

# 4599

PRELIMINARY REPORT

on

ONE- SIXTY-ONE PROJECT

Nicola M.D.

92 I 2/W

862445

by

M. R. Wolfhard Feb. 1977

ONE-SIXTY - ONE PROJECT

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ONE SIXTY ONE PROJECT

SUMMARY:

A felsic volcanic center with good evidence of copper - lead - zinc - iron sulphide, iron oxide, and barium and calcium sulphate mineralization exists on the One Sixty One claims. A program, which will eventually cost in the range of \$45,000 to \$70,000, should be undertaken to test the volcanogenic massive sulphide potential of this volcanic center.

INTRODUCTION:

PROPERTY: Two claims, One-Sixty-One # 1 and # 2, 22 units Nicola M D, Rec.#106, 107. 9 June 1976, owned by C. J. Robertson (Quintana). The ground immediately to the east is owned by M. McGuire of Merritt.

LOCATION: Seven km south of Merritt, B. C. on the southeast slope of Iron Mountain, in N T S 92 I 2/W. Relief is moderate. The ground slopes down to the southeast, from 1700 m to 1400 m. Vegetation is mixed pine - fir and spruce - balsam forest, varying from sparse to thick. Exploration and drilling season is about 6 months long, from May through October.

ACCESS: Exploration access is by auto from Merritt, about 4 hours by auto from Vancouver. Production access would be by road to Vancouver, or via the C. P. R. branch line at Merritt.

HISTORY: Hematite, chalcopyrite occurrences on the south east side of Iron Mountain were known prior to 1897 (Dawson, 1888). In 1927, a bedded barite, galena, sphalerite showing known as the Leadville was discovered. By 1930, a 30 m deep shaft had been sunk on the Leadville. At this depth, the mineralization which varied from 0.6 m to 1.5 m in width was found to be cut off by a flat dipping fault. A search for the offset "vein" was not successful and work was apparently abandoned in 1930. In 1948 the shaft was rehabilitated and a shipment was made of 36 tons yielding 1.86 oz/T silver and 16.4% lead.

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Subsequent work was not well documented in the public record, but the ground was held fairly continuously, mainly by local Merritt interests. They performed various geochemical, geological and geophysical surveys, trenched and drilled hematite showings, and drilled one hole east of the Leadville. The ground was allowed to lapse, and Quintana staked, mapped, and sampled the property in 1976. It does not appear that the obvious volcanogenic massive sulphide potential of the property has been carefully evaluated in the past.

GEOLOGY:

REGIONAL: The One Sixty One property lies in a narrow, north trending belt of Upper Triassic to Lower Jurassic Nicola group marine and continental volcanics. Although dominantly basic to intermediate volcanic in character, the Nicola group also includes marine sedimentary units and local accumulations of more felsic volcanics. The felsic rocks often occur in stratigraphic proximity to calcareous marine sediments, as at Craigmont, Promontory Hills, and Jesse Creek to the north as well as at Iron Mountain. The Iron Mountain rhyolites and dacite represent one of the larger known accumulations of felsic volcanics.

Nicola sediments in the Merritt area usually dip steeply and trend north or northeast; at Promontory Hills they strike west. Although folding is usually difficult to demonstrate in Nicola rocks, the recurrence of calcareous sediments on the east side of the Ann claims, 3 km east of Iron Mountain suggests that Iron

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Mountain is on the west limb of a north striking syncline.

LOCAL: Quintana's detail mapping is incomplete. However, Figure 3 shows most known outcrops in the area of interest. In Figure 3, a fairly complex assemblage of rocks related to a local felsic center has been crudely sub-divided into four major units. All trend about  $020^{\circ}$ , and dip steeply, mainly to the east. A few graded beds suggest that the pile faces east and I will assume east facing in the following discussions.

The lowest unit, underlying the western half of the property, is characteristically a poorly sorted to unsorted, coarse, lithic tuff to breccia, dark gray green in color. Bedding is massive and obscure. A few basic flows were noted at the southwest edge of the mapped area. This greater than 700 m thick unit of pyroclastic and epiclastic? rocks is overlain with apparent conformity by a mass of rhyolite, dacite and related breccias and tuffs. This felsic unit, which either lenses out or is faulted off to the north, extends for at least 1500 m along strike. In plan it thickens gradually from about 150 m on the south to 360 m in the central part and then abruptly swells to 700 m before tapering slightly and disappearing under cover to the north. The unit is variably grey and reddish. Bedding is locally expressed as flow banding, and by flattened lapilli. In the thickest portion it is weakly but pervasively sericitized and pyritized. A second volcanic clastic sequence, much finer

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grained than that on the west, overlies the felsic unit. Typically, this unit is green with some red lapilli size fragments, or maroon with green fragments. It includes a few intermediate flows. Bedding is massive and obscure. This unit appears to be about 600 m thick on the south edge of the mapped area. It thins to the north, complementary to thickening in the underlying felsic unit, until only 150 m remain adjacent to the thickest section of rhyolite and dacite.

