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REPORT ON THE

GEOLOGICAL SURVEY

of the NOR GROUPS

FIDELITY URANIUM MINES LTD.

ASPEN GROVE, B. C.

March 1, 1957.

E.J. Wendeborne

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS

A-SURVEY

This report is herewith submitted concerns the following 22 mineral claim groups for the purpose of assessment recording in the following groups:

NOR-A Group consisting of mineral claims Nos. NOR 35, 41, 42, 43, 44, 48, 49, and 50.

NOR-B Group consisting of mineral claims Nos. NOR 27, 28, 29, 30, 31, and 32.

NOR-C Group consisting of mineral claims Nos. NOR 17, 19, 21, 22, 23, 24, 25 and 26.

The survey and subsequent trenching and rock work was done by a crew under the direction of the following men:

E.J. Wendeborne, Prof. Eng. (Saskatchewan)

J.F.V. Millar, P. Eng. (Alberta)

The work was carried out during the summer of 1956, from the middle of July to the middle of October.

The use of aerial photographs as a control for mapping the geology was found to be impractical, so a large number of short closed brunton and pace traverses were made from the known geographic locations and from two north-south picket lines, one on the west side of the ridge and the other on the east side. Added control was provided by the surveyed parts of the crown granted claims to the northwest. A control map was made from the aerial photographs and all plotting was carried out in the field.

A preliminary geological examination of several weeks

duration, eliminated the remaining 32 claims and the more thorough work was concentrated in the area covered by the present survey.

The resulting geological map accompanies this report.

Detailed geology was carried out from picket lines over all the four main showings.

The main showings and numerous smaller showings were trenched. The largest trench, a bulldozer cut, was put in on the showing on NOR 19.

LOCATION

The NOR group of 55 claims is located in the Aspen Grove copper camp in southern British Columbia. As shown on the accompanying sketch map of the property, the claims were staked in the form of an "L", upright in a north-south direction. The north limb being two claims in width and the east limb four claims in width, with five crown granted mineral claims located in the angle formed by the two limbs. The town of Aspen Grove is situated three miles north-west of the claims. The eastern boundary of the claims lies along the west shore of Bluey Lake, from which they extend seven claims to the west. The claims are mapped on the British Columbia Minister Mines Claims Map No. 6BM.

GENERAL

The topography is in general subdued with wide valleys tending in a north-south direction. Differences in elevation would not exceed two thousand feet, but in the neighbourhood of the NOR group,

the difference in elevation between the highest and lowest point would be less than 1,000 feet. The hillsides, while not steep, are in the form of a series of steps along the steeper sections of which outcrop is generally abundant. The height of land separating the Bluey-Lake Kentucky Lake valley and the Otter Creek valley runs down the centre of the claims through NOR 48 to NOR 26 claims provides extremely thorough bedrock exposure.

In general, the area may be classed as rangeland. The upland areas are sparsely wooded with jackpine with a notable absence of underbrush.

Evidence of very early work in the area was found in several places. This work consisted of trenches and very shallow shafts, most of which are now caved and of no use.

GEOLOGY

The general geology of the area is covered in Memoir 243 of the Geological Surveys of Canada.

All rocks underlying the NOR claims are upper Triassic in age belonging to the Nicola group. The vast majority of the rock types identified are volcanic flows and flow breccias varying in composition and degree of alteration. The only sedimentary rock identified, was limestone, which was mapped in two sections of the property just to the east of the main ridge.

The andesites, which comrpised the greater part of the rock formation, are quite variable in texture and degree of metamorphism and present no well-defined boundaries between various classifications of alteration of original rock type.

The division of the volcanic rocks, as shown on the accompanying geological map, was more for the purpose of field correlation and identification, than an attempt to classify the rocks.

The most common rock identified was the plain fine-grained andesite which was found to be generally grey in colour but was found in places to have a distinct reddish or sometimes greenish colour. Rocks of this type are shown as Nos. 1, 1a, and 2 on the geological map. The 1a classification indicates outcrops showing silicification while the No. 2 designated an abundance of epidote and the slightly different texture than the normal fine-grained andesite.

