

85-704-14704

09/86

ASSESSMENT REPORT

ON

GEOLOGICAL, GEOCHEMICAL, METALLURGICAL AND PROSPECTING WORK

THE KENNEDY SULPHIDES GROUP

(TONY GROUP, GIL AND FACT)

LOCATED

KENNEDY LAKE AREA

NTS 92F/3W

ALBERNI MINING DIVISION

VANCOUVER, BRITISH COLUMBIA

LATITUDE 49°03 1/2'N

LONGITUDE 125°28'W

FILMED

GEOLOGICAL BRANCH
FOR ASSESSMENT REPORT

FIRST COAST MINERALS CORP.
VANCOUVER, BRITISH COLUMBIA

BY 14,704

W.D. GROVES, Ph.D., P.Eng.
ARCHAEAN RESOURCES CORP.
VANCOUVER, BRITISH COLUMBIA

Date: ORIGINAL REPORT MARCH 15, 1986 (AWR#85-704)
MODIFIED AS PER GC'S LETTER REQUEST JUNE 2, 1986
RESUBMITTED JULY 30, 1986
[AUGUST 2, 1986 DEADLINE]

WDG

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July 30, 1986

Mr. T.E. Kalnins, P.Eng.

MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES	
Rec'd	AUG 1 1986
SUBJECT	_____
FILE	_____
VANCOUVER, B.C.	

Dear Sir,

**Re: Yours: Kalnins-Ejtel June 2/86 plus
checklist and summary regulations: Deadline
resubmission modifications Aug. 2/86: Report file number #85-704**

Enclosed please find modified Report #85-704. The March 15, 1985 W.D. Groves report was originally requested by the client as an VSE-style Engineering Report, as stated. This has now been converted to standard AWR format.

The report gives some geological analysis on the postulated origin of local auriferous gold-magnetite-sulphides-actinolite differentiated 'smelt' type deposits, and tertiary-stock-sulphide veins on limestone contacts.

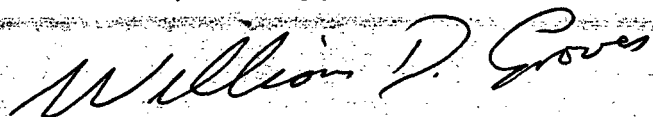
A brief metallurgical workup is reported involving crush-pan-screen analysis, showing that some of the gold values in the magnetite-sulphides is fine-particulate (i.e. physically concentratable by gravity methods), and that the geochemical composition of the iron and sulphide rich samples shows higher gold values if assayed with a flux designed for high iron-high and sulphur content.

A detailed work cost statement, at standard rates and with access to the author's diary and notes shows a total of \$2,630.00 work was carried out, (\$600.00 of which is prospecting-associated by Mr. Ejtel), and of which total \$2,000.00 is claimed on the March 15, 1986 Form. Showings maps have been re-drawn at requisite scale by Mr. Ejtel, showing the location of samples taken on January 18, 1985 during the author's property visit.

I was informed by your office that the modified Report would be applicable to the original filing period if resubmitted on or before August 2, 1986.

The above report should now be in standard AWR format as required, as distinct from the original VSE format document.

Yours respectfully,



William D. Groves, Ph.D., P.Eng.

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SUMMARY

The Tony, Gil and Fact claims form a north-south contiguous block called the Kennedy Sulphides Group, just north and west of the old Noranda Brynnor magnetite iron mine on the east shore of Kennedy Lake. The property is accessible by main logging roads from Highway 4, and is about 40 road miles west of Port Alberni and about 15 road miles from Ucluelet, on the Pacific Ocean. Claims extend from a rugged but not excessively steep logged-off lowland west of Draw Mountain, to a broad east-west draw on the lower slopes of Mt. Dawley, on the east side of Kennedy Lake.

Economic interest in the claim group arises from the presence of three gold-bearing sulphide showings. The first of these is the "Tony" showing on the Tony claims consisting of iron sulphides, arsenides and magnetite associated with an extensive granite-limestone contact. Two other showings, the "Fact 1" and "Fact 2", are on the Fact claims at the southern end of the property. The former features chalcopyrite in limestone fractures, the latter a high grade chalcopyrite-pyrrhotite vein system. Both are related to the contact of a small young porphyry stock against the same limestone unit on the lower northern spur of Mt. Dawley. Gold values in the Tony showing are in the order of 0.1-~~0.5~~0.63 oz./ton Au; of those on the Fact claims, the one in the chalcopyrite runs from .02 to .05 oz/ton Au, and the one other, containing high grade sulphide veins, averages about 0.44 oz./ton Au, with associated silver and copper values. The central portion of the claims area (the Gil Claim) has not yet been prospected or inspected in detail by the author, and is under heavy drift and till coverage for the most part. The showings are associated with large iron (magnetite) magnetic anomalies which assist in targeting areas for further exploration.

