GEOLOGICAL, GEOCHEMICAL & GEOPHYSICAL

REPORT

ON

THE NI 336 GROUP

HARRISON LAKE AREA, B.C.

(49°N, 121°W)

by

R.A. GONZALEZ, (Geologist)

endorsed by

WALTER E. CLARKE, B.Sc., P.Eng.

for

GIANT EXPLORATIONS LIMITED (N.P.L.)
Suite 2410, Pacific Centre
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INTRODUCTION

Giant Explorations Limited (N.P.L.) and Mascot Copper Mines Limited (N.P.L.) are carrying out a comprehensive exploration program in the area surrounding the Old Settler Mountain. The property consists of 530 mineral claims, and it is bounded on the west by Harrison Lake, on the south by Bear Creek, on the north by the Cogburn Creek Valley, and on the east by the Giant Nickel Mine.

As a result of exploration work carried out in 1970 and 1971, seven target areas were chosen for detailed investigation and in the 1971 season, detailed work was completed on six of the areas. The last area, outlined late in the 1971 season, was examined in 1972, and one of the completed six target areas was re-examined and its boundaries extended northward. Surveyed grids were established and this was followed by geological mapping, together with geochemical and geophysical surveys.

This report describes that portion of the 1972 detailed work program completed on the northern extension of Area 4 between August 15th, 1972 and October 11th, 1972.

MAP AND GRID CO-ORDINATE SYSTEMS

The co-ordinate system used on the maps which accompany this report are north and west extrapolations of the Giant Nickel Mine co-ordinates. The numbers on the map represent the distance in feet north (N) and west (W) of the zero point established at the mine site.

The surveyed line grids use a five digit computer format for each station location. The first digit represents the target area number, the second two digits represent the line number and the last two digits represent the station number. For example, 4-69-05 represents Station No. 5 on line 69 in grid area No. 4.

LINE CUTTING

The surveyed grids on each target area were established in the following manner:

An initial base station point was chosen which could be located accurately on air photos and government topographic maps. From this base station, base lines were surveyed using a compass transit with tripod and a survey chain. The base line was cut with axes and marked with colour coded ribbons and parallel lines established at 400 ft. horizontal intervals. Each grid line was run from the base line using a compass, a chain, and a clinometer for slope corrections. The grid lines were blazed and flagged and undergrowth cut where

necessary. Individual stations were established at 100 ft. intervals along the grid lines with pickets and colour coded ribbon. Elevations were taken at each station using Thommen altimeters. Claim posts adjacent to grid lines were tied into the grid.

GEOCHEMICAL SURVEY

Geochemical soil samples were taken at 200 ft. intervals along the cross lines. In addition, silt samples were taken at streams which crossed the grid lines. The B soil horizon was sampled wherever possible. A mattock was used for trenching and the sample was placed in Kraft wet-strength envelopes using a trowel. All sample locations were flagged and marked with colour coded ribbon and numbered according to the grid co-ordinate system.

Fraser Laboratories Ltd., 1175 West 15th., Street, North Vancouver, assayed the samples for total nickel and copper using the following procedure: One-half gram of the -80 mesh fraction was digested with nitric and perchloric acid. The samples were heated until the perchloric acid was consumed. This was followed by bulking the sample to standard volume. Values for nickel and copper were obtained with an atomic absorption spectrometer.

MAGNETOMETER SURVEY

The magnetometer surveys of the grid areas were carried out using a MacPhar M700 magnetometer as a field instrument and a "Sharpe" Model A2 vertical force magnetometer as a base station control instrument. The base station instrument was located at the base camp well away from any metallic objects and variable power sources. This instrument was read hourly. A reading was taken at each 100 foot station on the grid lines with the field instrument; in areas where the range of magnetic values changed rapidly intermediate stations were established. The time was noted for each reading in the field book. At the end of each survey day the field readings were corrected using the diurnal graph plotted from the base station data.

