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Report on the

HIAWATHA PROPERTY

LIZAR TOWNSHIP

DISTRICT OF ALGOMA

PORCUPINE MINING DIVISION

FOR

TANGLEWOOD CONSOLIDATED RESOURCES INC.

by

N.E. BREWSTER B.Sc., F.G.A.C.
A.C.A. HOWE INTERNATIONAL LTD.

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SUMMARY

Tanglewood Consolidated Resources has acquired an option on sixteen claims located on the west shore of Kabinakagami lake in Lizar Township, District of Algoma, Province of Ontario. This property was formerly developed as The Hiawatha Gold mines Ltd. during the late 1930's prior to World War II. Since the cessation of hostilities various efforts have been undertaken to reinvestigate the underground workings on the property, accompanied by limited drilling. These efforts have produced mixed and occasionally contradictory results.

Within the Hiawatha workings gold has been found in the native form occurring in shear hosted veins associated with a Trondhjemite intrusive. To investigate this gold occurrence the Hiawatha property was developed by a shaft to 325 feet with two levels established at 150 and 275 foot depths. During the tenure of Hiawatha Gold Mines Ltd. a total of 16,508 feet of surface drilling, 2,940 feet of underground drilling and 6,361 feet of lateral development in cross cuts and drifts was completed. A small 20 ton per day mill was financed and installed during 1939 which treated 1931 tons of rock for total gold production of 179 ounces or 0.093 ounce per ton. A one half ton bulk sample representing an aggregate of chip and bulk samples of the south zone on the first level returned a reported average gold content of 0.9 ounce AU per ton.

During 1969 samples taken by Primrock Mining and Exploration Ltd. returned the following; of 78 samples taken on the South Zone 275 foot level 40 yielded grades in excess of 0.3 ounce AU per ton

across 1 to 5 feet, of 21 samples taken on the 150 foot level 10 returned 0.27 ounce AU per ton over 2 foot width.

A sampling program completed by Keltic Mining Corporation Ltd. during 1974 returned 12 locations with results grading better than 0.1 ounce AU per ton.

Subsequent to the 1974 program Nickle Rim Mines Limited placed four drill holes under the down dip portion of the south zone and cut several sections mineralized with visible gold in quartz sericitic shear zones.

Due to the demonstrated presence of gold in the Hiawatha working, the favorable geological environment, the renewed interest in exploration of greenstone belt gold occurrences throughout Ontario, and a better understanding of traditional vein hosted gold mineralization in the volcanogenic environment, this writer's opinion is that the Hiawatha property merits additional work. A three phase surface exploration and underground bulk sampling program is herein recommended.

Phase I consisting of surface exploration is estimated to cost \$93,940.00

Phase II consisting of underground mapping and sampling is estimated to cost \$281,545.00.

Phase III which will consist of underground bulk sampling should have \$500,000.00 set aside for completion of the work.

INTRODUCTION

During May of 1983 Mr. R. Steiner President of Tanglewood Consolidated Resources Inc. asked the writer to prepare a report on the Hiawatha Property located in Lizar Township District of Algoma.

The writer has prepared this report utilizing reports and maps of previous authors, contained in company files, and discussions with people familiar with the property.

The various sources of reference are presented in a later section of this report.

A field visit to the Hiawatha property was not made during the preparation of this report.

SOURCES OF REFERENCE

Hardry J.	1974	Keltic Mining Corporation Limited, Lizar Township Property. Timmins Mining Division, Ontario Assessment Report.
Halstead M.C.	1980	A Summary of Reports and Information on the Hiawatha Gold Mines.
Holbrooke, G.L.	1937	Report on Hiwatha Mines Ltd., private report for Erie Canadian Mines Ltd.
James W.F.	1938	Report on Hiawatha Gold Mines Ltd.
Leroy J.C.	1970	The Hiawatha Mine
Sannes D.L.	1979	Nickle Rim Mines Limited 1978 Exploration Program Lizar Township, Ontario NTS 42 C/16.
Smith D.E.	1967	Report on the Property of Primrock Mining and Exploration Limited located in the Township of Lizar Sault Ste. Marie Mining Division District of Agoma, Ontario.
Way B.	1981	Diamond Drilling and Geochemical Soil Survey of the Hiawatha Property 1980.
Government Records		Ontario Department of Mines 1938. Annual Report Vol. 47, part. 1 Table facing page 10. Ontario Department of Mines 1940. Annual Report Vol. 49, Part 1 Page 18 and 125-126. Ontario Department of Mines 1941 Annual Report, Vol. 50, Part 1, Table facing page 8.
News Releases		Articles in Northern Miner February 1937 to November 1939.
Correspondence		Letter from R.I. Ferguson to I.W.C. Solloway. October 24, 1938. Concerning developments at Hiawatha Gold Mines Ltd.

PROPERTY

The Hiawatha property consists of sixteen unsurveyed mineral claims located in Lizar Township on the west shore of Kabinakagami Lake, District of Algoma. These claims are held in joint ownership by M. C. Halstead, L.J. McCarthy, and C.W. Carter. The claims are more particularly described as follows:

<u>Claim No.</u>	<u>Recording Rate</u>	<u>Registered in Name Of</u>
P-407552	June 21/76	L.J. McCarthy
P-407553	June 21/76	"
P-407554	June 21/76	"
P-407555	Aug. 19/77	"
P-500689	Aug. 19/77	"
P-500690	Aug. 19/77	"
P-500691	Aug. 19/77	"
P-500692	Aug. 19/77	"
P-500693	Aug. 19/77	"
P-500694	Aug. 19/77	"
P-500695	Aug. 19/77	"
P-500696	Aug. 19/77	"
P-500697	Aug. 19/77	"
P-500698	Aug. 19/77	"
P-500699	Aug. 19/77	"
P-500700	Aug. 19/77	"

Tanglewood Consolidated Resources has entered into an option agreement with the aforementioned owners of the Hiawatha property. A copy of the agreement is appended. The writer has not independently verified title to the Hiawatha property.

LOCATION & ACCESS:

The Hiawatha Property is located at latitude 48° 51' 40" and 84° 29' 20" longitude, on the west shore of Kabinakagami Lake, District of Algoma, Ontario. This area occurs in Lizar Township, Procupine Mining Division NTS C/16.

The property is located approximately 40 miles northeast of White River and approximately 60 miles north of Wawa, Ontario. Access is most readily achieved via float or ski equipped light aircraft from Wawa White River or Hornpayne.

Access is also achievable by water from Oba, a distance of about 36 miles.

A winter road, 14 miles in length provides access eastward from the south end of Kabinakagmi Lake to the station at Prince on the Algoma Central Railway.

Ontario Highway route 631 between White River and Hornpayne lies 15 miles west of the Hiawatha property. Approximately 20 miles of road would be necessary to connect the property to this highway.

HISTORY OF PREVIOUS WORK:

Gold is reported by various sources to have been first discovered on the Hiawatha property between 1926 and 1931.

Hiawatha Gold Mines Ltd. was incorporated in 1936 and acquired the ground which subsequently became known as the Hiawatha property. A period of active exploration and development was carried out continuing into 1940 which consisted of surface prospecting, trenching, 16,508 feet of diamond drilling, the sinking of a shaft to 325 feet with 636 feet of lateral development on two levels, 2,940 feet of underground drilling and mill testing of some 1931 tons of rock. A small 20 tpd mill was financed and installed at this time. Total gold production is reported to be 179 ounces or (0.093 oz/ton). During this period reference is made to extensive visible gold occurrence and problems of highgrading by the miners. During this time R. I. Ferguson K.C. and subsequently Ontario Supreme Court judge reported observing sufficient plate gold being stripped from a drift wall to fill a 100 pound powder box. This gold was subsequently unaccounted for.

Work was discontinued at the outbreak of World War II and not subsequently resumed by Hiawatha. Hiawatha Gold Mines Ltd. surrendered their charter in 1965, causing the ground to revert to the Crown.

The property was re-staked in 1965 and optioned to Primrock Mining and Exploration Limited in 1966. Primrock dewatered, rehabilitated surveyed and sampled the existing mine workings. Two short holes totalling 250 feet were also drilled to test the west zone 2,800 feet southwest of the shaft. Results were encouraging however a further program of recommended exploration was not carried out. (see maps appendix II)

In 1971 it is reported that Bear Creek Gold Mines Limited in joint venture with Primrock carried out magnetic, electromagnetic, and geological surveys on the property.

In 1974 Keltic Mining Corporation Limited acquired the property. Magnetometer and VLF-EM surveys were carried out in April over water portions of the property. In the summer of 1974 Keltic dewatered the workings and carried out systematic sampling and geological mapping. These results indicated the presence of gold mineralization and two or three shoots of sub-ore grade material which improved in continuity and grade from the upper to lower level. (See plan map appendix II) Testing of the zone at depth with a series of five 600 feet holes was recommended, but not carried out.

The claims were allowed to lapse in 1977, a portion was then re-staked by the current holders. Nickle Rim Mines Limited acquired the property by option in May 1978, and carried out a program of line cutting, magnetic surveying and diamond drilling. Four drill holes tested the down dip portion of the South Zone and cut several sections mineralized with visible gold, in quartz sericitic shear zones. The Nickle Rim option agreement expired on February 25th 1980.

During April 1980 Svenson-Way Mineral Services Ltd. staked 163 mineral claims along the strike direction of the property. This company subsequently negotiated an option agreement with the owners of the Hiawatha Property and in joint venture with Echo Bay Mines Ltd. conducted an exploration program. At the conclusion of the surface program an underground bulk sample test was recommended, but not completed due to lack of funds.

PREVIOUS DIAMOND DRILLING:

During the late 1930's Hiawatha completed 13,034 feet of diamond drilling from surface. This drilling covered portions of the North zone, West zone and South zone.

Data from these holes has been lost, however it is reported that 7 out of 15 holes intersected value greater than 0.75 oz. Au/ton. across 3.5 feet in the north zone. The remaining 8 holes assayed 0.04 oz Au./ton or less. The drilling was carried out over a length of 1500 feet. To the west, a second zone was drilled over a length of 200 feet and returned a grade greater than 1.3 oz. Au/ton (West zone). To the east beyond the extremity of the mine, one hole is reported to have encountered solid gold which blocked the bit.

Primrock in their program drilled two holes spaced at 100 feet beneath the surface showing on the West zone. Assay values obtained were 0.27 oz. Au/ton across 2.1 feet and 0.40 oz. Au/ton across 2.2 feet.

During 1978 Nickle Rim Mines Ltd., completed 2,702 feet in four holes beneath the south zone locating 3 occurrences with visible gold and one significant assay of 1.21 oz. Au/ton across a true width of 0.8 feet. (See Logs and sections Appendix III).

During 1980 Svension-Way completed a total of 4,265 feet of drilling in 18 holes using AQ Wireline equipment. Twelve holes were completed in the north zone one of which 80-12 intersected 2.7 feet of 0.12 oz. Au/ton. Two holes which advanced into the Bear Creek zone

intersected a broad sheared and intensely silicified zone at the north edge of a granodiorite body. No gold mineralization was encountered in this zone.

A total of six holes were put through the south zone; in contrast to Nickle Rim who obtained V.G. in three out of four holes, none was encountered by Svenson-Way. One significant assay occurred in hole 80-15 which returned 0.08 oz. Au/ton over 2.4 feet. Of the remaining samples 33% showed gold contents of 0.01 oz Au/ton or better. (Drill Logs presented in Appendix III)

PREVIOUS UNDERGROUND SAMPLING:

Data derived from the original work carried out by Hiawatha Gold Mines Ltd., is unavailable today, however a report to shareholders dated October 20, 1938, indicated that a one-half ton sample representing an aggregate of chips and bulk samples of the south zone on the first level returned an average gold content of 0.9 ounce per ton. This work was completed under the direction of Dr. W. F. James of James, Buffam & Cooper. Elsewhere several incidences are reported where 15 ounces or more occurred in a single drift round.

It appears that masses or aggregates of native metal occur together with blotches and disseminated fine particles in non-continuous seams. Sampling of the veins has been attempted on two occasions. During 1969 L.J. McCarthy for Primrock Mining and Exploration Ltd., collected 109 samples from the No. 1 and No. 2 levels. Although several significant values were obtained, the sampling appears to have been completed in a selective manner. Of the 78 samples taken in a 1,391 foot length of the South Zone on the 275 foot level 40 yielded grades in excess of 0.3 oz. Au/ton across widths of 1 foot to 5 feet. On the 150 foot level, 21 samples were taken of which 10 yielded 0.27 oz. Au/ton across a width of 2.0 feet. These samples demonstrate that significant gold concentrations occur in the vein system.

Keltic Mining Corporation Ltd. during 1974 sampled the underground returning poor results in comparison to those obtained by Hiawatha Gold Mines Ltd. During this program some 12 locations were found having a grade better than 0.1 oz. Au/ton. The sampling was carried out on systematic 10 foot intervals, at which point a channel sample was acquired. Although this is long standing sampling method it has the effect of being as selective in a negative sense as sampling only the mineralization within the veins. Such sampling tends

to totally discount the lensoid nature of vein occurrence and the erratic nature of mineralization within the veins. This feature referred to as payability is a well documented condition of vein type deposits which should be considered in any assessment.

GENERAL GEOLOGY:

The Hiawatha Property is located near the center of a four mile wide, fifty mile long Precambrian Greenstone Belt. (A table of formations is presented in Table 1).

This belt which has a northeast trend is interpreted as a tightly folded syncline with the fold axis passing in close proximity to the property. Within the belt mafic to intermediate metavolcanics are the dominant lithologies. A broad sequence of metasediments with minor sulfide facies iron formation and intercalated volcanics occurs along the southeast flank of the belt.

Extensive areas of granitic rock types occur on each side of the greenstone belt which vary in composition from quartz monzonite to quartz diorite. These rocks have at various points intruded the volcano - sedimentary greenstone belt. One such intrusion consisting of a trondjemite sill is host to the structure of interest on the Hiawatha property.

The youngest rock type in the area consists of northeast trending diabase dikes which cut all other rock types.

TABLE 1

TABLE OF LITHOLOGIC UNITS FOR THE KABINAKAGAMI LAKE AREA
after Sigugsa, G.M. 1977

CENOZOIC

QUATERNARY

RECENT

Fluvial, lacustrine, and swamp deposits

PLEISTOCENE

Silt and sandy till containing some clay and variable proportions of pebbles and boulders; fluvioglacial deposits of sand and gravel (eskers); stratified clay deposits

UNCONFORMITY

PRECAMBRIAN

MIDDLE TO LATE PRECAMBRIAN

(PROTEROZOIC)

MAFIC INTRUSIVE ROCKS

Diabase dikes, porphyritic diabase dikes, minor amphibolite and lamprophyre dikes ¹.

INTRUSIVE CONTACT

EARLY PRECAMBRIAN

(ARCHEAN)

FELSIC INTRUSIVE AND METAMORPHIC ROCKS

Biotite trondhjemite and trondhjemite to granodiorite; associated dioritic rocks derived from contamination; biotite granodiorite, quartz monzonite, minor muscovite-bearing granitic rocks.

INTRUSIVE CONTACT

MAFIC AND ULTRAMAFIC INTRUSIVE ROCKS

Metagabbro, metapyroxenite, metaperidotite

INTRUSIVE CONTACT (ASSUMED)

METASEDIMENTS

Sandstone, paragneiss, and lesser
mafic schists interpreted as lean
sulphide facies iron formation bands

METAVOLCANICS

Felsic Metavolcanics

Mafic to Intermediate Metavolcanics

1. The Middle to Late Precambrian age of amphibolite and lamprophyre dikes is tentative.

GEOLOGY OF THE PROPERTY

The Hiawatha property is underlain by Precambrian rock types as follows:

Table of Lithologic Units

Proterozoic

Diabase Dike

Granitic Pegmatite Dikes

Lamprophyre Dikes

Archean

Trondhjemite

Breccia Unit

Pyroxenite

Mafic Volcanics

Descriptions of the various rock types are taken from a report by David L. Sannes.

Mafic volcanics consisting predominately of massive fine grained flows strike northeast-southwest and dip vertically. A pervasive foliation including shearing, flow directions and bedding effects parallels this trend. Narrow sill-like felsic units are common within the mafic volcanics.

A breccia unit made up of 40 to 50 percent volcanic fragments occurs within sheared trondhjemite. Fragments occur in tabular form, range from a few inches to one foot thick and are oriented parallel to schistosity. This breccia unit extends through the center of the property is some 3000 feet in length and shows a maximum thickness of seventy feet. The breccia may represent a

remnant volcanic within the trondhjemite sill that has been effected by repeated shearing and intrusion. This unit is remiscent of the breccia ore material currently contributing to the underground reserves at the Macassa mine in Kirkland Lake. As native gold occurs associated with quartz in the main shear systems on the Hiawatha workings a structurally effected and altered breccia should not be overlooked for gold content.

The host rock to gold mineralization on the property is a trondhjemite sill. The rock type ranges from medium grained, non-sheared little altered schist to strongly sheared quartz-sercite mineralized zones. The trondhjemite appears to have been intruded during a single event, which has subsequently undergone several shearing and hydrothermal alteration events.

The southwest portion of the property is underlain by pyroxenite, the oldest intrusive rock in the area. Two separate sills are present with the greatest exposure width being 350 feet wide. The pyroxenite is fine to medium grained, black, and massive exhibiting only moderate shearing effects.

The youngest rock types on the property consists of Proterozoic Intrusives; including diabase, lamprophyre and granitic pegmatite.

Diabase dikes are fairly abundant and commonly fifty to seventy feet thick. These dikes cut perpendicular to local strike and dip steeply to vertically. Both lamprophyre and granitic pegmatite have a minor presence on the property.

MINERALIZATION

Mineralization within the Hiawatha property consists of native gold associated with strongly sheared altered zones in trondhjemite sills. Within the altered zones the best mineralization occurs in strongly sericitized schists usually with small quartz "eyes". These zones exhibit varying amounts of late quartz veinlets occurring as parallel thin streaks associated with shearing.

Gold occurs as very fine grains within, or adjacent to late quartz. Minor presence of sulfide minerals including in decreasing order pyrite, pyrrhotite, chalcopyrite, sphalerite, galena and molybdenite are frequently associated with gold. However, this association is not definitive.

CONCLUSIONS:

The Hiawatha property is underlain by a sequence of rock types which have undergone various deformation events which have resulted in alteration and structural settings conducive to the deposition and accumulation of mineralization. A provenance for gold mineralization was available as evidenced by surface and underground results of previous activities confined to the known shear zones.

It is this writer's opinion that in the present exploration climate that further work is merited on the Hiawatha property.

RECOMMENDATIONS:

A program of exploration on the Hiawatha property should consist of three phases.

PHASE I:

Phase I should involve surface work and would consist of the following activities, detailed prospecting, mapping and sampling of the known favorable shear zone southwest from the Hiawatha shaft. This would necessitate cleaning up of known pits or trenches. Possible mineralization in the trondhjenite breccia zone should be investigated at this time. Geophysics including magnetic and electromagnetic surveys should be carried out to detail known structures.

ESTIMATED COSTS FOR PHASE I

Mapping and Sampling Surface

One Geologist	\$300.00 per day for 40 days.	12,000.00
One junior Geologist	250.00 per day for 40 days	10,000.00
Two labourers	150.00 per day for 40 days	12,000.00

ESTIMATED COSTS FOR PHASE I (cont'd)

Geophysics

Linecutting	18 miles @ 350 per mile	6,300.00
Magnetic Survey	18 miles @ 250 per mile	4,500.00
Electromagnetic survey	18 miles @ 300 per mile	5,400.00

Camp Facilities

60.00 per man per day		
2 men x 40 days		4,800.00
2 men x 40 days		4,800.00
Food @ 30 per day x 4 x 40		4,800.00

Air Transportation to Assemble Camp

One plane 2 days		4,480.00
To supply camp 12 flights @ 600.00		7,200.00

Transport 4 men to Wawa

Room and board for four men at 60.00 per man per day for 2 days		720.00
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Truck Rental and Gas

1.5 months at 1,400 per month		2,100.00
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Assays

Allow 200 samples at 10.00		2,000.00
Diamond Saw Rental @ 400/month for 2 months		800.00

<u>Supervision and Reports 10 days @ 350.00 per day</u>		<u>3,500.00</u>
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85,400.00

Contingencies at 10%		<u>8,540.00</u>
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93,940.00

PHASE II

The Hiawatha shaft should be dewatered and rehabilitated at this time to allow access to the 275 level. An independent contract should be let for this work.

Underground work will consist of detailed structural and lithological mapping of the underground workings, followed by representative samplings of the existing backs and faces. This phase of activity will include a diamond drilling program to follow up positive results.

Dewater and rehabilitate shaft, underground opening and provide services (air and water). As this property was active in 1974 the shaft, manways and underground should require little

rehabilitation however a provision for 50,000 is made for this work which should be let an independent contractor.

ESTIMATED COSTS FOR PHASE II

Rehabilitate manways & air & water lines \$50,000.00

Sampling and mapping of existing workings

1 Geologist 20 days @ 300/per day 6,000.00

1 Junior Geologist 20 days @ 250/per day 5,000.00

2 Labourers 20 days @ 150/per day 6,000.00

Camp facilities for 4 men @ 60.00/man/day

60.00 x 4 x 20 4,800.00

Food for 4 men @ 30.00/man/day

30.00 x 4 x 20 2,400.00

Analysis of samples

500 samples @ 10.00 per sample 5,000.00

Drilling Allowance

5000 feet @ 35.00 per foot all inclusive 175,000.00

254,200.00

Supervision & Reports

5 days @ 350.00 per day 1,750.00

255,950.00

Contingencies @ 10%

25,595.00

281,545.00

PHASE III

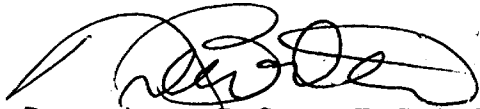
The object of this phase will be to obtain a bulk sample for metallurgical purposes, to confirm grades, and to test the area between NO 1 and NO 2 levels. Material for the bulk sample will come from drift backs, with areas designated by Phase II results, slashing the walls where appropriate and driving of one raise between levels. This writer recommends that the bulk sample programme be set out for independent tender as favorable results are being received from Phase II work.

There is an unusable headframe at the site which will need to be removed and replaced with temporary facilities, the state of air, and water lines and track are unknown at present. At this time it is difficult to define precisely mobilization - demobilization, equipment rental, supplies purchase and mining contract rates. However similar programs carried out by during the 1980-81 period required expenditures in the range of \$400,000.00. To this would be added costs for transportation supervision and metallurgical tests.

Hence the company would be advised to budget a minimum of \$500,000 for the bulk sampling program.

Respectfully submitted,

A.C.A. HOWE INTERNATIONAL LTD.


N.E. Brewster, B.Sc., F.G.A.C.

June 1, 1983

CERTIFICATE

I, Norman E. Brewster, of 1870 Bowler Drive, Pickering, Province of Ontario, hereby certify that:

1. I am and have been employed since 1971 as a geologist by A.C.A. Howe International Limited, Mining and Geological Consultants, with offices at Suite 826, 159 Bay Street, Toronto, Ontario, M5J 1J7.
2. I am a graduate of Acadia University, Wolfville, Nova Scotia, and hold a Bachelor of Science (1969) and Bachelor of Education (1971) degrees. In addition, I have completed one year of postgraduate study in geology at the same university. Subsequent to receiving the degree of B.Sc. in 1969, I have practised my profession in excess of twelve years.
3. I am a Fellow of the Geological Association of Canada.
4. I have no interest in Tanglewood Consolidated Resources Inc., nor in the properties discussed in this report, and do not anticipate such interest.
5. I have based statements and judgements in this report on reports, documents, maps and verbal communications supplied to me by Tanglewood Consolidated Resources Inc and others familiar with the Hiawatha property. I have not visited the Hiawatha property located in Lizar Township during the preparation of this report.

A.C.A. HOWE INTERNATIONAL LIMITED



Toronto, Ontario
June 1, 1983

N.E. Brewster, B.Sc., F.G.A.C.

PART I

DRAFT REPORT FOR REVIEW

REPORT
on the
HIAWATHA GOLD MINE PROPERTY
for
TANGLEWOOD CONSOLIDATED RESOURCES INC.

Toronto, Canada
April, 1984

Marc A. Leonard, B.Sc., M.Sc.
Consulting Geologist
Minroc Management Limited

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APPENDIX VII	- A Summary of Reports and Information on the Hiawatha Gold Mines by M.C. Halstead

1.0 INTRODUCTION

This report presents the results of an exploration program conducted over a 16 claim property optioned by Tanglewood Consolidated Resources Inc.

The property covers the site of a gold prospect formerly known as the Hiawatha Gold Mine. It is located on the west shore of Kabinakagami Lake in Lizar Township, District of Algoma, Ontario.

The purpose of the exploration program carried out during the periods July 30 to September 22, October 11 to November 17, 1983 and December 16, 1983 to March 19, 1984 was to assess the property from which numerous high gold values were reported from previous surface and underground sampling. A picket line grid was established and used for detailed geological mapping. Grab, channel, trench and diamond drill hole samples were collected in various locations and assayed for gold content.

The results of surface and drill sampling show that gold is essentially found over two major mineralized zones, the South and North zones.

The South zone consists of a series of more or less parallel sheared horizons with mineralized quartz veining. Significant assay results with gold values reaching 3.03 oz/t, with occasional low silver content, were obtained at different intervals along a strike length of close to 4,200 feet. A grab sample with 0.02 oz/t Au, taken in sericitized granodiorite, at the extreme southwest end of the property suggests that this zone may extend a considerable distance westward.

The North mineralized zone was traced over a strike length of close to 4,000 feet. This zone occurs on the north side of a thin felsic unit within mafic volcanics. Values as high as 4.90 oz/t were found locally. The highest gold value obtained from this year's drill coring from both the South and North mineralized zone was 0.21 oz/ton over 2.90 feet.

An isolated value of 0.15 oz/t Au was obtained from a sample located in the granodiorite-trondhjemite unit in the area of 6E, 5S. This result

may indicate the presence of a third mineralized zone, which warrants further investigation.

Based on the above results and on favourable geology, further work including geophysical surveying to trace the extension of the South Zone eastward to investigate a mineralized zone south of the South mineralized zone, and the Bear Creek fault zone where a trondhjemite intrusive is known to occur is warranted.

Should the geophysical surveying, which is estimated at approximately \$27,000 give positive results, a limited drilling program should be carried out to test anomalous areas and to test the south zone in the area of 8 + 50 E to acquire more information where underground sampling of the second level carried out in 1974 yield a gold value of 0.35 oz/t over 2.10 feet on a strike length of 90 feet and on section 10 + 00 E were a gold value of 0.35 oz/t over 1.6 feet was obtained over a strike length of 70 feet.

2.0 GENERAL

2.1 Location and Access

The property is located in the central part of Lizar Township, District of Algoma, Ontario; its center is approximately located at latitude 48°51'30" north and longitude 48°28'50" west (Figure 2.1). It is part of NTS 1:50000 scale topographic maps No. 46C/15 and 46C/16.

The area is readily accessible by float-equipped aircraft either from Hawk Junction (Wawa), White River or Hornpayne. These localities are respectively located 56 miles (90 km) south, 37 miles (60 km) southwest and 30 miles (48 km) northwest of the property.

2.2 Description of the Property

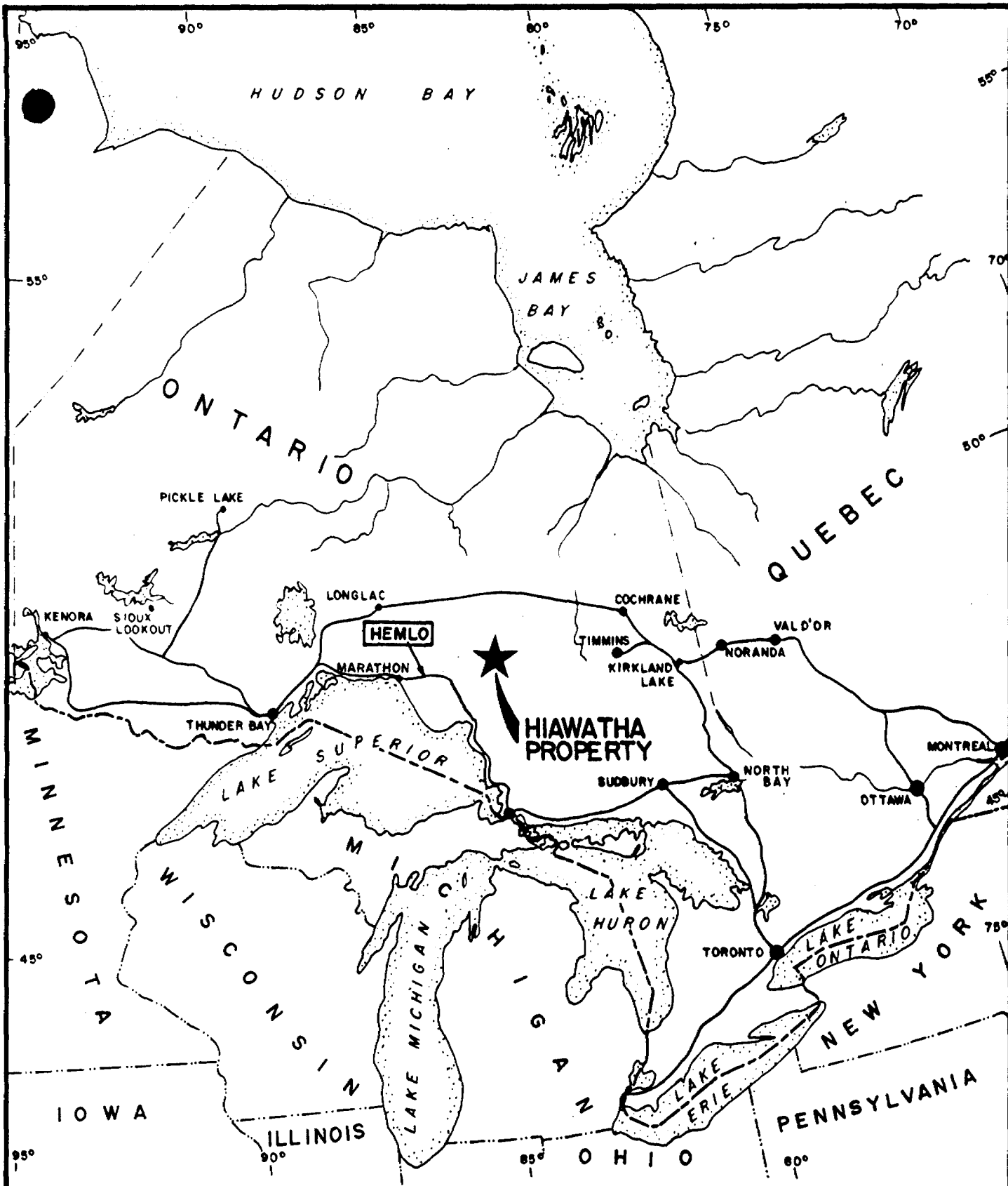
The property covers an area of approximately 640 acres and consists of 16 contiguous unpatented claims numbered 407552 to 407555 inclusive and 500689 to 500700 inclusive (Figure 2.2).

2.3 Previous Work

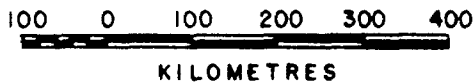
Gold was discovered in the area in the late twenties or early thirties. After acquiring the ground in 1936 and carrying out extensive surface exploration work, Hiawatha Gold Mines Limited sank a three compartment shaft and conducted underground exploration on two levels and carried out a mill test on a 1931 ton bulk sample. Development work was discontinued in the latter part of 1939 due to the outbreak of World War II.

In 1961 the property was returned to the Crown; it was restaked in 1965. Since that period intermittent exploration work including geological mapping, geophysical surveys, diamond drilling and surface and underground sampling was carried out by various mining companies.

Table 2.1 summarizes the history of exploration and development of the former Hiawatha Gold Mine Property.



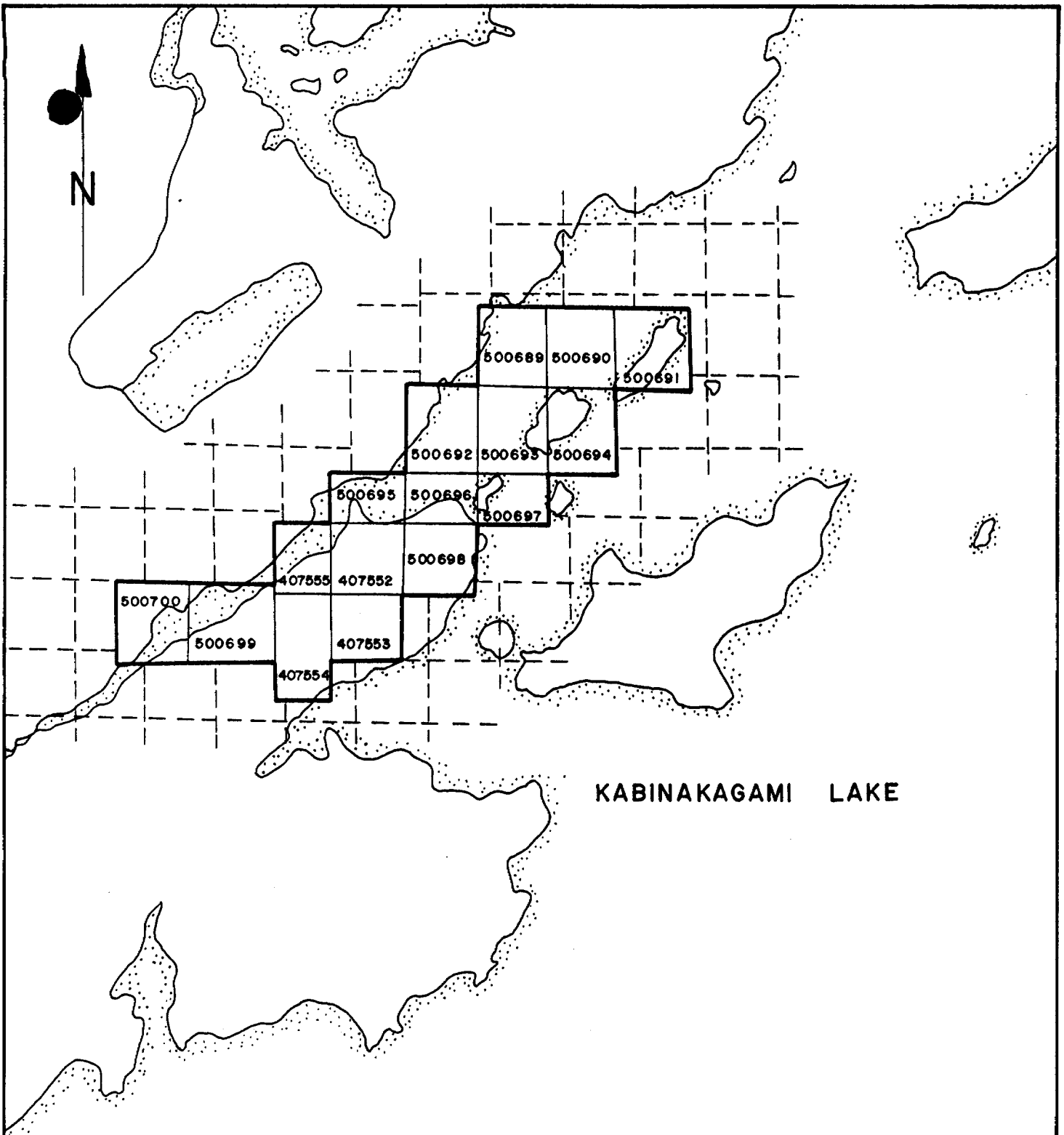
SCALE



**TANGLEWOOD CONSOLIDATED
RESOURCES INC.
LOCATION MAP**

**HIAWATHA PROPERTY, LIZAR TOWNSHIP
MINROC MANAGEMENT LIMITED**

Date: Sept. 1983 Drawn by: GCS Limited



KABINAKAGAMI LAKE

SCALE

0 1 2 3 4 5 6 x1000 FEET

0 1 2 x1000 METERS

TANGLEWOOD CONSOLIDATED
RESOURCES INC.

CLAIM MAP

HIAWATHA PROPERTY, LIZAR TOWNSHIP

MINROC MANAGEMENT LIMITED

BASED ON: ONTARIO, MINISTRY OF NATURAL RESOURCES
PLAN No. - M.1299, DATED 29-07-1983

DATE: DEC. 1983

Fig. 2.2

YEAR	COMPANY	DESCRIPTION OF WORK															
1926	anonymous Indian	- gold discovery in Hiawatha Mine area															
1926-1931(?)	individual prospectors	- prospecting; trenches															
1936-1939	Hiawatha Gold Mines Ltd.	- <u>Surface Work</u> : establishment of a line grid, prospecting, trenching, and drilling of 15 holes totalling 13,034 feet - <u>Underground Work</u> : (Oct. 1937 - Dec. 1939): - sinking of a three compartment shaft to 325 feet with workings at two levels consisting of: <table border="1" style="margin-left: 40px;"> <thead> <tr> <th></th> <th>Level</th> <th>Crosscutting</th> <th>Drifting</th> <th>Raising</th> </tr> </thead> <tbody> <tr> <td>1st</td> <td>150 ft.</td> <td>967 ft.</td> <td>847 ft.</td> <td>- 0 -</td> </tr> <tr> <td>2nd</td> <td>275 ft.</td> <td>1750 ft.</td> <td>2547 ft.</td> <td>250 ft.</td> </tr> </tbody> </table>		Level	Crosscutting	Drifting	Raising	1st	150 ft.	967 ft.	847 ft.	- 0 -	2nd	275 ft.	1750 ft.	2547 ft.	250 ft.
	Level	Crosscutting	Drifting	Raising													
1st	150 ft.	967 ft.	847 ft.	- 0 -													
2nd	275 ft.	1750 ft.	2547 ft.	250 ft.													
June - Dec. 1939	Hiawatha Gold Mines Ltd.	- underground exploration drilling - 2940 ft. - extraction of a bulk sample for mill testing - production of 179 oz of gold from a 1931 ton bulk sample with test mill built on location and consisting of a 100 t/day crusher and ball mill and a 20 t/day amalgamation plant. - all work discontinued in December 1939															
1969	Primroc Mining & Exploration Ltd.	- 2 drill holes totalling 250' to test west zone - dewatering underground workings for surveying and chip sampling first and second level - total 109 chip samples with increments varying from 1 to 5 feet															
1971	Bear Creek Gold Mines Ltd. and Primroc (Joint Venture)	- surface mapping and sampling - geophysical surveys (Mag & EM)															
1974	Keltic Mining Corporation Ltd.	- dewatering of mine, mapping and sampling of underground workings - geophysical surveys (Mag & EM) (?)															
1978	Nickel Rim Mines Ltd.	- 5.6 mile grid system - surface mapping - magnetometer survey - 4 drill holes totalling 2702 feet															
1980	S.W. Exploration Partnership	- soil sampling - 18 drill holes totalling 4265 feet - surface sampling and prospecting															
1982	Prospecting Geophysics Ltd.	- prospecting and sampling - discovery of a possible third mineralized zone															

TABLE 2.1 SUMMARY OF HISTORY OF EXPLORATION AND DEVELOPMENT WORK, HIAWATHA MINE

"A Summary of Reports and Information on the Hiawatha Gold Mines" by M.C. Halstead, (1978), is presented in Appendix V.

Tanglewood Consolidated Resources Inc. acquired the property in 1983.

2.4 Geological Setting

The Hiawatha property is located near the center of a northeast trending segment of Precambrian metavolcanic-metasedimentary belt surrounded and locally intruded by younger granitic rocks. This "greenstone" belt is approximately 30 miles long and 5 miles wide and extends from the western boundaries of Nameigos Township in the south, to the northeast corner of Derry Township (Figure 2.3).


The belt is essentially composed of mafic to intermediate metavolcanics and to a lesser extent, of metasediments including sandstone and conglomerate and minor sulphide facies iron formation. The metasediments, mostly located in the southeast part of the greenstone belt, locally include narrow bands of mafic volcanics. These rocks were intruded, metamorphosed and partially assimilated by younger granitic rocks. Subsequently, both the intrusives and older rocks were intruded by numerous Middle to Late Precambrian diabase and other mafic intrusive dikes.

The main structure of the volcano-sedimentary belt is believed to be a tightly folded syncline with a northeast trending axis. Metamorphic foliation and bedding planes are generally steeply dipping to sub-vertical.


Many gold and sulphide mineralization occurrences are known in the area. These are associated with the metavolcanics and are predominantly located in Lizar Township.

GEOLOGY

**MIDDLE TO LATE PRECAMBRIAN
(PROTEROZOIC)**

 Diabase Dikes

**EARLY PRECAMBRIAN
(ARCHEAN)**

 Felsic Intrusive and Metamorphic Rocks

 Mafic and Ultramafic Intrusive Rocks

METAVOLCANICS AND METASEDIMENTS

 Metasediments

 Iron Formation

 Felsic Metavolcanics

 Mafic to Intermediate Metavolcanics

SYMBOLS

 Geological Contact

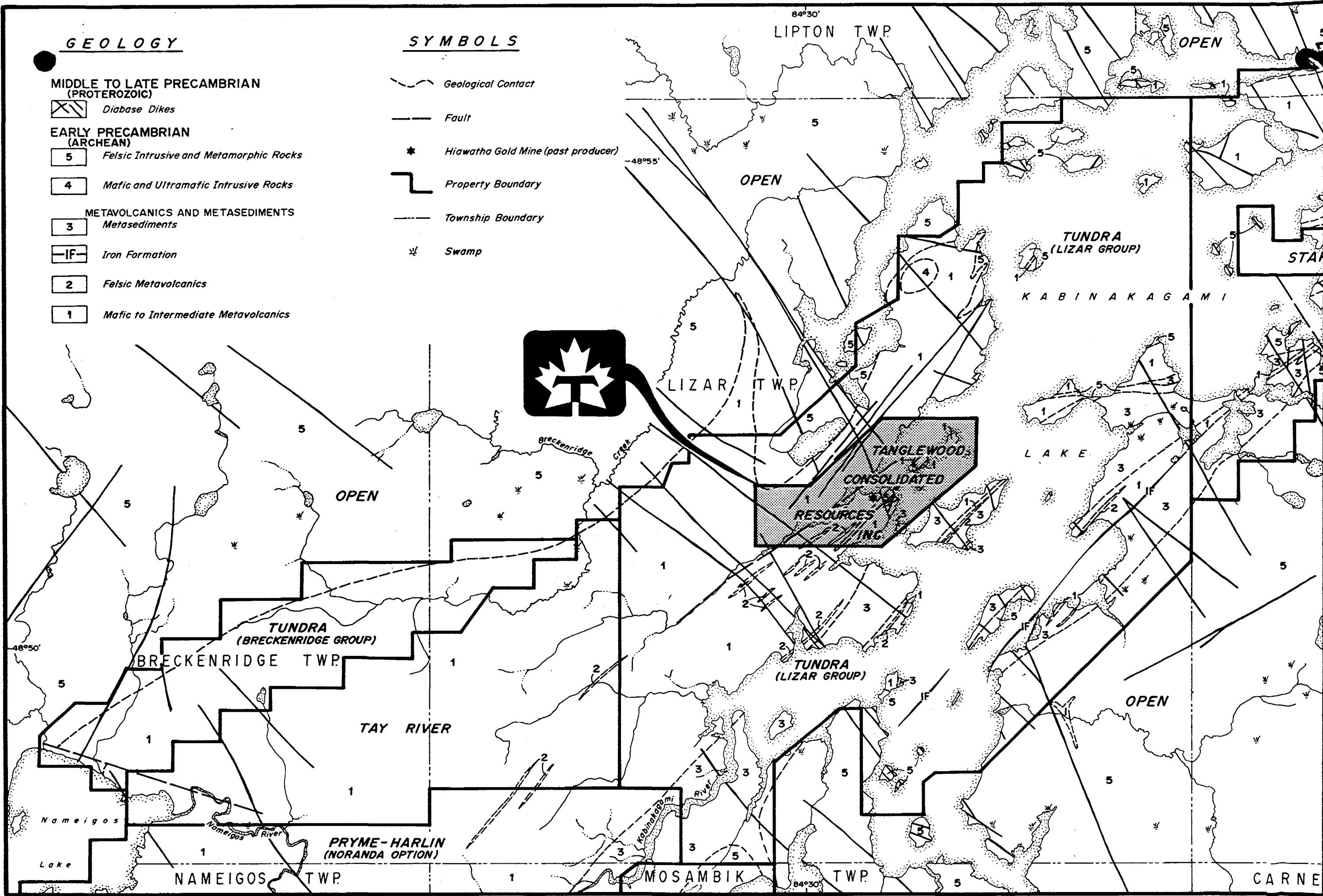
 Fault

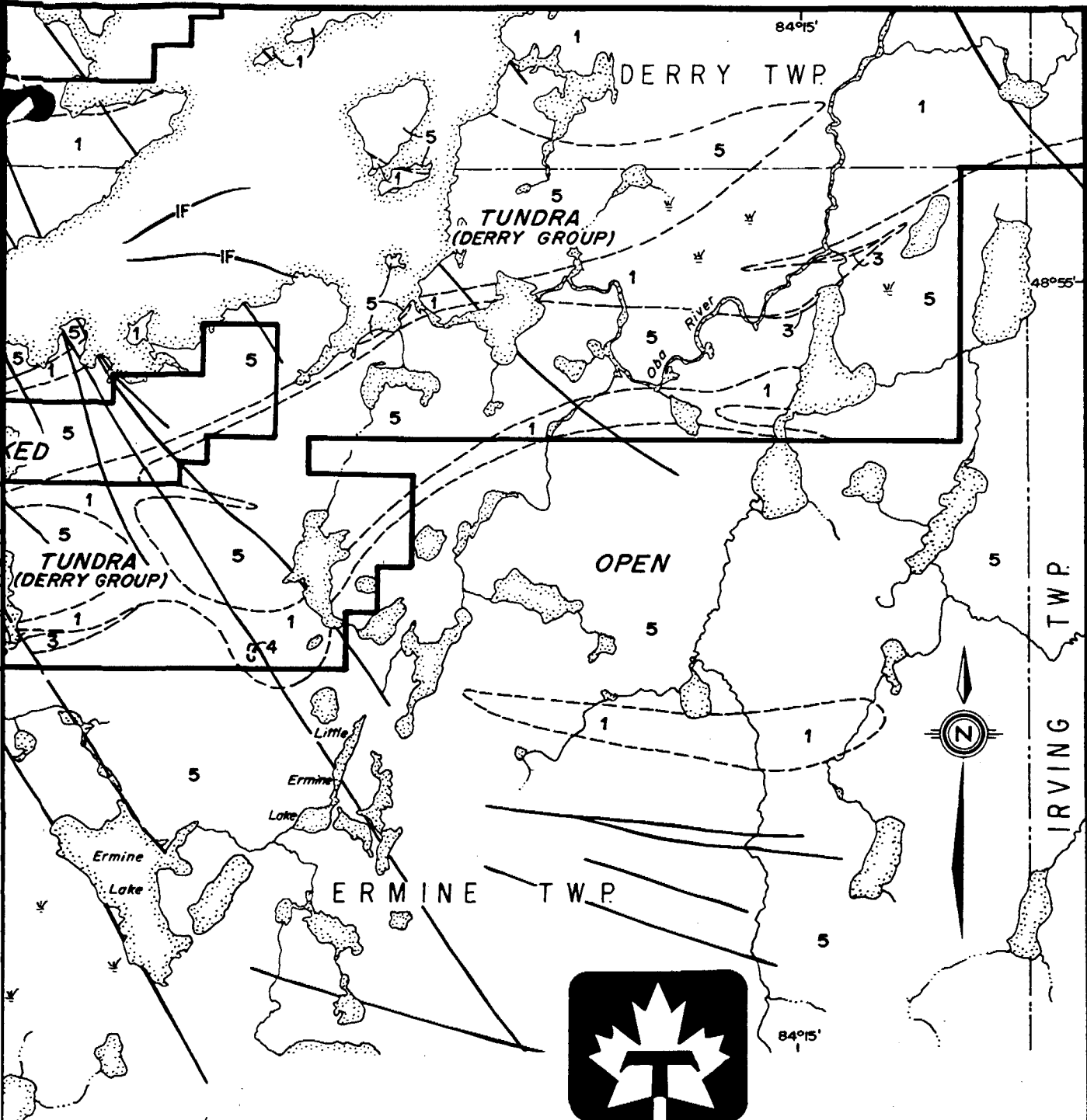
 Hiawatha Gold Mine (past producer)

 Property Boundary

 Township Boundary

 Swamp





**TANGLEWOOD CONSOLIDATED
RESOURCES INC.**

HIAWATHA PROPERTY

LIZAR TOWNSHIP, DISTRICT OF ALGOMA

MINROC MANAGEMENT LIMITED

Date: Sept. 1983

Drawn by: GCS Limited

SCALE

1:63,360



REF: Map 2355 Kabinakagami Lake, ODM by G.M. Siragusa, 1977

Compiled by information believed reliable but not certified

Fig. 2.3

3.0 WORK COMPLETED AND RESULTS

3.1 Field Work

Table 3.1 summarizes the work carried out over the 16 claim property during the period of July 30 to September 22, 1983, October 11 to November 17, 1983 and December 16, 1983 to March 19, 1984.

TABLE 3.1 SUMMARY OF WORK DONE

- line cutting:	23.6 miles
- geological mapping:	approx. 430 acres
- lithological samples:	123
- grab samples:	156]
- channel samples:	176] - 368*
- trench samples:	36]
- drill samples:	832
- channels opened:	41
- trenches opened:	10
- drilling	12 holes totalling 4.497 feet

* 356 samples assayed for Au, 12 assayed for Au and Ag

3.1.1 Line Cutting

A 23.6 mile grid system was established over the property. The grid system was started by reopening the 1978 "Nickel Rim" base line, oriented at N52°E. The grid was completed by opening transverse picket lines at 200 foot intervals, and by opening three (3) tie lines approximately parallel to the base line for complete grid control.

3.1.2 Geological Mapping

Geological mapping was carried out in conjunction with line cutting. Mapping methods varied depending upon lithology and outcrop density.

In well exposed areas, geological mapping was undertaken by "following" the geological contacts between the various lithologic units. In poorly exposed areas such as on the two islands located on the northeast end of the property,

around Bear Creek and in the southeast end of the peninsula, the terrain was mapped by compass traverses on and between the grid lines at intervals of approximately 100 feet.

3.1.3 Sampling

Rock samples were collected whenever unusual rock types or interesting alteration and mineralization features were observed during mapping. In addition to the above, channel and trench samples were taken to test various parts of the "South" and "North" zones.

Appendix II gives the location, description and results of grab samples collected for assaying.

3.1.3.1 Channel Sampling

Forty-one (41) channels, identified from A to Q on Figure 3.2, were cut and sampled to test various parts of the South and North Zones.

Tables 3.2 and 3.3 give the location, number of samples and length of each channel for the North and South Zones, respectively. The description and assay results of channel samples from both zones are presented in Appendix III.

3.1.4 Trenching

Ten (10) trenches, identified from 1 to 10 on Figure 3.2, were opened to sample parts of the South and North Zones.

Table 3.4 gives the location, length and number of samples collected in each trench. The description of trench samples from both zones is presented in Appendix IV.

3.1.5 Drilling

Twelve (12) holes totalling 4,497 feet, identified as Holes T-84-1 to T-84-12 were drilled to test parts of the North and South Zones.

Table 3.5 gives the location, elevation, angle of departure, Azimuth and length of each hole drilled during the period December 16, 1983 to March

19, 1984. The description of core and assay results for each drill hole is given in Appendix VI. Reduced drill sections are presented in Appendix I, however 20 feet to 1 inch sections of the same are available on request.

TABLE 3.2 LOCATION, LENGTH AND NUMBER OF SAMPLES TAKEN FROM CHANNELS IN THE NORTH ZONE

CHANNEL NO.	LOCATION	SAMPLES	NUMBER OF SAMPLES	LENGTH
A	14+05E, 2+65N	R-267 to R-272	6	13'9"
B	8+25E, 2+90N	R-174 to R-178	5	10'8"
C	5+02E, 3+55N	R-179 to R-183	5	12'8"
D	4+00E, 3+95N	C-1 to C-7	7	9'1"
E	3+00E, 4+10N	R-184 to R-186	3	9'8"
F*	0+05E, 5+10N	C-8 to C-12	5	6'8"
G*	3+80W, 5+42N	C-13 to C-15	3	6'2"
H	3+80W, 3+40N	C-26 to C-32	7	13'0"
I*	4+30W, 5+32N	C-16 and C-17	2	4'5"
J-1	6+00W, 3+85N	C-20 to C-25	6	10'8"
J-2	6+27W, 3+87N	C-33 to C-37	5	9'6"
K*	6+00W, 5+40N	C-18 and C-19	2	5'6"
L	17+00W, 2+60N	R-125 to R-134	10	20'11"
M*	17+50W, 3+95N	R-138 to R-143	6	21'8"
N	18+35W, 2+65N	R-265 and R-266	2	3'9"
O	18+75W, 2+80N	R-263 and R-264	2	4'7"
P1	18+95W, 2+87N	R-43 to R-45	3	6'8"
P2	19+23W, 2+90N	R-41 and R-42	2	2'0"
<u>MAIN PIT</u>				
Q1	19+30W, 2+90N	R-153	1	1'5"
Q2	19+30W, 2+90N	R-98, R-254 to R-256	4	4'4"
Q3	19+30W, 2+90N	R-99 and R-257	2	2'1"
Q4	19+30W, 2+90N	R-100, R-151 and R-152	3	3'4"
Q5	19+30W, 2+90N	R-154 and R-155	2	1'6"
Q6	19+30W, 2+90N	R-187 to R-192	6	4'5"
Q7	19+30W, 2+90N	R-193 to R-198	6	4'5"
Q8	19+30W, 2+90N	R-199, R-273, R-251 to R-253	5	4'7"
Q9	19+30W, 2+90N	R-258 to R-262	5	5'2"
TOTAL:	27		115	202'7"

* from other felsic units within the mafic volcanics

TABLE 3.3 LOCATION, LENGTH AND NUMBER OF SAMPLES
TAKEN FROM CHANNELS IN THE SOUTH ZONE

CHANNEL NO.	LOCATION	SAMPLES	NUMBER OF SAMPLES	LENGTH
R	23+70E, 0+58S	R-229 to R-241	13	27'8"
S	10+15E, 0+60S	R-162 to R-170	9	24'1"
T	2+60W, 1+40N	R-171 to R-173	3	7'3"
U	7+97W, 3+30N	C-38 to C-41	4	8'0"
V	8+57W, 0+82N	C-42 to C-44	3	5'6"
W-1	9+94W, 0+07N	R-156 to R-158	3	3'8"
W-2	10+25W, 0+02N	R-159 to R-161	3	3'7"
X-1	11+25W, 0+40N	C-64 to C-67	4	7'6"
X-2	11+36W, 0+37N	C-61 to C-63	6	4'6"
X-3	11+40W, 0+35N	C-58 to C-61	6	5'4"
Y-1	11+51W, 0+30N	C-52 to C-57	6	11'6"
Y-2	11+63W, 0+27N	C-49 to C-51	3	6'6"
Y-3	11+75W, 0+25N	C-47 and C-48	2	4'4"
Y-4	11+81W, 0+23N	C-45 and C-46	2	5'0"
TOTAL:	14 CHANNELS		61	124'5"

TABLE 3.4 LOCATION, SAMPLES COLLECTED AND LENGTH OF
TRENCHES OPENED ON THE NORTH AND SOUTH
MINERALIZED ZONES

Mineralized Zone	Trench No.	Location	Samples	No. of Samples	Approx. Length in ft.
North	1	3+00E, 4+00N	T-1 to T-5	5	10'
"	2	5+70W, 3+80N	T-9	1	12'
"	3	6+50W, 3+85N	T-10	1	17'
"	4	8+60W, 3+70N	T-21 to T-23	3	15'
"	5	17+00W, 2+50N	T-24 to T-28	5	12'
"	6	18+95W, 2+87N	T-32 to T-36 (bulk)	5	1 1/2'
"	7	22+00W, 3+60N	T-29 to T-31	3	35'
South	8	2+50W, 1+50N	T-6 to T-8	3	3 parts 15'
"	9	8+00W, 3+00N	T-11 to T-15	5	5'
"	10	8+50W, 3+10N	T-16 to T-20	5	10'
TOTAL	10 trenches			36	132 1/2'

TABLE 3.5 LOCATION, ELEVATION, DIP AND LENGTH OF DIAMOND DRILL HOLES. ALL HOLES ARE DRILLED AT AZIMUTH 322°

HOLE NUMBER	LOCATION	ELEVATION	DIP AT COLLAR	LENGTH
T-84-1	6+97E, 2+68S	1108	-53°	500'
T-84-2	9+59E, 2+69S	1085	-52°	201'
T-84-3	9+59E, 2+69S	1085	-50°	495'
T-84-4	14+06E, 3+76S	1031	-60°	703'
T-84-5	20+09E, 2+20S	1031	-50°	282'
T-84-6	27+17E, 3+08S	1031	-50°	545'
T-84-7	3+50E, 3+57N	1058	-60°	200'
T-84-8	2+54E, 0+62N	1104	-50°	286'
T-84-9	8+03W, 2+06N	1158	-50°	200'
T-84-10	18+52W, 2+05N	1209	-50°	200'
T-84-11	19+48W, 2+20N	1216	-45°	200'
T-84-12	20+17E, 3+81S	1031	-60°	685'
TOTAL	12 HOLES			4497'

3.2 Geology of the Property

The major geological feature of the mapped area (Figures 3.1, 3.2 and 3.3) consists of generally wide granodiorite to trondhjemite sills intruding mafic to intermediate metavolcanic rocks. These intrusives are, as the metavolcanics, steeply dipping or subvertical and are more or less parallel to the major trend of the "greenstone" belt.

Table 3.6 gives the lithologic units of the area. A brief description of the main units is presented below; however, for a detailed and more complete description of the various rock types, the reader can refer to: Siragusa, G.M. 1977: Geology of the Kabinakagami Lake Area, District of Algoma: Ontario Div. of Mines G.R. 159.

3.2.1 Mafic Metavolcanics (V5)

The mafic metavolcanics are the oldest and predominant extrusive rocks underlying the property. They are mostly massive, greenish black and fine grained; however, they locally grade into medium to coarse grained rocks, especially when chloritized. Local thin zones of dark greenish gray amphibole-rich and brown biotite-rich segregations interlayered with felsic thin bands occur within the volcanics.

Primary structures such as interflow margins and pillows are scarce and generally poorly developed. These structures appear to be restricted to thin horizons occurring on the northwest side of the main peninsula.

The metavolcanics are metamorphosed under amphibolite conditions and are as a rule poorly to moderately foliated. They locally contain numerous quartz and/or calcite veins and pods of variable shape and size, either parallel or at angle to foliation.

3.2.2 Felsic Metavolcanics (1R)

The felsic metavolcanics found on the property account for only a small percentage of the metavolcanic sequence. These rocks occur in mafic volcanics as generally uniform or lense shaped interbeds with thickness ranging from a few inches to over 35 feet locally.

PRECAMBRIANMIDDLE TO LATE PRECAMBRIAN (PROTEROZOIC)

MAFIC INTRUSIVE ROCKS

diabase dikes, porphyritic diabase dikes, minor amphibolite
and lamprophyre dikes¹

intrusive contact

EARLY PRECAMBRIAN (ARCHEAN)

FELSIC INTRUSIVE AND METAMORPHIC ROCKS

biotite trondhjemite and trondhjemite to granodiorite;
associated dioritic rocks derived from contamination;
biotite granodiorite, quartz, monzonite, minor muscovite-
bearing granitic rocks, flow breccia

intrusive contact

MAFIC AND ULTRAMAFIC INTRUSIVE ROCKS

metagabbro, metapyroxenite, metaperiodotite

intrusive contact (assumed)

METASEDIMENTS

sandstone, paragneiss, and lesser mafic schists interpreted
as lean sulphide facies iron formation

METAVOLCANICS

felsic metavolcanics

mafic to intermediate metavolcanics

¹ The Middle to Late Precambrian age of amphibolite and lamprophyre dikes is tentative.

The felsic metavolcanics are, as a rule, light to medium greenish grey, fine grained to aphanitic and more or less massive; however, they commonly display a graphic texture due to the presence of regular intergrowth of larger biotite, feldspar or hornblende crystals or they display a porphyritic texture due to large, nearly circular inclusions or opalescent quartz. These rocks could be rhyolitic tuffs or flows.

Siragusa (1977) reports that the mafic and felsic metavolcanics are in the tholeiitic basalt and calc-alkaline dacite and rhyolite field respectively.

3.2.3 Pyroxenite (4Y)

Pyroxenite occurs in sills in the southeast portion of the peninsula. The pyroxenite is in general dark green to black, massive and fine to medium grained and consists of approximately 80 to 90% green hornblende with segregations of iron-titanium oxides.

The northern sill, which is locally coarser grained close to its north contact with the metavolcanic, contains a 10 to 20 foot wide horizon of moderately magnetic lean "iron formation". This horizon runs parallel to the sill orientation and it can be traced over a distance of close to one mile, from mapping and from interpretation of previous ground magnetic survey (Primrock, 1971).

This unit is generally moderately foliated, greyish, fine grained and slightly magnetic. Magnetism is believed to be due to the presence of ilmenite.

The south sill is similar to the north except that it is finer grained and it does not have a magnetic "lean iron formation" horizon.

3.2.4 Breccia Unit

The main breccia unit is found close to the middle and runs more or less parallel to the main granodiorite-trondhjemite sill.

The breccia unit is characterized by alternating usually thin elongated tabular volcanic fragments with sheared granodiorite. The fragments range

from a few inches to a few feet across and are oriented parallel to the foliation.

The breccia is best exposed along the shore line at the east end of the peninsula and between lines 6E and 9E.

The contact between the breccia and other units is gradual and based on the relative proportion of its constituents.

3.2.5 Granodiorite-Trondhjemite (1D)

Granodiorite, biotite granodiorite and trondhjemite are the dominant granitic rocks of the property. Granodiorite and biotite granodiorite units are distinguished from the trondhjemite by partial to nearly complete obliteration of "gneissic" structure or foliation, and by a more potassic granitic phase.

These intrusives vary from medium light to dark greenish gray; they are generally poorly to moderately foliated and are chiefly made up of 20 to 40% quartz and/or feldspar phenocrysts in a fine to medium grained matrix essentially composed of quartz and feldspar with variable amounts of biotite and hornblende. These rocks are locally variably chloritized, sericitized, epidotized and silicified depending upon the degree of alteration, shearing etc.

The quartz porphyry type intrusives generally occur in or close to sheared zones; they are moderately to highly sericitized and silicified and often grade into a quartz-sericite schist.

This unit is host to the gold occurrences found in the South Zone.

3.2.6 Diabase Dikes (3D) Lamprophyre Dikes (4L)

The above Archean rocks have been locally intruded by younger diabase and lamprophyre dikes. These dikes vary in thickness and are roughly oriented southwest-northeast and north-south.

3.3 Structure

The metavolcanics and other Archean rock types of the property parallel the general trend of the greenstone belt. These rock units strike in a southwest-northeast direction and are steeply dipping to sub-vertical.

3.3.1 Bedding and Foliation

Metamorphic foliation can be observed in most rock types. However, it is best developed in basic metavolcanics and trondhjemite or biotite "gneissic" granodiorite. In granodiorite, metarhyolite or felsic metavolcanics and pyroxenite, foliation is poorly to moderately developed. A highly foliated almost slaty metavolcanic horizon is found immediately south of the trondhjemite-metavolcanics contact at the northeast end of the main peninsula near 12E, 7+50S.

Bedding planes of the volcanic flows are assumed to be parallel to foliation as suggested from areas where primary structures and foliation can be observed on the same outcrop.

Foliation and bedding strike is southwest-northeast and dip is generally steep (northwesterly or southeasterly) to sub-vertical.

3.2.2 Jointing

A joint system with two major joint set patterns has developed on the Hiawatha property. The first set appears to be parallel to a major "en echelon" faulting system. Its strike varies from N10°W to N10°E while its dip ranges from 65°NE to 70°SW. The second set of joints strikes from an east-west orientation to approximately N60°W, and dips steeply either NW or SE. Small displacements occur locally along some joints and in many instances the joints are healed by quartz. Abundant thin milky quartz veins and quartz stringers, parallel to sets of joints are found locally.

3.3.3 Faulting and Shearing

3.3.3.1 Bear Creek Fault

One of the major structural features located on the property consists of a northeast-trending fault known as the "Bear Creek Fault". This fault is parallel to the "Greenstone" belt and lies in the narrow Bear Creek

valley located approximately 1400 feet northwest of the base line. No evidence of the fault has been found from the actual surface work; however, Siragusa (1977) indicates that "...data from assessment work records suggest that this structure is probably a strike-slip fault with horizontal displacement of 240 m (800 ft.)..."!

3.3.3.2 "En Echelon" Faults

Numerous faults with an approximate north-south direction are found west of the mine shaft. These "en echelon" (?) faults appear to be characterized by more or less pronounced linear depressions associated with displacement of lithological units and/or by local brecciated zones. Apparent displacement is highly variable and is generally leftward. At 1800 feet west of the shaft, the metavolcanics-granodiorite contact is displaced approximately 300 feet southward. Differences in apparent displacement of the rock units along the same fault suggests that these are hinge faults with the axis of rotation located southward. The "en echelon" faults seem to be responsible for the offsets found in Bear Creek.

Other N-S faults are found locally east of the shaft.

3.3.3.3 Shearing

Shearing parallel to the general trend of the formations has been observed in various rock units but especially in granodiorite where gold mineralization occurs. Special attention to this shearing is given in Section 3.4 below.

3.4 Gold Mineralization

Gold mineralization occurs in the main granodiorite sill south of the mine shaft and also in a thin felsic unit within mafic metavolcanics north of the granodiorite-mafic metavolcanic contact. The former is known as the South Zone, the latter as the North Zone.

Previous work makes reference to a west zone; however, since this zone occurs in the same felsic horizon as the North Zone it is included in the North Zone in this report. Other similar tested felsic units located near the North Zone are also being considered as part of this mineralized zone.

3.4.1 South Zone

The South Zone is made up of a series of mineralized quartz veins occurring in more or less parallel silicified and sericitized horizons in sheared granodiorite or trondhjemite.

Surface work and drilling show that the relative position of the sheared mineralized horizons (SOUTH ZONE) is not parallel to the general trend but appears to cut across the granodiorite westward, at least in the area 8+00E to 8+00W. In the east end, the sheared horizons are located immediately north of the granodiorite flow breccia contact. At around 8+00W, the mineralized zone is closer to the north granodiorite contact indicating that the general direction of the zone is in the order of N65°E, west of the underground workings. The sheared horizons are spread over a width varying from approximately 90 to 200 feet.

Tables 3.7, 3.8 and 3.9 give the most significant results from grab, channel and trench and drill core samples taken from the South Zone.

3.4.1.1 Surface Sampling

The results of surface sampling, Tables 3.7 and 3.8 suggest that surface mineralization of the South Zone occurs over a strike length of approximately 4,200 feet, i.e. from 23+70E to 18+20W. Gold mineralization of the South zone was also noticed as far as 51+50W (R-223).

As shown on Tables 3.7 and 3.8, sample R-169 from Channel "S" and samples T-6, T-7, T-8 and T-17 from trenches 8 and 9 respectively, returned the best assay results.

In Channel "S" (Figure S, Appendix III), sample R-169 which gave 1.35 oz/t Au (1.28 oz/t recheck) was taken across 38 inches of silicified granodiorite with lenticular quartz veins and pods measuring up to 8 inches in thickness and some 5 feet or more in length. Westward, trenches No. 8 and 10, located over a distance of more than 300 feet northwest of the granodiorite-flow breccia contact, returned gold values reaching 0.10 oz/t in rusty silicified and sericitized granodiorite, in quartz veins and in quartz sericite schist (shear zone).

3.4.1.2 Drill Core Sampling

The results of drill samples, Table 3.9 and drill sections Appendix I, show that gold mineralization occurs locally in at least six (6) more or less parallel horizons. These horizons range from a few feet to approximately 15 feet in true thickness with individual gold values ranging from 0.01 to 3.03 oz/t; the highest values being in the 20+00E and 9+50E areas.

It has to be remembered at this stage that only a small portion of the South Zone has been tested by drilling, either laterally or at depth.

Both the surface and drill samples always contained variable amounts of disseminated pyrite and/or local traces of galena and ruby silver. Assaying for silver returned better than 0.10 oz/t in sample # T-6 (Trench No. 8) and samples T-16 and T-17 (Trench No. 10).

In addition to pyrite, galena and ruby silver, trace to minor amounts of chalcopyrite, pyrrhotite, malachite, sphalerite, magnetite and molybdenite have been observed locally.