Fractionation of the granite and porphyry magmas in fault-vented reaction systems has occurred in contact with various units of the Quatsino limestone, which exists in N-S axis anticlinal and synclinal fold remnants in the area. The intrusives are a major Tertiary intrusive (the granodiorite) and minor late porphyry stocks and dykes (the late porphyry). The granodiorite is chiefly responsible for extensive skarn-magnetite and partly segregated sulphides in the contact phase. The further rework of this system by the porphyry results in further upgrading of copper and precious metal values into a massive sulphide-magnetite

vein. Sulphides tend to be distal to the magnetite in the magnetite-pyroxenite phase of the system and consequently tend to "fringe" the magnetic anomalies. Silver "halo" geochem signals are produced by the system as well, which are detectable in soil geochem studies. On the Tony claims, the prospect is for lenses and pods of gold-bearing "massive" sulphide margining the magnetite along the NW-SE magnetic anomaly corridor crossing the claims on the underside of the gently dipping lime unit: on the Fact claims, high grade gold-silver-copper-magnetite veins, followable by magnetometer, occur in the vicinity of the young porphyry stock-limestone contact, and extend southward along a fault zone marked by a large magnetite-pyroxenite-sulphide showing in a logging road cut just south of the claims on the south-adjoining Sesame claims.

A work program consisting of ground magnetometer (for magnetite) and EM (for sulphides) surveys, geochem sampling and geological mapping, followed by a drill program to probe the known showings and any other targets defined by geophysics along the fault anomalies is recommended.

1. INTRODUCTION

A. Property, Location, Access and Physiography

The author was requested to write a geological report on the Kennedy Sulphides Group property by Mr. Waldo Ejtél, President of First Coast Minerals Corporation of Vancouver. Information presented herein is based primarily on the author's visits to the property in December of 1984 and January 1985; additional information was derived from reference to government geological publications and assessment work reports on the Kennedy Lake area. The author has written numerous geological reports on mineral properties in the Kennedy Lake area.

The Kennedy Sulphides Group claims are accessible from the main haulage road leading eastward from Highway 4 to the the iron mine and Toquart Bay. Northward side logging roads pass through the Tony claims, and southward ones through the Gil claim, and another logging main switchbacks up the north spur of Mt. Dawley (Fact claims). All three of the known showings on the property are directly beside gravelled roads. Two-wheel drive can negotiate the roads in reasonably good weather. Claims are about 40 miles westward of Port Alberni along Highway 4, which goes along the east shore of Kennedy Lake in the ironmine area. Ucluelet, the nearest town, is a fishing village about 15 miles westward on Highway 4, on the west coast of Vancouver Island.

The Gil claim covers the middle of a low logged-off east-west draw between Kennedy Lake and the old Brynnor mine site. The Tony claims lie on a rugged, but gently south slope forming the north flank of the draw: the Fact claims form the south flank, rising on into the lower part of the spur of Mt. Dawley. These are also logged off, now replanted with Christmas trees and/or alder bush growing in over old burnt slash. Going is rough, but not steep. Climate is wet, but exceedingly mild: some 200" of rain falls in the area, but snow is rare on the claims due to the moderating

effect of the nearby Pacific Ocean. The claim area has received minimal snow in the present season.

B. Status of Property

Relevant claim information is summarized below:

Claims in the Kennedy Sulphides Group are as follows: (See Figure 2)

Claim Name	Record No.	Claim Type
Tony Group:		
Tony 1	1779(6)	2 post
Tony 2	1780(6)	2 post
T3	2497(2)	2 post
T4	2498(2)	2 post
Gil	1500(9)	Modified Grid
Fact 1	1523(10)	2 post
Fact 2	1524(10)	2 post

Total units in the Kennedy Sulphides Group equals 16. Claim owner is Mr. Waldo Ejtél of Vancouver, British Columbia.

The claims are presently in good standing.

C. History

Early interest in the Kennedy Lake area began with the discovery of fine gold in magnetite black sand beach placers at Wreck Bay, near the mouth

of Lost Shoe Creek (near Ucluelet) and near Tofino, at the outlet of the Kennedy River, before the turn of the century. Prospectors following up-valley found small high grade gold sulphide quartz fault-veins in the Vancouver Group volcanics. Prospectors also encountered large compass deflections leading to magnetite bodies associated with lime intrusive contacts.

The Brynnor open pit magnetite mine, which produced 4 million tons of magnetite ore in the 1950's-60's is situated on one of the most accessible magnetite bodies. Large magnetite anomalies are also present in the area, correlating with lime-granite contacts and/or associated block fault systems.

Current interest in the iron mine area centers on the associated gold-silver-copper sulphide values fringing or distal to magnetite in some of the more elongate (fault or contact-lead) magnetite anomalies: the NW-SE elongate one crossing the Tony claims is one such target.

The area around the iron mine crown grants (and such other local holdings as the Tony area predecessor claims) was staked as the Mowgli 1-6 group by British Petroleum Minerals in the late 1970's: BP did pioneering soil and geochemistry studies along contacts and logging roads and located various Au, Ag, Cu, Zn, As etc. anomalies. Interestingly enough, in two instances (atop the NW-SE magnetic anomaly crossing the Tony claim, and near the sharp E-W magnetic anomaly atop Draw Mountain), B.P. found initial indication of silver soil geochem anomalies.

The present work recommends a more detailed soil geochem gridding of these areas to see how magnetic and silver anomalies (in the sulphides and pyroxenite) correlate.

Regionally, the Tech-IPY joint venture is developing what appears to be a N30E/steep oriented felsic breccia sheet-vent zone, with

intercalated gold sulphide veinlets and disseminated sulphide values, along the curving western rim of a N-S elongate Tertiary volcanic collapse structure. High grade quartz-sulphite-gold fault veins in N70W faults (Bear, Lost Canyon) are also of economic interest. Thus, fault fillings in N30E and N70W docking and tear faults in the Vancouver Group volcanoclastic island-arch rocks, Tertiary age re-working and enrichment of background gold values from the sea bottom metavolcanics, by Tertiary vulcanism, and magmatic segretations of pyroxenite skarn, magnetite and residually enriched base-precious metal sulphides resulting from Tertiary magma reacting with Vancouver Group limestones, all form deposits of interest in the area.

