Norpax Nickel Mines Ltd.

INTERIM REPORT #2

SALAL CREEK MOLYBDENUM

Bridge River, B. C.

Douglas D. Campbell

September 9, 1964

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Consultant

Vancouver
Canada

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INTRODUCTION

Earlier this year the writer submitted a brief preliminary report on the Salal Creek Molybdenum property based on interview with Mr. Hadden Agnew and references available on the area. Subsequently, on August 18 and 19 the writer examined the main exposures of the property and made an aerial reconnaissance of the general geology of the surrounding area.

This report presents the results of the recent examination. Further reports will be submitted as work on the property progresses. Because other reports will be forthcoming this present report is designated as Interim Report #2, the original report being regarded as #1.

LOCATION AND HISTORY: The property is an extensive one located in the heart of the B.C. Coast mountains at 50°45' N and 123°25' E. It is 40 miles northwest of Pemberton, B.C., at the headwaters of Salal Creek, a tributary of the Lillooet River. Present access to the area is by helicopter from Pemberton. A road could be built to the property up the Lillooet valley from Pemberton, a distance of 20 miles, or up the Bridge River valley, a distance of about 20 miles. The advantage of the Lillooet River route is that it terminates on rail at Pemberton.

The occurrence of molybdenite was discovered and staked by the Phelps Dodge Corporation in 1960. Prospecting was carried out by that company in 1961 and the claims allowed to lapse the following year. Prospectors for the Kelcam Mining Co. staked 32 claims, the "R" numbers 1 to 32, late in 1963 which are a relocation of most of the Phelps Dodge claims. In May, 1964, 30 claims adjoining the "R" claims on the east were staked for E.E. Mason. These are the "E.E." mineral claims Nos. 1 to 30. The "R" group has been obtained by Norpax Nickel Mines and the "E.E." claims are held in trust by E.E. Mason for Norpax.

LEGEND

MOLYBDENITE OCCURBENCES

MONZONITE

GRANODIORITE

RECENT LAVAS

ICE FIELD

GLACIER

WEST FORK

SALAL CREEK

EAST FORK

BIG CR.

CORNICE CR.

TRAIL CR.

FLOAT CR.

NORPAX NICKEL MINES
TORONTO, CANADA

GEOLOGY PLAN

MOLYBDENITE DEP.

SALAL CREEK

D.D. CAMPBELL CONSULTANT VANCOUVER

SCALE

1¼" = 1 MILE

SEPT. 9 1964

FIG. 1

SUMMARY AND CONCLUSIONS

The main showings of the Salal Creek property occur in the southeast corner of a square-shaped intrusive plug of quartz-monzonite. This plug is approximately four miles square and it has intruded granodiorite plutons of the Coast Range batholith. The monzonite is closely and intensely fractured by about three sets of joints which are extensively mineralized by quartz, pyrite and some molybdenite. The surface oxidation of the pyrite has converted the monzonite, which stands as the southern half of a single mountain mass, into an extremely rusty prominence among the surrounding grey granodiorite. Most of the flat surfaces of the plug are covered with glacial ice, Recent volcanic deposits and glacial deposits of gravel and outwash, etc. The northern half of the plug is in contact with the granodiorite along an upland surface that has few exposures. The only good exposures occur along the south side of the plug which is deeply eroded by the east and west forks of Salal Creek.

Around the southeast corner of the monzonite plug a number of steep snowslide-creek gulleys have bared fresh rock down the mountain side over an elevation of about 2,000 feet with a distance of about 2 miles from the southwestern most creek, Float Creek, to the northeastern most creek, Big Creek. In six of these creeks the exposed fresh monzonite is mineralized with molybdenite, in some places sparsely and in others profusely. The best mineralization occurs in Float Creek and Big Creek, two miles apart. The molybdenite occurs with quartz and pyrite in tight joints, two sets of which are host to most of the molybdenite. These sets strike N20°E, one dipping steeply west and the other steeply east.

Weathering has leached all the vein material from the joints except in the beds of the creeks therefore general assessment and sampling of the area is useless unless fresh surfaces are obtained. The ruggedness of the terrain in the south and the cover of overburden, etc. in the north make surface stripping either prohibitively difficult or impossible. For this reason the writer has recommended the drilling of a number of

SUMMARY AND CONCLUSIONS (Cont'd)

holes from the lower end of Float Creek, the best and richest exposure, in order to provide a proper sampling of the deposit and an indication of its extent from Float Creek.