GEOLOGICAL MAPPING

Geological mapping on the target area was carried out by Mr. R.Gonzalez, B.Sc., M.Sc. (Geology) and Mr. B. Yorston, B.Sc. (Geology). A summary of their combined work on Area 4, as written by Mr. Gonzalez, follows:

INTRODUCTION

A reconnaissance survey, during the 1971 field season, discovered sulfide bearing pyroxenite boulders on the north side of Cogburn Creek. Since the rock type and mineralization was similar to that found in Area 4, it was decided to extend the Area 4 grid across Cogburn Creek to examine this area in greater detail.

Rock exposures are generally poor and rare at lower elevations; inspite of this a fair appreciation of this area mineral potential has been determined.

LOCATION AND ACCESS

Area 4 straddles both sides of Cogburn Creek, approximately 7 miles, by road, from Bear Creek Camp. This report describes that portion of Area 4 on the north side of Cogburn Creek; the grid is confined to the south facing slopes. The topography is rugged with the average slope being about 40 degrees. Most of the area is covered with tall stands of timber, except at the lower elevations where the timber has been logged.

Access is readily available by vehicle along numerous logging roads.

GEOLOGY-ROCK TYPES

Outcrops are generally poor. In the valley bottom and lower elevations outcrops are rare, but at higher elevations small outcrops and bluffs are relatively common. Exposed bedrock covers less than 15% of the grid area.

Four rock types are present; they are, in descending order of abundance, as follows:

Gabbro

This rock type is the most abundant, and it represents more than 80% of the exposed bedrock. This unit seems to be more resistant to weathering than the surrounding rocks and almost always is a cliff former. This unit is similar in colour and texture to norite, but it does not appear to contain a sufficient percentage of ortho-pyroxenes to be a true norite. In hand specimen the rock is light grayish-brown, medium-grained, and equigranular consisting of plagioclase and pyroxene. Some of the pyroxenes are brown in colour suggesting the orthopyroxene bronzite.

In thin section, this rock is perfectly fresh, and the dominant minerals are plagioclase and pyroxene which occurs in a ratio of two to one; Plagioclase (An_{55} to An_{65}) represents approximately 65%, and pyroxenes make up 35%.

Of the pyroxenes 23% are clinopyroxenes and 12% are orthopyroxenes. Most grains are euhedral to subhedral, and they show local evidence of fragmentation. The long axes of the silicates have a clear tendency toward alignment. The fragmentation and alignment of grains is probably due to movement during and slightly after the final cooling.

Diorite

Diorite is the next most common rock type, and it represents approximately 15% of the total exposed rock. The diorite is scattered throughout the area, and it is represented by small isolated outcrops seldom more than 100 feet in diameter. It is also found in "mixed" outcrops containing both diorite and pyroxenite without distinct contacts.

The diorite is light gray in colour, medium-grained, equigranular, and unaltered. This rock is similar to the diorites found throughout the entire claim block, and it is classified as a hornblende diorite. The main constituents are rectangular calcium plagioclase about 40%, and a similar amount of fine-grained hornblende. Coarse-grained crystals of quartz represent approximately 3 - 5% of the total volume. Magnetite is weakly distributed, but locally it may be present in sufficient amounts to be the cause of some of the erratic magnetometer responses.

Pyroxenite

Pyroxenite is widely scattered throughout this area, but it probably does not represent more than 5 to 10% of the exposed rock. It is present in two distinct forms: 1.) small isolated bodies, and 2.) differentiated masses associated with diorite and, to a lesser extent, with gabbro.

The pyroxenite is medium-to coarse-grained and dark brownish-black in colour. The rock is serpentinized, especially on or adjacent to fault surfaces; serpentinization does not extend more than a few inches on either side of a fault. Actinolite alteration is prominent in the vicinity of faults and where the pyroxenite is in contact with the gabbroic phase. A hornblendic pyroxenite phase, locally poikilitic, contains the most impressive mineralization, but sulfides are present as fine disseminations in both pyroxenite phases.

Hornblendite

Only one occurrence of hornblendite was noted, line 71, station 26. The outcrop lies between outcrops of diorite and pyroxenite.

