245

NORANDA EXPLORATION COMPANY LIMITED

GEOLOGICAL SURVEY

of the

GORDON CREEK PROPERTY

SEVEN MILES NORTHWEST

of

LOWER NICOLA, B.C.

50° 121° SOUTH

M. M. Menzies, P. Eng.

May - July, 1958.

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NORANDA EXPLORATION COMPANY LIMITED

COST OF GEOLOGICAL SURVEY

of the

GORDON CREEK PROPERTY

SEVEN MILES NORTHWEST

of

LOWER NICOLA, B.C.

May - July, 1958.

PROFESSIONAL:

SUPERVISORY	- 15 days @ $35.00/day -	$ 525.00
MAPPING	- 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	- 100 man days @ $15.00/day -	$1,500.00
	TOTAL -	$7,325.00

COST DISTRIBUTION:

CLAIM	NO. OF CLAIMS	DISTRIBUTION/CLAIM	TOTAL
W.P. No's. 85-112 inclusive	28	$100.00	$2,800.00
W.P. No. 114	1	$100.00	$ 100.00
W.P. No's. 116-131 inclusive	16	$100.00	$1,600.00
W.P. No. 135	1	$100.00	$ 100.00
W.P. No. 136	1	$100.00	$ 100.00
	47 Claims	Total	$4,700.00

M M Mezgis

NORANDA EXPLORATION COMPANY LIMITED

GEOLOGICAL 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 was 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 Dot 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 Dot 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 mineralising 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.

OBSERVATIONS:

Much of the central part of the Gordon Creek property is underlain by Nicola Group porphyritic andesite. This rock is dark to medium grey in colour with white plagioclase phenocrysts about 3/8ths of an inch long lying in a dark aphanitic groundmass. Phenocrysts are nearly always present. Most of the rock is massive but excellent layering was found in a few places although flow structure is lacking. The layering, striking nearly east and dipping steeply south, was mapped as bedding. Elsewhere, a less distinct layering was apparently caused by shearing. In a few places small rock fragments and broken phenocrysts are present suggesting a tuffaceous origin for the porphyritic andesite. The porphyry is intruded by dykes and veinlets of diorite, granite, pegmatite, and aplite, all

probably derived from the Guichon Creek batholith. Four plugs of fine grained, grey diorite are found within the main mass of Nicola Group rocks and two large isolated patches of porphyritic andesite are enclosed in the batholithic rocks. Angular inclusions of porphyry are common in the granitic rocks near the fringe of the batholith. Near the contact of the Nicola Group and the Guichon Creek batholith both rock types are highly altered and contain much epidote.

Most of the eastern claims are underlain by rocks of the Guichon Creek batholith. These rocks are mainly coarse grained, light coloured biotite diorite or quartz diorite with hornblende as a common constituent mineral. Locally, orthoclase is abundant and this rock type was mapped as granitized diorite. The Nicola Group rocks and dioritic rocks are cut by simple pegmatite dykes, probably derived from the Guichon Creek batholith, consisting almost wholly of orthoclase and quartz. Near the contact of the Nicola and batholithic rocks a zone of shearing and intimate mixing of rock type occur . This zone and areas consisting of at least half Nicola Group inclusions in granitic rock were mapped as "Mixed Nicola-Batholithic Rocks".

The southwestern claims are underlain by a massive reddish lava of the Spences Bridge Group. Much of this rock is vesicular and in places contains considerable magnetite. Copper minerals and other sulphides are apparently absent. No bedding planes were positively identified in this rock but attitudes of joints and schistosity were mapped. Rocks probably belonging to the sedimentary facies of the Spences Bridge Group were exposed in a trench on the W.P. No. 116 claim. They are sandstones and mudstones with some very thin and irregular interbedded coal seams. The total exposed thickness is 70 feet with bedding planes striking northeasterly and dipping about 45 degrees to the southeast.

The trench lies a short distance above a swampy area and when first uncovered the rocks were saturated with water. Rock from this trench was found to be a good electrical conductor when wet and is in all probability the conductor discovered by Noranda's electro-magnetic survey of the Gordon Creek property.