TABLE 3.7 ASSAY RESULTS OF GRAB SAMPLES FROM SOUTH ZONE

SAMPLE # (ASSAY #)	LOCATION	DESCRIPTION	FIGURE REF.	Au oz/t	
R-228 R-16	(4447) (4216)	22+55E, 0+10S 11+70E, 0+60S	pyritized granodiorite quartz from q.v. with sericite + py	3.2 3.2	0.01 0.012
R-18	(4218)	11+70E, 0+60S	quartz from q.v. with sericite + py	3.2	0.017
R-23	(4223)	10+40E, 0+50S	quartz from q.v. in shear	3.2	0.02
R-108	(4282)	2+55W, 1+42S	quartz from q.v.	3.2	0.02
R-109	(4283)	2+55W, 1+42S	foliated granodiorite w/3-4% py	3.2	0.01
R-110	(4284)	2+55W, 1+42S	silicified + sericitized granodiorite	3.2	0.01
R-220	(4439)	2+55W, 1+42S	silicified + sericitized granodiorite w/rusty lenticular q.v.	3.2	0.02
R-106	(4280)	8+50W, 3+00N	sil. + chloritized grano- diorite w/2-4% py	3.2	0.01
R-119	(4298)	18+20W, 2+20N	rusty quartz w/fine diss. py in silicified grano- diorite	3.2	0.01
R-223	(4442)	51+50W, 11+75N	50/50 rusty quartz with sericite from q.v. in carbonatized fol. granodiorite	3.1	0.02

TABLE 3.8 ASSAY RESULTS OF CHANNEL AND TRENCH SAMPLES FROM THE SOUTH ZONE

CHANNEL NO.	SAMPLE # (ASSAY #)	DESCRIPTION	FIGURE REF.	LENGTH INCHES	Au oz/t
R	R-239 (4458)	shear, rusty sil. granod.	3.2	8"	0.01
S	R-163 (4368)	sil. granod. w/quartz veins	3.2	18"	0.01
	R-166 (4371)	" " " "	3.2	48"	0.01
	R-169 (4374)	" " " "	3.2	38"	1.35
	R-170 (4375)	" " " "	3.2	29"	0.01
T	R-171 (4376)	" " " "	3.2	32"	0.01
	R-173 (4378)	" " " "	3.2	31"	0.01
8	T-6 (073)	rusty, quartz sericite vein filling	3.2		0.024
	T-7 (074)	sericitized, silicified granodiorite w/diss. py	3.2		.052
	T-8 (075)	quartz sericite schist w/diss. py	3.2		.108
10	T-17 (084)	silicified, sericitized granodiorite w/diss. py	3.2		.020

NOTE: All samples from trenches 8 and 10 are grab samples.

TABLE 3.9 ASSAY RESULTS OF DRILL SAMPLES FROM SOUTH ZONE
(INCLUDING THOSE OF PREVIOUS DRILLING*)

DRILL HOLE NO.	SECTION	ASSAY NO.	INCREMENT		LENGTH feet	Au oz/t
			FROM	TO		
T-84-6	27+00E	708	405	408	3.0	0.02
T-84-5	20+00E	607	112.7	114.5	1.8	0.01
		626	243.7	246.6	2.9	0.02
		627	246.6	248.6	2.0	0.02
		628	248.6	251.6	3.0	0.01
		629	251.6	254.6	3.0	0.02
		638	277.9	280.8	2.9	0.21
T-84-12	20+00E	945	336.0	338.5	2.5	0.06
		946	356.4	358.4	2.0	0.01
		947	358.4	360.9	2.5	0.01
		968	528.5	531.5	3.0	0.16
		969	535.9	538.4	2.5	0.01
		972	550.0	552.3	2.3	0.02
		973	552.3	554.6	2.3	0.02
		976	562.7	565.2	2.5	0.01
		977	566.4	569.7	3.3	0.01
		979	571.7	574.3	2.6	0.01
		980	574.3	577.0	2.7	0.01
		981	591.7	594.5	2.8	0.01
		982	596.7	598.3	1.6	0.01
		983	598.3	600.0	1.7	0.01
T-84-4	14+00E	537	401.2	404.2	3.0	0.01
		538	404.2	407.2	3.0	0.01
		552	500.4	502.9	2.5	0.01
		556	512.2	514.2	2.0	0.03
		558	516.2	519.2	3.0	0.01
		560	521.7	523.9	2.2	0.01
		564	533.0	534.6	1.6	0.01
		566	537.6	540.6	3.0	0.01
		567	540.6	543.1	2.5	0.01
		568	543.1	544.7	1.6	0.01
		569	544.7	547.7	3.0	0.01
		578	568.3	570.7	2.4	0.01
		579	570.7	572.2	1.5	0.03
		581	574.2	576.5	2.3	0.01
80-13	11+50E	--	--	--	--	--
80-14	11+50E	38586*	65.9	69.9	4.0	0.01
		38596*	187.0	190.3	3.3	0.01
		38597*	200.8	204.1	3.3	0.03
		38601*	320.9	324.8	3.9	0.01
80-15	10+50E	38616*	75.5	77.8	2.3	0.08
80-16	10+50E	38651*	130.9	134.5	3.6	0.01
		38652*	134.5	139.8	5.3	0.01

DRILL HOLE NO.	SECTION	ASSAY NO.	INCREMENT		LENGTH feet	Au oz/t
			FROM	TO		
		38654*	156.5	161.7	5.2	0.01
		38656*	168.3	173.2	4.9	0.01
		38661*	216.9	222.8	5.9	0.02
		38662*	222.8	228.0	5.4	0.03
		38666*	333.0	337.9	4.9	0.02
80-17	9+50E	38668*	22.3	25.9	3.6	0.01
		38672*	64.0	65.9	1.9	0.03
80-18	9+50E	38632*	44.3	47.9	3.6	0.01
		38634*	51.8	55.8	4.0	0.01
		38637*	125.0	127.6	2.6	0.01
		38638*	200.8	204.7	3.9	0.05
		38639*	204.7	207.7	3.0	0.01
		38642*	216.9	219.8	2.9	0.01
		38643*	219.8	224.7	4.9	0.03
T-84-3	9+50E	410	30.0	32.5	2.5	0.01
		413	65.0	67.5	2.5	0.02
		423	156.8	159.2	2.4	0.02
		424	159.2	161.1	1.9	0.04
		425	161.2	163.5	2.3	0.02
		426	163.5	166.5	3.0	0.09
		427	166.5	169.0	2.5	0.04
		429	173.0	176.1	3.1	0.04
		455	257.5	260.5	3.0	0.01
		462	275.2	278.0	2.8	0.04
		463	278.0	280.9	2.9	0.01
		464	280.9	284.3	3.4	0.01
		466	288.2	290.6	2.4	0.03
		467	290.6	293.5	2.9	0.01
		481	332.2	334.5	2.3	0.01
		487	352.8	355.7	2.9	0.02
		494	370.6	372.4	1.8	0.01
		500	393.4	397.3	3.9	0.01
		507	425.0	427.5	2.5	0.01
T-84-2	9+50E	640	167.4	169.1	1.7	0.02
		641	169.8	174.5	4.7	0.01
		642	174.5	177.5	3.0	0.08
		643	177.5	181.0	3.5	0.01
NR L-78-1	9+50E	---	---	---	---	---
NR L-78-2	8+50E	796*	405.0	406.0	1.0	0.54
		801*	433.5	440.0	6.5	0.01
		812*	543.0	544.0	1.0	0.32
		818*	568.0	572.0	4.0	0.01
		819*	572.0	576.0	4.0	0.10
		820*	576.0	580.0	4.0	0.02
		825*	600.0	606.0	6.0	0.02
		249	643.8	647.0	3.2	0.01
		250	652.0	655.0	3.0	0.01
		251	655.0	658.1	3.1	0.01

DRILL HOLE NO.	SECTION	ASSAY NO.	INCREMENT		LENGTH feet	Au oz/t
			FROM	TO		
NR L-78-4	10+50E	867	192.4	195.4	3.0	0.01
	9+50E	872*	197.0	199.5	2.5	0.03
	8+50E	873*	202.0	205.0	3.0	0.03
		885	339.4	342.4	3.0	0.01
		882*	452.5	454.0	1.5	0.48
		883*	454.0	454.6	0.6	3.03
		892*	511.5	514.0	2.5	0.01
		894*	545.5	549.5	4.0	0.01
	T-84-1	7+00E	291	169.0	171.0	2.0
292			171.0	173.0	2.0	0.08
327			273.0	276.2	3.2	0.02
330			283.6	286.9	3.3	0.03
331			286.9	289.2	2.3	0.02
332			289.2	292.5	3.3	0.03
333			292.5	295.6	3.1	0.02
361			372.7	373.7	1.0	0.01
364			378.4	381.4	3.0	0.01
365			381.4	384.4	3.0	0.02
366			384.4	386.7	2.3	0.01
370			394.5	397.7	3.2	0.01
NR L-78-3			7+00E	4467	444.0	447.0
	4469	450.0		453.5	3.5	0.01
	850*	565.0		567.1	2.1	0.09
	855*	580.7		581.7	1.0	0.05
	858*	586.9		588.9	2.0	0.01
	860*	608.0		610.4	2.4	0.02
	4498	641.0		645.0	4.0	0.01
	4499	645.0		649.0	4.0	0.05
	T-84-8	2+50W		753	25.0	27.4
754			27.4	31.0	3.6	0.01
756			33.5	36.0	2.5	0.01
763			96.7	99.6	2.9	0.01
767			110.7	113.2	2.5	0.01
768			113.2	115.7	2.5	0.01
769			117.7	120.7	3.0	0.01
770			120.7	123.5	2.8	0.01
773			134.0	137.2	3.2	0.01
788			210.8	212.1	1.3	0.01
789			212.1	214.6	2.5	0.01
790			214.6	217.6	3.0	0.02
794			226.0	228.3	2.3	0.01
796			231.7	234.6	2.9	0.01
798			239.2	242.5	3.5	0.01
T-84-9	8+00E	820	106.0	109.4	3.4	0.01
		822	115.1	117.6	2.5	0.01

Note: Sample numbers identified with * indicate previous drill samples.

3.4.1.3 Underground sampling

Figure 3.4 gives a summary of the results of underground sampling of the second level done by Primrock Mining and Exploration Ltd. and by Keltic Mining Corp. Ltd. in 1967 and 1974 respectively. In addition to sampling, the level map shows the geology and the approximate limits of the south mineralized zone as determined from drilling.

The underground chip (1969) and channel (1974) samples show a large discrepancy in the results obtained. Fifty-nine (59) and thirty-one (31) percent of the chip samples returned gold values above 0.10 and 1.00 oz/t respectively whereas fourteen (14) percent of the channel samples returned gold values above 0.10 oz/t. Four (4) of the 172 channel samples returned gold values above 1.00 oz/tu. Both sampling programs were selective sample size is small and local and probably confined to areas of visible mineralization. Due to the nature of mineralization, the only true representative sample would be a bulk sample of the mineralized zone. As a rule, the Keltic 1974 underground sampling results are comparable to those obtained from drilling.

The 1974 underground drilling and sampling located two interesting zones in the area of 8+50E and 10+00E where gold values of 0.35 oz/t were obtained over 2.1 feet and 1.6 feet over a strike length of 90 feet and 70 feet respectively; these would represent small mineralized zones possibly extending to depth or repeated in the vertical plane in a yet unknown pattern.

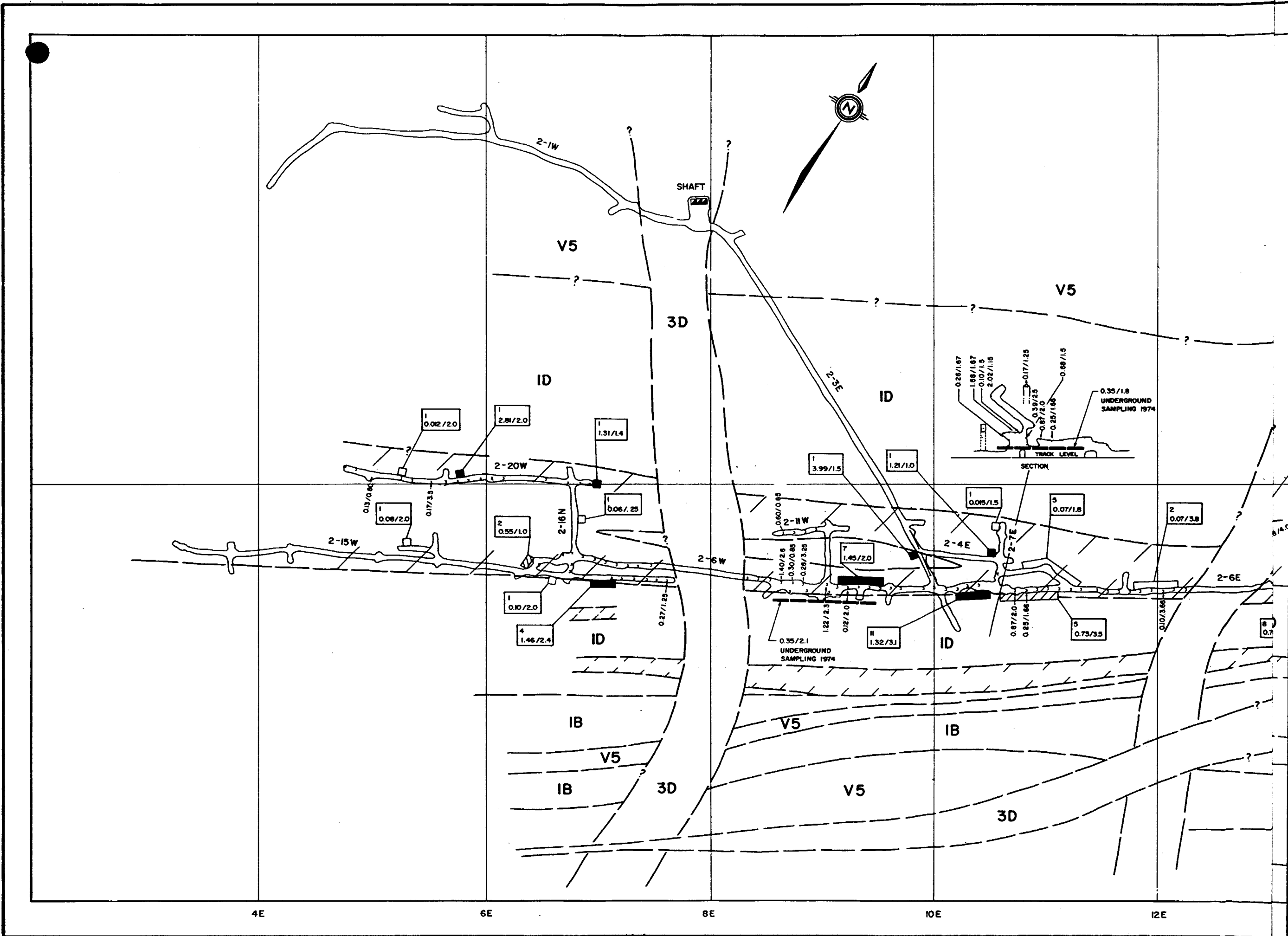
3.4.2 North Zone

The north auriferous zone consists of a approximately 2 to 10 inches thick sheared quartz vein occurring at the north contact of a narrow quartz porphyry unit. This felsic unit which is also mineralized near the quartz vein is located in mafic volcanics close to the granodiorite-metavolcanic contact. The quartz porphyry unit outcrops intermittently over most of the property west of point 14+10E, 2+70N. Its thickness varies from 7 to 10 feet near the mine shaft and reaches a thickness exceeding 30 feet near line 22+00W.

Grab, channel and trench samples were collected over the known North Zone as well as on other similar thin felsic units within the mafic volcanics.

Tables 3.2 and 3.4 give the location and length of channels and trenches with the number of samples collected in each while descriptions of the same are given in Appendices III and IV, respectively.

Tables 3.10 and 3.11 give the most significant results obtained from grab and channel and trench samples from the North Zone. These results show that gold mineralization is found over most of the traced quartz porphyry unit from line 22+00W, eastward i.e. on a strike length of close to 4,000 feet.



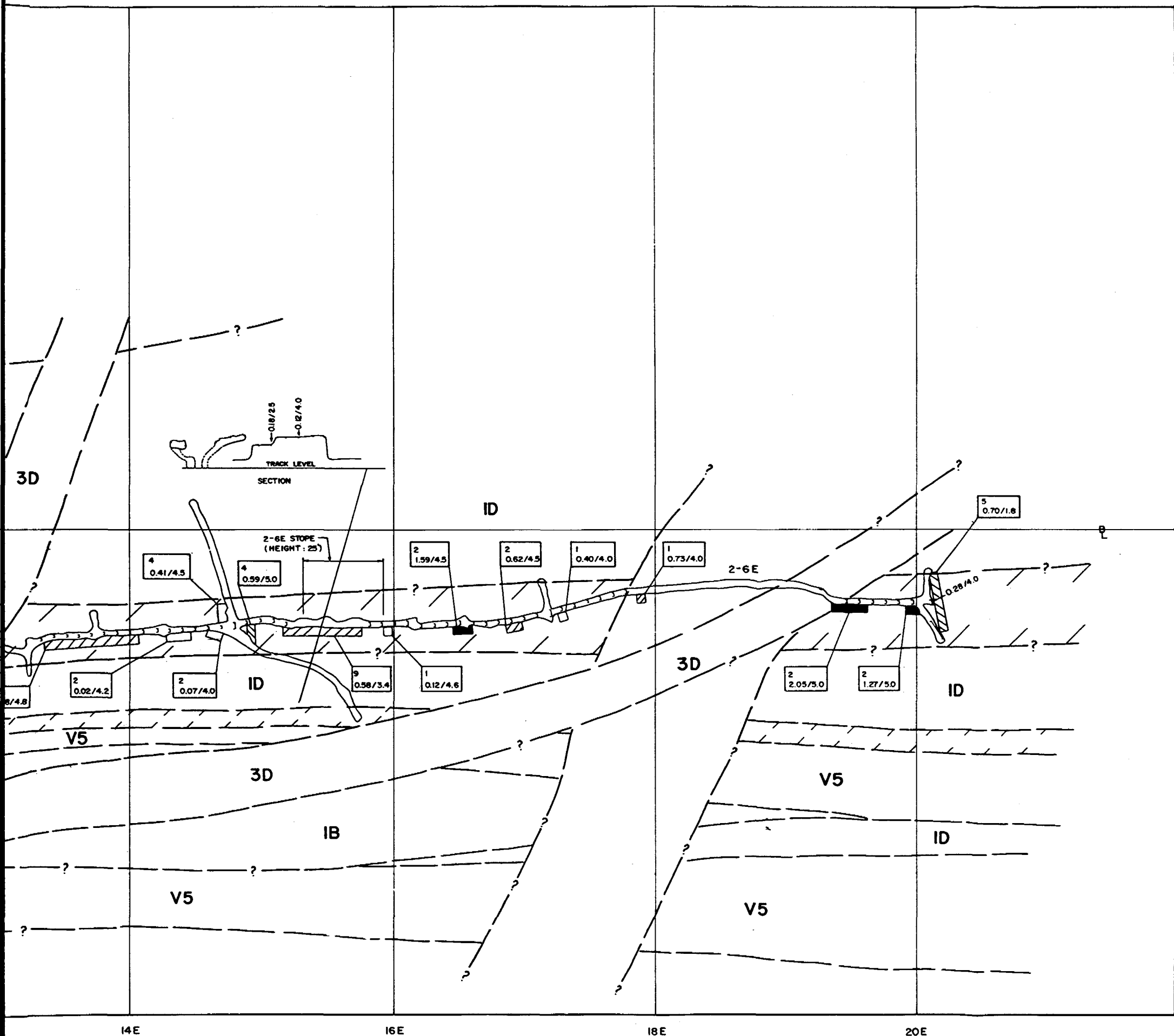
4E

6E

8E

10E

12E



LEGEND

GEOLOGY

- ID TRONDHJEMITE OR GRANODIORITE
- V5 MAFIC METAVOLCANICS
- IB FLOW BRECCIA
- 3D DIABASE DIKE
- MINERALIZED HORIZONS

UNDERGROUND SAMPLING

1. PRIMROCK MINING AND EXPLORATION LTD. 1969
(AFTER COMPILATION MAP BY J.C. LEROY, FEB. 1970)

- over 1.00 oz/t
 - 0.50 to 1.00 oz/t (chips)
 - tr to 0.49 oz/t
- # samples
- 5
0.57/2.3
- weighted average
Au oz/t / length in feet

2. KELTIC MINING CORPORATION LTD. 1974
(AFTER KELTIC 275' LEVEL MAP, OCT. 1974)

- [channels
- [0.15 / 2.1 (with values / footage when results 0.10 oz/t)

FREQUENCY DISTRIBUTION

RANGE Au oz/t	1 # SAMPLES	2 # SAMPLES
Nil to trace	0	19
0.005 to 0.09	37	129
0.10 to 0.29	8	14
0.30 to 0.49	8	2
0.50 to 0.79	6	2
0.80 to 0.99	4	2
1.00 to 1.99	20	3
OVER 2.00	8	1
TOTAL SAMPLES	91	172



TANGLEWOOD CONSOLIDATED RESOURCES INC.
HIAWATHA PROPERTY
GEOLOGY AND MINERALIZATION ZONES
2nd LEVEL

MINROC MANAGEMENT LIMITED

DATE: APRIL, 1984

BY: M.A. LEONARD

Fig. 3.4

TABLE 3.10 ASSAY RESULTS OF GRAB SAMPLES COLLECTED FROM THE NORTH ZONE

SAMPLE # (ASSAY #)	LOCATION	DESCRIPTION	FIGURE REF.	Au oz/t
R-2 (4202)	14+10E, 2+75N	silicified quartz porphyry	3.2	0.015
R-3 (4203)	14+10E, 2+72N	silicified quartz porphyry w/tr py	3.2	0.043
R-1 (4201)	11+80E, 2+65N	silicified quartz porphyry w/tr py	3.2	0.82
R-10 (4210)	11+75E, 2+70N	silicified quartz porphyry w/tr py	3.2	0.035
R-46 (-)	10+70E, 2+80N	rusted silicified meta. vol. w/3-4% garnet + diss. py	3.2	0.027
R-40 (4242)	3+00E, 4+05N	chloritized q. porphyry felsic flow?	3.2	1.40
R-48 (4273)	2+30E, 5+00N	chloritized q. porphyry w/1-2% py	3.2	0.01
R-222 (4441)	19+80W, 3+07N	q. from 4" sericitized q.v. w/galena, py	3.2	0.10

TABLE 3.11 ASSAY RESULTS OF CHANNEL AND TRENCH SAMPLES FROM THE NORTH ZONE

CHANNEL NO.	SAMPLE # (ASSAY #)	DESCRIPTION	FIGURE REF.	LENGTH INCHES	Au oz/t
C	R-180 (4394)	quartz porphyry w/diss. py	3.2	30"	0.01
E	R-185 (4399)	quartz porphyry w/diss. py	3.2	49"	.01
F*	C-10 (C-10)	felsic intrusive w/tr py	3.2	44"	.01
	C-12 (C-12)	mafic volcanic w/q.v.	3.2	7"	.01
G*	C-13 (C-13)	mafic volcanic	3.2	25"	.01
K*	C-19 (C-19)	felsic unit with large chlorite crystals	3.2	34"	.01
J-1	C-24 (C-24)	sericitized quartz porphyry w/tr py	3.2	24"	.01
M*	R-138 (4317)	mafic volc. north of felsic	3.2	22"	.01
O	R-263 (4427)	rusty q. porphyry w/1-2% py	3.2	26"	.01
P-1	R-44 (4246)	quartz w/1-2% py from q.v.	3.2	8"	0.027
P-2	R-41 (4243)	quartz w/1-2% py from 8" q.v.	3.2	8"	0.063
P-2	R-42 (4244)	silicified quartz porphyry w/2-3% sulphides	3.2	16"	2.24
Q2	R-255 (4419)	quartz from q.v. in q. porphyry	3.2	15"	.02
Q8	R-257 (4421)	quartz porphyry w/3% py	3.2	12"	.01
Q4	R-151 (4356)	quartz porphyry silicified	3.2	14"	.01
Q4	R-152 (4357)	quartz porphyry silicified	3.2	12"	.01
Q6	R-187 (4401)	quartz porphyry silicified	3.2	9"	.01
Q6	R-188 (4402)	quartz porphyry silicified	3.2	10"	.01
Q6	R-189 (4403)	quartz porphyry silicified	3.2	9"	.01
Q6	R-191 (4405)	quartz porphyry silicified	3.2	9"	.01
Q6	R-192 (4406)	quartz porphyry silicified	3.2	10"	.01
Q7	R-194 (4408)	quartz from v. in porphyry	3.2	4"	0.07
Q7	R-195 (4409)	quartz porphyry w/minor q.v.	3.2	16"	0.06
Q7	R-197 (4411)	quartz porphyry w/1% diss. py co	3.2	7"	.01
Q8	R-273 (4414)	quartz from q.v.	3.2	9"	.04
Q8	R-251 (4415)	silicified quartz porphyry	3.2	12"	.01

TABLE 3.11 ASSAY RESULTS OF CHANNEL AND TRENCH SAMPLES FROM THE NORTH ZONE (continued)

CHANNEL NO.	SAMPLE # (ASSAY #)	DESCRIPTION	FIGURE REF.	LENGTH INCHES	Au oz/t
Q8	R-252 (4416)	silicified quartz porphyry	3.2	6"	.01
Q9	R-260 (4424)	silicified quartz porphyry w/q.v.	3.2	16"	.02
Q9	R-261 (4425)	silicified quartz porphyry w/q.v.	3.2	10"	.02
TRENCH NO.					
1	T-1 (068)	sheared quartz sericite horizon	3.2	5"	.812
"	T-3 (070)	quartz porphyry w/approx. 1% diss. py	3.2	18"	.112
"	T-2 (069)	grab - lenticular quartz, sericite w/galena + py	3.2		.346
1	T-4 (071)	grab - sericitized quartz porphyry w/1/4% py + v.g.	3.2		4.47
"	T-5 (072)	grab - sericitized quartz w/minor py + v.g.	3.2		4.90
6	T-33 (100)	grab - quartz vein material with some sericitized quartz porphyry	3.2		.020
"	T-34 (101)	grab - sericite + quartz diss. py, galena	3.2		0.092
"	T-35 (102)	grab - sericite + quartz w/diss. py, galena	3.2		0.026
"	T-36 (103)	grab - sericitized quartz porphyry w/local q.v.	3.2		0.018
7	T-29 (096)	grab - sericitized, silicified quartz porphyry w/minor diss. py	3.2		0.01

TABLE 3.12 ASSAY RESULTS OF DRILL SAMPLES FROM SOUTH ZONE
(INCLUDING THOSE OF PREVIOUS DRILLING*)

DRILL HOLE #	SECTION	ASSAY #	INCREMENT		LENGTH FEET	AU OZ/T
			FROM	TO		
80-12	12+00E	38584*	93.8	96.5	2.7	0.12
80-11	11+00E	58*	319.9	321.5	2.0	0.01
80-10	10+00E	023*	33.0	35.8	2.8	0.02
80- 9	9+00E	---	---	---	---	---
80- 8	7+00E	---	---	---	---	---
80- 7	6+00E	---	---	---	---	---
80- 6	5+00E	---	---	---	---	---
80- 5	5+00E	---	---	---	---	---
80- 4	5+00E	065*	85.0	87.9	2.9	0.01
80- 3	4+00E	38649*	146.0	149.9	3.9	0.06
		38650*	152.9	154.9	2.0	0.04
T-84-7	3+50E	---	---	---	---	---
80-2	3+00E	---	---	---	---	---
80-1	2+00E	---	---	---	---	---
T-84-10	18+50W	854	92.0	94.5	2.5	0.01
T-84-11	19+50W	---	---	---	---	---

Note: Sample numbers identified with * indicate previous drill samples.

3.4.2.1 Surface Sampling

Sampling of the North Zone shows that high gold values are concentrated in two areas. The first area extends from approximately 3E to 14E, the second being in the area of the main pit, at approximately 19W.

In the east area, significant gold values ranging from 0.015 to 4.90 oz/t were obtained from Trench No. 1 at 3E and from the area extending from 10+70E to 14+10E. In Trench No. 1, the 5 inch thick sheared quartz horizon (sample T-1) yielded 0.812 while an 18" long sample (T-3) of silicified quartz-porphyry with approximately 10% py, taken immediately south of T-1 returned 0.112 oz/t Au, giving a combined value of 0.26 oz/t over 23 inches.

In the west area, the best gold values were obtained from grab sample R-222 (0.10 oz/t) and also from channel samples (Channels P-1, P-2, Q-2, Q-7, Q-8 and Q-9) where values range from 0.02 to 2.24 oz/t. In Channel P-2, samples R-41 and R-42 taken across silicified quartz porphyry and a quartz vein yielded a combined average of 1.51 oz/t of gold over 24 inches. A bulk sample of approximately 25 pounds, 30 feet east of the pit, taken in a quartz-sericite vein with pyrite and galena, mixed with sericitized quartz porphyry (Trench No. 6, samples T-33 to T-36) gave an average of 0.04 oz/t over approximately 1 1/2 feet.

In addition, grab and channel sampling done on felsic units located north of the north zone (grab R-48, Channels G, K, M) indicate that these units also carry gold locally.

3.4.2.2 Drill Core Sampling

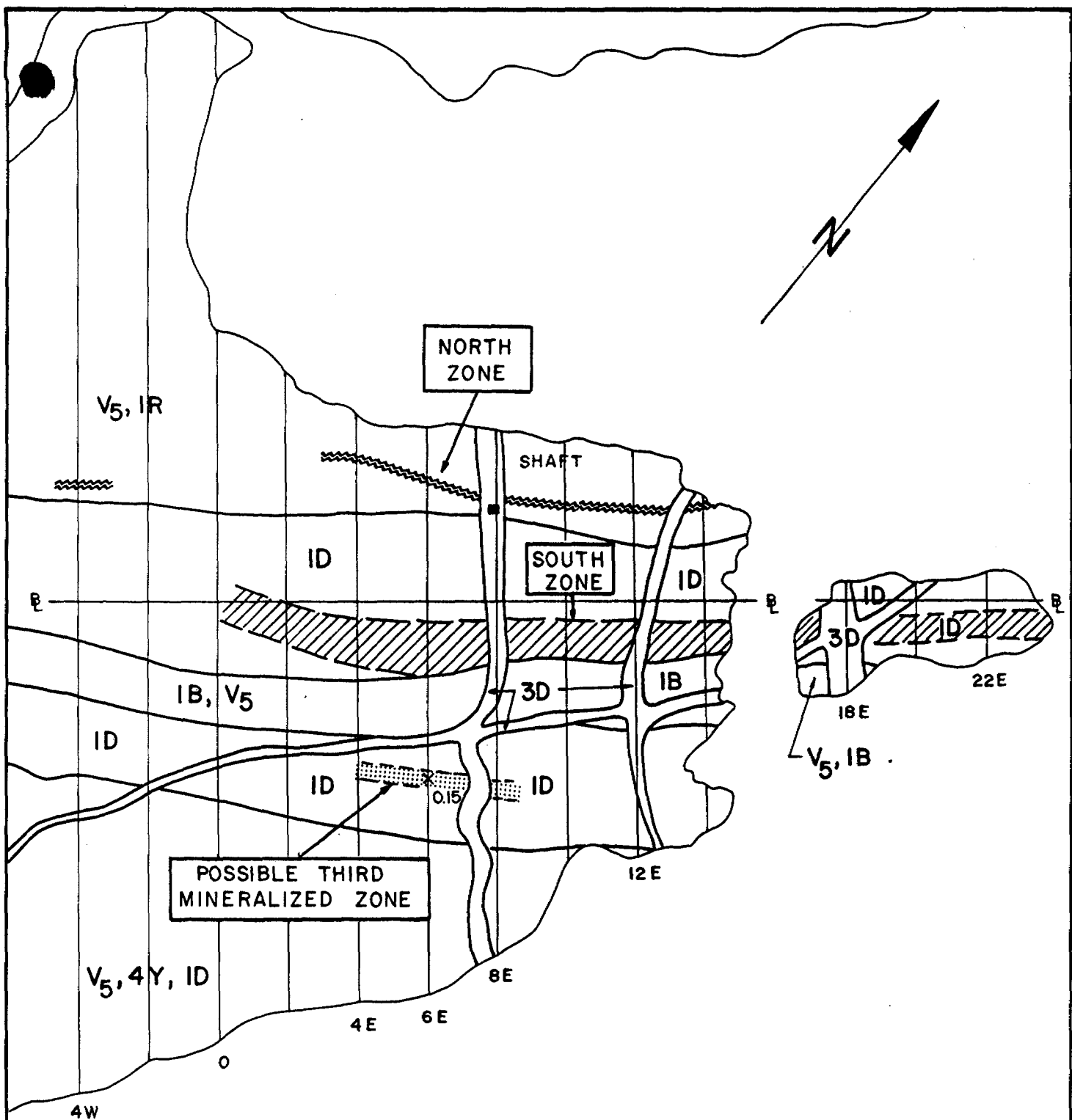
Table 3.12 shows the results obtained from samples collected from 15 holes drilled to test the North Zone. These results which vary from 0.01 to a relatively high value of 0.12 oz/t over 2.7 feet, combined with those of surface sampling suggest that gold is erratically distributed and that this zone is of limited interest.

3.4.3 Other Mineralized Areas

Grab sampling from other parts of the property were deceiving as only three (3) assays returned 0.01 oz/t Au. The location and description of these are presented in Table 3.13 below. However, a third mineralized zone may be suggested by 0.15 oz/t assay result from a sample taken in granodiorite-trondhjemite at approximately 6E, 5S; Figure 3.5.

TABLE 3.13 ASSAY RESULTS OF GRAB SAMPLES FROM OTHER PARTS OF THE PROPERTY

SAMPLE # (ASSAY #)	LOCATION	DESCRIPTION	FIGURE REF.	Au oz/t
R-68 (4261)	2+70E, 4+85S	quartz from q.v. in silicified granodiorite	3.2	0.01
R-225 (4444)	38+00W, 27+43N	metarhyolite (?)	3.1	0.01
R-219 (4392)	45+00W, 7+15N	rusty, chloritized felsic rock w/5-6% py	3.1	0.01



TANGLEWOOD CONSOLIDATED
RESOURCES INC.

SIMPLIFIED GEOLOGY
WITH
MINERALIZED ZONES

(APPROXIMATE LOCATION)

MINROC MANAGEMENT LIMITED

REF. FIGURE 3.2 FOR DETAILED GEOLOGY
AND LEGEND

Fig. 3.5

4. CONCLUSIONS

The Hiawatha Gold Mine property is located near the center of a northeast trending favourable "greenstone belt" having lithologies similar to those found in the Hemlo area. The belt is essentially composed of an assemblage of mafic to intermediate and felsic metavolcanic rocks with metasediments. This assemblage is intruded, metamorphosed and partially assimilated by younger granitic rocks.

Work carried out over the 16 claim Hiawatha property essentially consisted of line opening, geological mapping and sampling and drilling. During this work, 1200 grab, channel, trench and drill samples were collected and assayed for their gold content. Twelve of these were also assayed for silver.

Surface sampling returned significant assay values which are generally restricted to the North and South Zones. Each of these two zones is mineralized on surface over a strike length of close to 4,000 feet. In the South Zone, assay values range from trace to 1.35 oz/t Au and 0.224 oz/t Ag. In the North Zone assay samples returned values up to 4.90 oz/t Au locally.

Drill samples collected from 18 holes spread over 10 sections of the south zone (including previous drilling) returned gold values up to 3.03 oz/t. Within the zone diamond drilling has confirmed underground continuous lateral mineralization from section 8+00W to 27+00E. As only a small portion of this mineralized zone has been tested by drilling additional drilling to test the South Zone is required to fully assess its potential, especially at depth over its entire length.

High isolated values were obtained from the North Zone, however mineralization, as tested by 14 holes on 13 sections, appears to be erratically distributed and further work is not contemplated at this time.

A third mineralized zone may occur in the granodiorite found at approximately 6E, 5S where a sample returned 0.15 oz/t Au.

5. RECOMMENDATIONS

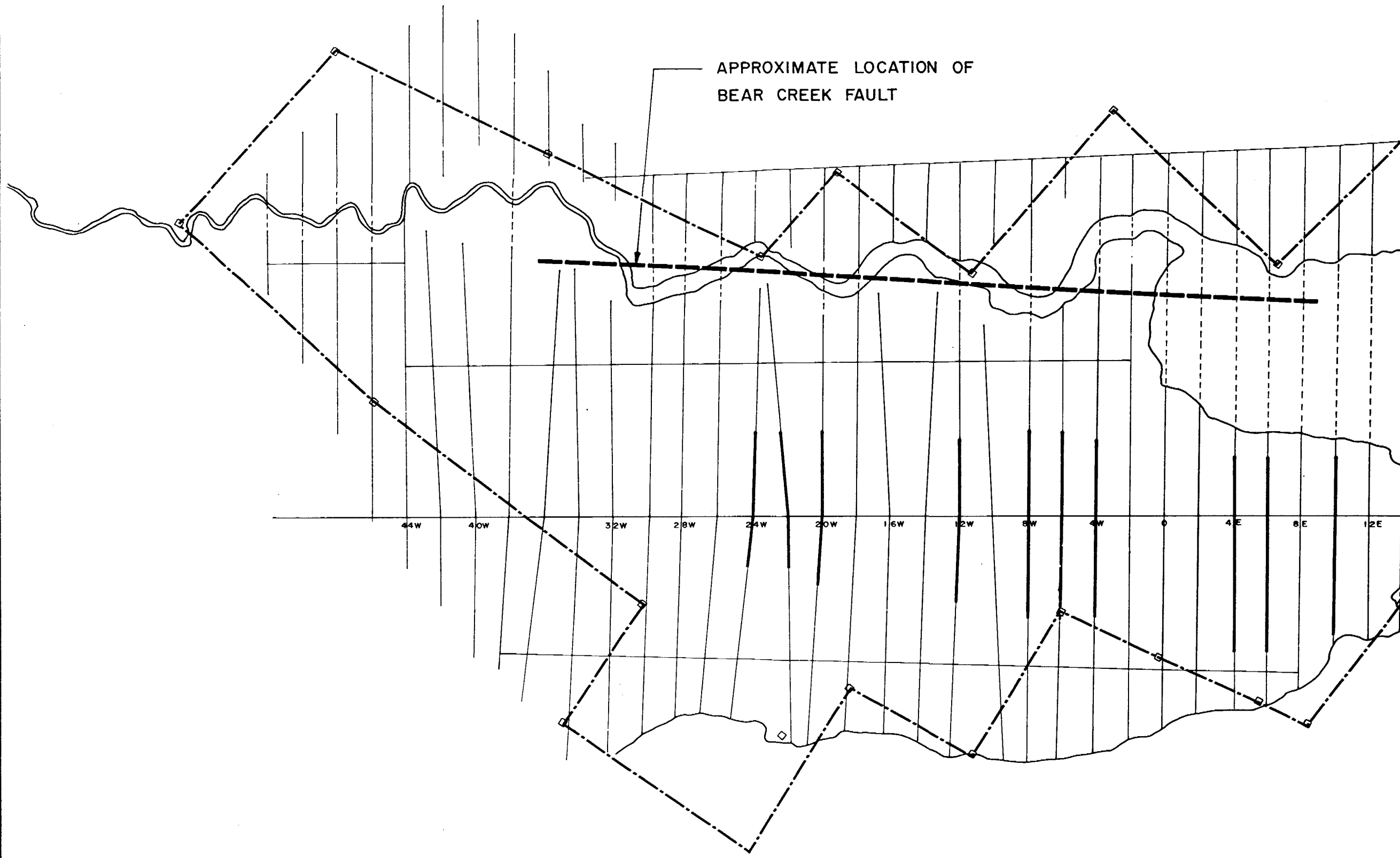
Based on the above results and on favourable geology, we recommend to proceed with a geophysical exploration program covering the property to locate drilling targets especially south of the South Zone, over the South Zone and its eastward extension under water and over the Bear Creek fault where a granodiorite or trondhjemite intrusive is known to occur. The recommendation map, Figure 5.1, locates the suggested programs indicated below. Anomalous responses over any of the zones would warrant a further diamond drilling program; such a program should be planned for, however it is not costed at present. Part of this drilling program should be carried close to sections 8+50E and 10+100E to determine the attitude and extent of the two mineralized zones defined from the 1974 underground sampling.

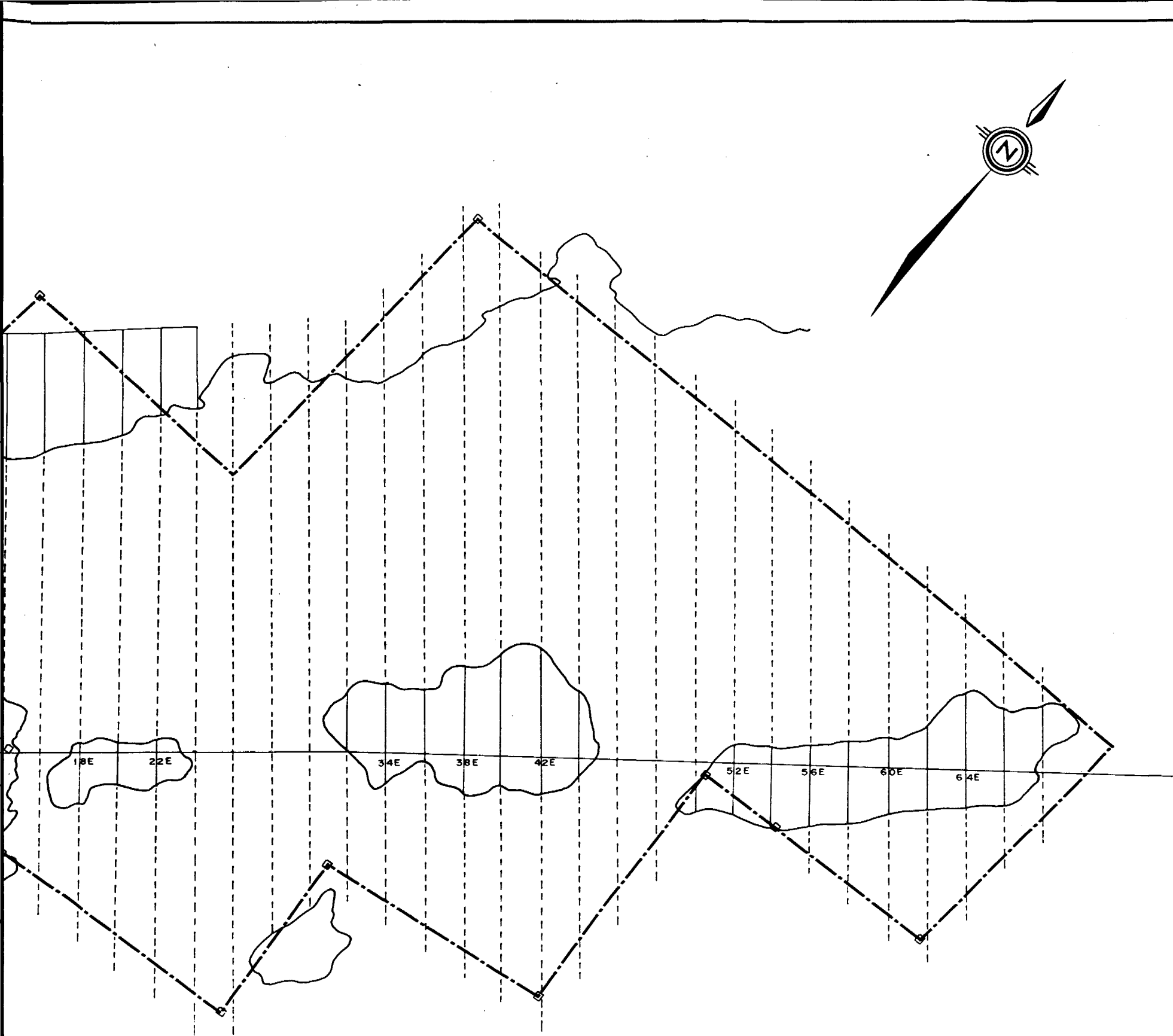
Geophysical Surveys (Winter Program)

- A. Magnetometer survey covering the entire property on 200 ft. spaced lines with readings at 50 and 25 ft. intervals, to define lithological contacts, etc.
- B. EM-MaxMin survey on all lines with readings at 100 ft. on two frequencies to locate conductors and define drill targets such as Bear Creek Fault, mineralized zones, etc.
- C. IP survey over three sections to test the various mineralized zones and to establish possible drill targets in the area of lines 10+00E, 8+00W and 20+00W.

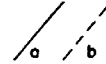


It is reported, by personal communication, that anomalous gold values were obtained from soil samples on claims located adjacent to the southwest end of the Hiawatha property. A soil sampling program should therefore also be considered in the southwest end of the property to locate new targets where we have poor outcrop exposure.

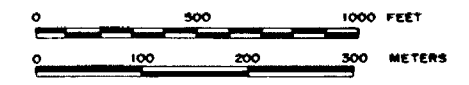
APPROXIMATE LOCATION OF
BEAR CREEK FAULT





LEGEND

- 
 GRID LINES a/ OPENED
 b/ TO BE OPENED AND CHAINED
- 
 I.P. SURVEY
- MAGNETOMETER SURVEY } OVER ALL LINES
 EM-MAXMIN SURVEY }
- 
 PROPERTY BOUNDARY



**TANGLEWOOD CONSOLIDATED
 RESOURCES INC.**
**HIAWATHA PROPERTY
 RECOMMANDATION MAP**
MINROC MANAGEMENT LIMITED

DATE: MAY 1984

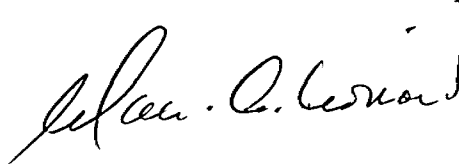
FIGURE 5.1

5.1 Cost Estimate

(Winter Program) Geophysical Surveys

Magnetometer Survey 40 miles @ \$120	\$ 4,800
EM, MaxMin Survey 40 miles @ \$260	10,400
IP Survey 2 miles @ \$1500	3,000
Line Chaining + Opening of Line Grid on lake 40 miles @ \$60	2,400
Mobilization and Demobilization	4,800
Supervision 5 days @ \$350	<u>1,750</u>
TOTAL approx.	\$ 27,150

Respectfully submitted,



Marc A. Leonard, B.Sc., M.Sc.

Toronto, Canada
May, 1984

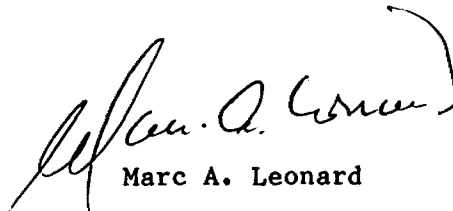
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- Heale, T., 1971: Report on Property of Bear Creek Gold Mines Ltd. and Primrock Mining and Exploration Ltd., Lizar Township, District of Algoma, Sault Ste. Marie Mining Division, Ontario.
- Sannes, D.L., 1979: "1978 Exploration Program Lizar Township, Ontario. NTS 42 C/16." Unpublished report for Nickel Rim Mines Ltd.
- Siragusa, G.M., 1977: Geology of the Kabinakagami Lake Area, District of Algoma; Ontario Div. Mines, GR 159, 39 p.
- Way, B., 1981: Diamond Drilling and Geochemical Soil Survey of the Hiawatha Property, 1980. Unpublished report.

CERTIFICATE

I, Marc A. Leonard, of 21 Forget St., St. Sauveur-des-Monts, Quebec, hereby certify that:

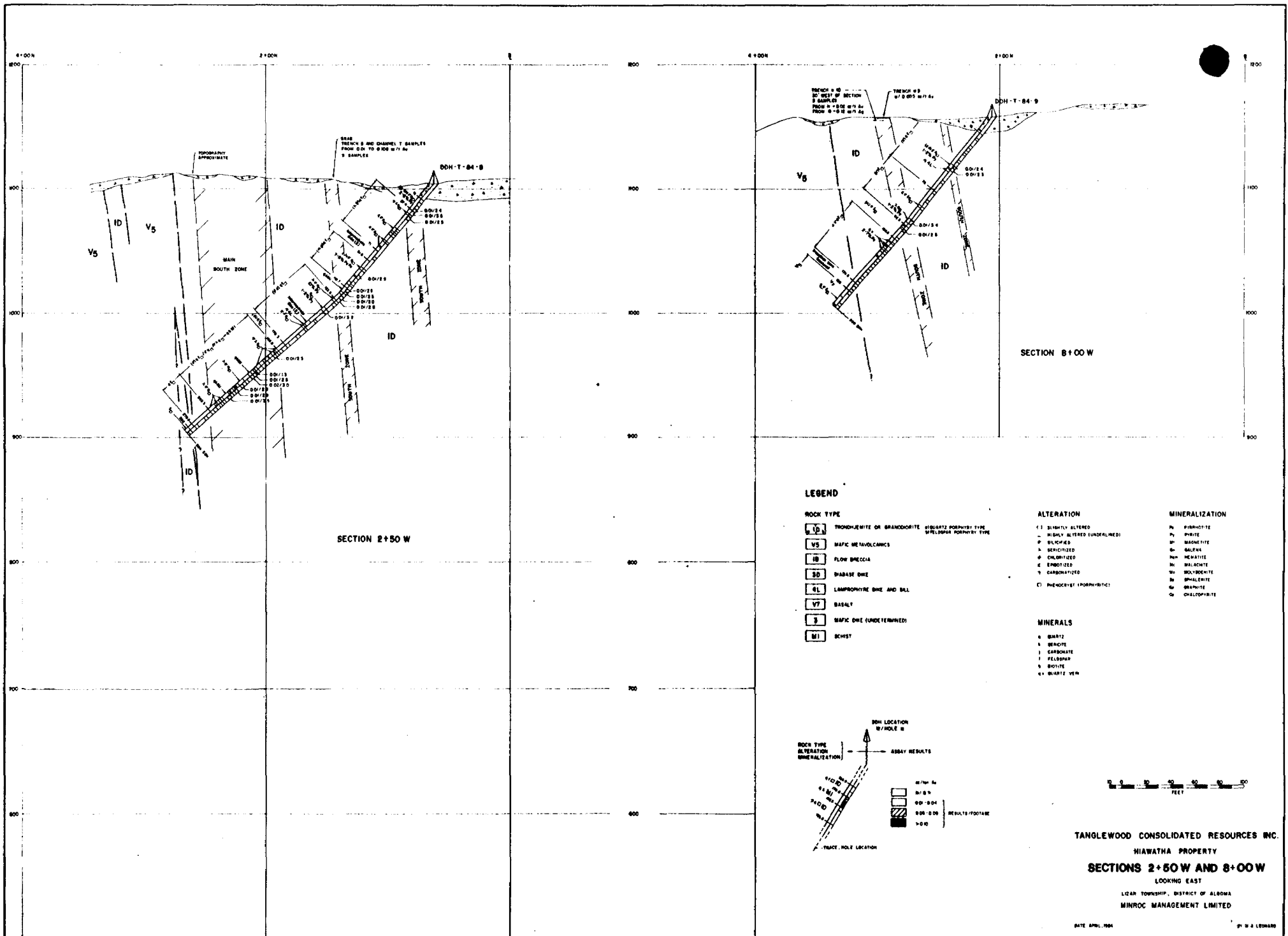
1. I am a geological consultant with an office at 21 Forget St., St. Sauveur-des-Monts, Quebec, JOR 1R0.
2. I am a graduate of Montreal University, Quebec, with a Bachelor of Science degree (1964) and a Master of Science degree (1973).
3. I have practised my profession since graduation in 1964.
4. I am a fellow of the Geological Association of Canada and a member of the Association of Geologists of Quebec.
5. I have no interest in Tanglewood Consolidated Resources Inc., or in the property discussed in this report, nor do I anticipate such interest.
6. This report is based on work I conducted on the property during the period July 30 to September 22, 1983 and October 11 to November 17, 1983, which included geological mapping and sampling. It also covers the drilling program which was carried on from December 16, 1983 to March 19, 1984.


Marc A. Leonard

APPENDIX 1

REDUCED DRILL SECTIONS

SECTIONS	19+50W	and	18+50W	(NORTH ZONE)
SECTIONS	8+00W	and	2+50W	(SOUTH ZONE)
SECTION	3+50E			(NORTH ZONE)
SECTION	7+00E			(SOUTH ZONE)
SECTION	8+50E		(" ")	
SECTION	9+50E		(" ")	
SECTION	10+50E		(" ")	
SECTION	11+50E		(" ")	
SECTION	14+00E		(" ")	
SECTION	20+00E		(" ")	
SECTION	27+00E		(" ")	



SECTION 2+50 W

SECTION 8+00 W

LEGEND

ROCK TYPE

- V5** TRONCHJEMITE OR GRANODIORITE (SILICATE PORPHYRY TYPE OR SILICATE PORPHYRY TYPE)
- V5** MAFIC METAVOLCANICS
- ID** FLOW BRECCIA
- 3D** DIABASE DIKE
- 4L** LAMPROPHYRE DIKE AND SILL
- Y7** BASALT
- 9** MAFIC DIKE (UNDETERMINED)
- M1** SCHIST

ALTERATION

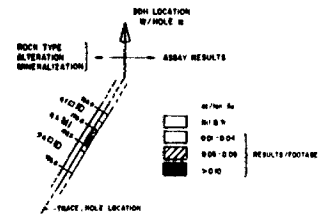
- 1** SLIGHTLY ALTERED
- 2** HIGHLY ALTERED (UNDULMINED)
- P** SULPHIDIZED
- A** SERICITIZED
- C** CHLORITIZED
- E** ENDOZONED
- Y** CARBONATIZED
- CT** PHENOCRYST (PORPHYRY) TYPE

MINERALIZATION

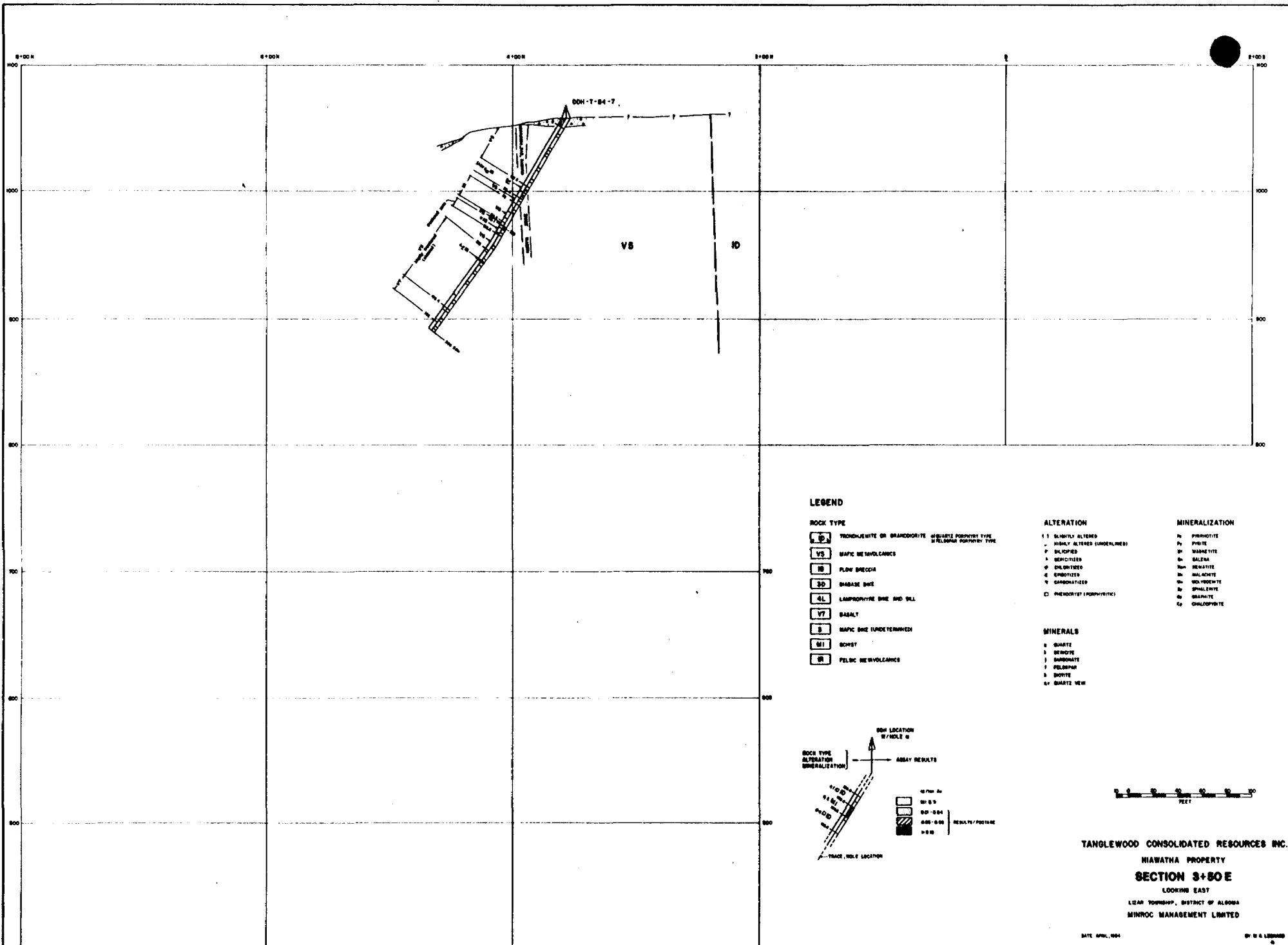
- M** MIBBYOTITE
- P** PYRITE
- B** BISMUTHITE
- S** SIALPINE
- K** KENOTITE
- N** NICKELITE
- W** WOLFRAMITE
- Sp** SPHALERITE
- G** GIBBSITE
- Q** CHALCOPRITE

MINERALS

- 1** QUARTZ
- 2** SERICITE
- 3** CARBONATE
- 4** FELDSPAR
- 5** BISMUTH
- 6** QUARTZ VEIN



TANGLEWOOD CONSOLIDATED RESOURCES INC.
 HIAWATHA PROPERTY
SECTIONS 2+50 W AND 8+00 W
 LOOKING EAST
 LIZAN TOWNSHIP, DISTRICT OF ALBERTA
 MINROC MANAGEMENT LIMITED



LEGEND

ROCK TYPE

- TEPHROMELITE OR BRONZODRITE (QUARTZ PORPHYRY TYPE OR FELSIC PORPHYRY TYPE)
- MAFIC METAVOLCANICS
- FLOW BRECCIA
- SHALE DUFF
- LAMPROPHYRE DIKE AND SILL
- BASALT
- MAFIC DIKE UNDETERMINED
- SCHIST
- FELSIC METAVOLCANICS

ALTERATION

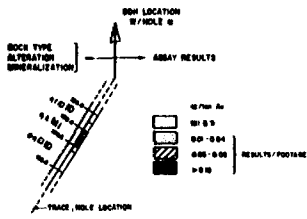
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- 2 SLIGHTLY ALTERED (UNDERLINED)
- 3 SCLERIFIED
- 4 SERICIFIED
- 5 CHLORITIZED
- 6 EPIDOTIZED
- 7 CARBONATIZED
- 8 PHENOCRYST (PORPHYRY)

MINERALIZATION

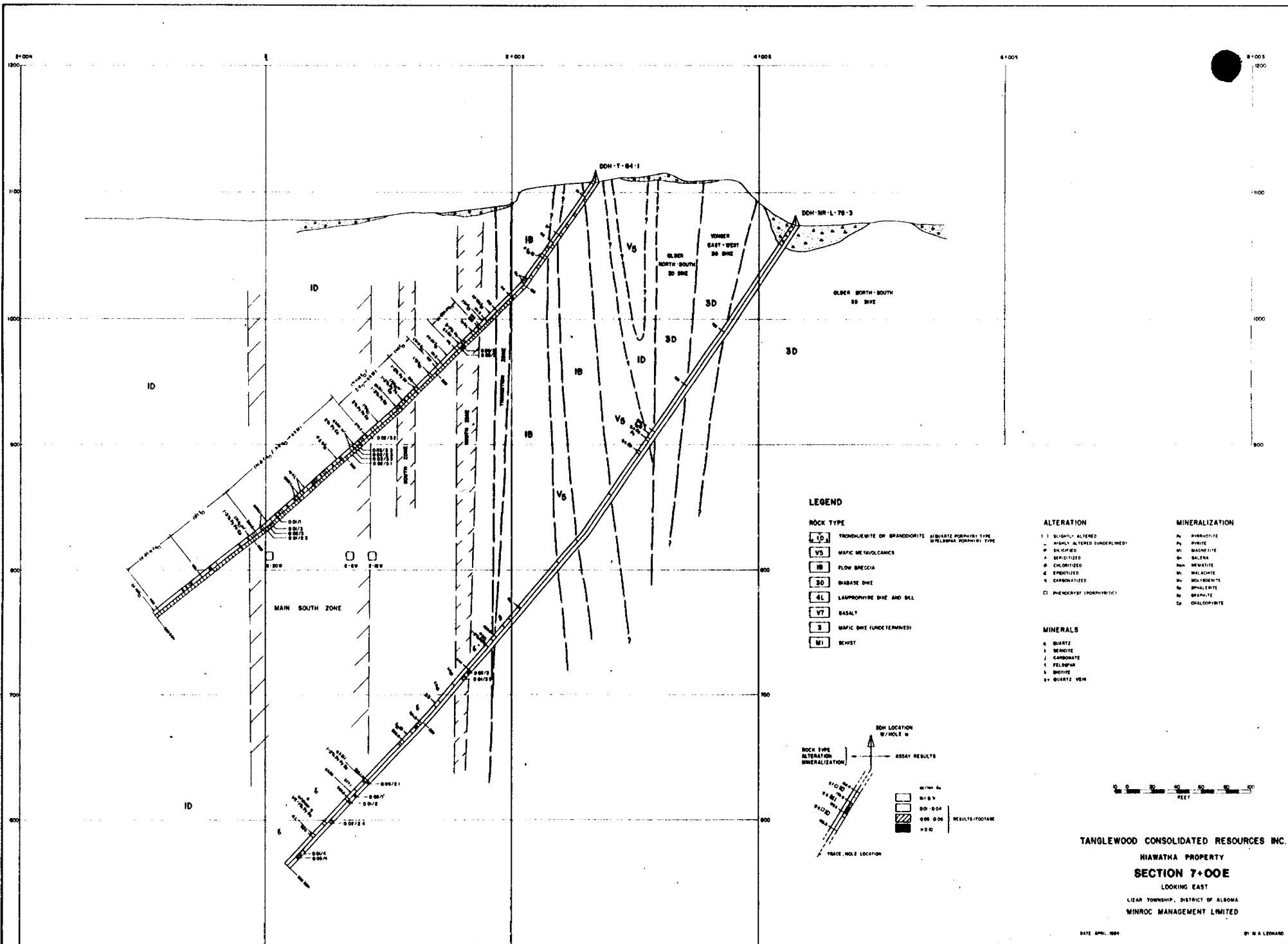
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- 20 PYRITE
- 21 MAGNETITE
- 22 SILEXITE
- 23 SILEXITE
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- 29 MALACHITE
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- 45 MALACHITE
- 46 MALACHITE
- 47 MALACHITE
- 48 MALACHITE
- 49 MALACHITE
- 50 MALACHITE

MINERALS

- 1 QUARTZ
- 2 SERICITE
- 3 BARROISITE
- 4 FELDSPAR
- 5 QUARTZ
- 6 QUARTZ VEIN



TANGLEWOOD CONSOLIDATED RESOURCES INC.
 MIAMATHA PROPERTY
SECTION 3+80E
 LOOKING EAST
 LEAR TOWNSHIP, DISTRICT OF ALBERTA
 MINROC MANAGEMENT LIMITED



LEGEND

ROCK TYPE

- ID TROCHALMITE OR GRANODIORITE (SILICATE PORPHYRY TYPE / MELTMASS PORPHYRY TYPE)
- V5 MAFIC METAVOLCANICS
- IB FLOW BRECCIA
- 3D DIABASE DHE
- 4L LAMPORPHYRE DHE AND SILL
- V7 BASALT
- 3 MAFIC DHE (UNDETERMINED)
- M1 SCHIST

ALTERATION

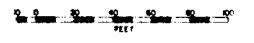
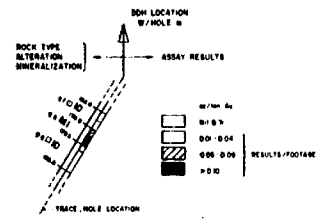
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- 2 HIGHLY ALTERED (UNDERLINED)
- 3 SULFIDED
- 4 SERICIFIED
- 5 CHLORITIZED
- 6 EPIDOTIZED
- 7 CARBONATIZED
- 8 PHENACITIC (PORPHYRY)

MINERALIZATION

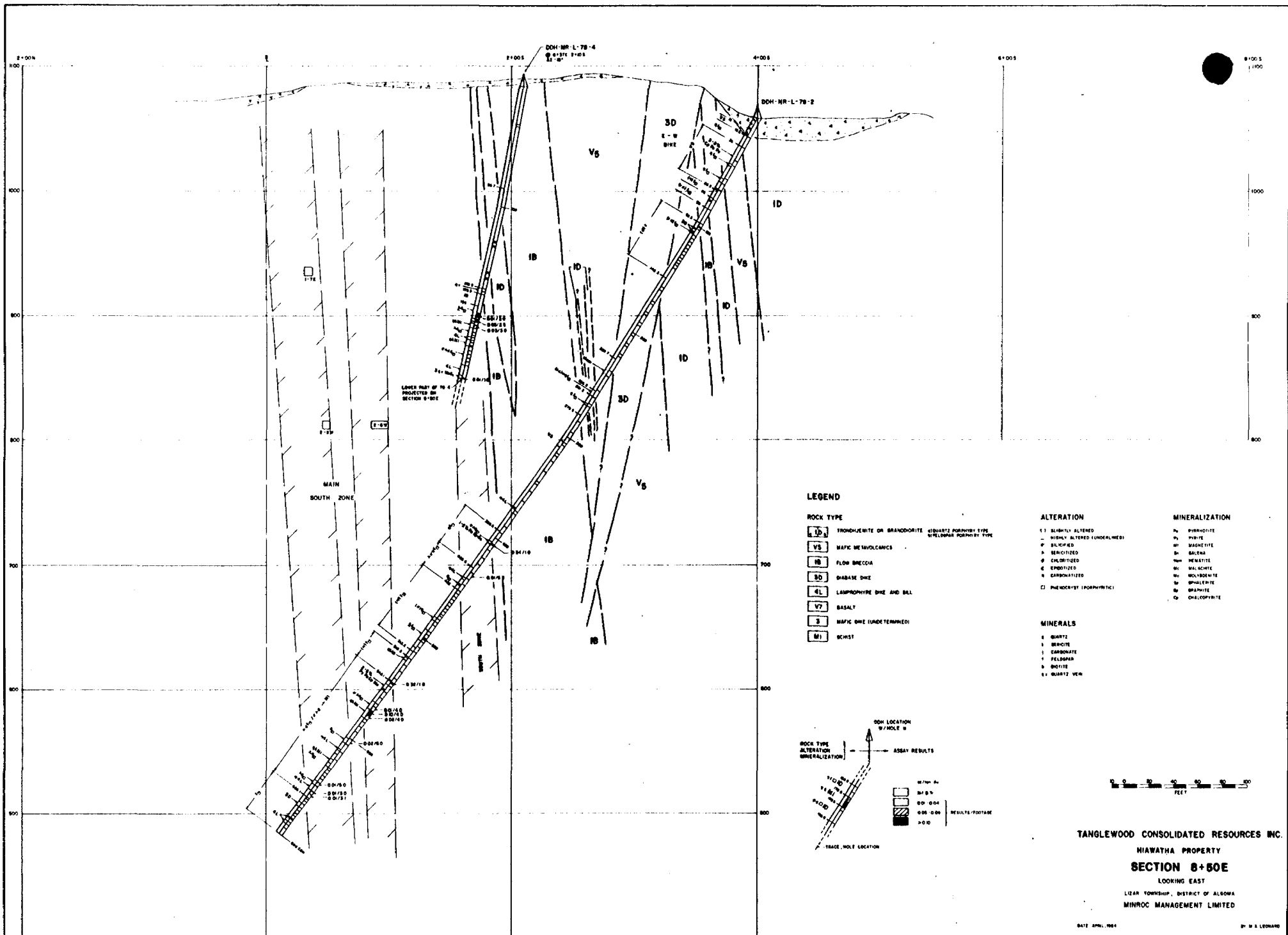
- Pn PYRRHOTITE
- Pp PYRITE
- M1 MANGANESE
- S SALT
- Mm MERRILLITE
- M MALACHITE
- M2 MOLLUSCITE
- M3 MONTICHITE
- M4 MALDENITE
- M5 MARGARITE
- M6 MARGARITE
- M7 MALDENITE
- M8 MALDENITE
- M9 MALDENITE

