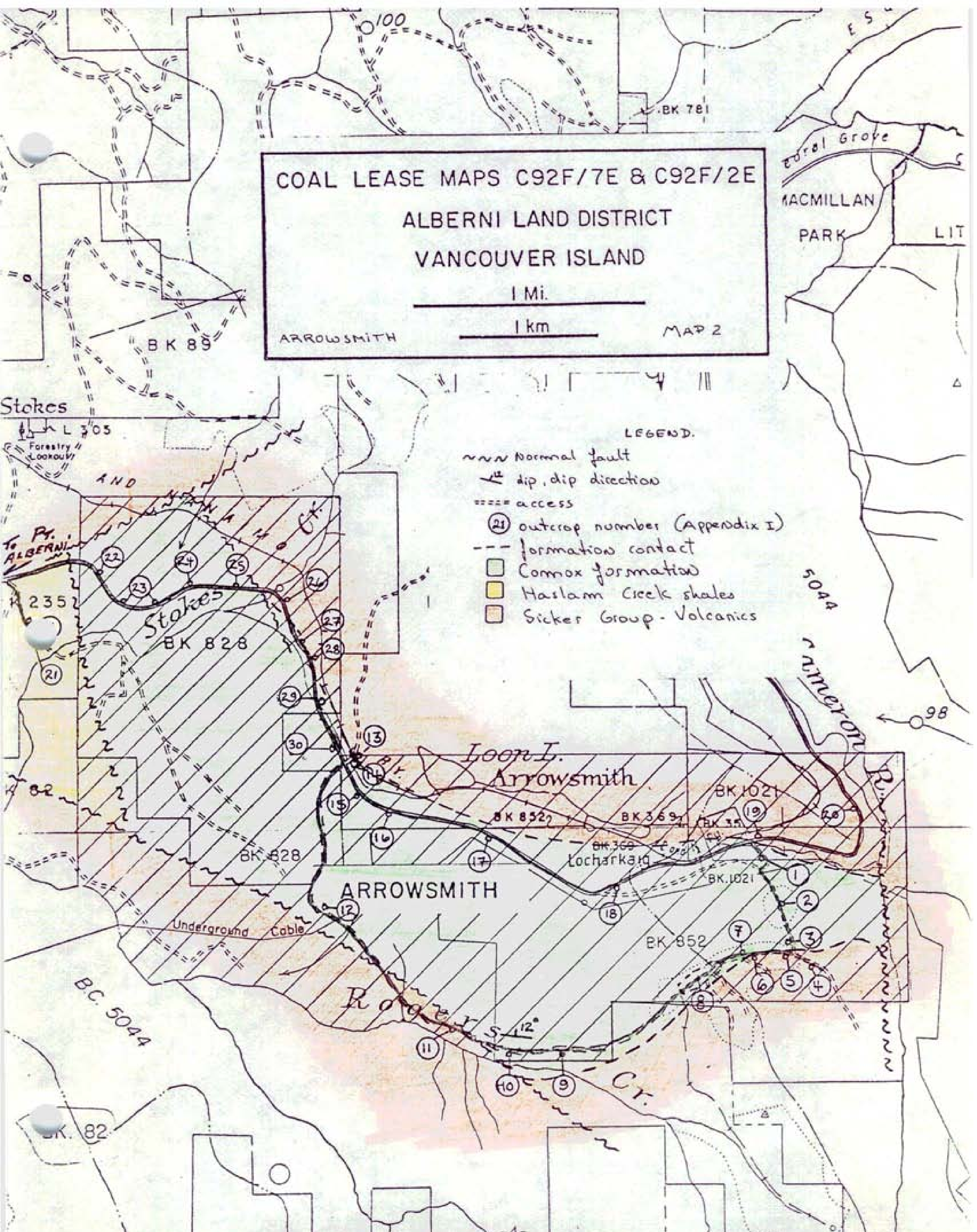
Coal Measures

Since no lagoonal sediments were discovered, no outcroppings of coal or coal float in the creeks were found. There are no coal seams present.