The uppermost, and most easterly, unit on the One Sixty One property includes thin to medium bedded marine limestone, shale, and thin bedded to massive volcanic clastics. The base of this unit trends in a straight line across the claim, parallel to the base of the felsic unit. It is exposed over more than 1200 m in plan at the southeast corner of the property. Although dips flatten and strikes vary in this area, the upper unit is thought to be greater than 600 m thick.

The plan distribution of felsic rocks might be explained by structural complexities. However, the stratigraphic evidence suggests strongly that we are looking at a cross section of a felsic dome.

Base, ferrous, and precious metalization is known in all rock units except the volcanic clastics overlying the dome. In the lower volcanic clastic unit, mineralization consists

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of specularite, minor chalcopyrite, in irregular fractures scattered apparently randomly over a zone 600 m in diameter in the southwest part of the mapped area. Grab samples might run to 0.5% Cu, but overall copper grade is estimated to be much less than 0.1%.

Within the felsic unit, barite, galena, sphalerite mineralization occurs over 0.3 to 0.6 m for 50 m along strike to the north of the Leadville shaft. Many of the rock geochemical samples taken within the altered portion of the felsic unit are anomalous is one or more of copper, lead, zinc and silver. Various samples taken from the most northeasterly exposures of the altered area contain up to 8000 ppm Cu, 8000 ppm Zn, 1800 ppm Pb and 10.0 ppm Ag. A gypsum bearing schist is exposed in a trench 330 m at about N 70 E from the Leadville shaft. Mineralization in rocks overlying the felsic unit is rare and weak. However, samples taken from the dump of an old shaft in shale of the Uppermost unit, at the south end of the mapped area, contain anomalous amounts of copper.

#### CONCLUSIONS AND RECOMMENDATIONS:

A tilted, partly eroded, volcanic center of probable Upper Triassic age exists in the vicinity of the One-Sixty-One claims. A felsic dome was emplaced during the development of this center. Copper, lead, zinc, and iron sulphide, iron oxide, and calcium and barium sulphate mineralization, together with silicate alteration, accompanied or followed the development of the felsic dome. This felsic dome is overlain by marine sediments, and is itself probably marine. The environ-

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ment is similar to that of many volcanogenic massive sulphide deposits.

Such a deposit should be explored for on and near the One-Sixty-One claim. The recommended steps in such an exploration program are as follows:

- 1) Completion of detailed geologic mapping. Further rock geochemical sampling in the altered area should accompany this work. Consideration should be given to trenching for geologic purposes as the mapping progresses. The flat fault which terminates the Leadville showing should be kept in mind.
  
- 2) Consideration should be given to a ground E.M. survey, using equipment suitable for reasonable depth penetration and noise free operation under the existing topographic conditions.
  
- 3) A number of holes should be drilled, either with percussion or diamond drilling equipment depending on the probable depth of target. Steps 1) and 2) should not be undertaken unless there is an intention to follow through with step 3.

The adjoining Ann claim may have some potential if the easterly dip flattens to the east. Consideration should be given to acquire this ground prior to drilling if it can be acquired at modest cost.

BUDGET:

Mapping	\$3,000
E M survey (tentative)	\$12,500
10 - 20 km @ \$125/km to	\$25,000
	\$15,500
	to
(cont'd)	\$28,000

DRILLING: (Approximate)

