104I/14E, 15W

REPORT ON THE GEOLOGY AND GEOCHEMISTRY

OF THE

NIZI GROUP

(NIZI 1 - 40 CLAIMS)

LIARD MINING DIVISION

Sixteen Miles E.S.E. of McDame

129°00'W, 58°58'N

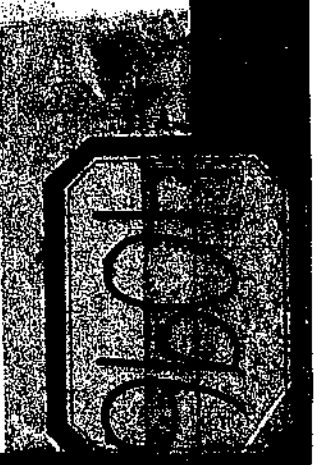
By

T. RODGERS, P. ENG.

For

SUMAC MINES LIMITED

August 10th to August 20th, 1972.



4096

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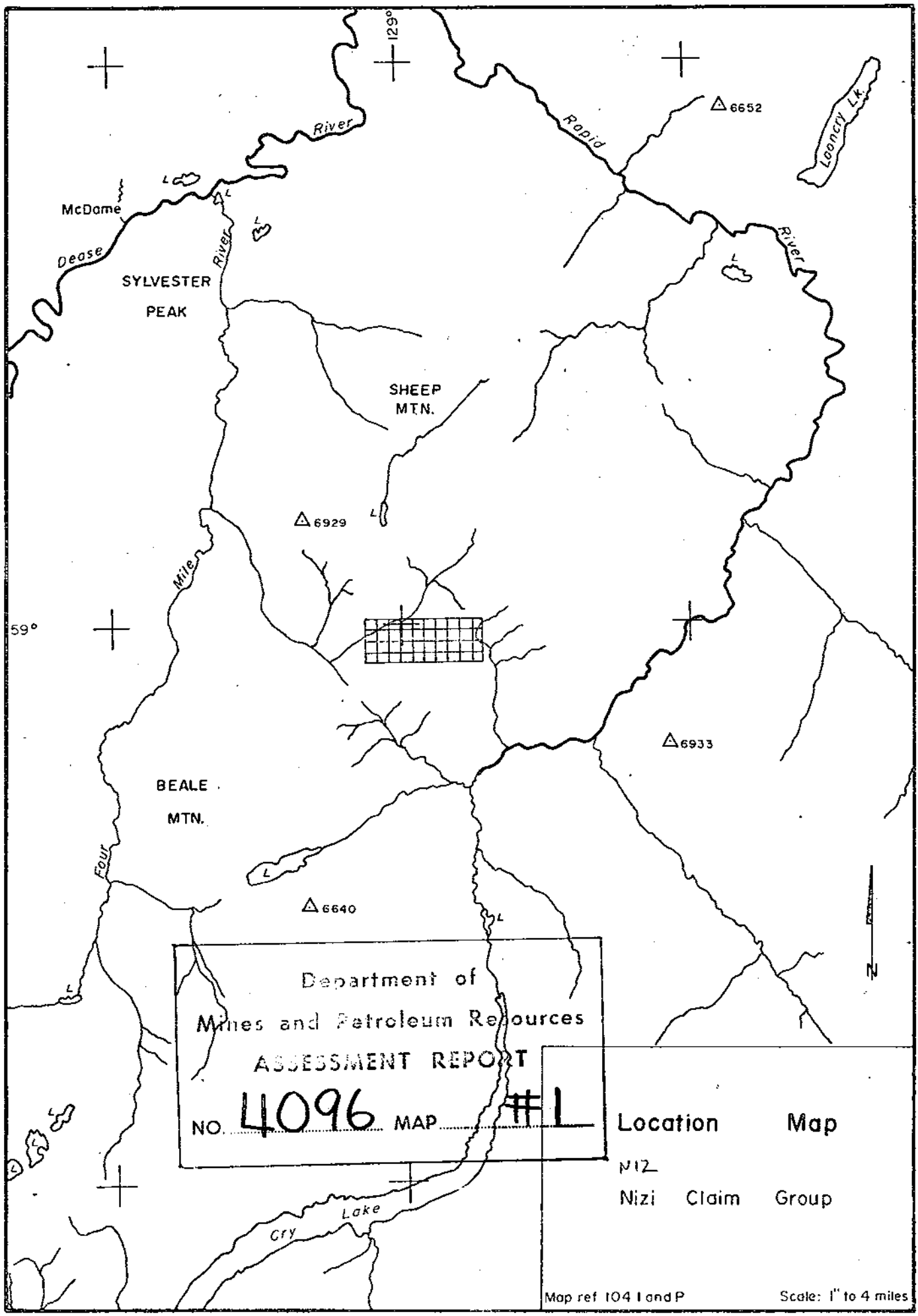