In the eastern half of the property and underlying the breccias, several areas were noted containing more well-developed augite crystals with less plagioclase feldspar in evidence.

In a very rough band through the centre of the property and co-inciding with the ridge of highland are a series of volcanic flow breccias. Fragments of nearly all the other rocks are found in varying sizes and shapes in several different ground masses. Silicified phases of all breccias are found in various parts of the rocks, but more commonly found to the west of the ridge in the same general trend as the silicified and altered fine-grained andesite (designated No. 1a).

The only sediment found on the property is limestone which was mapped in three smaller areas. The largest being on claim 48 and 49. Unidentified fossils were found in several of the beds.

STRUCTURAL GEOLOGY

No primary structures were identified in the rocks underlaying the NOR group. No flow tops or bottoms could be positively identified, but it is possible that concentrated work on the breccias in the neighbourhood of the main ridge would be successful.

The principal fault system associated with the Aspen Grove camp, follows a north-south trend. The two main faults lay some four miles apart; the Allison Lake fault to the west, following the Princeton-Merritt highway and the Missezula-Alleyne Lake fault which passes through Blue Lake on the east boundary of the NOR group. Numerous cross faults and shears have been mapped in the Aspen Grove area. Many more are obvious from the study of the aerial photographs of the area.

According to the geological survey memoir 243, the Allison Lake fault is not a single line of rupture, but rather an enechelon arrangement of closely related faults.

It is with these north-south trending faults that the shear structure on the NOR group is associated. Most of the shearing, both mapped and inferred, has an altitude of N 10° W. Some subsidiary structures cut obliquely to this trend.

ECONOMIC GEOLOGY AND MINERAL DEPOSITS

Scattered copper mineralization has been known to exist in varying amounts in the rocks of the Nicola series in this area for nearly sixty years. During the recent programme, only one deposit of

any significance was discovered that had previously not been worked in some manner.

NOR 19 SHOWING

After investigation and sampling of a showing in a shaft on the side of a narrow north-south lineament, an extended programme of hand trenching was carried out to trace the extension of the mineralized zone. In September it was decided to bring a bulldozer in and put some deeper cuts in the area which the sampling gave the most significant results.

The showing consisted of chalcocite and chalcopyrite disseminated and in stringers in a shear zone in fine-grained red andesite. The mineralization was traced for 250 feet by means of a long bulldozer trench and a series of hand trenches. The zone was found to bifurcate into two narrower shears, both of which are mineralized to some extent.

NOR 22 SHOWING

A zone of shearing parallel to and possibly an extension of the showing of NOR 19 was investigated by means of hand trenches and a length indicated of nearly 100 feet.

Mineralization consisting of chalcocite and chalcopyrite was found in a narrow shear zone in an old rock cut.

NOR 30 SHOWING

The best grade mineralization discovered on the property was found in a shaft and rock trench on the west boundary of the NOR 30

claim. A zone of high-grade chalcocite mineralization, up to 4 or 5 inches of solid chalcocite, was explored by a deep rock cut. Bordering the high-grade zone is several feet of disseminated chalcocite. This zone is traceable for several hundred feet on rock outcrops and the above-mentioned trenches. Forty feet to the north of the trench a shallow shaft was sunk on a wide shear zone or area of shearing, which has been mineralized with more or less chalcopyrite and chalcocite. Samples taken from this shaft showed a very small percentage of copper content.

Some hand trenching was carried out on the extension of both these zones to the north.