MINERALS

- 4 QUARTZ
- 1 SERICITE
- 2 CARBONATE
- 1 FELDSPAR
- 3 CHLORITE
- 2+ QUARTZ VEIN



TANGLEWOOD CONSOLIDATED RESOURCES INC.
 HIAWATHA PROPERTY
SECTION 7+00E
 LOOKING EAST
 CLEAR TOWNSHIP, DISTRICT OF ALABAMA
 MINROC MANAGEMENT LIMITED



LEGEND

ROCK TYPE

- SD** FRONDELINITE OR BRANDORITE (SILICATE PORPHYRY TYPE)
SULFURIC PORPHYRY TYPE
- VS** MAFIC METAVOLCANICS
- IB** FLOW BRECCIA
- SD** DIABASE DIKE
- 4L** LAMPHONYRE DIKE AND DALL
- V7** BASALT
- 3** MAFIC DIKE (UNDETERMINED)
- M1** GCHST

ALTERATION

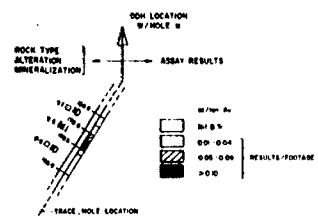
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- C2** HIGHLY ALTERED UNDERLIES
- F** SILICIFIED
- G** SERICIFIED
- E** ENDRITIZED
- H** ENDRITIZED
- I** ENDRITIZED
- J** ENDRITIZED
- K** ENDRITIZED
- L** ENDRITIZED
- C3** PNEUMONITIC (PORPHYRY)

MINERALIZATION

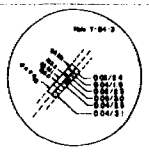
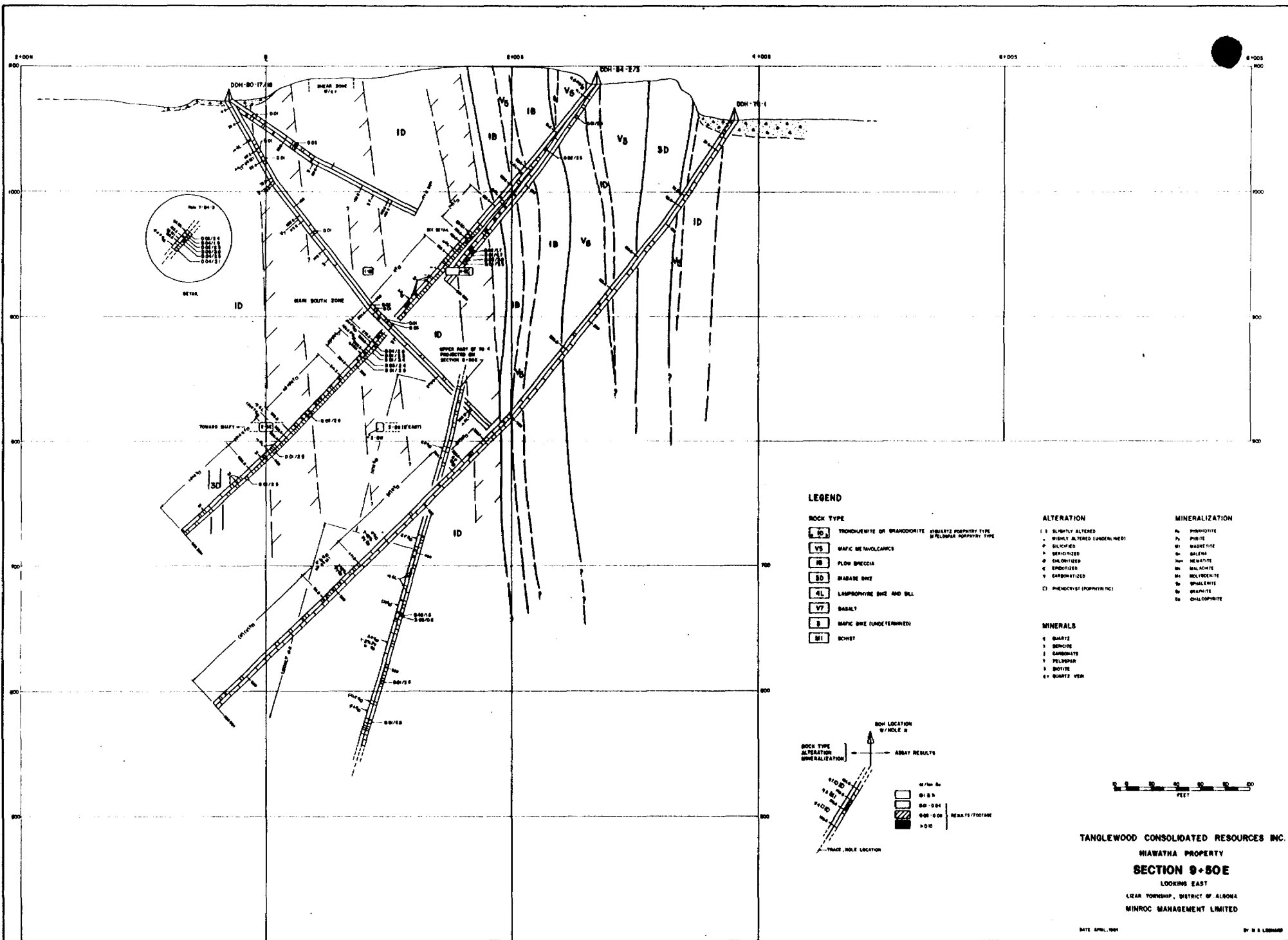
- Py** PYRRHOTITE
- Pn** PIRRITE
- Mn** MALACHITE
- Ml** MALACHITE
- Mq** MALACHITE
- Mz** MALACHITE
- Cd** CHALCOPRITE

MINERALS

- Q** QUARTZ
- S** SERICITE
- C** CARBONATE
- F** FELDSPAR
- M** MONTMORILLONITE
- Si** SILICIFIED
- Ch** CHALCOPRITE



TANGLEWOOD CONSOLIDATED RESOURCES INC.
HIAWATHA PROPERTY
SECTION 8+50E
 LOOKING EAST
 LEAR TOWNSHIP, DISTRICT OF ALGOMA
 MINROC MANAGEMENT LIMITED



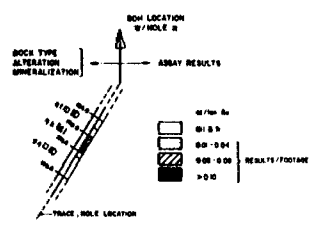
LEGEND

- ROCK TYPE**
- TD TRONDHEJEMITE OR GRANODIORITE (SILICIFIED PORPHYRY TYPE OR FELSIC/ULTRAFELSIC TYPE)
 - VS MAFIC METAVOLCANICS
 - VB FLOW BRECCIA
 - SD DIABASE DIKE
 - 4L LAMPROPHYTE DIKE AND BELL
 - V7 BASALT
 - B MAFIC DIKE (UNDETERMINED)
 - MI GNEISS

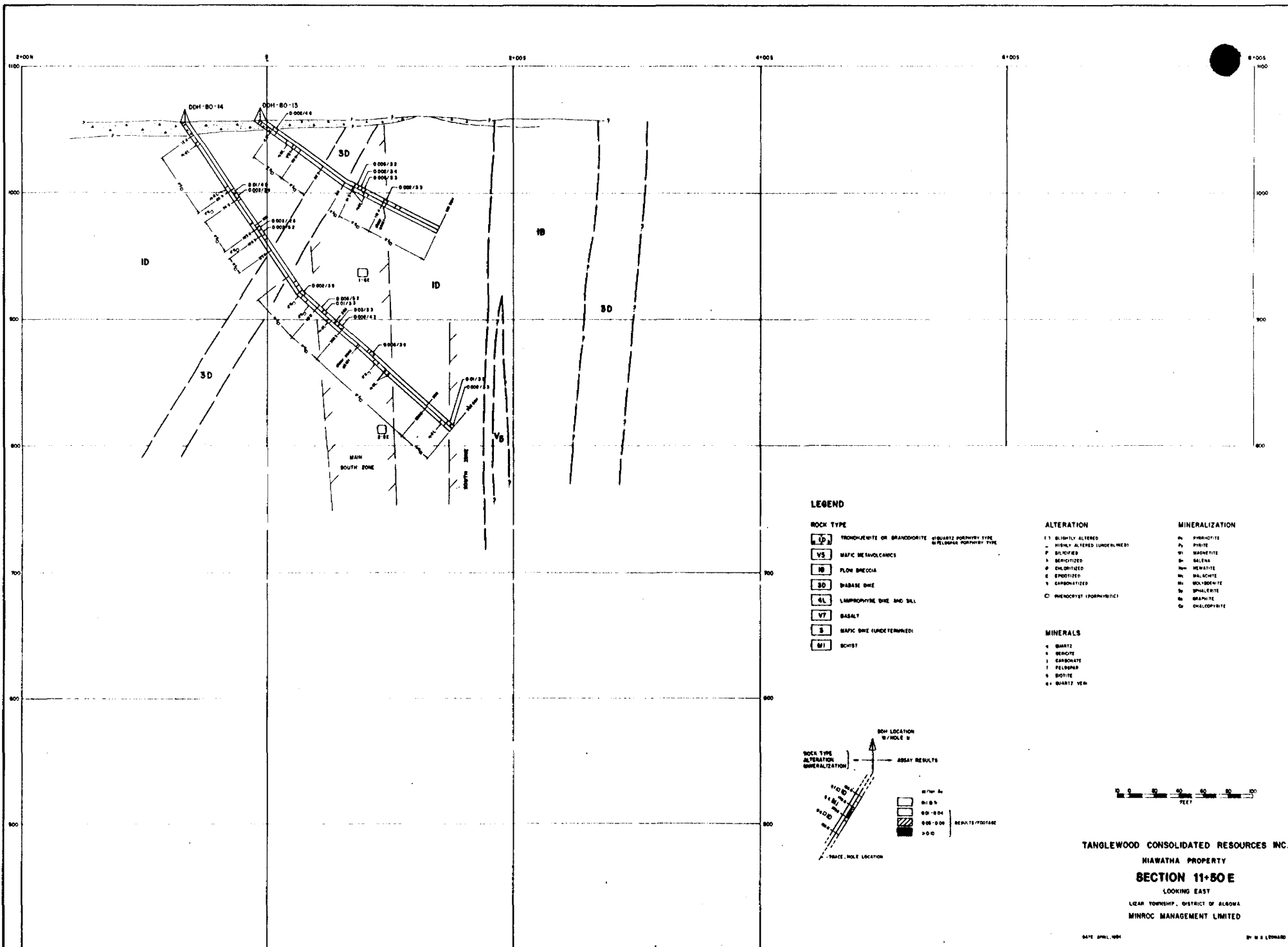
- ALTERATION**
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 - LA SLIGHTLY ALTERED (UNDERLINED)
 - P SILICIFIED
 - SI SILICIFIED
 - CH CHLORITIZED
 - CO COALIFIED
 - C CARBONATIZED
 - PH PHENOCRYST (PORPHYRY TYPE)

- MINERALIZATION**
- M PYRROTHITE
 - PI PYRITE
 - MA MAGNETITE
 - GA GALENA
 - HE HEAVY METALS
 - HA HALOGENIDES
 - MO MOLYBDENUM
 - SP SPHALERITE
 - GR GRAPHITE
 - CHL CHALCOPYRITE

- MINERALS**
- Q QUARTZ
 - B BERCITE
 - C CARBONATE
 - F FELDSPAR
 - BI BIOTITE
 - QV QUARTZ VES



TANGLEWOOD CONSOLIDATED RESOURCES INC.
 MIAWATHA PROPERTY
SECTION 9+80E
 LOOKING EAST
 LIZAR TOWNSHIP, DISTRICT OF ALBERTA
 MINROC MANAGEMENT LIMITED



LEGEND

ROCK TYPE

- VS TROCHILITE OR BRANDORITE (SILICATE PORPHYRY TYPE)
- VS MAFIC METAVOLCANICS
- 1B FLOW BRECCIA
- 3D DIABASE DIKE
- 4L LAMPROPHYTE DIKE AND SKEL
- VT BASALT
- S MAFIC DIKE (UNDETERMINED)
- MT SCHIST

ALTERATION

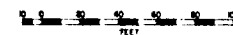
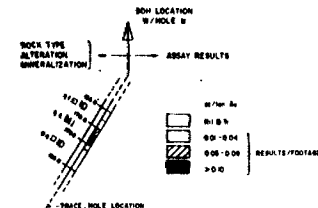
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- P BLEBBIED
- B BLENDED
- 4 CHLORITIZED
- E EPIDOTIZED
- C (HYDROTHERMAL PORPHYRY)

MINERALIZATION

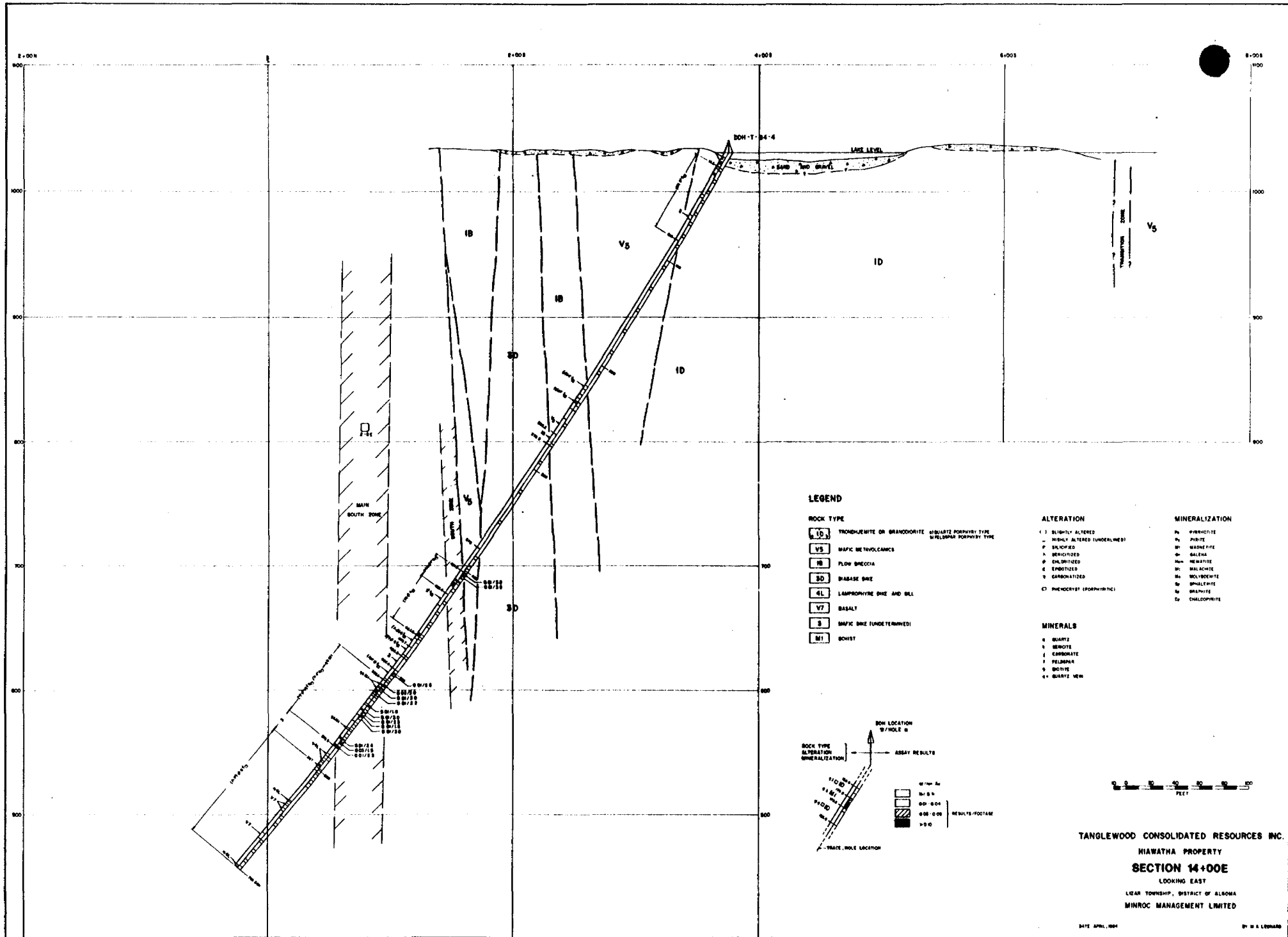
- M PYRRHOTITE
- PY PYRITE
- W WADSWORTHITE
- MA MALACHITE
- ML MALLENITE
- MR MARGARITE
- MS MALACHITE
- ML MALLENITE
- SP SPHALERITE
- GR GARNET
- CH CHALCOPYRITE

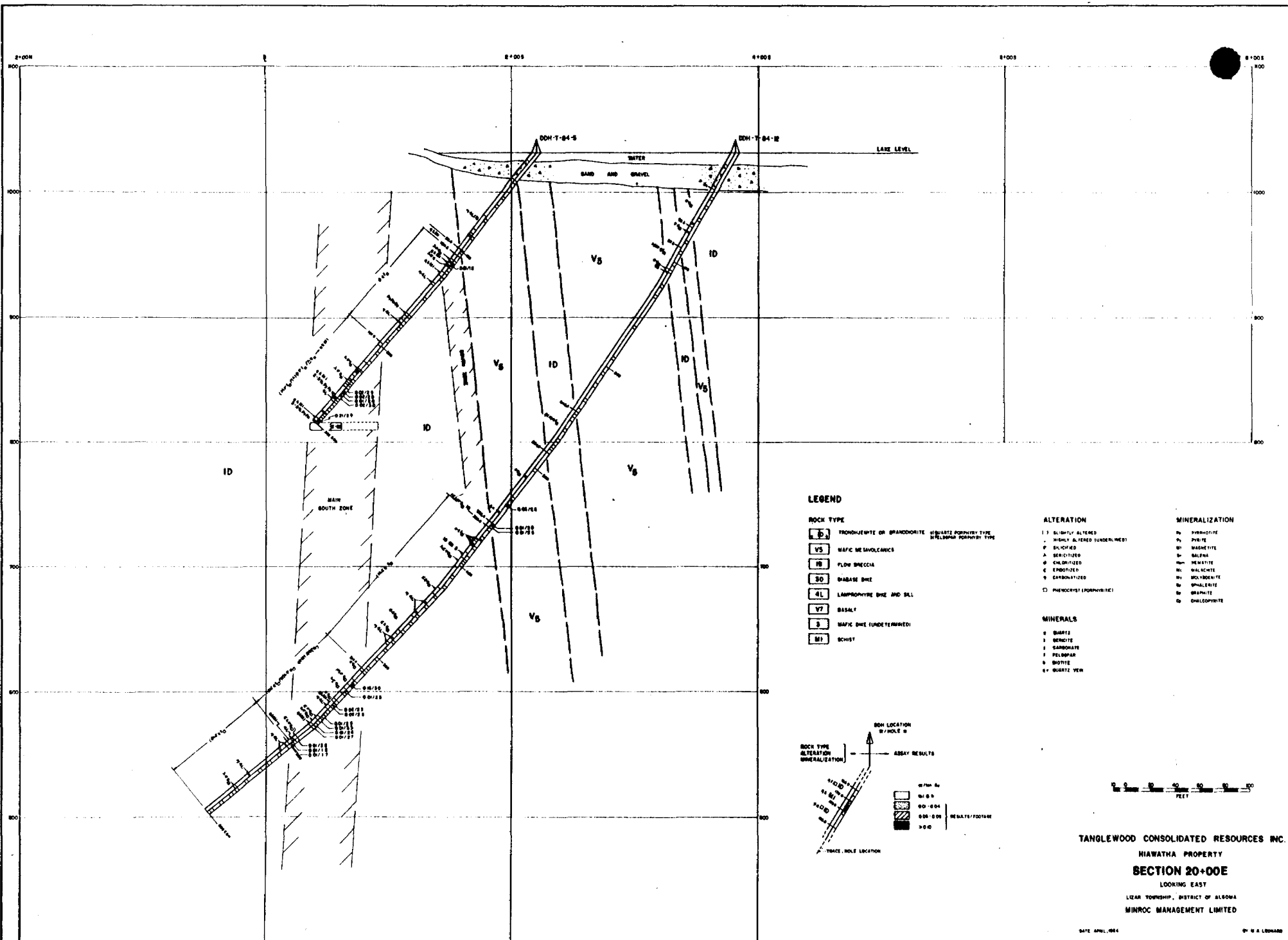
MINERALS

- Q QUARTZ
- W WADSWORTHITE
- C CARBONATE
- F FELDSPAR
- S SODIUM
- Q QUARTZ VENE



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LEGEND

ROCK TYPE

- [B3] TRONDHJEMITE OR GRANODIORITE
- [V5] MAFIC METAVOLCANICS
- [ID] FLOW SPECIA
- [30] DIABASE DIKE
- [4L] LAMPHONYMITE DNE AND SILL
- [V7] BASALT
- [3] MAFIC DNE (UNDETERMINED)
- [M1] SCHIST

QUARTZ PORPHYRY TYPE

- [S] SLIGHTLY ALTERED
- [P] SLIGHTLY ALTERED (UNDERLIES)
- [A] SERICIFIED
- [E] ENDRIZED
- [C] EPIDOTIZED
- [] PHENOCRYST (PORPHYRYC)

ALTERATION

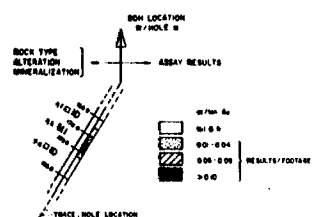
- [S] SLIGHTLY ALTERED
- [P] SLIGHTLY ALTERED (UNDERLIES)
- [A] SERICIFIED
- [E] ENDRIZED
- [C] EPIDOTIZED
- [] PHENOCRYST (PORPHYRYC)

MINERALIZATION

- [M] MARCHITE
- [W] WALSCHITE
- [S] SODALITE
- [G] GARNET
- [B] BISMUTH
- [Q] QUARTZ
- [] CHALCOPIRITE

MINERALS

- [S] QUARTZ
- [P] BISMUTH
- [A] GARNET
- [E] FELDSPAR
- [C] BOTTITE
- [] QUARTZ VEH



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APPENDIX II
ROCK SAMPLE DESCRIPTIONS

ROCK SAMPLE DESCRIPTIONS

SAMPLE # ROCK	TAG	ASSAY RESULT Au oz/t	COORDINATES		SAMPLE DESCRIPTION + (CONTEXT)
			E or W	N or S	
R-1	4201	0.82	11+80E	2+65N	- silicified quartz porphyry near mafic volcanic contact (in trench)
R-2	4202	0.015	14+10E	2+75N	- silicified quartz porphyry
R-3	4203	0.043	14+10E	2+72N	- silicified quartz porphyry
R-4	4204	nil	14+15E	2+70N	- quartz porphyry
R-5	4205	0.002	14+20E	2+60N	- mafic volcanic
R-6	4206	.001	14+55E	0+55S	- rusty quartz (q.) from thin quartz vein (q.v.) in granodiorite
R-7	4207	.001	14+55E	0+55S	- milky quartz from lenticular q.v. in granodiorite
R-8	4208	.001	14+48E	1+00S	- carbonatized granodiorite with (w/) trace (tr) of pyrite (py)
R-9	4209	tr	14+70E	5+60S	- rusty quartz from lenticular q.v. in carbonatized granodiorite; no visible sulphides
R-10	4210	0.035	11+75E	2+70N	- fine grained silicified quartz porphyry w/tr py in trench
R-11	4211	.002	11+76E	2+71N	- sheared, silicified quartz porphyry at contact with mafic volcanics (in trench)
R-12	4212	.005	12+60E	1+40S	- greenish-grey, fine silicified granodiorite w/tr py
R-13	4213	tr	10+90E	3+00S	- quartz from 12" q.v. in mafic volcanic close to diabase contact
R-14	4214	nil	11+00E	1+80S	- slightly silicified biotite granodiorite (trondhjemite?) w/tr py near contact w/flow breccia unit
R-15	4215	nil	11+00E	1+40S	- silicified and sericitized granodiorite w/MoS ₂ and py
R-16	4216	0.012	11+70E	0+60S	- quartz w/minor py from lenticular q.v. in silicified granodiorite
R-17	4217	.002	11+70E	0+60S	- silicified and sericitized granodiorite w/2-3% py in contact w/q.v.
R-18	4218	0.017	11+70E	0+60S	- quartz w/sericite from q.v. in silicified granodiorite
R-19	4219	nil	11+00E	0+25S	- granodiorite w/tr py w/2 cm q.v. containing diss. py
R-20	4220	.002	11+15E	0+70S	- quartz w/sericite from q.v. in test pit
R-21	4221	nil	11+15E	0+70S	- slightly silicified and sericitized granodiorite w/py, adjacent to q.v. in test pit

SAMPLE # ROCK TAG	ASSAY RESULT Au oz/t	COORDINATES		SAMPLE DESCRIPTION + (CONTEXT)
		E or W	N or S	
R-22	4222	n11	10+40E 0+50S	- biotite granodiorite w/1-2% py, in trench
R-23	4223	0.02	10+40E 0+50S	- quartz from q.v. w/minor py, in trench
R-24	4224	.004	10+40E 0+50S	- quartz from q.v. w/minor biotite (b) and tr py in shear zone
R-25	4225	.003	10+40E 0+50S	- silicified granodiorite w/2-4% sulphides (py, Co, Bo (?)) in trench
R-26	4226	n11	9+90E 1+65S	- rusty-red q. from lenticular q.v. at granodiorite (1D)/flow breccia contact, north of trench.
R-27	4227	n11	8+05E 3+25S	- silicified, fine granodiorite (1D) w/tr adjacent to thin q.v.
R-28	4228	tr	7+50E 2+80S	- slightly rusty q. w/tr py from q.v. taken in 5 to 7 ft. thick shear zone, north (N) of diabase (3D) contact
R-29	4229	n11	6+50E 3+62S	- silicified fine granodiorite (1D) w/tr py + malachite (Mc) coating, near contact w/mafic volcanic (V5)
R-30	4230	n11	6+70E 1+20S	- slightly silicified biotite (b) granodiorite (1D) w/tr py
R-31	4231	n11	7+20E 0+85S	- slightly silicified 1D in trench
R-32	4232	n11	7+20E 1+02S	- grey, fine silicified and sericitized 1D w/approx. 1% py
R-33	4233	n11	7+20E 1+15S	- epidotized b1D w/tr py (block in test pit)
R-34	R-34	n11	6+50E 4+08N	- greenish-grey, felsic metavolcanic-quartz porphyry (1R) w/large b and chlorite (c) crystals and 1-2% py
R-35	R-35	n11	10+00E 3+40N	- felsic metavolcanic (1R) (2" thick) in pillowed V5
R-36	R-36	0.004	10+65E 2+80N	- fine grained silicified and sericitized quartz porphyry (1R) w/1/2-1% py. Taken in test pit near N contact w/V5 (thin shear zone)
R-37	4239	n11	3+40E 3+05N	- q. w/2-3% chlorite (c) + tr py and limonite. Taken from lenticular q.v. in V5.
R-38	4240	1.40	3+00E 4+10N	- rusty q. w/tr py from approx. 2" q.v. at 1R/V5 contact
R-39	4241	0.003	3+02E 4+09N	- light grey, fine grained, massive 1R w/1-2% py locally
R-40	4242	0.001	3+00E 4+05N	- greenish-grey, chloritized b1R w/20-30% b. South portion of 7' thick 1R in V5.
R-41 to R-45				- Channel samples. Refer to Appendix II, Channel "P" for rock descriptions and assay results.

SAMPLE # ROCK	TAG	ASSAY RESULT Au oz/t	COORDINATES		SAMPLE DESCRIPTION + (CONTEXT)
			E or W	N or S	
R-46		not assayed	10+70E	2+80N	- rusty, silicified V5 w/3-4% garnet (g) and diss. sulphides. Taken in test pit, at 1R/V5 contact.
R-47		not assayed	10+25E	0+50S	- fine grained, silicified and sericitized 1D w/1-2% sulphides locally. Trench material, random on stockpile.
R-48	4273	0.01	2+30E	5+05N	- greenish-grey, med. to coarse grained, chloritized 1R w/1-2% sulphides (local)
R-49	4274	tr	6+00W	6+00N	- dark grey, coarse to med. grained diabase (3D)? w/tr py
R-50	4234	nil	6+00E	4+15S	- lenticular q.v. material from 1D
R-51	4235	.004	5+00E	3+35S	- carbonatized 1D w/1/2% sulphides (py, Pyrrhotite (Po), Bornite (Bo))
R-52	4236	nil	5+40E	3+15S	- vuggy q. and carbonate from q.v., locally rusty. Minor arsenopyrite (As)?
R-53	4237	nil	5+20E	3+85S	- rusty V5 from shear zone
R-54	4238	nil	5+75E	1+40S	- milky q. w/chlorite (C) from q.v., trace of Po
R-55	4248	nil	5+95E	9+35S	- 2" wide rusty silicified, sheared V5
R-56	4249	nil	5+95E	9+35S	- same as above; contact zone
R-57	4250	nil	3+50E	8+40S	- milky q. from lenticular q.v. in sheared V5
R-58	4251	nil	3+50E	8+40S	- same as above, rusty
R-59	4252	nil	3+50E	8+40S	- milky q. from q.v.
R-60	4253	nil	3+50E	8+40S	- sheared, chloritized V5
R-61	4254	nil	5+75E	6+35S	- rusty q. w/minor py from q.v. in pink 1D
R-62	4255	tr	3+50E	3+45S	- rusty V5 w/q.v. at contact w/1D (sheared zone)
R-63	4256	nil	3+80E	3+30S	- V5 w/rusty q. and carbonate stringers
R-64	4257	nil	4+20E	7+65S	- grey, fine grained sericitized (?) 1R?
R-65	4258	nil	3+00E	3+50S	- 1D w/rusty q. + carbonate stringers and local large py crystals
R-66	4259	tr	2+85E	3+90S	- rusty V5 w/tr diss. py, Bornite (Bo)?
R-67	4260	tr	2+10E	4+60S	- milky q. w/tr diss. py from lenticular q.v. in silicified 1D
R-68	4261	.01	2+70E	4+85S	- q. from 8" wide q.v. in silicified 1D
R-69	4262	nil	3+75E	3+85S	- silicified 1D

SAMPLE # ROCK	TAG	ASSAY RESULT Au oz/t	COORDINATES		SAMPLE DESCRIPTION + (CONTEXT)
			E or W	N or S	
R-70	4263	nil	2+95E	6+25S	- q. from 24" q.v. in V5
R-71	4264	nil	3+05E	8+60S	- locally rusty q. + chlorite from q.v. in V5
R-72	4265	nil	0+80W	8+65S	- milky q. from q.v.
R-73	4266	nil	0+35W	8+60S	- milky q. from block in frost-heave talus
R-74	4267	nil	0+00E	3+20S	- pyritized and silicified V5
R-75	4268	nil	0+40E	1+05S	- silicified 1D w/tr py
R-76	4269	nil	0+60E	1+10S	- rusty, silicified 1D w/q.v.
R-77	4270	nil	0+90N	1+85S	- rusty V5
R-78	4271	nil	1+50W	1+70S	- silicified 1D w/q. stringers
R-79	4272	tr	1+00W	3+40S	- rusty, sheared 1D
R-80	4286	nil	0+20W	5+65S	- well foliated, silicified V5 w/q. stringers, near 1D contact
R-81	4287	nil	0+70W	7+20S	- rusty V5 from shear zone
R-82	4288	nil	1+75W	5+75S	- well foliated V5 w/q.v.
R-83	4289	nil	1+75W	5+75S	- rusty q. w/1-2% py from q.v. in V5
R-84	4290	nil	3+80W	9+60S	- rusty q. from 8" q.v. in 1R (?)
R-85	4331	tr	4+00W	5+15S	- med. to fine grained, carbonatized 1D w/minor sulphides
R-86	4332	tr	4+00W	5+25S	- fine, foliated rusty V5 w/occasional 1R stringers
R-87	4333	tr	3+40W	6+60S	- grey, medium grained, moderately carbonatized, slightly foliated 1R
R-88	4334	tr	2+50W	3+10S	- carbonatized, well foliated V5 w/minor py
R-89	4335	tr	2+60W	3+10S	- pinkish grey, fine, sericitized grano-diorite w/minor py
R-90	4336	tr	6+00W	8+50S	- slightly to moderately magnetic, black, fine to med. pyroxenite
R-91	4337	nil	3+60W	8+30S	- light grey, fine to medium 1R (metarhyolite ?)
R-92	4338	nil	2+00W	12+95S	- well foliated V% w/1/2% diss. py cubes. Local carbonates.
R-93	4339	tr	4+00W	12+35S	- q. from q.v. in black, coarse grained magnetic pyroxenite (4Y)
R-94	4344	nil	3+80E	11+55S	- milky q. from 16" q.v. in rusty greenish-grey chloritized 1R (metarhyolite ?)

SAMPLE # ROCK	TAG	ASSAY RESULT Au oz/t	COORDINATES		SAMPLE DESCRIPTION + (CONTEXT)
			E or W	N or S	
R-95	4350	tr	24+00W	1+10S	- dark grey, well foliated, fine grained slightly carbonatized V5
R-96	4351	nfl	24+00W	1+10S	- milky q. from q.v. w/some rusty zones in V5
R-97	4352	tr	25+30W	1+65S	- same as R-95
R-98 to R-100			channel samples		- Refer Appendix II, Channel "Q" for rock description and assay results.
R-101	4275	nfl	6+00W	6+00N	- rusty q. and chlorite (c) w/no apparent sulphides, from q.v. material in shear zone
R-102	4276	tr	7+15W	5+85N	- pale grey, aphanitic 1R w/few q. veinlets and minor py
R-103	4277	nfl	8+00W	5+60N	- pale green mylonite ? in silicified V5; sheared zone
R-104	4278	nfl	8+70W	3+55N	- white q., locally rusty w/minor chlorite and sulphides from 2' q.v. in transition zone
R-105	4279	nfl	8+60W	3+60N	- aphanitic 1R w/q. eye phenocrysts and hairline fractures filled w/py and galena
R-106	4280	0.01	8+50W	3+00N	- silicified and chloritized fine 1D w/3-4% sulphides
R-107	4281	nfl	8+50W	3+00N	- rusty q. w/local py, from q.v. in 1D
R-108	4282	0.02	2+55W	1+42N	- q. w/local py concentrated along fractures, from q.v. in silicified and sericitized 1D (test pit)
R-109	4283	0.01	2+55W	1+42N	- q. sericite w/3-4% py along foliation planes (test pits)
R-110	4284	0.01	2+55W	1+42N	- med. grained, silicified and sericitized 1D w/3% py conc. along foliation planes
R-111	4285	tr	7+40W	1+10N	- med. grained gneissic, slightly silicified, sericitized 1D w/q. phenocryst and approx. 1/2% py
R-112	4291	nfl	11+90W	0+25N	- light-grey, med. to fine, slightly foliated, sericitized and carbonatized 1D w/1-2% py along foliation planes. Minor chlorite.
R-113	4292	nfl	11+60W	0+50N	- white granular q. w/tr py and chlorite (c) from 15" q.v. in gneissic 1D
R-114	4293	nfl	17+70W	0+20N	- greenish, med. to coarse, slightly carbonatized, chloritized granodiorite (1D) w/minor py mainly conc. along fracture planes
R-115	4294	nfl	18+40W	1+05N	- massive milky q., slightly rusty w/tr py and c, from q.v.

SAMPLE # ROCK	TAG	ASSAY	COORDINATES		SAMPLE DESCRIPTION + (CONTEXT)
		RESULT Au oz/t	E or W	N or S	
R-116	4295	nil	18+40W	1+05N	- greenish silicified, chloritized 1D w/tr py & c
R-117	4296	nil	18+25W	1+08N	- milky q. w/some rusty q. from q.v. in silicified and chloritized 1D
R-118	4297	tr	18+20W	2+20N	- light greenish-grey, fine to med. grained, silicified and sericitized 1D w/q. phenocrysts and w/minor sulphides mostly concentrated on foliation planes
R-119	4298	.01	18+20W	2+20N	- rusty q. w/fine diss. py cubes
R-120	4299	tr	13+20W	3+10N	- 50/50 green, med. to fine V5 w/tr py and white q. from brecciated zone ?
R-121	4300	tr	14+87W	3+10N	- pale grey aphanitic, silicified 1R w/some thin q. layering and w/tr py
R-122	4301	tr	16+70W	3+18N	- aplitic, highly fractured white silicified 1R, south (S) of silicified V5
R-123	4302	tr	14+00W	3+75N	- q. from milky q.v.
R-124	4303	tr	14+00W	3+75N	- highly silicified and chloritized V5 or chloritized 1R
R-125 to R-134			channel samples		- Refer to Appendix II, Channel "L" for rock descriptions and assay results.
R-135	4314	nil	16+93W	2+57N	- green, fine, epidotized 1R (quartz-porphry) w/minor py. Sample taken in shear zone.
R-136	4315	tr	16+87W	2+61N	- greenish-buff, highly altered silicified 1R w/tr py. Taken at N contact of 1R/V5.
R-137	4316	tr	16+80W	2+50N	- greenish-buff, fine silicified 1R w/tr py and magnetite (Mt) ? along foliation planes and rusty q. w/Fe black staining from q.v. at V5 contact.
R-138 to R-143			channel samples		- Refer to Appendix II, Channel "M" for rock descriptions and assay results.
R-144	4323	tr	22+45W	1+15N	- grey "gneissic" carbonatized biotite granodiorite (trondhjemite) w/minor diss. py in large crystals, locally concentrated along foliation planes (1" rusty layer)
R-145	4324	tr	21+40W	1+90N	- 50/50 rusty q. w/minor py from q.v. and rusty, partially chloritized 1D at contact w/q.v.
R-146	4325	tr	21+60E	0+50N	- light greenish-grey, med. grained, massive, sericitized 1D w/up to 1/2% diss. py
R-147	4326	tr	23+70E	0+60S	- slightly foliated, buff, med. to coarse, silicified and sericitized 1D w/py (from shear zone)

SAMPLE # ROCK	TAG	ASSAY RESULT Au oz/t	COORDINATES		SAMPLE DESCRIPTION + (CONTEXT)
			E or W	N or S	
R-148	4327	tr	23+70E	0+63S	- light greenish-grey, fine highly silicified mylonite ? with minor py
R-149	4328	tr	23+50E	1+20S	- carbonatized and sericitized biotite 1D (trondhjemite) w/local q. veinlets and w/Py, Co and Mc (malachite)
R-150					- not utilized
R-151 to R-155			channel samples		- Refer to Appendix II, Channels Q for rock description and assay results.
R-156 to R-161			channel samples		- Refer to Appendix II, Channel W for rock description and assay results.
R-162 to R-170			channel samples		- Refer to Appendix II, Channel S for rock description and assay results.
R-171 to R-173			channel samples		- Refer to Appendix II, Channel T for rock description and assay results.
R-174 to R-178			channel samples		- Refer to Appendix II, Channel B for rock description and assay results.
R-179 to R-183			channel samples		- Refer to Appendix II, Channel C for rock description and assay results.
R-184 to R-186			channel samples		- Refer to Appendix II, Channel E for rock description and assay results.
R-187 to R-199			channel samples		- Refer to Appendix II, Channels Q for rock description and assay results.
R-200	4329	tr	21+10W	3+50N	- grey-buff, fine to aphanitic porphyritic, epidotized felsic metavolcanic w/tr diss. py
R-201	4330	tr	18+00W	4+45S	- white and rusty q. from q.v. in approx. 20' thick coarse granitic or pegmatitic sill within V5
R-202	4340	nil	5+00W	1+52S	- 40/60 white q. from q.v. w/no apparent sulphides and greenish fine to medium silicified and chloritized 1D w/minor fine diss. py
R-203	4341	nil	14+20W	4+55S	- dark grey aphanitic slightly foliated 1R w/minor diss. py
R-204	4342	tr	12+02W	7+95S	- pale greenish-grey, aphanitic, slightly foliated, carbonatized and epidotized 1R w/diss. py and magnetite
R-205	4343	nil	6+25W	13+70S	- greenish, aphanitic 1R w/local diss. py and w/1 mm fracture filled w/py
R-206	4345	nil	65+45E	3+90N	- coarse grained slightly sericitized biotite 1D w/sericite and py, locally rusty. Local large q. crystals along fractures.

SAMPLE # ROCK	TAG	ASSAY RESULT Au oz/t	COORDINATES		SAMPLE DESCRIPTION + (CONTEXT)
			E or W	N or S	
R-207	4346	tr	23+40W	3+45S	- light green, very coarse 1D w/isolated large py crystals
R-208	4347	nil	23+15W	3+40S	- rusty q. from q.v. in 1D
R-209	4348	tr	36+00W	5+33N	- greenish-grey, highly silicified, well foliated 1R w/approx. 1% py. Mainly conc. along fracture planes. Tr of malachite in 0.5 to 1 mm q. rich layers.
R-210	4349	tr	36+00W	5+00N	- similar to above, however w/minor py
R-211	4384	nil	29+40W	10+30N	- mostly chloritized 1R w/tr diss. py and w/approx. 10% V5 fragments containing 1-2% py
R-212	4385	nil	33+40W	9+90N	- milky q. w/chlorite + tr py
R-213	4386	tr	33+40W	9+90N	- milky q. w/chlorite and approx. 5-7% py
R-214	4387	tr	20+00W	6+80N	- milky q. locally rusty and pink feldspar w/V5 w/no apparent sulphides, from 2"-12" q.v. in fault oriented 140°
R-215	4388	tr	26+40W	1+50N	- + well foliated, rusty, pyritized, med. To fine carbonatized 1D (fault-zone ?)
R-216	4389	tr	26+40W	5+55N	- pinkish-green, chloritized 1R w/2% py conc. along fracture planes in same w/tr diss. py
R-217	4390	tr	34+20W	7+50N	- light greenish-grey gen. fine grained chloritized, slightly foliated 1R w/tr diss. py
R-218	4391	tr	43+05W	8+65N	- light grey, fine sericitized and chloritized quartz porphyry w/minor py and approx. 10% q. from q.v.
R-219	4392	0.01	45+00W	7+15N	- rusty, pale greenish-grey chloritized 1R, foliated w/5-6% py at south contact 1R/V5
R-220	4439	.02	2+50W	1+50N	- sericitized 1D w/rusty lenticular q.v. up to 10" thick
R-221	4440	tr	18+00W	4+35S	- pink, coarse grained, chloritized 1D w/minor diss. py - local lenticular milky q.v. w/rusty spots
R-222	4441	0.10	19+80W	3+07N	- q. w/sericite and tr galena + py from 4" q.v.
R-223	4442	.02	51+50W	11+75N	- 50/50 rusty q. from q.v. and sericitized and carbonatized "gneissic" biotite 1D (trondhjemite) w/py
R-224	4443	tr	29+60W	19+75N	- light pinkish-grey, coarse to med. grained slightly carbonatized and chloritized biotite 1D w/tr diss. py
R-225	4444	.01	38+00W	27+45N	- dark-grey, fine + massive, poorly foliated metasediment (?) w/tr diss. py and actinolite needles up to 10 mm long

SAMPLE # ROCK	TAG	ASSAY RESULT Au oz/t	COORDINATES		SAMPLE DESCRIPTION + (CONTEXT)
			E or W	N or S	
R-226	4445	tr	37+60W	27+70N	- very rusty horizon, light greenish-grey, massive, aphanitic, pyritized IR
R-227	4446	tr	28+00W	13+45N	- grey, med. to coarse, slightly foliated, biotite ID (slightly sericitized) w/tr py
R-228	4447	.01	22+55E	0+10S	- rusty, coarse grained, slightly foliated and pyritized ID horizon in slightly carbonatized biotite ID w/q.v. up to 5-10".
R-229 to R-241			channel samples		- Refer to Appendix II, Channel R for rock description and assay results.
R-242 to R-250					- not utilized
R-251 to R-262			channel samples		- Refer to Appendix II, Channel Q for rock description and assay results.
R-263 and R-264			channel samples		- Refer to Appendix II, Channel O for rock description and assay results.
R-265 and R-266			channel samples		- Refer to Appendix II, Channel N for rock description and assay results.
R-267 to R-272			channel samples		- Refer to Appendix II, Channel A for rock description and assay results.
R-273			channel sample		- Refer to Appendix II, Channel Q for rock description and assay results.
R-274	4437	tr	22+30E	17+95N	- 12" gossan zone in mafic volcanics
R-275	4438	nil	16+80E	16+20N	- pale grey, fine grained ID w/diss. py cubes

APPENDIX III
CHANNEL SAMPLING

LEGEND FOR FIGURES NO. 'A' TO 'Y'

LITHOLOGIES

4L	LAMPROPHYRE DIKE AND SILL
3D	DIABASE DIKE
1D	GRANODIORITE - TRONDHJEMITE
1B	FLOW BRECCIA
4P	PERIDOTITE
4Y	PYROXENITE
1R	FELSIC - METAVOLCANICS
V ₅	MAFIC METAVOLCANICS
V _{5θ}	MAFIC METAVOLCANICS - PILLOWED
TZ	TRANSITION ZONE

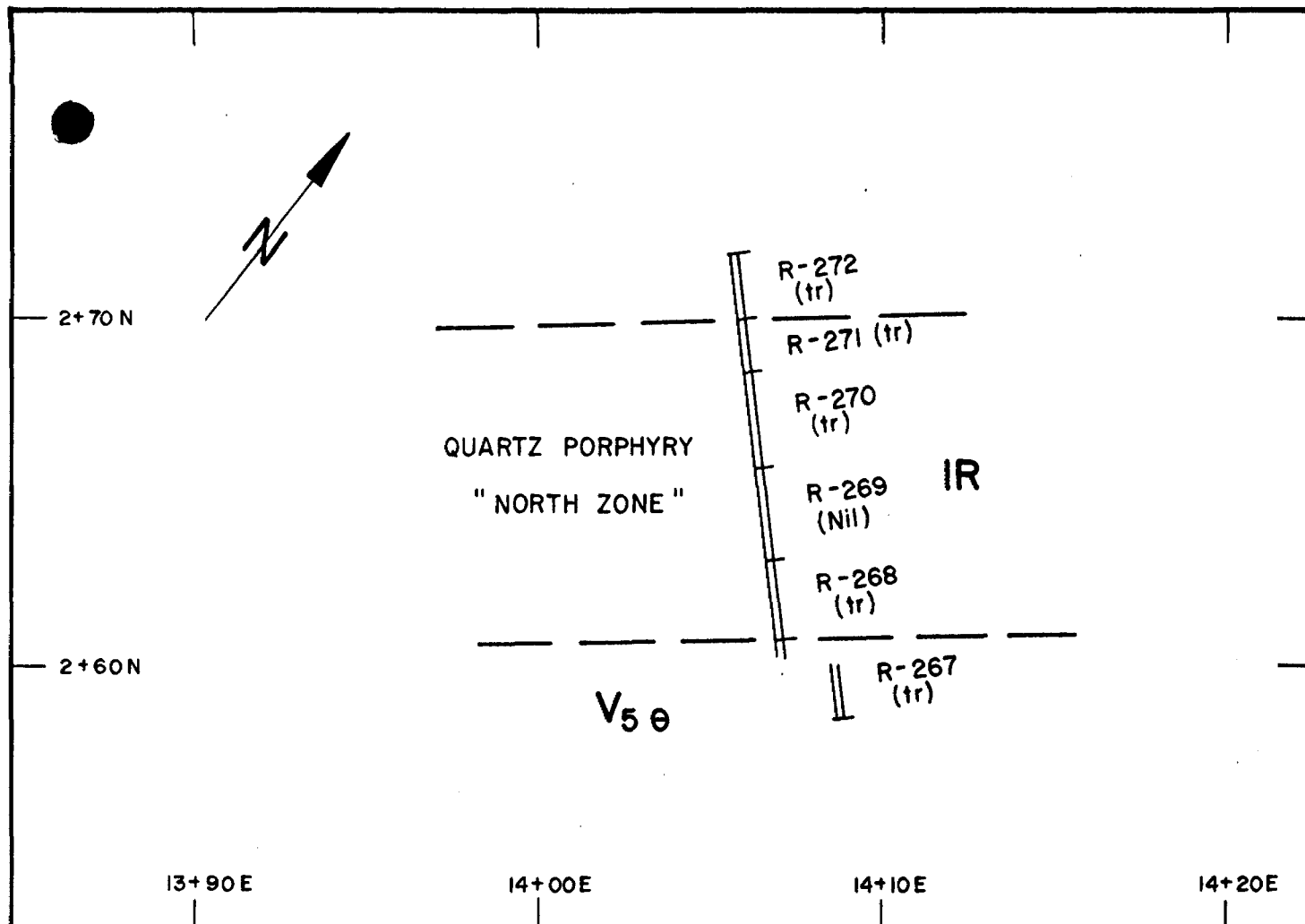
CHANNEL "A"

MINERALIZED ZONE: North
 NUMBER OF SEGMENTS: 1
 TOTAL LENGTH: 13'9"

AREA: 14+05E, 2+65N
 AZIMUTH: approx. 314°
 REF. FIG: "A"

GEOLOGICAL CONTEXT: Nine foot wide quartz porphyry felsic unit (1R) within mafic volcanics (V5).

SAMPLE NO.	TAG NO.	ASSAY Au oz/t	LENGTH INCHES	DESCRIPTION
R-267	4431	tr	33"	med. to dark green, fine grained, mafic volcanics exhibiting pillow structures. South of 1R.
R-268	4432	tr	28"	pale greenish-grey, sericitized quartz eye porphyry w/minor py. Buff weathered surface.
R-269	4433	nil	29"	same as above
R-270	4434	tr	31"	same as above
R-271	4435	tr	20"	same as above
R-272	4436	tr	24"	dark green, fine-grained V5 w/occ. q. stringers



GEOLOGICAL CONTEXT

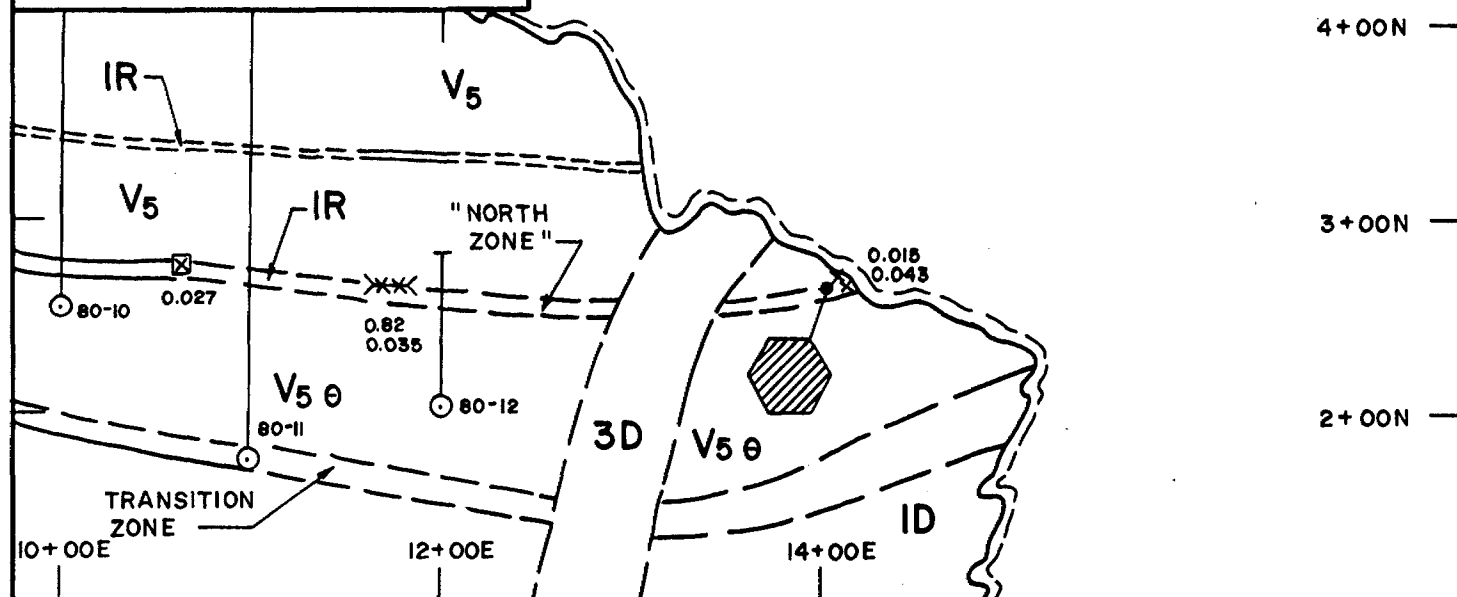


FIGURE NO A

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 U.T.M. _____ TOWNSHIP LIZAR
 PROVINCE ONT.

LONG. _____
 LAT. _____

SCALE: 1" = 100' AND 1" = 5'

CHANNEL "B"

MINERALIZED ZONE: North
 NUMBER OF SEGMENTS: 1
 TOTAL LENGTH: 10'8"

AREA: 8+25E, 2+90N
 AZIMUTH: approx. 330°
 REF. FIG: "B"

GEOLOGICAL CONTEXT: 7'4" thick quartz porphyry (felsic meta-volcanic (V5) immediately east of mine shaft.

SAMPLE NO.	TAG NO.	ASSAY Au oz/t	LENGTH INCHES	DESCRIPTION
R-174	4379	nil	16"	dark green, fine grained mafic volcanic (V5) w/occ. minor rust but w/no visible sulphides.
R-175	4380	tr	24"	3" thick q.v. at contact with V5, followed by 21" slightly rusted IR
R-176	4381	tr	30"	light grey, gen. fine grained "blue quartz-eye porphyry" w/tr diss. py
R-177	4382	tr	34"	similar to above
R-178	4383	tr	24"	mafic volcanic (V5) similar to R-174

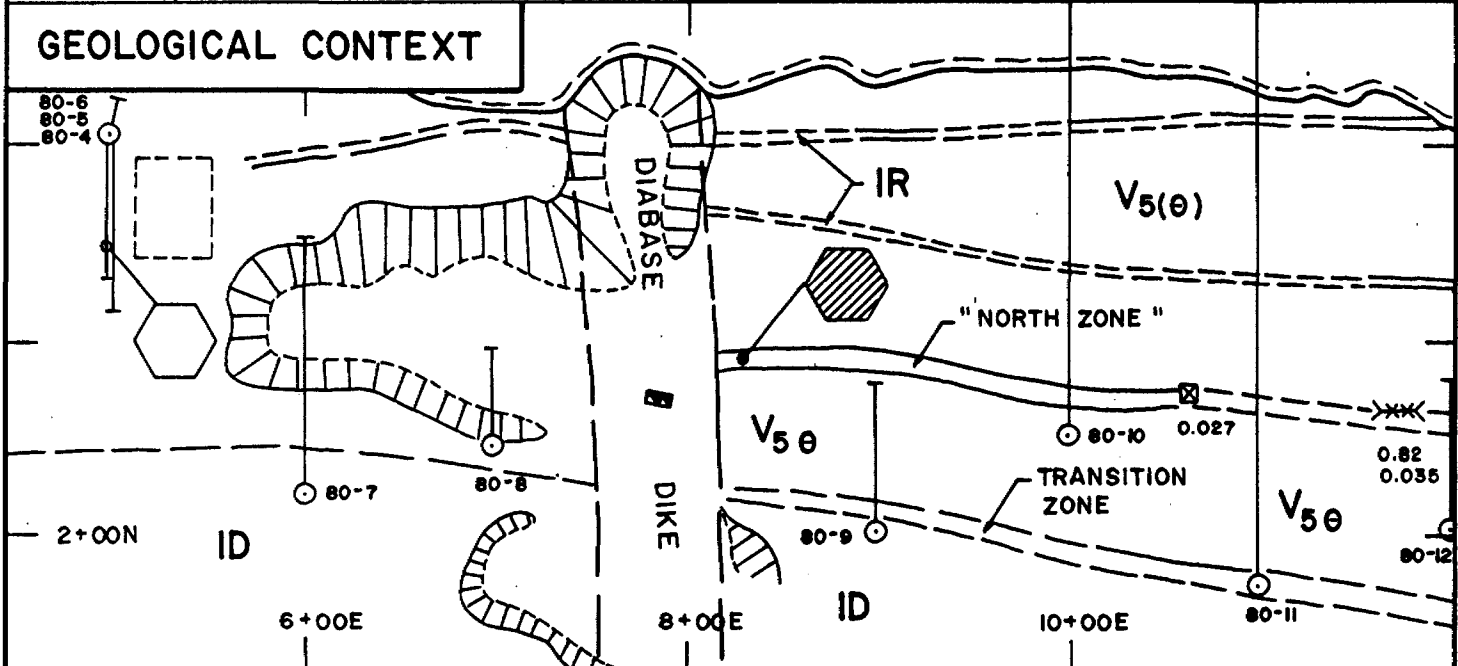
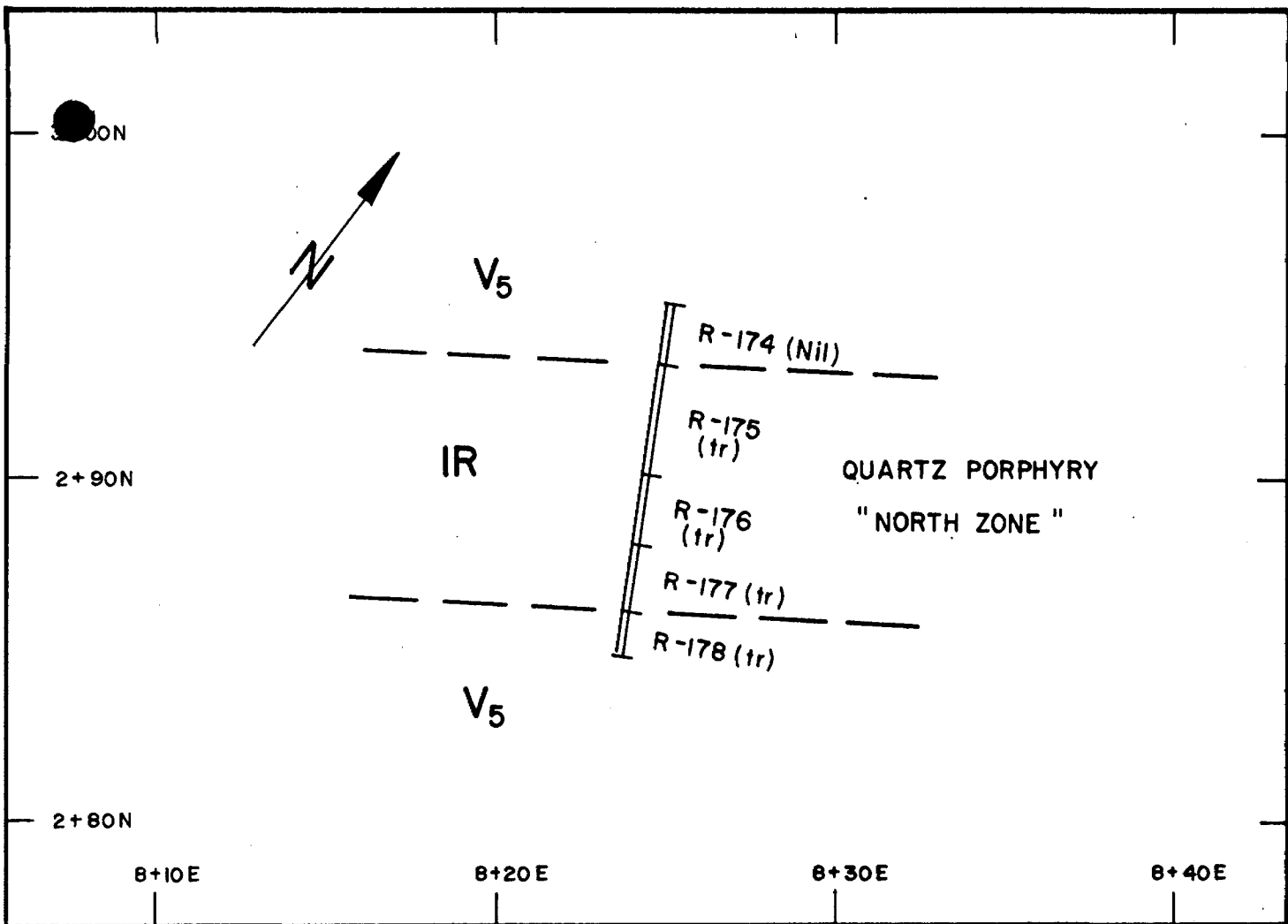


		FIGURE NO		B	
DRAFTED BY <u>B. FALLADA</u> INTERPRETED BY <u>M.A. LEONARD</u> APPROVED BY _____ REVISED _____		DATE <u>DEC. 1983</u> <u>DEC. 1983</u> _____ _____		MINROC MANAGEMENT LIMITED PROJECT <u>MM-003</u> N.T.S. _____ U.T.M. _____ TOWNSHIP <u>LIZAR</u> _____ PROVINCE <u>ONT.</u> LONG. _____ LAT. _____ SCALE: <u>1" = 100'</u> AND <u>1" = 5'</u>	

CHANNEL "C"

MINERALIZED ZONE: North
 NUMBER OF SEGMENTS: 1
 TOTAL LENGTH: 12'8"

AREA: 5+02E, 3+55N
 AZIMUTH: approx. 332°
 REF. FIG: "C"

GEOLOGICAL CONTEXT: part of north mineralized zone. 9'9" thick felsic (quartz porphyry) 1R unit within mafic volcanics (V5), close to old mill site (similar to Channel "B").

SAMPLE NO.	TAG NO.	ASSAY Au oz/t	LENGTH INCHES	DESCRIPTION
R-179	4393	tr	31"	dark green, fine grained V5 w/ minor rust but no visible sulphides
R-180	4394	0.01	30"	light grey, gen. fine to med. grained 1R w/blue quartz eye phenocrysts and pinpoint diss. sulphides.
R-181	4395	tr	32"	similar to above
R-182	4396	tr	37"	similar to above however med. grey and fine grained
R-183	4397	tr	22"	med. to dark green, fine grained mafic volcanics V5 w/no visible sulphides

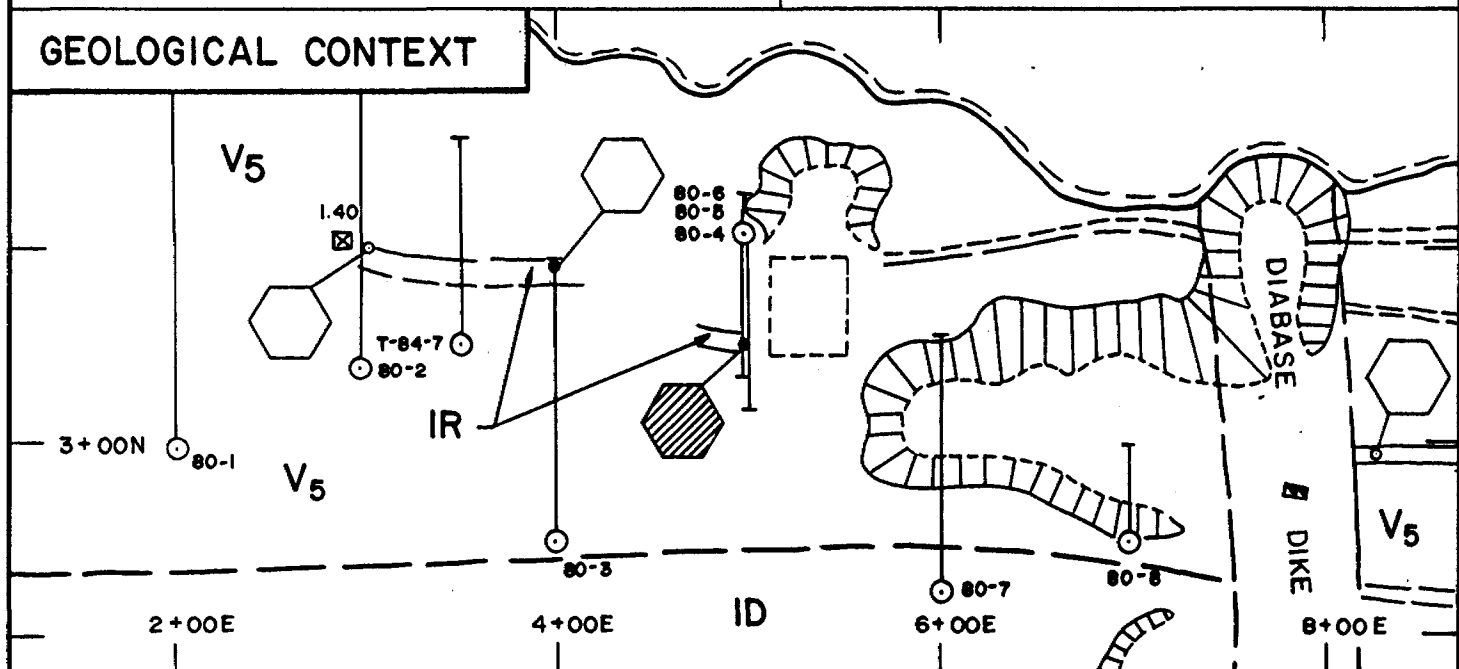
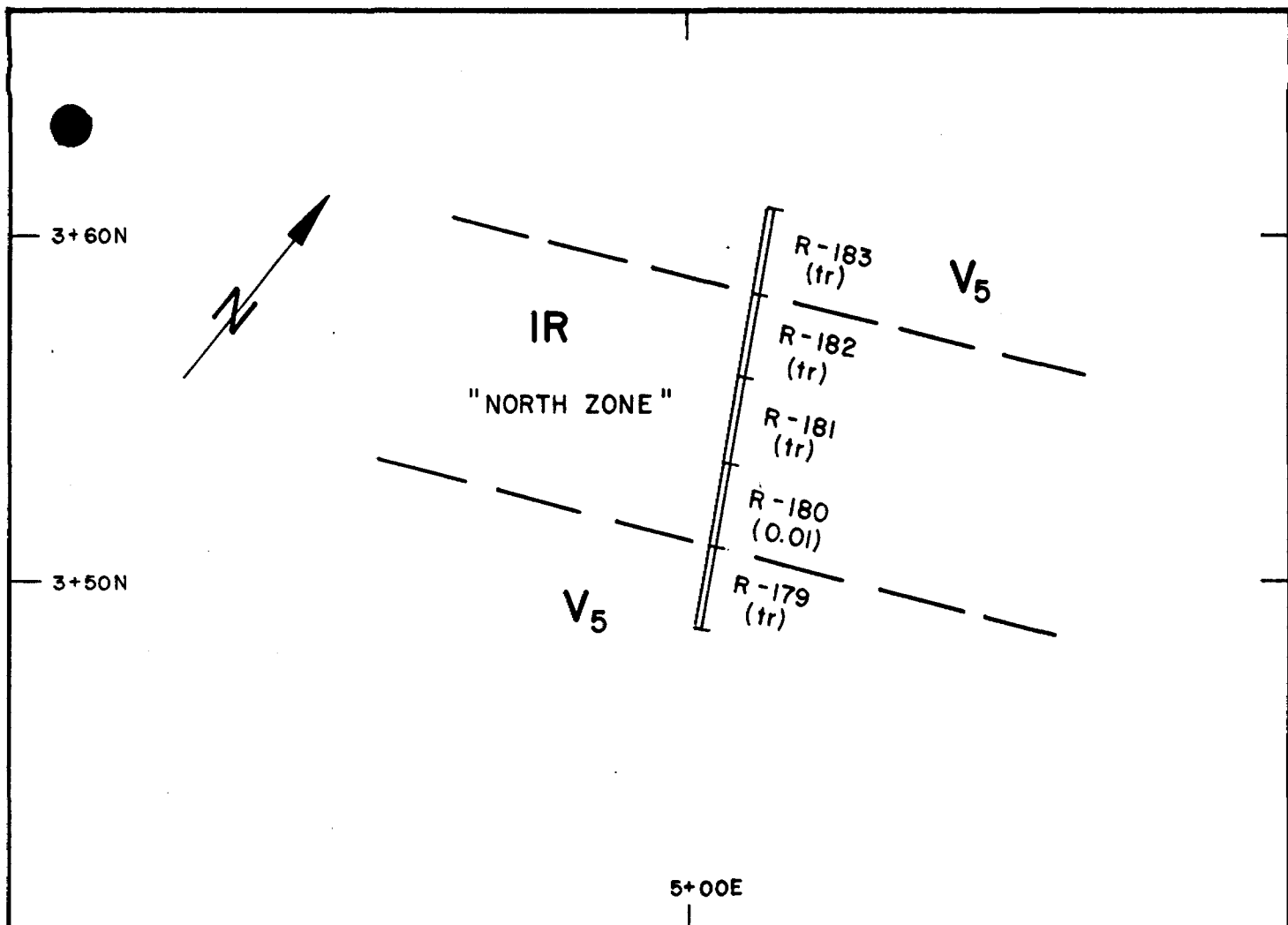


		FIGURE NO C	
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		PROJECT <u>MM-003</u>	N.T.S. _____
		U.T.M. _____	TOWNSHIP <u>LIZAR</u>
		LONG. _____	PROVINCE <u>ONT.</u>
		LAT. _____	
		SCALE: <u>1" = 100'</u> AND <u>1" = 5'</u>	

CHANNEL "D"

MINERALIZED ZONE: North
 NUMBER OF SEGMENTS: 2
 TOTAL LENGTH: 9'1"

AREA: 4+00E, 3+95N
 AZIMUTH: approx. 335°
 REF. FIG: "D"

GEOLOGICAL CONTEXT: Approx. 5' thick quartz porphyry unit (1R) within mafic volcanic (V5).