Half a dozen junior companies, and at least 4 major companies, have properties under claim and/or active exploration or development in the area at the present time.

D. **References**

Eastwood, G.E.P.: Bull. No. 55, Geology of the Kennedy Lake Area, Vancouver Island, British Columbia. B.C. Department of Mines & Petroleum Resources, 1968.

Noranda Mines: Assessment Work Report, Airborne Geophysical Survey, Brynnor Mine Area.

E. **Summary of Work Done**

In the period December 1984, Mr. Ejtél spent a total of 2 1/2 days prospecting the showings areas on the Tony and Fact claims, and looking for showings on the Gil claim, which is more or less drift-covered.

On January 18, 1986, Mr. Ejtél and the author spent a day's

field work and sampled the magnetite-sulphide showing on the Tony 1 claim (the Tony 'switchback' showing. (Sample #7262). The 'two' sulphide-rich veins near a Tertiary porphyry contact with limestone on the Fact 2 claim (Samples #7264-7365) and the nearby massive chalcopyrite veinlets and blebs in a limestone fracture system (Sample #7363), as well as looking at the local and regional geology on the claim block. The four samples were fire assayed for gold (Acme Sheet 85-0070A, and geochemically tested (by ICP) for Cu, Zn, Ag, with Fe, As and Au (ppm) Acme sheet #85-5070. At the Tony switchback showing, a large sample of the magnetite-actinolite-sulphides was also taken from a 12' chip along the mineralization, later forming the basis for crush-pan-screen metallurgical tests reported in the metallurgy section, and whose fraction assays are shown on Bondar-Clegg certificates dated 14 March 1985 and 15 March 1985 appended to this report.

A total of \$ 600.00 worth of prospecting, plus expenses, was carried out by Mr. Ejtél. \$ 2,030.00 worth of consulting, metallurgical test work, with associated assays and reporting costs, was involved in the work of Dr. Groves in the period January - March 1986. (See Appendix I - Work Cost Statement.)

Subsequent blast trenching on the Tony switchback showing by Mr. Ejtél, reported as \$ 600.00 worth of physical work, was recorded separately June 3, 1985 by prospector-owner Ejtél, so is not part of this report.

2. TECHNICAL DATA AND INTERPRETATION

A. Regional Geology

On a large regional scale, two submarine volcanosedimentary systems whose axes lie roughly N70°W, make up the basic fabric of Vancouver Island. A Mesozoic submarine volcanic platform (the Vancouver Group) "piggybacks" on the SW flank of an earlier Late Paleozoic Arc (the Sicker

Group). The entire edifice docked against the North American continent in Late Mesozoic time, folded along N70°W axes, and a pattern of N30E/steep docking tension and normal faults, and N70°W/steep post-docking right hand tear faults developed as the Pacific Plate, finished subducting under the North American Plate and began moving NW past it.

The rift line of the Sicker Arc (exposed more on the NE side of Vancouver Island) has a locus passing through Nimkish Lake, Buttle Lake (Western Mines), Ladysmith and Mt. Sicker (Twin J Mines) marked by black-smoker type sea bottom spreading center massive sedimentary polysulphide deposits. The Sicker consists of greyish, fine-grained siliceous tuffs, grey limestone lenses and dark argillites intruded by large synvolcanic dioritic porphyry masses. Sicker flows tend to be grey rather than green.

No riftline for the Vancouver Group rock has yet been found: it may lie offshore. The Vancouver Group is floored by a thick sequence of green submarine platform metabasalts followed by the lenticular Quatsino limestone and Parsons Bay tuffaceous limey dark argillites, and cut (and topped) by felsic pyroclastics (the Bonanza Group). The Bonanza rifts the platform basalts and is now eroded into remnants.

Various intrusives have intruded the arc rocks; including the Island Intrusions, thought to be contemporaneous with the Coast Range Intrusions on the mainland.

Tertiary plate-subduction-remelt associated and other intrusive plugs, batholiths and volcanic-collapse edifices, now eroded to the roots, cut the arc rocks, and are thought to be the source of the high grade gold-sulphides fault veins which were mined after the turn of the century at various locations in the Kennedy River Valley. Old crown-granted claim groups, marked by tunnels and small workings attest to the early mining activity.

In the Kennedy River Valley area, there is evidence of a major cross-arc transform structure, probably with a right hand striking slip offset of several miles. Anticlinal and synclinal fold remnants in the Quatsino Limestone, and Parsons Bay Formations, with northward to N20E axial directions (for example the Iron Mine-Draw Mountain anticline, the N-S axis syncline passing just east of the Tony claims, and the N30E Salmonberry Mountain syncline), all demonstrate folding (and depositional) axes across the overall N70W strike trend of Vancouver Island.

The significance of this N20E corridor - now followed by the course of the Kennedy River for 10 miles above Kennedy Lake - is that it is also parallel to the long dimension of the Tertiary ring dyke (volcanic collapse) system (some 2 miles on major axis), the west rim of which has now been identified 5 miles up-valley.

Existence of limestones at high elevations (6000' plus) 1-2 km east and west of the corridor, and now mainly pluton-digested remnants of the same limestones (i.e., on the Tony claims) at low elevations within the corridor, suggest the transform corridor subsequently underwent undersea E-W spreading and collapse, with infill sediments and precipitate limestones forming in the period before the Vancouver Group rocks docked.