The occurrence of the molybdenite with quartz and pyrite in persistent and densely distributed joint sets within a monzonite intrusive body is a most favourable indication that the property is a typical molybdenite deposit of the Cordillera type, which includes Climax and Endako. Investigation of the Salal Creek deposits will be difficult and costly but the meagre evidence available thus far is extremely encouraging. Further assessment of the property will be made following the drill results.

GEOLOGICAL SETTING

The Salal Creek property is located just inside the eastern fringe of the Coast Range intrusive belt. The claims are underlain by quartz-monzonite which is part of a plug that is intrusive into the surrounding granodiorite plutons that form the great mass of the Coast Range batholith. North of Salal Creek on the other side of the Bridge River, other bodies of monzonite occur along the east edge of the batholith. These younger intrusives may be Tertiary in age. Similar intrusives are the foci for copper-molybdenum commercial mineralization throughout the Cordillera and extend through B.C. in a northwest direction along the eastern side of the Coast Range batholith.

At Salal Creek the monzonite plug is roughly square-shaped measuring about eight miles to the side. It underlies the southern half of a single mountain mass which is bounded on the north by the headwater valley of the Bridge River and on the south by the east and west forks of the headwaters of Salal Creek which drains southward into the Lillooet River. This mountain mass is steep and high walled but relatively flat topped, the central 3 square miles being covered by an ice field. The monzonite portion of the mountain is well exposed as a precipitous, high valley wall along the west and east forks of Salal Creek on the south but is largely covered on top by the ice field as well as by relict patches of lava flows and gravel deposits of Recent age and also by thick deposits of glacial outwash and moraine. The north contact of the monzonite crosses the top of the plateau and is largely covered by overburden. Thus the best exposures of fresh monzonite are along the south cliffs of the mountain where snowslide creeks have scoured long straight gulches down the mountain face.

The only traversing the writer did on foot was the descent of two gulches near the southeast corner of the monzonite plug. The geological map accompanying this report was prepared by geologists on the property and checked from the air by the writer as being reasonably correct.

ECONOMIC GEOLOGY

QUARTZ MONZONITE:

The quartz monzonite is composed principally of potash feldspar (1/3-2/3), oligoclase and quartz (+10%) with minor accessory biotite. The rock adjacent to the quartz-molybdenite veinlets is sericitized, pyritized and slightly chloritized.

The monzonite is everywhere closely and strongly jointed by at least three sets of fractures which may be related either to the cooling of the intrusive or to imposed stresses or both. These fractures are generally tight and filled with quartz in which molybdenite and pyrite are dispersed. Surface weathering has oxidized the pyrite in the fractures and formed sulphuric acid which, in turn has leached out the cementing minerals in the fractures. This has resulted in a cover on the monzonite comprised of a pile of loose blocks of limonite stained rock many feet in depth. The red-brown staining of the monzonite is ubiquitous and thus this rock stands out sharply from the drab, grey-coloured surrounding granodiorite.

SHOWINGS:

In six creek gulleys around the southeast corner of the monzonite plug Norpax prospectors have discovered molybdenite mineralization in fresh monzonite. From the southwesternmost to the northeasternmost of these creeks is a distance of two miles. (Fig. 1). The best exposures of molybdenite are in Big Creek, Cornice Creek and Float Creek. The writer examined Big Creek and Float Creek from their upper exposures down to the bottom.

In Big Creek the available slope distance of exposed creek bed is about 1,000 feet. Most of this distance is occupied by rock rubble or jointed rock from which all the joint cement has been leached; however, in some fresh exposures three joint sets are host to fracture fillings of

ECONOMIC GEOLOGY (Cont'd)

quartz, pyrite and fine grained, smokey grey coloured molybdenite. The most consistently mineralized joint set strikes N20°E and dips 75° to the west; it is complemented by another strongly mineralized set which strikes approximately in the same direction by dips steeply eastward. Wherever unleached rock is exposed down the 1500 feet of Big Creek gulch there is molybdenite in the joints, it therefore is reasonable to assume that the remaining portions, which are underlain by leached rock, will also contain molybdenite below the leached zone. Lack of fresh exposures makes an estimate of grade hazardous but the spacing of the joints is at intervals of several feet or less, suggesting a possible ore grade.

It is understood from the prospectors that the exposures in the next gulley to the south and in Cornice Creek, 1/2 mile to the south, are essentially the same in character and extent to those in Big Creek.