NOR 31 SHOWING

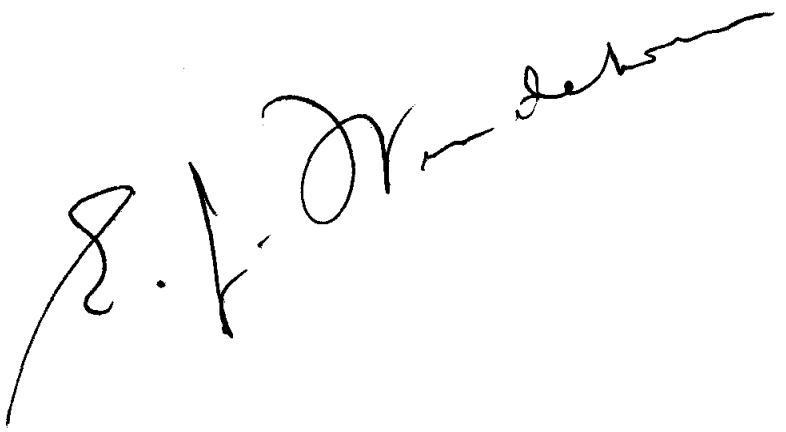
The most interesting showing discovered on the east half of the property was found to the west of a small ridge along the west shore of Bluey Lake. The showing is on the side of a strong N 10° W shear zone. Several narrow (5 and 6 feet in width) shear zones were discovered carrying significant copper values. A narrow section of fairly good grade material was traced for 250 ft. by means of shallow trenches and rock cuts.

The mineralization is chalcocite disseminated and in calcite stringers in a shear zone. It is thought that the shear zones may be subsidiary structures to the main shear zone with which they are associated. This main shear zone is difficult to prospect due to the overburden underlaying it.

RECOMMENDATIONS

The occurrences of copper mineralization are widespread, although present showings appear of a limited nature, with regard to both mineralization extent and structure. The possibility of proper mineralization having been deposited in more major structures is feasible from a study of the overall geological data collected by Government geological surveys as well as exploration recently conducted by the company. Further prospecting of a general nature is recommended. Inasmuch as detailed trenching is hindered by heavy overburden, an electro-magnetic survey may show, more quickly, any anomalies or anamalous conditions and could be conducted very economically.

Further stripping, or more advanced work, could be predicated on the results of the electro-magnetic survey.



STATEMENT OF EXPENSES

on the Geological Survey of the NOR Group of mineral claims (23 claims) owned by Canadian Chieftain Petroleums Ltd. and Fidelity Uranium Mines Ltd. in the Aspen Grove camp of B. C.

E.J. Wendeborne, Geologist, @ $550.00 per month for 1 month	$ 550.00
J.F.V. Millar, Mining Engineer, @ $550.00 per month for approx. 16 days	296.88
K. Falconer, student assistant, @ $350.00 per month for approx. 49 days	898.33
D. Yates, prospector, @ $300.00 per month for approx. 15 days	150.00
C. Seaman, prospector, @ $300.00 per month for approx. 20 days	200.00
J.D. Hradil, prospector, @ $375.00 per month for 45 days	562.50
	2,657.71

CERTIFIED:

ACCOUNTANT.

The above amounts are the amounts paid to the men involved and charged to the survey on the books of the company.

CERTIFICATION

I, Emil J. Wendeborne, of the City of Edmonton, in the Province of Alberta, hereby certify:

1. That I am a registered Geologist and reside at 6703 - 127 Avenue, Edmonton, Alberta.

2. That I hold the degree of B. Sc. and have practised my profession from 1948.

3. That I have no direct or indirect interest in this property, nor have I the expectation of receiving any.

4. That the accompanying report is based on personal survey of the NOR claims noted.

DATED at Edmonton, Alberta, on the 15th March, 1957.

E. J. Wendeborne, P. Egg.

Seal

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SUMMARY OF QUALIFICATIONS

NAME Emil J. Wendeborn

ADDRESS 6703 - 127 Avenue, Edmonton, Alberta.

ACADEMIC

Degree	University	Year	Major Subject
B.Sc.	University of Manitoba	1948	Geology, Chemistry

MEMBERSHIPS IN TECHNICAL SOCIETIES

Member Canadian Institute of Mining and Metallurgy

Member Assoc. of Prof. Engineers of Saskatchewan

Former Member Assoc. of " " " Manitoba

" " " " " " " " Ontario

" " " " " " " " Quebec

SUMMARY OF PRACTICE

1948 - 1951 Field Geol. International Nickel Co., Sherritt Gordon Mines Ltd.