The hornblendite is composed of two minerals: hornblende and plagioclase. Coarse grained hornblende laths, commonly 2 cm. long, make up 80% of the constituents.

Plagioclase occupies the interstitial position between the grains of hornblende.

STRUCTURE

Little is known of the overall structure of this area because of poor bedrock exposures. However, data gathered from scattered outcrops suggests two separate periods of intrusion; one period covering the diorite and gabbro intrusion and one for the pyroxenite. The diorite-gabbro intrusions show four strong joint sets: north-south, north-northeast, northeast, and northwest. The pyroxenite shows three strong joint sets: northeast, east-west and northwest.

The northwest trend is consistent with the regional trend, and from previous work this set was caused by resurrection along a regional zone of weakness.

Two northwest trending faults were mapped. The fault zones are occupied by small streams, but when visible, the zones are a few inches to a foot wide and are marked by local actinolite alteration. The majority of known mineral occurrences lie along these fault zones.

INTERPRETATION OF SURVEYS

Geochemical Survey

High values in nickel and copper occur at several localities, and are anomalous for this area. For the most part these anomalous areas correspond to known

areas of mineralization or are a reflection of structural features. Nickel values in the soil samples have outlined two areas that should be re-examined: one along the projected strike of a fault near 4-70-06, and another area near 4-72-33 contains favourable pyroxenite bedrock.

Geophysical Survey

The magnetometer survey has indicated that the area is more complex than is suggested by the geological mapping. In many areas a range of several thousand gammas is common over a distance of less than 100 feet. The condition is not confined to any one rock type.

Geological Mapping

Although outcrops are generally poor, a good appreciation of the area is available. Mineralized ultramafics are widely scattered and can be divided into two groups: 1.) small isolated plugs of pyroxenite, and 2.) small isolated plugs of pyroxenite with intermixed (local differentiation?) diorite or gabbro.

CONCLUSION AND RECOMMENDATIONS

The geochemical survey has outlined a number of anomalous areas. Sulphides were not recorded in all of the areas. From our experience on other claims in the block, areas of anomalous geochemical values always warrant more detailed prospecting.

The magnetometer survey is difficult to interpret, mainly due to the erratic magnetic response over short distances. Locally the erratic response was probably due to pyroxenite intermixed with diorite or gabbro, but in other areas only mafic rocks were exposed. One could conclude that in areas where only mafic rocks were exposed, the magnetic response is due to near surface ultramafics. In any event, additional detailed prospecting is warranted.

PERSONNEL

Geological, geophysical and geochemical work on part of the Ni 336 Group was carried out under the writer's supervision from August 15th to October 11th, 1972. The personnel involved were as follows:

Harry Bruce	4474 West 5th Avenue, Vancouver, B.C.
Clayton DeRoux	Gen. Del., Hope, B. C.
Ralph Gonzalez	#1 - 1621 St. Georges Avenue, North Vancouver
Brad Hoglan	c/o Prettys' Timber, Bear Creek Division, Harrison Hot Springs, B.C.
Hamish MacDonald	3241 Point Grey Road, Vancouver
Doug Mackinnon	2949 West 4th Avenue, Vancouver
Don McCool	2073 West Keith Road, North Vancouver
Robert Mitchell	1543 Venables Street, Vancouver
Wayne Monkman	2519 West 5th Avenue, Vancouver
Greg Rowe	720 Winona Avenue, North Vancouver
Bob Yorston	10045 - 161st Street, Surrey, B.C.

EXPENDITURES

A detailed cost statement of work done on the Ni 336 Group is as follows:

Line Cutting

Harry Bruce	4 days @$29/day	$116
Clayton DeRoux	1 day @ $26/day	26
Don McCool	2 days @ $24/day	48
Hamish MacDonald	1 day @ $22/day	22
Doug MacKinnon	1 day @ $24/day	24
Robert Mitchell	1 day @ $24/day	24
Wayne Monkman	1 day @ $22/day	22
Greg Rowe	4 days @ $28/day	112

Geological Mapping

Ralph Gonzalez	1 day @ $50/day	$ 50
Don McCool	30 days @ $24/day	72
Bob Yorston	10 days @ $41/day	410