129°
River
Rapid
Looncry Lk.
6652
McDame
Dease
River
SYLVESTER
PEAK
River
SHEEP
MTN.
6929
Mile
59°
6933
BEALE
MTN.
Four
6640
Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4096 MAP #1
Location Map
NIZ
Nizi Claim Group
Cry Lake
Map ref 104 I and P
Scale: 1" to 4 miles

Introduction

The Nizi group of claims were staked in 1970 by J.J. Altenburg and optioned in March 1972 by Sumac Mines Limited.

High grade copper and zinc float together with anomalous stream silt geochemistry in creeks traversing or rising in the property, together with such favourable host rocks as acid volcanics and porphyritic intrusives justified further investigation.

The property was therefore systematically sampled and its geology mapped during the 1972 field season. This report describes the work done and presents the data which was collected.

Location and Access

The property is situated on the watershed between the Four Mile and Rapid Rivers in the Cassiar Mountains ($129^{\circ}00'W$, $58^{\circ}58'N$).

Normal access is by road to McDame on the Cassiar to Watson Lake road and then by helicopter. The Sumac crew were supported by helicopter from a base camp on Hottah Lake, 56 miles to the south-east. Eventual road access to McDame via the valley of the Four Mile River and Nizi Creek appears feasible.

Topography and Climate

Land covered by the claims is extremely rugged as it consists of a north facing cwm and steep ($+45^{\circ}$) walls buttressed by talus slopes. The reverse slopes are not so steep and have more overburden and vegetable cover.

The elevation reaches a maximum in excess of 6000'. Perhaps owing to this elevation the climate is in general inhospitable with snow cover at the upper level nine months in the year.

Claims

The group consists of forty of the original forty-eight claims staked. Few are full-sized but due to angling of the location lines there may be some unclaimed fractions.

Geology

The claims are underlain by acid to intermediate volcanic rocks, probably Upper Triassic in age, pierced by two younger intrusions. Four rock types are present, they are :-

(i) Rhyolite. This is fine-grained, dark in colour and commonly has a cherty appearance. Oxidation of accessory pyrite causes outcrops to be rusty.

(ii) Andesite. This rock occurs as flows but also as tuffs and tuff-breccia. It is a dark green rock with a porphyritic texture. Felspar laths up to 5 mm in length are scattered in an aphanitic groundmass.

(iii) Diorite. This is a normal diorite with equigranular texture and consisting of felspar and hornblende.

(iv) Quartz-felspar-porphyry. This rock is exactly as its name would imply; it may, however, be a variant of a rhyolite porphyry, which occurs as a dyke crossing the northern half of the property.

The rhyolite and andesite appear to be conformable and both are cut by diorite. Scattered outcrops of rhyolite and/or andesite well within the diorite may be either roof pendants or very large xenoliths.

Mineralisation

Although disseminated chalcopyrite float has been reported, none was discovered in place during 1972. There are, however, many veinlets of galena and sphalerite, particularly on or near Line zero. They seem to be associated with minor faulting.

Gossans after pyrite (?) can be found in many places and are shown on the accompanying map. In addition to limonite the gossan is characterised by silicification and carbonatisation.

