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GEOLOGICAL REPORT

ON

THE ACE GROUP OF MINERAL CLAIMS

OF

CONSOLIDATED NORTHLAND MINES LIMITED

AT

TEDDERCH LAKE, N.W. BRITISH COLUMBIA

by

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INTRODUCTION

This report summarizes the results of geological investigations carried out on the ACE Group of mineral claims near Tedideech Lake in the northwestern corner of British Columbia.

The writer, in the employ of Consolidated Northland Mines Limited, visited the area in 1957 during the periods from June 2 to June 13 and August 11 to August 24. Assistance in the field was rendered by S. Yanik during the initial visit and by D.E. Tayler during the second visit.

The field investigations, which included prospecting and geological mapping, were conducted primarily for the purpose of identifying and delineating rock types and geological structures insofar as they might indicate areas favorable for nickel mineralization which is known to occur elsewhere in the area at Opal Lake. Opal Lake is approximate-

ly four miles west of the west boundary of the property.

The accompanying geological plan, based on aerial photographic ground control, depicts the approximate limits of outcrop boundaries; and is believed to include most of the significant bed-rock exposure present on the property. Owing to the scarcity of outcrop - a characteristic of a large portion of the Tedideech Lake area - some mapping was done beyond the property limits to assist in establishing the dominant rock types and regional structural trend. Most of this work was carried out along the valley of the Koshin River west of the property, since here is provided the most-continuous geological section in the immediate area.

THE PROPERTY

The property was staked on September 25 and 26 under the supervision of S. Yanik working for Consolidated Northland Mines Limited, 509 - 25 Adelaide Street West, Toronto.

Holdings consist of 16 claims in a rectangular block that is eight claims long and two claims wide. Details of the claims follows:

<u>CLAIM NO.</u>	<u>REGISTERED NO.</u>	<u>METAL TAG NO.</u>
ACE #1	2968 N	282041
ACE #2	2967 N	282042
ACE #3	2966 N	282043
ACE #4	2965 N	282044
ACE #5	2964 N	282045
ACE #6	2963 N	282046
ACE #7	2962 N	282047
ACE #8	2961 N	282048
ACE #9	2976 N	282049
ACE #10	2975 N	282050

ACE #11	2974 N	282051
ACE #12	2973 N	282052
ACE #13	2972 N	282053
ACE #14	2971 N	282054
ACE #15	2970 N	282055
ACE #16	2969 N	282056

#### LOCATION OF PROPERTY

The Tedideech Lake area is in the northwestern corner of British Columbia about 88 direct-line miles from Atlin, B.C. and 62 miles north and a little west of Telegraph Creek. Atlin is the closest settlement of any size.

The property is in the northwest quadrant of the quadrangle between Latitudes 58 and 59 degrees and Longitude 131 and 132 degrees. The topography of the area appears on the Dease Lake Sheet (1 inch to 4 miles), 104J, of the National Topographic Series of the Department of National Defence. The claims are shown on Mineral claim map #73M2 issued by the British Columbia Department of Mines.

The group of claims embraces an area that extends from south of Tedideech Lake westward to the east bank of the Koshin River.

#### ACCESSIBILITY

The area is remote from any road or water transportation, and is most easily reached by light float- or ski-equipped aircraft which may be chartered in Atlin from Peterson's Air Service and landed on Tedideech Lake.

A less satisfactory but alternate means of entering the country is by foot or horse from Atlin or Telegraph Creek via the Telegraph Trail, which crosses the extreme west side of the property.

GENERAL FEATURES OF THE AREA

The area occupies a part of the major physiographic unit known as the Stikine Plateau that lies between the Coast Range on the west and the Stikine and Cassiar mountains on the east.

Terrain features gentle slopes westwards towards the Koshin River and northwards and eastwards towards Tedideech Lake. The maximum relief is less than 500 feet and elevation above sea level ranges between 2000 and 3500 feet. A large part of the eastern third of the property - particularly around Nomoose Lake - is muskeg and marshy ground.

Rock exposure is extremely sparse (probably less than 5 percent of the ground area) and on the property is confined mainly to the higher ground on ACE 7, 9 and 10 mineral claims. Even here, outcrops are small and frequently quite obscure.

