GEOLOGICAL REPORT ON SELECTED SB AND PAM MINERAL CLAIMS, 50°117°NW. SLOCAN M. D., B.C.

FOR 82K/3E

PAN OCEAN OILS LIMITED

R.J. TRIMBLE R.J. MacNEILL, P.Eng.

3921

GEOLOGICAL REPORT

ON

MINERAL CLAIMS

SB 10, 11, 12, 14

SB 57, 58, 59, 61, 52, 54, 56.

PAM 14, 15, 16, 17.

WHITEWATER MOUNTAIN PROPERTY

OF

PAN OCEAN OIL LIMITED

AT

50° 06' NORTHING

117° 13' EASTING.

BY

R. JAY TRIMBLE, B.Sc.

AND

R. J. MacNEILL, P.ENG.

SEPT. 10, 1972

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#1 Claim Area and Location Map (SB-72-1)

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WHITEWATER MOUNTAIN PROPERTY

GEOLOGICAL REPORT

SUMMARY

Geological mapping of the mineral claims outlined in Drawing SB-72-1 was carried out during the period of August 12 to August 20, 1972 by R. J. Trimble, Geologist, and P. Leontowicz, prospector. Due to the precipitous mountain terrain and relative isolation of the property, a helicopter was used to deploy personnel and to map the more inaccessible areas of the map area.

Two geological formations dominate the map area. The Kaslo Ultrabasic Belt, a belt of serpentinized peridotite, is unconformably intruded into volcanic sequences of the Triassic Kaslo Series. The Ultrabasic unit, having undergone several stages of structural and metamorphic deformation and alteration, is characterized by assemblages of serpentinized peridotite with areas of talc-carbonate alteration. The Kaslo Series' volcanic assemblages, although originally of andesitic composition, now grade from fine-grained greenstones to chlorite schists. Feldspar-porhyry dikes intrude both units.

Concentrations of copper mineralization were noted; these occurrences have not been examined fully to date due to the precipitous terrain. The possibility of significant concentrations of sulphides in the hangingwall area of the Ultrabasic warrants the use of a magnetometer survey over accessible areas in order to delineate areas of interest.

LOCATION AND ACCESS (DWG. SB-72-1)

The SB and PAM mineral claims are located on the northwest and north faces of Whitewater Mountain and lie approximately four miles north-northwest of Retallack, B.C.

The claims are accessible by helicopter from either Retallack, B.C. or Nelson, B.C. The nearest road is approximately two miles away at Kane Creek.

TOPOGRAPHY AND CLIMATE

The dominant topographical features of the area are two large glaciers immediately below the Whitewater Mountain Peak. Elevations on the map area range from 4500 feet to 9000 feet above sea level. The average slope is 40°, with approximately 60 percent of the map area inaccessible due to precipitous cliffs.

Work in the area is restricted to the last three weeks of August and the first week of September. Heavy snowfall and high winds during the rest of the year make exploration impossible.

CLAIMS

The map area includes the following mineral claims:

SB 10,11,12,14.
SB 57, 58, 59, 61, 52, 54, 56.
PAM 14, 15, 16, 17.

All of the above mineral claims are presently held by Pan Ocean Oils Limited of Calgary, Alberta.

HISTORY AND PREVIOUS WORK

To the best of the writer's knowledge, no detailed examinations of the map area have been made in the past.

Several private and government papers have been published on the nearby Retallack Mining Camp. Very little mention was made, however, of the Kaslo Ultrabasic Belt beyond the recognition of its existence.

In 1969 and 1970, Versatile Mining Services Ltd. carried out regional and local examinations of the Kalso Ultrabasic Belt. In a program of complete coverage of this unit, Versatile staked the above ground in preparation for future detailed examination.

REGIONAL GEOLOGY

The map area covers the Kaslo Ultrabasic Belt where it intrudes greenstones of the Kaslo Series. The Kuskanex Batholith lies to the northwest of the map area.

