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NORANDA EXPLORATION COMPANY LIMITED

GEOPHYSICAL SURVEY

of the

GORDON CREEK PROPERTY

SEVEN MILES NORTHWEST

of

LOWER NICOLA, B.C.

30° 121° SOUTH

M. M. Menzies, P. Eng.

May - July, 1958.

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COST STATEMENT

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#1 ONE GEOPHYSICAL MAP- - - Scale 1" = 400'

#2 ONE CLAIM & GRID MAP - - - Scale 1" = 400'

NORANDA EXPLORATION COMPANY LIMITED

COST OF GEOPHYSICAL SURVEY

of the

GORDON CREEK PROPERTY

SEVEN MILES NORTHWEST

of

LOWER NICOLA, B.C.

May - July, 1958.

PROFESSIONAL:

SUPERVISORY	- 10 days @ \$35.00/day -	\$ 350.00
GEOPHYSICAL SURVEYING	- 50 days @ \$35.00/day -	\$1,750.00

TECHNICAL:

DRAUGHTING	- 15 days @ \$20.00/day -	\$ 300.00
SURVEYING	- 50 days @ \$20.00/day -	\$1,000.00

LABOR:

LINE CUTTING	- 150 man days @ \$15.00/day -	\$2,250.00
ASSISTANTS	- 150 man days @ \$15.00/day -	<u>\$2,250.00</u>

TOTAL - \$7,900.00

COST DISTRIBUTION:

<u>CLAIMS</u>	<u>NO. OF CLAIMS</u>	<u>DISTRIBUTION/CLAIM</u>	<u>TOTAL</u>
W.P. No's 99 - 108 inclusive	10	\$100.00	\$1,000.00
W.P. No's 111, 112	2	\$100.00	\$ 200.00
W.P. No. 114	1	\$100.00	\$ 100.00
W.P. No's 116 - 118 inclusive	3	\$100.00	\$ 300.00
W.P. No's 123 - 128 inclusive	6	\$100.00	\$ 600.00
W.P. No. 131	1	\$100.00	\$ 100.00
W.P. No's 135, 136	<u>2</u>	\$100.00	<u>\$ 200.00</u>
	<u>25 claims</u>	Total -	<u>\$2,500.00</u>

W. H. King

NORANDA EXPLORATION COMPANY LIMITED

GEOPHYSICAL SURVEY

of the

GORDON CREEK PROPERTY

INTRODUCTION:

Noranda Exploration Company Limited optioned the Gordon Creek property, a group of 47 claims, in April, 1958, from Highland Valley Mining Corporation Ltd., of Vancouver, B.C. A camp was built on the property in May, 1958, and work started immediately. The programme carried out during May, June and July, included line cutting, chain and compass surveying, geophysical work, trenching, road construction and geological mapping. Highland Valley Mining Corporation Ltd. had done some road construction, trenching, and geophysical surveying during the two previous summers.

DESCRIPTION:

The Gordon Creek property adjoins Indian Reserve No. 9 to the north and lies 4 miles east of the Det railroad station on the C.P.R. Merritt-Spence's Bridge line. A rough road to the property branches off the Merritt-Spence's Bridge highway one-half mile west of Det station and continues on to Farr and Tyner Lakes and thence easterly to the Aberdeen road in Guichon Creek Valley. There are many old logging roads and trails on the Gordon Creek property and one of these leads to the summit of Promontory Hills. Craigmont Mine lies 4 miles to the east.

The Gordon Creek property is in rolling hill country lying above the steep slopes and cliffs of Cretaceous volcanics bordering the northeast side of the Nicola River and to the west of the Promontory Hills summit. Elevations range from 3000 feet to 4400 feet with gentle slopes to the south and west. The property is covered by lodgepole pine, yellow pine, and Douglas fir. In general underbrush is scarce but dense growths of young trees and windfall along streams

makes travel difficult. Poison Creek and tributaries of Gordon and David Creeks, which drain the area, are fed by small swamps along their upper courses. By mid summer the smaller streams are usually dry.

BIBLIOGRAPHY:

- Cockfield, W.E. (1948): Geology and Mineral Deposits of Nicola Map-Area, British Columbia; Geol. Surv., Canada. Memoir 249
- Duffell, S. and McTaggart, K.C. (1951): Ashcroft Map-Area, British Columbia; Geol. Surv., Canada. Memoir 262
- Rice, H.M.A. (1947): Geology and Mineral Deposits of the Princeton Map-Area, British Columbia; Geol. Surv., Canada. Memoir 243
- White, W.H., Thompson, R.M., McTaggart, K.C. (1958): The Geology and Mineral Deposits of Highland Valley, B.C.; C.I.M. Transactions Vol. LX, 1957, PP 273-289.