A flesh coloured biotite rhyolite containing biotite and feldspar phenocrysts is found on a high ridge east of the area underlain by Spences Bridge rocks. A contact exposed in a trench on W.P. No. 123 claim indicates that this rock overlies the Spences Bridge Group and it therefore is probably a remnant of the Kingsvale Group. The rock is massive and structureless. Faint layering with a strike of 138 degrees and a steep northerly dip may be bedding.

No copper deposits of economic importance were found on the Gordon Creek property but small amounts of copper mineralization were mapped at the following locations:

1. 16N-63E. Just within the north boundary of W.P. No. 101 claim. A 6 inch quartz vein carrying some chalcopyrite and malachite cuts quartz diorite.

2. 51S-16E. On the W.P. No. 130 claim. A vein similar to No. 1 above cuts the porphyritic andesite.

3. 2N-5E. On the W.P. No. 88 claim. Massive quartz diorite contains sparsely disseminated chalcopyrite.

4. 45S-12E. On the boundary between W.P. No. 110 and W.P. No. 130 claims. A steeply dipping fault zone strikes approximately north and cuts porphyritic andesite which has been silicified, sheared, brecciated, and mineralized with chalcopyrite, pyrite, specularite, and minor amount of cinnabar. The fault zone contains a weathered white mineral, possibly albite, and some calcite, both of which have been introduced. These minerals form veins and cement rock fragments in the fault zone. The maximum width of the chalcopyrite-bearing zone is two feet and it has been followed discontinuously for 200 feet.

CONCLUSIONS:

1. No significant copper mineralization has been found on the Gordon Creek property.

2. The only conductor found by the electromagnetic survey is probably a coal bearing member of the Spence's Bridge Group.

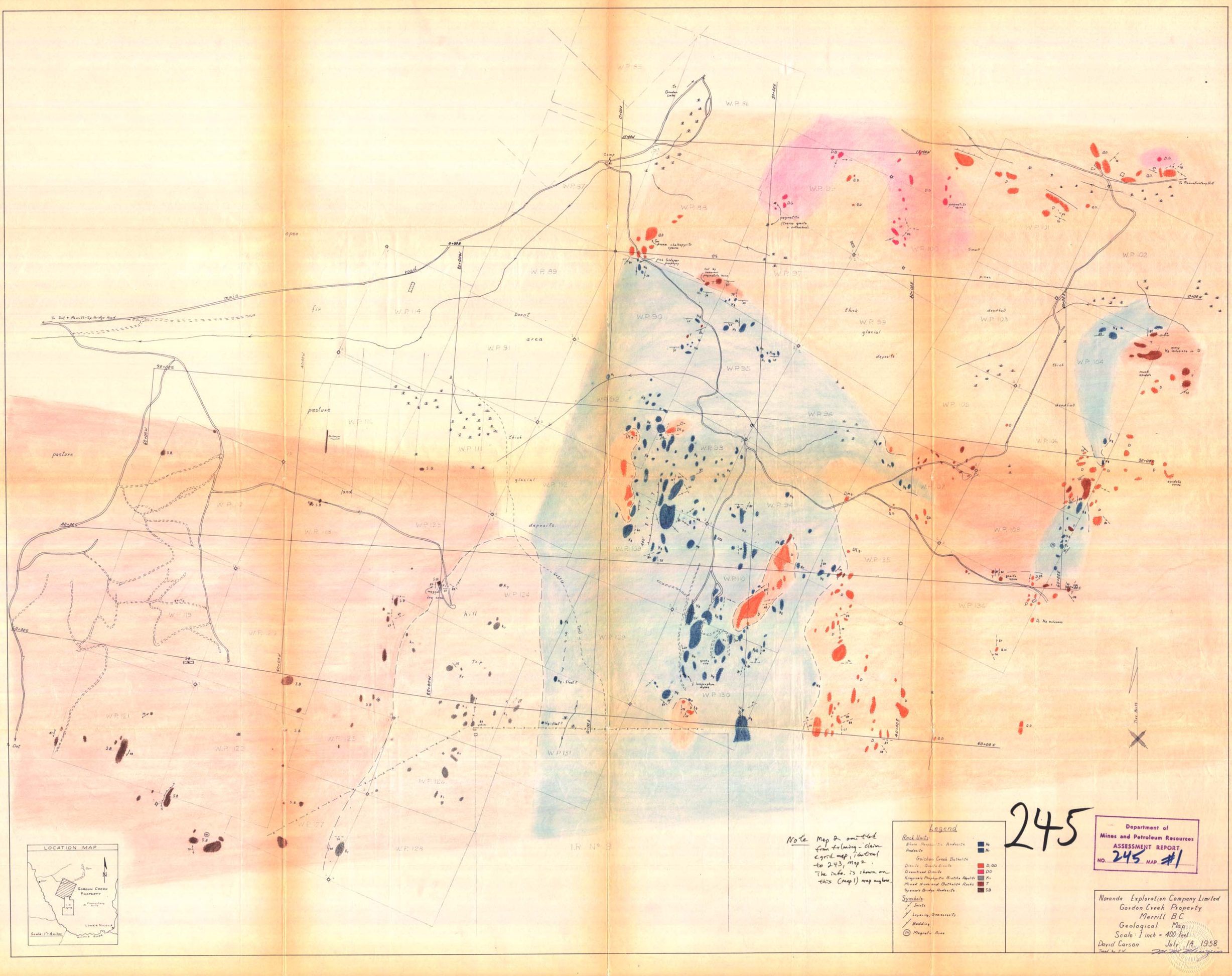
3. Favourable limy tuffaceous horizons of the Nicola Group found at the Craigmont Mine apparently do not occur on the Gordon Creek property.