FIELD WORK

The object of the 1972 program was to map the study area. All geological observations and data were transferred to a 1" equals 1000' topographic map. All accessible areas were traversed and all major outcroppings were located with respect to the topographic map with the aid of a pocket altimeter.

GEOLOGY (DWG. SB-72-2)

Two differing rock types dominate the map area. These are the Kaslo Ultrabasic Belt and the Kaslo Series' greenstones.

Kaslo Ultrabasic Belt:

This unit appears as a band of ultrabasic rock cutting the Kaslo Series' volcanics. Although it is characterized by roughly parrallel boundaries, local pinching and swelling does occur. The average width within the map area is 1500 feet.

The unit strikes northwesterly and is steeply dipping to the southwest. The original rock type was probably a fine grained peridotite. What appears to several phases of structural deformation in association with hydrothermal and regional dynamothermal metamorphism has changed the original rock type to its present appearance as a serpentinized peridotite with areas of dominantly serpentine.

This unit is characteristically a black to dark-green colour on weathered surfaces. Areas of light-grey to white in outcrop are attributed to the presence of talc-carbonate alteration. In areas of intense shearing fibrous serpentine in the form of picrolite and chrysotile have been noted. A characteristic mineral assemblage for the serpentinized peridotite is 60% serpentine, 20% altered peridotite, 15% magnetite and 5% carbonates.

The dominant structural feature of the intrusive is intensive shearing and faulting along the hangingwall contact with the Kaslo volcanics. This intense deformation has produced areas of brecciation where cross-faulting has occurred.

To date, no economic concentrations of sulphides have been found within the map area. It must be stressed, however, that examinations have not been concluded due to the extremely short field season.

Kaslo Series:

The Kaslo Series, of Triassic Age, are represented in the map area by massive units of metamorphosed andesite. Due to the lack of remnant stratigraphic boundaries, the rock is considered as relatively homogeneous greenstone.

These rocks are usually pale-green to light-green on weathered surfaces and dark-green to grey on fresh surfaces and show a characteristic fine- to medium-grained texture.

Alteration of the greenstones is most prevalent in areas of intense fracturing and near the contacts with the Kaslo Ultrabasic Belt. In these areas, the greenstones grade into a chlorite-biotite schist.

Quartz veining in the greenstones occurs in areas of intense shearing. Many of these veins have been explored by short exploration adits. These workings were probably part of the general boom experienced at Retallack at the turn of the century. Characteristically, these veins yielded minor amounts of copper, lead, zinc and silver.

Within the chlorite-biotite schist prevalent along the greenstones' contact with the serpentinized peridotite, disseminated chalcopyrite has been noted. The extent of this mineralization has not been determined due to precipitous terrain.

Felsic Dikes:

Dikes ranging in composition from an alaskite to a feldspar-porphyry have been noted in the map area. They intrude both the Kaslo Series and the Kaslo Ultrabasic Belt. Although not confirmed by detailed mapping, they appear to be intrusions along dominant fracturing roughly parrallel to the attitude of the serpentinized peridotite.

In outcrop the dikes seen are white to light-gray in colour while in hand specimen they appear uniformly white. Disseminated pyrite is pervasive throughout these structures; minor chalcopyrite was noted at two locations. Late fracturing is healed with calcite and ankerite.

CONCLUSIONS AND RECOMMENDATIONS

Preliminary geological examinations of the ultrabasic and the surrounding Kaslo Series indicate that favourable structural and mineralogical conditions exist for the formation of a sulphide ore body. Further exploration of the area is warranted; a mountain climber/geologist will have to be employed to examine areas presently inaccessible.

It is further recommended that a magnetometer survey be made over those portions of the ultrabasic that are accessible on foot. The purpose of this type of survey would be the delineation of shear zones which may host sulphide concentrations.

R. J. TRIMBLE, B.Sc.

R.J. MacNEILL, P. ENG. Eng. B.C.

QUALIFICATION OF WRITER

Roy Jay Trimble is 23 years of age and completed the degree of Bachelor of Science (Honours Geology) at the University of British Columbia in May, 1972.