1951 - 1952 Senior Mine Geol. Algoma Iron Ore

Chief Geol.

1952 - 1953 Chief Geol. Buffalo Ankerite Gold Mines

1953 - 1954 Senior Mine Geol. Hudson Bay Mining and Smelting Co.

1954 Area Chief NALCO - Contract
Central Nfld.

1954 - 1956 Field Geol. Tri Management Services Ltd.

1957 Petroleum Geol. Canadian Fina Oil Ltd.

PROFESSIONAL ENGINEER
E. J. WENDEBORN
EDMONTON, ALTA.

Note: The above information is for the use of the B.C. Dept. of Mines in connection with reports submitted in support of applications for credit. At the discretion of the Department, it may be accepted in a specific instance or for a limited period of time in lieu of registration with the Association of Professional Engineers of British Columbia.

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SUMMARY OF QUALIFICATIONS

NAME J. F. V. Millar

ADDRESS 119 Commercial Chambers
Edmonton Alta.

ACADEMIC

Degree	University	Year	Major Subject
B. A. Sc.	U. of B. C.	1950	Mining Engineering

MEMBERSHIPS IN TECHNICAL SOCIETIES

Member - Assoc. of Prof. Eng. of Alberta

SUMMARY OF PRACTICE

1950 - 1952 Small property leasing, Kootenay area - Southern B.C.
Contracting, road + tunnel work

1953 - 1955 Placer mining and engineering
Project engineer and exploration engineer, Y.C.G.C. Dawson City Yukon.

1955 - 1956 Tri Management Services - Expl. Manager and Chief Engineer in charge of operations for Combined Developments Ltd., Fidelity Uranium Mines Hawker Uranium Mines, North Country Uranium Mines.

1956 - 1957 Independent engineering work for several Edmonton and Eastern Mining Companies.

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JFVM.