Veinlets of chalcopyrite were noted on Line 64W at 5N.

Geochemistry

The area was systematically covered with a grid of sample sites, theoretically at 400' intervals on lines 800' apart. In practice some of the lines had to be offset or omitted owing to the precipitous nature of the topography.

Samples were collected using a stainless steel trowel from a hole dug by mattock and placed in standard high wet-strength kraft bags. These were then dried and shipped directly to Chemex Labs Limited of North Vancouver for sieving and analysis.

With the exception of thirteen stream silt samples, the remainder were taken from the B1 horizon. All were analysed for copper, nickel, zinc, molybdenum, silver and gold. Forty-seven rock samples were also analysed for the same elements plus lead.

Geochemical Results

Two areas are distinctly anomalous in silver, zinc, and in some places, gold. These are :-

(a) on Lines 0 to 24E south of the baseline and,

(b) on Lines 32W to 64W north of the baseline (this anomaly is open to the west).

The eastern anomaly (a) coincides with the area of sphalerite veinlets noted earlier, in an area of abundant outcrop. In this area it is unlikely that mineable mineralisation could exist without having been discovered during this and earlier work.

The western anomaly (b) is of more concern in that it coincides with the major area of volcanic rocks which, in this part of the claim group are largely covered by overburden. Most likely these rocks have a high background in base and precious metals, but it is possible that economic mineralisation exists but is not exposed.

Proj. Engineer Seal not available at this date.

T. Rodgers

22.XI.72

T. Rodgers P.Eng.

DECLARATION OF COSTS

Personnel

J.W. Morton	Aug. 10th - Aug. 20th	9 days @	$30.00	270.00
R. Britten	" "	9 "	$22.50	202.50
W. Dacre	" "	9 "	$18.33	165.00
V. Pratico	" "	5 "	$25.00	125.00
S. Mathews	" "	5 "	$17.50	87.50
C. Stannus	" "	5 "	$15.00	75.00
		42		925.00

Field Expenses

(see Schedule A)

42 man-days @ $96.53 — 4,054.00

Laboratory Expense

Soil and rock geochemistry — 925.00

Office Expense

Drafting, reproduction, typing, etc. — 100.00

$6,004.00

Declared before me at the

of , in the

Province of British Columbia, this

day of NOV 22 1972 , A.D.

VANCOUVER, B.C.

T. Rutgers

Sub - Mining Recorder

T. Rutgers P.Eng

A Commissioner for taking Affidavits within British Columbia or
A Notary Public in and for the Province of British Columbia.

Schedule A

SUMAC 220 PROJECTS

Allocable Costs - 1972

00	Engineering & camp supplies	3,598
40	Fuel (Aviation)	2,637
41	" (Other)	813
42	Catering	6,082
50	Communications	790
51	Transportation	10,961
52	Helicopter charter	36,769
62	Rental (Equipment)	514
		62,164

Total man-days (June 1st to August 30th)

Seven men x 92 days 644

Cost per man-day

$$= \frac{62,164}{644} = \$96.53$$

Declared before me at the

of , in the

Province of British Columbia VANCOUVER, B. C.

day of NOV 22 1972 , A.D.

T. Rodgers

Sub - Mining Recorder

A Commissioner for taking Affidavits within British Columbia or
A Notary Public in and for the Province of British Columbia.

T. Rodgers P.Eng

Schedule B

CHEMEX LABS LTD.

212 Brooksbank Avenue, North Vancouver, B.C.

Description of preparatory and analytical procedures.

PREPARATION PROCEDURE FOR ROCK GEOCHEM SAMPLES - Weighing less than 450 gms.

(1) Samples are sorted, recorded and dried @ approx. 120°F.

(2) Dried samples are processed to -1/8" through geochem crusher only.

(3) The entire crushed sample is pulverized to -100 mesh using rotary pulverizer.

(4) Pulverized sample is rolled 100 times to produce a homogeneous pulp.