The various structural and economic geology ramifications of this idea have a significant effect on investigating the block fault and lime-intrusive reaction area surrounding the Brynnor Mine - sic: Tony, Gil and Fact claims.

B. Property Geology

The Tony claims lie just west of the axis of the N-S syncline axis in the lime unit exposed on the claims. On the Tony claims, a 300' thick upper member of the Quatsino Limestone is engulfed in a large

Early Tertiary age granodiorite pluton. The barren granodiorite now lies both over and under the lime unit. Both upper and lower surfaces have reacted somewhat with the granodiorite melt. At the foot of a SE trending fault scarp on the Tony claims (the limestone is a cliff former), now glacially somewhat smoothed off - are sulphide "boils" or lenses with cauliflower-like stoping contacts against clean lime above, margining local contorted dykes of fine-grained chilled-looking andesite intruding pyroxenite rock and lime in the contact area, and an underlying coarse green pyroxenite. Magnetite is also present in, and just below, the sulphides. Whether the major NW-SE magnetic anomaly is primarily due to shallow near-surface magnetite bodies on the lower contact of this upper limestone member, or to NW-SE trending fault-related bigger deposits at depth (in the much thicker lower member below the now-digested intervening argillite bed) is not yet known. Mineralized contact is the lime-magnetic andesite (Eastwood) not lime-Tertiary granodiorite, the latter being younger.

Also in the immediate vicinity of the lime-intrusive contact in the "Tony" showing area, are contact-metamorphic metasomatic-type lenses and masses of pink and green garnet and plagioclase feldspar, which are weakly auriferous. At the south end of the Tony claims, the upper lime-intrusive contact is exhibited; locally the porphyry dykes invade the lime-intrusive reaction zone, with local sulphide-manganese mineralization, the manganese being excluded from the porphyry. Past samples taken from the "Tony" showing have ranged from 0.05 to 0.11 oz/ton in gold. A recent 12 foot chip sample, taken under the author's supervision, ran 0.112 oz/ton in gold (see Assay Certificate # 7362). Overall results of crush-pan test on a bulk sample ran .563 oz/t Au recovered.

The geology of the Gil claims is generally similar to the Tony, but much less well exposed. More work needs to be done on the group. On the Fact claims, which form the southern two units of the area, a 200 meter diameter young porphyry stock cuts the lime and the granodiorite. On the main "Fact 2" showing, a 20' x 20' x 30' long blast pit has been excavated

southward into a steep south-rising hillside following the contact. The blast pit reveals a near-vertical N/S steep intrusive contact between the hornfelsed rim of the young porphyry and the Quatsino limestone. Massive sulphide-pyrrhotite-magnetite-chalcopyrite veins extend out from the porphyry into the limestone along the contact. These contain chalcopyrite, bornite, pyrrhotite and magnetite as well as black manganese minerals: tenor is about 0.44 oz/ton in gold, accompanied by values in silver and copper (see Assay Certificate, #7364 and 7365, representing two grab character samples). The massive sulphide veinlets and veins are irregular in direction and width but can be "tracked" by magnetometer along the region of the contact. One hundred fifty meters to the east on the "Fact 1" showing, massive chalcopyrite is seen replacing the lime along joints in replacement relations. This chalcopyrite carries a few hundredths of an ounce of gold (see Assay Certificate, # 7363, character sample). It is a more distal phase of the stock-lime reaction sulphide phase.

All three showings are designated for reference on Figure 3, which also shows the primary faults in the area and the location of the Brynnor iron mine. Both the "Tony" and "Fact 1" and "Fact 2" showings appear to be related to two significant magnetic highs within the claim area (see Figure 4, Magnetic Contour Map, from data filed with the government by Noranda from a regional airborne geophysical survey).

Samples from the showings were also subjected to I.C.P. analysis for semi-quantative testing of Cu, Zn, Ag, Mn, Fe, As and Au values (see Appendix).

The geometry of a corridor of lenticular sulphide lenses along the relatively flat lying NW-SE Tony magnetic anomaly might be amenable to open pitting under shallow cover if drilling confirms and extends what surface geology presently indicates in the vicinity of the "Tony" showing.

C. Mineralization and Discussion

When a magma digests limestone at depth, ankerite (Fe-Mg- CO_3) results: when the system is able to vent CO_2 in a shallower encounter, through faults, carbonate calcines to oxide, and magnetite (Fe_3O_4) results, as well as calcium-rich silicates. Around the Brynnor magnetite mine, a large Tertiary granodiorite has digested Quatsino limestone, vented CO_2 , and left magnetite calcium silicates (diopside, actinolite-pyroxenite "slags") and calcium-rich feldspar as reaction products. The magnetite and pyroxenite were trapped on the underside of the upper (300' thick bed of Quatsino), or were injected along faults. Segregation of Au, Ag and Cu in a residual sulphide phase after oxide-precipitation or slagging of mafics in the magma-lime reaction led to "fringe" sulphide deposits associated with the magma-limestone contact and along the faults that vented the system. Gold assays in the order of .01 oz/ton to 1.5 oz/ton tend to be masked in high-iron samples, unless specially fluxed. The assay values in this report are fire assays specially fluxed for high Fe and S content, and are appreciably higher than results from ICP or fire assay without the special treatment.

While the magnetite from the iron mine deposit itself shows only trace gold, margins of the mixed sulphides-magnetite-pyroxenite phase when injected along block-faults or spread out over the undersurface of the lime appear to be both more differentiated and thus locally more auriferous.