Forest growth is widespread but nowhere in great abundance. Almost the entire land surface, whether forested or open country, is infested with a thick growth of low alders, willows and "buck-brush" which greatly impede overland travel and do much towards obscuring what little outcrops there are in the area.

Drainage of the area is effected by the Koshin River which flows north to join the Nahlin River two miles west of Nahlin Crossing on the Telegraph Trail. Tedideech Lake is the largest body of water in the vicinity of the property although numerous other, smaller lakes are found in the surrounding area.

### REGIONAL GEOLOGY

So far as can be determined little geological work has been done in the area, and no recent written data could be found dealing with the regional geological setting. The geological map of British Columbia (map B3EA) published by the Geological Survey of Canada shows the region to be underlain by Mesozoic ultra-basic and acidic intrusives that surround small remnants of undivided Paleozoic sediments.

The writer's work reveals that the sedimentary rocks are more extensive than shown on the government map, and it is believed that they may be continuous with a wide belt of similar rocks that have been mapped in detail in the Atlin area to the northwest.

(It is known from the writer's observations that ultra-basic intrusives are the predominant rocks in the area around and north of Hatin Lake, some 8 miles south of the property.)

The entire area is mantled by extensive deposits of Pleistocene and Recent glacial drift, soil and alluvium, which in places probably reach considerable thicknesses.

### GEOLOGY OF THE PROPERTY

The areal distribution of lithological units identified on the property and outlying areas is shown on the accompanying geological plan on a scale of 500 feet to one inch. Rocks mapped are all sedimentary with the exception of a few small bodies of light-colored rocks that may be intrusive.

For the purpose of field mapping the consolidated rocks on the property were divided into the following groups:

- (a) Serpentine (1)
- (b) Limestone (2)
- (c) Argillite, greywacke, arkose, grit, chert (3)  
(may include some tuffaceous material)
- (d) Feldspar porphyry (4)
- (e) Carbonate zone (5)

The limestone is the best-exposed rock in the area. It is a grey-weathering, pure-looking rock with, in places, poorly-developed bedding. At other places no bedding can be discerned. The texture varies from dense and fine-grained to medium-crystalline. The limestone is relatively resistant to erosion and tends to stand up in relief above the surrounding rocks. It is, in some localities, traversed by a system of conjugate, rectangular fractures that are healed by white, crystalline calcite.

Argillite is typically a dark grey to black, foliated rock with planes of foliation essentially parallel with the bedding. It may be either calcareous or siliceous, and locally exhibits small-scale crumpling with quartz and carbonate injected along disturbed planes of foliation. In some places quartz constitutes 5 to 10 percent of the rock mass.

Other green, grey and black, dense, chert-like beds may be true chert or be silicified argillite.

Certain light-colored, greyish and greenish, poorly exposed beds are classed together as greywacke, grit, and arkose. A few possess an ashy-looking character and may be composed of tuffaceous material.



An outcrop on the north shore of Homoose Lake in the southwest corner of ACE 5 consists of light-grey, acid rock containing fine crystals of white feldspar, and scattered flecks of green, chloritic(?) material. The rock is classed as a feldspar porphyry. Other exposures of similar rock were identified that were too small to map on the scale being used.

Rocks along the valley of the Koshin River are featured by much intense fracturing, crushing and shearing, and in many places their true identity is difficult to ascertain. In addition to previously described rock-types there occurs a zone of carbonate rock and several outcrops of dark-green rock that may be serpentine or chlorite schist.

Material from the carbonate zone is buff to brown weathering and a similar shade of the same color on the fresh fracture. It contains intermixed carbonate and siliceous phases, and shows numerous patches and lenticules of a green mineral that may be a chromiferous mica of the mariposite family.

The serpentine or chlorite schist is a dark green, intensely deformed rock that breaks easily along myriads of irregular, curving fracture planes with shining, slickensided surfaces.

At several localities along the river the argillite and greywacke are thin-bedded; with individual beds sharply defined and reaching a minimum thickness of less than one inch. Similar thin-bedded horizons were not recognized in the exposures in the centre of the property.

