Geological Report

on the

JACK CLAIM

Kamloops M.D.  N.T.S.  92I/9W

Location:  50° 36' N  120° 26' W

Owner:  Nova Energy Corp.
        Vancouver, B.C.

            Pan-American Consultants Ltd.
            2602-1055 West Georgia Street
            Vancouver, B.C.

Dates of Work:  October 18 - October 21, 1979

November 5, 1979
Vancouver, B.C.
L. Sookochoff, P.Eng.
Consulting Geologist
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ILLUSTRATIONS

Map No. Scale
1. INDEX MAP 1 : 50,000
2. GEOLOGY 1 : 5,000
SUMMARY AND CONCLUSIONS

The Jack claim of Nova Energy Corp. Ltd. is located along the southern margin of the Iron Mask Batholith and within five km south of the Iron Mask Mine - a former producer from which 5,000,000 lbs. of copper was recovered from 200,000 tons of ore.

Afton Mines is seven km to the northwest with other reported blocked out copper zones at the Seadrift Resources property, four km to the northwest and at Cominco's property within one km to the east. Drilling is presently in progress on the Seadrift property. Encouraging copper-silver mineralization is reported.

A recently completed VLF-EM survey on the Jack claim disclosed a number of discontinuous northwesterly and northeasterly trending E.M. anomalies.
The anomalies correlate in part to topographically indicated major fault zones in addition to anomalous copper rock geochem values.

Epidote zones border a diorite phase of volcanics and are in association with high copper geochem values.

Quartz veins generally occur in outcrop areas low in copper values. General silicification accompanies quartz vein areas.

Anomalous silver rock geochem values occur within quartz veined areas or peripheral to anomalous copper areas. Pyrite disseminations occur in correlation with anomalous copper values and with an E.M. anomaly.

In addition to numerous indicated major structures on the property, the claim area contains moderate to intense fracturing.
It is concluded that the Jack claim:

1. Is proximal to a geologically favorable area (the Iron Mask Batholith) and may cover a hybrid phase (dioritic phase) of the intrusive.

2. The northeasterly trending dioritic phase parallels dominant structural features which in addition to indicated (geologically and geophysically) cross faults, present favorable structures for localizing mineralization.

3. The alteration pattern suggests that the northwesterly trending diorite phase would be a preferred zone of mineralization.
INTRODUCTION

As the initial stage in an exploration program on the Jack claim, a geological mapping program was completed during October 1979. The purpose of the program was to provide geological information as an aid in the interpretation of geophysical or geochemical information on the property and to establish correlative areas as prime target areas for subsurface testing.

PROPERTY

The property is comprised of one claim of eight units held by location. Particulars are as follows:

<table>
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<th>Claim Name</th>
<th>Record No.</th>
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<td>1800</td>
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LOCATION AND ACCESS

The claim is located 10 km southwest of Kamloops, B.C. within the Kamloops M.D. The northeast corner of the property covers the southwest portion of Jacko Lake.

Access is via the Lac La Jeune road which branches off the No. 1 Highway six km west of Kamloops.

The Lac Le Jeune road passes through the west portion of the claim.

PHYSIOGRAPHY

The property lies within the physiographic province known as the Thompson Plateau. Within the claim area, the topography is of gently rolling hills covered with predominantly pine groves in addition to open field. Escarpments are common where steep slopes or rock bluffs prevail and which presumably indicate faulting.

Elevations average 950 meters with local relief of 40 meters.
HISTORY

The general Kamloops area and more specifically the Iron Mask Batholith area in which the Jack claim is situated, has been explored since the turn of the century.

In addition to numerous copper-gold-silver occurrences discovered with only minimal local production, only one significant producer resulted. The producer was the Iron Mask Mine located four and a half km north of the Jack claim.

The Iron Mask Mine was worked to around 1930 and produced some "5,000,000 lbs. of copper" in addition to gold and silver from approximately 200,000 tons of ore.

More recently, Afton Mines has placed a property in production which is located seven km northwest of the Jack claim. Afton Mines has reportedly blocked out 30 million tons of one percent copper with significant gold values.

Other drill indicated reported mineralized zones in the immediate area include Cominco's copper zone east of Jacko Lake within one km east of the Jack claim.
Two zones of copper mineralization have reportedly been blocked out on the Seadrift Resources Property four km to the northwest. One of the zones is reported to contain sixteen million tons of .53% Cu. Additional drilling on the property is currently in progress.

The Jack claim covers an area that was previously owned by: Rolling Hills Copper Mines in 1968; Minex Development in 1972; and New Denver Explorations in 1976.

Previous exploration on portions of this ground by the aforementioned companies disclosed the following:

1. Northwesterly trending magnetometer "lows: over the area surveyed which consisted of the northern portion of the Jack claim.