Following up on the showings by shallow drilling (targeted by detailed geochem and ground geophysics) would help define and evaluate these deposits.

Locus of the primary zone of interest in the Tony claims area runs NW-SE diagonally across the 4 claim block. Locus of interest on the Fact claims to the south is in the area of the young porphyry stock/limestone contact, of which the present "Fact 2" showings (massive, N-S/steep

chalcopyrite-pyrrhotite-magnetite veins) on the porphyry (to E) limestone (to W) contact in the blast pit serves as an example.

Comment: The young porphyry occurring in dykes and small stocks often reworks the older limestone-granite reaction zone, impeded by the limestone. It tends to further upgrade Au-Ag Cu/Fe ratio in its sulphides. It is associated with much higher manganese concentrations in contact areas; thus, the two suites of sulphides are distinguishable.

D. Geochemistry

The geology of the Gil claims is generally similar to the Tony, but much less well exposed. More work needs to be done on the group. On the Fact claims, which form the southern two units of the area, a 200 meter diameter young porphyry stock cuts the lime and the granodiorite. On the main "Fact 2" showing, a 7m x 7m -x 10 m long blast pit has been excavated southward into a steep south-rising hillside following the contact. The blast pit reveals a near-vertical N/S steep intrusive contact between the hornfelsed rim of the young porphyry and the Quatsino limestone. Massive sulphide-pyrrhotite-magnetite-chalcopyrite veins extend out from the porphyry into the limestone along the contact. These contain chalcopyrite, bornite, pyrrhotite and magnetite as well as black manganese minerals: tenor is about 0.44 oz/ton in gold, accompanied by values in silver and copper (see Assay Certificate, #7364 and 7365, representing two grab character samples). The massive sulphide veinlets and veins are irregular in direction and width but can be "tracked" by magnetometer along the region of the contact. One hundred fifty meters to the east on the "Fact 1" showing, massive chalcopyrite is seen replacing the lime along joints in replacement relations. This chalcopyrite carries a few hundredths of an ounce of gold (see Assay Certificate, # 7363, character sample). It is a more distal phase of the stock-lime reaction sulphide phase.

All three showings are designated for reference on Figure 3, which also shows the primary faults in the area and the location of the Brynnor iron mine. Both the "Tony" and "Fact 1" and "Fact 2" showings appear to be related to two significant magnetic highs within the claim area (see Figure 4, Magnetic Contour Map, from data filed with the government by Noranda from a regional airborne geophysical survey). Acme Assay sheet 85-0070A reports the four fire assays above.

Samples from the showings were also subjected to I.C.P. analysis for semi-quantative testing of Cu, Zn, Ag, Mn, Fe, As and Au values (See Appendix) (Acme Assay Sheet 85-0070).

The geometry of a corridor of lenticular sulphide lenses along the NW-SE Tony magnetic anomaly might be amenable to open pitting under shallow cover if drilling confirms and extends what surface geology presently indicates in the vicinity of the "Tony" showing.

E. Field Procedure and Laboratory Analysis

Initial small samples taken from the "Tony Switchback" showing ranged from 0.05 to 0.11 oz/ton in gold. A subsequent 12 foot chip sample, taken under the author's supervision, ran 0.112 oz/ton in gold (see Acme Assay Certificate # 7362).

On January 18, 1985 Mr. Ejtél, accompanied by the author, took a large careful chip sample along the length of the same Tony "switchback" showing. It was sent to Bondar-Clegg laboratory in North Vancouver. A first 1770 gram sample was pulverized to -150 mesh nominal size. two independent sub-samples of this were assayed in duplicate at 1 assay ton (29.2) gram assay sample size: the first ran 0.19 oz//ton Au with close reproductibility, the second 1.5282 oz/ton Au with close reproductibility.

Next, three additional independent sub-samples from the large sample were assayed at 1 assay ton (29.2 grammes) assay sample size: the results were .890, .395, and .408 oz/ton Au. The overall average of the 5 sub-samples from the 1770 grams first pulverized is thus: -

$$(.19 + 1.528 + .890 + .395 + .408) / 5 = 0.682 \text{ oz/ton Au}$$

About 1,000 grams of this same pulverized material was then carefully single-stage hand panned: the pan concentrate removed 32.25 milligrams of gold, showing that a part at least of the gold values were gravity - concentratable. Inspection of the pan did not reveal any visible gold: to be invisible as filtrate in 150 minus mesh magnetite and sulphides, particle size had to be extremely small.

A somewhat more elaborate three-stage panning test was then carried out on another 1,770 grams separately pulverized to -150 mesh from the same large sample. In each stage of panning a small concentrate was removed, then the tailings re-panned: Results were as follows:

Con 1. Total 76.9 gms. Total was assayed giving 25.01 milligrams Au.

Con 2. Stage two: Con Sample 92.1 gms.
Assayed 29.2 gms. giving 28 milligrams

Au prorated to total sample size - .655 mg.

Con 3. Stage 3 con sample 342.7 grams
Assayed 29.2 grams giving .063 mg. Au.

Con 4. This sample was from the overflow mud fines from the Stage 3 panning, settled. Sample weight 155.3 grams.

Assayed 29.2 grams, giving 0.060 g. Au.

WDG

Pro-rated sample - .318 mg.

Total CON weights $79.6 + 92.1 + 342.7 = 514.4$ grams

Total material "tailed" - 1770 - 5.414 - 1255.6 gms.

Note that final tails was NOT sampled for assay.

Total gold in C1-C4 = 26.711 mgms.