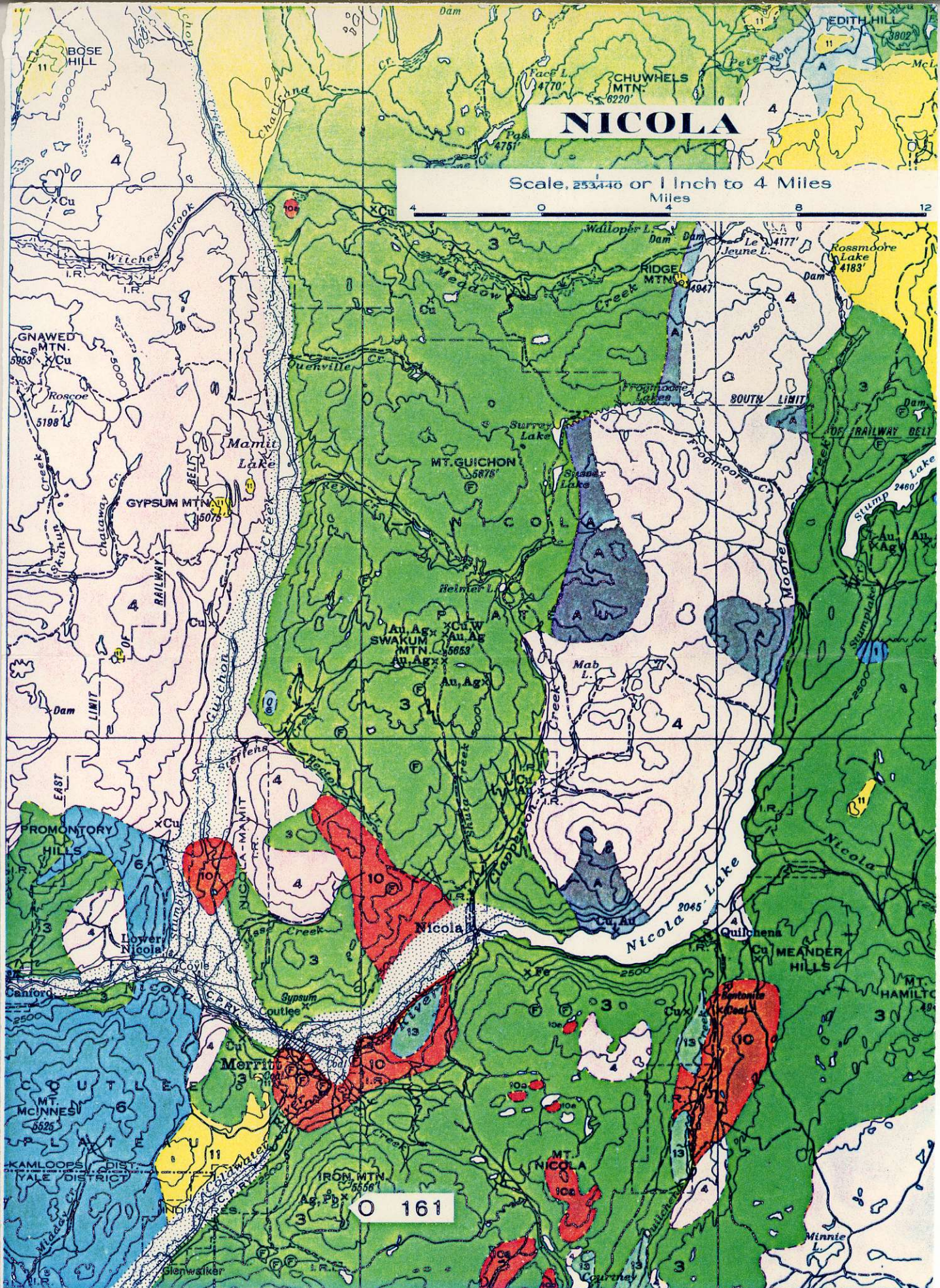
600 m to 1000 m at \$70/m	\$45,000
	to
	\$70,000

REFERENCES:

- 1) B. C. Minister of Mines Reports, 1928  
through 1948.
- 2) Geol. Survey of Canada Annual report 1887 - 88