Structure

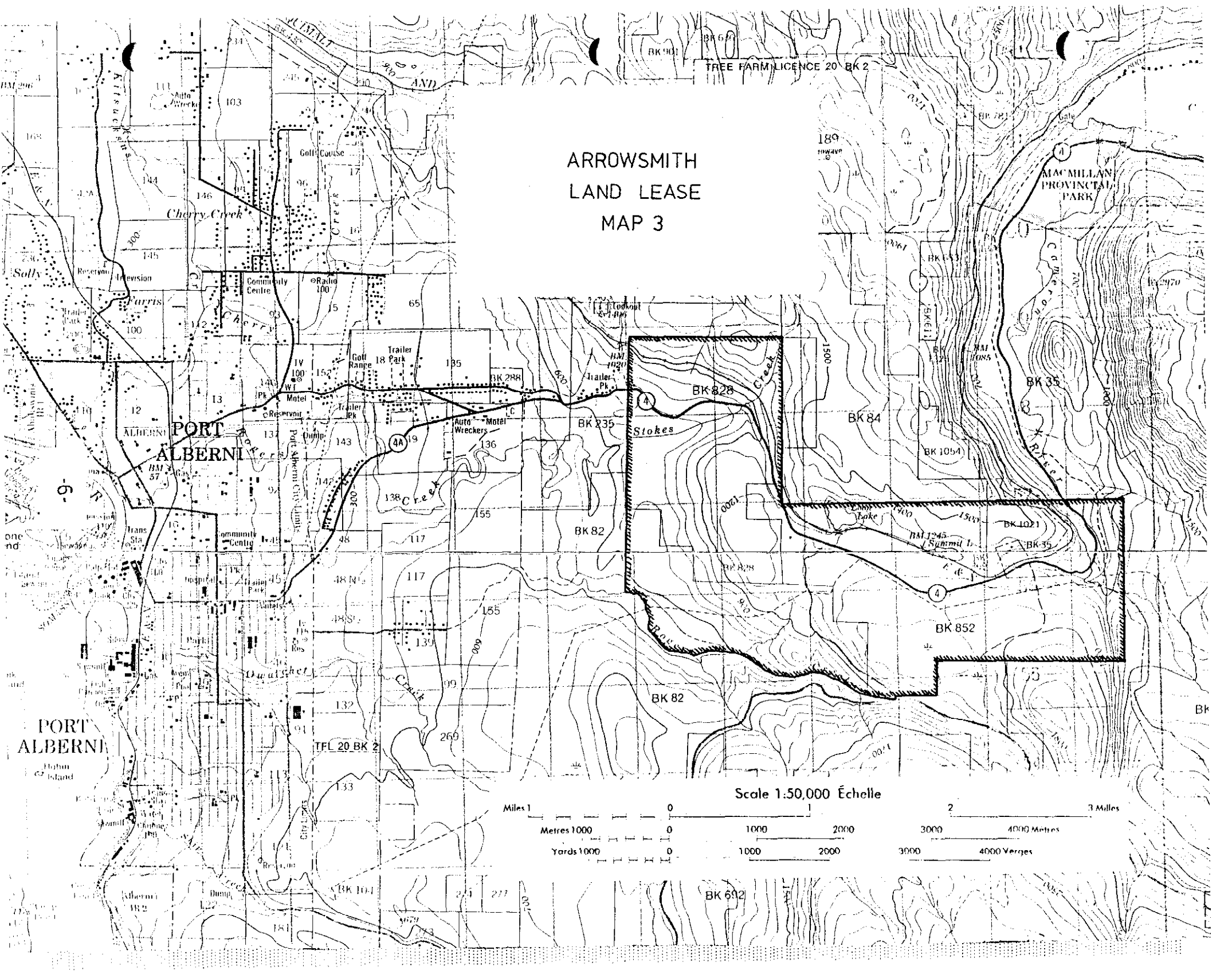
The structure at Arrowsmith consists of an uplifted fault block as evidenced by the major normal fault separating the overlying Haslam formation at outcrop 21 (Map 2) from the underlying Comox formationat outcrop 22.

Very few dips were found on the property because of the massive weathered conglomerates which form most of the Comox. In general, the beds tend to dip 5^{o} to 12^{o} to the north. In areas adjacent to the faults, the dips could vary considerably.


COAL LEASE MAPS C92F/7E & C92F/2E
ALBERNI LAND DISTRICT
VANCOUVER ISLAND
1 Mi.
1 km
ARROWSMITH
MAP 2
LEGEND.
Normal fault
dip, dip direction
access
(21) outcrop number (Appendix I)
formation contact
Comox formation
Haslam Creek shales
Sicker Group - Volcanics
Stokes
L 305
Forestry Lookout
To Pt. ALBERNI
BK 89
BK 828
Loon L.
Arrowsmith
ARROWSMITH
BK 852
BK 369
BK 1021
Locharkaig
Underground Cable
Rogers Cr.
B.C. 5044
MACMILLAN PARK
BK 781
Cameron R.
5044
BK. 82
Stokes

LAND LEASE

In early April of 1979, E.M.C. applied for approximately 1328 hectares of coal licenses in the Port Alberni area on Vancouver Island (Map 3). This property was named Arrowsmith and after the preliminary field reconnaissance was carried out in May, the land was subsequently withdrawn from application in June of 1979. We are expecting a refund on our application fee of $6,612.00 sometime this year.