Geochemistry

Harry Bruce	2 days @ $29/day	$ 58
Don McCool	2 days @ $24/day	48
Hamish MacDonald	1 day @ $22/day	22
Doug MacKinnon	1 day @ $24/day	24
Greg Rowe	4 days @ $28/day	112

Magnetometer Survey

Brad Hoglan	1 day @ $24/day	$ 24
Bob Yorston	4 days @ $41/day	164

Labour costs	$1,378
Room and Board: 44 man days @ $17/day	748
Vehicle Rental: Truck rental - 24 days @ $10/day	240
Assaying: 102 soil samples @ Assayed for Ni and Cu	
Report and Map preparation, including interpretation - 10 days @ $50/day	500
Scientific instrument rental and engineering supplies	300
	$3,166

CERTIFICATE

I, Ralph A. Gonzalez of the city of North Vancouver in the Province of British Columbia hereby certify:

1. That I am engaged in work as a Geologist and reside at #1-1621 St. Georges Ave., North Vancouver, British Columbia.

2. That I am presently employed by Giant Mascot Mines Limited.

3. That I have personally done work on the 316 Group of claims.

4. That I have practiced as a geologist in British Columbia for over four years.

5. That I am a graduate of the University of New Mexico with both a Bachelor of Science and a Master of Science degree in Geology.

DATED this fifthteenth day of January, 1973

Signed

Ralph A. Gonzalez
Geologist.