# NICOLA

Scale, 253,140 or 1 Inch to 4 Miles  
Miles



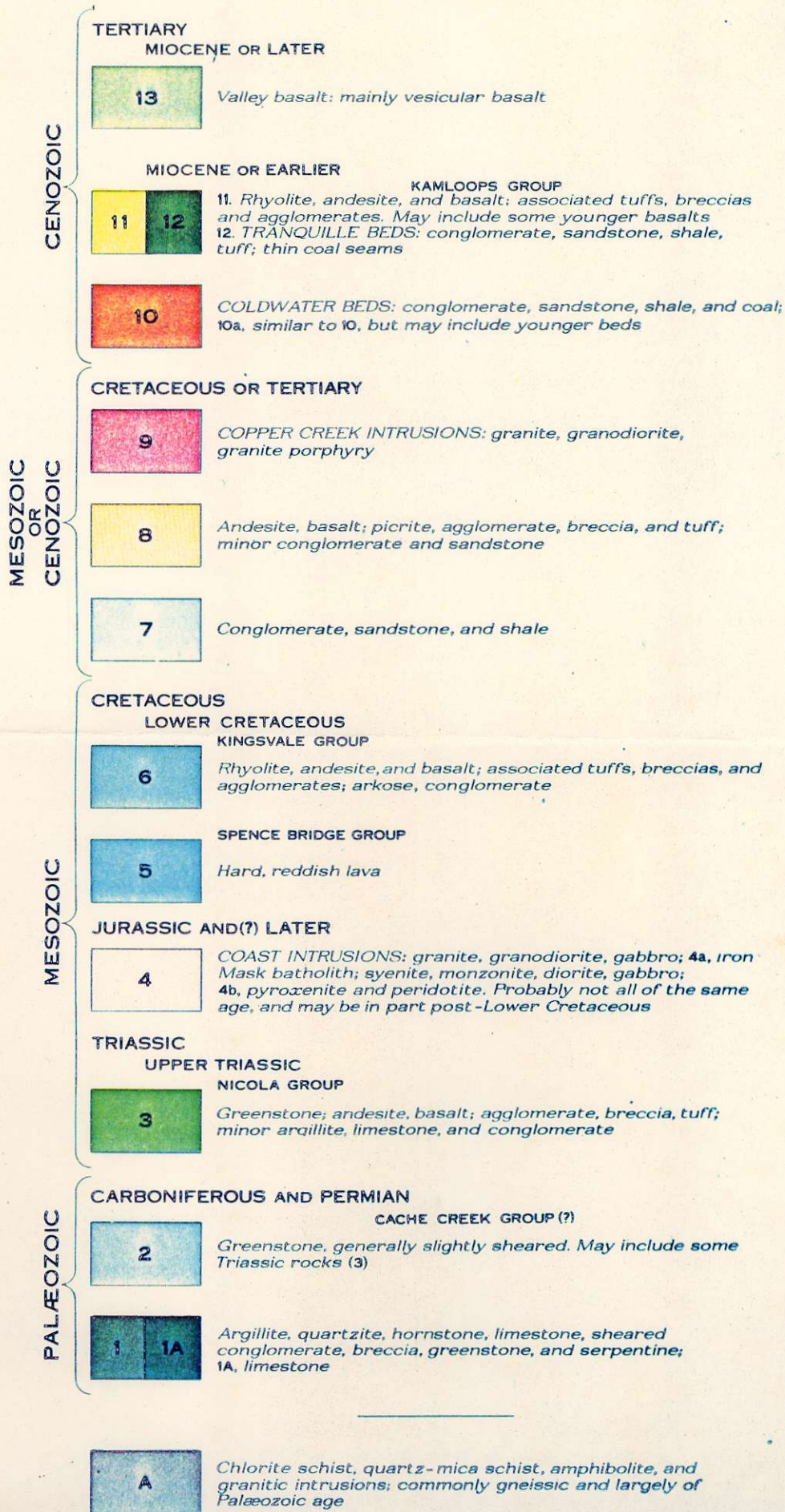
O 161

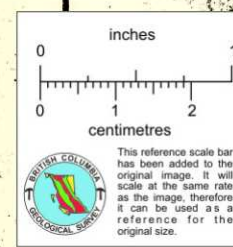
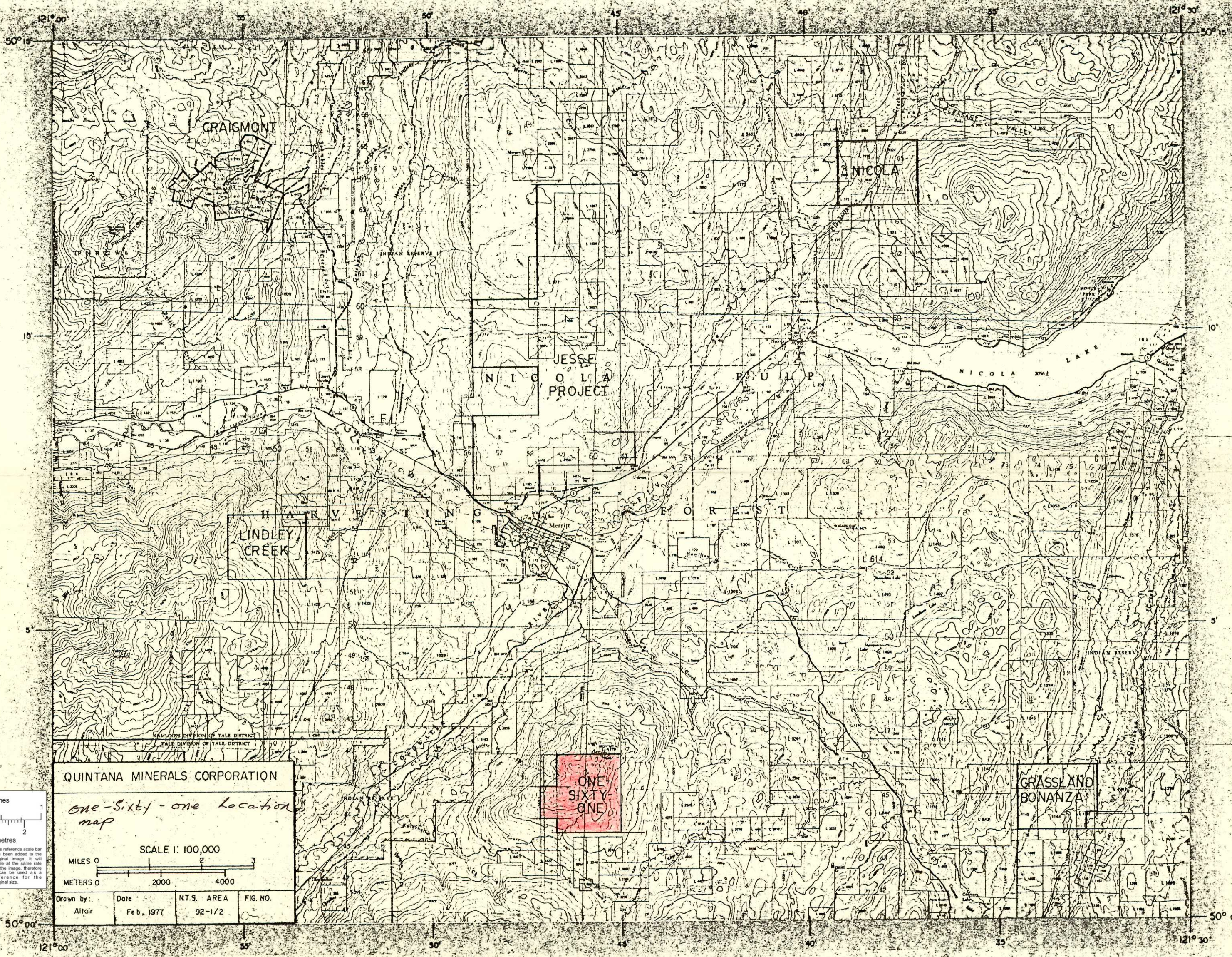
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FIG 161-2

# LEGEND

#4599





QUINTANA MINERALS CORPORATION

*one-Sixty-one Location map*

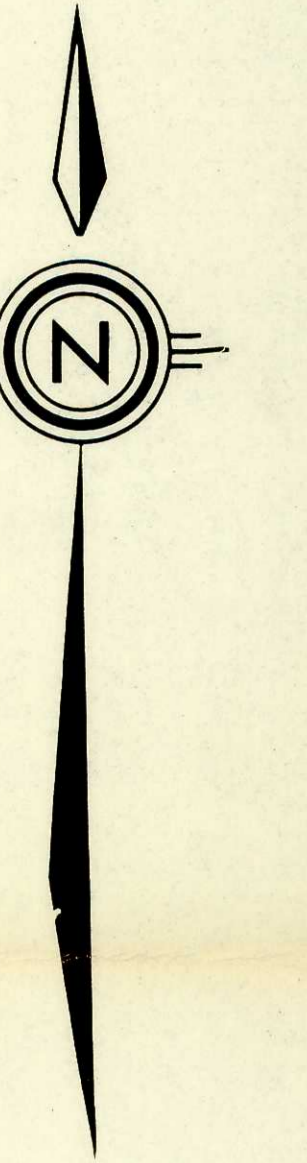
SCALE 1: 100,000

MILES 0 2 3

METERS 0 2000 4000

Drawn by:	Date:	N.T.S. AREA:	FIG. NO.:
Altair	Feb. 1977	92-1/2	

#4599



**LEGEND**

- 4 Limestone, shale, tuff
- 3 Tuffs, red, green, fine to loppili
- 2 Rhyolite, dacite, breccia, tuff
- 1 Agglomerate, tuff, coarse spi-oid porphyritic green.

--- Outer limit of pervasive phyllosilicate alteration.  
--- Geologic contact  
--- Claim boundary  
--- 02/12/02/02 Rock geochemical sample site; Cu/Pb/Zn/Ag in ppm.

QUINTANA MINERALS CORPORATION

161 PROJECT

GEOLOGY

SCALE: 1:5000

FEET 0 100 200 300 400 500 600 700 800 900 1000

METERS 0 50 100 150 200 250 300 350 400 450 500

Prepared by: Altair Date: MARCH, 1977  
Drawn by: Altair N10 MAP AREA DRAWING NO. #4579