This, reported to 1770 gram sample size, gives a recovery grade of 0.445 oz/ton Au for the sample.

While the 5-assay average of the first test (.682 oz/ton Au) and the second tests recovered grade (.445 oz/ton Au) are not strictly comparable figures, the arithmetic average of the two figures, namely .563 oz/ton Au should give a somewhat conservative value for the average gold tenor of the original 5 kg chip sample.

The sample consisted of fine granular magnetite (about 2/3) about 1/3 mixed sulphide (pyrrhotite, arsenopyrite, minor chalcopyrite) and some of the green actinolite gangue. The -150 mesh pulverized product was a mid-khaki greenish brown in color. Panning gave rise to some flotation of sulphides in the pan. There is no doubt that some gold in the panning tests floated over the pan, and that some values were still probably present in the tails. However, the tests bore out that much of the gold is very fine but particulate and concentratable in the pan, though not visible in it.

The above tests, assays and comments on this showing, together with its obvious magnetite association and the large aeromagnetic anomaly peaking at the site, should contribute to making this area one of most considerable interest.

WJG

Four rock-chip samples, #7362-7365, were analyzed by Acme Analytical. Preparations for the 7 element multi-assay included: digestion of 1.00 gram sample with 50 ml of 3-1-2 HCl-HNO₃-H₂O at 95°C for one hour followed by dilution to 100 ml with water. This method is sensitive to .01% for base metals. Gold analysis was carried out on 10 gm samples using the following method. Results of the multi-element atomic absorption analysis are presented on Certificate #85-0070. Check gold assays (Certificate 85-0070A) were carried out using standard fire assay techniques.

The fire assaying of pan concentrates by Bondar-Clegg involved fire assay techniques on 20 gram starting samples, with flux adjusted to accommodate high iron and sulphide content in the samples. Dore beads were dissolved in aqua regia and analyzed by Atomic Absorption Spectroscopic techniques.

F. Conclusions

1. On the Fact 1 & 2 - mineralization is copper-iron (gold-silver) sulphides plug magnetite veins off a tertiary stock in limestone.
2. On the Tony Group, gold values are associated with magnetite-sulphides-actinolite smelt products invading limestone.
3. On the Gil claims, magnetite and Au-Cu geochem anomalies bear follow-up prospecting.
4. At least some of the gold values in the sulphide-magnetite rich margins of magnetite bodies are very fine but particulate in nature (and physically concentratable).

5. A program of geochemical-geophysical follow-up on the claims is recommended (see VSE report of March 15, 1985).

Respectfully submitted.

William D. Groves.

W.D. Groves, Ph.D., P.Eng.

APPENDIX I
WORK COST STATEMENT

APPENDIX I

WORK COST STATEMENT

A. FIELD

Field Personnel

W. Ejtel, Prospector, 2 1/2 days prospecting (Dec/84)	
1 day field assistant (Jan 18/85)	
3 1/2 days at \$ 100/day	\$ 350.00
Dr. W.D. Groves, P.Eng. (Jan. 18/85) @ \$350/day	350.00
	<u>\$ 700.00</u>

Transportation

W. Ejtel, 2 trips prospecting (gas, mileage, BC Ferry) Vancr-Kennedy Lake return(Ferry + Car) at \$ 125/trip	250.00
W.D. Groves, 1 day, Van-Kennedy Lake-Return (Ferry and Car) @ \$125	<u>125.00</u>
	\$ 375.00

Food

4 1/2 man days @ \$30/man day	135.00
-------------------------------	--------

Field Supplies

Sample bags, tags, note books	10.00
-------------------------------	-------

<u>Equipment Rental</u> - nominal	Nil
-----------------------------------	-----

Sample assays - Acme, 4 F.A. + 4 ICP (7 el.)	80.00
- Bondar-Clegg- F.A.	<u>90.00</u>

\$ 315.00

\$ 1,390.00

(Ejtel-Assoc: \$ 600, W.D.G. -Assoc. + Assays - \$ 790.00)

B. Metallurgical Testing (Panning concentrates,
screening, plus calculations)

W.D.Groves, 1 day @ \$350	\$ 350.00
---------------------------	-----------

wdg

C.	Report -W.D. Groves, 2 days at \$350	700.00
	Typing - rough draft, 4 hrs. @ \$10/hour	40.00
	Word Printer - 4 hours @ \$25/hour	100.00
	Xerox, covers, maps	<u>50.00</u>
		\$ 890.00

	Total A,B.C.	\$ 2,630.00
		=====
	Total Cost Claimed	
	(Assessment Report - Title Page & Summary of Sept. 16/85)	\$ 2,000.00
		=====

W.D.G.

APPENDIX II

CERTIFICATE, W.D. GROVES, P.Eng., Ph.D.

APPENDIX II

CERTIFICATE

I, William D. Groves, do hereby certify that:

1. I, William D. Groves, am a Consulting Engineer (geological) with an office at 200-675 West Hastings Street, Vancouver, British Columbia, V6B 4Z1.
2. I am a graduate of the University of British Columbia (B.A.Sc. in Geological Engineering, 1960). I am a graduate of the University of Alberta, B.Sc., in Chemical Engineering in 1962, and of the University of British Columbia with a Ph.D. in Chemical Engineering in 1971.
3. I am a registered Professional Engineer in the Province of British Columbia.
4. I have practised my profession since 1960.
5. I have examined the Kennedy Sulphides Group (in December and January 1985) and have also reviewed geology and mineralogy of regional reports and from previous assessment work reports, GSC and BCDM studies made on the property and area, and conducted crush-pan-screen preliminary metallurgical tests on samples March/85.
6. I have not received directly or indirectly, nor do I expect to receive any interest, direct or indirect, in the Kennedy Sulphides Group claims, nor do I beneficially own, directly or indirectly any securities of First Coast Minerals Corp., nor do I expect to receive any such interests.