SAMPLE NO.	TAG NO.	ASSAY Au oz/t	LENGTH INCHES	DESCRIPTION
C-1	C-1	tr	14"	med. to dark green, fine grained V5 w/tr py. Py content increases toward C-2.
C-2	C-2	tr	11"	similar to C-1, however w/up to 1/4 - 1/2% py and w/q. veinlets. Sheared parallel to foliation. Note 4" gap between C-1 and C-2.
C-3	C-3	tr	30"	med. grey, fine grained, slightly sericitized 1R w/biotite porphyroblats (displaying graphic texture) and w/minor py, locally conc. to 1/4-1/2%
C-4	C-4	nil	34"	similar to C-3
C-5	C-5	nil	10"	similar to above
C-6	C-6	tr	4"	dark green, sheared, fine grained sericitized V5 w/minor sulphides
C-7	C-7	nil	12"	similar to C-1, however, highly sericitized

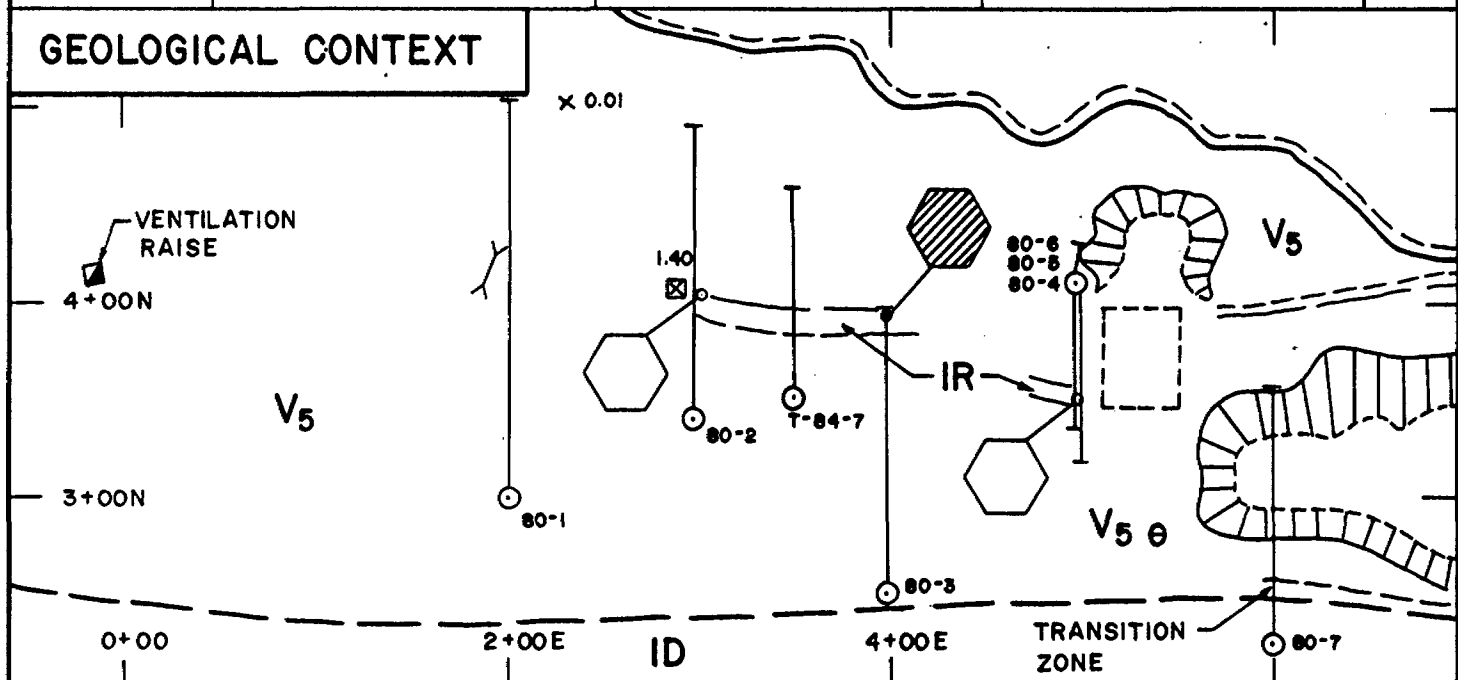
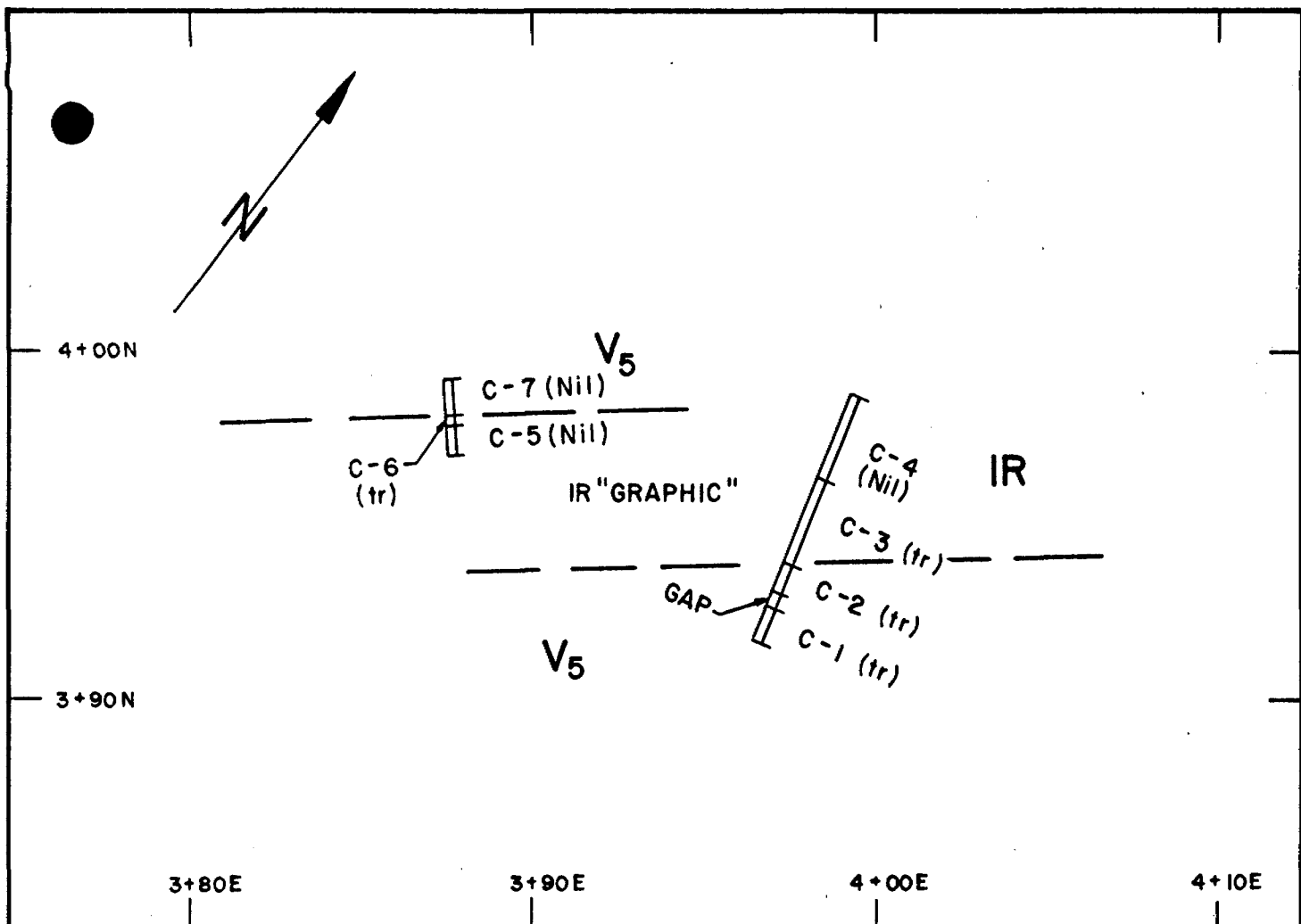


FIGURE NO D			
		MINROC MANAGEMENT LIMITED	
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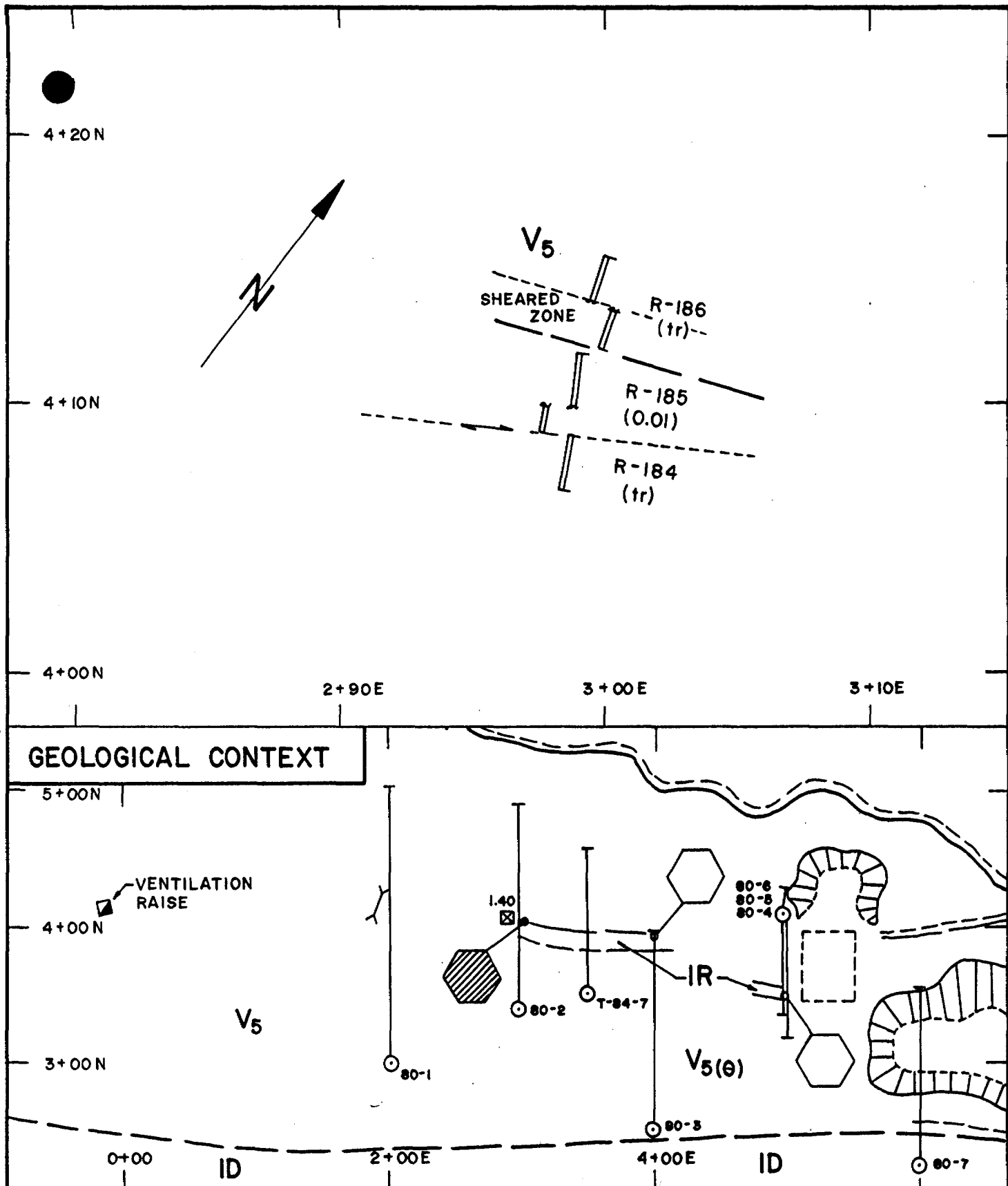
CHANNEL "E"

MINERALIZED ZONE: North
 NUMBER OF SEGMENTS: 5
 TOTAL LENGTH: 9'8"

AREA: 3+00E, 4+10N
 AZIMUTH: approx. 330°
 REF. FIG: "E"

GEOLOGICAL CONTEXT: similar to Channels "B" and "C". Quartz porphyry unit (1R) within mafic volcanics V5.

SAMPLE NO.	TAG NO.	ASSAY Au oz/t	LENGTH INCHES	DESCRIPTION
R-184	4398	tr	28"	greenish-grey, fine grained chloritized and slightly carbonatized 1R w/approx. 1% diss. py
R-185	4399	.01	49"	pale grey, rusty quartz eye porphyry w/minor py, becoming sheared and highly silicified at north contact w/V5
R-186	4400	tr	39"	dark green, fine grained mafic volcanic (V5), including part of shear zone, locally rusty but w/no visible sulphides.



GEOLOGICAL CONTEXT

FIGURE NO E

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 U.T.M. _____ TOWNSHIP LIZAR
 _____ PROVINCE ONT.
 LONG. _____
 LAT. _____
 SCALE: 1" = 100' AND 1" = 5'

CHANNEL "F"

MINERALIZED ZONE: North
 NUMBER OF SEGMENTS: 1
 TOTAL LENGTH: 6'8"

AREA: 0+05E, 5+10N
 AZIMUTH: approx. 325°
 REF. FIG: "F"

GEOLOGICAL CONTEXT: Faulted and partly displaced felsic unit (1R) displaying "graphic" texture within mafic volcanic (V5). Thin 1R horizon north of north zone.

SAMPLE NO.	TAG NO.	ASSAY Au oz/t	LENGTH INCHES	DESCRIPTION
C-8	C-8	tr	16"	dark green, coarse to very coarse grained, sheared V5 w/tr py
C-9	C-9	nil	6"	pale to med. green, chloritized 1R w/tr sulphides. Sheared.
C-10	C-10	0.01	44"	med. to dark grey, fine 1R w/hornblende phenocrysts, exhibiting "graphic texture". The rock becomes granitic and salmon coloured toward C-11.
C-11	C-11	tr	7"	dark green, med. to coarse highly chloritic rock (transition zone, 1R/V5) w/tr py. The rock is slightly sheared.
C-12	C-12	0.01	7"	med.-dark green, fine V5 w/tr py and few q. veinlets

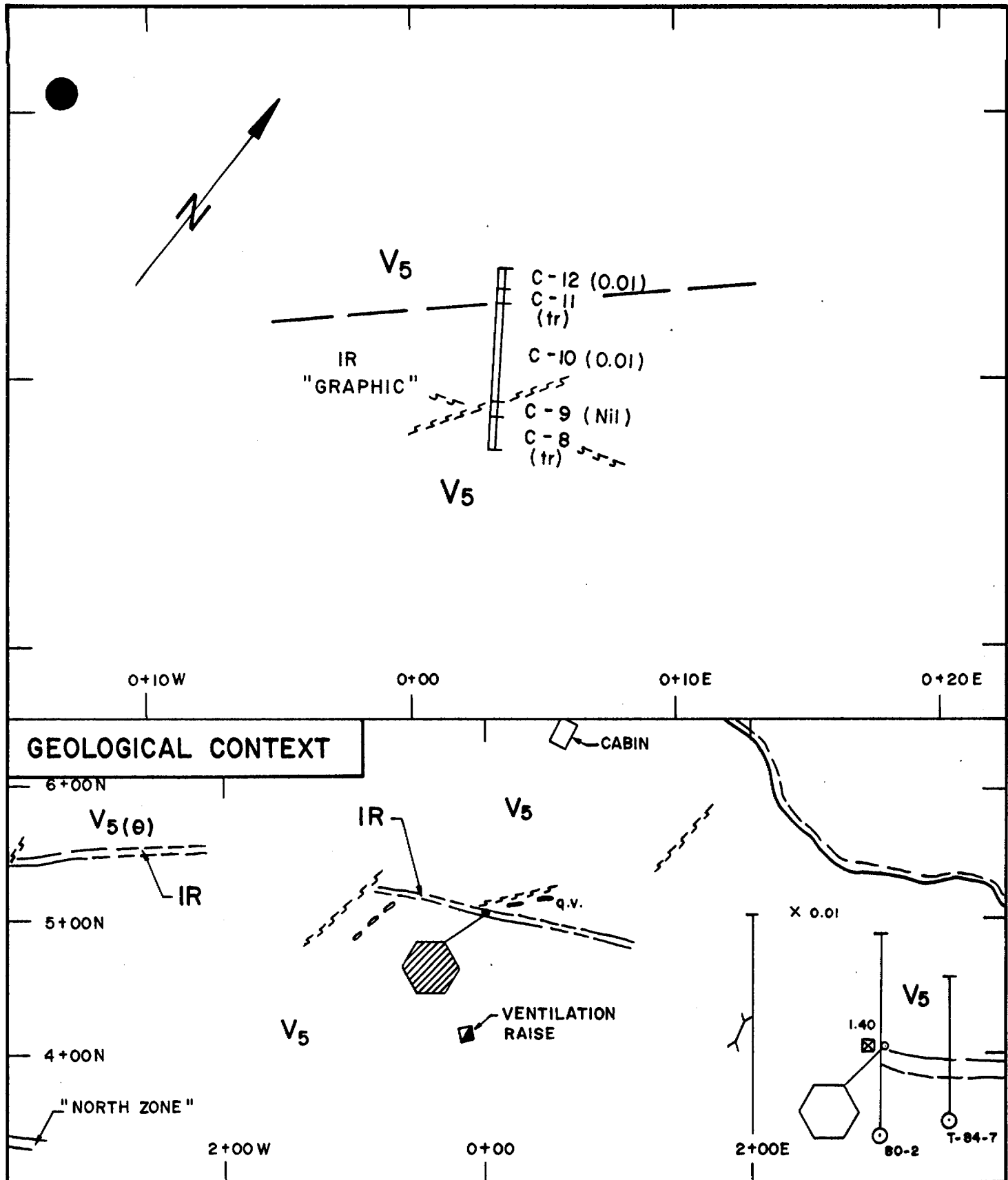


FIGURE NO 80-1 F

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 U.T.M. _____ TOWNSHIP LIZARD
 _____ PROVINCE ONT.
 LONG. _____
 LAT. _____
 SCALE: 1" = 100' AND 1" = 5'

CHANNEL "G"

MINERALIZED ZONE: North
 NUMBER OF SEGMENTS: 1
 TOTAL LENGTH: 6'2"

AREA: 3+80W, 5+42N
 AZIMUTH: approx. 322°
 REF. FIG: "G"

GEOLOGICAL CONTEXT: Similar and on same horizon as Channel F. Faulted felsic unit (1R) displaying "graphic texture" within mafic volcanic (V5).

SAMPLE NO.	TAG NO.	ASSAY Au oz/t	LENGTH INCHES	DESCRIPTION
C-13	C-13	0.01	25"	dark green, fine to med. grained, chloritized V5 w/no app. sulphides
C-14	C-14	nil	34"	med. grey, fine to med. grained 1R w/tr to minor py. Locally, similar to C-10 (Channel F).
C-15	C-15	tr	15"	similar to C-13

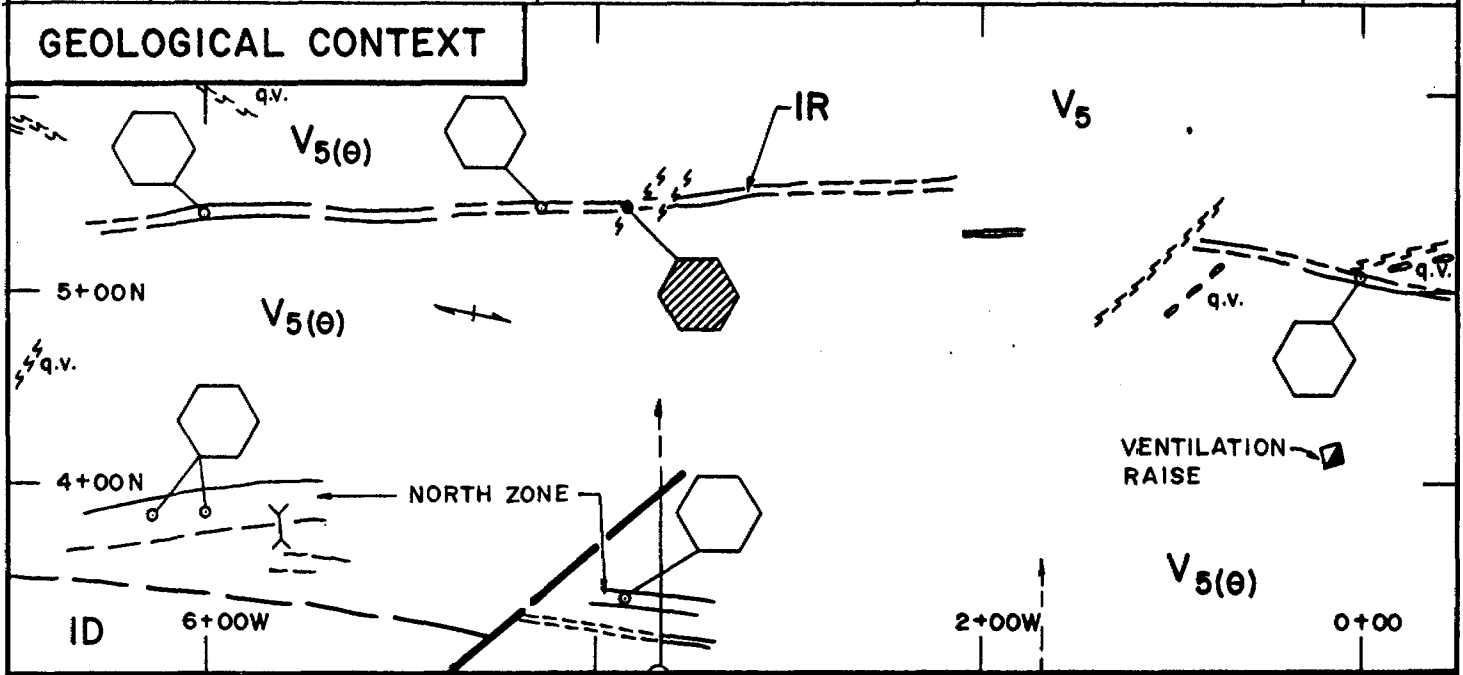
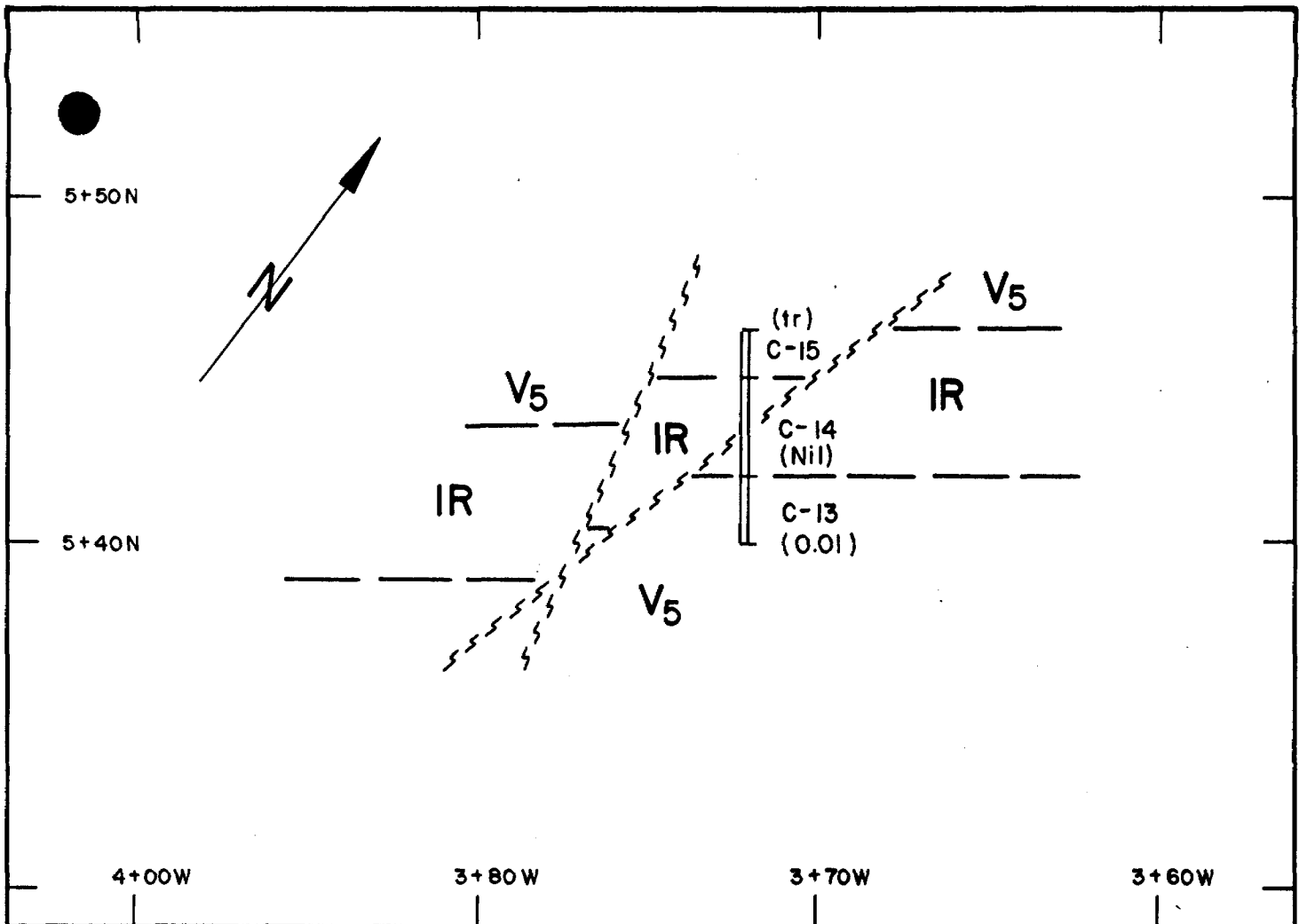


FIGURE NO G

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PROJECT MM-003 N.T.S. _____

U.T.M. _____ TOWNSHIP LIZAR

LONG. _____ PROVINCE ONT.

LAT. _____

SCALE: 1" = 100' AND 1" = 5'

CHANNEL "H"

MINERALIZED ZONE: North
 NUMBER OF SEGMENTS: 1
 TOTAL LENGTH: 13'0"

AREA: 3+80W, 3+40N
 AZIMUTH: approx. 338°
 REF. FIG: "H"

GEOLOGICAL CONTEXT: Approx. 10 foot wide quartz porphyry unit (IR) within mafic volcanic (V5).

SAMPLE NO.	TAG NO.	ASSAY Au oz/t	LENGTH INCHES	DESCRIPTION
C-26	C-26	nil	22"	dark green, fine grained more or less well foliated V5 w/occ. q. veinlets
C-27	C-27	nil	24"	pale to med. grey, fine, massive, silicified IR w/minor py and occ. large biotite books. Rusty weathered surface.
C-28	C-28	tr	24"	similar to above, slightly darker w/occ. bluish quartz phenocrysts
C-29	C-29	tr	23"	as above, slightly foliated w/minor py and tr garnet (?)
C-30	C-30	tr	19"	as above, foliated, vuggy, very rusty in middle of increment (shear zone?)
C-31	C-31	nil	24"	similar to C-29
C-32	C-32	tr	20"	dark green, fine to med. grained, slightly foliated V5 w/no app. sulphides

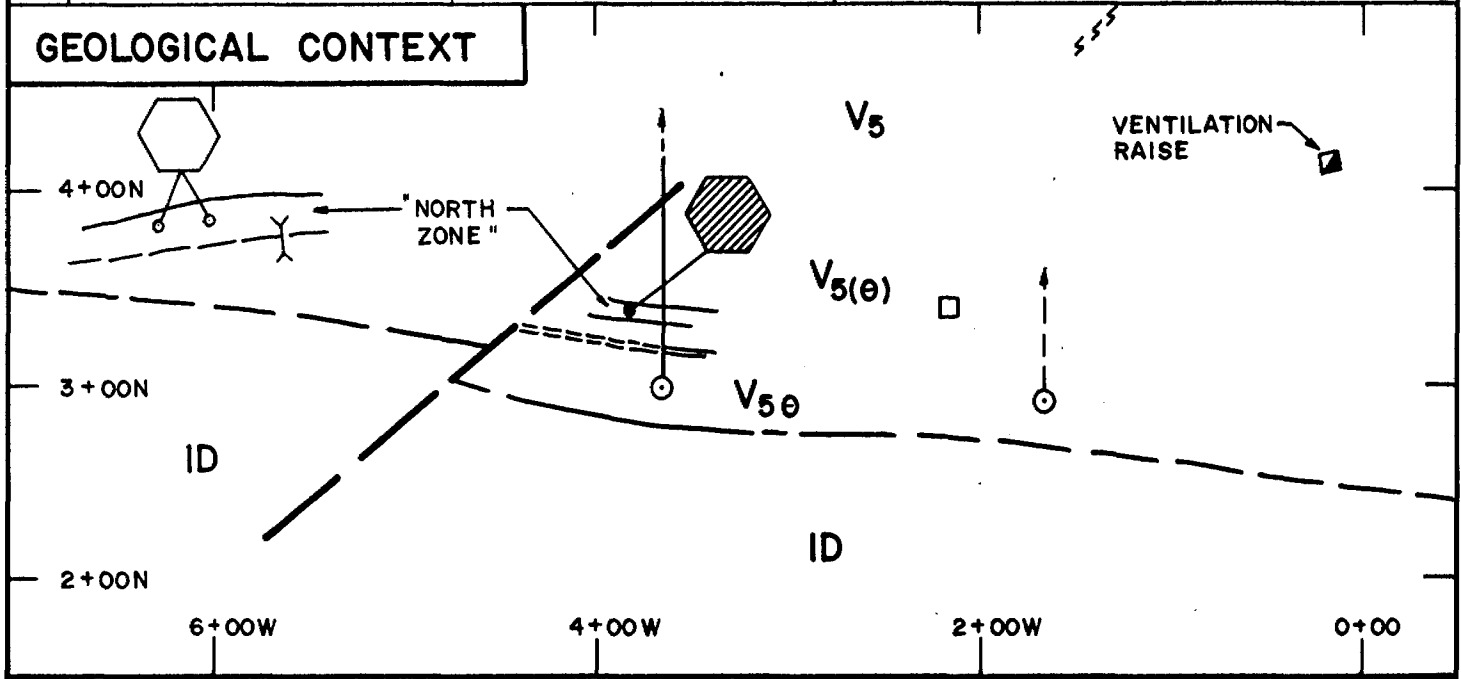
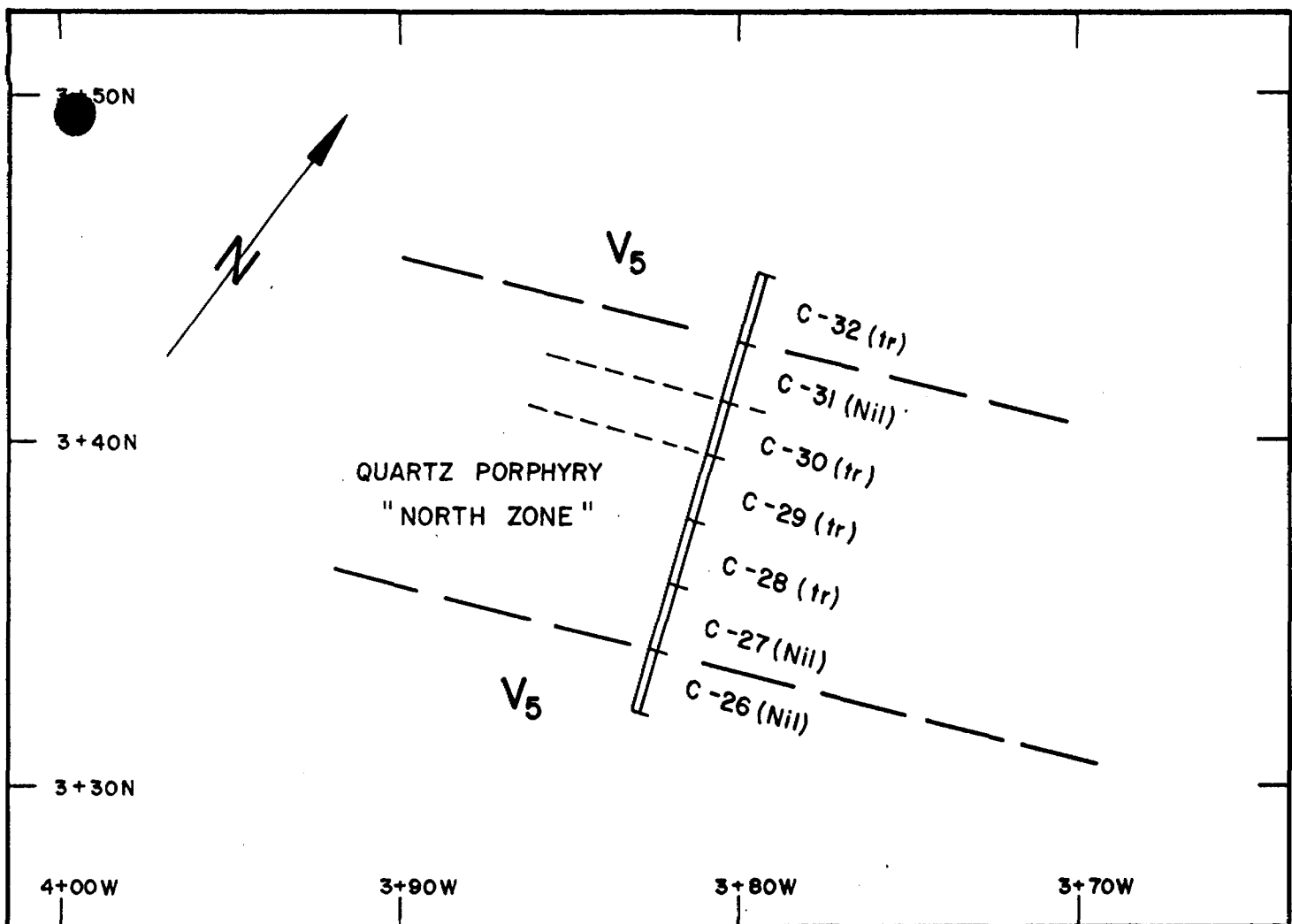


FIGURE NO H

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PROJECT MM-003 N.T.S. _____

U.T.M. _____ TOWNSHIP LIZAR

LONG. _____ PROVINCE ONT.

LAT. _____

SCALE: 1" = 100' AND 1" = 5'

CHANNEL "I"

MINERALIZED ZONE: North
 NUMBER OF SEGMENTS: 1
 TOTAL LENGTH: 4'5"

AREA: 4+30W, 5+32N
 AZIMUTH: approx. 328°
 REF. FIG: "I"

GEOLOGICAL CONTEXT: Approx. 3.5 foot thick felsic metavolcanic unit (1R) displaying "graphic texture" within mafic volcanic (V5). (South contact of 1R unit only).

SAMPLE NO.	TAG NO.	ASSAY Au oz/t	LENGTH INCHES	DESCRIPTION
C-16	C-16	tr	12"	dark green, fine to med. grained chloritized V5 w/no app. sulphides. Similar to C-13 (Channel G).
C-17	C-17	nil	41"	med. grey, fine to med. grained 1R w/tr to minor sulphides locally and w/app. 2% large hornblende crystals. Similar to C-10 and C-14.

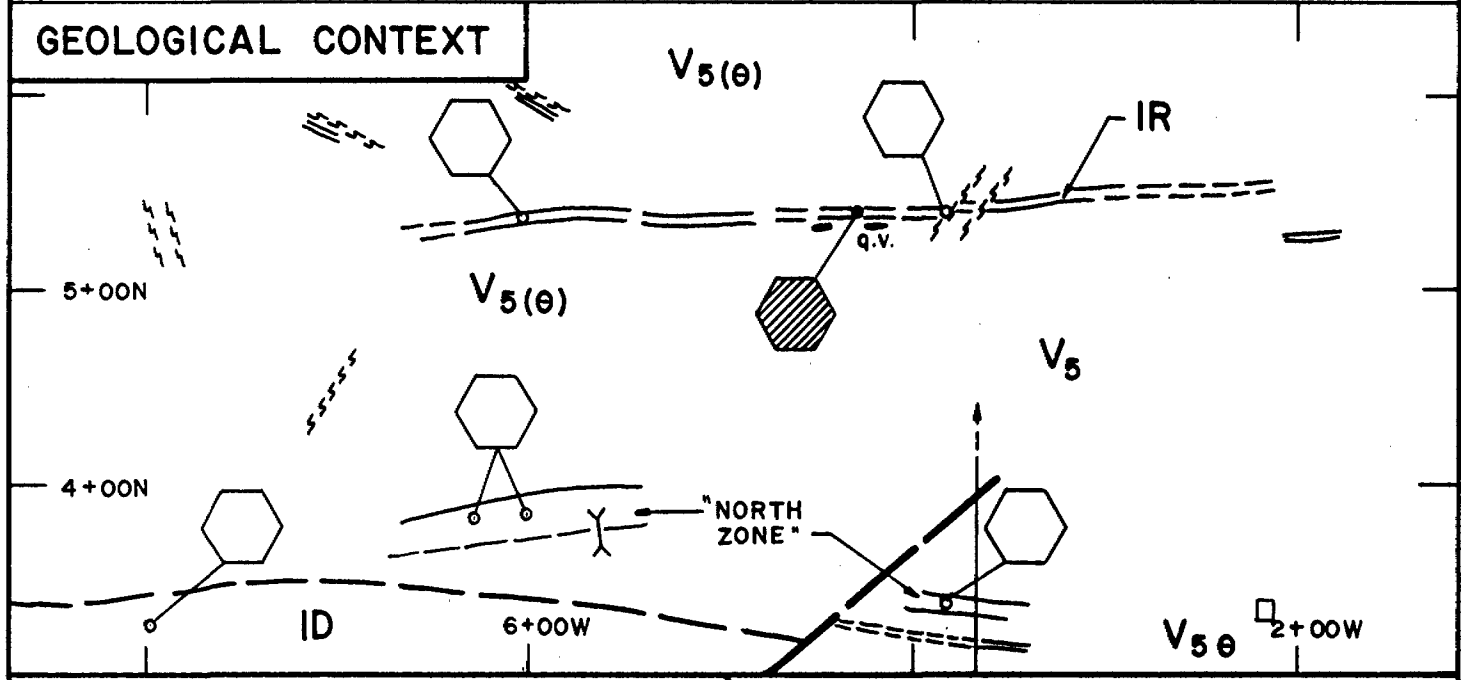
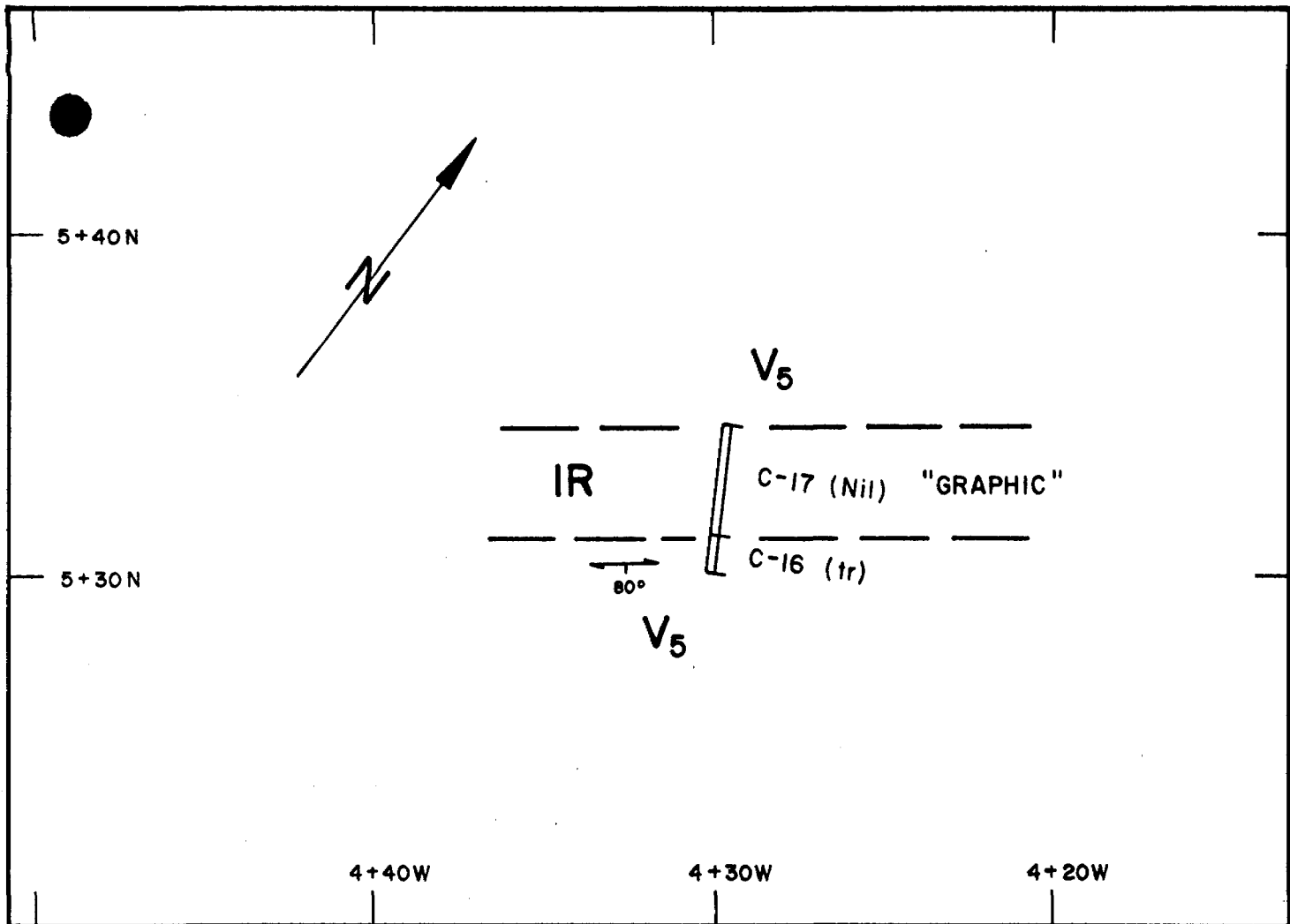


FIGURE NO 1

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U.T.M. _____ TOWNSHIP LIZARD

PROVINCE ONT.

LONG. _____

LAT. _____

SCALE: 1" = 100' AND 1" = 5'

CHANNEL "J"

MINERALIZED ZONE: North
 NUMBER OF SEGMENTS: 5
 TOTAL LENGTH: 20"2"

AREA: 6+10W, 3+85N
 AZIMUTH: approx. 322°
 REF. FIG: "J"

GEOLOGICAL CONTEXT: Part of quartz porphyry felsic unit (1R) within mafic volcanic (V5). North contact only.

SAMPLE NO.	TAG NO.	ASSAY Au oz/t	LENGTH INCHES	DESCRIPTION
C-20	C-20	tr	18"	pale to med. green, silicified and chloritized 1R w/tr py. Highly broken and rusty.
C-21	C-21	tr	14"	pale green, fine, slightly sericitized, 1R w/tr py. Buff coloured weathered surface.
C-22	C-22	nil	24"	similar to C-21
C-23	C-23	tr	24"	same as above except more weathered
C-24	C-24	0.01	24"	similar to C-21
C-25	C-25	nil	24"	light greenish-grey, fine grained massive silicified 1R w/tr py and occ. q. veinlets
C-33	C-33	nil	24"	pale greenish-grey, fine silicified and sericitized 1R w/tr to minor py, few magnetite crystals and w/few diss. quartz phenocrysts
C-34	C-34	tr	24"	same as above
C-35	C-35	nil	30"	similar to C-33, however, slightly darker w/minor to 1/4% py
C-36	C-36	nil	12"	contact zone; "dirty" med. green w/pink feldspar, fine to med. grained 1R/V5 hybrid, rusty but w/no app. sulphides (gradual contact w/C-37)
C-37	C-37	nil	20"	dark green, fine grained V5 w/local q. veinlets

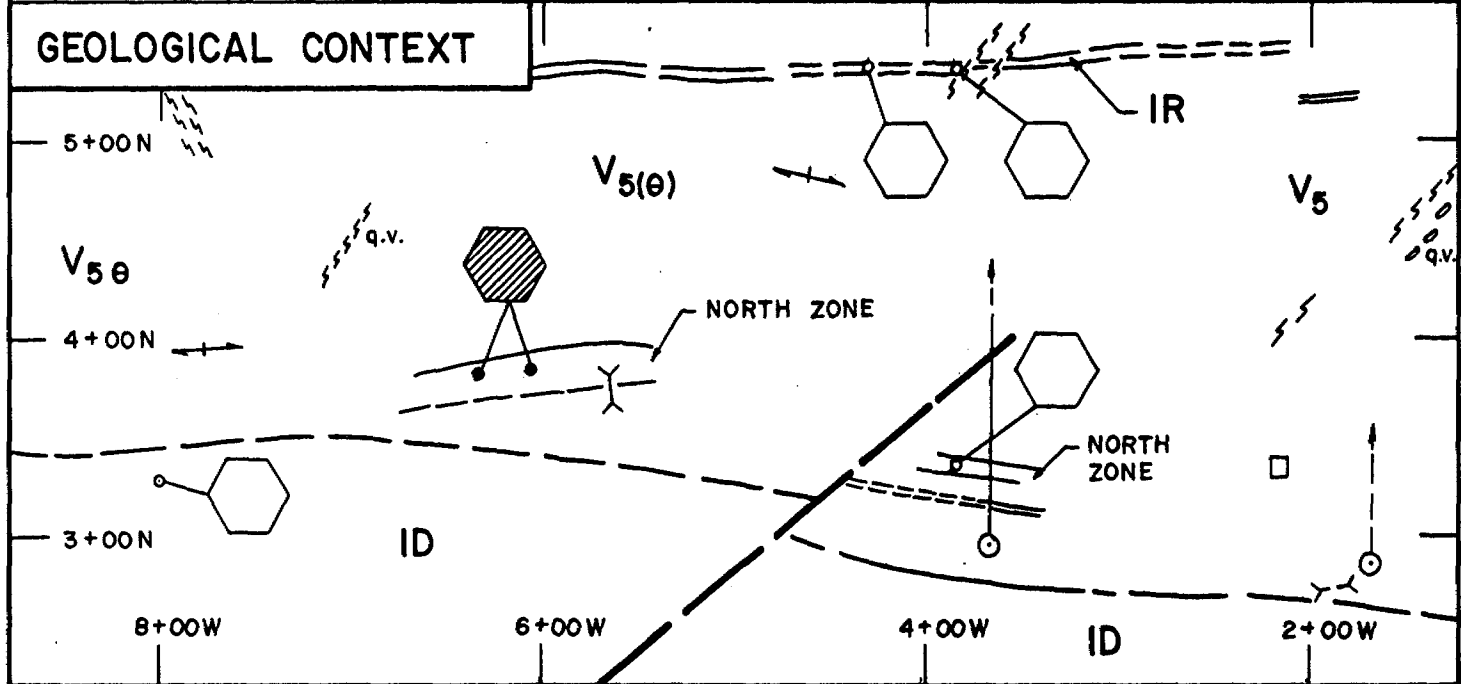
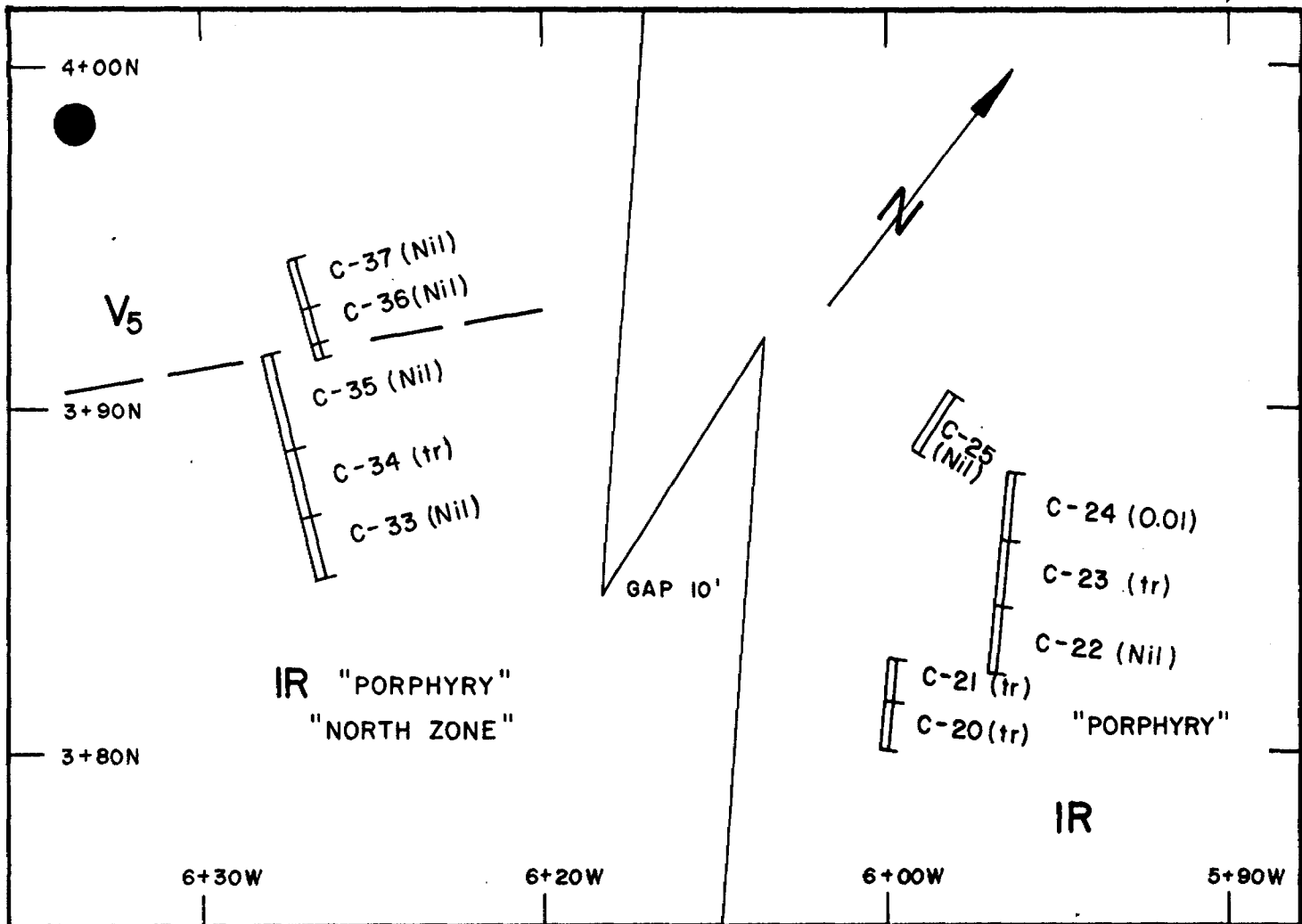


		FIGURE NO		J
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CHANNEL "K"

MINERALIZED ZONE:	North	AREA:	6+00W, 5+40N
NUMBER OF SEGMENTS:	2	AZIMUTH:	approx. 322°
TOTAL LENGTH:	5'6"	REF. FIG:	"K"

GEOLOGICAL CONTEXT: Approx. 5.5 foot wide felsic unit (1R) displaying "graphic texture" within mafic volcanic (V5).

SAMPLE NO.	TAG NO.	ASSAY Au oz/t	LENGTH INCHES	DESCRIPTION
C-18	C-18	nil	32"	similar to C-10, C-14. Ref. description Channels F and G.
C-19	C-19	0.01	34"	same

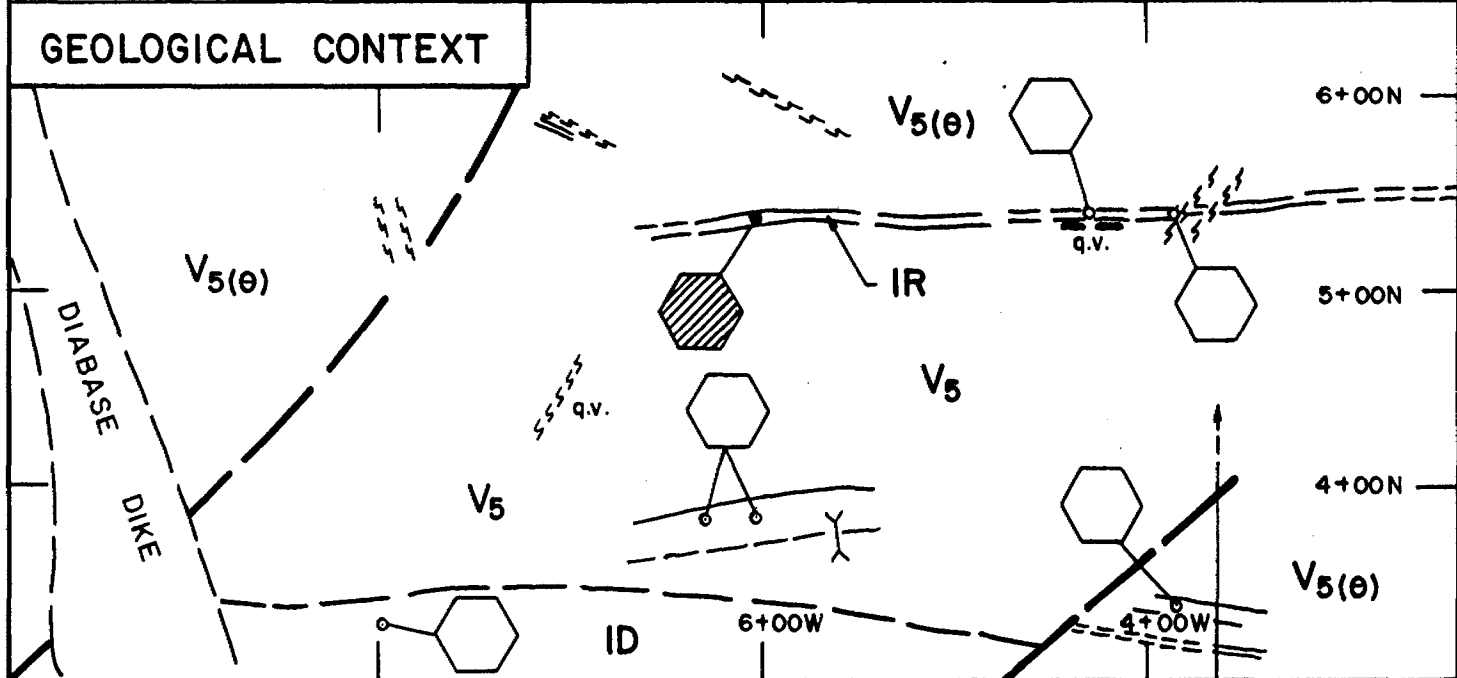
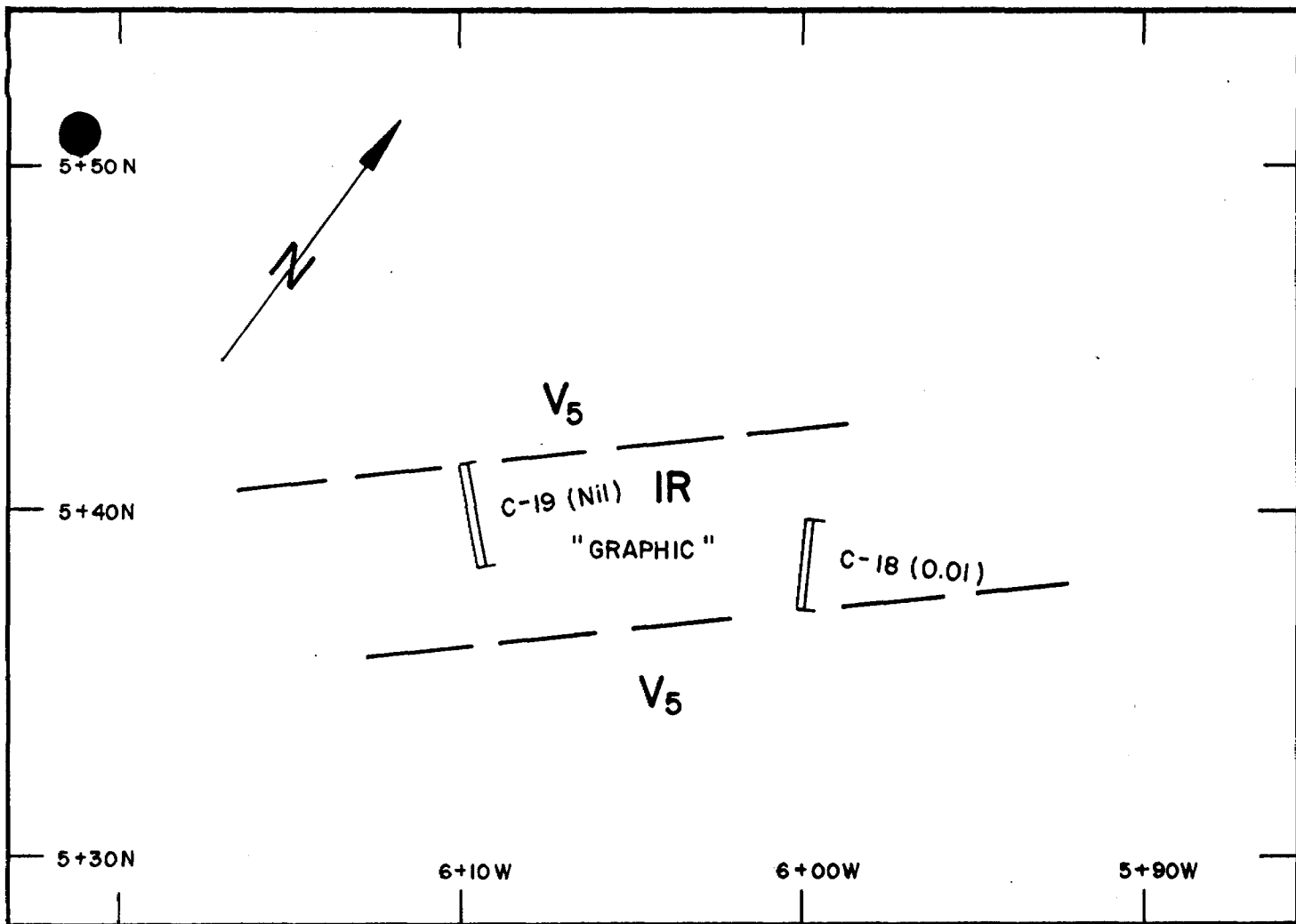


FIGURE NO K

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PROJECT MM-003

U.T.M. _____

LONG. _____

LAT. _____

SCALE: 1" = 100' AND 1" = 5'

N.T.S. _____

TOWNSHIP LIZAR

PROVINCE ONT

CHANNEL "L"

MINERALIZED ZONE: North
 NUMBER OF SEGMENTS: 3
 TOTAL LENGTH: 20'11"

AREA: 17+00W, 2+50N
 AZIMUTH: approx. 320°
 REF. FIG: "L"

GEOLOGICAL CONTEXT: 15 to 17' thick, locally sheared, greenish, fine to medium grained chloritized quartz porphyry (1R) within mafic volcanic (V5).

SAMPLE NO.	TAG NO.	ASSAY Au oz/t	LENGTH INCHES	DESCRIPTION
R-125	4304	tr	24"	partially silicified and sheared V5
R-126	4305	tr	5"	white, highly silicified 1R w/ q. veins
R-127	4306	nil	36"	greenish, well foliated, fine to med. grained, chloritized 1R w/minor py along foliation planes
R-128	4307	nil	18"	same as above except that rock is slightly epidotized and contains q. and epidote stringers parallel to shear zone located south. High % py.
R-129	4308	nil	36"	greenish, fine, chloritized 1R w/minor py along foliation planes
R-130	4309	nil	30"	same as above
R-131	4310	tr	30"	same as above w/minor py
R-132	4311	tr	36"	same as above; however, epidotized w/epidote stringers
R-133	4312	tr	12"	contact zone w/2 to 3" of highly silicified and rusted 1R
R-134	4313	nil	24"	green, fine to med. grained V5

CHANNEL "M"

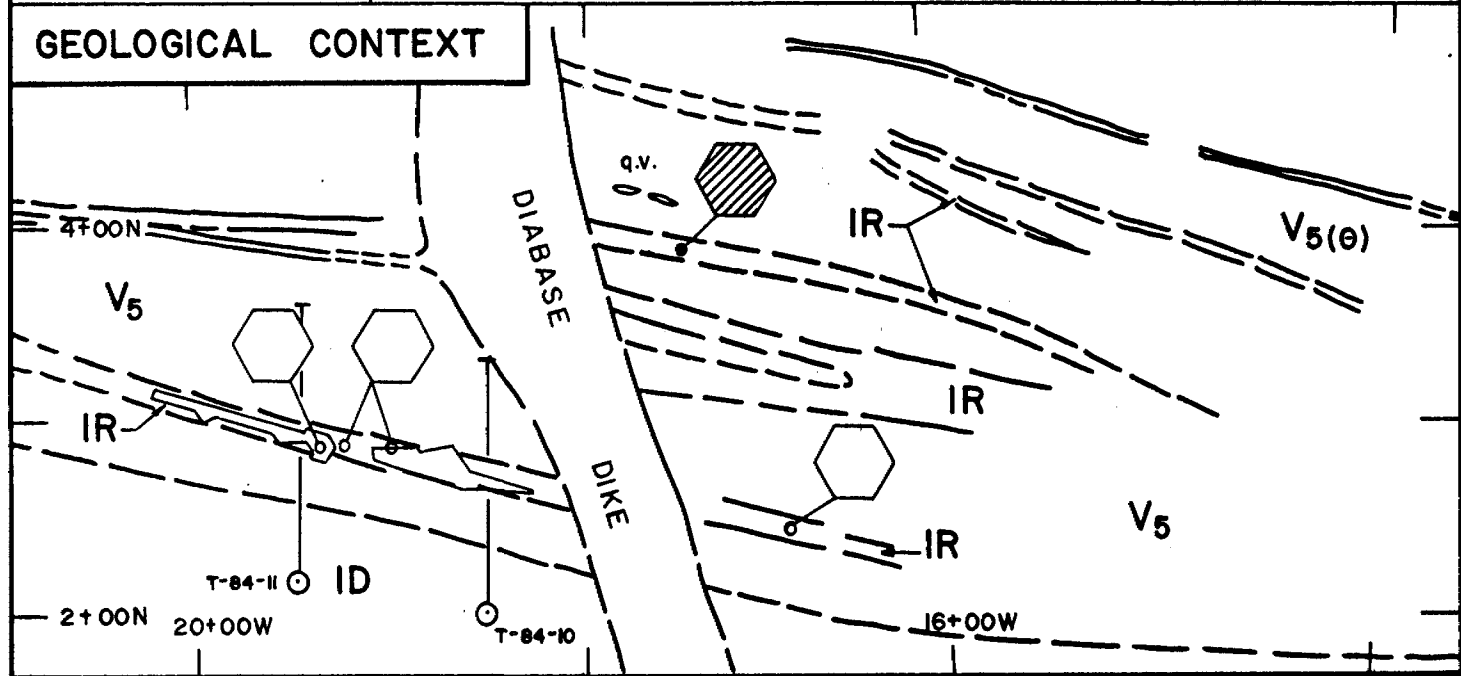
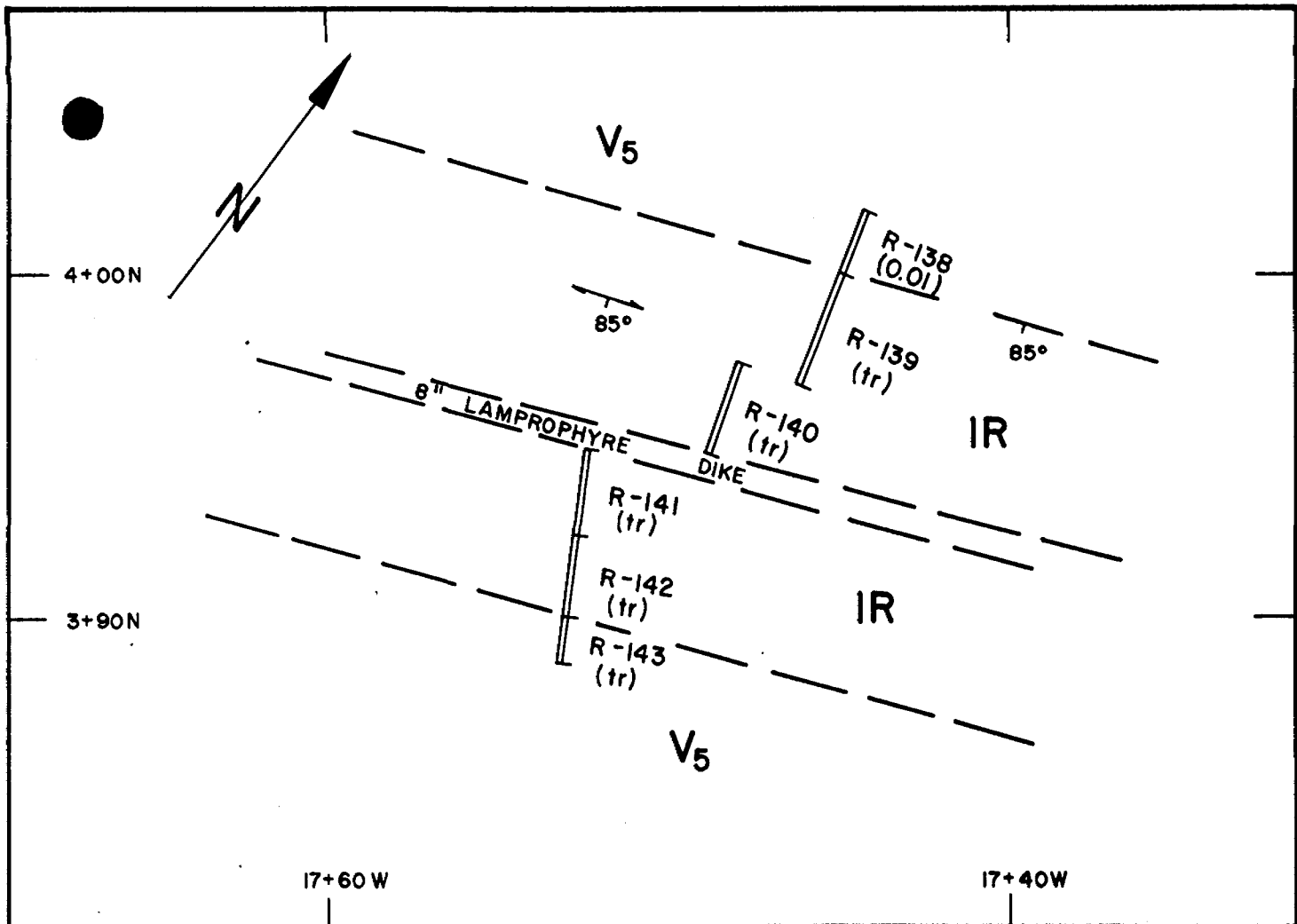
MINERALIZED ZONE: North
 NUMBER OF SEGMENTS: 3
 TOTAL LENGTH: 21'8"

AREA: 17+50W, 4+00N
 AZIMUTH: approx. 340°
 REF. FIG: "M"

GEOLOGICAL CONTEXT: 12' thick greenish grey fine grained felsic metavolcanic (1R) within mafic volcanics (V5). Similar to the quartz porphyry of the Main Pit area.