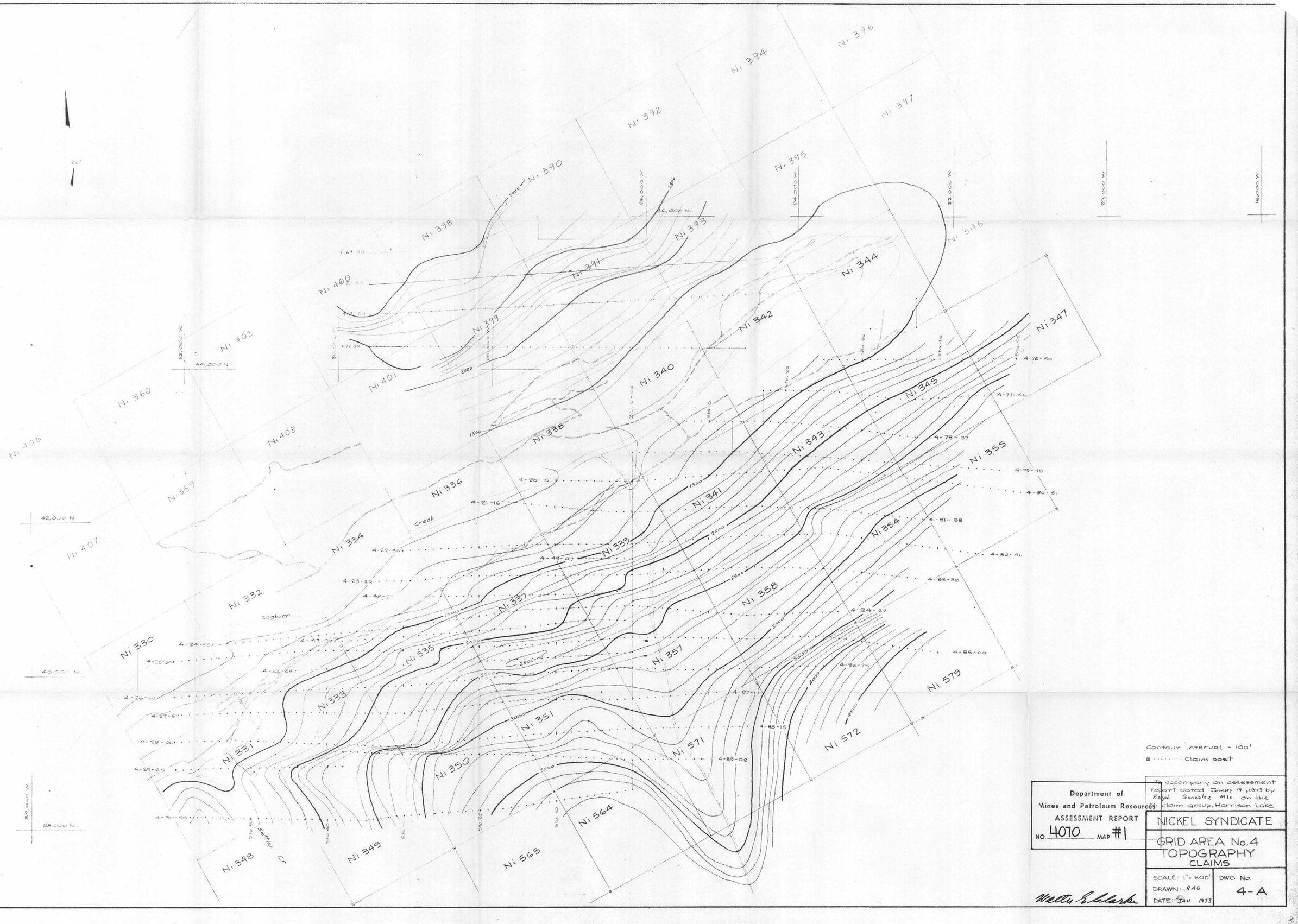
Submitted on behalf of

GIANT EXPLORATIONS LIMITED (N.P.L.)

Ralph Gonzalez

Endorsed by

W. E. Clarke, B.Sc., P.Eng.



Contour interval - 100'

B ..... Claim post

To accompany an assessment report dated January 19, 1973 by Ralph Gonzalez M.Sc. on the claim group, Harrison Lake.

Department of Mines and Petroleum Resources

ASSESSMENT REPORT NO. 4070 MAP #1

NICKEL SYNDICATE

GRID AREA No. 4
TOPOGRAPHY
CLAIMS

SCALE: 1" = 500'
DRAWN: RAG
DATE: JAN 1973

DWG. No. 4-A

Walter R. Clarke

22°

46,000 N.

44,000 N.

42,000 N.

40,000 N.

38,000 N.

34,000 W.

32,000 W.

30,000 W.

28,000 W.

26,000 W.

24,000 W.

22,000 W.

20,000 W.

18,000 W.

4-69-00

4-72-00

4-20-10

4-21-10

4-22-30

4-23-33

4-24-55

4-25-60

4-26-60

4-27-59

4-28-60

4-29-60

4-31-58

4-48-27

4-49-07

4-46-44

4-47-39

4-76-50

4-77-58

4-78-37

4-78-48

4-80-61

4-81-38

4-82-46

4-83-38

4-84-27

4-85-40

4-86-26

4-87-11

4-88-16

4-88-09

Creek

Cogburn Creek

Sta 80

Sta 40

Sta 20

Sta 0

Sta 20

Sta 40

Sta 60

Sta 80

Sta 100

Base line 0+00

LEGEND

SYMBOLS

Faults
- Defined
- Approximate
- Assumed

Outcrop boundary

Geological contact lines
- Defined
- Approximate
- Assumed

Joints

GEOLOGY

0.		Drift
1A		Hornblendic Pyroxenite
1B	788	Pyroxenite
2	792	Peridotite
3	739	Norite
4.	737	Diorite
5	749	Gabbro
6	761	Altered Basic
7.	746	Metasediments
8.	740	Hornblendite

Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4070 MAP #2

To accompany an assessment report dated January 19, 1973 by Ralph Gonzalez M.Sc. on the Ni claim group, Harrison Lake

NICKEL SYNDICATE

GRID AREA No. 4
GEOLOGY

Scale: 1" = 500'
Drawn: RAG
Date: JAN 1973

Dwg. No. 4-B

Walter B. Clarke

48,000 N.

46,000 N

44,000 N

42,000 N

40,000 N

38,000 N.

24,000 W.

32,000 W.

30,000 W.

28,000 W.

Base line 0+00

26,000 W.