STRUCTURE

The paucity of rock exposure permits no more than a very general treatment of the structural conditions that obtain on the property.

All the sedimentary rocks conform to an average strike of approximately North 80 degrees West, and seldom vary more than a few degrees from this direction. Dips are steep; in the main from 70 to 80 degrees south.

No evidence of large scale folding can be recognized, and the major part of the small-scale folds seen are limited to argillaceous rocks.

The intense deformation of rocks along the Koshin River may be attributable to faulting along the general course of the river in this locality. The limestone on the east where the Opal Lake trail crosses the river does not appear on the west side, although limestone is exposed on the west side some 1800 feet farther north. In addition, the carbonate zone exposed in the southwest corner of the map area does not appear on the east side of the river. However, these two apparent structural discontinuities may be the result of inadequate rock exposure rather than actual displacement by faulting along the river valley.

The carbonate zone is the locus of considerable alteration and introduction of carbonate and silica, and may represent a longitudinal fault structure of some magnitude. Work of a more regional nature would be necessary to determine its origin.

ECONOMIC GEOLOGY

Except for a minor quantity of pyrite in a few of the sedimentary beds, and isolated specks of pyrite and chalcopyrite in the feldspar porphyry, no metallic mineralization was encountered on the property.

Apart from a possible - but unproven - fault structure along the Koshin River, the carbonate zone is the most significant feature in the map area. It is believed to be the eastward continuation of a similar zone that outcrops in the vicinity of the Opal Lake nickel showing. If this is correct, then the structure is at least 4 miles long.

However, work around Opal Lake has not shown the carbonate zone to bear any direct structural or genetic relationship with the nickel (millerite) mineralization. Low nickel values have been reported from the carbonate matter around Opal Lake, but the carbonate in the map area gave a negative reaction to dimethylglyoxime powder.

CORRELATION OF ROCKS

The age of the consolidated rocks in the map area is uncertain. On the basis of the degree of alteration and deformation, lithological character, and experience in other regions of British Columbia, the writer would tentatively correlate the sedimentary rocks with the Cache Creek Group of Permian age. Detailed geological mapping in the Atlin map area to the northwest has revealed considerable areas to be underlain by Cache Creek sediments, and rocks in the Tedideech area may be a continuation of this same belt of Permian rocks. Work

of a more regional nature, however, may prove this correlation to<sup>ve</sup> incorrect.

The acid intrusives (porphyry) present are probably later than the sedimentary rocks and may belong to the major period of igneous activity that took place during the Jura-Cretaceous period.

SUMMARY

The ACE group of claims is underlain mainly by sedimentary rocks provisionally correlated with the Cache Creek Group.

These rocks conform to an average North 80 degrees West strike and are inclined steeply to the south.

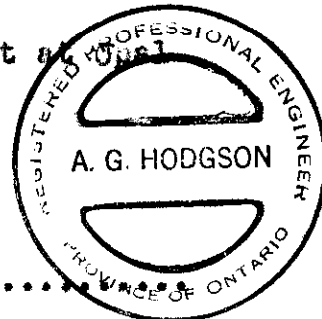
No major folding is apparent. Cross-faulting is suggested by strong deformation and apparent off-set or terminated horizons along the Koshin River, but positive evidence is lacking. Longitudinal faulting may be reflected in a carbonate zone believed to be the eastward continuation of a similar zone near Opal Lake.