GENERAL GEOLOGY:

Table of Formations occurring on the Gordon Creek Property

Kingsvale Group (Volcanics) - - - - -	Lower Cretaceous
---conformable contact---	
Kingsvale Group (Sediments) - - - - -	Lower Cretaceous
---unconformity---	
Spence's Bridge Group (Volcanics) - -	Lower Cretaceous
---erosional contact---	
Guichon Creek Batholith - - - - -	Lower Jurassic
---intrusive contact---	
Nicola Group - - - - -	Upper Triassic

The Nicola Group is mainly volcanic rocks with some interbedded tuffs, breccias, agglomerates, limestone, argillite, and conglomerate. Limestone normally occurs in short, narrow lenses interbedded with other rocks. Fossils found in the sedimentary rocks are of Upper Triassic age.

The Guichon Creek batholith is mainly granodiorite and quartz diorite with some diorite and gabbro. The batholith is intrusive into the Nicola Group and is overlain by Mid-Jurassic rocks near Ashcroft. It was probably emplaced during the Lower Jurassic period and is, therefore, older than the main Coast Intrusions west of the Fraser River.

The Gordon Creek property is on the southern edge of the batholith which extends 40 miles to the north and has a maximum width of 17 miles. Copper deposits at Highland Valley are found in granitic rocks intruding the Guichon Creek batholith and in breccias partially derived from them. The Craigmont copper deposit occurs in Nicola rocks near the contact between the Guichon Creek batholith and limy tuffs of the Nicola Group.

The Spence's Bridge Group is a thick series of lavas and pyroclastics with minor amounts of tuffaceous conglomerate, sandstone, and waterlain tuff at the base of the group. Flow lines are commonly well developed in the lavas and serve to distinguish it from the Kingsvale flows. The Spence's Bridge Group borders most of the northeastern side of the Nicola River valley from Canford to Spence's Bridge and also occurs in a small area south of the Nicola River. It overlies the rocks of the Nicola Group and Guichon Creek batholith.

The Kingsvale Group consists of two parts, a series of sedimentary rocks at the base and a series of volcanic rocks conformably above. These rocks are arkose, grit, mudstone, conglomerate, argillite, andesite, basalt, agglomerate, tuff and breccia. Basal sedimentary beds are not always present. The Kingsvale Group is unconformably above the Nicola Group, the Guichon Creek batholith, and the Spence's Bridge Group. It borders the south and southwest side of the Nicola River valley west of Merritt and underlies a small area on the eastern slope of Promontory Hills.

REASONS FOR INVESTIGATIONS:

The Nicola - Guichon Creek contact was known to strike in a north-westerly direction across the Gordon Creek property. It was hoped that limy horizons would be present in the Nicola volcanics and that their spatial relationship to the Guichon Creek batholith would give rise to the favorable mineralizing conditions existing in the Craigmont Mine 4 miles to the east.

The earlier work done by Highland Valley Mining Corporation, Ltd. exposed small quantities of chalcopyrite mineralization in Nicola volcanics.

CONTROL OF SURVEY:

Picket lines were run true north-south and east-west to divide the property into squares 2000 feet on a side. These lines were chained every hundred feet and systematic geological and geophysical coverage of each block was controlled by chain and compass with both ends of each traverse tied into the grid. All claim posts were located and tied into the nearest grid station.

ELECTROMAGNETIC EQUIPMENT:

The electromagnetic instrument used in surveying the Gordon Creek property is called the Junior E.M. It was developed and tested over a period of years by Crone Geophysics, Toronto, Ontario, a division of Noranda Mines, Limited. While the basic principles are the same as those for standard E.M. instruments a number of radical new developments, now being patented, have been incorporated which give the Junior E.M. many advantages over the familiar equipment commonly used in this type of survey. It is very light in weight and designed for rapid coverage of rough terrain.

METHOD OF SURVEY:

Three men comprised the Junior E.M. crew. The chief and helper, maintaining a distance of 200 feet between transmitter and receiver, traversed north-south lines taking readings at 100 foot intervals and noting dips in degrees. Where significant angles were obtained readings were taken every 50 feet. The north-south lines were spaced at 400 foot intervals.

The third crew man started each line at a known point on the grid system. From there he ran a 2000 foot compass line true north or south, blazing and chaining off each hundred feet, and tying in to the appropriate point at the end of the traverse. This method was found to be both fast and accurate.