(5) 0.5 grams of pulp is weighed into test tube for $HClO_4$-HNO_3 digestion and final analyses of ppm Cu, Mo, Pb, Zn, Ag etc. A 5 gram sample is digested to dryness with aqua-regia for the ppb gold analyses.

The Pulverizer and crusher are thoroughly cleaned between samples to reduce contamination problems.

PROCEDURE FOR THE ANALYSIS OF TRACE GOLD IN SOIL AND SILT MATERIALS.

Step 1. The sample is dried at 110°F, sieved to -80 mesh and stored in a coin envelope.

Step 2. A 2 gm sample is weighed into a 100 ml beaker.

Step 3. 15 ml of aqua regia (3 parts HCl to 1 part HNO_3) is added to the pulp.

Step 4. After sitting for 15 minutes, the sample is heated to dryness.

Step 5. More aqua regia is added and the sample is again evaporated to dryness.

Step 6. The soluble salts are dissolved in 25% HCl and mixed.

Step 7. The gold is extracted as the bromide in 5 ml. of methyl isobutyl ketone.

Step 8. The organic layer is then analysed on the Atomic Absorption Spectrophotometer against prepared standards.

GEOCHEMICAL LABORATORY PROCEDURE FOR THE HANDLING AND ANALYSES OF SOIL AND SILT MATERIALS CONTAINING TRACES OF Cu, Mo, Pb, Zn, Ni, Co and Ag.

Step 1. Samples are dried @ 110°F and then sieved to -80 mesh consistency through a nylon and stainless steel sieve. Presieved materials are processed starting at Step 2.

Step 2. 0.50 grams of the dry pulp is weighed into a calibrated test tube.

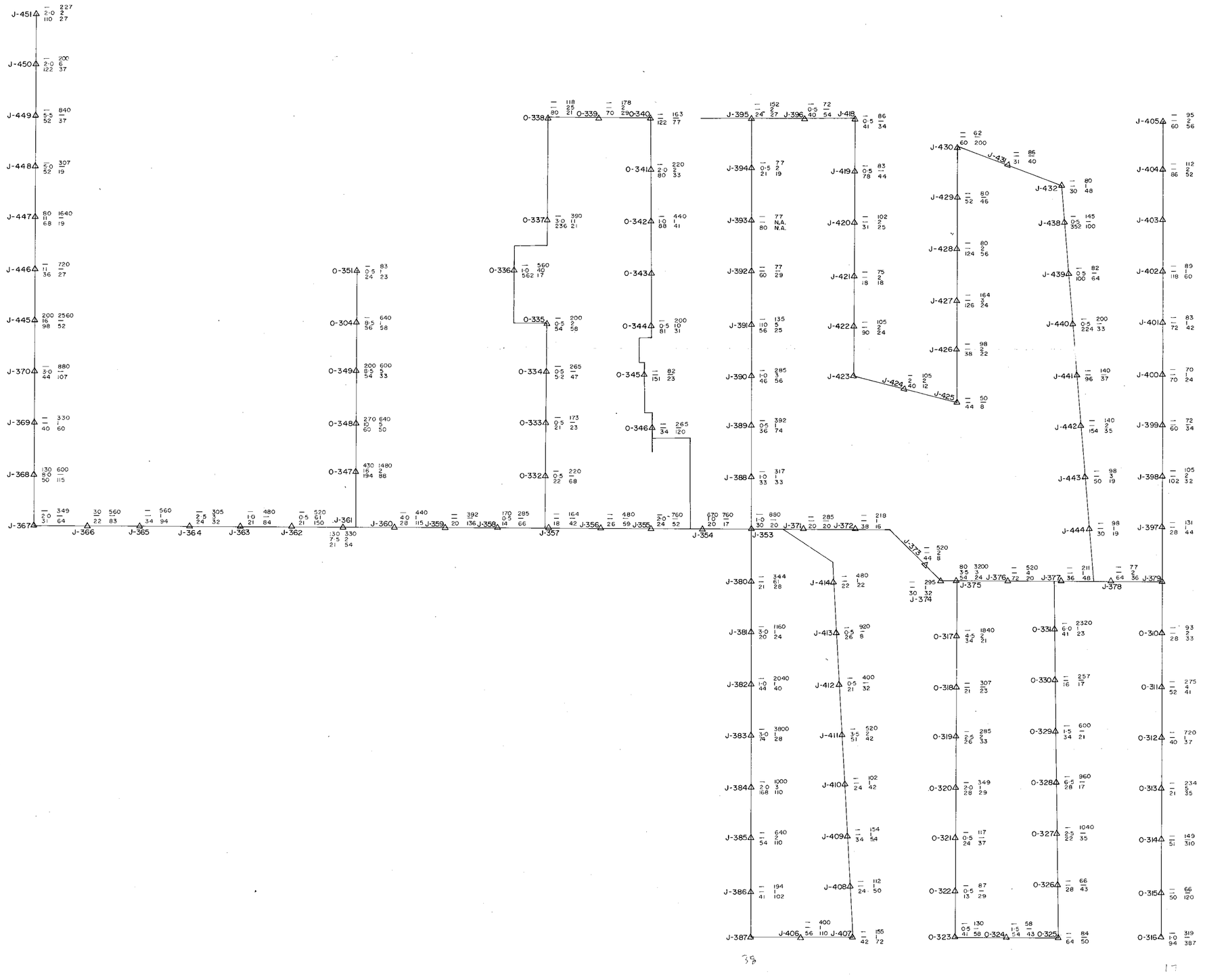
Step 3. 3 mls. of perchloric acid and 1 ml. of nitric acid is added to sample.