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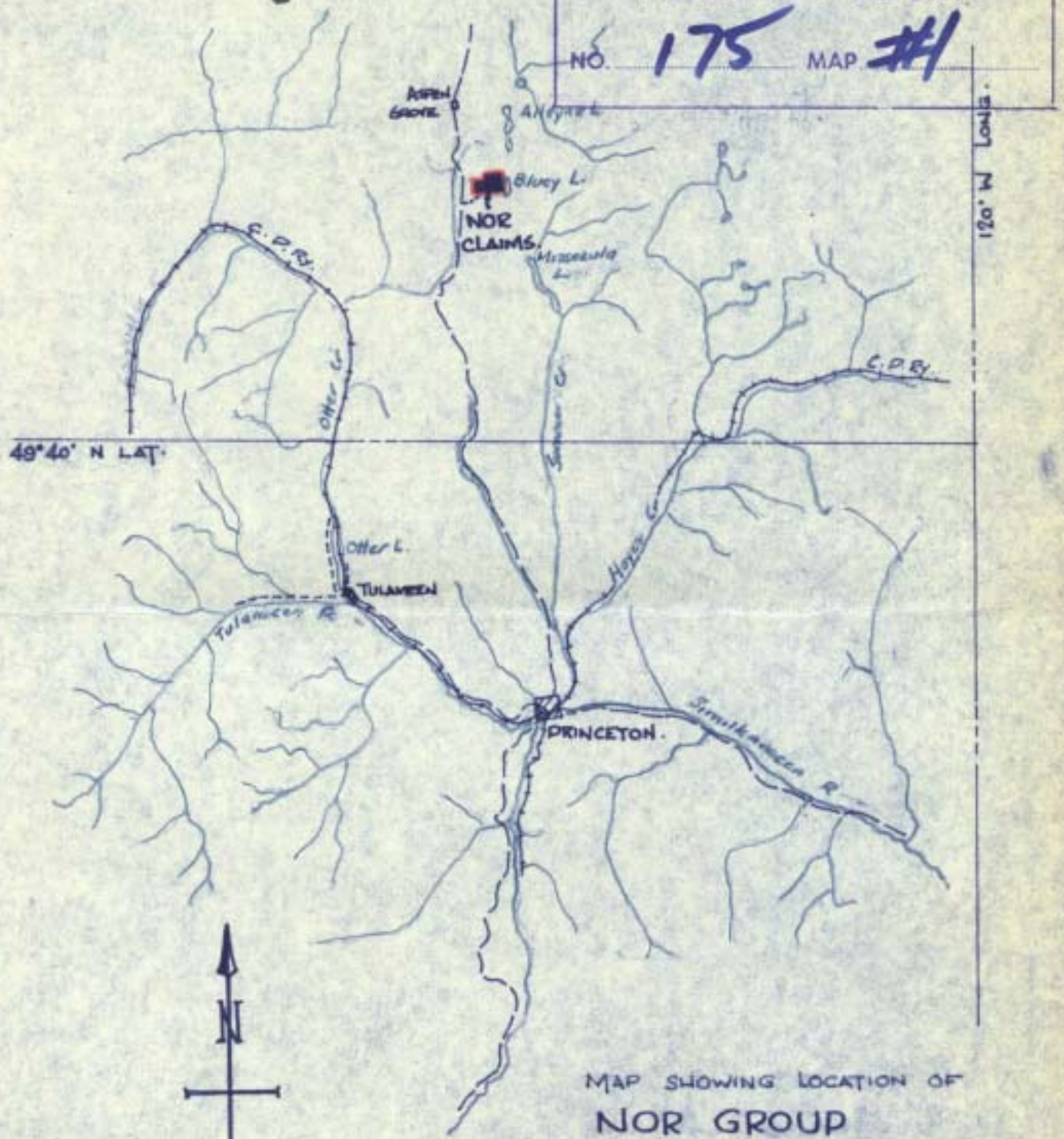
Department of
Mines and Petroleum Resources
Assessment Report

NO. 175 MAP #1



MAP SHOWING LOCATION OF

NOR GROUP

ASPEN GROVE CAMP IN SIMILKAMEEN MINING DIV.

CPR - Kettle Valley Line ←→

HIGHWAYS — — — ----

Scale 8 mi = 1 inch.

MAIN PROPERTY PLAN
NOR GROUP

Portland Camp

VOLCANIC

1 — fine grained, red to grey, usually calcareous

1a — silicified, metamorphosed

2 — epidote and shear planes abundant, sugary texture; weathers pastel shades of red and green

3 — dark green to dark grey; dense. Augite crystals well developed. Plagioclase crystals to lesser degree

4 — medium grained dark green containing biotite, augite, light green inclusions to one inch

5 — dark, shorty, heavily brecciated; variety of inclusions to six inches

6 — fine grained, red containing andalusite crystals and inclusions of grey and light green material

6a — silicified

7 — red siliceous containing well developed augite and appearing as inclusions and leases.

8 — mauve breccia; highly metamorphosed, siliceous with inclusions of ? and dark blue material.

9 — chocolate weathering augite diorite

SEDIMENTARY

10 — limestone

11 — covered

SCALE : 1 INCH = 300 FEET

300 0 300 600 900 1200 1500

October 1986.

Logging Road

Trail

Farm Line

Claim Post, Numbers

Shaft

Trench : Number, Original, Recent

mineralization Cu

Shear direction

Fault

Ore zone

N

OUTLINE OF CROWN GRANT BOUNDARIES

NOR 48 NOR 43 NOR 44 NOR 35 NOR 36

NOR 41 NOR 42 NOR 49 NOR 50

NOR 17 NOR 21 NOR 23 NOR 25 NOR 27 NOR 29 NOR 31 NOR 33

NOR 19 NOR 24 NOR 26 NOR 28 NOR 30 NOR 32 NOR 34

NOR 22

BLUEY LAKE

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MAP 2