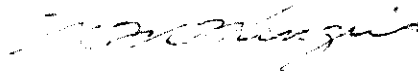
OBSERVATIONS:

1. Much outcrop was encountered east of zero base line and overburden in general is believed light.
2. Few outcrops were found west of the zero base line but overburden is thought to be shallow enough to permit use of the Junior E.M. equipment.
3. One definite conductor was found on mineral claims #.P. No's 91, 111, 116, and 117.
4. The conductor starts on the south boundary of the #.P. No. 91 claim, strikes southwesterly across a small swamp, and then runs south of west on a well drained northerly slope for a total distance of 3200 feet.
5. A 300 foot long bulldozer trench was dug across the conductor along the 36 West section line on #.P. No. 116 claim. A coal bearing sedimentary horizon of the Spence's Bridge Group was exposed at a shallow depth.
6. Tests showed that this coal bearing rock was an excellent electrical conductor, especially when saturated with ground water as this area was at the time of surveying and trenching.

CONCLUSIONS:

1. The coal bearing horizon is undoubtedly the conductor outlined by Noranda's Junior M.M. survey.
2. The lack of other electromagnetic conductors tends to rule out the presence of good sulphide deposits on the Gordon Creek property.
3. Areas of overburden in excess of 100 feet cannot be completely eliminated by the Junior M.M. method nor do the results preclude the possible existence of deep-seated sulphide deposits.

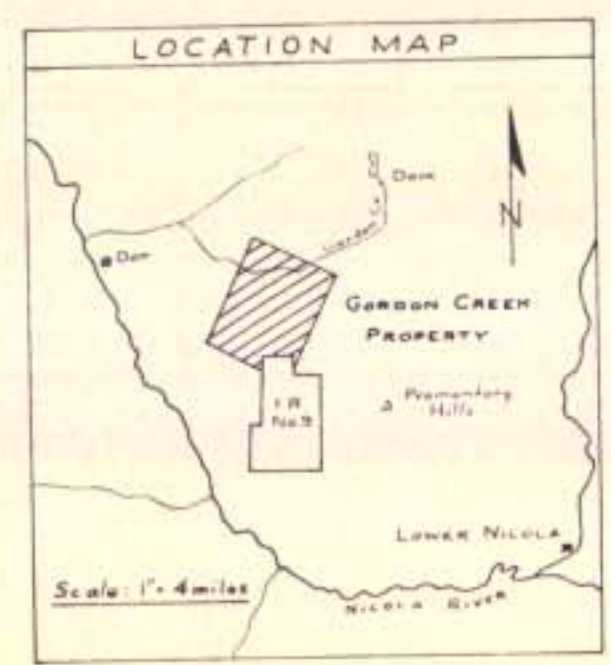
Respectfully submitted,



Morris M. Menzies, P. Eng.



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Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 243 MAP #1

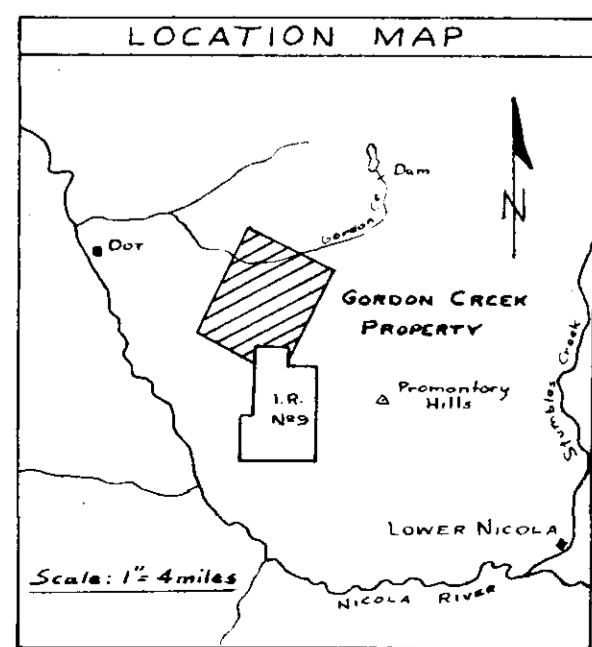
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LEGEND

--- Readings in degrees.

∠ is dip angle in degrees for null

Noranda Exploration Company Limited
Gordon Creek Property
Merrill, B.C.
J.E.M. Survey
Scale 1 inch = 400 feet
July 14, 1958



Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. **243** MAP #2

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Report 243
Noranda Exploration Company Limited
Gordon Creek Property
Merrill, B.C.
Claim and Grid Map
Scale: 1 inch = 400 feet
July 14, 1958

I. R. No. 9