4. Large areas are effectively covered by overburden but the electromagnetic results seem to exclude the possibility of good sulphide deposits.

Respectfully submitted,

M M Menzies

Morris M. Menzies, P.Eng.



LOCATION MAP

Note Map 2 omitted from following-claim grid map, identical to 243, Map 2. The info. is shown on this (Map 1) map anyhow.

Legend

Rock Units

Nicola Porphyritic Andesite	Ns
Andesite	Na
Guichon Creek Batholith	
Diorite, Quartz Diorite	D, QD
Granitoid Dioritic	DG
Kingsvale Porphyritic Biotite Rhyolite	Kr
Mixed Nicola and Batholith Rocks	T
Spences Bridge Andesite	SB

Symbols

- Joints
- Layering, Gneissosity
- Bedding
- (m) Magnetic Area

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Noranda Exploration Company Limited
Gordon Creek Property
Merritt B.C.
Geological Map
Scale: 1 inch = 400 feet
David Carson July 19, 1958.
Traced by T.V.

W.P. 85
W.P. 86
W.P. 87
W.P. 88
W.P. 89
W.P. 90
W.P. 91
W.P. 92
W.P. 93
W.P. 94
W.P. 95
W.P. 96
W.P. 97
W.P. 98
W.P. 99
W.P. 100
W.P. 101
W.P. 102
W.P. 103
W.P. 104
W.P. 105
W.P. 106
W.P. 107
W.P. 108
W.P. 109
W.P. 110
W.P. 111
W.P. 112
W.P. 114
W.P. 116
W.P. 117
W.P. 118
W.P. 119
W.P. 120
W.P. 121
W.P. 122
W.P. 123
W.P. 124
W.P. 125
W.P. 126
W.P. 127
W.P. 128
W.P. 129
W.P. 130
W.P. 131
W.P. 135
W.P. 136

0+00 N
20+00 S
40+00 S
60+00 S
0+00 E
20+00 E
40+00 E
60+00 E
80+00 W
60+00 W
40+00 W
20+00 W
0+00 W

N.W. I.R. No. 9

I. R. No. 9

True North

LOCATION MAP

Gordon Creek Property
I.R. No. 9
Reservation Mills
Lower Nicola
Scale: 1½ miles

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 245 MAP #2

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

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