His experience includes one season as field assistant in the Yukon Territories with ASARCO, four months as an underground assistant geologist with Falconbridge Nickel Mines Ltd., eight months as Mine Geologist with Davis Keays Mining Company Ltd, four months as Project Manager for Cordilleran Engineering, four months as Party Leader and Field Geologist with Trigg, Woollett and Associates Ltd. and has been employed on this project as Project Manager and Field Geologist.

Mr. Trimble is fully qualified as a field geologist, and in the undersigned's opinion, has performed his duties carefully and reliably.

R. J. MacNeill P. Eng. B.C.

R. J. MacNeill, P. Eng.
Province of British Columbia.

AFFIDAVIT ON EXPENDITURES

Personnel

K.L. Daughtry, P.Eng. (Ont.)
Supervision, August 11,
1 day @ $125. ---------- $125.00

R. J. Trimble, B.Sc. Mapping,
supervision, preliminary
report (August 17, 1972),
August 12, 15, 16, 17, 18,
and 20, 1972. 6 days @ $100.- $600.00

P. Leontowicz, Mapping assistant
and prospector, August 12,
15, 16, and 18, 1972.
4 days @ $50. ----------$200.00

Support

Room and board - 11 man-days @
$10.00 ----------$110.00

Helicopter: Aug. 12 to 17 incl.:
4:05 hrs. @ $160.00----$653.33

Aug. 18 to 20 incl.:
3:05 hrs. @ $160.00----$493.33

TOTAL ----------$2181.66

I, R. J. MacNeill, of the city of West Vancouver in the Province of British Columbia , make the above declaration, concientiously believing it to be true and knowing it is of the same force and effect as if made under oath and by virtue of the Canada Evidence Act.

R. J. MacNeill P. Eng.

Declared before me at the city of ~~Vernon~~ Vancouver in the Province of British Columbia, this 13 day of Sept, 1972 A.D.

A commissioner for the taking of affidavits for British Columbia

SUB-MINING RECORDER

Pond

SB-63

SB-77

Serpentine

lders of Serpentine
ne with massive
Chalcopyrite.

DDH-1

Snow

72-1

72-2

72-3

71-1

60-65°

DIAMOND DRILLING
PAN OCEAN OIL LTD
WHITEWATER GROUP I

SB-62

SB-78

cf #3921

SB-72-2

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 3921 MAP #2

N

PAM 12
PAM 13
PAM 14
PAM 15
PAM 16
PAM 17
KANE CREEK
JAY CREEK
Pat Creek
SB 54
SB 52
SB 14
SB 61
SB 56
SB 58
SB 57
SB 59
SB 11
SB 10
GLACIER
Whitmonte Mtn 9400'

LEGEND

1. / 1a. Kaslo Ultrabasic ~ 1. Peridotite, 1a. Sheared-serpentinized peridotite.

2 Kaslo Series Volcanics (?) ~ Greenstones locally grades to chlorite schist.

3 Felsic Dikes ~ Alaskite to feldspar porphyry.

4 Quartz Vein System ~ minor py, cpy, gn

Geological Contact Definite, probable.
Fault or Shear Zone Definite, probable.
Contact attitude
Jointing attitude
Fracturing, attitude
Shearing, strike
" , " , possible
Outcrop
Helicopter Landing
Creek
SB11 Mineral Claim Number
+9400' Mountain Peak.