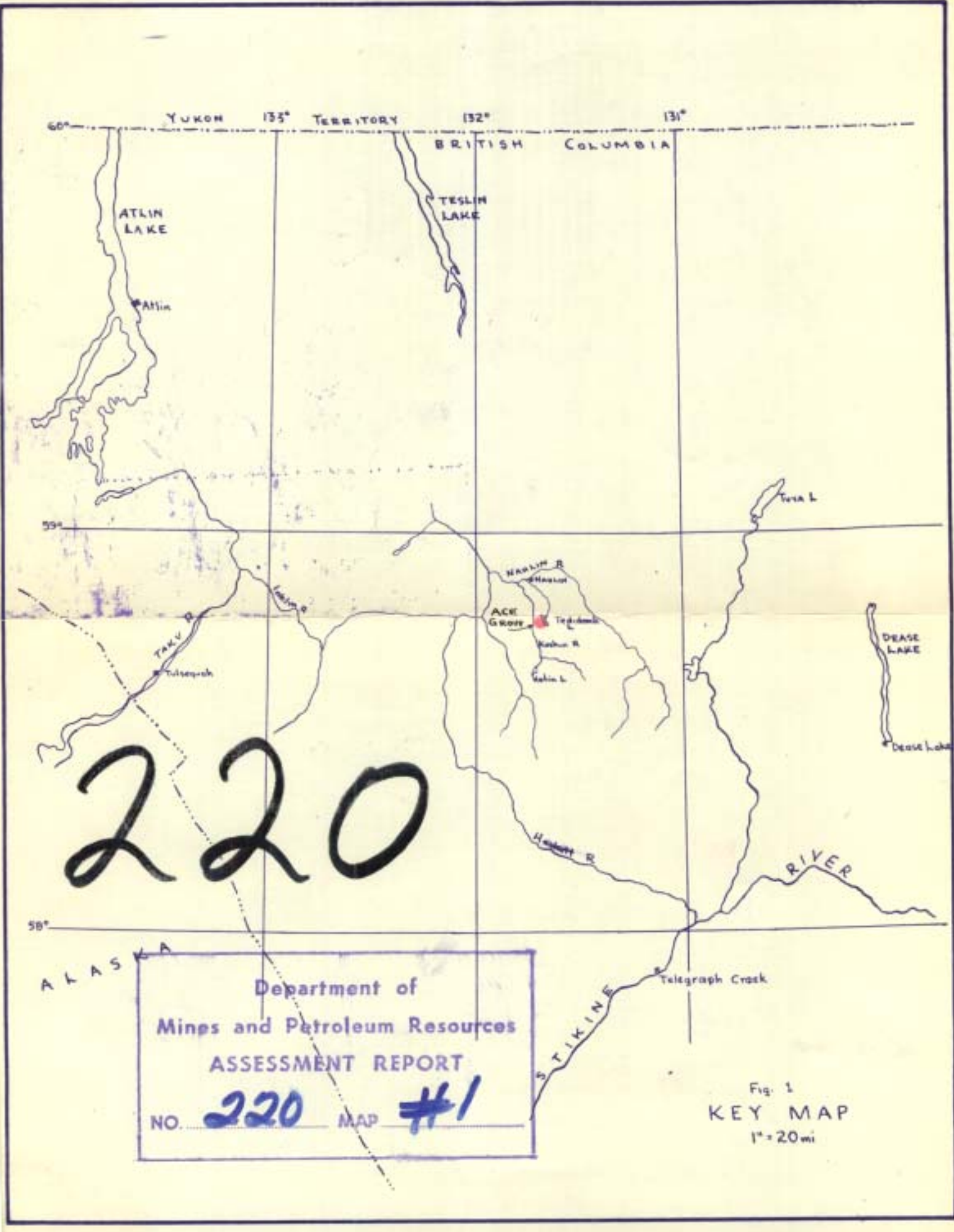
No mineralization of economic importance has been found on the property, although the dearth of outcrop renders surface investigations wholly inadequate to exhaustively explore the property

The property does not merit further investigation unless the exploration of the known nickel deposit at Opal Lake produces decidedly encouraging results.