Step 4. Samples are digested at low heat initially and then the temperature is raised to 203°C. Digestion time 2 to 3 hours.

Step 5. Digested samples are cooled, made up to 25 ml. volume with distilled water and solutions are thoroughly mixed.

Step 6. Analyses for Cu, Mo, Pb, Zn, Ni, Co and Ag by Atomic Absorption procedures. Detection limits as per our brochure.

Bruce W. Brown,
Manager Laboratory Division.



△ Soil sample

Metals: Gold ppb (– <30)
Silver ppm (– <0·5)
Copper ppm
Zinc ppm
Molybdenum ppm (– <1)
Nickel ppm

To accompany report on geology and geochemistry by T. Rodgers P.Eng.

T. Rodgers P.Eng.

22.XI.72

SULLIVAN RODGERS

SUMAC-221

NIZI GROUP

Geochemistry - soil

Date: Nov. 1972 | Scale: 1" to 400' | N.T.S. 104-I | Map No. 221-C-1

POND

Gossan

IVa, IVb — a. Quartz feldspar porphyry; b. Rhyolite porphyry (dyke)

III — Diorite

II — Andesite (tuff and tuff breccia)

I — Rhyolite (siliceous and sometimes cherty)

Contact defined

Contact inferred

Rock outcrop

Fault

Ridge

Claim post

Claim line

N

To accompany report on geology and geochemistry by T. Rodgers P.Eng.

T. Rodgers P.Eng. 22.XI.72

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M-2

Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4096 MAP #2

SULLIVAN RODGERS

SUMAC-221

NIZI GROUP

Geology

Date: Nov. 1972 | Scale: 1" to 400' | N.T.S. 104-1 | Map No. 221-G-1

○ Silt sample

□ Rock sample

Metals: Gold ppb (– <30)
Silver ppm (– <0·5)
Copper ppm
Zinc ppm
Molybdenum ppm (– <1)
Nickel ppm
Lead ppm

To accompany report on geology and geochemistry by T. Rodgers P.Eng.

T. Rodgers P.Eng.
22.XI.72

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4096 MAP #3

SULLIVAN RODGERS

SUMAC-221

NIZI GROUP

Geochemistry – stream and rock

Date: Nov. 1972	Scale: 1" to 400'	N.T.S. 104-1	Map No. ZSR-G-2