SAMPLE NO.	TAG NO.	ASSAY Au oz/t	LENGTH INCHES	DESCRIPTION
R-138	4317	0.01	22"	dark green, fine grained V5 on north side of 1R/V5 contact
R-139	4318	tr	36"	greenish-flesh coloured, med. grained "granitic" chloritized 1R w/occ. py crystals. The rock is locally rusty. Note 3" of rock missing as 1R/V5 contact.
R-140	4319	tr	32"	similar to above, however, foliated. The rock contains numerous q. phenocrysts (up to 8-10 mm). Minor py.
R-141	4320	tr	30"	same as above
R-142	4321	tr	30"	similar to above but with increased amount of q. and feldspar (f) phenocrysts and chlorite content. Grain size decreasing southward toward 1R/V5 contact.
R-143	4322	tr	20"	partly silicified, dark green V5. Similar to R-138.

NOTE: 1R intruded close to its center by an 8" lamprophyre dike running parallel to 1R/V5 contact.



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		MINROC MANAGEMENT LIMITED PROJECT <u>MM-003</u> U.T.M. _____ LONG. _____ LAT. _____ SCALE: 1" = 100' AND 1" = 5'		N.T.S. _____ TOWNSHIP <u>LIZAR</u> PROVINCE <u>ONT.</u>	

CHANNEL "N"

MINERALIZED ZONE: North
 NUMBER OF SEGMENTS: 2
 TOTAL LENGTH: 3'9"

AREA: 18+35W, 2+65N
 AZIMUTH: - ? -
 REF. FIG: "N"

GEOLOGICAL CONTEXT: Quartz porphyry felsic unit (1R) within mafic volcanic (V5). Eastward prolongation of 1R unit in main pit (Channels P & Q) (south contact of 1R).

SAMPLE NO.	TAG NO.	ASSAY Au oz/t	LENGTH INCHES	DESCRIPTION
R-265	4429	tr	32"	pale greenish-grey, fine grained, highly silicified 1R w/minor fine diss. py. Rusty-red weathered surface.
R-266	4430	tr	13"	dark green fine grained V5 w/felsic stringers. Minor py.

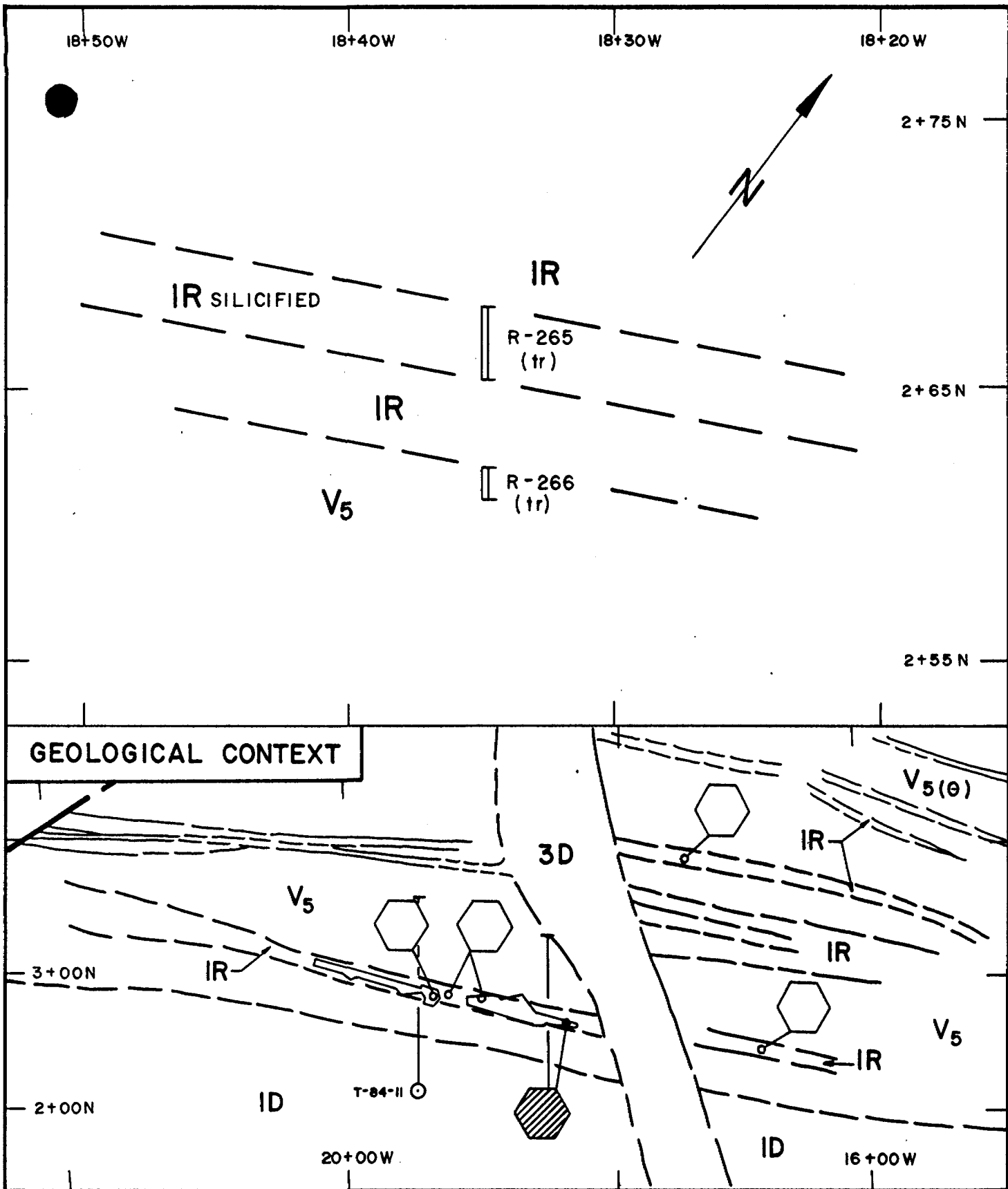


		FIGURE NO		N
		MINROC MANAGEMENT LIMITED		
DRAFTED BY <u>B. FALLADA</u>	DATE <u>DEC. 1983</u>	PROJECT <u>MM-003</u>	N.T.S.	
INTERPRETED BY <u>M.A. LEONARD</u>	<u>DEC. 1983</u>	U.T.M. _____	TOWNSHIP <u>LIZAR</u>	_____
APPROVED BY _____	_____	LONG. _____	PROVINCE <u>ONT.</u>	_____
REVISED _____	_____	LAT. _____		
_____	_____	SCALE: <u>1" = 100'</u> AND <u>1" = 5'</u>		

CHANNEL "0"

MINERALIZED ZONE: North
 NUMBER OF SEGMENTS: 2
 TOTAL LENGTH: 4'7"

AREA: 18+75W, 2+80N
 AZIMUTH: - ? -
 REF. FIG: "0"

GEOLOGICAL CONTEXT: Quartz porphyry felsic unit (1R) within mafic volcanic (V5). Eastward prolongation of 1R unit in main pit (Channels P & Q)

SAMPLE NO.	TAG NO.	ASSAY Au oz/t	LENGTH INCHES	DESCRIPTION
R-263	4427	0.01	26"	light-grey, fine grained, silicified blue quartz eye porphyry w/up to 1/2% finely diss. py with local py conc. along foliation planes. Rusty-red weathered surface.
R-264	4428	tr	29"	similar to above except that no py was observed

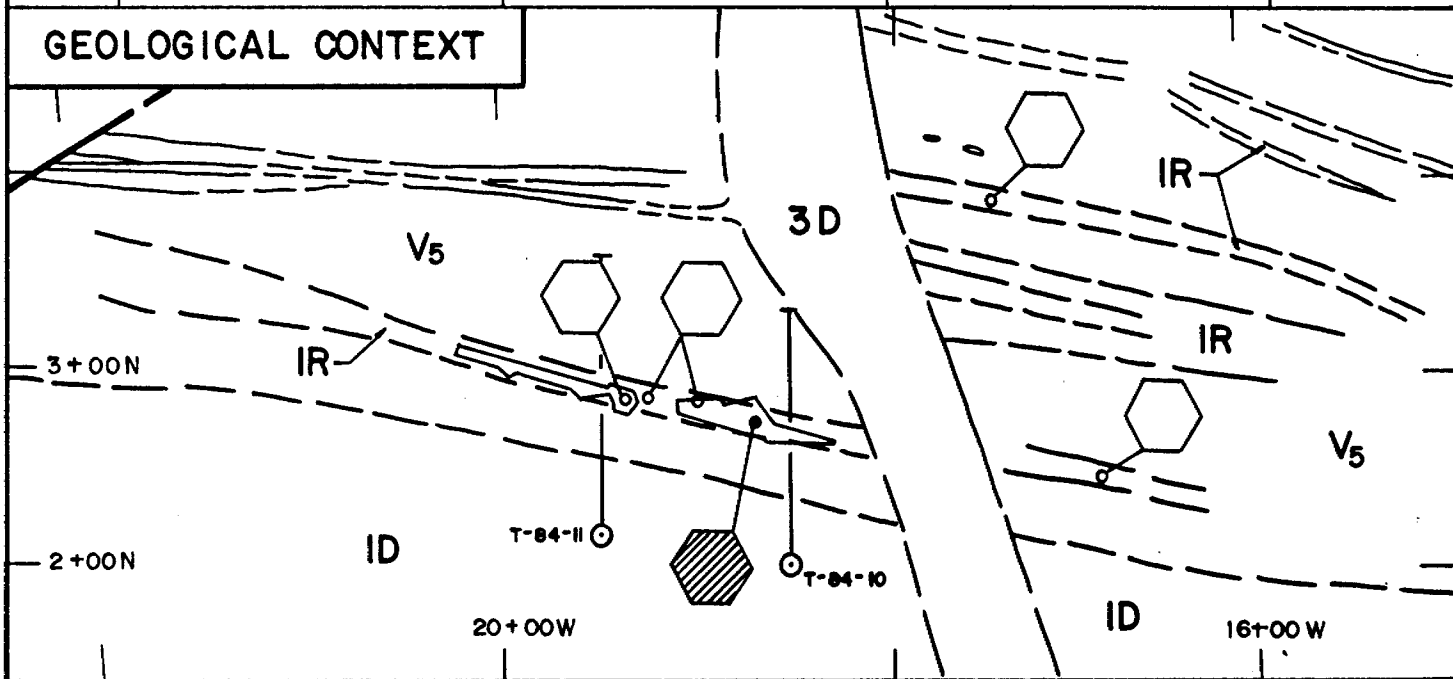
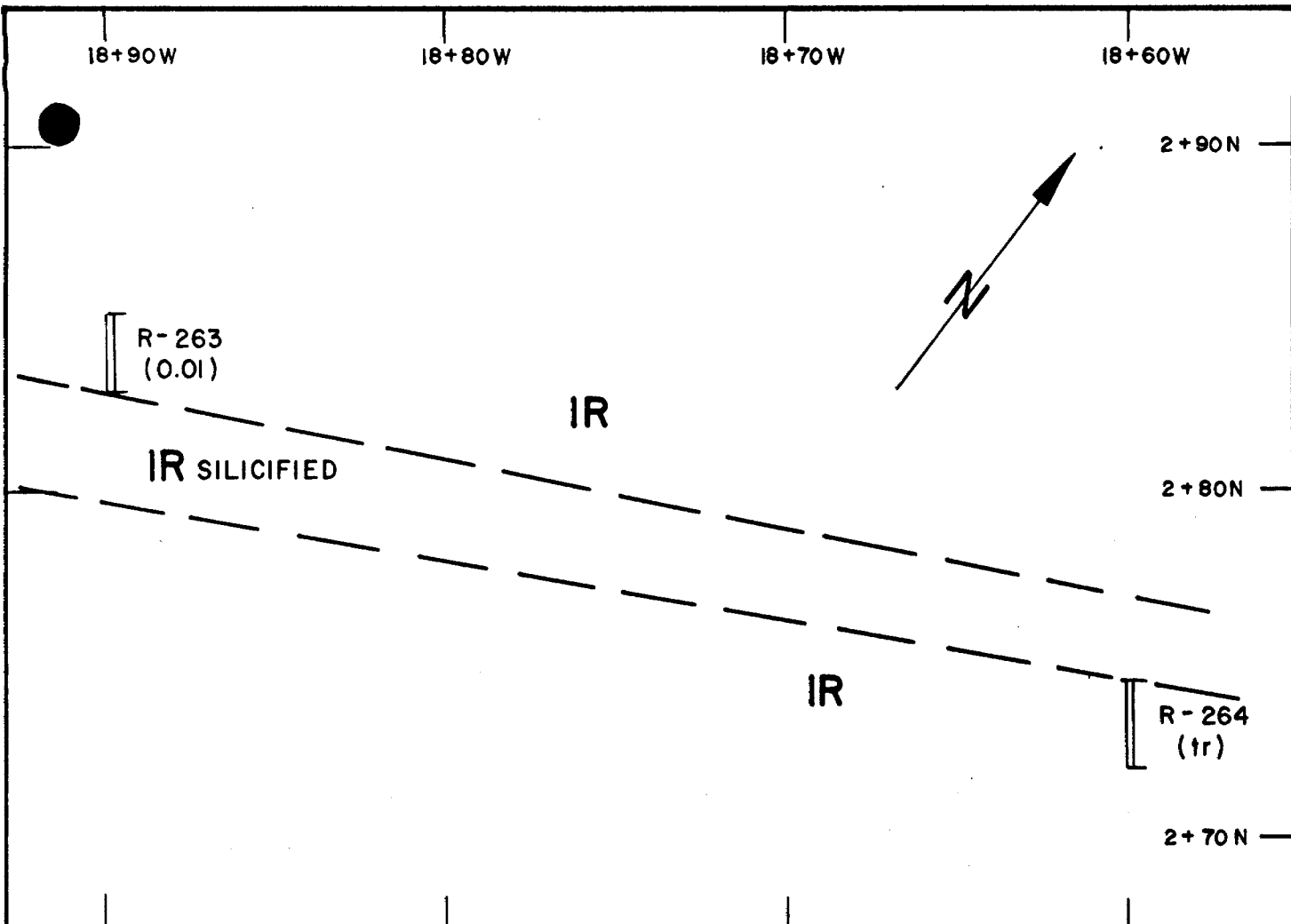


FIGURE NO 0

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MINROC MANAGEMENT LIMITED

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U.T.M. _____

LONG. _____

LAT. _____

SCALE: 1" = 100' AND 1" = 5'

N.T.S. _____

TOWNSHIP LIZAR

PROVINCE ONT.

CHANNEL "P" (1 + 2)

MINERALIZED ZONE: North
 NUMBER OF SEGMENTS: 2
 TOTAL LENGTH: 8'8"

AREA: Main Pit
 AZIMUTH: approx. 320°
 REF. FIG: "P"

GEOLOGICAL CONTEXT: Sampling of north portion of approx. 10' thick pale grey, fine, silicified quartz porphyry (1R) w/diss. pyrite within mafic volcanics (V5) adjacent to main pit.

SAMPLE NO.	TAG NO.	ASSAY Au oz/t	LENGTH INCHES	DESCRIPTION
R-41	4243	0.063	8"	q. with 1-2% py from 8" q.v. in 1R
R-42	4244	2.240	16"	silicified 1R w/2-3% sulphides
R-43	4245	0.004	48"	silicified 1R w/tr py north of q.v.
R-44	4246	0.027	8"	q. w/1-2% py from 8" q.v. in silicified 1R
R-45	4247	0.009	24"	pale grey, fine silicified 1R w/1-2% diss. py

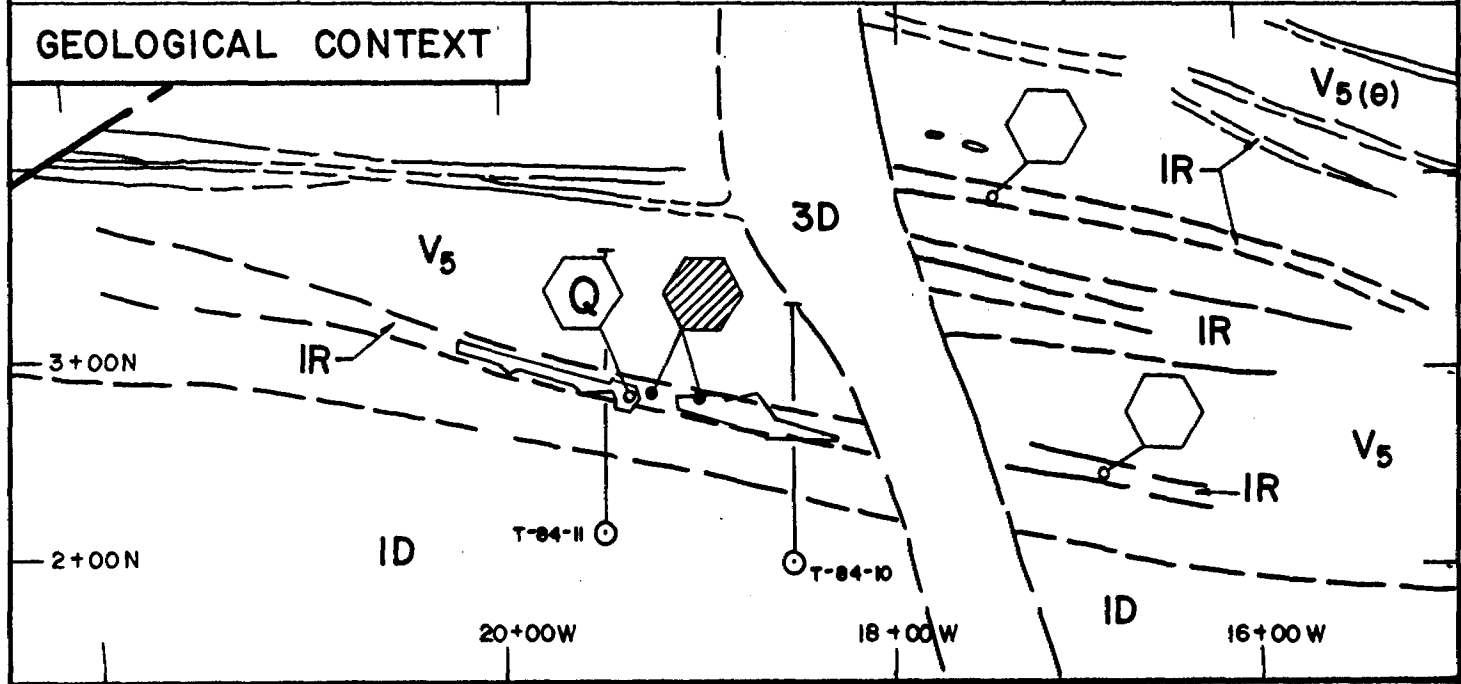
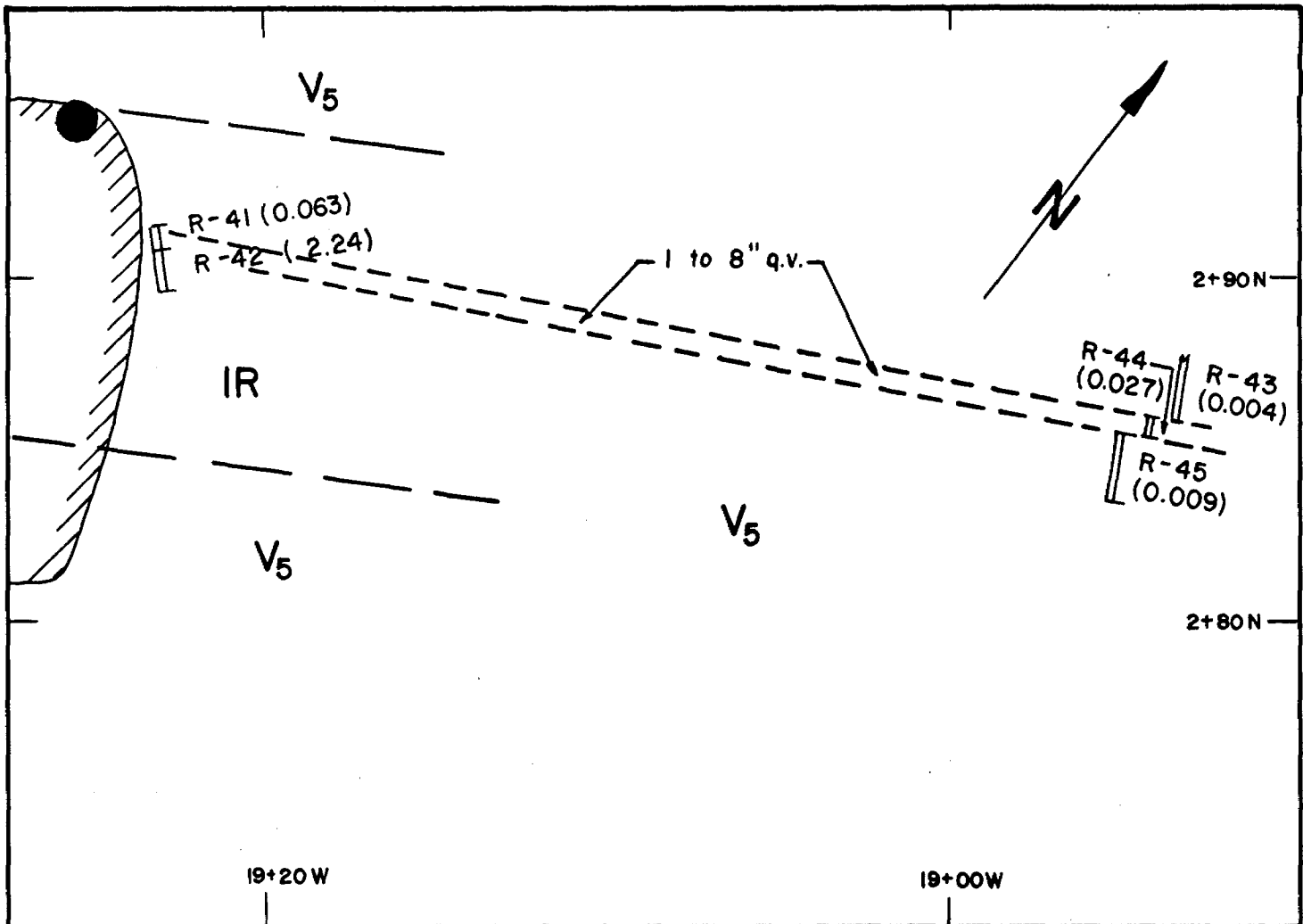


		FIGURE NO		P
		MINROC MANAGEMENT LIMITED		
DRAFTED BY <u>B. FALLADA</u>	DATE <u>DEC. 1983</u>	PROJECT <u>MM-003</u>	N.T.S. _____	
INTERPRETED BY <u>M.A. LEONARD</u>	<u>DEC. 1983</u>	U.T.M. _____	TOWNSHIP <u>LIZAR</u>	
APPROVED BY _____	_____	LONG. _____	PROVINCE <u>ONT.</u>	
REVISED _____	_____	LAT. _____		
		SCALE: <u>1" = 100'</u> AND <u>1" = 5'</u>		

CHANNEL "Q" (1-10) (MAIN PIT)

MINERALIZED ZONE: North
 NUMBER OF SEGMENTS: 10
 TOTAL LENGTH: 31'3"

AREA: 19+30W, 2+90N
 AZIMUTH: approx. 333°
 REF. FIG: "Q"

GEOLOGICAL CONTEXT: Northern part of approx. 10" wide quartz eye porphyry felsic horizon located at approximately 2700 feet SW of mine shaft and formerly known as the West Zone. Channel samples were taken at bottom of main pit after extracting approximately 8 feet of "muck".

SAMPLE NO.	TAG NO.	ASSAY Au/oz t	LENGTH INCHES	SAMPLE NO.	TAG NO.	ASSAY Au oz/t	LENGTH INCHES
R-258	4422	tr	9"	R-252	4416	0.01	6"
R-259	4423	tr	22"	R-253	4417	tr	24"
R-260	4424	0.02	16"	R-193	4407	tr	6"
R-261	4425	tr	5"	R-194	4408	0.07	4"
R-262	4426	0.02	10"	R-195	4409	0.06	16"
R-100	4355	tr	14"	R-196	4410	tr	7"
R-151	4356	0.01	14"	R-197	4411	0.01	7"
R-152	4357	0.01	12"	R-198	4412	tr	13"
R-99	4354	tr	13"	R-187	4401	0.01	9"
R-257	4421	0.01	12"	R-188	4402	0.01	10"
R-98	4353	tr	15"	R-189	4403	tr	9"
R-254	4418	tr	6"	R-190	4404	0.01	6"
R-255	4419	0.02	15"	R-191	4405	0.01	9"
R-256	4420	tr	16"	R-192	4406	0.01	10"
R-199	4413	tr	4"	R-154	4359	tr	5"
R-273	4414	0.04	9"	R-155	4360	tr	13"
R-251	4415	0.01	12"	R-153	4358	tr	17"

SEE DESCRIPTION, FOLLOWING PAGE

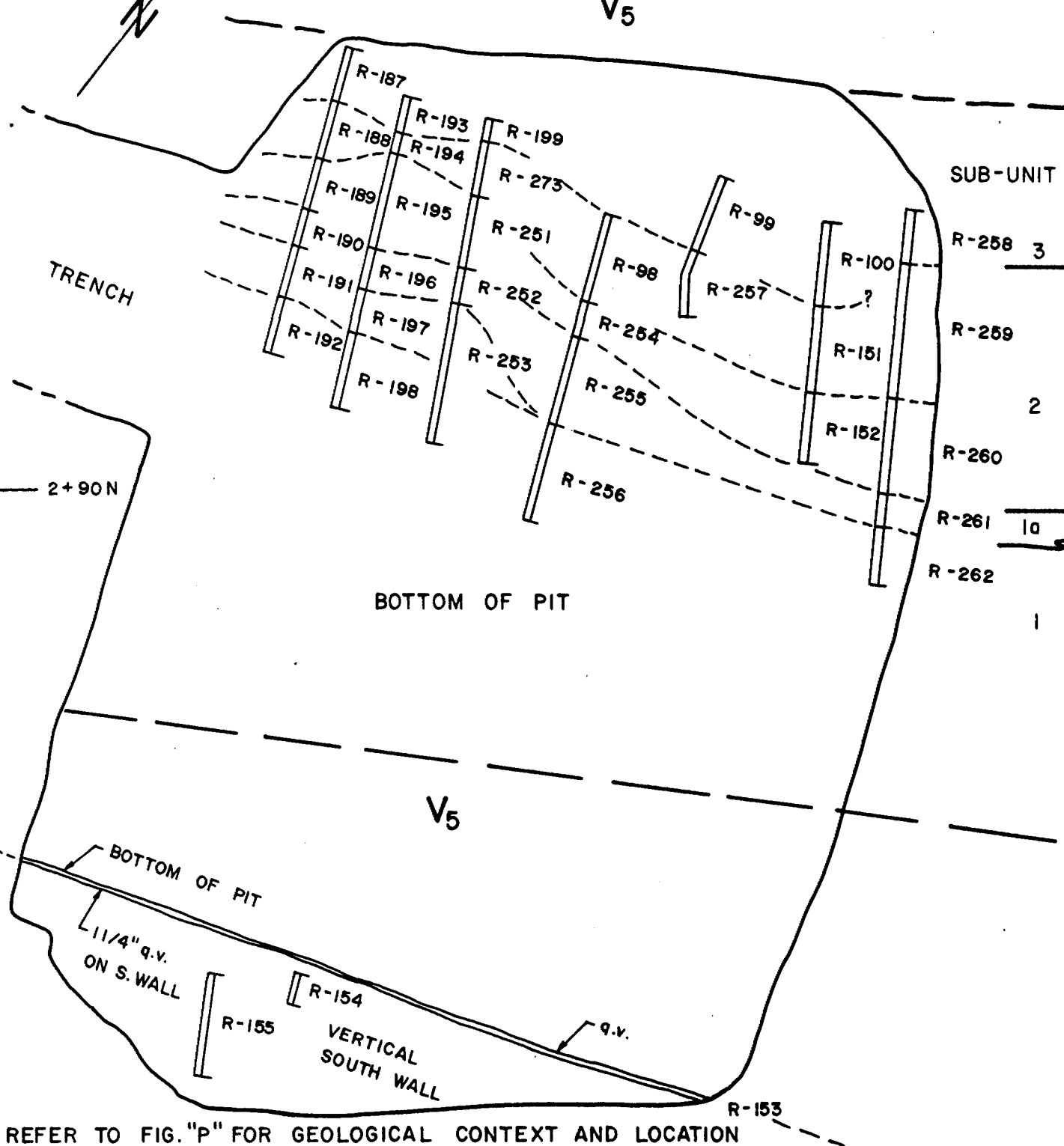
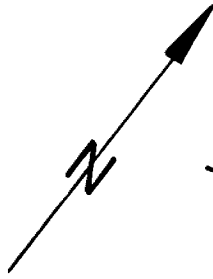
CHANNEL "Q"

GENERAL DESCRIPTION OF 1R SUB-UNITS

- SUB-UNIT 1: R-series, sample numbers 262-256, 198 and 192. Generally light greenish-grey, fine grained, silicified and slightly sericitized quartz-porphyry w/5 to 10% large bluish slightly elongated quartz grains. The rock generally contains minor fine disseminated py. The rock is locally rusty.
- SUB-UNIT 1a: Samples R-191-197 and 253. Same as above except that silicification is higher and that the rock contains veinlets of quartz and carbonate.
- SUB-UNIT 2: Light grey, fine grained, highly silicified and sericitized quartz porphyry horizon w/up to 1% fine diss. py. (Samples R-260-152-254-251-195-189) flanked by sheared quartz rich veins w/sericite, local carbonate and up to locally 10% py, w/occasional conc. of galena. (To the south, samples R-261-255-252-196 and 190; to the north, samples R-259-151-257-98-273-194 and 188).
- SUB-UNIT 3: Light to med. grey, fine grained silicified "blue quartz-eye" porphyry w/occ. q. stringers and minor diss. py. Similar to sub-unit 1 (samples R-258-100-99-199-193 and 187).

Samples R-153 and 154 (Channel) - milky quartz w/carbonate from 1 1/2" q.v. from mafic volcanic (V5) (channel sample R-155). No visible sulphides.

V5



2+90N

TRENCH

BOTTOM OF PIT

V5

BOTTOM OF PIT

1 1/4" q.v.
ON S. WALL

R-154
R-155
VERTICAL
SOUTH WALL

q.v.

R-153

SUB-UNIT

R-258 3

R-259

2

R-260

R-261 10

R-262

1

REFER TO FIG. "P" FOR GEOLOGICAL CONTEXT AND LOCATION

FIGURE NO

Q

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PROJECT MM-003

N.T.S. _____

U.T.M. _____

TOWNSHIP LIZAR

LONG. _____

PROVINCE ONT.

LAT. _____

SCALE: 2' = 1"

CHANNEL "R"

MINERALIZED ZONE: North
 NUMBER OF SEGMENTS: 3
 TOTAL LENGTH: 27'8"

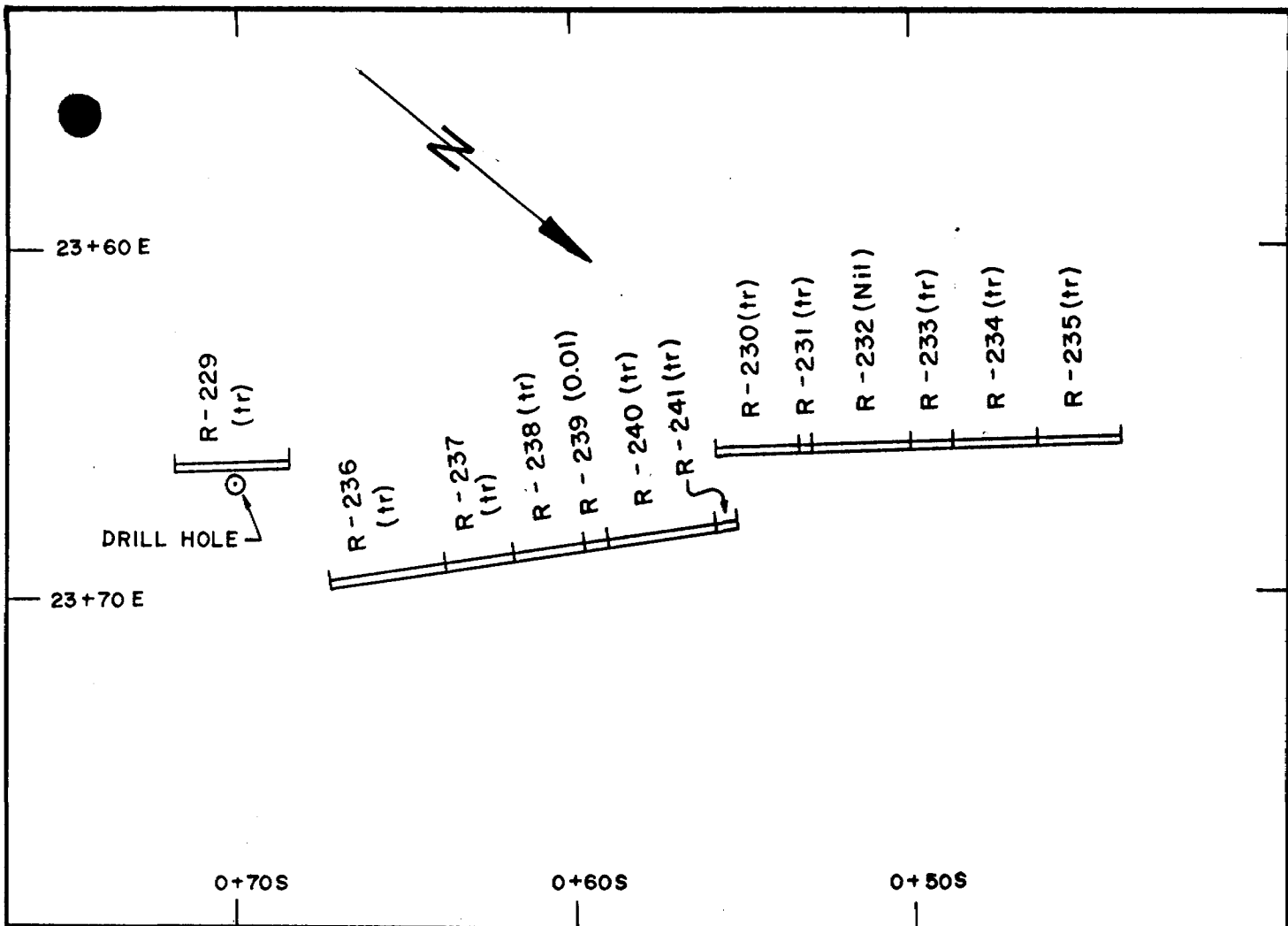
AREA: 23+70E, 0+58S
 AZIMUTH: approx. 320°
 REF. FIG: "R"

GEOLOGICAL CONTEXT: highly sheared granodiorite (1D) w/numerous q.v. Rusty horizon.

SAMPLE NO.	TAG NO.	ASSAY Au oz/t	LENGTH INCHES	DESCRIPTION
R-229	4448	tr	40"	light grey, fine to med. grained, sericitized biotite 1D w/local q. veinlets and tr py. The rock is locally carbonatized.
R-230	4449	tr	30"	similar to above w/tr py and q. veinlets up to 1/4"
R-231	4450	tr	4"	milky q. from q.v. within 1D. No apparent sulphides.
R-232	4451	nil	36"	med. grey, med. to fine grained slightly foliated and sericitized biotite 1D w/tr py
R-233	4452	tr	14"	sugary q. from 1/4" q. veinlet running almost parallel to surface. Tr py.
R-234	4453	tr	30"	med. grey, fine to medium grained slightly chloritized and sericitized biotite 1D w/tr py
R-235	4454	tr	30"	similar to above
R-236	4455	tr	42"	greenish-grey, med. to fine grained, chloritized, partly sericitized 1D w/tr py and w/q. phenocrysts
R-237	4456	tr	24"	similar to above except more sericitized
R-238	4457	tr	26"	greenish, fine grained silicified and chloritized 1D w/minor biotite and tr py

CHANNEL "R"
(continued)

SAMPLE NO.	TAG NO.	ASSAY Au oz/t	LENGTH INCHES	DESCRIPTION
R-239	4458	0.01	8"	light greenish-grey, rusty silicified 1D w/py (rusty shear zone)
R-240	4459	tr	38"	similar to R-238
R-241	4460	tr	10"	rusty, med. to coarse grained biotite 1D w/q.v. and tr py



GEOLOGICAL CONTEXT

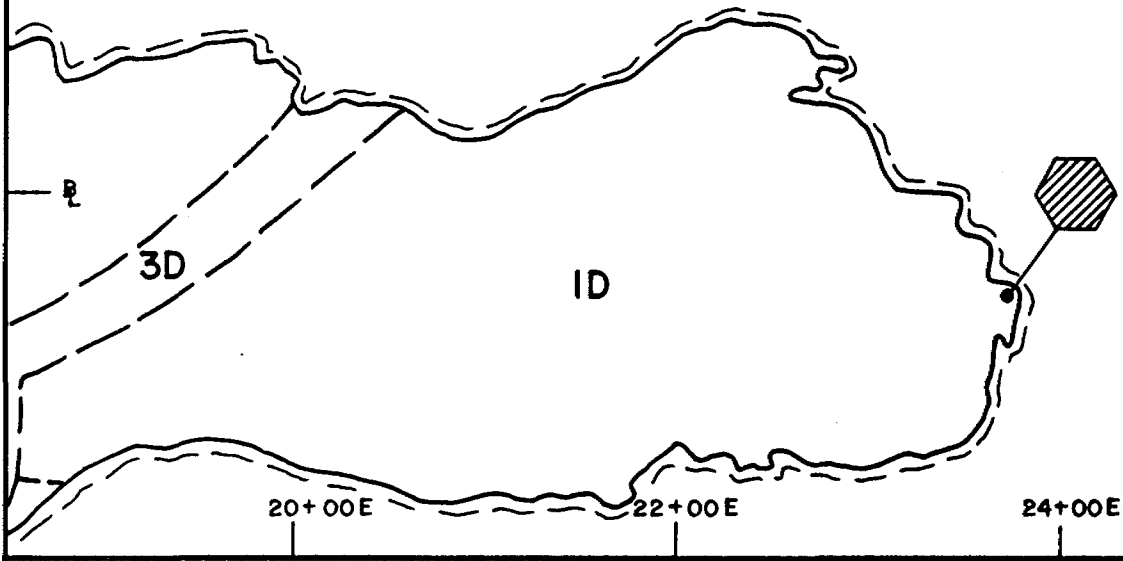


FIGURE NO **R**

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MINROC MANAGEMENT LIMITED
 PROJECT MM-003 N.T.S. _____
 U.T.M. _____ TOWNSHIP LIZAR
 _____ PROVINCE ONT.
 LONG. _____
 LAT. _____
 SCALE: 1" = 100' AND 1" = 5'

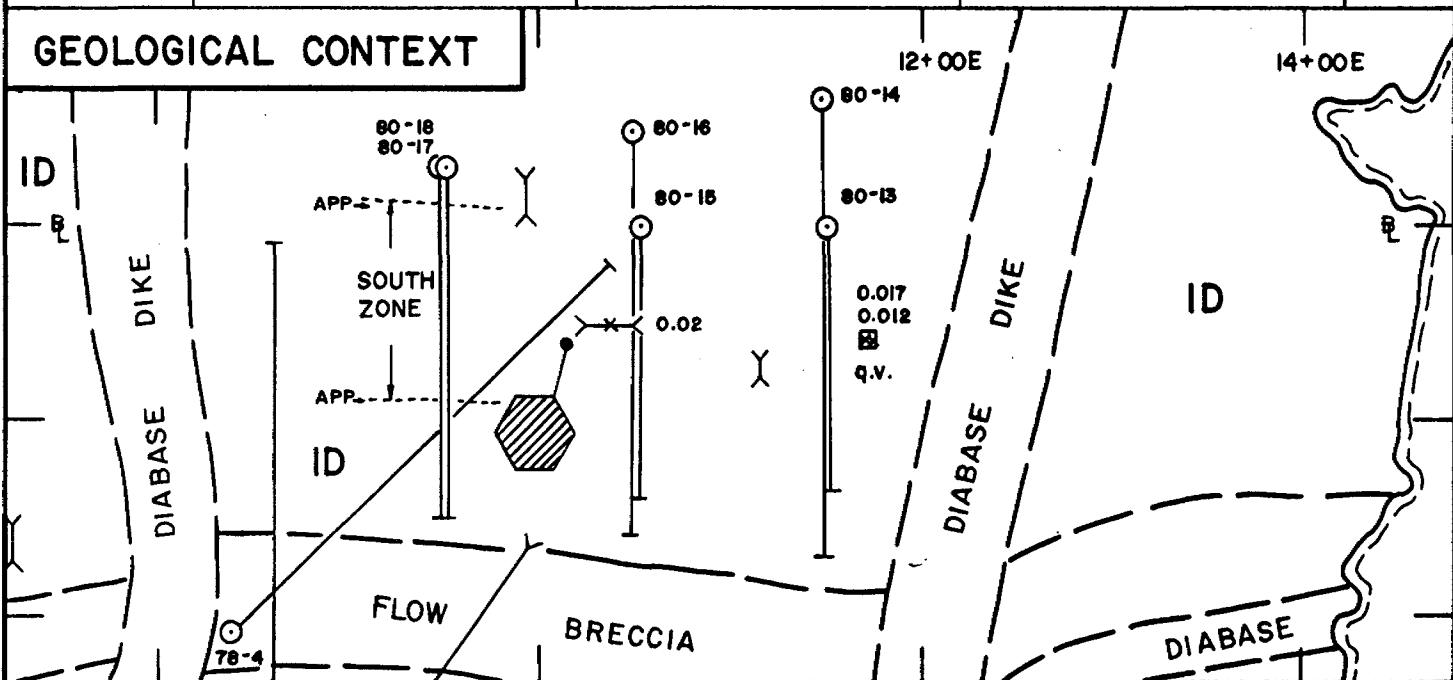
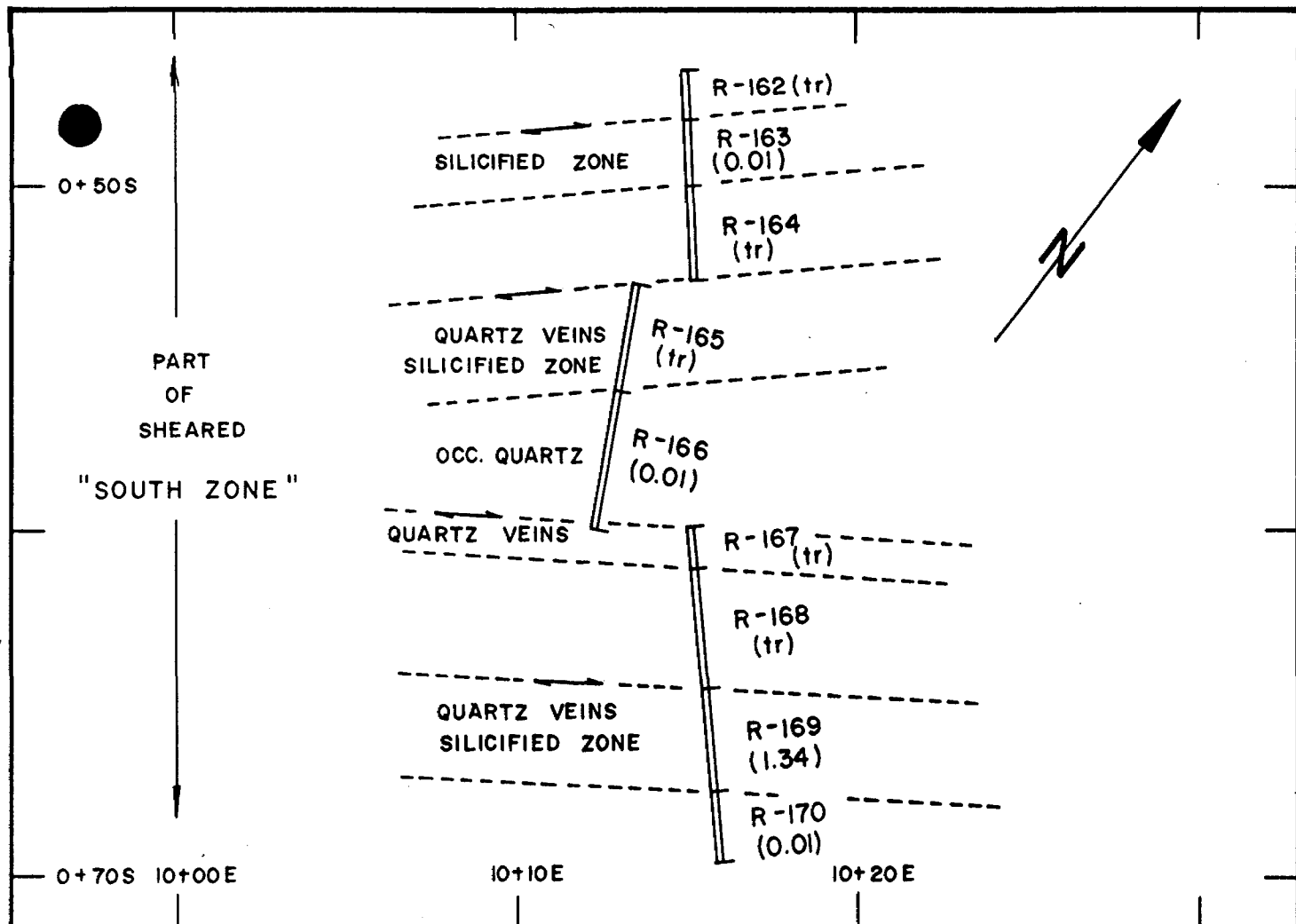
CHANNEL "S"

MINERALIZED ZONE: South
 NUMBER OF SEGMENTS: 3
 TOTAL LENGTH: 24'1"

AREA: 10+15E, 0+60S
 AZIMUTH: approx. 317°
 REF. FIG: "S"

GEOLOGICAL CONTEXT: Part of mineralized south zone. Silicified and sericitized granodiorite (1D) with lenticular quartz veins and veinlets and with trace or minor sulphides

SAMPLE NO.	TAG NO.	ASSAY Au oz/t	LENGTH INCHES	DESCRIPTION
R-162	4367	tr	18"	med. grained, pinkish granodiorite (1D)
R-163	4368	0.01	18"	rusty, med. to fine grained, silicified granodiorite w/thin q.v. (up to 1/2") and w/minor py
R-164	4369	tr	36"	greenish-pink homogeneous silicified and sericitized 1D
R-165	4370	tr	38"	similar to above but w/glassy to milky q.v. Minor rust.
R-166	4371	0.01	48"	med. grey, med. grained 1D w/occ. q.v. Local q. and feldspar phenocrysts. No visible sulphides.
R-167	4372	tr	32"	same as above
R-168	4373	tr	32"	med. grey, med. grained "gneissic" 1D w/local pink feldspar
R-169	4374	1.35/ 1.28	38"	highly silicified and sericitized 1D w/lenticular q.v. up to 8" thick and 5' long. Local smaller q.v. and pods.
R-170	4375	0.01	29"	med. to light grey, med. grained 1D w/occ py and q. phenocrysts. Locally rusty.



GEOLOGICAL CONTEXT

FIGURE NO S

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PROJECT MM-003 N.T.S. _____
 U.T.M. _____ TOWNSHIP LIZAR
 _____ PROVINCE ONT.
 LONG. _____
 LAT. _____
 SCALE: 1" = 100' AND 1" = 5'

CHANNEL "T"

MINERALIZED ZONE: South
 NUMBER OF SEGMENTS: 1
 TOTAL LENGTH: 7'3"

AREA: 2+60W, 1+40N
 AZIMUTH: approx. 333°
 REF. FIG: "T"

GEOLOGICAL CONTEXT: Part of mineralized south zone. Shear zone. Lenticular quartz veins (q.v.) w/minor to 1-2% py and galena in silicified and sericitized granodiorite 1D. Local horizons of quartz. Sericite schist.

SAMPLE NO.	TAG NO.	ASSAY Au oz/t	LENGTH INCHES	DESCRIPTION
R-171	4367	0.01	32"	50/50 rusted quartz from q.v. and highly silicified and sericitized 1D w/finely diss. py.
R-172	4377	tr	24"	same as above, however less silicified
R-173	4378	0.01	31"	light grey, fine grained, occ. rusted silicified 1D w/no visible sulphides

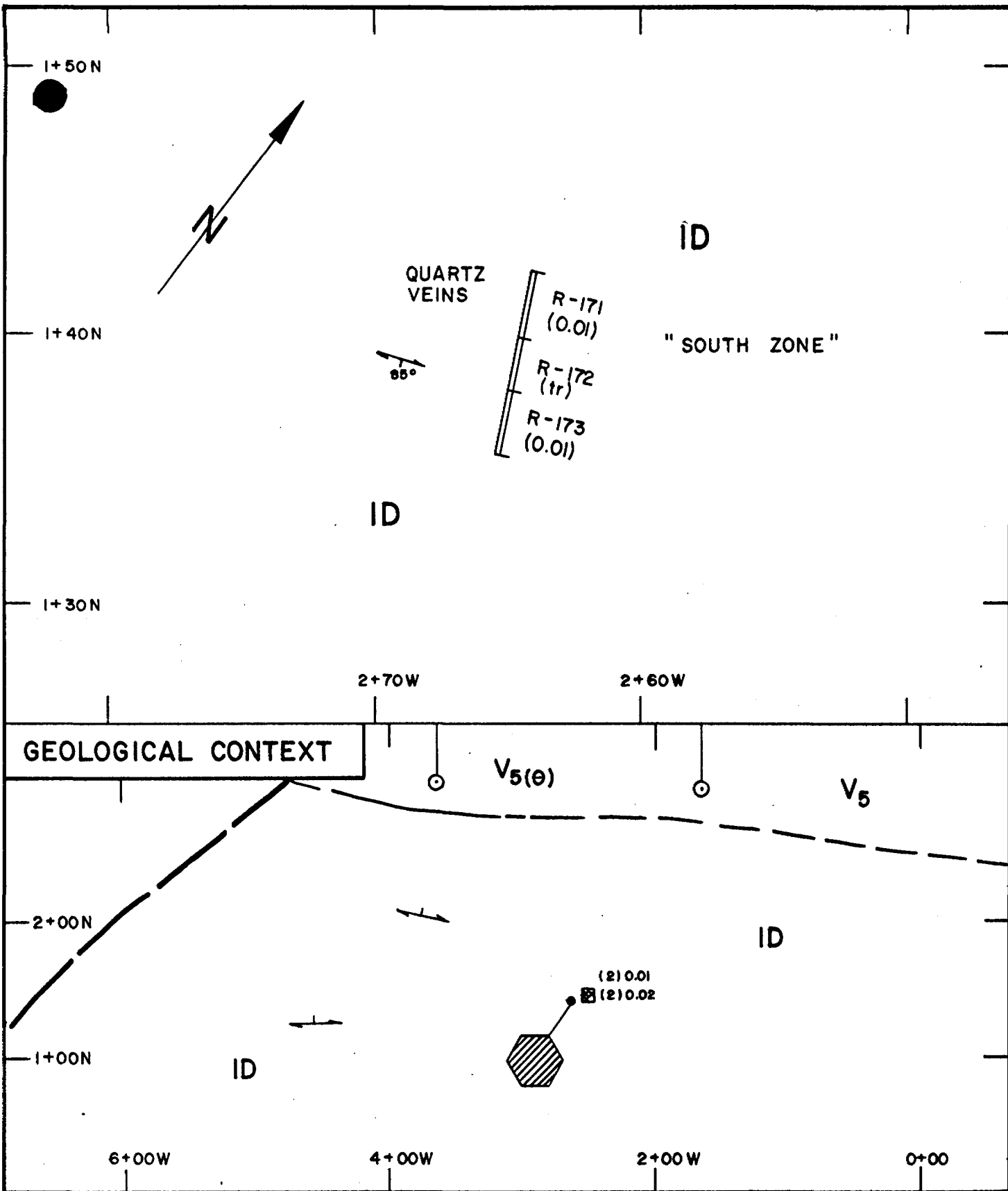


FIGURE NO T

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MINROC MANAGEMENT LIMITED

PROJECT MM-003

U.T.M. _____

LONG. _____

LAT. _____

SCALE: 1" = 100' AND 1" = 5'

N.T.S. _____

TOWNSHIP LIZAR

PROVINCE ONT.

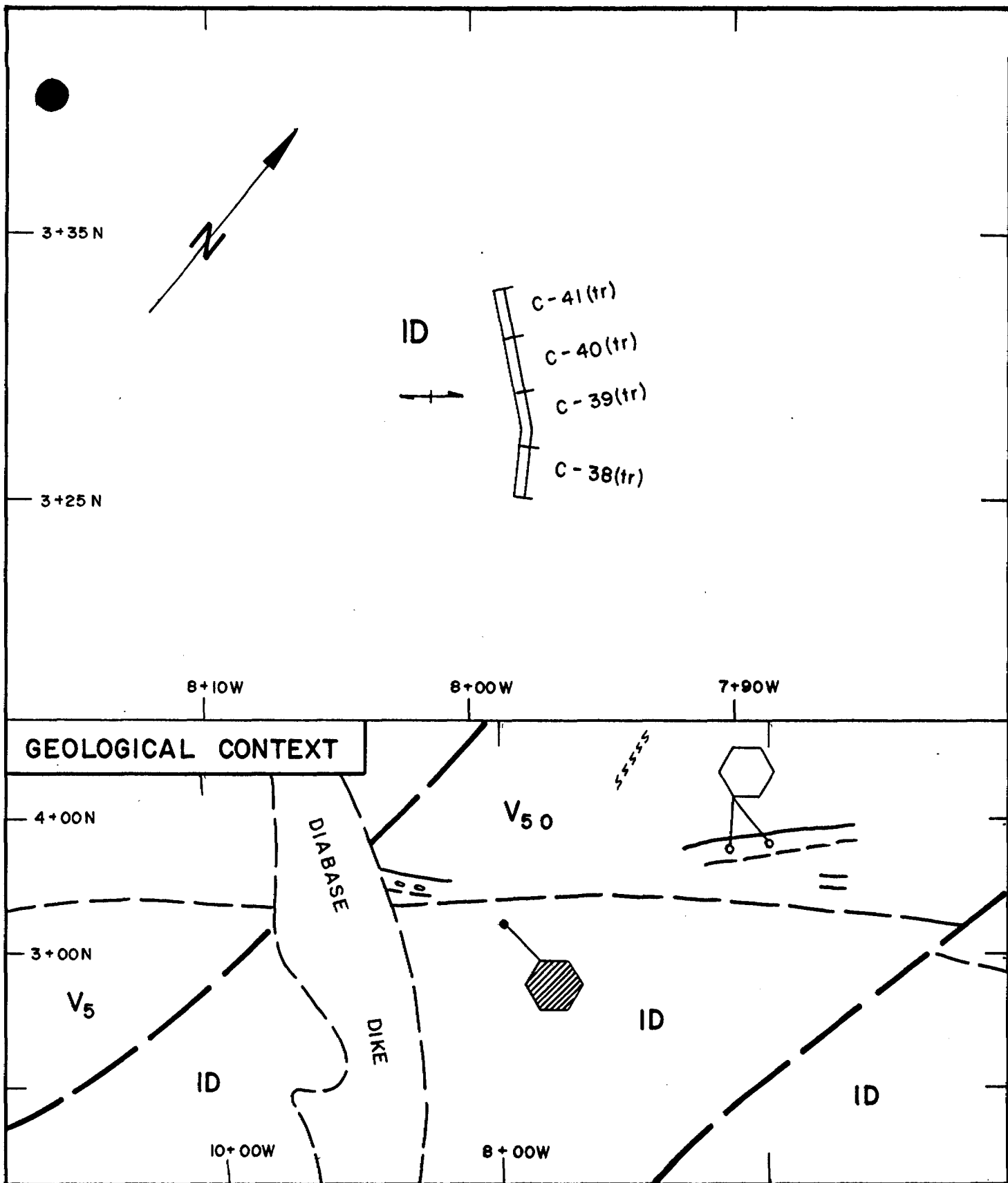
CHANNEL "U"

MINERALIZED ZONE: South
 NUMBER OF SEGMENTS: 1
 TOTAL LENGTH: 8'0"

AREA: 7+97W, 3+30N
 AZIMUTH: approx. 320°
 REF. FIG: "U"

GEOLOGICAL CONTEXT: Altered granodiorite (1D) close to 1D/V5 contact.

SAMPLE NO.	TAG NO.	ASSAY Au oz/t	LENGTH INCHES	DESCRIPTION
C-38	C-38	tr	24"	med. greenish-grey, med. to fine chloritized 1D w/q. phenocrysts elongated parallel to foliation, and w/minor biotite.
C-39	C-39	tr	24"	same as above. Buff weathered surface.
C-40	C-40	tr	24"	similar to above, slightly darker due to higher % chlorite and biotite. Minor py.
C-41	C-41	tr	24"	pale greenish grey, fine grained w/occ. q. phenocrysts, chloritized and sericitized 1D. Minor py w/local conc. along foliation plane.



GEOLOGICAL CONTEXT

FIGURE NO U

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 PROJECT MM-003 N.T.S. _____
 U.T.M. _____ TOWNSHIP LIZAR
 _____ PROVINCE ONT.
 LONG. _____
 LAT. _____
 SCALE: 1" = 100' AND 1" = 5'

CHANNEL "V"

MINERALIZED ZONE: South
 NUMBER OF SEGMENTS: 1
 TOTAL LENGTH: 5'6"

AREA: 8+57W, 0+82N
 AZIMUTH: approx. 326°
 REF. FIG: "V"

GEOLOGICAL CONTEXT: slightly altered granodiorite (1D) w/quartz veins

SAMPLE NO.	TAG NO.	ASSAY Au oz/t	LENGTH INCHES	DESCRIPTION
C-42	C-42	nil	28"	med. greenish-grey, med. to coarse grained chloritized, slightly foliated 1D w/tr py and minor biotite
C-43	C-43	nil	22"	similar to above but w/q.v. (folded) and rusty sections. Minor diss. py.
C-44	C-44	tr	16"	similar to C-42, slightly more chloritized w/tr py. Some elongated q. phenocrysts.

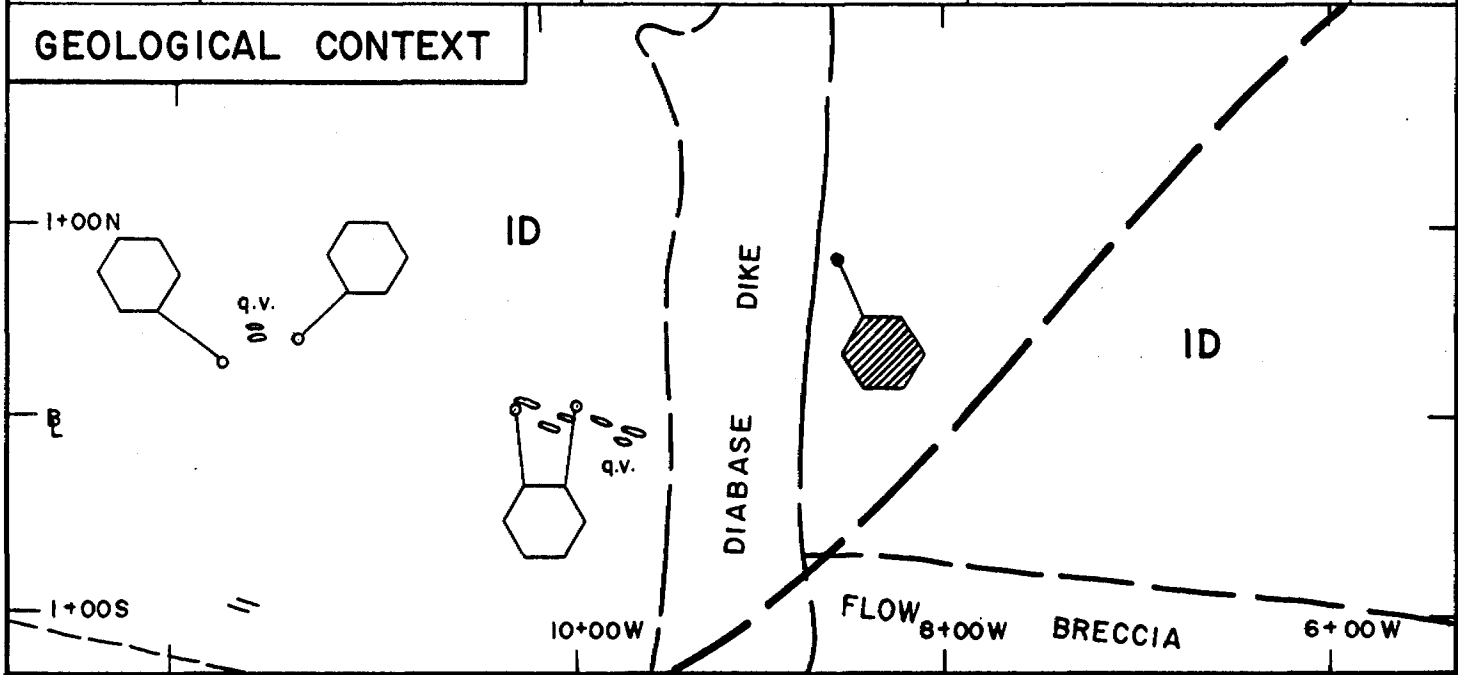
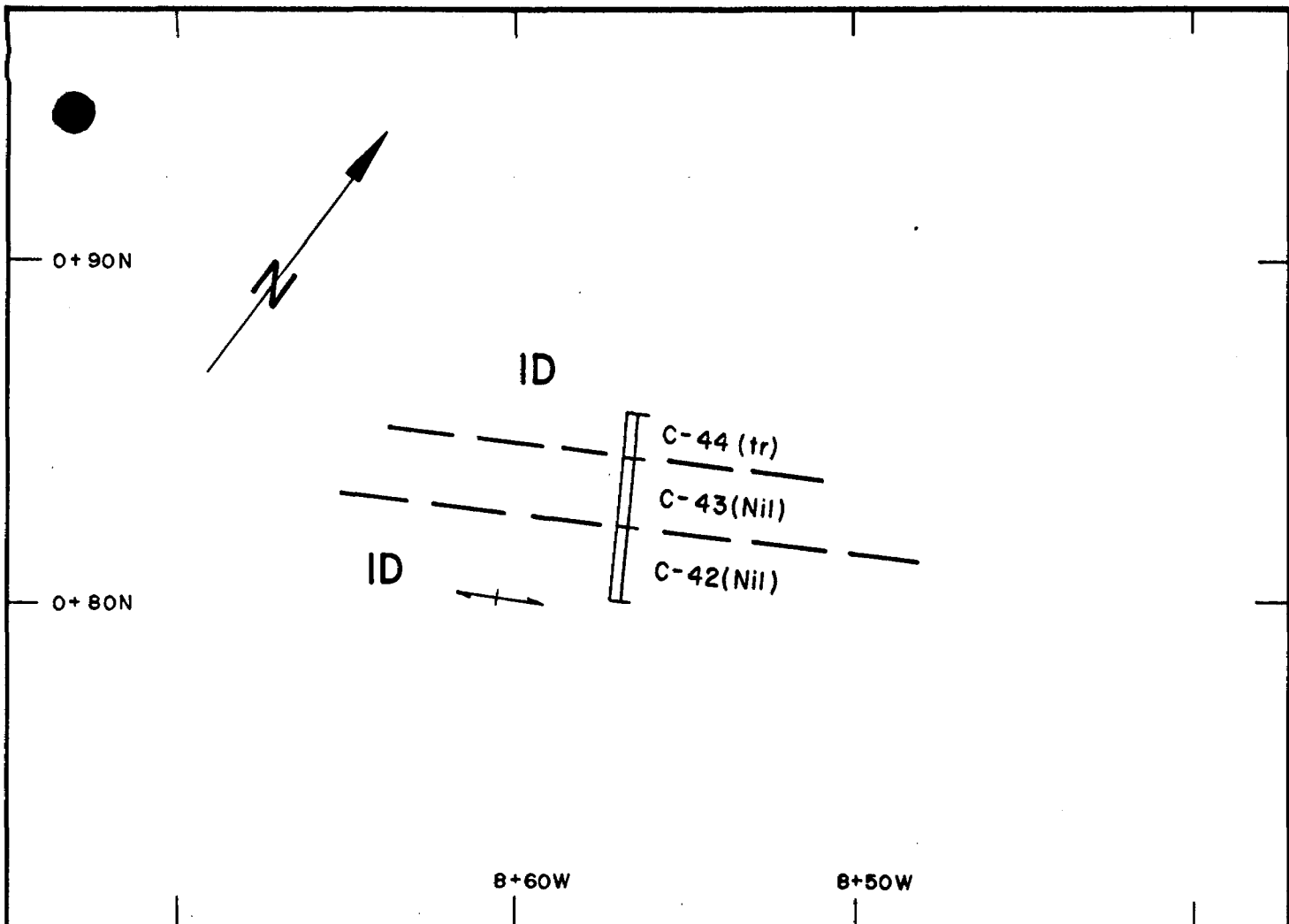


		FIGURE NO		V
DRAFTED BY <u>B. FALLADA</u> INTERPRETED BY <u>M.A. LEONARD</u> APPROVED BY _____ REVISED _____		DATE <u>DEC. 1983</u> <u>DEC. 1983</u> _____ _____		MINROC MANAGEMENT LIMITED PROJECT <u>MM-003</u> N.T.S. _____ U.T.M. _____ TOWNSHIP <u>LIZAR</u> _____ PROVINCE <u>ONT.</u> LONG. _____ LAT. _____ SCALE: 1" = 100' AND 1" = 5'

CHANNEL "W" (1 and 2)

MINERALIZED ZONE: South
 NUMBER OF SEGMENTS: 2
 TOTAL LENGTH: 7'3"

AREA: baseline, 10+00W
 AZIMUTH: approx. 330°
 REF. FIG: "W"

GEOLOGICAL CONTEXT: granodiorite (1D) horizon with lenticular quartz veins, slightly offset by "N-S" fault.