PAN OCEAN OILS LIMITED

GEOLOGY

SELECTED PAM AND SB CLAIMS

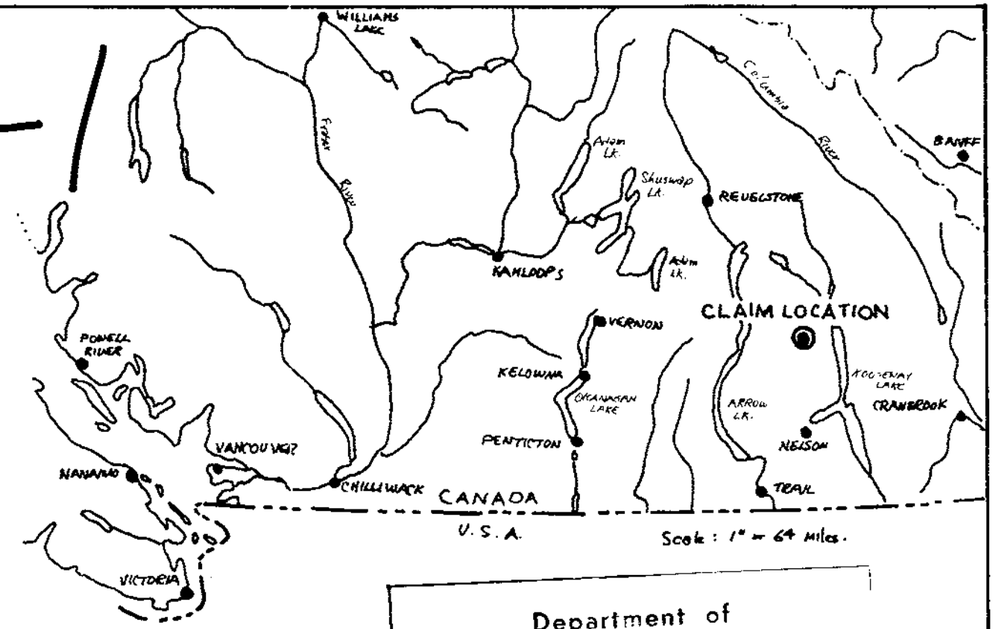
Prepared by: R.J. Trimble August 20, 1972
Approved by: R.J. MacNeill. P.Eng, B.C.
SCALE: 1 INCH = 1000 FEET.

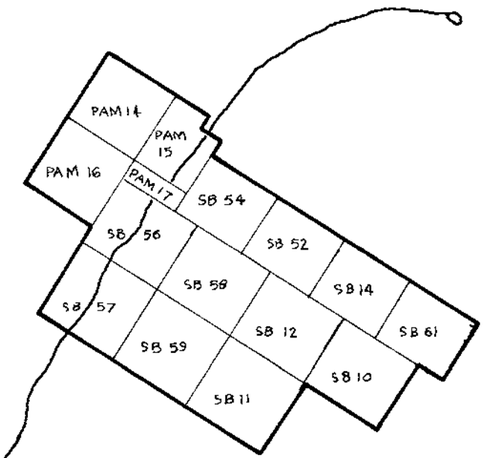
DWG: SB-72-2

R. J. MacNeill P. Eng.

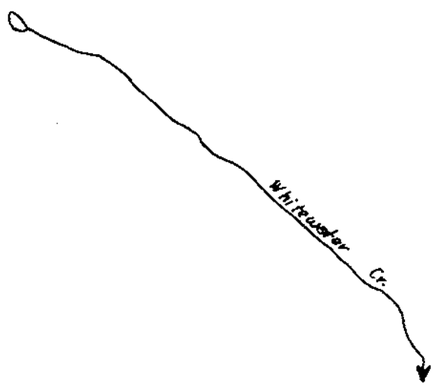
SB-72-1

3921 M-1





Scale : 2" = 1 Mile



Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 3921 MAP #1

PREPARED FOR: PAN OCEAN OILS LIMITED.
CALGARY ALBERTA

DERRY, MICHENER AND BOOTH LTD.

WHITEWATER MOUNTAIN PROPERTY
MIN. CLAIMS SB 10, 11, 12, 14, 52, 54, 56, 57, 58, 59, 61
PAM 14, 15, 16, 17.

CLAIM AREA AND LOCATION MAP

Technical Work By:	Scale
Derry, Michener and Booth Ltd.	As Shown
Drawn By: R.J. Trimble	Date: Sept. 1972
Approved By: R.J. MacNeill	SB-72-1

R. J. MacNeill P. Eng.