ARROWSMITH
LAND LEASE
MAP 3
TREE FARM LICENCE 20 BK 2
PORT ALBERNI
TFL 20 BK 2
BK 828
BK 84
BK 235
BK 82
BK 852
BK 35
BK 692
Scale 1:50,000 Échelle
Miles 1 0 1 2 3 Miles
Metres 1000 0 1000 2000 3000 4000 Metres
Yards 1000 0 1000 2000 3000 4000 Verges

EXPENDITURES

Up until June 7, 1979, total expenditures on the Arrowsmith prospect totalled $7,051.60. Of this $6,612.00 was application fee for license rental and $439.60 was for a 2 man party to carry out a preliminary field reconnaissance.

Since we have withdrawn our application because of negative results on the reconnaissance, we will be getting the $6,612.00 back from the B.C. government and the total expenditures on this prospect will only amount to $439.60.

REFERENCES

Mueller, J. E. and Jeletzky, J. A.

1970 Geology of the Upper Cretaceous Nanaimo Group, Vancouver Island and Gulf Islands, British Columbia; (G.S.C. paper 69-25)

APPENDIX I

Arrowsmith

Reconnaissance Field Notes

O.C. 1 Comox Formation - Good conglomerate exposure along road. Large pebbles up to 4" in diameter in a very coarse grained pebbly matrix. Poorly sorted subrounded pebbles.

O.C. 2 Comox Formation - Good outcrop in road bed. Formation not as conglomeritic as O.C. 1. More coarse grained sandstone weathering buff with fewer scattered pebbles much smaller up to 1" in diameter.

O.C. 3 Comox Formation - Good outcrop. Same lithology as O.C. 2.

O.C. 4 Sicker Group - Volcanics.

O.C. 5 Sicker Group - Volcanics.

O.C. 6 Sicker Group - Volcanics from O.C. 5 to this location.

O.C. 7 Comox Formation - Conglomerate just up the road from O.C. 6 by 800 feet.

O.C. 8 Comox Formation - Same lithology as O.C. 7 and extends from outcrop O.C. 7 to this location. Conglomerate.

O.C. 9 Comox Formation - Conglomerate. Huge outcrop with large pebbles up to 8" in diameter and a 4' bed of more scattered pebbles in a coarse grained sandstone which weathers buff. This bed is very resistant while the coarser conglomerate is poorly resistant and weathers easily. Conglomerate extends all the way from O.C. 8 to O.C. 9. May be tuff in thin beds in the conglomerate.

O.C. 10 Comox Formation - Conglomerate extends from O.C. 9 to O.C. 10. Also is a contact with the volcanics. Up the hill halfway is the conglomerate lying on top of volcanics. Road does not exist on topographic or coal lease maps. Orientations are 3/9 9/14.

O.C. 11 Sicker Group - Shists all along road from O.C. 10 to this location.

O.C. 12 Comox Formation - Conglomerate.

NOTE: Just up the road 700 feet from O.C. 12 is conglomerate and coarse grained sandstone interbedded. Orientation looks to be 0^{o} - 5^{o} to the northwest.

O.C. 13 Sicker Group - Volcanics on the north wide of the railway tracks near Loon Lake.

O.C. 14 Comox Formation - Conglomerate extends between highway north to the railway tracks.

O.C. 15 Comox Formation - Medium to coarse grained buff weathering sandstone with some scattered well-rounded pebbles. Located on highway.

O.C. 16 Comox Formation - Conglomerate and sandstone.

O.C. 17 Comox Formation - Located along highway. Even coarser conglomerate than O.C. 16.

O.C. 18 Comox Formation - Conglomerate.

O.C. 19 Sicker Group - Shists.

O.C. 20 Sicker Group - Shists.

O.C. 21 Haslam Formation - Shales weathering medium grey to rusty brown. Weather easily.

O.C. 22 Comox Formation - Conglomerate.

NOTE: Just after O.C. 22 towards O.C. 23 was a contact between conglomerate of Comox and shists of the Sicker Group.

O.C. 23 Comox Formation - Conglomerate.

O.C. 24 Comox Formation - Conglomerate.

O.C. 25 Comox Formation - Conglomerate.

O.C. 26 Sicker Group - Volcanics.

O.C. 27 Sicker Group/Comox Contact - Conglomerate on the west side overlying shists to the east.

O.C. 28 Sicker Group - Volcanics.

O.C. 29 Comox Formation - Conglomerate.

O.C. 30 Comox Formation - Conglomerate.