24,000 W.

22,000 W.

20,000 W.

18,000 W.

48,000 N

46,000 N.

44,000 N

42,000 N

40,000 N

38,000 N

N

27°

4-64-00

4-70-00

4-71-00

4-72-00

4-76-60

4-77-46

4-78-37

4-79-48

4-80-51

4-81-38

4-82-46

4-83-38

4-84-27

4-85-40

4-86-25

4-87-20

4-88-15

4-89-03

4-20-10

4-21-16

4-22-30

4-49-07

4-23-38

4-48-27

4-24-55

4-25-60

4-46-44

4-45-20

4-26-60

4-27-63

4-28-60

4-29-60

4-30-68

Anomalous Ni in PPM

☐ 125+

Sample Interval - 200'

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4070 MAP #3

To accompany an assessment report dated January 19, 1973 by Ralph Gonzalez Msc. on the N claim group Harrison Lake

NICKEL SYNDICATE

GRID AREA No.4
GEOCHEMISTRY
PPM Ni

SCALE : 1" = 500'
DRAWN: RAG
DATE: JAN 1973

DWG. No. 4-D

Walter E. Hanson

48,000 N.

46,000 N.

44,000 N.

42,000 N.

40,000 N.

38,000 N.

24,000 W.

22,000 W.

20,000 W.

18,000 W.

Baseline 0+00

N

22°

4-67-00 10 23 20 65 42 43 44 57 17 16 52 16 159 24 9 33 9 50 43 14 30 17 28 39 28 20 37 45 60 28 13 12

4-70-00 14 31 57 8 5 6 38 18 23 14 21 64 71 71 90 62 68 152 25 40 97 37 62 47 30 53 19 32 49 35

4-71-00 52 13 70 93 46 57 8 7 63 31 25 59 17 36 63 60 17 16 39 39 35 57 89 51 53 55 28

4-72-00 18 65 32 57 38 35 27 87 41 100 79 140 56 41 83 117 91 68 46 44 25 16 25

4-76-50 29 15 15 24 31 24 24 43 19 16 3

4-77-46 40 83 33 28 83 16 16 50 10 12 12

4-78-87

4-79-48 34 40 23 33 33 24 30 41 20 14 24 19 32 8 192

4-80-51

4-20-10 27 38 28 47 21

4-21-16 8 48 57 14 22

4-81-38

4-22-30 37 64 62 49 37 41

4-82-46

4-48-07

4-23-33 24 15 66 75 50 100 28 46 34 12 73 78 49 35 23 14 12

4-83-38

4-48-27

4-64-27

4-24-55 49 40 21 11 33 60 55 68 200 108

4-85-40

4-25-60 19 26 35 24 14 32

4-46 44

4-86-25

4-26-20 26 6 28 22 52 57 38 23 72 38 108 36

4-87-20

4-27-59 5 15 32 10 10 29 55 33 32 136 101 326 53 87

4-88-15

4-28-60 6 7 6 25 18 70 81 14 42

4-89-08

4-29-60 39 16 8 29 57 24 12 81 102 9 18

4-30-58 100 47 77 54 35 27 62 20 32 41 47 87 36 60 42 27 10 4 14 39 33 92 28 22 10 25 7

Anomalous Cu. in P.P.M.

☐ 100+

Sample Interval – 200'

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4070 MAP #4

To accompany an assessment report dated January 19, 1973 by Ralph Gonzalez M.Sc. on the Ni claim group, Harrison Lake.