Most of the rich float that attracted prospectors up Salal Creek to this deposit was traced to Float Creek, located two miles southwest of Big Creek, around the southeast corner of the monzonite plug. Fresh rock is exposed in the bottom of this steep notch for a slope distance of over 2,000 feet through an elevation of about 1,500 feet. The flanks of the gulley are underlain by deeply leached bedrock which sits as loose-jointed blocks, making climbing treacherous. In traversing the 1,500 feet of this gulley the writer found widely spaced molybdenite fractures in the upper few hundred feet, where exposures are admittedly poor, but changing to richly mineralized, closely-spaced fractures in the central, well exposed, 500 feet of slope below. Below this point exposures are fewer but still exhibit abundant molybdenite mineralization in the fractures. In several places in this creek veins of molybdenite up to an inch in width are exposed, apparently associated with shears that angle across the creek. Also in several places the density of crisscrossing joints is very high, (less than one foot apart), and every joint is abundantly mineralized with molybdenite, providing very high grade sections. As in Big Creek the strongest joint sets and most often mineral-

ECONOMIC GEOLOGY (Cont'd)

ized by molybdenite strike N20°E and dip steeply west and east.

The Norpax crew blasted a trail in leached bedrock along the west side of the gulley near the bottom of the mountain and wherever unleached rock is exposed along this trail the joints are mineralized with molybdenite.

The width of fresh rock exposed in the creek bed seldom exceeds four feet and is generally flint hard and worn glassy-smooth by the water, making it extremely difficult to sample. Sampling of the adjacent leached rock serves no purpose.

In summary: Float Creek represents a sloping opencut or drill hole 1,500 feet in length with abundant molybdenite mineralization in joints in the rock throughout the entire length. Judging from exposures and core seen by the writer at Endako Mines, B.C., the Float Creek exposure is ore grade at least in some places.

The occurrence of similar mineralization in the same joint sets in Big Creek, two miles to the northeast, suggests that a deposit of very major size possibly exists on the property, or at least several separate deposits of ore size. The geological setting is essentially identical to the major known molybdenum deposits of the Cordillera type.

Respectfully submitted,

Douglas D. Campbell

Douglas D. Campbell, P.Eng., PhD.

RECOMMENDATIONS

Surface stripping is severely hampered by ice and drift cover and by precipitous topography. In any case, the Float Creek exposure represents as fine a surface exposure as could be made by excavation. The ubiquitous capping of leached rock on the monzonite makes surface sampling useless. Bulk sampling of the creek beds would be a long, difficult and expensive project at this locality. The size of the occurrence means that a proper sampling job would necessarily be of mammoth proportions.

With the foregoing factors in mind the writer recommends that a long drill hole be drilled upwards under Float Creek from the bottom exposure on the creek. This hole should be 2000 feet in length if possible and be inclined at an angle of not less than ten degrees. (The writer originally suggested +35° but recent word from the property indicates that this angle is too steep for the present set-up.)

Following results of the first hole subsequent drill holes should be fanned out to the right and left from the same set up.

It is of supreme importance that complete sludges be taken of every hole drilled on this property. Experience has shown at other properties that appreciable loss of molybdenite occurs in drilling from the water washing out fractures in the core. Thus sludge samples are essential.

Respectfully submitted,

Douglas D Campbell

D. D. Campbell, P. Eng. PhD.

DOUGLAS D. CAMPBELL
CONSULTING GEOLOGIST
314 MARINE BUILDING
VANCOUVER 1, B.C.

September 9, 1964.

CERTIFICATE

I, Douglas D. Campbell, with business and residential addresses in Vancouver, British Columbia, do hereby certify that:

1. I am a consulting geological engineer.

2. I am a graduate of the University of British Columbia, (B.A.Sc., Geological Engineering, 1946), and of the California Institute of Technology, (PhD., Economic Geology and Geophysics, 1955).

3. I am a registered Professional Engineer of the Province of British Columbia.

4. From 1946 until 1957 I was engaged in mining and mining exploration in Canada and the United States as geologist for a number of companies. I was chief geologist for Eldorado Mining and Refining Co. Ltd. when I retired in 1957 to begin private practice as a consulting geologist.

5. I personally have examined and assessed all available government reports and plans concerning this property and in addition have examined the main showings on the property personally.

6. I have not received, nor do I expect to receive, any interest directly or indirectly in the properties or securities of Norpax Nickel Mines Ltd.

Respectfully submitted,

Douglas D. Campbell, B.A., P. Eng.

Vancouver, B. C.