2. Spotty copper geochemical "highs" from a survey covering the northwestern corner of the Jack claim.
The Jack claim lies within a north-south trending arcuate band of Nicola rocks extending from Princeton in the south, through Merritt and beyond Kamloops Lake to the north. Peripheral rocks predominantly intrusives in addition to cappings of younger sediments and volcanics. Stocks and plugs of intrusives are also scattered throughout the Nicola rocks.

The Jack claim as indicated by Geological Map 886A, covers Nicola rocks to the south of the Iron Mask Batholith. The Nicola Group is comprised of greenstones, volcanics and sedimentary rocks. The rocks display various stages of metamorphism with intense chlorite and epidote alteration in association with intrusives. Structural trends in the Iron Mask Batholith are predominantly northwesterly which are the controlling structures for the prime mineralized zones within the intrusive. Northerly, north-easterly and to a lesser degree, east-west structural directions are indicated from topographical features, aeromagnetic maps and from reported geological features of contained mineral zones. These "secondary" structure directions are significant in that mineral controlling cross structures are possible.

An airborne geophysical map of the area suggests an east-west structural direction on the Jack claim. The geological mapping program disclosed three rock types of Nicola series of metamorphosed volcanics on the Jack claim.
The three units are comprised of a green volcanic, red volcanics and a central green volcanic unit which is of a more granular texture and has been designated as a dioritic phase.

A common feature of all three units is the matrix, which where obvious is a feldspar porphyry, and inclusive sub rounded fragments of distinct feldspar porphyry.

The green volcanics occur along the eastern and western portion of the property and consist of a highly chloritized aphanitic to fine grained commonly porphyritic matrix. White euhedral feldspar phenocrysts are evident in less altered phases.

The red volcanics occur locally within the western portion of the property and are enveloped by green volcanics to the west and the dioritic phase to the east. The aphanitic to fine grained porphyritic greenish altered matrix contains disseminations of red hematite thus reflecting a red appearance.

The dioritic phase also contains euhedral feldspar crystals, however the matrix is up to medium grained, equigranular and chloritized. Various degrees of agglomeritic fragments occur within this unit.
ALTERATION

Epidote

Epidote occurs predominantly as splashes along fracture planes in addition to light disseminations through the matrix in two localized areas within the green volcanic sequence. The occurrences border the central dioritic phase.

Silicification

Quartz veins occur randomly and fracture controlled within the eastern portion and the south of the western portion of the green volcanic sequence. The quartz veins are less than two cm wide.

General silicification accompanies the quartz zones.

Calcite

General calcite flooding and lesser veining occurs generally throughout the property except in northeast.

Pyrite

Pyrite as rare disseminations within the green volcanic sequence occurs along the inferred central eastern contact dioritic - green volcanic sequence.
STRUCTURE

Dominating structures as indicated by topographical depressions and local fault scarp s are northerly, northwesterly and northeasterly.

These dominant structural trends are reflected as fractures within outcrops. Superimposed on the major structural trends are complementary fracture features resulting in moderate to intense fracturing within most outcrops. The higher degree of fracturing results in a pseudobreciated appearance which does not appear to be limited to any one area.
ROCK GEOCHEM RESULTS

Rock chip samples were taken from outcrops throughout the property and were assayed for copper and silver.

Copper values ranged from 8 ppm. to 224 ppm. A sufficient number of samples were not taken for a thorough analysis however, in generalizing on the anomalous (+120 ppm. Cu +.6 ppm. Ag) values the following conclusions can be made:

1. Anomalous copper values occur in quartz vein free areas.

2. Anomalous copper values occur in heavily brecciated areas.

3. Anomalous copper values occur on the periphery of silicified diorite phase.

4. Anomalous silver values occur in areas of quartz veining or peripheral to siliceous zones.
RECOMMENDATIONS

It is recommended that a geochemical survey in addition to an I. P. survey be carried out to establish definitive anomalous areas which would be tested by diamond drilling.

Respectfully submitted

Laurence Sookochoff, P.Eng.
Consulting Geologist

November 5, 1979
Vancouver, B.C.
REFERENCES


CERTIFICATE

I, Laurence Sookochoff, of the City of Vancouver, in the Province of British Columbia, do hereby certify:

That I am a Consulting Geologist with the firm of Pan-American Consultants Ltd. of 2602-1055 West Georgia Street, Vancouver, B.C.

I further certify that:

1. I am a graduate of the University of British Columbia (1966) and hold a B.Sc. degree in Geology.

2. I have been practising my profession for the past thirteen years.

3. I am registered with the Association of Professional Engineers of British Columbia.

4. The information for this report was obtained from material as cited under references in addition to field work carried out on the Jack claim during October 1979.

November 5, 1979
Vancouver, B.C.
Statement of Costs

Geological Survey

NOVA ENERGY CORP. LTD.

L. Sookochoff - October 18-October 21, 1979

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$3,049.00