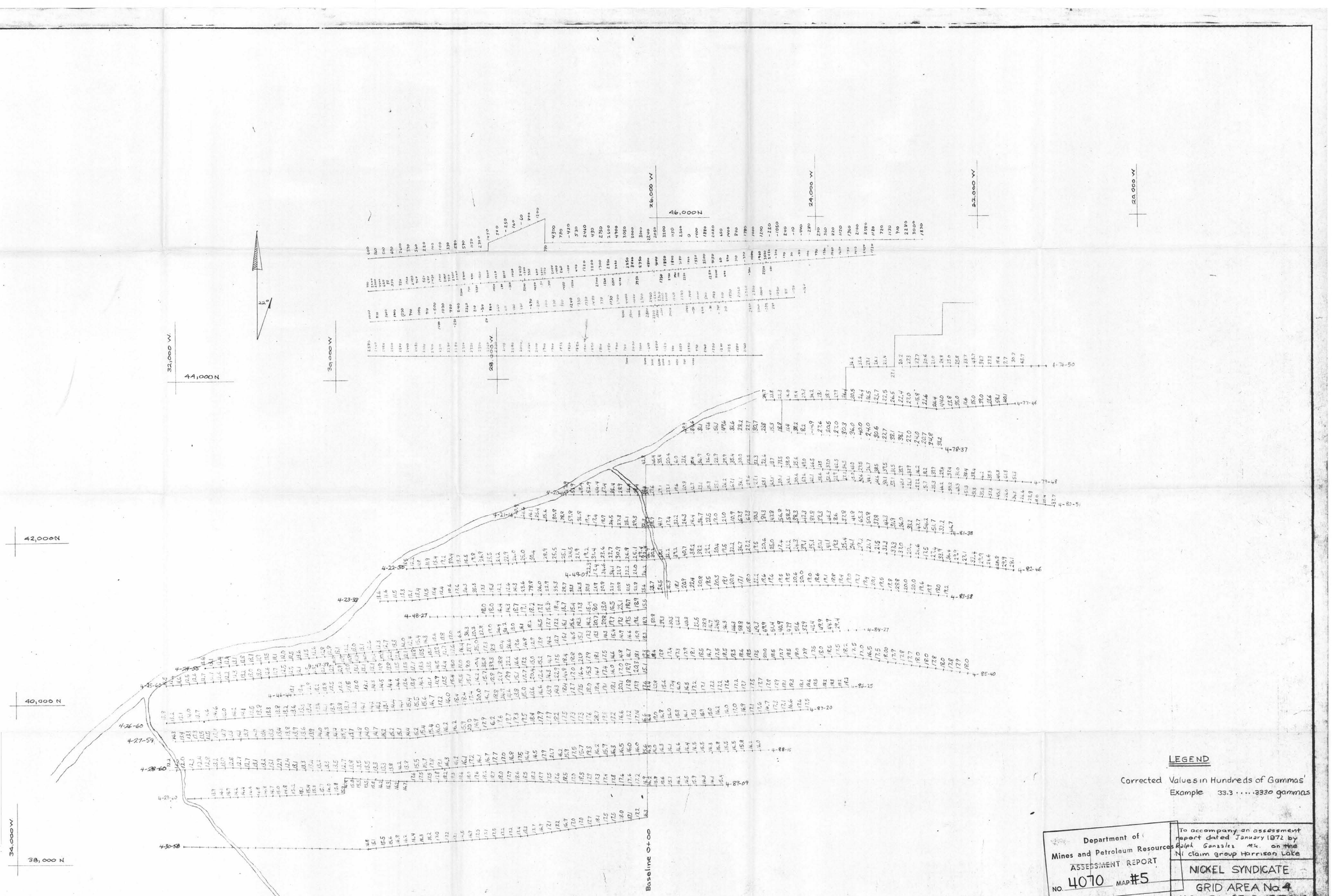
NICKEL SYNDICATE

GRID AREA No. 4
GEOCHEMISTRY
PPM CU.

SCALE: 1" = 500'
DRAWN: R.A.G.
DATE: JAN., 1973

DWG. No.
4-E

Walter E. Clarke



LEGEND

Corrected Values in Hundreds of Gammas'
Example 33.3 ..... 3330 gammas

Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4070 MAP #5

To accompany an assessment report dated January 1972 by Ralph Gonzales M.A. on the Ni claim group Harrison Lake

NICKEL SYNDICATE

GRID AREA No 4
MAGNETOMETER STATIONS
GAMMA READINGS

SCALE: 1"=500'
DRAWN: RAG
DATE: JAN 1972

DWG No
4-F