Respectfully submitted,

William D. Groves

W.D. Groves, Ph.D., P.Eng.

Updated: 15 March 1985

- and - July 30, 1986.

APPENDIX III
ASSAY CERTIFICATES (Pages 1-4)

ACME ANALYTICAL LABORATORIES LTD.
852 E. HASTINGS, VANCOUVER B.C.
PH: (604) 253-3158 COMPUTER LINE: 251-1011

DATE RECEIVED JAN 21 1985
DATE REPORTS MAILED Jan. 23, 1985

ASSAY CERTIFICATE

SAMPLE TYPE : PULP
ANAL BY FIRE ASSAY

ASSAYER: V. Saundry DEAN TOYE OR TOM SAUNDY, CERTIFIED B.C. ASSAYER

FIRST COAST MINERALS FILE# 85-0070A

PAGE# 1

SAMPLE	ANAL	oz/t
7362	121 CHIP. TONY SWITINBARK	.112
7363	FACT 1 - CHALCO	.024
7364	FACT 2 - F-4-S (A0A9) VEINS.	.472
7365		.416

notes:
WDG.

WDG

AC ANALYTICAL LABORATORIES LTD.
E. HASTINGS ST. VANCOUVER B.C. V6A 1R6
PHONE 253-3158 DATA LINE 251-1011

DATE RECEIVED: JAN 21 1985

DATE REPORT MAILED: *Jan. 23 1985*

GEOCHEMICAL ICP ANALYSIS

.500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-3 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR Mn, Fe, Ca, P, Cr, Mg, Ba, Ti, B, Al, Na, K, W, Si, Zr, Ce, Sn, Y, Nb and Ta. Au DETECTION LIMIT BY ICP IS 3 ppm.
- SAMPLE TYPE: ROCK CHIPS

ASSAYER: *Dean Toye* DEAN TOYE OR TOM SAUNDY. CERTIFIED B.C. ASSAYER

FIRST COAST MINERALS

FILE # 85-0070

PAGE 1

SAMPLE#	Cu ppm	Zn ppm	Ag ppm	Mn ppm	Fe %	As ppm	Au ppm
7362	4681	62	2.6	395	18.54	27	2
7363	80475	426	33.0	197	13.92	49	ND
7364	7250	91	8.0	141	24.23	89	ND
7365	16146	189	13.7	322	35.31	69	7
7363 .1GM	32469	87	8.3	47	4.07	15	ND
7365 .1GM	4558	50	5.9	94	8.81	24	5
STD C	61	127	7.0	1072	3.93	41	7

W.D.G.

REPORT: 625-0269

[Empty Box]

FIRST COAST MINERALS CORPORATION
 DATE: 14-MAR-85 PROJECT: NONE GIVEN

SUBMITTED BY: SYLVIA

ORDER	ELEMENT	LOWER DETECTION LIMIT	EXTRACTION	METHOD	SIZE FRACTION	SAMPLE TYPE	SAMPLE PREPARATIONS
01	Au	.002 OPT				ROCK OR BED ROCK	PULVERIZING
02	Au	.01		Fire Assay AA			

REPORT COPIES TO: FIRST COAST MINERALS CORP

INVOICE TO: FIRST COAST MINERALS CORP

REMARKS: 8. - Au WAS FOUND IN THE + 150 MESH FRACTION
 AFTER SCREENING AND CALCULATED INTO THE
 TOTAL.

Mgs Au FOUND ON THE +150 MESH AFTER SCREENING

METALLIC SPLIT 1	5.063
METALLIC SPLIT 2	1.109
METALLIC SPLIT 3	1.090

Bondar-Clegg & Company Ltd.
 130 Pemberton Ave.
 North Vancouver, B.C.
 Canada V7P 2R3
 Phone: (604) 935-0681
 Telex: 04-352667



BONDAR-CLEGG

Certificate
 of Analysis

REPORT: 625-0269

PROJECT: NONE GIVEN

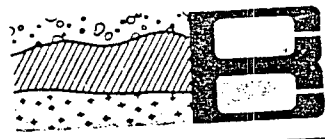
PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Au OPT	Au mg	NOTES
PREFIX 425-0269				
T-1		0.190		
PREFIX 525-0269				
T-1		1.528		
PREFIX 625-0269				
T-1		0.890		BA
T-1		0.395		BA
T-1		0.408		BA
T-1	IN CON	8.189	32.25	

wpg

[Handwritten Signature]

Bondar-Clegg & Company Ltd.
 130 Pemberton Ave.
 North Vancouver, B.C.
 Canada V7P 2R5
 Phone: (604) 985-0681
 Telex: 04-352667



BONDAR-CLEGG

Certificate
 of Analysis

PAGE 4

REPORT: 425-0345

SUBMITTED BY: UNKNOWN

FROM: FIRST COAST MINERALS CORPORATION
 DATE: 15-MAR-85 PROJECT: NONE GIVEN

ORDER	ELEMENT	LOWER DETECTION LIMIT	EXTRACTION	METHOD	SIZE FRACTION	SAMPLE TYPE	SAMPLE PREPARATIONS
01	Au	.002 OPT		Fire Assay AA			CONCENTRATE (PAN AS RECEIVED, NO SP
02	Au	.001 ug					
03	WT	.01 gm					
04	wt/Au	.1 gm					

REPORT COPIES TO: FIRST COAST MINERALS CORP

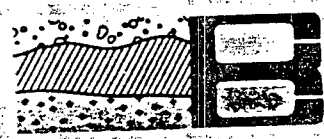
INVOICE TO: FIRST COAST MINERALS CORP

DETECTION LIMITS FOR GOLD
 20 GRAM SAMPLE: 5 PPB.
 10 GRAM SAMPLE: 10 PPB.
 1 GRAM SAMPLE: 100 PPB.