*A. G. Hodgson*

A. G. Hodgson P. Eng.



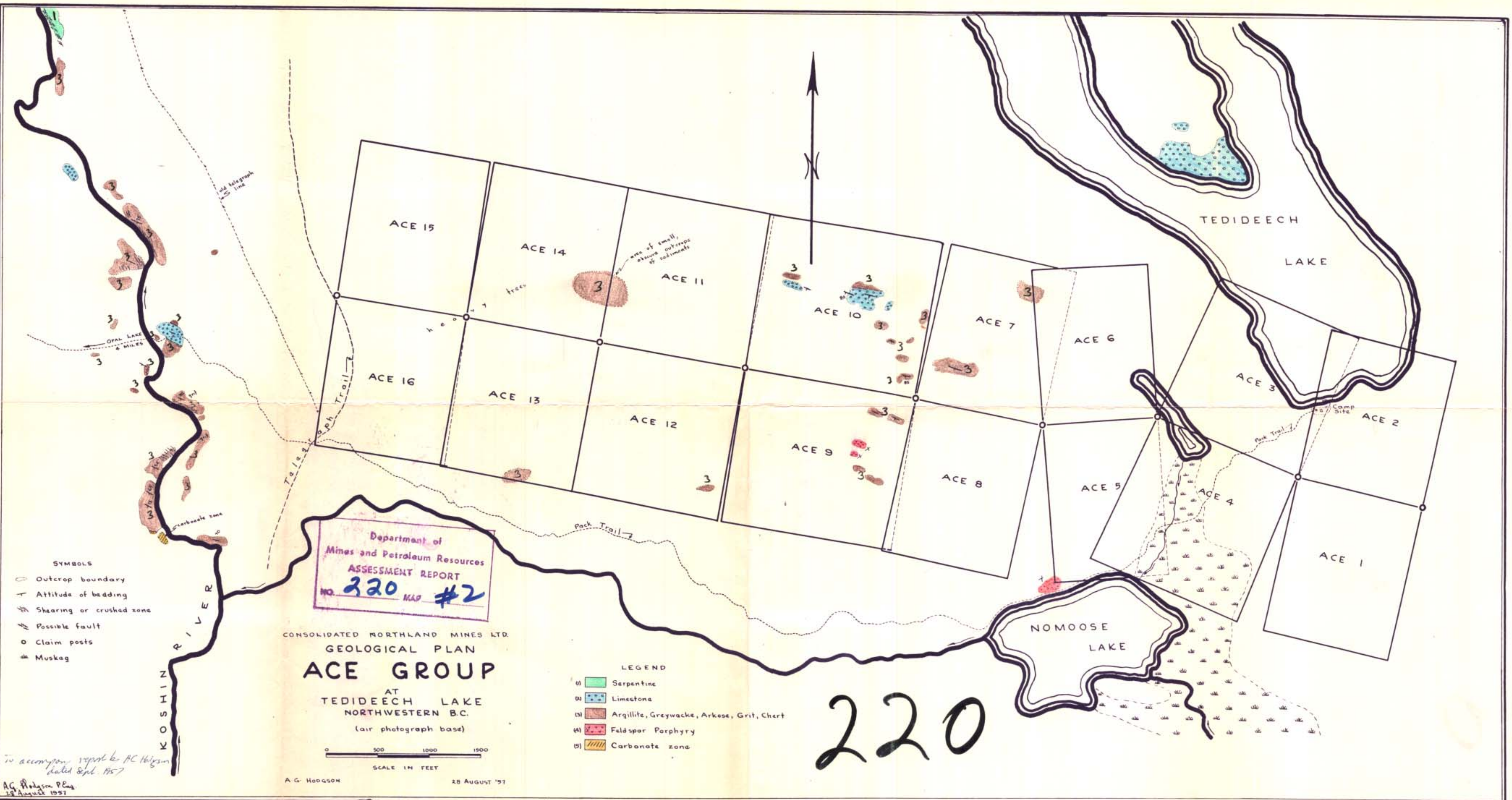


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ALASKA  
Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 220 MAP #1

Fig. 1  
KEY MAP  
1" = 20 mi





Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 220 MAP #2

CONSOLIDATED NORTHLAND MINES LTD.  
GEOLOGICAL PLAN  
**ACE GROUP**  
AT  
TEDIDEECH LAKE  
NORTHWESTERN B.C.  
(air photograph base)

0 500 1000 1500  
SCALE IN FEET

- LEGEND
- (1) Serpentine
  - (2) Limestone
  - (3) Argillite, Greywacke, Arkose, Grit, Chert
  - (4) Feldspar Porphyry
  - (5) Carbonate zone

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In accompan report by AC Hodgson dated Sept. 1957  
A.G. Hodgson P.Eng.  
28 August 1957