SAMPLE NO.	TAG NO.	ASSAY Au oz/t	LENGTH INCHES	DESCRIPTION
R-156	4361	tr	10"	med. grey, fine grained silicified and sericitized granodiorite
R-157	4362	tr	18"	milky, locally rusty quartz from lenticular q.v.
R-158	4363	tr	16"	similar to R-156 except that rock is slightly greenish grey and slightly chloritized
R-159	4364	tr	8"	same as above
R-160	4365	tr	20"	milky quartz from q.v. Some granodiorite.
R-161	4366	nil	15"	similar to R-158, no visible sulphides

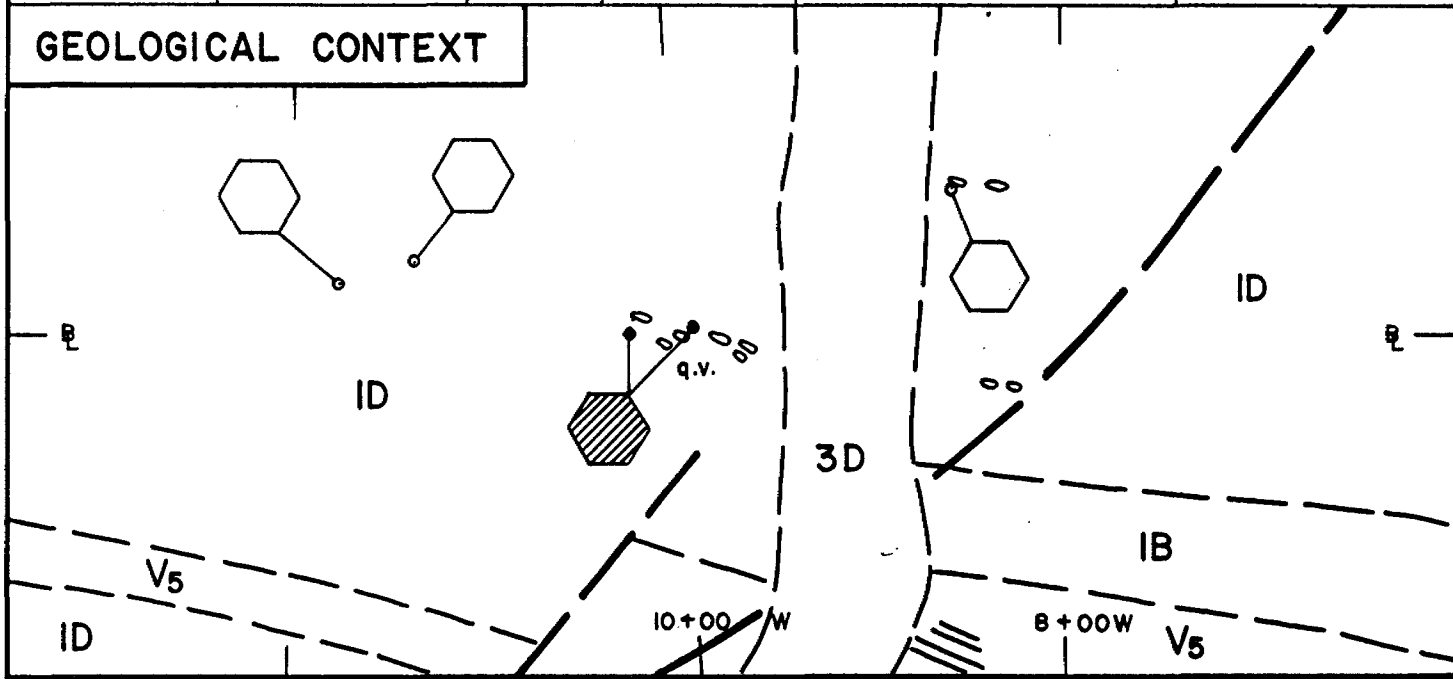
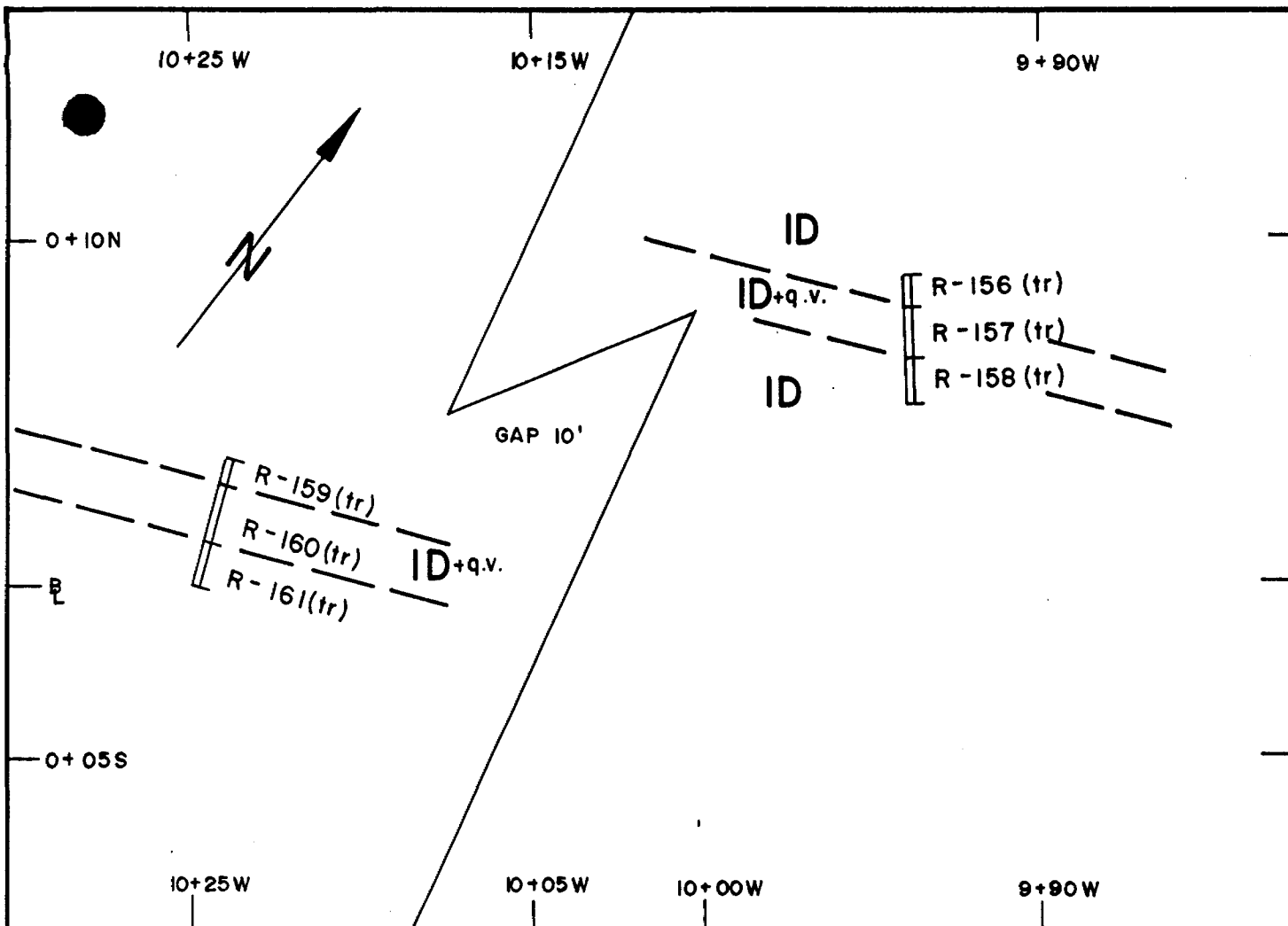


		FIGURE NO		W
DRAFTED BY <u>B. FALLADA</u> INTERPRETED BY <u>M.A. LEONARD</u> APPROVED BY _____ REVISED _____		DATE <u>DEC. 1983</u> <u>DEC. 1983</u>		MINROC MANAGEMENT LIMITED PROJECT <u>MM-003</u> N.T.S. _____ U.T.M. _____ TOWNSHIP <u>LIZAR</u> LONG. _____ PROVINCE <u>ONT.</u> LAT. _____ SCALE: <u>1" = 100'</u> AND <u>1" = 5'</u>

CHANNEL "X"

MINERALIZED ZONE: South
 NUMBER OF SEGMENTS: 3
 TOTAL LENGTH: 17'4"

AREA: 11+36W, 0+37N
 AZIMUTH: approx. 336°
 REF. FIG: "X" & "Y"

GEOLOGICAL CONTEXT: Along w/Channel Y, part of silicified granodiorite (ID) w/occasional q.v. and q. veinlets with sulphides.

SAMPLE NO.	TAG NO.	ASSAY Au oz/t	LENGTH INCHES	DESCRIPTION
C-58	C-58	nil	24"	med. to dark grey. Medium to coarse grained, slightly foliated carbonatized and chloritized biotitic ID w/tr diss. py.
C-59	C-59	tr	24"	similar to above but w/occ. thin q.v. and local conc. of py
C-60	C-60	tr	12"	similar to above, with silicification near q.v. (C-61)
C-61	C-61	nil	10"-12"	combined sample from ends of X-2 and X-3. 10" to 12" milky q.vein w/occ. py
C-62	C-62	tr	24"	pale to med. grey. Fine to med. grained w/local q. phenocrysts. Silicified and sericitized ID w/minor py locally conc. along foliation planes.
C-63	C-63	tr	20"	similar to above
C-64	C-64	nil	24"	med. to dark grey, med. to coarse grained, slightly foliated sericitized biotite ID (trondhjemite) w/tr py. The rock is locally gneissic.
C-65	C-65	tr	24"	similar to above
C-66	C-66	tr	24"	similar to above
C-67	C-67	tr	18"	similar to above

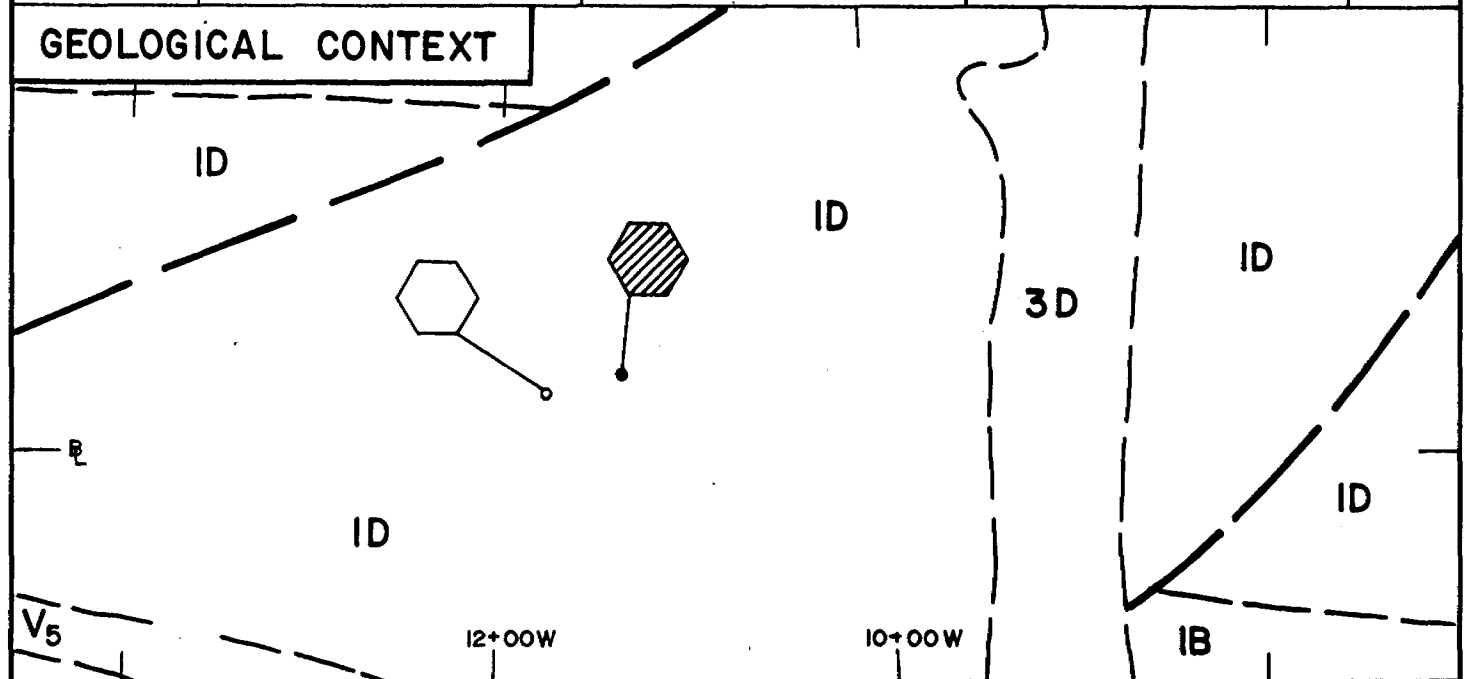
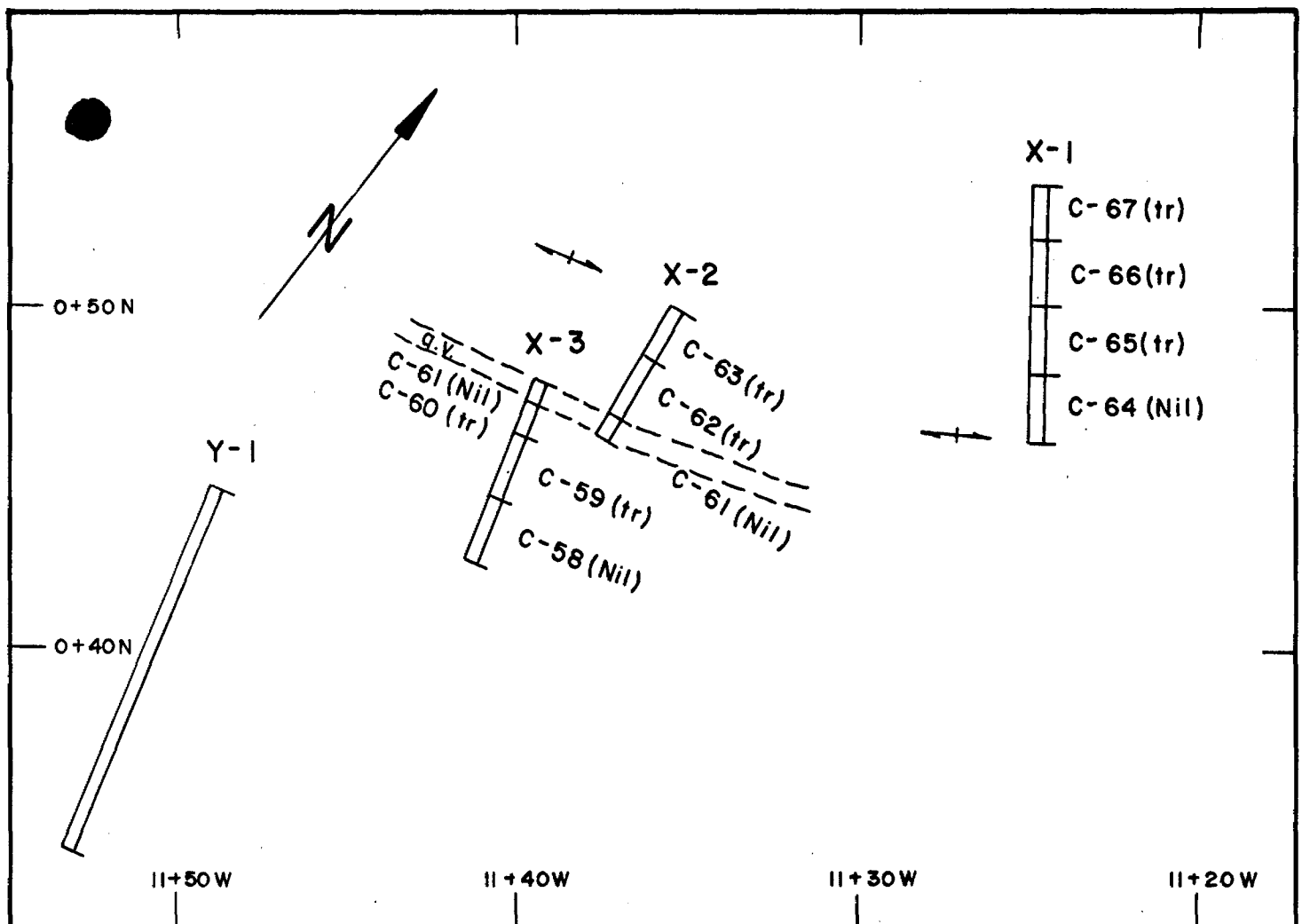


FIGURE NO		X
MINROC MANAGEMENT LIMITED		
DRAFTED BY <u>B. FALLADA</u>	DATE <u>DEC. 1983</u>	PROJECT <u>MM-003</u>
INTERPRETED BY <u>M.A. LEONARD</u>	<u>DEC. 1983</u>	N.T.S. _____
APPROVED BY _____	_____	TOWNSHIP <u>LIZAR</u>
REVISED _____	_____	PROVINCE <u>ONT.</u>
_____	_____	LONG. _____
_____	_____	LAT. _____
SCALE: 1" = 100' AND 1" = 5'		

CHANNEL "Y"

MINERALIZED ZONE: South
 NUMBER OF SEGMENTS: 4
 TOTAL LENGTH: 27'4"

AREA: 11+70W, 0+25N
 AZIMUTH: approx. 340°
 REF. FIG: X-Y

GEOLOGICAL CONTEXT: With Channel X, part of silicified granodiorite (ID) w/occasional q.v. and q. veinlets with sulphides.

SAMPLE NO.	TAG NO.	ASSAY Au oz/t	LENGTH INCHES	DESCRIPTION
C-45	C-45	nil	30"	med. grey, fine to med. grained partly carbonatized, silicified ID w/minor diss. py. Some elongated q. phenocrysts w/long axis parallel to foliation planes.
C-46	C-46	tr	30"	similar to above but w/amount of py increasing toward C-47. C-45 and C-46 slightly epidotized and sericitized.
C-47	C-47	nil	24"	med. greenish-grey, fine to med. grained, foliated, silicified ID w/minor py locally conc. to 1%
C-48	C-48	tr	28"	same as above w/local thin highly silicified horizons. Loc. conc. of py to 1-1 1/2%.
C-49	C-49	nil	26"	light greenish-grey, fine to med. grained, slightly foliated, sericitized and silicified ID w/minor py. Local q. veinlets.
C-50	C-50	nil	30"	similar to above
C-51	C-51	tr	22"	similar to above
C-52	C-52	tr	24"	med. grey, fine to med. grained, foliated, partly carbonatized, biotitic ID w/minor py, loc. conc. along foliation planes

CHANNEL "Y"
(continued)

SAMPLE NO.	TAG NO.	ASSAY Au oz/t	LENGTH INCHES	DESCRIPTION
C-53	C-53	nil	24"	med. to light grey, fine, slightly foliated, partly carbonatized, silicified and sericitized 1D w/minor py and few q. stringers
C-54	C-54	tr	16"	similar to above with silicification increasing toward C-55
C-55	C-55	tr	14"	fine grained slightly chloritized and epidotized, highly silicified 1D, w/8" q.v. in center of horizon
C-56	C-56	nil	24"	light greenish-grey fine to med. grained "gneissic" silicified and chloritized biotite 1D (trondhjemite) w/tr to minor py. The rock is slightly carbonatized and epidotized.
C-57	C-57	nil	36"	med. to dark grey, med. to coarse grained chloritized, slightly carbonatized biotite 1D w/tr diss. py

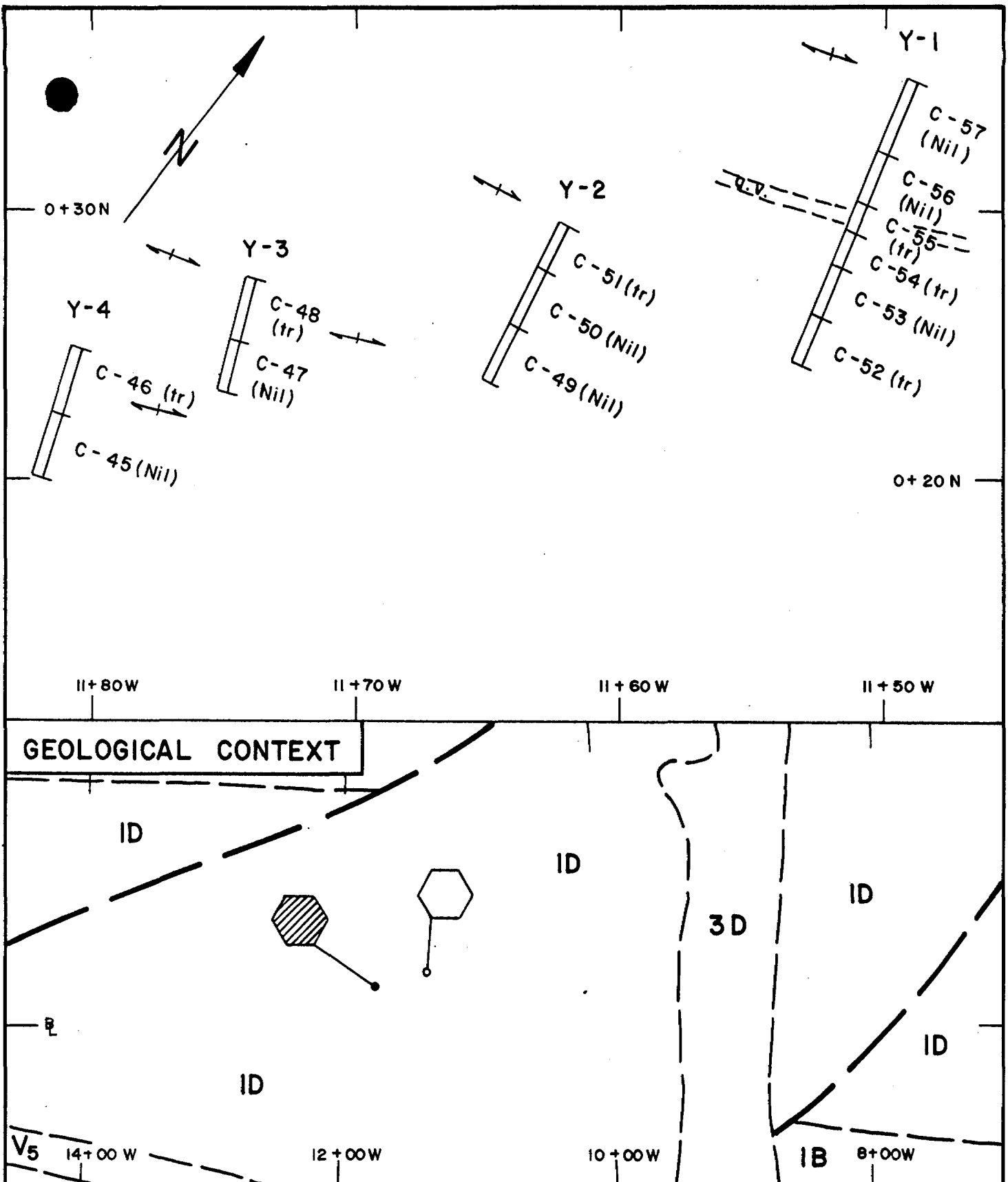


FIGURE NO Y

DRAFTED BY B. FALLADA
 INTERPRETED BY M.A. LEONARD
 APPROVED BY _____
 REVISED _____

DATE DEC. 1983
DEC. 1983

MINROC MANAGEMENT LIMITED

PROJECT MM-003 N.T.S. _____
 U.T.M. _____ TOWNSHIP LIZAR
 _____ PROVINCE ONT.

LONG. _____
 LAT. _____

SCALE: 1" = 100' AND 1" = 5'

APPENDIX IV
TRENCH SAMPLING

The following trenches were opened to sample adequately:

1. Areas where encouraging results were obtained from previous sampling.
2. Favourable areas or lithologies where poor results were obtained from channel sampling (to check channel sampling).
3. Unsampld favourable areas from both the north and south mineralized zones.

Refer to Figure 3.2 (Geology) for trench locations.

TRENCH 1

MINERALIZED ZONE: North
TOTAL LENGTH: approx. 10'

AREA: 3+00E, 4+00N
AZIMUTH: 337°

NOTE: Well exposed north contact of 1R w/V5

Sample #	Tag #	Assay Au oz/t	Description
T-1	068	0.812	- at 1R North Contact - highly sheared rusty 2" zone followed by 3" q. rich vein w/sericite
T-3	070	0.112	- south of T-1, 18" light grey, highly silicified, massive, fine 1R w/app. 1% diss. fine py and w/few q. phenocrysts
T-2	069	0.346	- grab - highly sericitized, very coarse grained quartz + feldspar w/tr galena and app. 1% py from lenticular veins in 1R
T-4	071	4.470	- grab - pale to med. grey, fine to med. silicified and sericitized quartz porphyry w/thin q.v. and up to 1/2% py, some v.g.
T-5	072	4.902	- grab - same as above, however, w/tr sulphides. V.G.

* combined T-1 and T-3 give a weighted average of 0.26 oz/t Au over 23"

TRENCH 2

MINERALIZED ZONE: North
TOTAL LENGTH: approx. 12'

AREA: 5+70W, 3+80N
AZIMUTH: 318°

NOTE: Trench mostly in mafic volcanic V5 to the north w/approx. 3 to 5' of 1R at its south end. Faulted area.

Sample #	Tag #	Assay Au oz/t	Description
T-9	076	tr	- grab sample - 75/25 pale grey, fine grained, highly silicified 1R w/tr py + occ. q. veinlets and pyritized and epidotized dark green V5

TRENCH 3

MINERALIZED ZONE: North
TOTAL LENGTH: approx. 17'

AREA: 6+50W, 3+85N
AZIMUTH: 312°

NOTE: Trench mostly in V5 with V5/1R contact and approx. 4 to 5' of 1R felsic unit to the south.

Sample #	Tag #	Assay Au oz/t	Description
T-10	077	0.005	- grab sample - pale green, fine grained epidotized 1R w/few quartz phenocrysts and w/tr to minor py, mostly occurring as small fracture fillings

TRENCH 4

MINERALIZED ZONE: North AREA: 8+60W, 3+70N
TOTAL LENGTH: approx. 15' AZIMUTH: 322°

NOTE: "U" shaped, approx. 15' long trench cutting across V5/1R contact. 1R unit south of contact.

Sample #	Tag #	Assay Au oz/t	Description
T-21	088	tr	- grab sample - 50/50 quartz from q.v. and silicified V5 w/epidote and quartz stringers both w/minor py - q.v. and epidote and quartz stringers run 350° and dip 55°E. These seem to be more or less parallel to major fault located westward.
T-22	089	tr	- epidotized quartz porphyry w/q. and sulphides occurring as fracture fillings
T-23	090	tr	- med. grey, sericitized quartz porphyry w/local conc. of py

TRENCH 5

MINERALIZED ZONE: North
TOTAL LENGTH: approx. 12'

AREA: 17+00W, 2+00N
AZIMUTH: 325°

NOTE: Trench located over part of Channel "L". Trench is 12' long and cuts across V5/1R contact. Quartz porphyry is generally greenish-grey, fine to med. grained and is slightly epidotized and chloritized. Quartz phenocrysts account for approx. 2-3%. Rocks contain up to 1/2% fine diss. py.

Sample #	Tag #	Assay Au oz/t	Description
T-24	091	tr	- grab sample - greenish, fine to med. epidotized 1R w/diss. sulphides along foliation planes.
T-25	092	tr	- grab sample - feldspar (f) w/diss. py, chlorite and epidote from f.v.
T-26	093	tr	- grab sample - massive med. greenish-grey chloritized 1R w/tr diss. py
T-27	094	tr	- grab sample - same as above except highly chloritized and epidotized w/q. veins
T-28	095	tr	- grab sample - feldspar and quartz from V5/1R contact

TRENCH 6

MINERALIZED ZONE: North AREA: 18+95W, 2+87N
TOTAL LENGTH: approx. 1 1/2' AZIMUTH: approx. 60°

NOTE: Bulk sample mainly from quartz vein located in silicified quartz porphyry near V5/1R north contact. The samples, totalling approx. 25 pounds, were taken close to channel samples R-44 and R-45 Channel "P" (ref. Appendix II, Fig. P)

Sample #	Tag #	Assay Au oz/t	Description
T-32	099	0.008	- quartz w/sericite and py from q.v.
T-33	100	0.02	- highly silicified med. grey 1R w/1% py locally and w/q. veinlets. Tr of galena.
T-34	101	0.092	- mostly quartz w/sericite and diss. py. Local conc. of fine to med. size galena cubes.
T-35	102	0.026	- same as above
T-36	103	0.018	- similar to T-33

TRENCH 7

MINERALIZED ZONE: North
TOTAL LENGTH: approx. 33'

AREA: 22+00W, 3+60N
AZIMUTH: approx. 322°

NOTE: Testing of quartz porphyry felsic unit (North Zone) west of the main pit. The trench cut across approx. 3" of mafic volcanic (V5) in its northern part and approx. 30' of generally med. greenish-grey, fine to med. quartz and feldspar porphyry w/tr to minor diss. py. A shear zone running at 63° and dipping at 85° southward was intersected at 3+60N.

Sample #	Tag #	Assay Au oz/t	Description
T-29	096	0.012	- grab sample - greenish silicified and sericitized 1R w/minor diss. py locally concentrated. Sample collected at shear zone contact.
T-30	097	tr	- med. grey, med. grained silicified 1R w/tr py and malachite
T-31	098	tr	- q. w/chlorite from q.v. at 1R/V5 north contact

TRENCH 8

MINERALIZED ZONE: South
TOTAL LENGTH: (3) totalling 15'

AREA: 2+50W, 1+50N
AZIMUTH: approx. 330°

NOTE: Testing of south mineralized zone in three small parallel trenches across med. grey, med. grained silicified and sericitized granodiorite (1D) injected w/rusty lenticular q. veins. Trenches close to Channel "T".

Sample #	Tag #	Assay		Description
		Au oz/t	Ag oz/t	
T-6	073	0.024	0.224	- grab sample - rusty q. and sericite w/fine diss. py and galena from lenticular q.v. in silicified and sericitized 1D
T-7	074	0.052	0.070	- grab sample - sericitized and silicified 1D w/diss. py and w/conc. of py along foliation and fracture planes
T-8	075	0.108	0.016	- grab sample - quartz-sericite schist w/diss. py

TRENCH 9

MINERALIZED ZONE: South
TOTAL LENGTH: approx. 5'

AREA: 8+00W, 3+00N
AZIMUTH: approx. 322°

NOTE: From north (3+00N) to south; approx. 2' thick pink pegmatite or coarse granite "sill" w/q. veinlets and local high sulphide content followed by pinkish grey silicified granodiorite (1D) w/minor diss. py and trace of galena and (ruby silver?)

Sample #	Tag #	Assay		Description
		Au oz/t	Ag oz/t	
T-11	078	0.002	tr	- grab sample - pink pegmatite (?) w/diss. py
T-12	079	tr	tr	- grab sample - q. w/py from q.v. in silicified 1D
T-13	080	0.005	tr	- grab sample - pegmatite or granite and granodiorite w/minor diss. py
T-14	081	tr	tr	- grab sample - mostly q. w/py and minor galena from pink pegmatite
T-15	082	tr	tr	- grab sample - mixture of above

TRENCH 10

MINERALIZED ZONE: South
TOTAL LENGTH: approx. 10'

AREA: 8+50W, 3+10N
AZIMUTH: approx. 310°

NOTE: Trench east of major fault where lenticular quartz veins with associated minor py, galena and malachite mineralization occur in grey, generally fine grained silicified granodiorite

Sample #	Tag #	Assay		Description
		Au oz/t	Ag oz/t	
T-16	083	0.003	0.163	- grab sample - silicified and sericitized 1D w/diss. py
T-17	084	0.020	0.124	- grab sample - silicified and sericitized med. grey, slightly foliated 1D w/diss. py
T-18	085	tr	--	- q. w/chlorite and tr py from q.v.
T-19	086	0.002	0.038	- rusty, silicified and sericitized, slightly foliated 1D w/tr fine diss. py
T-20	087	0.005	0.043	- med. grey, fine to med. grained poorly foliated, silicified and sericitized 1D w/minor conc. of sericite and py

APPENDIX V
CERTIFICATES OF ANALYSIS
GRAB, CHANNEL AND TRENCH SAMPLES

SAMPLE	AU OZ/TON
4201	0.320
4202	0.015
4203	0.043
4204	NIL
4205	0.002
4206	0.001
4207	0.001
4208	0.001
4209	TRACE
4210	0.035
4211	0.002
4212	0.005
4213	TRACE
4214	NIL
4215	NIL
4216	0.012
4217	0.002
4218	0.017
4219	NIL
4220	0.002
4221	NIL
4222	NIL
4223	0.020
4224	0.004
4225	0.003
4226	NIL
4227	NIL
4228	TRACE
4229	NIL
4230	NIL
4231	NIL
4232	NIL
4233	NIL
4234	NIL
4235	0.004
4236	NIL
4237	NIL
4238	NIL
4239	NIL
4240	1.400
4241	0.003
4242	0.001
4243	0.063
4244	2.240
4245	0.004
4246	0.027
4247	0.009
4248	NIL
4249	NIL
4250	NIL

SAMPLE	AU OZ/TON
4251	NIL
4252	NIL
4253	NIL
R34	NIL
R35	NIL
R36	0.004



LABORATOIRE D'ANALYSE BOURLAMAQUE LTÉE
BOURLAMAQUE ASSAY LABORATORIES LTD.

Minroc Management Ltd.

CERTIFICAT D'ANALYSES
CERTIFICATE OF ANALYSIS

No. 39307

ÉCHANTILLONS
SAMPLES Rock

VAL D'OR, QUÉ., September 6 19... 83

RECU DE
RECEIVED FROM Gilles Tremblay

ANALYSES
ASSAYS 64 Au

<u>Echantillon</u>	<u>Au oz/ton</u>	<u>Echantillon</u>	<u>Au oz/ton</u>	<u>Echantillon</u>	<u>Au oz/ton</u>
4254	Nil	4276	Trace	4297	Trace
4255	Trace	4277	Nil	4298	0.01
4256	Nil	4278	Nil	4299	Trace
4257	Nil	4279	Nil	4300	Trace
4258	Nil	4280	0.01	4301	Trace
4259	Trace	4281	Nil	4302	Trace
4260	Trace	4282	0.02	4303	Trace
4261	0.01	4283	0.01	4304	Trace
4262	Nil	4284	0.01	4305	Trace
4263	Nil	4285	Trace	4306	Nil
4264	Nil	4286	Nil	4307	Nil
4265	Nil	4287	Nil	4308	Nil
4266	Nil	4288	Nil	4309	Nil
4267	Nil	4289	Nil	4310	Trace
4268	Nil	4290	Nil	4311	Trace
4269	Nil	4291	Nil	4312	Trace
4270	Nil	4292	Nil	4313	Nil
4271	Nil	4293	Nil	4314	Nil
4272	Trace	4294	Nil	4315	Trace
4273	0.01	4295	Nil	4316	Trace
4274	Trace	4296	Nil	4317	0.01
4275	Nil				

Gilles Tremblay

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CERTIFICATE OF ANALYSIS

Att: Gilles Tremblay

No 39544

ECHANTILLONS rock
SAMPLES

VAL D'OR, QUÉ.,October 11..... 19..83....

RECU DE RECEIVED FROM

ANALYSES 20 Au
ASSAYS

Sample No. Au oz/ton

4318	Trace
4319	Trace
4320	Trace
4321	Trace
4322	Trace
4323	Trace
4324	Trace
4325	Trace
4326	Trace
4327	Trace
4328	Trace
4329	Trace
4330	Trace
4331	Trace
4332	Trace
4333	Trace
4334	Trace
4335	Trace
4336	Trace
4337	nil

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CERTIFICAT D'ANALYSES
CERTIFICATE OF ANALYSIS

No 39425

ÉCHANTILLONS surface
SAMPLES

VAL D'OR, QUÉ.,Sept.....21..... 19...83..

RECU DE Att: Gilles Tremblay
RECEIVED FROM

ANALYSES 55 Au
ASSAYS

Sample No. Au oz/ton

4338	nil
4339	Trace
4340	nil
4341	nil
4342	Trace
4343	nil
4344	nil
4345	nil
4346	Trace
4347	nil
4348	Trace
4349	Trace
4350	Trace
4351	nil
4352	Trace
4353	Trace
4354	Trace
4355	Trace
4356	0.01
4357	0.01
4358	Trace
4359	Trace
4360	Trace
4361	Trace
4362	Trace
4363	Trace
4364	Trace
4365	Trace
4366	nil
4367	Trace

Sample No. Au oz/ton

4368	0.01	
4369	Trace	
4370	Trace	
4371	0.01	
4372	Trace	
4373	Trace	
4374	1.35	(check 1.28)
4375	0.01	
4376	0.01	
4377	Trace	
4378	0.01	
4379	nil	
4380	Trace	
4381	Trace	
4382	Trace	
4383	Trace	
4384	nil	
4385	nil	
4386	Trace	
4387	Trace	
4388	Trace	
4389	Trace	
4390	Trace	
4391	Trace	
4392	0.01	

G. Tremblay
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CERTIFICAT D'ANALYSES
CERTIFICATE OF ANALYSIS

No 39459

ECHANTILLONS
SAMPLES

rock

VAL D'OR, QUÉ., Sept. 27 19. 83

RECU DE
RECEIVED FROM

ANALYSES
ASSAYS 68 Au

Sample No. Au oz/ton

4393	Trace
4394	0.01
4395	Trace
4396	Trace
4397	Trace
4398	Trace
4399	0.01
4400	Trace
4401	0.01
4402	0.01
4403	Trace
4404	0.01
4405	0.01
4406	0.01
4407	Trace
4408	0.07
4409	0.06
4410	Trace
4411	0.01
4412	Trace
4413	Trace
4414	0.04
4415	0.01
4416	0.01
4417	Trace
4418	Trace
4419	0.02
4420	Trace
4421	0.01
4422	Trace
4423	Trace
4424	0.02
4425	Trace
4426	0.02

Sample No. Au oz/ton

4427	0.01
4428	Trace
4429	Trace
4430	Trace
4431	Trace
4432	Trace
4433	nil
4434	Trace
4435	Trace
4436	Trace
4437	Trace
4438	nil
4439	0.02
4440	Trace
4441	0.10
4442	0.02
4443	Trace
4444	0.01
4445	Trace
4446	Trace
4447	0.01
4448	Trace
4449	Trace
4450	Trace
4451	nil
4452	Trace
4453	Trace
4454	Trace
4455	Trace
4456	Trace
4457	Trace
4458	0.01
4459	Trace
4460	Trace

Alucubana
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CERTIFICAT D'ANALYSES
CERTIFICATE OF ANALYSIS

.....Minroc Management Ltd.

No 39730

ECHANTILLONS
SAMPLES rock

VAL D'OR, QUÉ., November 9 19 83

RECU DE
RECEIVED FROM Gilles Tremblay

ANALYSES
ASSAYS 44 Au

Sample No. Au oz/ton

Sample No. Au oz/ton

C.1	Trace
2	Trace
3	Trace
4	nil
5	nil
6	Trace
7	nil
8	Trace
9	nil
10	0.01
11	Trace
12	0.01
13	0.01
14	nil
15	Trace
16	Trace
17	nil
18	nil
19	0.01
20	Trace
21	Trace
22	nil
23	Trace
24	0.01
25	nil
26	nil
27	nil
28	Trace
29	Trace
30	Trace

C.31	nil
32	Trace
33	nil
34	Trace
35	nil
36	nil
37	nil
38	Trace
39	Trace
40	Trace
41	Trace
42	nil
43	nil
44	Trace

[Signature]

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Minroc Management Ltd.

CERTIFICAT D'ANALYSES
CERTIFICATE OF ANALYSIS

No 39794

ÉCHANTILLONS rock
SAMPLES

VAL D'OR, QUÉ.,November 17..... 19...83..

RECU DE Purolator
RECEIVED FROM

ANALYSES 23 Au
ASSAYS

Sample No. Au oz/ton

C.045	nil
046	Trace
047	nil
048	Trace
049	nil
050	nil
051	Trace
052	Trace
053	nil
054	Trace
055	Trace
056	nil
057	nil
058	nil
059	Trace
060	Trace
061	nil
062	Trace
063	Trace
064	nil
065	Trace
066	Trace
067	Trace

[Signature]
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Minroc Management Ltd.

CERTIFICAT D'ANALYSES
CERTIFICATE OF ANALYSIS

No 39824

ÉCHANTILLONS rock
SAMPLES

VAL D'OR, QUÉ.,November...22..... 19.83....

RECU DE M. Leonard
RECEIVED FROM

ANALYSES 36 Au. 12 Ag.
ASSAYS

Sample No.	Au oz/ton	Ag oz/ton
068	0.812	
069	0.346	
070	0.112	
071	4.470	
072	4.902	
073	0.024	0.224
074	0.052	0.070
075	0.108	0.016
076	Trace	
077	0.005	
078	0.002	Trace
079	Trace	Trace
080	0.005	Trace
081	Trace	Trace
082	Trace	Trace
083	0.003	0.163
084	0.020	0.124
085	Trace	
086	0.002	0.038
087	0.005	0.043
088	Trace	
089	Trace	
090	Trace	
091	Trace	
092	Trace	
093	Trace	
094	Trace	
095	Trace	
096	0.012	
097	Trace	
098	Trace	
099	0.008	
100	0.020	
101	0.092	
102	0.026	
103	0.018	

G. Gauthier
ANALYSTE / ASSAYER

APPENDIX VI

**DRILL HOLE SURVEY DATA
DRILL CORE DESCRIPTION (LOGS)
DRILL CORE SAMPLES CERTIFICATE OF ANALYSIS**

DRILL HOLE SURVEY DATA

HOLE NO.	LOCATION	ELEVATION FEET	DIP AT COLLAR	AZIMUTH DEGREES	LENGTH FEET
NR-L-78-1	9+60E, 3+80S	1057'	-56°	323°	635'
NR-L-78-2	8+60E, 4+00S	1059'	-60 1/2°	323°	696'
NR-L-78-3	7+09E, 4+30S	1074'	-55 1/2°	320°	659'
NR-L-78-4	8+37E, 2+10S	1084'	-73°	013°	712'
80-1	2+01E, 3+06N	1070'	-45°	323°	268'
80-2	2+98E, 3+46N	1061'	-50°	323°	228'
80-3	4+01E, 2+55N	1070'	-40°	323°	182'
80-4	4+94E, 4+14N	1047'	-55°	143°	148'
80-5	4+94E, 4+14N	1047'	-31°	143°	87'
80-6	4+94E, 4+14N	1047'	-40°	323°	31'
80-7	5+98E, 2+33N	1071'	-48°	323°	188'
80-8	7+05E, 2+49N	1077'	-60°	323°	98'
80-9	9+00E, 2+04N	1072'	-55°	323°	138'
80-10	10+02E, 2+54N	1066'	-40°	323°	573'
80-11	11+08E, 1+91N	1059'	-63°	323°	653'
80-12	12+03E, 2+15N	1055'	-60°	323°	138'
80-13	11+53E, 0+05N	1057'	-35°	143°	168'
80-14	11+54E, 0+67N	1056'	-55°	143°	328'
80-15	10+55E, 0+04N	1066'	-40°	143°	168'
80-16	10+55E, 0+50N	1064'	-58°	143°	338'
80-17	9+57E, 0+31N	1072'	-34°	143°	178'
80-18	9+48E, 0+31N	1072'	-45°	143°	338'
T-84-1	6+97E, 2+68S	1108'	-53°	322°	500'
T-84-2	9+59E, 2+69S	1086'	-52°	322°	201'
T-84-3	9+59E, 2+69S	1086'	-50°	322°	495'
T-84-4	14+06E, 3+76S	1031'	-60°	322°	703'
T-84-5	20+09E, 2+20S	1031'	-50°	322°	282'
T-84-6	27+17E, 3+08S	1031'	-50°	322°	545'
T-84-7	3+50E, 3+57N	1058'	-60°	322°	200'
T-84-8	2+54W, 0+62N	1104'	-50°	322°	286'
T-84-9	8+03W, 2+06N	1158'	-50°	322°	200'
T-84-10	18+52W, 2+05N	1209'	-50°	322°	200'
T-84-11	19+48W, 2+20N	1216'	-45°	322°	200'
T-84-12	20+17E, 3+81S	1031'	-60°	322°	685'

NOTE: Drill Hole Elevation measured relative to mine shaft collar. Shaft Collar Elevation 1083'.

GEOLOGICAL SYMBOLS USED

ROCK TYPE

1D	Trondhjemite or Granodiorite	Quartz Porphyry Type and Feldspar Porphyry Type
V5	Mafic Metavolcanics	
1B	Flow Breccia	
3D	Diabase Dike	
4L	Lamprophyre Dike and Sill	
V7	Basalt	
3	Mafic Dike (Undetermined)	
M1	Schist	
1R	Felsic Metavolcanics (include North Zone quartz "eye" porphyry)	

ALTERATION

()	Slightly Altered
<u>-</u>	Highly Altered (Underlined)
σ	Silicified
λ	Sericitized
φ	Chloritized
ε	Epidotized
η	Carbonatized
☐	Phenocryst (Porphyritic)

MINERALS


q	Quartz
k	Sericite
j	Carbonate
f	Feldspar
b	Biotite
u	Amphiboles
q.v.	Quartz Vein

MINERALIZATION

Po	Pyrrhotite
Py	Pyrite
Mt	Magnetite
Gn	Galena
Hem	Hematite
Mc	Malachite
Mo	Molybdenite
Sp	Sphalerite
Gp	Graphite
Cp	Chalcopyrite

LOGS:

T-84-1/12
NR-L-78-1/4

 MINROC MANAGEMENT LIMITED DIAMOND DRILL RECORD	HOLE NUMBER: T-84-1 LOCATION: 6+97E, 2+68S ELEVATION: 1108'		AZIMUTH: 322 LENGTH: 500'		STARTED: Dec. 21, 1983 COMPLETED: February 2, 1984 CASING LEFT IN HOLE: Yes	ETCH TESTS: 26' - 54 175' - 44 315' - 41 455' - 38
	PROPERTY: HIAWATHA TOWNSHIP: LIZAR PROJECT NUMBER: MM-003	DIP AT COLLAR: -53 CORE SIZE: BQ DRILLED BY: MORISSETTE DRILLING CO.				

OBJECTIVE: Note: No drilling from Dec. 23, 1983 to January 30, 1984.

FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE		SAMPLE			ASSAYS						
					NO.	FOOTAGE		oz Au						
						FROM	TO						LENGTH	
0	2'	OVERBURDEN												
10	10'	NO CORE RECOVERY.												
10	14'	<u>MAFIC METAVOLCANICS: V5</u> Dark, greenish gray, fine to med. grained, slightly foliated, mafic metavolcanics w/occ. calcite occurring as veinlets and as fracture filling.												
14	114	<u>FLOW BRECCIA UNIT: 1B</u> Variable amounts (20 - 90%) of elongated fragments of dark greenish gray mafic metavolcanics similar to those previously described, within a groundmass of very light to light gray feldspar porphyry felsic intrusive locally containing tr to minor diss. Po Py. V5 fragments from 1/8" to 30" thick. Local thin fracture zones w/f or q or calcite or chlorite or a combination of the above. @ 71' 1/2" thick zone w/10% Py Cp(?) in thin horizons. @ 80' 5% Py conc. in thin beds. 83.5 - 85, 40% biotite (b) as thin beds. 94.5 - 95.5, Lamprophyre dike (4L), w/contact parallel to foliation. 97.3 - 99, 4L dike. From 70' to end of zone increase of Po Py, occurring as thin beds along foliation planes or as hairline fracture filling or diss. in felsic groundmass. Increase in biotite content downward.			261	25	27	2.0	N11					
					262	29	31	2.0	tr					
					263	40	42.5	2.5	N11					
					264	48.5	51	2.5	N11					
					265	60	62.5	2.5	N11					
					266	71	73.5	2.5	N11					
					267	80	82.5	2.5	N11					
					268	90	92.5	2.5	N11					
					269	100	102.5	2.5	N11					
					270	110	112.5	2.5	tr					



FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE	SAMPLE			ASSAYS					
				NO.	FOOTAGE		oz Au					
					FROM	TO						LENGTH
114	130	TRONDHJEMITE: (σ) 1D Med. dark gray, fine to med. grained, foliated (σ) ub 1D w/app. 30 - 40% biotite, evenly distributed on closed space foliation planes throughout rock. Rock locally chloritized at beginning of zone. 2 - 3% diss. Py.		271	114	117	3.0	N11				
				272	117	120	3.0	N11				
				273	120	123	3.0	N11				
				274	123	126	3.0	N11				
				275	126	128	2.0	N11				
				276	128	130	2.0	N11				
130.0	141.5	TRONDHJEMITE, quartz and feldspar porphyry type; (φ?) qf _□ 1D Med. dark bluish gray, med. grained, slightly foliated, slightly chloritized and carbonatized qf porphyry 1D w/local thin q.v. (up to 1/4") parallel to foliation and w/tr to minor diss. Py. @ 133.5', 2" fracture zone filled w/ q and chlorite (c).		277	130	133	3.0	N11				
				278	133	136	3.0	N11				
				279	136	139	3.0	N11				
				280	139	141.5	2.5	N11				
141.5	148	TRONDHJEMITE, feldspar porphyry type; (φ) f _□ 1D Light to med. light greenish gray, med. grained, slightly foliated partly chloritized feldspar porphyry 1D, w/tr diss. Py locally and occasional thin q.v. The rock is slightly sericitized locally. 136.2 - 136.8, Lamprophyre dike 4L w/Δ = 50 143.2 - 147.0, partly chloritized fq porphyry 1D similar to 130 - 141.5 @ 147', 3" fracture zone filled w/granular q, chlorite and epidote and w/tr Mt. Fracture @ Δ = 10°.		281	141.5	143	2.5	N11				
				282	143	145.5	2.5	N11				
				283	145.5	148	2.5	N11				
148	150	TRONDHJEMITE, quartz and feldspar porphyry type; (φ) qf _□ 1D Med. greenish gray, med. grained, slightly foliated chloritized qf _□ 1D w/minor diss. Py. (transition zone).		284	148	150	2.0	N11				
150	176	TRONDHJEMITE/QUARTZ SERICITE SCHIST: (ε φ) λ σ q _□ 1D / qkMI (SHEAR ZONE) Med. to dark gray, med. grained, well foliated, partly epidotized and chloritized, sericitized and silicified q porphyry 1D, becoming highly sericitized locally (quartz sericite schist) w/quartz occurring as thin granular layers parallel to foliation. Unit becoming slightly carbonatized downward. Local thin fractures @ Δ = 20°, filled w/q epidote		285	150	152	2.0	N11				
				286	152	154.6	2.6	N11				
				287	156.3	159.3	3.0	N11				
				288	159.3	162.4	3.1	tr				
				289	162.4	165.4	3.0	tr				




FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE	SAMPLE			ASSAYS					
				NO.	FOOTAGE		oz Au					
					FROM	TO						LENGTH
150	176	(continuation) 150 - 151, 165-4 - 166.6 and 169 - 173, quartz sericite schist (qkM1) w/½ - 1% Py Po in 169 - 173 increment. 154.6 - 157.3 and 168.5 - 169, carbonatized Lamprophyre dikes (η4L) 157.6 - 158.6, fractured zone w/q and chlorite filling and w/1 - 2% Py locally occurring as large crystals. 166.9 - 167.9, carbonatized mafic dike w/5 - 7% Po. 173 - 173.8, highly epidotized fractured zone w/1 - 1½% Py Po @ 153.3, 1" fracture filled w/granular q and minor Py. @ 171.2, slickenside parallel to foliation w/1" mafic dike.		290	165.4	168.5	3.1	tr				
				291	169	171	2.0	0.09				
				292	171	173	2.0	0.08				
				293	173	176	3.0	tr				
176	185	<u>TRONDHJEMITE</u> , quartz and feldspar porphyry type; (ηφ) q f ID Med. greenish gray, med. grained foliated, partly carbonatized and chloritized qf porphyry ID w/app. 7 - 10% biotite (b) concentrated on foliation planes. @ 180.5, thin fracture funning @ Δ = 25° filled w/hematized q. @ 181', 1" η 4L dike.		294	176	179	3.0	tr				
				295	179	182	3.0	tr				
				296	182	185	3.0	tr				
185	191.5	<u>TRONDHJEMITE</u> , feldspar porphyry type: (ηφ) f ID Similar to above, but w/only occasional q. porphyry. 187.3 - 188.1, fractured zone w/glassy q and chlorite filling.		297	185	188	3.0	Nil				
				298	188	191.5	3.5	Nil				
191.5	197	<u>TRONDHJEMITE</u> , quartz porphyry type; (η) φ q ID Similar to above, however finer grained and w/tr to minor diss. Py. Local minor sericitization.		299	191.5	194	2.5	tr				
				300	194	197	3.0	tr				
197	219	<u>TRONDHJEMITE</u> , feldspar porphyry type; (η) f ID Med. dark greenish gray, med. to fine grained, slightly foliated and carbonatized f porphyry ID w/occ. thin fq porphyry ID zones. Local thin (up to 1/2 - 2" thick) q.v. w/chlorite with chloritization of nearby trondhjemite. The rock is locally sericitized and epidotized. 203.2 - 205.5, carbonatized q porphyry ID, finer grained. 210', 1" Lamprophyre dike (η4L). 218.7 - 219.5, η 4L dike.		301	197	200	3.0	Nil				
				302	200	203.2	3.2	Nil				
				303	203.2	205.5	2.3	Nil				
				304	205.5	208.5	3.0	tr				
				305	208.5	211.5	3.0	tr				
				306	211.5	214.5	3.0	Nil				
				307	214.5	216.5	2.0	re				
				308	216.5	218.7	2.2	Nil				



FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE		SAMPLE				ASSAYS				
					NO.	FOOTAGE			oz Au				
						FROM	TO	LENGTH					
394.5	451	(continuation) This unit is locally epidotized, displays numerous hairline fractures filled with calcite and few thin (1/8" - 1/4") q.v. parallel to foliation and contains tr of diss. Py. 394.5 - 395.4, 397.7 - 399.3 and 399.6 - 401.6, partly sericitized carbonatized q porphyry 1D w/1 - 3% diss. Py Po and minor Cp. 402.7 - 410.7, partly sericitized, chloritized (λ) chloritized qf porphyry 1D w/few thin finer grained, highly sericitized horizons w/minor sulfides. 410.7 - 411.5, carbonatized Lamprophyre dike (η4L). 418.6 - 421.6, epidotized qf porphyry 1D w/few thin q.v. and minor diss. Py. @ 422, 2" q.v. w/chlorite, magnetite (mt), sericite and calcite. @ 426.7, tr Cp. 435.2 - 440.5, epidotized qf porphyry 1D w/few hairline to 1/2" fractures filled w/epidote, calcite, q and chlorite w/minor Py Cp. 440.5 - 441.3 and 441.9 - 442.2, Diabase dikes (3D). 441.3 - 441.9, epidotized qf porphyry 1D, same as 435.2 - 440.5.			374	404.6	407.6	3.0	tr				
					375	407.6	410.7	3.1	tr				
					376	411.5	415	3.5	tr				
					377	415	418.6	3.6	Nil				
					378	418.6	421.6	3.0	Nil				
					379	421.6	425	3.4	Nil				
					380	425	428	3.0	tr				
					381	428	431.6	3.6	Nil				
					382	431.6	435.2	3.6	Nil				
					383	435.2	437.8	2.6	tr				
					384	437.8	440.5	2.7	tr				
					385	442.2	445	2.8	tr				
					386	445	448	3.0	tr				
					387	448	451	3.0	tr				
451	495	TRONDHEMITE, quartz and feldspar type; (εφ)ηfq□ 1D Med. light greenish gray, med. to coarse, poorly foliated, slightly epidotized and chloritized, carbonatized fq porphyry 1D, w/app. 60% large q phenocrysts and w/few med. dark finer highly sericitized q porphyry 1D horizons and w/tr diss. Py locally concentrated. 460.5 - 461, highly sericitized q porphyry 1D w/2 x 1/4" q.v. 462.1 - 463.2, 465.7 - 466.7, 467.2 - 467.8 and 469.6 - 470.3, epidotized and sericitized q porphyry 1D horizons. 478.7 - 479.2, carbonatized Lamprophyre dike (η4L). 481.3 - 482.3 and 488.1 - 489.2, potassic alteration w/few fractures filled w/q calcite and epidote.			388	451	454	3.0	Nil				
					389	454	457	3.0	Nil				
					390	457	460.5	3.5	Nil				
					391	460.5	463.2	2.7	Nil				
					392	463.2	466.7	3.5	Nil				
					393	466.7	470.3	3.6	Nil				
					394	470.3	473	2.7	Nil				
					395	473	476	3.0	Nil				
					396	476	478.7	2.7	tr				
					397	479.2	481.3	2.1	Nil				
					398	482.3	485	2.7	Nil				
					399	485.2	488.1	2.9	Nil				
					400	489.2	492	2.8	Nil				
					401	492	495	3.0	Nil				



FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE		SAMPLE			ASSAYS						
					NO.	FOOTAGE		oz Au						
						FROM	TO						LENGTH	
495	500	TRONDHJEMITE, feldspar porphyry type; (E η) f ₀ ID Similar to above, gradual change w/previous unit.			402	495	497.5	2.5	N11					
	500'	END OF HOLE.			403	497.5	500	2.5	N11.					

 MINROC MANAGEMENT LIMITED DIAMOND DRILL RECORD	HOLE NUMBER: T-84-3 LOCATION: 9+59E, 2+69S ELEVATION: 1086' DIP AT COLLAR: -50 CORE SIZE: BQ DRILLED BY: MORISSETTE DRILLING CO.	AZIMUTH: 322 LENGTH: 495'	STARTED: Feb. 5, 1984 COMPLETED: Feb. 7, 1984 CASING LEFT IN HOLE: LOGGED BY: Marc A. Leonard DATE: Feb. 10, 1984 CORE LOCATION: Core Shack (0+50E, 6N)	ETCH TESTS: 25' - 50 145' - 48½ 235' - 48 345' - 46 450' - 42
	PROPERTY: HIAWATHA TOWNSHIP: LIZAR PROJECT NUMBER: MM-003			

OBJECTIVE: To test South Zone over first level.


FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE		SAMPLE			ASSAYS						
					NO.	FOOTAGE		oz Au						
						FROM	TO						LENGTH	
0	4	Casing; no core recovery; drilling started on bedrock.												
4	14.1	<u>FELSIC UNIT (TRONDHEMITE); εφσqf□ ID</u> Ref. description T-84-2 from 2.7 to 15.7 Few broken zones w/limonite fracture coating.			408	11	13.5	2.5	Nil					
14.1	51.2	<u>MAFIC METAVOLCANICS: V5</u> Similar to description given in T-84-2 from 15.7 to 55.7. @ 23', 1½" fracture filled w/q, calcite and chlorite. @ 27', fractured zone w/epidote alteration.			409	20	22.5	2.5	Nil					
					410	30	32.5	2.5	0.01					
					411	40	42.5	2.5	tr					
51.2	88.9	<u>FLOW BRECCIA: 1B</u> Similar to description given in T-84-2 from 55.7 to 91.8, w/V5 fragments ranging from 1/8" to 18" with larger fragments concentrated in middle of zone. Some V5 fragments w/minor diss. Py. 52 - 53.4, fractured and bleached zone.			412	55	57.5	2.5	tr					
					413	65	67.5	2.5	0.02					
					414	75	77.5	2.5	Nil					
					415	85	87.5	2.5	Nil					
88.9	107.2	<u>MAFIC METAVOLCANICS: V5</u> Similar to description given in T-84-2 from 91.8 to 112.2. 95.2 - 96.8, Lamprophyre dike (4L).			416	100	102.5	2.5	Nil					
107.2	128.4	<u>FLOW BRECCIA: 1B</u> Ref. to description given in T-84-2 from 112.2 to 130.2, w/biotite and amphibole banding. 119.3 - 120.5, Lamprophyre dike, carbonatized: η 4L.			417	110	112.5	2.5	Nil					
					418	120.5	123	2.5	Nil					



FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE	SAMPLE			ASSAYS					
				NO.	FOOTAGE		oz Au					
					FROM	TO						LENGTH
170.5	176.1	<p><u>TRONDHJEMITE</u>: quartz porphyry type; $\phi \epsilon \sigma q \square$ 1D</p> <p>Med. to med. dark greenish gray, fine to very fine grained, slightly foliated, highly broken, silicified, epidotized, and chloritized q porphyry 1D w/alternating q-rich and epidote-rich thin bands. Hairline to 1/4" fractures filled w/calcite quartz and epidote. Minor to 1/2% Po Py Cp and dust size MoS₂ in bluish q bands. @ 173.8, 4" η 4L dike (Lamprophyre).</p>		428	170.5	173	2.5	tr				
				429	173	176.1	3.1	0.04				
176.1	178.2	<u>LAMPROPHYRE DIKE</u> : η 4L										
178.2	183.4	<p><u>TRONDHJEMITE</u>, quartz and feldspar porphyry type; $(\sigma) \epsilon \phi q f \square$ 1D</p> <p>Med. greenish gray, med. to fine grained, slightly foliated, epidotized and chloritized qf porphyry 1D w/increasing chloritization in fractured zone from 180.5 to 181.4. Minor to 1/2% diss. Py throughout zone. @ 181, bleached fracture w/Δ 20°</p>		430	178.2	181.4	3.2	N11				
				431	181.4	183.4	N11					
183.4	275.2	<p><u>TRONDHJEMITE</u>, quartz and feldspar porphyry type; qf porphyry 1D</p> <p>Med. bluish gray, med. to fine grained, slightly foliated qf porphyry 1D w/generally thin horizons of finer grained silicified 1 porphyry 1D and w/slightly epidotized and chloritized zones. Minor diss. Py Po w/occ. Cp.</p> <p>186.5 - 189, silicified q porphyry type 1D.</p> <p>190.5 - 196.5, qf porphyry 1D w/minor to 1% Py Cp locally conc. into thin beds along foliation planes.</p> <p>192.6 - 193.4, fractured zone filled w/q chlorite and minor epidote and 2 - 5% Py Cp Mt and dust size MoS₂ (?) @ 194.8, 2" concentration of chlorite.</p> <p>205 - 206.4, 209.8 - 210.2, 223.4 - 224, 225 - 228.5, and 232 - 232.8, mafic intrusive, (3), diabase dike, 3D (?)</p> <p>210.8 - 215.5, section w/8 x 1/8" to 3/4" q.v. w/occ. chlorite, calcite and minor amounts of Py, Mt and Gn.</p> <p>221.4 - 223, 2 - 3% Po Py Gn w/2 thin fractures filled w/calcite.</p> <p>228.5 - 232, sericitized Q porphyry 1D w/minor diss. Py.</p> <p>233.5 - 234.1, Lamprophyre (4L) w/hairline fractures @ Δ -10°</p> <p>235.7 - 237.5, silicified q porphyry 1D w/5 - 6% Po Py locally conc. along foliation planes.</p>		432	183.4	186.5	3.1	N11				
				433	186.5	189	2.5	N11				
				434	190.5	193.5	3.5	tr				
				435	193.5	196.5	3.0	N11				
				436	196.5	199.5	3.0	N11				
				437	199.5	202.5	3.0	N11				
				438	202.5	205	2.5	N11				
				439	206.5	209.4	2.9	N11				
				440	209.5	212.4	2.9	N11				
				441	212.4	215.5	3.1	N11				
				442	215.5	218.5	3.0	N11				
				443	218.5	221.4	2.9	N11				
				444	221.4	223	1.6	N11				
				445	223	225	2.0	"				
				446	228.5	232	3.5	tr				
				447	235.7	237.5	1.8	tr				
448	237.5	240.3	2.8	N11								
449	240.3	241.7	1.4	N11								
450	241.7	244.9	3.2	tr								



FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE	SAMPLE			ASSAYS					
				NO.	FOOTAGE		oz Au					
					FROM	TO						LENGTH
183.4	275.2	(continuation) 239.4 - 241.7, partly fractured and epidotized zone w/minor diss. Py and w/1" q.v. @ 241.2 w/3 - 4% combined MoS ₂ , Cp and Gn. 241.7 - 244.9, well foliated, biotitic felsic intrusive, w/app. 35% biotite and w/ local thin calcite banding. Minor diss. Py @ 247.7, fracture filled w/calcite, q chlorite and Mt. @ 252.7, 3" mafic dike (3). 253.2 - 254.5, 265.6 - 266.8, 268.6 - 269.4 and 270.2 - 271.3, slightly sericitized q porphyry 1D w/½ - 2% diss. Py and tr Cp. Note: T-84-3 intersected previous DDH (80-18) axis @ 274.3 Δ angle of DDH 80-18 relative to T-84-3 core axis is app. 70°		451	244.9	248	3.1	Nil				
				452	248	251	3.0	Nil				
				453	251	254.5	3.5	tr				
				454	254.5	257.5	3.0	tr				
				455	257.5	260.5	3.0	0.01				
				456	260.5	263	2.5	Nil				
				457	263	265.6	2.6	Nil				
				458	265.6	267.5	1.9	Nil				
				459	267.5	269.4	1.9	Nil				
				460	269.4	272.4	3.0	Nil				
				461	272.4	275.2	2.8	Nil				
275.2	280.9	<u>TRONDHJEMITE</u> , quartz porphyry type, (λ)σq□ 1D Bluish black, very fine grained, slightly foliated and sericitized, silicified q porphyry 1D w/minor quartz phenocrysts and w/1 - 2% diss. Py, locally concentrated along foliation planes. 276.6 - 277.2, carbonatized Lamprophyre dike (η4L).		462	275.2	278.0	2.8	0.04				
				463	278.0	280.9	2.9	0.01				
280.9	286.8	<u>TRONDHJEMITE</u> , quartz and feldspar porphyry type; (φ)εσq□ 1D Med. olive greenish gray, med. grained poorly foliated, slightly chloritized, epidotized and silicified qf porphyry 1D w/1 - 2% diss. Py and w/fractures @ Δ -20° filled w/calcite and fluorite at beginning of zone. Epidotization decreases toward end of zone. 284.3 - 286.1, Lamprophyre dike (η4L).		464	280.9	284.3	3.4	0.01				
286.8	304.5	<u>TRONDHJEMITE</u> , quartz and feldspar porphyry type; (φη)qf□ 1D Med. dark-dark greenish gray, coarse grained moderately foliated, slightly chloritized and carbonatized qf porphyry 1D w/app. 2/3 f porphyry and 1/3 q porphyry and w/generally thin bluish and finer grained q porphyry 1D horizons. Local thin q.v. 288.2 - 290.6, quartz-sericite schist (qkM1) w/few 1/8" - 1" q.v. and hairline fractures filled w/app. 3 - 5% diss. Py. 291 - 292.1, 295.2 - 295.9 and 296.3 - 296.6, silicified q porphyry 1D w/1% Py locally conc..		465	286.1	288.2	2.1	tr				
				466	288.2	290.6	2.4	0.03				
				467	290.6	293.5	2.9	0.01				
				468	293.5	296.5	3.0	Nil				
				469	296.5	299.5	3.0	Nil				
				470	299.5	302.5	3.0	Nil				
				471	302.5	304.5	2.0	Nil				

 MINROC MANAGEMENT LIMITED DIAMOND DRILL RECORD	HOLE NUMBER: T-84-4 LOCATION: 14+06E, 3+76S ELEVATION: 1031'		AZIMUTH: 322 LENGTH: 703'		STARTED: Feb. 9, 1984 COMPLETED: Feb. 13, 1984 CASING LEFT IN HOLE:	ETCH TESTS: 25' - 59½ 135' - 57½ 285 - 56 400 - 55 550 - 52 675 - 50
	PROPERTY: HIAWATHA TOWNSHIP: LIZAR PROJECT NUMBER: MM-003	DIP AT COLLAR: -60 CORE SIZE: BQ DRILLED BY: MORISSETTE DRILLING CO.		LOGGED BY: Marc A Leonard DATE: Feb. 14, 1984 CORE LOCATION: Core Shack (0+50E, 6N)		

OBJECTIVE:

Hole cemented (app. 50 feet) below casing.

FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE	SAMPLE			ASSAYS							
				NO.	FOOTAGE		oz Au							
					FROM	TO						LENGTH		
0	12	LAKE, OVERBURDEN.												
12	14.5	<u>MAFIC METAVOLCANICS: V5</u> Greenish-black, fine grained poorly foliated V5, w/numerous thin fractures filled w/calcite and w/calcite, chlorite and epidote toward end of unit.												
14.5	81.8	<u>TRONDHJEMITE, feldspar porphyry type; (φ) σ f ID</u> Dark bluish gray, fine to med. grained, moderately foliated, slightly chloritized, silicified f porphyry ID, w/app. 15% large feldspar phenocrysts and w/minor diss. Py Cp. Local thin finer grained, highly silicified qf porphyry ID and chloritized, epidotized f porphyry ID horizons. From 58' downward, the rock is highly fractured, silicified, chloritized and epidotized. It is generally microcrystalline and contains app. 5% feldspar phenocrysts. 14.5 - 16.3, 17.4 - 18.0, and 42.7 - 46.8, highly silicified microcrystalline rock w/few phenocrysts and w/minor to 1/2% Py Cp. Conc. of Cp in thin fracture @ 44.8 20.5 - 21.4 and 66.1 - 66.8, Lamprophyre dike (γ4L). 39.8 - 42.7, highly silicified, chloritized and epidotized f porphyry ID. 59 - 62.1, mafic dike (3).												
					513	14.5	17.0	2.5	N11					
					514	25	27.5	2.5	N11					
					515	35	37.5	2.5	N11					
					516	44	46.5	2.5	N11					
					517	55	57.5	2.5	N11					
					518	63.6	66.1	2.5	N11					
					519	75	77.5	2.5	N11					
81.8	266.2	<u>MAFIC METAVOLCANICS: V5</u> Greenish black, fine grained, poorly to moderately foliated V5, occasionally chloritized and w/occ. conc. of biotite and/or chlorite occurring as thin bands. Numerous fractures ranging from 1/16" to 1/2" thick and filled w/calcite or calcite and quartz occur throughout the mafic volcanics.												
					520	85	87.5	2.5	N11					
					521	105	107.5	2.5	N11					
					522	125	127.5	2.5	N11					
					523	145	147.5	2.5	N11					
					524	165	167.5	2.5	N11					



FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE	SAMPLE			ASSAYS					
				NO.	FOOTAGE		oz Au					
					FROM	TO						LENGTH
81.8	266.2	(continuation) 128.2 - 129.3, 130.2 - 132.7, 141.8 - 142.3, 148.2 - 149.1, 209 - 209.4 and 210.8 - 212.2. Fractured zones filled with 50 - 80% calcite. 220 - 223.4, Trondhjemite w/5" V5 fragment @ 220.2. Similar to 14.5 - 81.8 228.1 - 231.8 and 242.3 - 251.6, flow breccia (1B) w/75 to 90% V5 fragments. 234.9 - 242.3 - similar to 220 - 223.4 w/mafic volcanics (V5) from 236.5 - 237.1.		525	185	187.5	2.5	Nil				
				526	205	207.5	2.5	Nil				
				527	220	223.4	3.4	Nil				
				528	234.9	238.6	3.7	Nil				
				529	238.6	242.3	3.7	Nil				
				530	255	257.5	2.5	Nil				
266.2	276.9	<u>FLOW BRECCIA: 1B</u> Similar to 1B previously described w/45 - 50% V5 fragments ranging from 1/8" to 18" thick. The rock is highly fractured and epidotized from 268.8 downward. Potassic alteration occurs @ contact w/next zone.		531	274.4	276.9	2.5	Nil				
276.9	378	<u>DIABASE DIKE: 3D</u> Greenish black, med. to fine grained, moderately magnetic, massive diabase dike w/10 - 15% Mt, and w/minor diss. Po Py locally conc. to 20 - 25% close to epidotized, fractured zones. 291.5 - 291.9, 292.6 - 292.7, 301.2 - 301.6, 306.6 - 307.1, 312.9 - 313.2, 318 - 318.8 and 349.7 - 349.8, fractured and epidotized diabase.		532	291.2	293.7	2.5	Nil				
				533	320	322.5	2.5	Nil				
				534	350	352.5	2.5					
378	401.2	<u>MAFIC METAVOLCANICS: V5</u> Similar to V5 previously described w/minor diss. Po Py and tr Cp, occ. concentrated and forming 1/8 to 3/4" bands. At 380.4 and 395.5, Po Mt. Numerous hairline fractures filled w/q and calcite. 378.7 - 379.3 and 383.5 - 385, fractured zones w/1/2 - 3/4" fractures filled w/q. chlorite, epidote and minor calcite. 386.2 - 387.4, shear zone @ Δ -42° w/alternating thin band of q, epidote, ferromagnesian, hematitic quartz and minor calcite and w/local conc. of Py, Po and Gn.		535	385	387.5	2.5	tr				
				536	395	397.5	2.5	Nil				




FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE	SAMPLE			ASSAYS					
				NO.	FOOTAGE		oz Au					
					FROM	TO						LENGTH
401.2	423.6	<p><u>TRONDHJEMITE</u>, quartz porphyry type; (λ) ε φ σ q ID</p> <p>Med. to dark olive greenish gray, fine to med. grained, poorly foliated, slightly sericitized, epidotized, chloritized and highly silicified q porphyry 1D, with app. 10% slightly elongated q phenocrysts and w/tr Py. Occasional hairline to 1/4" fractures filled w/calcite and or quartz. Alteration decreases downward.</p> <p>409.8 - 410.6, 412.8 - 413.9 and 416 - 417.2, carbonatized Lamprophyre dikes.</p> <p>415 - 416, breccia w/small angular 1D fragments in calcite and epidote groundmass.</p> <p>@ 419, 3" epidotized fractured zone.</p>		537	401.2	404.2	3.0	0.01				
				538	404.2	407.2	3.0	0.01				
				539	407.2	409.8	2.6	tr				
				540	410.6	412.8	2.2	tr				
				541	417.2	420.2	3.0	Ni1				
				542	420.2	423.6	3.4	tr				
423.6	464.9	<p><u>TRONDHJEMITE</u>, feldspar porphyry type; (λ) φ f ID</p> <p>Dark bluish gray, med. grained, moderately foliated, slightly sericitized, chloritized f porphyry 1D, w/25 - 30% feldspar phenocrysts and w/tr diss. Py. This rock is interlayered w/few thin med. gray silicified q porphyry 1D w/local 1/4" to 1" fractures filled w/q. or q. calcite and chlorite. Local thin, highly sericitized zones.</p> <p>423.6 - 435, highly chloritized w/chloritization decreasing downward.</p> <p>459.6 - 460.5, sericitized, chloritized and silicified qf porphyry 1D w/minor to 1% diss. Py.</p> <p>462.6 - 463.7, silicified q porphyry 1D, purplish gray, w/2 - 3% diss. Py.</p> <p>@ 454, 3" fractured zone w/q. calcite and epidote filling w/1 - 2% Py.</p>		543	430	432.5	2.5	Ni1				
				544	440	442.5	2.5	Ni1				
				545	450	452.5	2.5	Ni1				
				546	452.5	455	2.5	Ni1				
464.9	475.7	<p><u>TRONDHJEMITE</u>: quartz and feldspar porphyry type; (λ φ) q f ID</p> <p>Similar to above except that combined phenocrysts (2/3 feldspar, 1/3 quartz) amounts to 50 - 60% of total rock.</p> <p>464.9 - 466.2 and 466.7 - 467.2, sericitized q porphyry 1D w/quartz phenocrysts up to 3/8" and w/1 - 2% Py Cp.</p> <p>467.2 - 470.4, highly chloritized zone w/minor Py.</p>		547	462.6	464.9	2.3	Ni1				
				548	464.9	467.2	2.3	Ni1				
				549	467.2	470.4	3.2	tr				



FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE	SAMPLE			ASSAYS						
				NO.	FOOTAGE		oz Au						
					FROM	TO						LENGTH	
475.7	485.5	<u>TRONDHEMITE</u> : quartz and feldspar porphyry type; (σ) φ q f ID Med. Greenish gray, med. grained, poorly foliated, slightly silicified, chloritized qf porphyry ID w/tr Py locally conc. along foliation planes. 478.5 - 478.8, Lamprophyre dike (η 4L). 483.7 - 485.5, highly sericitized and silicified q porphyry ID w/1/2 - 1% diss. Py Cp, and w/silicification increasing downward.		550	483.7	485.5	1.8	N11					
485.5	497.4	<u>MAFIC DIKE</u> : 3 (?) Med. - med. dark greenish gray, fine grained, poorly foliated mafic to intermediate dike (?) w/numerous hairline fractures filled w/calcite. 493.2 - 494.4, fractured zone w/q. chlorite and calcite filling.											
497.4	508.2	<u>TRONDHEMITE</u> : feldspar porphyry type; (λ) σ φ f ID Med. greenish gray, slightly sericitized, silicified and highly chloritized f porphyry ID w/numerous hairline fractures filled w/epidote and calcite.		551	497.4	500.4	3.0	N11					
				552	500.4	502.9	2.5	0.01					
				553	502.9	505.4	2.5	N11					
				554	505.4	508.2	2.8	tr					
508.2	509.5	<u>LAMPROPHYRE DIKE</u> : η 4L											
509.5	576.5	<u>TRONDHEMITE/QUARTZ-SERICITE SCHIST</u> ; (η φ λ) f q ID / qkM1 Med. - med. dark greenish gray, med. grained, slightly foliated, partly carbonatized, chloritized and sericitized fq porphyry ID w/minor diss. Py, interlayered w/horizons of med. purplish gray, fine grained, highly sericitized and silicified q porphyry ID and horizons of quartz-sericite schist (qkM1), both containing high amounts of sulfides and low amounts of q. phenocrysts. 509.5 - 513.1 and 516.2 - 517.3, highly silicified, sericitized q porphyry ID w/2 - 5% diss. Py. 513.1 - 514.2, 517.3 - 519.2 and 558.1 - 558.4, quartz-sericite schist (qkM1) w/3 - 5% diss. Py. 519.2 - 520.5, 521.9 - 523.9, 525.6 - 528.5, 538.3 - 539.2, 544.7 - 551 and 574 - 575, sericitized and silicified q porphyry ID occasionally chloritized w/5 - 8% diss. Py and w/occ. tr of Cp.		555	509.5	512.2	2.7	tr					
				556	512.2	514.2	2.0	0.03					
				557	514.2	516.2	2.0	N11					
				558	516.2	519.2	3.0	0.01					
				559	519.2	521.7	2.5	tr					
				560	521.7	523.9	2.2	0.01					
				561	523.9	525.3	1.4	N11					
				562	525.3	528.5	3.2	tr					
				563	528.5	533.0	4.5	tr					
				564	533	534.6	1.6	0.01					
				565	534.6	537.6	3.0	N11					
				566	537.6	540.6	3.0	0.01					
				567	540.6	543.1	2.5	0.01					



FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE	SAMPLE			ASSAYS						
				NO.	FOOTAGE		oz Au						
					FROM	TO						LENGTH	
509.5	576.5	(continuation) 525.3 - 525.6, fractured zone filled w/q. chlorite and local conc. of Py Po. 533 - 534.6 and 556 - 557.3, chloritized, sericitized and silicified q porphyry 1D w/3 - 5% diss. Py. 558.8 - 559.7, 560.9 - 561.4, 563.6 - 564.4 and 566.2 - 572.2, sericitized and silicified q porphyry 1D w/3 - 5% Py. 567.4 - 568.3, Lamprophyre dike (74L).		568	543.1	544.7	1.6	0.01					
				569	544.7	547.7	3.0	0.01					
				570	547.7	551.0	3.3	tr					
				571	551	553.5	2.5	Nil					
				572	553.5	556	2.5	Nil					
				573	556	558.1	2.1	tr					
				574	558.1	559.7	1.6	tr					
				575	559.7	562.7	3.0	tr					
				576	562.7	565.7	3.0	tr					
				577	565.7	567.4	1.7	tr					
				578	568.3	570.7	2.4	0.01					
				579	570.7	572.2	1.5	0.03					
				580	572.2	574.2	2.0	tr					
				581	574.2	576.5	2.3	0.01					
576.5	597	<u>MAFIC DIKE:</u> 3 Greenish black, fine to med. grained, foliated, slightly carbonatized mafic dike w/app. 10 - 15% plagioclases. Unit locally vuggy. 584.1 - 586.1 and 591.5 - 593, Lamprophyre dike (4L). 586.1 - 589, chloritized and silicified q porphyry 1D w/tr Py and hematite at end of zone. 595.3 - 596.4, sericitized and silicified q porphyry 1D w/½ - 1% diss. Py.		582	586.1	589	2.9	tr					
597	703	<u>TRONDHJEMITE</u> , quartz and feldspar porphyry type; (λσ) φ q f □ 1D Med. dark greenish gray, med. grained, slightly silicified and sericitized, chloritized qf porphyry 1D w/tr diss. Py and w/decreasing amounts of q. phenocrysts downward. Some thin unaltered horizons. 598.8 - 601.3, quartz-sericite schist (qkM1) with 3/4" q.v. @ 599.5 and with 3 - 5% Py. 602 - 606.9, fractured zone w/numerous 1/8" to 1/2" q.v.; highly sericitized in middle portion (qkM1). 603.9 - 606.4, q.v. w/chlorite and tr diss. Py. 606.9 - 607.4, 607.9 - 608.1, 609 - 609.3, 611.4 - 612, 618.1 - 619.2, 620.1 - 620.4.		583	597	598.8	1.1	tr					
				584	598.8	602	3.2	tr					
				585	602	603.6	1.6	tr					
				586	603.6	606.9	3.3	tr					
				587	606.9	610	3.1	tr					
				588	610	613	3.0	Nil					
				589	613	616.4	3.4	tr					
				590	625	627.5	2.5	tr					
				591	647.6	650.1	2.5	Nil					
				592	655	657.5	2.5	Nil					
				593	665	667	2.0	Nil					


 MINROC MANAGEMENT LIMITED DIAMOND DRILL RECORD	HOLE NUMBER: T-84-5 LOCATION: 20+09E, 2+20S ELEVATION: 1031 DIP AT COLLAR: -50 CORE SIZE: BQ DRILLED BY: MORISSETTE DRILLING CO.	AZIMUTH: 322 LENGTH: 282'	STARTED: Feb. 14, 1984 COMPLETED: Feb. 16, 1984 CASING LEFT IN HOLE: LOGGED BY: Marc A Leonard DATE: Feb. 17, 1984 CORE LOCATION: Core Shack (0+50E, 6N)	ETCH TESTS: 45' -52 205' -48
	PROPERTY: HIAWATHA TOWNSHIP: LIZAR PROJECT NUMBER: MM-003			

OBJECTIVE: Remark: Hole located to pass 30' above drift. Hole intersected drift @ 282'
 Note: Hole cemented (50') below casing.

FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE	SAMPLE			ASSAYS							
				NO.	FOOTAGE		oz Au							
					FROM	TO						LENGTH		
0	28	CASING (LAKE AND OVERBURDEN).												
28	99	<u>MAFIC METAVOLCANICS: V5</u> Similar to V5 previously described w/numerous hairline to 1/8" - 1/4" q. and calcite veins in random directions. Rock highly fractured in the upper part of the hole. Minor Py Po occ. conc. along foliation and fracture planes. @ 34.5, 2 1/2" breccia. @ 45.5, 52.6, 57.1, 79.1 and 81.1, 1" to 3" q.v. w/massive MoS2 @ 52.6 59 - 59.6 and 68.7 - 70, fractured zone w/q. calcite and chlorite filling. 65.9 - 79.5, Lamprophyre dike (4L). 79.5 - 83.4 and 85.1 - 86.6, concentrations of biotite and amphiboles in thin bands (20 - 25%) interlayered w/V5.		597	28	30.5	2.5	Nil						
				598	44	46.5	2.5	Nil						
				599	52.5	55	2.5	tr						
				600	67.5	70	2.5	tr						
				601	85	87.5	2.5	tr						
99	104.6	<u>QUARTZ - SERICITE SCHIST: qkM1</u> Med. dark - dark gray, fine grained silicified and highly sericitized q porphyry 1D w/few q. phenocrysts grading into qkM1 w/minor Py Po. Gradational contact w/next zone.		602	99	102	3.0	tr						
				603	102	104.6	2.6	tr						
104.6	197.9	<u>TRONDHJEMITE</u> , quartz and feldspar porphyry type; ϕ qf ID Med. light to med. greenish gray, med. grained, very poorly foliated, chloritized qf porphyry 1D w/minor diss. Py Po alternating with narrow silicified and sericitized q porphyry 1D → qkM1 horizons in the upper part of zone. 109.3 - 111.1 and 115.5 - 116, sericitized and silicified q porphyry 1D w/tr Py. 112.7 - 114.5 and 121.8 - 125.4, quartz-sericite schist (qkM1) w/1/2 - 1% Po Py. 133 - 135, Lamprophyre dike (74L).		604	104.6	109.3	4.7	Nil						
				605	109.3	111.1	1.8	Nil						
				606	111.1	112.7	1.6	Nil						
				607	112.7	114.5	1.8	0.01						
				608	114.5	116	1.5	tr						
				609	116	119	3.0	tr						
				610	119	121.8	2.8	Nil						
				611	121.8	125.4	3.6	tr						



FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE	SAMPLE			ASSAYS							
				NO.	FOOTAGE		oz Au							
					FROM	TO						LENGTH		
104.6	197.9	(continuation) @ 148.1 and @ 152.9, 2" and 3" mafic dikes (3). 146 - 151.5 and 159 - 165, fractured zones w/hem. 166.3 - 168.2, fractured zone w/q.v. and minor Hem, Po Py and tr Cp and calcite from 166.4 to 167.3 168.6 - 172.4, highly silicified, dark intrusive w/tr Py. 175.2 - 176, Lamprophyre dike (η4L). 176 - 181.6, highly fractured zone w/numerous hairline fractures filled w/q. calcite, epidote and tr Hem. Contact with next zone is gradational.												
197.9	282	<u>TRONDHJEMITE/QUARTZ-SERICITE SCHIST; (λ)σf□ ID/σφf□ ID/qkMl</u> Dark greenish gray, med. to fine, moderately foliated, slightly sericitized, silicified f porphyry 1D alternating w/chloritized and silicified f porphyry 1D and highly sericitized q porphyry 1D, grading into quartz-sericite schist horizons. 200.5 - 218 and 229.7 - 232.7, chloritized f porphyry 1D w/tr Py. 225.5 - 226.9, highly silicified, sericitized q porphyry 1D w/up to 1% Py. 227.7 - 228.7, chloritized fractured zone. 235.4 - 237.8 and 239.6 - 241.2, chloritized fine f porphyry 1D. 237.8 - 239.6, highly silicified, sericitized q porphyry 1D. 243.7 - 254.6, 255.3 - 256.6 and 277.9 - 280.8, quartz-sericite schist (qkMl) w/2 - 5% Py Po and w/local q.v. 256.6 - 258.9, Lamprophyre dike (η4L), w/5" q.v. @ 258.3 @ 263.2 and @ 265.5, 7" and 3/4" q. veins w/chlorite. 270.4 - 271.1, chloritized and silicified q porphyry 1D w/minor to 1% Py.												
	282'	END OF HOLE.												
					612	125.4	128.4	3.0	N11					
					613	147	149.5	2.5	N11					
					614	166.3	168.2	1.9	N11					
					615	168.2	172.4	4.2	N11					
					616	176	179	3.0	N11					
					617	179	181.6	2.6	tr					
					618	192.5	195	2.5	N11					
					619	205	207.5	2.5	tr					
					620	215	218	3.0	N11					
					621	225.5	226.9	1.4	tr					
					622	235	237.7	2.7	N11					
					623	237.7	239.6	1.9	N11					
					624	239.6	241.2	1.6	N11					
					625	241.2	243.7	2.5	N11					
					626	243.7	246.6	2.9	0.02					
					627	246.6	248.6	2.0	0.02					
					628	248.6	251.6	3.0	0.01					
					629	251.6	254.6	3.0	0.02					
					630	254.6	256.6	2.0	N11					
					631	258.9	261.9	3.0	tr					
					632	261.9	264.9	3.0	N11					
					633	264.9	267.9	3.0	N11					
					634	267.9	270.4	2.5	N11					
					635	270.4	273.4	2.5	tr					
					636	273.4	275.4	2.0	tr					
					637	275.4	277.9	2.5	N11					
					638	277.9	280.8	2.9	0.21					
					639	280.8	282.0	1.2	tr					

 MINROC MANAGEMENT LIMITED DIAMOND DRILL RECORD	HOLE NUMBER: T-84-6 LOCATION: 27+17E, 3+08S ELEVATION: 1031' AZIMUTH: 322 DIP AT COLLAR: -50 LENGTH: 545' CORE SIZE: BQ DRILLED BY: MORISSETTE DRILLING CO.	STARTED: Feb. 17, 1984 COMPLETED: Feb. 23, 1984 CASING LEFT IN HOLE: LOGGED BY: Marc A. Leonard DATE: February 25, 1984 CORE LOCATION: Core Shack (O+50E, 6N)	ETCH TESTS: 166 --49½ 300 -42 450 -36½
	PROPERTY: HIAWATHA TOWNSHIP: LIZAR PROJECT NUMBER: MM-003		

OBJECTIVE:

FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE	SAMPLE			ASSAYS							
				NO.	FOOTAGE		oz Au							
					FROM	TO						LENGTH		
0	17	WATER (LAKE)												
17	152	SAND, GRAVEL AND BLOCS, 0 to 152' CASING.												
152	188.7	<u>MAFIC METAVOLCANICS: V5</u> Similar to metavolcanics (V5) previously described. @ 155.5, 168.8, 170.3 and 186.8, 1" to 3" fractures filled with q. chlorite and local epidote. 167-168.3 and 172.7 - 184.1, biotite and amphibole banding. V5 with pale reddish brown 1/8 to 1" thick bands of biotite and amphibole.		645	160	162.5	2.5	N11						
				646	170	172.5	2.5	N11						
				647	180	182.5	8.5	N11						
188.7	196.7	<u>TRONDHJEMITE, quartz porphyry type: (λ)σ q□ ID</u> Med. to med. dark gray, fine to med. grained, slightly sericitized, highly silicified q porphyry 1D with some feldspar phenocrysts conc. in thin zones and with hairline fractures filled with q. and/or calcite and minor diss. Py Cp locally conc. along foliation planes. Local large phlogopite (?) 189.5 - 190.5 and 191.7 - 192.5, silicified qf porphyry 1D. 194.9 - 195.8, Lamprophyre dike (η4L).		648	188.7	191.7	3.0	N11						
				649	191.7	194.9	3.2	N11						
				650	195.8	196.7	0.9	N11						
196.7	220.5	<u>TRONDHJEMITE, quartz and feldspar porphyry type: (εσ)φ qf□ ID</u> Med. dark greenish gray, med. to fine grained, slightly epidotized and silicified, chloritized qf porphyry 1D with 50.50 q. and f. phenocrysts, locally interbedded with finer grained, slightly epidotized and sericitized, highly silicified q. porphyry 1D horizons with minor to 1% PyPo. These horizons occur: from - to 201.3 - 201.7, 202.6 - 203.4, 204.2 - 205.0, and 206.9 - 208.5		651	196.7	199.7	3.0	N11						
				652	199.7	202.7	3.0	N11						
				653	202.7	204.9	2.2	N11						
				654	204.9	206.9	2.0	N11						
				655	206.9	208.5	1.6	N11						
				656	208.5	211.8	3.3	N11						




FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE	SAMPLE			ASSAYS					
				NO.	FOOTAGE		oz Au					
					FROM	TO						LENGTH
196.7	220.5	(continuation) @ 207.4, 5" q.v., w/3-4% Py Po along fracture and foliation planes near q.v. From 211.8 to end, shearing parallel to foliation with numerous close spaced, thin, epidotized, highly silicified zones with hematitic and potassic alteration, and increasing amounts of Py Po.		657	211.8	214.8	3.0	N11				
				658	214.8	217.8	3.0	N11				
				659	217.8	220.5	2.7	N11				
220.5	228	TRONDHJEMITE, feldspar and quartz porphyry type; (φ) σ fq □ ID Med. slightly greenish gray, very coarse grained, non- to poorly foliated, slightly chloritized, silicified fq porphyry ID, with q phenocrysts up to 3/8". Thin q rich fractured zones containing from ½ to 1% diss. coarse Py Po. Some transverse hairline fractures filled with calcite and sulfides. 220.7 - 222.1, q.v. with minor chlorite, calcite and tr Py.		660	220.5	222.1	1.6	N11				
				661	222.1	225.0	2.9	N11				
				662	225.0	228.0	3.0	N11				
228	248	FRACTURED ZONE, TRONDHJEMITE, quartz and feldspar porphyry type; (ε φ σ) k q f □ ID Dark green to reddish gray, med. to coarse grained, highly fractured, slightly epidotized, chloritized and silicified, highly potassic qf porphyry ID. Local thin brecciated zones and hairline fractures filled with epidote and calcite. Local hematitic alteration, tr to minor Py Po Mt and Cp. @ 231.4, 4" thick, highly potassic and hematitic zone. 231.7 - 239.3, Lamprophyre dike (η4L), highly fractured, with some calcite veins @ 247, 3" q.v. with concentration of Py along vein walls.		663	228	231.7	3.7	N11				
				664	239.3	242.3	3.0	N11				
				665	242.3	245	2.7	N11				
				666	245	248	3.0	N11				
248	295	TRONDHJEMITE, feldspar and quartz porphyry type; (ε φ) kf q □ ID / (ε φ) fq □ ID Med., med. dark, olive greenish gray, coarse to med. grained, poorly foliated, slightly epidotized and chloritized fq porphyry ID with thin zones, with high amounts of moderate reddish orange, potassic feldspar phenocrysts, mostly conc. around and in fractures. Tr diss. Py throughout, with local conc.		667	248	251	3.0	N11				
				668	251	254	3.0	N11				
				669	254	257	3.0	N11				
				670	257	259.5	2.5	N11				
				671	260.2	263.2	3.0	N11				
				672	263.2	266.3	3.1	N11				
				673	266.3	269	2.7	N11				



FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE	SAMPLE			ASSAYS						
				NO.	FOOTAGE		oz Au						
					FROM	TO						LENGTH	
248	295	(continuation) Note: gradual end of previous zone. Numerous thin fractured zones with q epidote, chlorite, Mt, potassic alteration, etc. 259.5, 260.2, 269 - 270.7 and 275.9 - 280, Lamprophyre dikes (η4L) @ 290.1, 3" 4L dike. 272.4 - 275, highly potassic, reddish-orange zone with epidote alteration. 292.9 - 295, highly potassic reddish-orange zone with large q phenocrysts.		674	270.7	272.4	1.7	N11					
				675	272.4	275.9	3.5	N11					
				676	280	283	3.0	N11					
				677	283	286	3.0	N11					
				678	286	289	3.0	N11					
				679	289	292	3.0	N11					
				680	292	295	3.0	N11					
295	318.7	<u>TRONDHJEMITE</u> , quartz and feldspar porphyry type; ε φ q f □ ID Med. dark olive greenish gray, med. grained, moderately foliated, epidotized and chloritized qf porphyry 1D with tr to minor diss. Py, interlayered with few thin highly silicified q porphyry 1D horizons containing ½ - 1% Py Po. 298.1 - 299.4, slightly sericitized, silicified 1D with 1 - 2% Py Po 304.5 - 305.9, 312.5 - 313.4 and 314.2 - 314.6, epidotized, highly silicified qf porphyry 1D with ½ - 1% Py Po locally conc. to 3 - 4%.		681	295	298.1	3.1	N11					
				682	298.1	301.1	3.0	N11					
				683	301.1	304.5	3.4	N11					
				684	304.5	307	2.5	N11					
				685	312.5	315	2.5	N11					
318.7	334.7	<u>TRONDHJEMITE</u> , feldspar and quartz porphyry type; (ε) f q □ ID Med. dark, slightly greenish gray, coarse grained, "granitic", slightly epidotized fq porphyry 1D with tr Py Cp and with occasional silicified, slightly sericitized q porphyry thin horizons with minor to 1% diss. Py (326.3 - 327 and 328.3 - 328.8) 325.9 - 326.3, Lamprophyre dike (η4L). @ 333.7, conc. of Cp along 1/8" q.v.		686	326.3	328.9	2.5	N11					
				687	332	334.7	2.7	N11					
334.7	379.5	<u>TRONDHJEMITE</u> , feldspar and quartz porphyry type (ε φ σ) f q □ ID Med. to med. dark greenish gray, med. grained, slightly epidotized, chloritized and silicified fq porphyry 1D with ½% diss. Py, interlayered with thin highly silicified, occasionally sericitized and epidotized q porphyry 1D; finer grained horizons with up to 7.8% diss. Py Po and tr Cp. These horizons occur from - to: 336 - 337.2 (1½ - 2% diss. Py), 337.7 - 339 (1% diss. Py), 348.6 - 349.8 (2-3% Py Po), 350.8 - 351.6 (3-5% Py Po tr Cp), 364 - 364.4 (7 - 8% Py Po) and 368.6 - 371 (3 - 5% Py).		688	334.7	337.7	3.0	tr					
				689	337.7	339.5	1.8	tr					
				690	345.4	348.6	3.2	N11					
				691	348.6	351.6	3.0	N11					
				692	351.6	354.6	3.0	N11					
				693	354.6	357.1	2.5	N11					
				694	357.1	359.6	2.5	N11					
				695	360.5	364	3.5	N11					



FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE	SAMPLE			ASSAYS						
				NO.	FOOTAGE		oz Au						
					FROM	TO						LENGTH	
334.7	379.5	(continuation) 339.5 - 345.4 and 359.6 - 360.5, Basalt (V7), with numerous hairline fractures filled with epidote and calcite. Note: Rock highly fractured from 350 to 360 with abundant hairline to ½" epidote filled fractures and local breccia with epidote groundmass in centre of zone.		696	364	368.6	4.6	N11					
				697	368.6	371	2.4	N11					
				698	371	374	3.0	N11					
				699	374	377	3.0	N11					
				700	377	379.5	2.5	N11					
379.5	420	<u>TRONDHJEMITE</u> , quartz porphyry type, ε λ σ q □ ID Dark greenish and bluish gray, fine grained, slightly foliated, epidotized, sericitized and silicified q porphyry 1D with app. 1% diss. Py and with occasional thin quartz-sericite schist zones with increasing amounts of diss. Py. 381.4 - 382.4, 384.2 - 387, 398.8 - 401.7 and 414 - 414.8, mafic dikes (3) 387 - 389.5, quartz-sericite schist (qkM1) with 3 - 5% diss. Py. 389.3 - 395.9, highly silicified, sericitized q porphyry 1D with 3 - 5% diss. Py locally conc. to 7 - 8%, grading into qkM1 at end of zone. 397.4 - 398.8, silicified and highly epidotized fractured zone, brecciated toward the end. From 405 to end of zone, highly silicified with 2" to 12" thick quartz-sericite schist (qkM1) horizons with 6 - 8% Py.		701	379.5	381.4	1.9	N11					
				702	382.4	384.2	1.8	tr					
				703	387	389.5	2.5	N11					
				704	389.5	392.5	3.0	tr					
				705	392.5	395.9	3.4	tr					
				706	395.9	398.8	2.9	N11					
				707	401.7	405	3.3	tr					
				708	405	408	3.0	0.02					
				709	408	411	3.0	tr					
				710	411	414	3.0	tr					
				711	414.8	417	2.2	tr					
				712	417	420	3.0	tr					
420	496.2	<u>TRONDHJEMITE</u> , quartz and feldspar porphyry type; ε φ κ q f □ ID Med. greenish to reddish orange gray, coarse grained, poorly foliated epidotized, chloritized, highly potassic qf porphyry 1D with tr diss. Py and with very large q and f phenocrysts. Occasional hairline fractures filled with q and epidote. 423.1 - 415, 427.3 - 428.2, 488 - 488.4, 491.7 - 493.8 and 494.6 - 495 mafic dikes (3). 426.4 - 427.3 and 430.4 - 431.7, fractured zones with potassic alteration. 448.9 - 450.6 Lamprophyre dike (74L). 457.6 - 460.4 mod. foliated, epidotized and chloritized q porphyry 1D @ 483, 6" thick fractured zone, epidotized and potassic (alteration) 488.4 - 490.3, epidotized and highly silicified q porphyry 1D. Note: Contact with next zone is gradational.		713	420	423.1	3.1	tr					
				714	430	432.5	2.5	N11					
				715	440	443	3.0	N11					
				716	452.2	456.8	4.6	N11					
				717	465	467.5	2.5	N11					
				718	475	477.5	2.5	N11					
				719	485	488	3.0	N11					
				720	488.4	490.3	1.9	tr					


 MINROC MANAGEMENT LIMITED DIAMOND DRILL RECORD	HOLE NUMBER: T-84-7 LOCATION: 3+50E, 3+57N ELEVATION: 1058' DIP AT COLLAR: -60 CORE SIZE: BQ DRILLED BY: MORISSETTE DRILLING CO.	STARTED: Feb. 26, 1984 COMPLETED: Feb. 27, 1984 CASING LEFT IN HOLE: LOGGED BY: Marc A. Leonard DATE: February 27, 1984 CORE LOCATION: Core Shack (O+50E, 6N)	ETCH TESTS: 35' - 59' 200' - 53'
	PROPERTY: HIAWATHA TOWNSHIP: LIZAR PROJECT NUMBER: MM-003		

OBJECTIVE: To test North Zone, close to area where channel (E) and trench (1) samples returned gold values of 0.01 to 4.9 oz/t.

FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE	SAMPLE			ASSAYS							
				NO.	FOOTAGE		oz Au							
					FROM	TO						LENGTH		
0	8'	<u>CASING, OVERBURDEN</u>												
8	62.5	<u>MAFIC METAVOLCANICS: V5</u> Greenish black, fine grained, poorly to locally moderately foliated mafic metavolcanics w/occasional thin fractures filled w/calcite and/or q and occasional concentration of Py and Cp. Local well foliated chloritic zones. (19.2 - 26.0 and 27.0 - 29.4). 29.9 - 31, fractured zone, slickensides. @ 33.7, 1" fracture filled w/q calcite and 4 - 5% Po Cp. 35.6 - 36, Lamprophyre dike (4L) 56.4 - 56.8, mafic dike (3). 61.3 - 62.5, fractured zone @ Δ = 33° w/calcite, chlorite, epidote.		724	14	16.5	2.5	tr						
				725	27	29.4	2.4	tr						
				726	32	34.5	2.5	tr						
				727	45	47.5	2.5	tr						
				728	56.8	59.3	2.5	tr						
				729	59.3	62.5	3.2	tr						
62.5	68.2	<u>QUARTZ VEIN: q.v.</u> White granular q.v. w/chlorite in upper part and w/occasional V5 fragments at 66'. From 66' to end, presence of epidote. Minor Py at contact w/next zone.		730	62.5	65.5	3.0	N11						
				731	65.5	68.2	2.7	N11						
68.2	73.6	<u>FELSIC INTRUSIVE (QUARTZ EYE PORPHYRY): (λ) σ q □ IR</u> Med. dark bluish-purple gray, fine to med. grained, slightly foliated and sericitized, silicified q porphyry 1R, w/ ½ - 1% fine diss. Py and w/2" q.v. at 70.8. the rock is slightly sericitized in in the upper part; it becomes highly silicified toward the end.		732	68.2	70.2	2.0	N11						
				733	70.2	71.9	1.7	N11						
				734	71.9	73.6	1.7	tr						



FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE	SAMPLE			ASSAYS					
				NO.	FOOTAGE		oz Au					
					FROM	TO						LENGTH
73.6	79	<u>MAFIC METAVOLCANICS: V5</u> Similar to above description.		735	73.6	75.8	2.2	tr				
79	96.6	<u>FELSIC TO INTERMEDIATE INTRUSIVE "GRAPHIC": IR</u> Med. dark - dark gray, med. to fine grained, schistose felsic to intermediate intrusive (IR) w/"graphic" texture and w/high biotite content from 93 to end of zone. 87.2 - 93.0, mafic metavolcanics (V5). @ 82.2, 3/4" q.v. w/minor Py.		736	84	86.5	2.5	Nil				
96.6	99.1	<u>MAFIC METAVOLCANICS: V5</u> Similar to above w/minor diss. Py.										
99.1	106.8	<u>FRACTURED ZONE (QUARTZ VEINS / FELSIC INTRUSIVES / V5)</u> 99.1 - 99.5, sheared V5 w/calcite veins and w/high core of Cp @ bottom contact w/q.v. (1/2" w/15 - 20% Cp). 99.5 - 101.7, granular q.v. w/loc. conc. of chlorite and 2" 10 - 15% Cp @ 100'. 101.7 - 106, fine, massive silicified felsic intrusive (IR) w/1 - 1 1/2% fine diss. Py Cp, locally conc. to 3%. 4" V5 band @ 104' 106 - 106.8, sheared V5 w/chlorite and biotite rich bands.		737	99.1	101.7	2.6	tr				
				738	101.7	104.3	2.6	Nil				
				739	104.3	106.8	2.5	Nil				
106.8	122	<u>MAFIC METAVOLCANICS: V5</u> Similar to V5 previously described, very well foliated from 111 to 116' and w/2 x 1" calcite veins @ 112.4 and 113.5. Tr diss. Py. Occasional hairline fractures filled w/calcite.		740	116	118.5	2.5	tr				

 MINROC MANAGEMENT LIMITED DIAMOND DRILL RECORD	HOLE NUMBER: T-84-8 LOCATION: 2+54W, 0+62N ELEVATION: 1104' AZIMUTH: 322 DIP AT COLLAR: -50 LENGTH: 286' CORE SIZE: BQ DRILLED BY: MORISSETTE DRILLING CO.		STARTED: Feb. 28, 1984 COMPLETED: Feb. 29, 1984 CASING LEFT IN HOLE: LOGGED BY: Marc A. Leonard DATE: March 1, 1984 CORE LOCATION: Core Shack (0+50E, 6N)		ETCH TESTS: 36' - 49 200' - 41
	PROPERTY: HIAWATHA TOWNSHIP: LIZAR PROJECT NUMBER: MM-003				

OBJECTIVE: To test South Zone where channel (T) and trench (8) samples returned gold values of 0.01 to 0.108 oz/t.


FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE	SAMPLE			ASSAYS							
				NO.	FOOTAGE		oz Au							
					FROM	TO						LENGTH		
0	16	<u>CASING, OVERBURDEN</u>												
16	27.4	<u>TRONDHJEMITE</u> , quartz porphyry type; (φ η) ε σ q ID Med. light - med. olive greenish gray, fine grained poorly foliated, partly chloritized and carbonatized, highly silicified, epidotized q porphyry ID w/approx. 5 - 10% bluish q phenocrysts and w/2 - 3% diss. Py locally conc. to 5 - 8% tr Cp.		750	16	19	3.0	Nil						
				751	19	22	3.0	tr						
				752	22	25	3.0	Nil						
				753	25	27.4	2.4	0.01						
27.4	71	<u>TRONDHJEMITE</u> , quartz and feldspar porphyry type; (λ φ) q f ID Med. dark - dark bluish gray, med. to fine grained, slightly foliated partly sericitized and chloritized qf porphyry ID w/tr diss. Py and w/local thin silicified and/or epidotized finer grained horizons w/1 - 2% Py. 34.3 - 34.8, epidotized and silicified q porphyry ID w/2% Py and w/Mc @ 34.5' 36 - 46.8, f porphyry ID. 46.8 - 54.5, 60.3 - 62 and 66.5 - 67.3, similar to 16 - 27.4 w/numerous hairline fractures filled w/chloride, Py and tr Cp. Some fractures filled w/epidote or q and tr calcite. Sulfides up to 6.7% locally. 50.7 - 52.1 Lamprophyre dike (η4L). 3" q.v. at contact with next zone.		754	27.4	31	3.6	0.01						
				755	31	33.5	2.5	tr						
				756	33.5	36	2.5	0.01						
				757	46.8	48.8	2.0	tr						
				758	48.8	50.7	1.9	Nil						
				759	52.1	54.5	2.4	Nil						
				760	60.3	62	1.7	Nil						
71	81.8	<u>INTERMEDIATE DIKE (2) ?</u> Grayish black, fine grained, poorly foliated intermediate dike (2) (?) with tr Py.		761	76	78.5	2.5	Nil						



FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE	SAMPLE			ASSAYS				
				NO.	FOOTAGE		oz Au				
					FROM	TO					
81.8	110.7	<p><u>TRONDHJEMITE</u>, quartz and feldspar porphyry type; (ηφ) qf ID</p> <p>Med. dark greenish to bluish gray, slightly foliated, partly carbonatized and chloritized qf porphyry 1D w/tr to minor diss. Py, locally concentrated to 3 - 5%. Local thin, highly silicified and occasionally sericitized q porphyry 1D zones occurring from - to: 89.6 - 91.9 (½ - 1% Py), 98.4 - 99.6 (1 - 2% diss. Py) and 105.7 - 107.5 (7 - 8% Py Po).</p> <p>96.7 - 97.2, fractures with q filling and up to 7 - 10% Py.</p> <p>109 - 110.5, silicified and epidotized horizons with minor diss. Py.</p>									
			762	89.6	91.6	2.0	Nil				
			763	96.7	99.6	2.9	0.01				
			764	103	105.7	2.7	tr				
			765	105.7	107.5	1.8	tr				
			766	107.5	110.7	3.2	tr				
110.7	123.5	<p><u>QUARTZ - SERICITE SCHIST</u>: qkM1</p> <p>Med. light olive gray, fine to med. grained quartz sericite schist (qkM1) w/local thin sericitized highly silicified q porphyry 1D horizons w/7 - 10% Py and w/some 1/2" to 1" q.v. schist w/½ - 1% diss. Py local conc. to 2%.</p> <p>115.7 - 116.5, Lamprophyre dike (η4L)</p> <p>116.8 - 117.7, mafic dike (3).</p>									
			767	110.7	113.2	2.5	0.01				
			768	113.2	115.7	2.5	0.01				
			769	117.7	120.7	3.0	0.01				
			770	120.7	123.5	2.8	0.01				
123.5	178.3	<p><u>TRONDHJEMITE</u>, quartz and feldspar porphyry type; (φε) qf ID</p> <p>Med. dark slightly greenish gray, med. grained, partly chloritized and epidotized qf porphyry 1D, locally interlayered w/thin, highly epidotized qf porphyry 1D or sericitized silicified q porphyry 1D horizons.</p> <p>123.5 - 125.3, sericitized, highly silicified q porphyry 1D w/10% Py.</p> <p>134 - 137.2, similar to above w/1 - 2% Py.</p> <p>141.6 - 142.7, and 146.1 - 148.2, epidotized qf porphyry 1D.</p> <p>150.9 - 155.1, intermediate dike (2) similar to 71 - 81.8 w/2" and 6" epidotized 1D fragments @ 151.3 and 153.6.</p> <p>155.1 - 156.5, Lamprophyre dike.</p> <p>156.5 - 158.7, silicified fq porphyry 1D, epidotized from 156.8 to 157.8 w/3" q.v. with 3 - 4% Py @ 157.8.</p> <p>164.2 - 164.8, slightly sericitized, silicified q porphyry 1D w/6 - 7% Py Po.</p>									
			771	123.5	125.3	2.0	tr				
			772	125.3	128.3	3.0	Nil				
			773	134	137.2	3.2	0.01				
			774	146.1	148.2	2.1	Nil				
			775	156.5	158.7	2.2	Nil				
			776	164.2	167.2	3.0	Nil				
			777	175.3	178.3	3.0	Nil				




FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE	SAMPLE			ASSAYS					
				NO.	FOOTAGE		oz Au					
					FROM	TO						LENGTH
178.3	185.8	TRONDHJEMITE, quartz and feldspar porphyry type: () qf 1D Similar to above, poorly foliated ("granitic texture") w/tr Py locally conc. to 1 - 3%. 180.9 - 182.4, epidotized and silicified qf porphyry 1D w/minor Py.		778	182.8	185.8	3.0	Nil				
185.8	260.5	TRONDHJEMITE / QUARTZ-SERICITE SCHIST: (σ) qf 1D / σ q 1D / σ Λ q 1D → qkMI Sheared zone. Partly silicified qf porphyry 1D interlayered w/horizons of silicified q porphyry 1D and horizons of silicified, highly sericitized q porphyry 1D grading into quartz-sericite schists locally. Occasional q.v. up to 1½" thick. 185.8 - 187.3, 189.7 - 192, 195 - 195.7, 204.5 - 208.2, 212.8 - 214.1, 230.8 - 231.7, 237.6 - 238.7, 249.6 - 251.3, 252.8 - 254 and 254.6 - 260.5, sericitized and silicified q porphyry 1D horizons w/1 to 5% diss. Py. 187.9 - 189.1 210.8 - 212.1, 214.6 - 217.6 and 239.2 - 245.7, quartz- sericite schist horizons w/3 to 8% diss. Py. 199.2 - 201.2, 209.5 - 210.8, 223 - 228.3 and 232.1 - 232.9, silicified, locally epidotized q porphyry 1D w/minor to 3% diss. Py and occasional tr Cp. 228.7 - 229.8, epidotized q porphyry 1D w/1% Py. 230 - 230.3, 234.6 - 236.9 and 247.4 - 249.6, Lamprophyre dike (74L) @ 210.1 and 228.3, 1" and 2" Lamprophyre dikes (74L). 233.9 - 234.6, (fractured zone) epidotized and chloritized q porphyry 1D.		779	185.8	187.3	1.5	tr				
				780	187.3	189.7	2.4	tr				
				781	189.7	192	2.3	0.01				
				782	192	195	3.0	tr				
				783	195	198	3.0	Nil				
				784	198	201.2	3.2	tr				
				785	201.2	204.5	3.3	tr				
				786	204.5	208.2	3.7	tr				
				787	208.2	210.8	2.6	tr				
				788	210.8	212.1	1.3	0.01				
				789	212.1	214.6	2.5	0.01				
				790	214.6	217.6	3.0	0.02				
				791	217.6	220.6	3.0	Nil				
				792	220.6	223	2.4	Nil				
				793	223	226	3.0	tr				
				794	226	328.3	2.3	0.01				
				795	228.5	231.7	3.2	Nil				
				796	231.7	234.6	2.9	0.01				
				797	236.9	239.2	2.3	Nil				
				798	239.2	242.5	3.5	0.01				
				799	242.5	245.7	3.2	tr				
				800	245.7	247.4	1.7	Nil				
				801	249.6	251.3	1.7	tr				
				802	251.3	254.6	3.3	Nil				
				803	254.6	257.6	3.0	Nil				
				804	257.6	260.5	2.9	tr				

 MINROC MANAGEMENT LIMITED DIAMOND DRILL RECORD	HOLE NUMBER: T-84-9 LOCATION: 8+03W, 2+06N ELEVATION: 1158' DIP AT COLLAR: -50 CORE SIZE: BQ DRILLED BY: MORISSETTE DRILLING CO.	STARTED: March 2, 1984 COMPLETED: March 3, 1984 CASING LEFT IN HOLE: LOGGED BY: Marc A. Leonard DATE: March 4, 1984 CORE LOCATION: Core Shack (O+50E, 6N)	ETCH TESTS: 25', -51 197' -48
	PROPERTY: HIAWATHA TOWNSHIP: LIZAR PROJECT NUMBER: MM-003		

OBJECTIVE: To test West extension of South Zone.

FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE	SAMPLE			ASSAYS							
				NO.	FOOTAGE		oz Au							
					FROM	TO						LENGTH		
0	16'	OVERBURDEN, CASING TO 18'.												
16	76	<p>TRONDHJEMITE, quartz and feldspar porphyry type; (ε) qf_□ ID</p> <p>Med. dark bluish gray, locally epidotized and chloritized qf porphyry 1D w/tr diss. Py and w/local slightly silicified finer grained horizons containing 1/2 - 1% Py.</p> <p>16.5 - 19.5 and 44.2 - 44.9, epidotized w/tr Py.</p> <p>20.9 - 22.5, epidotized, slightly silicified w/minor to 1/2% Py tr Cp.</p> <p>29.5 - 29.8, silicified q porphyry 1D w/2 - 3% Py Cp.</p> <p>34.3 - 38.6, slightly chloritized, epidotized qf porphyry 1D, silicified to 36.9.</p> <p>@ 46.1 2" q.v. w/1/4" shear filled w/epidote, q and 1 - 2% Gn.</p> <p>@ 48.3 3" thick, 1% Cp conc. along foliation planes.</p> <p>50.3 - 54, slightly epidotized, chloritized and highly silicified q porphyry 1D w/1 - 2% Py and tr Cp, Mc, MoS₂ and Gn from 51.1 to 57.8.</p> <p>55 - 57 and 72.2 - 72.5, Lamprophyre dike (74L).</p>												
				808	20.9	22.5	1.6	tr						
				809	29	31.5	2.5	Nil						
				810	34.3	36.9	2.6	Nil						
				811	36.9	38.6	1.7	tr						
				812	44.2	46.4	2.2	Nil						
				813	46.4	50.3	3.9	tr						
				814	50.3	52.7	2.4	0.01						
				815	52.7	55	2.3	0.01						
				816	65	67.5	2.5	tr						
76	112.2	<p>TRONDHJEMITE, (quartz) and feldspar porphyry type; (ε) "q" f_□ ID</p> <p>Similar to above except that bluish quartz phenocrysts are reduced to clusters of fine q.</p> <p>76.6 - 77.7, epidotized and chloritized f porphyry 1D w/tr diss. Py.</p> <p>92.2 - 93.7, epidotized and silicified fq porphyry 1D, finer</p> <p>@ 98.2, 2½" q.v. w/tr epidote</p> <p>106 - 106.8, sericitized q porphyry 1D w/1 - 2% Py.</p> <p>108.6 - 109.4, silicified q porphyry 1D w/1 - 2% Py.</p>												
				817	76	78.5	2.5	Nil						
				818	85	87.5	2.5	Nil						
				819	92.2	94.7	2.5	tr						
				820	106	109.4	3.4	0.01						

 MINROC MANAGEMENT LIMITED DIAMOND DRILL RECORD	HOLE NUMBER: T-84-10 LOCATION: 18+52W, 2+05N ELEVATION: 1209' AZIMUTH: 322 DIP AT COLLAR: -50 LENGTH: 200' CORE SIZE: BQ DRILLED BY: MORISSETTE DRILLING CO.	STARTED: March 5, 1984 COMPLETED: March 6, 1984 CASING LEFT IN HOLE: LOGGED BY: Marc A Leonard DATE: March 1984 CORE LOCATION: Core Shack (O+50E, 6N)	ETCH TESTS: 36' - 50 200' - 48
	PROPERTY: HIAWATHA TOWNSHIP: LIZAR PROJECT NUMBER: MM-003		

OBJECTIVE: To test North Zone in main pit area.


FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE	SAMPLE			ASSAYS							
				NO.	FOOTAGE		oz Au							
					FROM	TO						LENGTH		
0	10	OVERBURDEN.												
10	46.7	<u>TRONDHJEMITE</u> , quartz and feldspar porphyry type; (φ)ε q f ID Med. greenish gray, med. to fine grained, poorly foliated, partly epidotized and chloritized qf porphyry 1D w/few thin darker sections, due to high biotite content and some sections showing potassic alteration w/reddish orange feldspar phenocrysts close to thin fractured zones. Tr to minor diss. Py w/local concentration to app. 1%. 12.4 - 13.2 and 30.3 - 31.2, Lamprophyre dikes (74L). 27 - 28.1, 31.2 - 33.4 and 42.4 - 45.1, epidotized qf porphyry 1D w/potassic alteration, w/hairline fractures parallel to core axis and filled w/calcite (42.4 - 45.1) and w'Hem. @ 44.5. From 40.4 to end of zone, 10 q.v. parallel to foliation and ranging from 1/8" to 1" thick.		846	16.0	18.5	2.5	N11						
				847	26.0	28.5	2.5	N11						
				848	36.0	38.5	2.5	N11						
46.7	54.0	<u>TRONDHJEMITE</u> , quartz porphyry type; (φ)εσq ID Med. olive greenish gray, very fine grained, moderately foliated, slightly chloritized, epidotized and highly silicified q porphyry 1D w/app. 10% quartz phenocrysts and w/minor to 1% diss. Py and tr Hem near lower contact. Local highly potassic alteration. 51.3 - 52.3, carbonatized lamprophyre dike (4L).		849	46.7	51.3	4.6	N11						
				850	52.3	54.0	1.7	N11						
54.0	114.3	<u>MAFIC METAVOLCANICS: V5</u> Greenish black, generally fine grained, moderately foliated V5 with few thin, slightly coarser grained chlorite-rich sections and w/numerous thin, calcite-rich bands parallel to foliation and hairline to 1" fractures filled w/calcite and occ. q. and chlorite. Tr to minor diss. Py.		851	61	63.5	2.5	N11						
				852	71	73.5	2.5	tr						
				853	81	83.5	2.5	tr						
				854	92	94.5	2.5	0.01						



FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE	SAMPLE			ASSAYS						
				NO.	FOOTAGE		oz Au						
					FROM	TO						LENGTH	
84.1	117.5	(continuation) 107 - 109.3, mafic dike (3) w/contacts parallel to foliation and with 3/8 - 1/2" Po Py rich, highly silicified bands @ both contacts. 110.5 - 111, calcite rich and V5 banding w/3 - 7% Py, mostly conc. along foliation planes. @ 114.8 and @ 116.7, 3" zones similar to above but without sulfides.		902	86	88.5	2.5	Ni1					
				903	95	97.5	2.5	Ni1					
				904	105	107	2.0	Ni1					
				905	109.3	112.8	3.5	Ni1					
117.5	126.4	<u>FELSIC INTRUSIVE, QUARTZ EYE PORPHYRY; σ ε q □ IR</u> Med. light - med. greenish gray, very fine grained epidotized and highly silicified IR w/few q. phenocrysts. The rock is highly fractured w/q and epidote filling, and w/tr to minor Py. Local potassic alteration. 118.6 - 119.4 and 121.4 - 123.4, mafic metavolcanics (V5). 123.4 - 126.4, highly silicified, microcrystalline (mylonite ?)		906	117.5	121.4	3.9	Ni1					
				907	121.4	123.4	2.0	Ni1					
				908	123.4	126.4	3.0	Ni1					
126.4	144.4	<u>MAFIC METAVOLCANICS: V5 (FRACTURED "FAULT" ZONE)</u> Similar to V5 previously described; however, very highly fractured w/local thin, epidotized and silicified breccia and abundant hairline to 1" fractures filled w/q calcite and epidote, and occasional f and Hem. The rock is epidotized in central part of zone. 130.2 - 131.2, lamprophyre dike. @ 136, 1½" q.v. w/minor epidote and chlorite and conc. of Po Py. Gradual contact with next zone.		909	126.4	128.9	2.5	Ni1					
				910	135	137.5	2.5	Ni1					
144.4	196.2	<u>MAFIC METAVOLCANICS: V5</u> Similar to above; however, less fractured. @ 154.1, 4" q.v. w/epidote. @ 172.1 and 174.4, 1" q.v. @ 181.6, 3" lamprophyre dike. 182.6 - 186.2 and 194.3 - 194.9, mafic dike (3) 186.2 - 186.6, q.v. w/tr chlorite and calcite and w/7 - 10% Py at contacts.		911	145	147.5	2.5	Ni1					
				912	154	156.5	2.5	Ni1					
				913	165	167.5	2.5	Ni1					
				914	175	177.5	2.5	Ni1					
				915	186.2	188.2	2.0	tr					
				916	191.7	194.2	2.5	tr					
				917	194.9	196.2	1.3	Ni1					



FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE	SAMPLE			ASSAYS						
				NO.	FOOTAGE		oz Au						
					FROM	TO						LENGTH	
196.2	200	<u>FELSIC INTRUSIVE,</u> Med. light to med. greenish gray, fine to med. grained, poorly foliated, slightly chloritized and sericitized, epidotized f porphyry IR with tr Py locally concentrated to 1/2 - 1%.		918	196.2	198	1.8	N11					
	200'	END OF HOLE..		919	198	200	2.0	N11					


 MINROC MANAGEMENT LIMITED DIAMOND DRILL RECORD	HOLE NUMBER: T-84-12 LOCATION: 20+17E, 3+81S ELEVATION: 1031'	AZIMUTH: 322 LENGTH: 685'	STARTED: March 12, 1984 COMPLETED: March 16, 1984 CASING LEFT IN HOLE:	ETCH TESTS: 46' -60 200' -56 345 -52 500 -46 650 -39
	PROPERTY: HIAWATHA TOWNSHIP: LIZAR PROJECT NUMBER: MM-003	DIP AT COLLAR: -60 CORE SIZE: BQ DRILLED BY: MORISSETTE DRILLING CO.	LOGGED BY: Marc A Leonard DATE: March 16, 1984 CORE LOCATION: Core Shack (O+50E, 6N)	

OBJECTIVE: To test South Zone at approximately 400' below surface on Section 20+00E.

FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE	SAMPLE			ASSAYS						
				NO.	FOOTAGE		oz Au						
					FROM	TO						LENGTH	
0	12	WATER.											
12	34	<u>GRAVEL TO 22', SAND TO BEDROCK.</u>											
34	69.5	<u>TRONDHJEMITE</u> , quartz and feldspar porphyry type; $\sigma(q_{\square})$ ID/ σf_{\square} ID Med. light to med. purplish gray, fine grained, moderately foliated, silicified 1D w/shattered q and f phenocrysts and w/local thin foliation and fracture planes. Silicification increases slightly downward. 65.9 - 67, mafic metavolcanics V5. @ 68.1, 2" lamprophyre dike.		920	40	42.5	2.5	N11					
				921	48.4	50.9	2.5	N11					
				922	60	62.5	2.5	N11					
69.5	87.3	<u>MAFIC METAVOLCANICS: V5</u> Similar to V5 previously described w/some hairline fractures filled w/calcite. Local calcite and biotite and amphiboles (bu) banding. 73.4 - 74, silicified q porphyry 1D similar to above. 77 - 78, fractured zone. @ 84, 2" q and calcite rich zone w/tr epidote.		923	80	82.5	2.5	N11					
87.3	110	<u>TRONDHJEMITE</u> , feldspar porphyry type; $(\phi)\sigma f_{\square}$ ID Similar to 1D previously described (34 to 69.5); however, w/greater amount of phenocrysts. Numerous hairline fractures filled with q and occasional chlorite from 91.5 to 102. Minor to 1/2% diss. Py. Silicification increases downward from 101. @ 92.6, 3" q rich section w/epidote and tr chlorite. 106.5 - 109, highly silicified q porphyry 1D w/2 - 3% diss. Py.		924	90	93	3.0	N11					
				925	100	102.5	2.5	N11					
				926	106.5	109	2.5	N11					



FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE	SAMPLE			ASSAYS					
				NO.	FOOTAGE		oz Au					
					FROM	TO						LENGTH
110	243.4	<p><u>MAFIC METAVOLCANICS: V5</u></p> <p>Similar to V5 previously described w/local chloritic sections. The rock is highly fractured from 125 to 135 and silicified w/conc. of Py Po from 131.5 to 132.2. Local q.v. (1½ to 3") w/calcite and occ. chlorite.</p> <p>125 - 135, fault zone.</p> <p>143.9 - 148.6, biotite (b) and amphiboles (u) rich banded zone w/bands from 1/16 to 3/4"</p> <p>@ 155.4, 5" fracture filled w/50-50 calcite and q and minor chlorite.</p> <p>210.9 - 211.7, epidotized fractured zone w/slickensides.</p> <p>215.3 - 219, fractured zone w/numerous hairline fractures filled w/calcite and q and w/app. 60% bu bands from 216.4 to 218.</p> <p>From 205 to end of zone, local conc. of Py Po (up to 20%) along foliation planes or as fracture filling (up to 3/4") with q and calcite.</p>		927	120	127.5	2.5	Ni1				
				928	130	132.5	2.5	tr				
				929	160	162.5	2.5	tr				
				930	190	192.5	2.5	tr				
				931	205	207.5	2.5	Ni1				
				932	215.3	219	3.7	Ni1				
				933	230	233	3.0	Ni1				
				934	240	243.4	3.4	Ni1				
243.4	284.3	<p><u>TRONDHJEMITE, quartz and feldspar porphyry type; (εσ) q f ID</u></p> <p>Med. dark to dark bluish-purplish gray, fine to med. grained, slightly epidotized and silicified qf porphyry 1D w/horizons of epidotized qf porphyry 1D and thin silicified zones. Minor to 1% diss. Py w/occ. conc. of Py (up to 1/8" thick) along foliation planes toward the end of the zone. Local thin q.v. From 270 to the end, the rock is moderately foliated (increase in biotite) and med. purplish gray. Silicification increases toward end of zone.</p> <p>244.7 - 246.2, 249 - 252.6, 257.6 - 258.5 and 263 - 265.2, epidotized qf porphyry 1D.</p>		935	243.4	246.2	2.8	Ni1				
				936	249	252.6	3.6	Ni1				
				937	260	263	3.0	Ni1				
				938	270	273	3.0	Ni1				
				939	273	276	3.0	Ni1				
				940	276	279	3.0	Ni1				
				941	279	281	3.0	Ni1				
				942	281	284.3	3.3	tr				
284.3	356.4	<p><u>MAFIC METAVOLCANICS; V5</u></p> <p>Similar to V5 previously described w/few thin q.v. and calcite veins and w/local conc. of Py Po, often w/Po as fracture coating.</p> <p>309.3 - 310.5, fractured zone w/silicified q porphyry felsic intrusive, q, minor calcite.</p> <p>329 - 330, epidotized fractured zone.</p> <p>336.2 - 337.9, q. bu banding, silicified w/chlorite and 2 - 3% Py.</p> <p>329 - 340.8, fractured zone with 1/4" - 1" calcite and q.v. w/epidote and w/Po as fracture coating.</p> <p>345.4 - 346.2, q.v., granular, with V5 small fragments.</p>		943	300	302.5	2.5	Ni1				
				944	329	331.5	2.5	Ni1				
				945	336	338.5	2.5	Ni1				

 MINROC MANAGEMENT LIMITED DIAMOND DRILL RECORD	HOLE NUMBER: L-78-1 LOCATION: 9+60E, 3+80S ELEVATION: 1057' AZIMUTH: 323 DIP AT COLLAR: -56 LENGTH: 635' CORE SIZE: AX DRILLED BY: AMALGAMATED DRILLING CO.	STARTED: July 23, 1978 COMPLETED: August 4, 1978 CASING LEFT IN HOLE: Yes RELOGGED BY: Marc A. Leonard DATE: March 6, 1984 CORE LOCATION: Core Shack (0+50E, 6N)	ETCH TESTS: 200' - 51 400' - 44 580' - 43
	PROPERTY: HIAWATHA TOWNSHIP: LIZAR PROJECT NUMBER: MM-003		

OBJECTIVE: To test south zone at depth originally logged by David L. Sannes, August 7, 1978. Ref. 1978 assessment Work # T-1890 for additional details.
 Note: All samples - 1978 sampling:

FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE	SAMPLE			ASSAYS							
				NO.	FOOTAGE		oz Au							
					FROM	TO						LENGTH		
0	14	<u>OVERBURDEN</u> , CASING LEFT IN PLACE.												
14	17	<u>MAFIC METAVOLCANICS</u> : V5 Similar to V5 previously described w/5 - 10% felsic dikelets.												
17	27.4	<u>TRONDHJEMITE</u> , feldspar and quartz porphyry type;(e)σfq ID Med. dark slightly greenish gray, fine grained, moderately foliated, slightly epidotized, highly silicified fq porphyry 1D w/generally minor amounts of phenocrysts and w/½% diss. Py and minor Cp. Few highly epidotized thin sections close to fractures. End of zone marked by 2" q.v. w/minor calcite Py and tr Cp Gn. Locally conc. of sulfides to 2 - 3%.			711* 712*	16.7 22.7	22.7 27.7	6.0 5.0	N11 N11					
27.4	69.9	<u>TRONDHJEMITE</u> , quartz and feldspar porphyry type;(e)σqf ID Med. dark - dark greenish gray, med. to fine grained, partly foliated, slightly epidotized, silicified qf porphyry 1D w/thin local highly silicified sections and w/few phenocrysts. Epidotization increases down-hole, toward following fractured zone. Hairline fractures filled w/epidote and occ. Hem. Minor to 1/2% diss. Py. 40.1 - 41.5, lamprophyre dike.			713* 714* 715* 716* 717* 718*	27.7 35 42 49 59 66	35.0 42 49 59 66 71	7.3 7.0 7.0 10.0 7.0 5.0	N11 N11 N11 N11 N11 N11					
69.9	72.5	<u>FRACTURED ZONE</u> : (epidotized and silicified) Fractured zone w/q epidote, Hem and altered feldspar filling and w/tr chlorite, calcite and 1/2 - 1% diss. Py.			719*	71	76	5.0	N11					




FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE		SAMPLE			ASSAYS					
					NO.	FOOTAGE		oz Au					
						FROM	TO						LENGTH
72.5	82	<p><u>MAFIC METAVOLCANICS: V5</u></p> <p>Similar to V5 previously described w/hairline to 1/3" fractures filled w/q and epidote w/loc. conc. of Py Po in fractures and along foliation planes. 73.1 - 74.7, fractured zone w/q, calcite and feldspar filling, conc. vuggy w/limonite in central part.</p>			720*	76.0	82.0	6.0	N11				
82	135	<p><u>DIABASE: 3D</u></p> <p>Greenish black, med. to coarse grained, massive, moderately magnetic 3D w/occ. epidotized zones ranging from 1" to 10" thick, and w/local 2 - 3% diss. Py, especially close to epidotized zones. Similar to 3D previously described. 118.9 - 119.7 and 120 - 120.7, highly epidotized zones, w/up to 15% Mg.</p>			721*	117	122	5.0	N11				
					722*	122	127.5	5.5	N11				
135	239	<p><u>MAFIC METAVOLCANICS: V5</u></p> <p>Similar to V5 previously described, poorly foliated w/hairline fractures filled w/q or epidote or calcite or feldspar or combination of the above. Some local 1/2 to 5" fractures w/abundant epidote and calcite, often vuggy, especially close to the upper 3D/V5 contact. Local thin chlorite-rich zones. 143 - 152, chlorite-rich, med. to fine grained V5. 166.8 - 175, epidotized and silicified f porphyry 1D w/tr Py and w/2, 6" V5 fragments at end of zone. 183 - 184.5, q.v. w/chlorite and minor Py Cp. 224 - 226.4, V5 w/1/2 - 1% Cp Po. 226.4 - 226.9, fractured zone w/q and calcite filling and 1 - 2% Cp. 229 - 233, slightly epidotized, silicified qf porphyry 1D w/minor diss. Py in upper part. Epidotization decreases downward.</p>			723*	145.5	150.5	5.0	N11				
					724*	166.8	177.0	10.2	N11				
					725*	177.0	182.0	5.0	N11				
					726*	182.0	187.0	5.0	N11				
					727*	187.0	192.0	5.0	tr				
					728*	224.0	229.0	5.0	TR				
					729*	229.0	234.0	5.0	N11				
					730*	234.0	239.0	5.0	N11				
239	312.7	<p><u>FLOW BRECCIA: 1B</u></p> <p>As previously described w/40 - 50% 1/8" to 2' V5 fragments in med. grained qf porphyry 1D, locally slightly chloritized and potassic. V5 fragments w/local bu rich bands and w/tr Py Cp.</p>			731*	239	249	10.0	N11				
					732*	249	259	10.0	N11				
					733*	259	269	10.0	N11				
					734*	269	279	10.0	N11				



FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE	SAMPLE			ASSAYS					
				NO.	FOOTAGE		oz Au					
					FROM	TO						LENGTH
239	312.7	(continuation) 283.7 - 291, mafic metavolcanics, V5. 299.2 - 302.1, slightly epidotized, chloritized qf porphyry 1D. 305.8 - 306.7, lamprophyre dike.		735*	279	289	10.0	Nil				
				736*	289	299	10.0	Nil				
				737*	299	309	10.0	Nil				
				738*	309	313	4.0	Nil				
312.7	328.5	<u>TRONDHJEMITE</u> , quartz porphyry type; σλq ID Med. light - med. olive gray, med. to fine grained, moderately foliated, silicified and sericitized q porphyry 1D, grading into quartz-sericite schist at beginning of zone. Sericitization decreases downward. 1/2 - 1% diss. Py. Few f phenocrysts. 319 - 325.6, slightly chloritized and sericitized, epidotized qf porphyry 1D w/minor diss. Py and w/q.v. from 323.8 - 324.5 @ 327.3, 3" q.v. w/high sericite content at bottom contact.		739*	313	319	6.0	Nil				
				740*	319	323	4.0	Nil				
				741*	323	329	6.0	tr				
328.5	353.5	<u>TRONDHJEMITE</u> , quartz and feldspar porphyry type; εσ qf ID Med. dark gray, med. to coarse grained, poorly foliated, slightly epidotized and silicified qf porphyry 1D w/tr diss. Py Cp, locally conc. along foliation planes or as clusters w/q. Local epidotized zones. Few 1" q.v. at end of zone. 331.5 - 341.8, purplish gray, slightly sericitized and epidotized, silicified q porphyry 1D w/1/16 - 1/8" feldspar bands and w/minor to 1/2 - 1% Py Cp. @ 333.4, 2" lamprophyre dike. 342.4 - 343.8 and 345.5 - 346.3, lamprophyre dikes.		742*	329	339	10.0	tr				
				743*	339	349	10.0	tr				
				744*	349	359	10.0	Nil				
353.5	364.7	<u>TRONDHJEMITE</u> , quartz and feldspar porphyry type; εφqf ID Med. olive greenish gray, med. grained, poorly foliated, epidotized and chloritized qf porphyry 1D w/low biotite and minor diss. Py. Sharp contacts w/previous and following zones. Local thin silicified q porphyry 1D bands at end of zone. @ 355.5, 3" q.v. @ 362, 6" lamprophyre dike.		745*	359	369	10.0	Nil				



FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE	SAMPLE			ASSAYS						
				NO.	FOOTAGE		oz Au						
					FROM	TO						LENGTH	
364.7	471	<p><u>TRONDHJEMITE</u>, quartz and feldspar porphyry type; (ε) qf_□ ID</p> <p>Med. to med. dark greenish gray, med. grained, partly foliated, slightly epidotized qf porphyry 1D, w/thin, moderately foliated, silicified fq porphyry 1D locally slightly sericitized.</p> <p>379.6 - 380.2 and 408.7 - 409.3, lamprophyre dikes.</p> <p>412 - 413.6, slightly epidotized, silicified fine q porphyry 1D, w/1 - 1½% Py Cp.</p> <p>420 - 440, slightly chloritized, epidotized and silicified qf porphyry 1D w/increased epidotization and silicification due to fracturing from 421.5 to 426.5.</p> <p>@ 424.5, 1" breccia followed by 4" lamprophyre dike.</p> <p>433 - 434.5, mafic dike (3)</p> <p>442 - 457, highly silicified q porphyry 1D w/7 - 12% Py Cp, diss. and occ. concentrated along foliation planes. Thin sericitized section @ 449. Rock slightly epidotized and chloritized @ 452.</p> <p>460 - 460.7, fractured zone w/thin fractures filled w/f, q, chlorite and Hem.</p>											
				746*	369	379	10.0	N11					
				747*	379	389	10.0	N11					
				748*	389	399	10.0	N11					
				749*	399	409	10.0	N11					
				750*	409	415	6.0	N11					
				751*	415	422	7.0	tr					
				752*	422	432	10.0	tr					
				753*	432	442	10.0	tr					
				754*	442	452	10.0	N11					
				755*	452	462	10.0	N11					
				756*	462	470	8.0	N11					
471	511	<p><u>TRONDHJEMITE/QUARTZ-SERICITE SCHIST</u>: σ_Δq_□ ID / (ε) qf_□ ID / qkMI</p> <p>Med. light to med. olive greenish gray, fine to med. grained, moderately foliated, silicified, highly sericitized q porphyry 1D, locally grading into quartz-sericite schist, w/1 to 10% Py Cp, inter-bedded w/slightly epidotized qf porphyry 1D.</p> <p>473 - 476.5 and 502 - 504, qf porphyry 1D w/lamprophyre dike from 474.1 to 474.7.</p> <p>481.2 - 483, epidotized qf porphyry 1D.</p> <p>490.1 - 492.9 and 493.9 - 495.4, lamprophyre dikes.</p> <p>@ 496, 6" mafic dike (3).</p>											
				757*	470	480	10.0	tr					
				758*	480	490	10.0	tr					
				759*	490	500	10.0	tr					
				760*	500	510	10.0	tr					
511	635	<p><u>TRONDHJEMITE</u>, quartz and feldspar porphyry type; (ε) qf_□ ID</p> <p>Med. - med. dark greenish gray, med. grained, poorly foliated, slightly epidotized qf porphyry 1D w/minor to 2% Py and w/q phenocrysts made up of fine q clusters. Local thin silicified q porphyry 1D horizons.</p>											
				761*	510	515	5.0	tr					
				762*	515	525	10.0	N11					
				763*	525	535	10.0	N11					
				764*	535	540	5.0	N11					

 MINROC MANAGEMENT LIMITED DIAMOND DRILL RECORD	HOLE NUMBER: NR-L-78-2 LOCATION: 8+60E, 4+00S ELEVATION: 1059' AZIMUTH: 323 DIP AT COLLAR: -60½ LENGTH: 696' CORE SIZE: AX DRILLED BY: AMALGAMATED DRILLING CO.		STARTED: August 5, 1978 COMPLETED: August 17, 1978 CASING LEFT IN HOLE: Yes RELOGGED BY: Marc A. Leonard DATE: Feb. 1, 1984 CORE LOCATION: Core Shack (0+50E, 6N)		ETCH TESTS: 200' -57½ 400' -53-3/4 595' -53
	PROPERTY: HIAWATHA TOWNSHIP: LIZAR PROJECT NUMBER: MM-003				

OBJECTIVE: To test south mineralized zone. Note: Originally logged by David L. Sannes, August 18, 1978. Ref. 1978 assessment work #T-1890 for additional details. 1978 sampling indicated by *.

FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE	SAMPLE			ASSAYS						
				NO.	FOOTAGE		oz Au						
					FROM	TO						LENGTH	
0	16	<u>OVERBURDEN, CASING</u>											
16	16.5	<u>MAFIC METAVOLCANICS: V5</u> Similar to V5 previously described.											
16.5	26.0	<u>TRONDHJEMITE</u> , quartz and feldspar porphyry type; qf porphyry 1D Med. light bluish gray, med. to fine grained, partly foliated qf porphyry 1D w/2 - 3% biotite and w/minor diss. Py Cp. @ 22', 1/2" q.v. w/minor Mc.		780*	16.0	26.0	10.0	N11					
26.0	66.5	<u>MAFIC METAVOLCANICS: V5</u> Dark greenish gray, fine to med. grained, slightly foliated V5 w/local conc. of calcite veinlets and w/local biotite-rich thin bands. Rock is med. grained and slightly chloritic from 46 to 55'. @ 38.4, 1½" q stringers w/3 - 5% Cp Po Py. 42 - 44, 55.9 - 57.3 and 57.9 - 59.5, qf porphyry 1D similar to 16.5 - 26.0. 65.5 - 66.5, carbonatized and silicified shear zone w/2 - 3% Cp.		781* 782*	38.0 55.0	42.5 60.0	4.5 5.0	N11 tr					
66.5	74	<u>TRONDHJEMITE</u> , feldspar porphyry type; (m)f□ ID Med. light gray, med. grained, partly foliated, slightly carbonatized f porphyry 1D w/few q phenocrysts and w/tr to minor Py Cp.		783*	65.5	74.5	9.0	tr					
74	83	<u>TRONDHJEMITE</u> , feldspar porphyry type; (σ)εf□ ID Med. light greenish gray, med. to fine grained, slightly silicified and epidotized f porphyry 1D, w/local conc. of Py (up to 2%. 76 - 77', mafic metavolcanic, V5		784*	74.5	83.0	8.5	N11					



FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE	SAMPLE			ASSAYS							
				NO.	FOOTAGE		oz Au							
					FROM	TO						LENGTH		
83	96.5	<u>FLOW BRECCIA:</u> 1B As previously described w/70 - 80% V5 fragments in slightly carbonatized f porphyry 1D felsic intrusive.												
96.5	148.3	<u>TRONDHJEMITE,</u> feldspar porphyry type; (φ) f ₀ 1D Med. light gray, fine to med. grained, slightly foliated, f porphyry 1D w/minor biotite and occasional calcite veinlets. Rock is slightly chloritized locally. Few biotite-rich bands at beginning of zone. 101.5 - 102.5 and 104.5 - 105.5, diabase dikes. 105.5 - 106.5, slightly epidotized and carbonatized f porphyry 1D, vuggy. @ 125', fracture filled w/f, epidote and sericite.			203	96.5	99.0	2.5	tr					
					204	99.0	101.5	2.5	tr					
					785*	101.5	107.0	5.5	Nil					
					205	107	110	3.0	tr					
					206	110	113	3.0	tr					
					207	113	116	3.0	tr					
					208	116	119	3.0	tr					
					209	119	122	3.0	Nil					
					210	122	125	3.0	tr					
					211	125	128	3.0	tr					
					212	128	130.5	2.5	tr					
					213	130.5	133	2.5	tr					
					214	143	145.5	2.5	tr					
					215	145.5	148.3	2.8	Nil					
148.3	225.7	<u>DIABASE:</u> 3D Greenish black, med. to fine grained, massive, slightly to moderately magnetic 3D, locally epidotized w/tr diss. Py. 3D locally med. to coarse grained.			216	156	159	3.0	Nil					
					217	170	172.5	2.5	tr					
					218	180	182.5	2.5	Nil					
					219	190	192.5	2.5	Nil					
					220	200	202.5	2.5	Nil					
					221	210	212.5	2.5	Nil					
					222	220	227.5	2.5	Nil					
225.7	256.3	<u>MAFIC METAVOLCANICS:</u> V5 Similar to 26 - 66.5 w/local hairline to 1/2" thick fractures filled w/calcite, q and epidote. V5 is epidotized downward, close to felsic intrusive. 237.5 - 240.5, shear zone w/q and epidote fracture filling and w/minor Po.			787*	236.0	241.0	5.0	tr					




FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE	SAMPLE			ASSAYS						
				NO.	FOOTAGE			oz Au					
					FROM	TO	LENGTH						
256.3	261.2	<u>TRONDHJEMITE</u> , (SHEAR ZONE) quartz and feldspar porphyry type; (φε) qf ID Light greenish gray, med. to fine grained, slightly chloritized and epidotized, highly silicified qf porphyry ID w/minor Py Cp.		788*	255	261.5	6.5	N11					
261.2	279.5	<u>MAFIC METAVOLCANICS</u> : V5 Similar to V5 previously described. 267.5 - 268.5, epidotized w/numerous calcite veins. 268.5 - 270, qf porphyry ID w/minor Py.		223	267.5	270	2.5	N11					
279.5	393.5	<u>FLOW BRECCIA</u> : 1B Similar to flow breccia previously described w/40 - 90% V5 fragments up to 2' thick. 279.5 - 305, 310 - 313, 352 - 371 and 372 - 393.5, from 60 to 85% V5 fragments 305 - 310, mafic metavolcanics, V5. 313 - 340, 40 - 50% V5 fragments. 340 - 352, 90% V5 fragments. 371 - 372, lamprophyre dike. 385 - 386, fractured zone w/q filling and minor Py, Cp and Mt.		789*	285	295	10.0	N11					
				224	305	307.5	2.5	N11					
				225	315	317.5	2.5	N11					
				790*	323	333	10.0	N11					
				226	343	345.5	2.5	N11					
				791*	353	363	10.0	N11					
				227	373	375.5	2.5	N11					
				793*	388	394	6.0	N11					
393.5	429.9	<u>TRONDHJEMITE</u> , quartz and feldspar porphyry type; qf ID Light to med. light gray, med. to fine grained, slightly foliated qf porphyry ID w/low amount of q phenocrysts and app. 5 - 10% biotite. Minor Py. 404.3 - 406.4, purplish, silicified and sericitized q porphyry ID w/1" - 1½" q.v. w/sericite and 1/2% Po Sp Gn @ 405.5 (V.G. reported in previous Log). @ 421.8, 1½" q.v. w/Po as fracture filling.		794*	394	400	6.0	N11					
				795*	400	405	5.0	N11					
				796*	405	406	1.0	0.54					
				797*	406	411	5.0	N11					
				798*	411	418.5	7.5	N11					
				799*	418.5	424.5	6.0	N11					
				800*	424.5	433.5	9.0	tr					
429.9	452.0	<u>TRONDHJEMITE</u> , quartz and feldspar porphyry type; (λσ) qf ID Slightly sericitized and silicified qf porphyry ID becoming epi- dotized from 444 to end of zone and w/alternating bleached greenish sections of sericitized and epidotized qf porphyry ID w/chlorite,		801*	433.5	440	6.5	0.01					
				802*	440.0	446	6.0	tr					
				803*	446.0	452	6.0	tr					



FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE	SAMPLE			ASSAYS							
				NO.	FOOTAGE		oz Au							
					FROM	TO						LENGTH		
429.9	452.0	(continuation) biotite and amphibole-rich bands from 433.8 to 439. 440.5 - 442.3, lamprophyre dike. 444 - 452, slightly epidotized.												
452	513.2	<u>TRONDHJEMITE</u> , feldspar porphyry type;(γ) f ₀ ID Same as 393.5 - 429.9, except that core is slightly carbonatized (moderately in centre of zone) w/local chloritized and sericitized thin f porphyry ID horizons. 447.1 - 448.5, q porphyry ID. 480.5 - 483.5, slightly silicified q porphyry ID. 493 - 503, highly sericitized f porphyry ID. 507.5 - 509.6, highly chloritized f porphyry ID. 509.6 - 513.2, q porphyry ID w/2, 1/4 - 1/2" q.v. and 1 - 3% Py.		228	452	455	3.0	tr						
				229	455	458	3.0	tr						
				230	458	461	3.0	tr						
				231	461	464	3.0	Nil						
				232	464	467	3.0	Nil						
				233	467	470	3.0	Nil						
				234	470	473	3.0	Nil						
				235	473	476	3.0	Nil						
				236	476	478	2.0	Nil						
				237	478	480.5	2.5	Nil						
				238	480.5	483.5	3.0	Nil						
				239	483.5	487	3.5	Nil						
				804*	487	493	6.0	tr						
				240	493	496	3.0	Nil						
				241	496	499	3.0	Nil						
				242	499	501	2.0	Nil						
				243	501	503	2.0	Nil						
				805*	503	508	5.0	tr						
				806*	508	513	5.0	tr						
513.2	519.3	<u>FRACTURED ZONE:</u> Fractured zone w/20% coarse grained q w/massive chlorite w/scattered large Py crystals and minor Mt Cp.		807*	513.0	519.5	6.5	Nil						
519.3	543.1	<u>TRONDHJEMITE</u> , feldspar porphyry type;(γ) f ₀ ID Similar to 452 - 513.2 zone. 520.5 - 522.6, quartz sericite schist (qkM1) 532 - 532.5 and 542.3 - 543.1, lamprophyre dikes. 538.7 - 542.3, strongly sheared w/½ - 1% Py w/q porphyry ID from 540.2 to 541.7		808*	519.5	526	6.5	tr						
				809*	526	532	6.0	Nil						
				810*	532	537	7.0	tr						
				811*	539	543	4.0	tr						



FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE	SAMPLE			ASSAYS					
				NO.	FOOTAGE		oz Au					
					FROM	TO						LENGTH
413.1	659.0	(continuation)		860*	608.0	610.4	2.4	0.02				
				861*	610.4	613.0	2.6	tr				
				862*	613.0	616.0	3.0	tr				
				4/								
				493	616	620	4.0	tr				
				494	620	626.5	6.5	Nil				
				495	629	633	4.0	Nil				
				496	633	637	4.0	Nil				
				497	637	641	4.0	tr				
				498	641	645	4.0	0.01				
				499	645	649	4.0	0.05				
				500	649	652	3.0	tr				
				863*	652.0	653.0	1.0	tr				
				201	653	656	3.0	tr				
				202	656	659	3.0	tr				

 MINROC MANAGEMENT LIMITED DIAMOND DRILL RECORD	HOLE NUMBER: NR-L-78-4 LOCATION: 8+37E, 2+10S ELEVATION: 1084' AZIMUTH: 013 DIP AT COLLAR: -73 LENGTH: 712 CORE SIZE: AX DRILLED BY: AMALGAMATED DRILLING CO.	STARTED: Sept. 7, 1978 COMPLETED: Sept. 21, 1978 CASING LEFT IN HOLE: Yes LOGGED BY: Marc A. Leonard DATE: March, 1984 CORE LOCATION: Core Shack (O+50E, 6N)	ETCH TESTS: 200 -69-3/4 400 - 65 1/2 610 - 64 1/2
	PROPERTY: HIAWATHA TOWNSHIP: LIZAR PROJECT NUMBER: MM-003		

OBJECTIVE: To test South mineralized zone at depth originally logged by David L. Sannes, Sept. 22, 1978. Ref. 1978 Assessment Work #T-1890 for additional details. Note: original, 1978 sampling indicated by*.

FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE	SAMPLE			ASSAYS							
				NO.	FOOTAGE		oz Au							
					FROM	TO						LENGTH		
0	4'	CASING, NO CORE.												
4'	85.7	<u>FLOW BRECCIA: 1B</u> Similar to breccia previously described w/40 - 50% V5 fragments w/occasional bu banding and w/tr diss. Py Cp. 9 - 10.5, fractured zone w/1/2" - 1 1/2" q.v. 31.5 - 32.4, fractured zone w/potassic and epidote alteration. @ 57', concentration of Cp along fractured planes.		864*	6.0	12.0	6.0	N11						
				865*	31.5	33.0	1.5	N11						
85.7	170.4	<u>TRONDHJEMITE: quartz and feldspar type; ε q f ID</u> Med. dark, slightly greenish gray, med. to fine grained, poorly foliated, slightly epidotized qf porphyry 1D w/15 - 20% biotite and w/generally low % of q phenocrysts. Occasional thin purplish, slightly sericitized q porphyry 1D horizons and local coarser grained slightly chloritized f porphyry 1D zones. Tr diss. Py. 115.3 - 116.5, f porphyry 1D w/potassic alteration and w/hairline fractures filled w/ calcite and epidote and w/1/2" q.v. at end of zone. 129.5 - 130.2 and 133.5 - 134.5, slightly sericitized q porphyry 1D w/1/2" - 1% diss. Py, conc. along contacts of 3/4" q.v. at end of first zone. 156.1 - 156.9 q.v. 157.9 - 159.3, lamprophyre dike 159.3 - 170.4, epidotized q porphyry 1D, very coarse, w/q.v. from 161 to 162 and w/ 1 1/2" lamprophyre dike at 166.1.		866*	129.5	130.5	1.0	N11						
				867*	133.5	134.5	1.0	N11						
				868*	156.0	157.0	1.0	N11						
				869*	161.0	162.0	1.0	N11						
170.4	175.5	<u>QUARTZ VEIN: q.v.</u> Granular q.v. w/minor calcite, chlorite and Py and w/few thin inclusions of !D.		870*	170.5	173.0	2.5	N11						
				871*	173.0	175.5	2.5	tr						



FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE	SAMPLE			ASSAYS							
				NO.	FOOTAGE		oz Au							
					FROM	TO						LENGTH		
175.5	186.1	<u>FLOW BRECCIA: 1B</u> Similar to above breccia w/50 - 60% V5 fragments and w/several thin biotite and amphibole (bu) rich bands in lower half of zone.												
186.1	196.5	<u>TRONDHJEMITE</u> , feldspar and quartz porphyry type; (ε) λ f q ID Med. dark to dark greenish gray, medium grained, slightly epidotized, sericitized fq porphyry 1D w/sericitization increasing downward and w/app. equal amounts of q and f phenocrysts. 192.4 - 193.6, slightly silicified, highly epidotized and sericitized q porphyry 1D w/½ - 1% diss. Py.			867	192.4	195.4	3.0	0.01					
					868	195.4	197.0	1.6	tr					
196.5	221.2	<u>QUARTZ- SERICITE SCHIST/TRONDHJEMITE</u> ; qkM1 /εσq ID / (εσ) λ ID Alternating horizons of highly sericitized q porphyry 1D grading into quartz sericite schist w/1 - 5% diss. Py w/horizons of highly epidotized and silicified q porphyry 1D w/1 - 3% diss. Py and horizons of slightly epidotized and silicified, sericitized fine grained 1D. 199.4 - 201.4, mafic dike (3) 205 - 213, slightly sericitized, highly epidotized q porphyry 1D 213 - 215.4, lamprophyre dike.			872*	197.0	199.5	2.5	0.03					
					873*	202.0	205.0	3.0	0.03					
					869	205.0	208.0	3.0	tr					
					870	208	211	3.0	Nil					
					871	211	213	2.0	Nil					
					872	215.4	217	1.6	tr					
					874*	217	220	3.0	tr					
					873	220	221.2	1.2	tr					
221.2	236.8	<u>TRONDHJEMITE</u> , feldspar and quartz porphyry type; σ k ε f q ID Med. olive greenish gray, med. grained, non-foliated, highly silicified, epidotized and potassic fq porphyry 1D, w/med. reddish-orange, large f phenocrysts and w/minor Py. Occasional hairline fractures filled w/calcite. Core very highly epidotized from 221.2 to 222.4.			874	221.2	224.2	3.0	tr					
					875	224.2	227.2	3.0	tr					
					876	227.2	230.2	3.0	Nil					
					877	230.2	233.2	3.0	Nil					
					878	233.2	236.8	3.6	Nil					
236.8	246	<u>LAMPROPHYRE DIKE: 4L</u>												
246	248.3	<u>MAFIC DIKE: 3</u> Mafic dike w/q.v. and MoS2 from 247.7 to end of zone.			875*	247.5	248.5	1.0	0.01					



FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE	SAMPLE			ASSAYS						
				NO.	FOOTAGE		oz Au						
					FROM	TO						LENGTH	
248.3	254	<u>TRONDHJEMITE</u> , quartz porphyry type; (λ) σ ε q □ ID Med. dark greenish gray, fine grained, poorly foliated, slightly sericitized, highly silicified and epidotized q porphyry 1D w/light potassic alteration at end of zone and w/1/8 to 1" q.v. w/2 - 5% Py MoS2 and epidote filling from 251.5 to 252.5.		876*	251.5	252.5	1.0	tr Au 0.23% tr Pb	H ₂ S ₂				
254	256.3	<u>MAFIC DIKE:</u> 3											
256.3	712	<u>TRONDHJEMITE</u> , quartz and feldspar porphyry type; (ε) q f □ ID Med. to dark bluish-greenish gray, med. grained, partly foliated, slightly epidotized qf porphyry 1D w/thin highly epidotized qf porphyry 1D zones and w/few hairline fractures filled w/epidote and occasional sericitized and silicified q porphyry 1D thin horizons. Local potassic alteration. 263.4 - 264.2, 273.5 - 275.2, 278.7 - 279.9, 294 - 296, and 298.6 - 299.4, epidotized qf porphyry 1D. 266.1 - 266.9, q.v. w/minor calcite and chlorite. 284.9 - 288.4, highly epidotized qf porphyry 1D w/slight potassic and chloritic alteration. 306 - 310.5, slightly sericitized, epidotized and silicified q porphyry 1D w/minor Py. @ 311, few 1/8 - 1/4" q.v. w/minor epidote, calcite and chlorite. 312 - 313, bleached qf porphyry 1D w/chlorite alteration. 319 - 320.2, highly potassic and epidotized f porphyry 1D. 336.4 - 345.4, sericitized, highly epidotized and silicified q porphyry 1D w/minor to 1/2% diss. Py w/tr Cp. 350.5 - 352.1 and 493.5 - 496.2, epidotized and chloritized qf porphyry 1D. 353.7 - 354.8, epidotized and silicified qf porphyry 1D w/hairline fractures filled w/epidote in centre of zone. 384.5 - 395, purplish, fine, slightly epidotized, silicified q porphyry 1D w/minor diss. Py and w/qf porphyry 1D from 388.4 to 389.1. Epidotization increases toward end of zone. 397.4 - 398.7, sericitized and silicified q porphyry 1D. 403.2 - 404.5, 420.8 - 422, 429.3 - 432, 488.5 - 490, 593 - 594.3, 632.8 - 639.9, and 685.7 - 686.8, lamprophyre dikes. @ 412.4, 2" q.v. w/minor calcite, chlorite and sericite.		877*	265.5	267.0	1.5	Ni1					
				878*	306	310.5	4.5	Ni1					
				885	339.4	342.4	3.0	0.01					
				886	342.4	345.4	3.0	Ni1					
				879*	384.5	385.5	1.0	Ni1					
				887	385.5	388.5	3.0	Ni1					
				888	388.5	391.5	3.0	tr					
				889	391.5	395	3.5	Ni1					
				890	411.0	413.5	2.5	Ni1					
				880*	434.0	441	7.0	Ni1					
				891	441.8	444.8	3.0	Ni1					
				892	444.8	448	3.2	Ni1					
				893	448	451.5	3.5	Ni1					
				881*	451.5	452.5	1.0	tr					
				882*	452.5	454	1.5	0.48					
				883*	454.0	454.6	0.6	3.03					
				884*	454.6	457.5	2.9	tr					
				885*	462	466	4.0	Ni1					
				886*	466	470	4.0	tr					
				887*	476.5	479.0	2.5	tr					
				888*	479.0	481.5	2.5	Ni1					
				889*	497.7	499.7	2.0	Ni1					
				890*	503.5	506.5	3.0	tr					
				891*	506.5	509.5	3.0	tr					
				894	509.5	511.5	2.0	Ni1					
				892*	511.5	514	2.5	0.01					
				895	514	516.5	2.5	Ni1					



FROM	TO	DESCRIPTION	STRATIGRAPHY AND Δ ANGLE	SAMPLE			ASSAYS					
				NO.	FOOTAGE		oz Au					
					FROM	TO						LENGTH
256.3	712	(continuation) 434.4 - 435.2, q.v. w/minor calcite @ 439.2 and 440.2, 2 1/2" q.v. w/tr calcite and chlorite. 440.9 - 441.8, 587 - 587.6, 597.9 - 598.1, 598.7 - 598.9, 600 - 601.4, 606.1 - 614.2 628.6 - 629.4, 630.5 - 632.2, 643.1 - 644.4 and 658.7 - 663.7, mafic dikes (4L) 441.8 - 451.4, slightly sericitized purplish fq porphyry 1D locally highly epidotized w/minor diss. Py, sericitized, increasing downward. 451.4 - 452.5 and 587.6 - 588.4, quartz-sericite schist w/minor to 3 - 5% diss. Py. 452.5 - 457, sericitized, highly silicified q porphyry 1D w/1 - 2% Sp Gn Po Py and tr Cp. V.G (app. 20 dust-size Au particles in lower 6") from 452.4 - 454.5. 458.7 - 460.2, purplish, slightly silicified fq porphyry 1D. 462 - 470, fractured zone w/q.v., bleached 1D and thin mafic veins w/3 - 5% Py. 470.8 - 488.5, purplish sericitized and silicified fq porphyry 1D w/1 - 2% diss. Py and tr Cp. Slightly epidotized, highly silicified q porphyry 1D w/4 - 5% Py and w/1" to 6" q.v. from 475 to 480. @ 499, 2" q.v. w/chlorite and minor Py. 503.5 - 509.5, 2 - 4% diss. Py, locally conc. to 7 - 10% along fractures and foliation planes. @ 504, 6" lamprophyre dike @ 509, 6" mafic dike. 511 - 513, fractured zone w/few q.v. chlorite, epidote and minor calcite. 530 - 532.8, slightly sericitized, silicified q porphyry 1D w/minor to 3% Py. 532.8 - 545.7, chloritized and epidotized q porphyry 1D. 545.7 - 584, 4m sericitized and silicified q porphyry 1D w/local sericite-rich sections. 549.2 - 551.2 and 555.5 - 559.2, lamprophyre dikes 552 - 554, highly sericitized q porphyry 1D w/2, 1" q.v. w/6 - 7% Py between q.v. 573 - 575.3, quartz-sericite schist w/3 - 6% Py. 577.8 - 580, slightly epidotized q porphyry 1D. 582.1 - 584.4, highly sericitized, silicified q porphyry 1D.										
				893*	530	533	3.0	tr				
				894*	545.5	549.5	4.0	0.01				
				895*	549.5	552	2.5	tr				
				896*	552	554	2.0	tr				
				897*	554	555.5	1.5	tr				
				898*	559.5	564	4.5	tr				
				899*	564	569	5.0	tr				
				900*	569	573	4.0	tr				
				13/								
				605*	573	575.5	2.5	tr				
				606*	575.5	577.5	2.0	tr				
				607*	587.3	588.3	1.0	tr				
				608*	594	598	4.0	tr				
				609*	674	675.6	1.6	tr				



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Minroc Management Ltd.

CERTIFICAT D'ANALYSES
CERTIFICATE OF ANALYSIS

No 40098

ÉCHANTILLONS core
SAMPLES

VAL D'OR, QUÉ.,January 6..... 19.84....

RECU DE Timmins
RECEIVED FROM

ANALYSES 14 Au
ASSAYS

Sample No. Au oz/ton

4461	Trace
4462	Trace
4463	nil
4464	nil
4465	Trace
4466	Trace
4467	0.06
4468	Trace
4469	0.01
4470	Trace
4471	Trace
4472	Trace
4473	Trace
4474	Trace

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(Marc Leonard)

CERTIFICAT D'ANALYSES
CERTIFICATE OF ANALYSIS

No 40265

ECHANTILLONS
SAMPLES core

VAL D'OR, QUÉ., February 3 1984

RECU DE
RECEIVED FROM Hornepayne, Ont.

ANALYSES
ASSAYS 28 Au

Sample No. Au oz/ton

4475	nil
4476	nil
4477	Trace
4478	nil
4479	nil
4480	Trace
4481	nil
4482	nil
4483	nil
4484	Trace
4485	nil
4486	Trace
4487	Trace
4488	nil
4489	nil
4490	Trace
4491	Trace
4492	Trace
4493	Trace
4494	nil
4495	nil
4496	nil
4497	Trace
4498	0.01
4499	0.05
4500	Trace
201	Trace
202	Trace

Alencha

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Minroc Management Limited

CERTIFICAT D'ANALYSES
CERTIFICATE OF ANALYSIS

No 40286

ECHANTILLONS
SAMPLES

core

VAL D'OR, QUÉ.,February 8..... 19.84.....

RECU DE
RECEIVED FROM

Marc Leonard (Hornepayne)

ANALYSES
ASSAYS

85 Au

Sample No. Au oz/ton

Sample No. Au oz/ton

Sample No. Au oz/ton

203	Trace	233	nil	263	nil
204	Trace	234	nil	264	nil
205	Trace	235	nil	265	nil
206	Trace	236	nil	266	nil
207	Trace	237	nil	267	nil
208	Trace	238	nil	268	nil
209	nil	239	nil	269	nil
210	Trace	240	nil	270	Trace
211	Trace	241	nil	271	nil
212	Trace	242	nil	272	nil
213	Trace	243	nil	273	nil
214	Trace	244	Trace	274	nil
215	nil	245	Trace	275	nil
216	nil	246	Trace	276	nil
217	Trace	247	Trace	277	nil
218	nil	248	Trace	278	nil
219	nil	249	0.01	279	nil
220	nil	250	0.01	280	nil
221	nil	251	0.01	281	nil
222	nil	252	Trace	282	nil
223	nil	253	Trace	283	nil
224	nil	254	Trace	284	nil
225	nil	255	Trace	285	nil
226	nil	256	nil	286	nil
227	nil	257	nil	287	nil
228	Trace	258	nil		
229	Trace	259	nil		
230	Trace	260	Trace		
231	nil	261	nil		
232	nil	262	Trace		

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No 40286

page 2

ÉCHANTILLONS
SAMPLES core

VAL D'OR, QUÉ., February 8 1984

RECU DE
RECEIVED FROM

ANALYSES
ASSAYS 43 Au

Sample No. Au oz/ton

Sample No. Au oz/ton

288	Trace
289	Trace
290	Trace
291	0.09
292	0.08
293	Trace
294	Trace
295	Trace
296	Trace
297	nil
298	nil
299	Trace
300	Trace
301	nil
302	nil
303	nil
304	Trace
305	Trace
306	nil
307	Trace
308	nil
309	nil
310	Trace
311	Trace
312	Trace
313	Trace
314	Trace
315	Trace
316	Trace
317	Trace

318	nil
319	nil
320	nil
321	nil
322	nil
323	Trace
324	Trace
325	Trace
326	Trace
327	0.02
328	Trace
329	Trace
330	0.03

[Signature]

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CERTIFICATE OF ANALYSIS

No 40333

ÉCHANTILLONS
SAMPLES

core

VAL D'OR, QUÉ., February 15 19...34..

RECU DE
RECEIVED FROM

M. Leonard (Hornepayne)

ANALYSES
ASSAYS

77 Au

Sample No. Au oz/ton

Sample No. Au oz/ton

Sample No. Au oz/ton

331	0.02	361	0.01	391	nil
332	0.03	362	nil	392	nil
333	0.02	363	Trace	393	nil
334	Trace	364	0.01	394	nil
335	Trace	365	0.02	395	nil
336	nil	366	0.01	396	Trace
337	nil	367	Trace	397	nil
338	nil	368	Trace	398	nil
339	nil	369	Trace	399	nil
340	nil	370	0.01	400	nil
341	Trace	371	nil	401	nil
342	Trace	372	Trace	402	nil
343	Trace	373	nil	403	nil
344	Trace	374	Trace	404	nil
345	Trace	375	Trace	405	nil
346	Trace	376	Trace	406	nil
347	Trace	377	nil	407	nil
348	Trace	378	nil		
349	Trace	379	nil		
350	Trace	380	Trace		
351	Trace	381	nil		
352	Trace	382	nil		
353	Trace	383	Trace		
354	nil	384	Trace		
355	nil	385	Trace		
356	nil	386	Trace		
357	Trace	387	Trace		
358	Trace	388	nil		
359	Trace	389	nil		
360	Trace	390	nil		

Oliver
ANALYSTE / ASSAYER



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No 40353

ÉCHANTILLONS
SAMPLES

core

VAL D'OR, QUÉ., February 17 19 84

RECU DE
RECEIVED FROM

M. Leonard (Hornepayne)

ANALYSES
ASSAYS

40 Au

Sample No. Au oz/ton

408	nil
409	nil
410	0.01
411	Trace
412	Trace
413	0.02
414	nil
415	nil
416	nil
417	nil
418	nil
419	nil
420	nil
421	nil
422	nil
423	0.02
424	0.04
425	0.02
426	0.09
427	0.04
428	Trace
429	0.04
430	nil
431	nil
432	nil
433	nil
434	Trace
435	nil
436	nil
437	nil

Sample No. Au oz/ton

438	nil
439	nil
440	nil
441	nil
442	nil
443	nil
444	nil
445	nil
446	Trace
447	Trace

Alfred P.

ANALYSTE / ASSAYER



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CERTIFICAT D'ANALYSES
CERTIFICATE OF ANALYSIS

No 40358

ÉCHANTILLONS
SAMPLES

core

VAL D'OR, QUÉ., February 20 19 84

RECU DE
RECEIVED FROM

M. Leonard (Hornepayne)

ANALYSES
ASSAYS

83 Au

<u>Sample No.</u>	<u>Au oz/ton</u>	<u>Sample No.</u>	<u>Au oz/ton</u>	<u>Sample No.</u>	<u>Au oz/ton</u>
448	nil	478	nil	508	Trace
449	nil	479	nil	509	nil
450	Trace	480	Trace	510	nil
451	nil	481	0.01-	511	nil
452	nil	482	Trace	512	nil
453	Trace	483	Trace		
454	Trace	484	Trace		
455	nil	485	nil		
456	0.01-	486	Trace		
457	nil	487	0.02	536	nil
458	nil	488	nil	537	0.01
459	nil	489	nil	538	0.01
460	nil	490	nil	539	Trace
461	nil	491	Trace	540	Trace
462	0.04-	492	Trace	541	nil
463	0.01-	493	Trace	542	Trace
464	0.01	494	0.01	543	nil
465	Trace	495	Trace	544	nil
466	0.03-	496	Trace	545	nil
467	0.01-	497	Trace	546	nil
468	nil	498	nil	547	nil
469	nil	499	Trace	548	nil
470	nil	500	0.01	549	Trace
471	nil	501	Trace	550	nil
472	nil	502	nil	551	nil
473	Trace	503	nil	552	0.01
474	nil	504	nil	553	nil
475	nil	505	nil		
476	nil	506	Trace		
477	nil	507	0.01		

Alfred P.
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No 40388

ÉCHANTILLONS
SAMPLES

core

VAL D'OR, QUÉ., February 23 1984

RECU DE
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M. Leonard (Hornepayne)

ANALYSES
ASSAYS

91 Au

Sample No. Au oz/ton

Sample No. Au oz/ton

Sample No. Au oz/ton

554	Trace	584	Trace	614	nil
555	Trace	585	Trace	615	nil
556	0.03	586	Trace	616	nil
557	nil	587	Trace	617	Trace
558	0.01	588	nil	618	nil
559	Trace	589	Trace	619	Trace
560	0.01	590	Trace	620	nil
561	nil	591	nil	621	Trace
562	Trace	592	nil	622	nil
563	Trace	593	nil	623	nil
564	0.01	594	Trace	624	nil
565	nil	595	nil	625	nil
566	0.01	596	nil	626	0.02
567	0.01	597	nil	627	0.02
568	0.01	598	nil	628	0.01
569	0.01	599	Trace	629	0.02
570	Trace	600	Trace	630	nil
571	nil	601	Trace	631	Trace
572	nil	602	Trace	632	nil
573	Trace	603	Trace	633	nil
574	Trace	604	nil	634	nil
575	Trace	605	nil	635	Trace
576	Trace	606	nil	636	Trace
577	Trace	607	0.01	637	nil
578	0.01	608	Trace	638	0.21
579	0.03	609	Trace	639	Trace
580	Trace	610	nil	640	0.02
581	0.01	611	Trace	641	0.01
582	Trace	612	nil	642	0.08
583	Trace	613	nil	643	0.01
				644	nil

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No 40466

Page 1

ECHANTILLONS
SAMPLES

Core

VAL D'OR, QUÉ., March 05 1984

RECU DE
RECEIVED FROM

M. Leonard

ANALYSES
ASSAYS

62 Au

<u>Sample No.</u>	<u>Au oz/ton</u>	<u>Sample No.</u>	<u>Au oz/ton</u>
513	Nil	653	Nil
514	Nil	654	Nil
515	Nil	655	Nil
516	Nil	656	Nil
517	Nil	657	Nil
518	Nil	658	Nil
519	Nil	659	Nil
520	Nil	660	Nil
521	Nil	661	Nil
522	Nil	662	Nil
523	Nil	663	Nil
524	Nil	664	Nil
525	Nil	665	Nil
526	Nil	666	Nil
527	Nil	667	Nil
528	Nil	668	Nil
529	Nil	669	Nil
530	Nil	670	Nil
531	Nil	671	Nil
532	Nil	672	Nil
533	Nil	673	Nil
534	Nil	674	Nil
535	Trace	675	Nil
		676	Nil
645	Nil	677	Nil
646	Nil	678	Nil
647	Nil	679	Nil
648	Nil	680	Nil
649	Nil	681	Nil
650	Nil	682	Nil
651	Nil	683	Nil
652	Nil		

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No 40466

Page 2

ÉCHANTILLONS
SAMPLES

Core

VAL D'OR, QUÉ., March 05 1984

RECU DE
RECEIVED FROM

M. Leonard

ANALYSES
ASSAYS

62 Au

<u>Sample No.</u>	<u>Au oz/ton</u>	<u>Sample No.</u>	<u>Au oz/ton</u>
684	Nil	715	Nil
685	Nil	716	Nil
686	Nil	717	Nil
687	Nil	718	Nil
688	Trace	719	Nil
689	Trace	720	Trace
690	Nil	721	Nil
691	Nil	722	Nil
692	Nil	723	Trace
693	Nil	724	Trace
694	Nil	725	Trace
695	Nil	726	Trace
696	Nil	727	Trace
697	Nil	728	Trace
698	Nil	729	Trace
699	Nil	730	Nil
700	Nil	731	Nil
701	Nil	732	Nil
702	Trace	733	Nil
703	Nil	734	Trace
704	Trace	735	Trace
705	Trace	736	Nil
706	Nil	737	Trace
707	Trace	738	Nil
708	0.02	739	Nil
709	Trace	740	Trace
710	Trace	741	Trace
711	Trace	742	Nil
712	Trace	743	Nil
713	Trace	744	Nil
714	Nil	745	Nil

Janet
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Minroc Management

CERTIFICAT D'ANALYSES
CERTIFICATE OF ANALYSIS

No 40519 page 1

ECHANTILLONS core
SAMPLES

VAL D'OR, QUÉ., March 14 1984

RECU DE RECEIVED FROM Marc Leonard

ANALYSES ASSAYS 90 Au

Sample No. Au oz/ton

Sample No. Au oz/ton

Sample No. Au oz/ton

746 Trace
747 nil
748 Trace
749 nil
750 nil
751 Trace
752 nil
753 0.01
754 0.01
755 Trace
756 0.01
757 Trace
758 nil
759 nil
760 nil
761 nil
762 nil
763 0.01
764 Trace
765 Trace
766 Trace
767 0.01
768 0.01
769 0.01
770 0.01
771 Trace
772 nil
773 0.01
774 nil
775 nil

776 nil
777 nil
778 nil
779 Trace
780 Trace
781 0.01
782 Trace
783 nil
784 Trace
785 Trace
786 Trace
787 Trace
788 0.01
789 0.01
790 0.02
791 nil
792 nil
793 Trace
794 0.01
795 nil
796 0.01
797 nil
798 0.01
799 Trace
800 nil
801 Trace
802 nil
803 nil
804 Trace
805 nil

806 nil
807 nil
808 Trace
809 nil
810 nil
811 Trace
812 nil
813 Trace
814 0.01
815 0.01
816 Trace
817 nil
818 nil
819 Trace
820 0.01
821 nil
822 0.01
823 nil
824 nil
825 nil
826 nil
827 Trace
828 nil
829 nil
830 nil
831 nil
832 nil
833 nil
834 nil
835 nil

Aluciana
ANALYSTE / ASSAYER



LABORATOIRE D'ANALYSE BOURLAMAQUE LTÉE
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CERTIFICAT D'ANALYSES
CERTIFICATE OF ANALYSIS

No 40519

page 2

ECHANTILLONS
SAMPLES

core

VAL D'OR, QUÉ., March 14 19 84

RECU DE
RECEIVED FROM

Marc Leonard

ANALYSES
ASSAYS

26 Au 26 Au

Sample No. Au oz/ton

836	nil
837	nil
838	nil
839	nil
840	Trace
841	nil
842	nil
843	nil
844	nil
845	nil
846	nil
847	nil
848	nil
849	nil
859	nil
851	nil
852	Trace
853	Trace
854	0.01
855	Trace
856	nil
857	nil
858	Trace
859	nil
860	nil
861	nil

Sample No. Au oz/ton

862	nil
863	nil
864	nil
865	nil
866	nil
867	0.01
868	Trace
869	Trace
870	nil
871	nil
872	Trace
873	Trace
874	Trace
875	Trace
876	nil
877	nil
878	nil
879	nil
880	nil
881	nil
882	Trace
883	nil
884	Trace
885	0.01
886	nil
887	nil

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Minroc Management

CERTIFICAT D'ANALYSES
CERTIFICATE OF ANALYSIS

No 40596

ÉCHANTILLONS core
SAMPLES

VAL D'OR, QUÉ., March 23..... 19...84...

RECU DE M. Leonard (Hornepayne)
RECEIVED FROM

ANALYSES 43 Au
ASSAYS

Sample No. Au oz/ton

Sample No. Au oz/ton

888	Trace
889	nil
890	nil
891	nil
892	nil
893	nil
894	nil
895	nil
896	nil
897	Trace
898	nil
899	Trace
900	Trace
901	nil
902	nil
903	nil
904	nil
905	nil
906	nil
907	nil
908	nil
909	nil
910	nil
911	nil
912	nil
913	nil
914	nil
915	Trace
916	Trace
917	nil

918	nil
919	nil
920	nil
921	nil
922	nil
923	nil
924	nil
925	nil
926	nil
927	nil
928	Trace
929	Trace
930	Trace

ANALYSTE / ASSAYER

Alc... Leonard



LABORATOIRE D'ANALYSE BOURLAMAQUE LTÉE
BOURLAMAQUE ASSAY LABORATORIES LTD.

Minroc Management

CERTIFICAT D'ANALYSES
CERTIFICATE OF ANALYSIS

No 40596

page 2

ECHANTILLONS core
SAMPLES

VAL D'OR, QUÉ., March 26 19 84

RECU DE M. Leonard
RECEIVED FROM

ANALYSES 62 Au
ASSAYS

Sample No. Au oz/ton

Sample No. Au oz/ton

931	nil
932	nil
933	nil
934	nil
935	nil
936	nil
937	nil
938	nil
939	nil
940	nil
941	nil
942	Trace
943	nil
944	nil
945	0.06
946	0.01
947	0.01
948	nil
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950	Trace
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952	Trace
953	Trace
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957	nil
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960	nil

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964	nil
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971	Trace
972	0.02
973	0.02
974	nil
975	nil
976	0.01
977	0.01
978	Trace
979	0.01
980	0.01
981	0.01
982	0.01
983	0.01
984	nil
985	nil
986	nil
987	nil
988	nil
989	Trace
990	nil
991	nil
992	nil

[Signature]
ANALYSTE / ASSAYER

APPENDIX VII
A SUMMARY OF REPORTS AND INFORMATION ON
THE HIAWATHA GOLD MINES

by
M.C. HALSTAD. B. Sc., P. Eng.

A SUMMARY OF REPORTS AND INFORMATION ON THE HIAWATHA GOLD MINES

by M. C. Halstead, B. Sc., P. Eng.

The property is located in Lizar Township, about 40 miles by air, north-east of White River, Ontario, and 12 to 16 miles east of the White River to Hornepayne highway, and comprised of 16 forty acre claims.

The property is held by C.A. Carter, of Sault Ste. Marie, Ontario, M. C. Halstead, of Cobalt, Ontario, and N. McCarthy, Sault Ste. Marie, Ontario.

HISTORY OF HIAWATHA MINES

The company was incorporated in 1936 and acquired on the evidence of spectacular gold assay returns from surface pits. The company proceeded to explore and develop the prospect during the next three years. All activity stopped in 1939 as a result of the outbreak of World War II.

During the period 1937-1939, Hiawatha Gold Mines Limited carried out surface prospecting, trenching, diamond drilling, and sank a three compartment shaft to 325 feet and established levels at 150 feet and 275 feet.

On the 150 foot level, 967 feet of crosscutting and 847 feet of drifting is reported. On the 275 foot level, 1,750 feet of crosscutting, 2,547 feet of drifting and 250 feet of raising is reported, for a total of 6,361 feet.

A 20 ton test mill was also built on the property.

J. E. Sullivan, mine manager at the time of closing, December 15, 1939, commented on conclusion, "There are several high grade showings on surface over a length of 4,000 feet or more, with lamprophyre intrusions. Some high grade sections have been cut on the first and second levels. It would appear that with further development, more high grade should appear."

"It is also possible that further sinking might tap a section that would be very profitable."

The last completed assessment of the work on the Hiawatha Mine was done by D. Sharpstone, Consulting Engineer, dated August 26, 1939, extracts of which are as follows:

"Main showing: The principal showing is a strong shear zone in a wide granodiorite dyke which follows its long axis. The shear has been followed on the bottom level for about 2,000 feet and on the 150 foot level for less than 1,000 feet. On surface it appears to have been followed for 3,000 feet.

The shear ranges from 2 feet to 12 feet in width and probably averages four feet. Mineralization varies from sericitization (alteration) of the granite and pyritization to extensive silification with numerous parallel stringers of quartz, 0.5-6.0 inches in width. Numerous showings of free gold have been found in the quartz stringers, but altered granite in the shear appears to be barren. Likewise, all of the gold appears to be free, with little or none in the sulphides.

It is possible that the present workings are on top of an ore shoot which is suggested by a greater abundance of quartz and by stronger shearing on the bottom level, as compared to the 150 foot level. Sinking is therefore, in my opinion, the only bet now apparent. If this were attempted, I would think that no less than an additional 500 feet would be worthwhile."

Stope preparation was underway and partially completed at the time the mine was closed in 1939. All timber in the shaft and underground is in good condition and track remains in place on both levels.

In 1969, when the mine was dewatered, considerable mud had to be cleaned up and all walls and backs were washed for sampling.

The mine workings on the ore zones on the first and second levels have not been delimited. A diamond drill hole drilled through the ice about 1,000 feet ahead of the present second level face is reported to have blocked in native gold.

A diamond drill hole, #25, drilled from 275 foot level in a northwest direction, to cut the Bear Creek Fault, intersected the fault at 330 feet northwest from the collar or about 400 feet west of the shaft. It intersected an 8 foot quartz vein, but no assays were reported. The hole drilled to a depth of 508 feet was in granodiorite for the last 50 feet. The granodiorite is reported to be similar to the main granodiorite in which the south ore zone is found.

Dr. W. F. James reported on the property, September 8, 1938, and with reference to the Bear Creek fault, said in his report: "The importance of such a fault is that it is the locus of the principal movement and that close to it, the rocks may be so opened up as to permit passage of gold bearing solutions. There is evidence already in the workings on the property, that a source of gold is available and it seems desirable to find areas where openings may have existed to receive such solutions."

Checking of the Bear Creek fault has yet to be done.

The Hiawatha Gold Mines property was held by the company until the 1960's when former officials had passed away and the property reverted to the Crown. The property was restaked and transferred to Primrock Mining and Exploration Limited, in October 1966.

Dr. E. Smith, P.Eng., outlined a program of exploration and development to be carried out in the summer and fall of 1969, by Primrock Mines.

The work involved building a camp, dewatering the workings, rehabilitating the shaft and mine workings, surveying the unsurveyed portions of drifts and mine workings, surveying the unsurveyed portions of drifts and crosscuts, and drilling two diamond drill holes and sampling of the first and second level workings underground.

The sampling was by chip sampling across the veins. It was done by placing a platform on the ore cars covered by a tarpaulin and chipping the sample onto the tarpaulin for collection. A total of 115 samples over a width of 1 to 5 feet were taken underground and six on surface.

The underground sampling is shown on the enclosed mine level and assay plans.

The range and frequency of assays for the second level of the mine as taken from the assay plans are as follows, with gold at \$800.00 per ounce Canadian funds.

A-nil to trace							0 samples
B-0.005 to 0.009 oz gold per ton	\$	4.00	-	\$	72.00	37	samples
C-0.10 to 0.29	"	"	"	"	80.00	-	232.00 8 "
D-0.30 to 0.49	"	"	"	"	240.00	-	392.00 8 "
E-0.50 to 0.79	"	"	"	"	400.00	-	632.00 6 "
F-0.80 to 0.99	"	"	"	"	640.00	-	792.00 4 "
G-1.00 to 1.99	"	"	"	"	800.00	-	1592.00 20 "
H-2.00 to plus	"	"	"	"	1600.00	-	plus 8 "

The first level 6-1 vein was advanced just over 300 feet to the east while the second level was advanced 1,000 feet east on the 6-2 vein which are assumed to be the same vein at different levels. For 700 feet there is therefore no indication as to whether the 6-2 vein continues up to the 6-1 vein and on to surface or not. There was no diamond drilling ahead of the face on the 6-1 vein.

F. A. Enders, President of Hiawatha, in his report to the shareholders October 15, 1938, states that a shipment of ore of one half ton to the Dominion Government Laboratories, Ottawa, assayed 0.9 oz gold per ton or \$31.50 a ton. Today, this would be \$720.00 per ton.

Concerning this shipment, P. W. Meahan, the manager, reports:

This shipment came from the last round taken from the south vein (6-1) on the first level and very little gold was noticed. All the quartz was taken and bagged. There was no picking. The previous round would have given much higher returns and I think that as good returns could be obtained on the second level in places where the gold is not spectacular. Note there was no galena in this shipment.

I have taken the average width of the samples above and the average value per ton which is \$856.72 per ton. Giving each section sampled a length as shown

by sampling and an equal height this would indicate a value of gold in the blocks of \$16,092,628.00. If you take a height of only ten feet and apply it to the total length along which the samples were taken it indicates gold values at \$2,203,340.00 as a possibility.

Spectacular high grade gold was found on this 6-2 vein and taken out in powder boxes. The 6-1 and 6-2 veins have never been delimited underground.

G. L. Holbrooke reports that a trial shipment of one ton of material was made from a pit in the area known as the West A zone 2,900 feet southwest of the shaft returned over \$2,000.00. This information is contained in a letter to W. V. Moat dated September 18, 1937 from G. L. Holbrooke, superintendent of Erie Canadian Mines Limited.

Gold can be seen in the bottom of this pit today. It is reported that the pit in this mineralized zone has the same type of quartz showing in quartz porphyry as encountered at the shaft north hzone and is believed to be an extension of the same and not the 6-2 south zone.

The west A zone is described by Holbrooke, as a gold bearing quartz vein investigated over 200 feet, having a width of 3.5 feet. Four diamond drill holes 50 feet apart along strike intersected the zone at depth and returned an average of better than 1.33 oz gold per ton.

Primrock Mines in 1969 put down tow shallow holes to check the vein, one hole at a depth of 58 feet and one at a depth of 80 feet. They returned 0.27 oz gold per ton over a true width of 2.1 feet and .40 oz gold per ton over a true width of 2.2 feet. This is \$216.00 and \$320.00 a ton today.

Primrock made an agreement with Bear Creek Gold Mines in 1971, who did a magnetometer, electromagnetic and geological survey of the main Hiawatha claims and those held by Bear Creek Mines to the north and to the west. On the completion of this work, T. Heale, B. Sc., P.Eng., gave the following conclusions and recommendations.

"Diamond drilling in 1936 showed gold values over a strike length of 1,500 feet in the shaft area. The work on the first and second levels in the shaft have verified the presence of gold over considerable lengths in the South zone. The gold values are better on the second level than the first and appear to extend beyond the limits of the drifting at both ends.

On surface the area between the shaft and the high grade pit 2,900 feet to the southwest has not been adequately examined. To the east of the shaft the second level has not reached the area where a diamond drill hole is reported to have obtained high values. The possibilities for developing ore appear to be open at each end and at depth."

Bear Creek Gold Mines in 1974 sold its interests to Keltic Mining Corporation who took an option on the Primrock property, the former Hiawatha. This company dewatered the mine, checked and sampled the sampling done in 1969 and sampled the drift walls. No further work was done at this time. Work done on the property had not been recorded and the property reverted to the Crown.

The property was restaked by the present owners as previously stated, C.A. Carter and N. McCarthy of Sault Ste. Marie, Ontario, and M. C. Halstead of Cobalt, Ontario, Canada.

The President, F. A. Enders, in his October 15, 1938 report, refers to the second level south zone or No. 6-2 vein and states that "preliminary to the development of this zone at lower horizons two inclined diamond drill holes have been bored to cut the body 100 feet below the 2nd level. The holes are 160 ft. apart and both have cut through this southerly vein. The hole in the east drift discloses well mineralized quartz showing galena, and in the west hole visible gold appears in the core. In both cases the cores reveal the vein to have the same characteristics and widths as on the second level.

In 1977 the present owners optioned the property to Mid North Engineering Limited. They drilled three holes to cut the No. 6 vein at a depth of 500 feet. The first hole cut one foot true width of .31 gold; the second cut into the diabase dyke and the third I have no report on. It could easily cut a blank spot in the vein as there are some to be found on the second level in sampling.

The above does show that there is gold 100 feet below the second level and also 225 feet below the second level.

I have attached to this report a number of copies of reports in the Northern Miner Press. They simply point out that the Hiawatha Mine operators back in 1938 and 1939 thought that they had mine possibilities at \$35.00 gold.

The mine was closed on account of World War II, supplies and men were not available. It had been a privately financed company and for some reason or other, no funds were available to start up after the war.

There are a lot of the backs taken down in readiness for stope preparation, some of which was done. The timber that was put in then, is as good today as when put in, both in the shaft and underground on the second level. Mine track remains on the levels.

Present status of the mine is such that the claims have to be surveyed and a lease applied for.

The owners are open to an outright purchase or an option with a 10% royalty on production.

Dated this 16 day of
January 1980

M. C. Halstead, B. Sc., P. Eng.

HIAWATHA IN THE NEWS

Numerous articles in the Northern Miner from 1937 onward (Ref.3) provide an interesting commentary on the activities at the Hiawatha Mine. They are summarized below:

February 25, 1937: "Hiawatha Conducts Drilling Campaign"

Mr. J. Lanning, president and managing director, reported that 3,000' of diamond drilling out of 10,000' planned were now completed and assays of \$8, \$31.40 and \$76.65 had been obtained over mineable widths.

April 8, 1937: "New Interests Enter Hiawatha Gold"

Harry M. Porteous of Montreal took over as president. Hiawatha Gold Mines Ltd., with a 3 million shares capitalization had then brought in \$30,000 for immediate operating expenses.

April 22, 1937: "Hiawatha Finances"

\$39,000 had been spent to that date. Mr. Porteous brought in an underwriting of 72,000 for 291,200 shares at 25¢ per share.

July 8, 1937: "Hiawatha to go Underground"

"Diamond Drilling and Surface Work Yield Satisfactory Results - Finances Secured."

\$55,000 had been spent to date, and \$75,000 were to go into underground work. One drill had completed 16 holes and indications were for commercial grade over one zone 1,500' long, this zone being 2,500' away from the original high grade pits. The original zone had also favourable results as well as another zone 2,000' beyond showing commercial grade material over 3.5 and 4 feet widths. Exploration had then been carried out over a strike length of 7,000 feet.

October 14, 1937: "Hiawatha Starts Shaft Sinking"

The work involved sinking a shaft to 300 feet and setting up two levels to investigate a main zone 1,000 feet long and 3 to 5 feet in width, having had sufficient encouragement from the surface drilling.

\$135,000 had been spent to that date, and another underwriting for \$100,000 was to be made. 600,000 out of 3 million shares had been issued.

April 14, 1938: "Hiawatha Explores Drilled Area"

"Drifting on Two Levels Approaches Section Where Favourable Indications Reported."

By January 20, 1938, the shaft had been completed to 325 feet, and levels established at 150' and 275'. Mr. A. Enders was now the president, Mr. Porteous having resigned, and Mr. P. W. Meahan the mine manager.

As of February 15, 1938, 1,751,671 shares were outstanding. Mr. R. I. Ferguson, K. C., was elected director. He was later to become justice to the Ontario Supreme Court. (Ref. 8).

June 23, 1938: "Getting Results at Hiawatha"

"Crosscut on First Level Cuts Several Veins - Will Extend Second Level Work."

12,000 feet of drilling had been completed by then, and development work on the 150' level revealed 5 veins one of which was 16 feet wide and yielded ore values and another 5 feet wide with visible gold.

The strike of the mineralized zones had been established over 2.5 miles

in a north easterly direction. There was keen interest for Hiawatha shares on the Toronto Stock Exchange, and little stock available for trading.

July 21, 1938: "Hiawatha Gold May Have Tonnage"

"Officials Look To Big Operation but Details on Development not Provided."

It was then estimated that large tonnage of "moderate" material was within sight to consider mining in the near future. A crosscut on the 150' level had cut six veins within a 150' zone width. Gold values appeared to be in the free state resulting in erratic sampling assays; bulk sampling was being considered to obtain a truer evaluation.

A 12 foot section averaged \$12.75 and another 20 foot section averaged \$19. Surface investigation reported gold occurring over wide areas of the property, particularly along strike.

A water power site near the property was reported as being able to generate a potential 1,800 hp.

As of date, out of a 3 million share capitalization, 1,900,000 shares were outstanding, 1,000,000 vendors pooled shares and less than 100,000 shares traded on the public market.

August 18, 1938: "Hiawatha Working on Two Levels"

"Four Veins in Granodiorite Drifted on First Level - Values Low and Erratic."

After a 30-mile canoe trip, the Northern Miner visited the Hiawatha property. Four silicified mineralized zones were observed in the granodiorite. Channel sampling appeared to prove unsatisfactory and the mine management was considering a more thorough sampling procedure involving bulk sampling and the use of a small test mill. The mineralized breaks within the granodiorite host rock appeared to be persistent. The south contact of the granodiorite and the greenstone was particularly interesting in that it showed long and straight quartz stringers within a 25 foot wide shear zone.

Underground, four zones were examined. The No. 1 zone was 12 feet wide, the No. 2 zone was 6 feet wide with visible gold but appeared to be pinching, the No. 3 zone was 20 feet wide and appeared to be continuing strongly in an easterly direction. The No. 4 zone was on the contact but did not appear important.

On the second level, the first zone had been recut and the No. 2 zone was about to be entered, while the other two zones were being intersected by drill holes.

P. W. Meahan, mine manager, was directing a crew of 27 men. The mine was provided with a 60 hp steam boiler, a 150 hp diesel and air supplied by a 600 cubic feet compressor. The mine had its own assay office.

August 25, 1938: "Better at Hiawatha"

Officials of Hiawatha reported that considerable improvement in an ore zone had occurred since the visit of the Northern Miner staff member.

October 20, 1938: "Talk of Mill Now at Hiawatha"

"Progress Report to Shareholders Refers to Visible Gold at Several Points."

On the first level, a fine seam of gold similar to surface exposure had been encountered. The third or most southerly zone showed assays of \$576 over 3 feet and \$210 over the next foot.

On the second level, "spectacular" gold had been encountered and as Mr. Enders stated... "For 30 consecutive days in the east drift, and 16 consecutive days in the west drift, visible gold was secured from the daily round." The quartz vein both in the east and west drift averaged 2.5 to 3 feet over the entire length with much galena in evidence.

Two drill holes 160' apart were drilled from the second level to cut the mineralized body 100' below the second level. Both holes cut the vein and one reported visible gold.

"On the advice of Dr. W. F. James (of James, Buffam & Cooper), the company has adopted a plan of chip sampling and bulk sampling. Analysis of approximately half a ton of ore taken from the south vein on the first level returned an average gold content of 0.9 ounce/ton, equal to \$31.50 per ton."

Financing had been by subscription for all of 1938, and the installation of mill equipment was to be financed by loan for 1939. On October 1st, out of 3 million share capitalization, 2,021,671 shares had been issued including 1 million pooled, leaving 978,329 in the treasury.

April 6, 1939: "Hiawatha Orders 20-ton Mill"

An amalgamation mill to be used for treatment of bulk samples was shipped and scheduled to be installed in 6 to 8 weeks.

The stock had jumped from 60¢ to 95¢ presumably on the strength of that piece of news. The Northern Miner noted that an official of the company had stated that no public statement would be made since there was no public financing. "However, it is notable that the stock is being traded over the counter in Toronto at what looks to be high prices in view of the property's stage of development, and in that sense the public is participating."

June 15, 1939: "Hiawatha Mill Now Nearly Ready"

"Amalgamation plant of 20-ton Capacity Will Act as Bulk Sampler. - Power is Augmented."

A 100 ton per day crusher and ball mill was being installed, and diesel power was being increased to provide air capacity in excess of 1,300 cubic feet.

Gold values had been disclosed over 600 foot length with numerous occurrences of visible gold. It was planned to stop from the second level up for thorough bulk sampling prior to deepening work. Later it was planned to sink a second shaft, presumably to the northeast to continue the investigation of the long gold-bearing quartz veins. "The principal vein carries a narrow core of visible gold and sorting could bring the grade to high figures."

September 28, 1939: "Hiawatha Resuming Work"

The mine manager reported the suspension of operations as of September 10, because of the outbreak of World War II. However, from the latest or last annual report of the company, work was resumed on the 22 of September till the end of December, requiring the dewatering of the workings.

November 23, 1939: "Hiawatha Starts Milling"

"Tuning Up on High Grade Ore While Stopes Prepared - May Go Deeper Later."

It was planned to mine those higher grade shoots encountered on both levels. The article says further, "In actual mining it is found that extraordinary values are found in individual rounds in the shoots. Free gold is in evidence elsewhere but it cannot be classed as high grade ore. The plan is to open the known rich shoots for stoping while additional development and exploration is being carried on."

It was also planned to determine the average grade of mill feed. The mining approach was to follow the methods used in the Northern Empire and Leitch gold mines. The persistence of values between the rich shoots being encouraging, it was also hoped to follow those shoots at depth.

The mill showed tails averaging 35¢ per ton, indicating a high level of efficiency. However, the last annual report indicates a figure of 75¢ per ton

for their period September 22 to December 15. The crew consisted of 30 men with four machines on two shifts per day.

November 26, 1944: "Wawbeek Gold Mines Ltd. & Hiawatha Gold Mines Limited"

Wawbeek held claims adjacent to Hiawatha and was controlled by the latter. Wawbeek was dissolved on August 22, 1940.

Hiawatha remained inactive for the whole of the war period. As of November 1939, 2,115,004 shares had been issued out of its 3 million share capitalization.

December 23, 1965: "Hiawatha Gold Mines Limited"

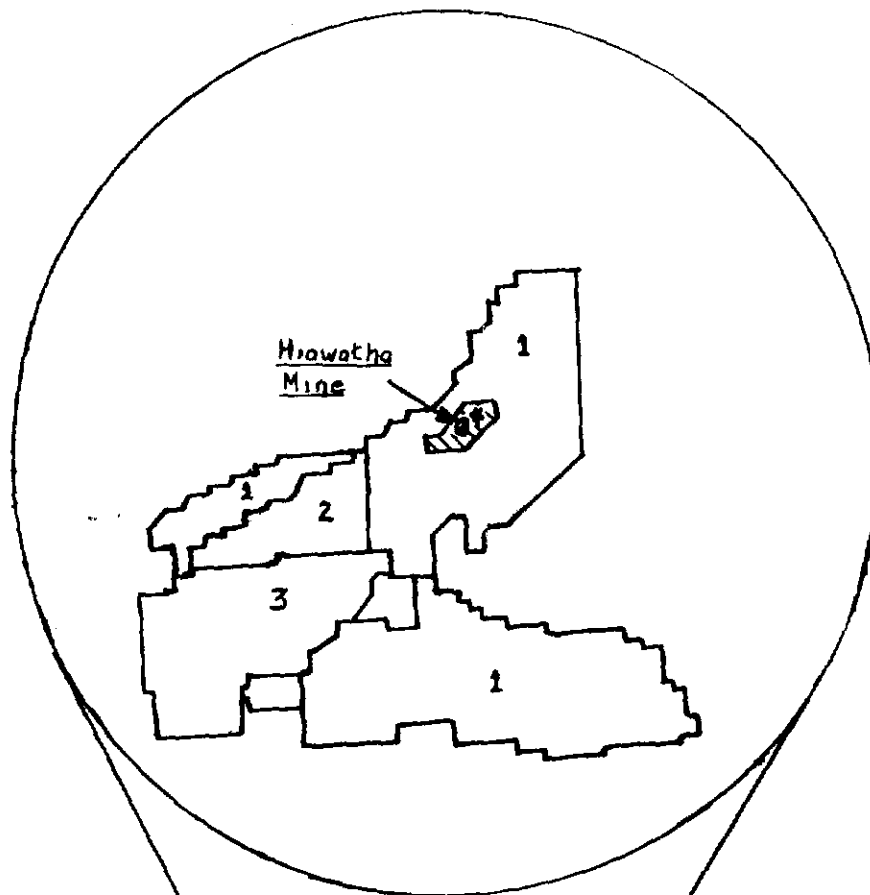
"Ontario charter cancelled for default in filing Annual Returns with the Provincial Secretary and dissolved."

The Toronto Globe & Mail also had an article, dated October 24, 1938, (Ref.10) which gave more spectacular news:

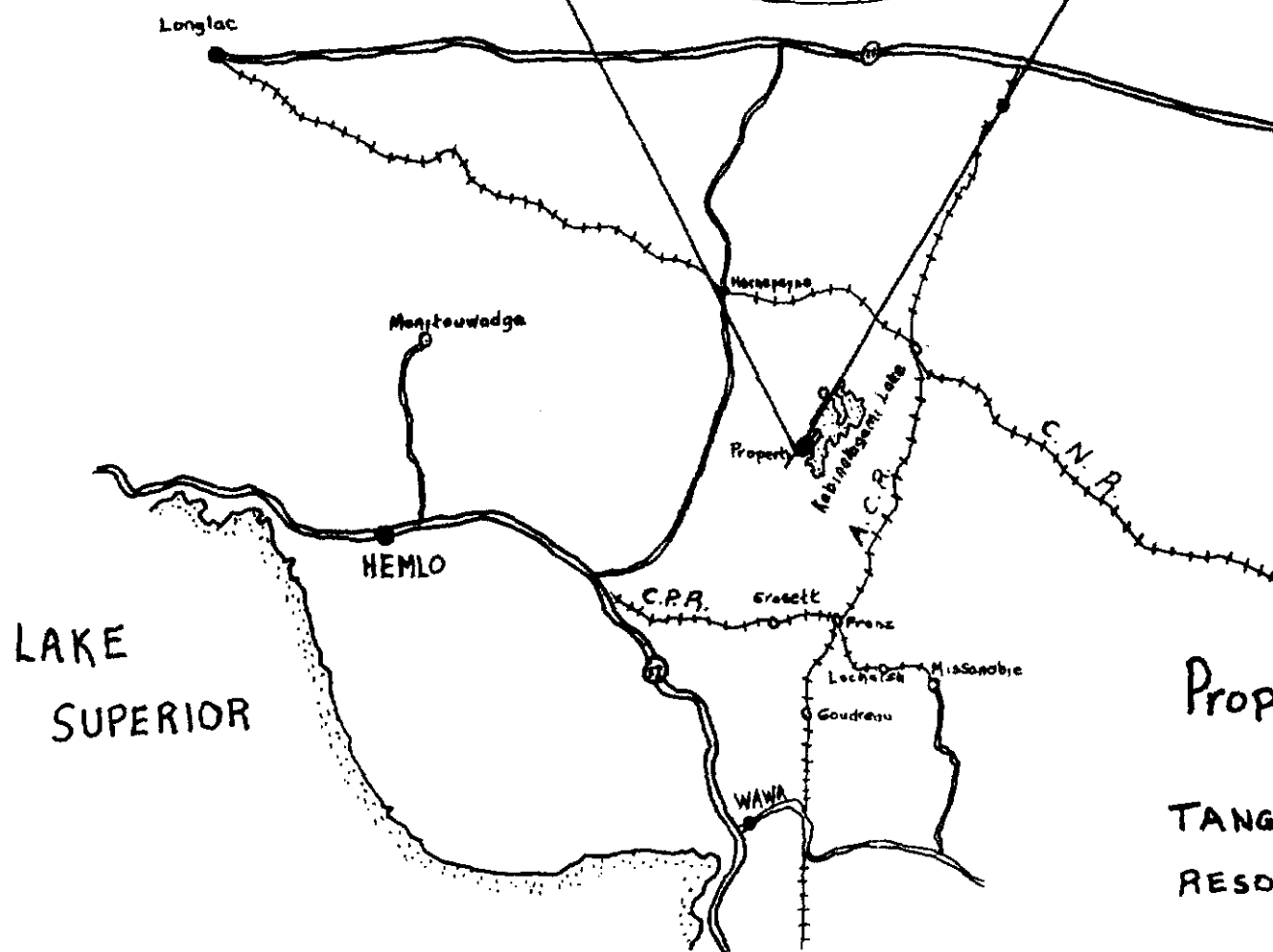
A spokesman for Hiawatha Gold Mines Ltd. was quoted as saying: ..."In fact, we can modestly claim to having opened a new gold mining area in Canada." Also about the 150' level, it was stated: ..."visible gold was secured and an assay of \$576 across three feet of the face and \$210 across the next foot."

It was mentioned that bulk sampling was underway and about 1,000 lbs of ore sent to the Dominion Laboratories had returned 0.9 ounce of gold or \$31.50 per ton.

P.W. Meahan, the mine manager, reported that, with reference to the above high returns, ..."there was no picking and previous rounds would even have given higher returns." F.A. Anders, the president, stated "...it is the unanimous opinion of the directors, that the presence of visible gold in 320 feet of the vein so far explored constitutes ore of at least commercial grade and the board have decided to push forward plans for enlargement of the development and to bring the mine to production in the near future."



- * Tanglewood Consolidated Resources Inc.
 1 Tundra Gold Mines Limited
 2 Toy River
 3 Pryme Energy Resources



63.4343

Property Location Map
 for

TANGLEWOOD CONSOLIDATED
 RESOURCES INC.

by

A.C.A. HOWE INTERNATIONAL LTD.



42C16SW0009 63.4343 LIZAR