SAMPLE WT. 20 G. UNLESS OTHERWISE STATED.

NOTE:
 CHECK CONCENTRATION/SAMPLE WEIGHT RATIO
 FOR EFFECTIVE DETECTION LEVEL.

Bondar-Clegg & Company Ltd.
 130 Pemberton Ave.
 North Vancouver, B.C.
 Canada V7P 2R5
 Phone: (604) 985-0681
 Telex: 04-352667



BONDAR-CLEGG

Certificate
 of Analysis

REPORT: 425-0345

PROJECT: NONE GIVEN

PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	AU OPT	AU ug	WT gm	wt/Au gm	NOTES
C1			25.010	77.6	79.6	
C2		0.208	0.208	92.1	29.2	
C3		0.063	0.063	342.7	29.2	
C4		0.060	0.060	155.3	29.2	

WPG

ILLUSTRATIONS

FIGURE 1 - FIGURE 9

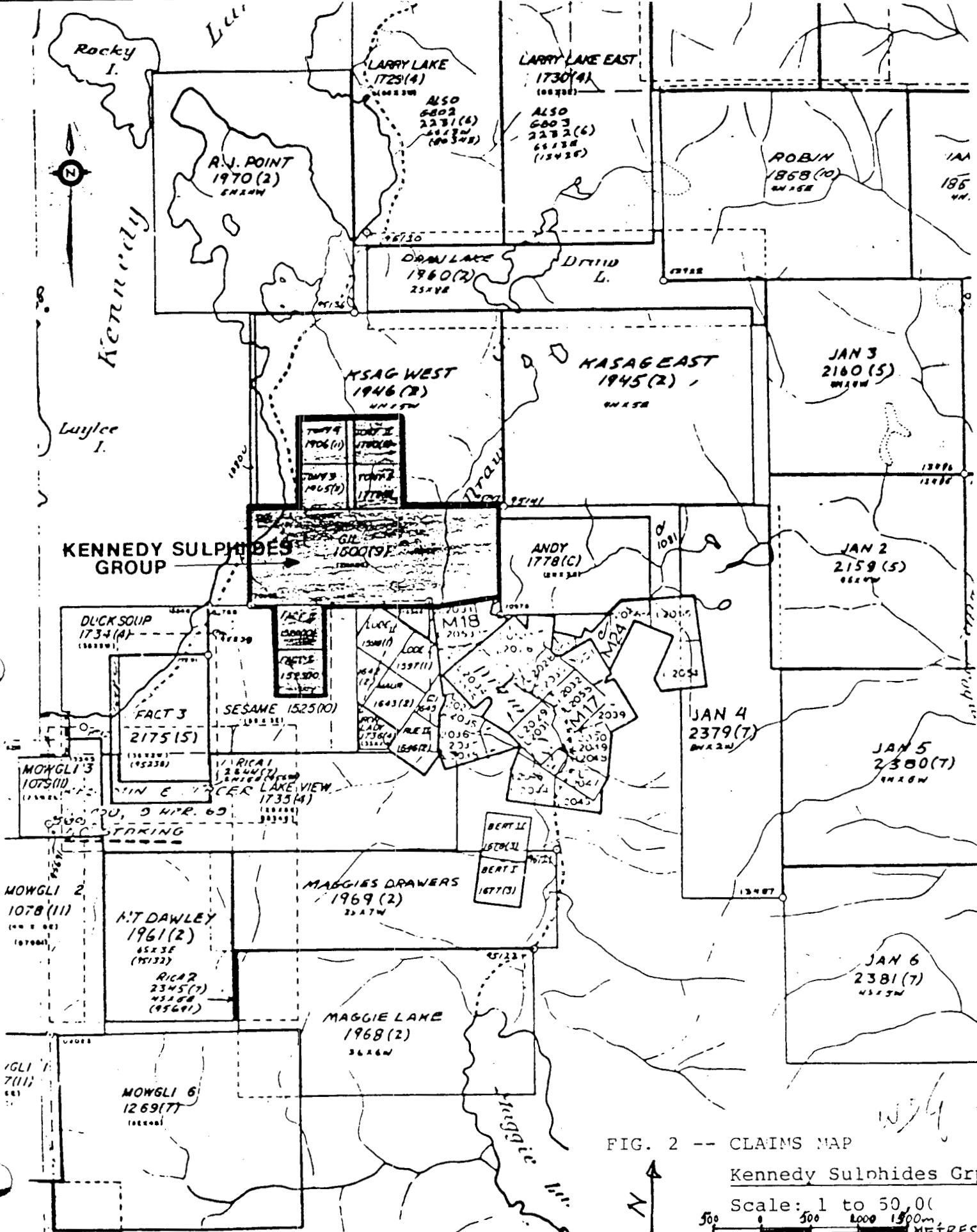
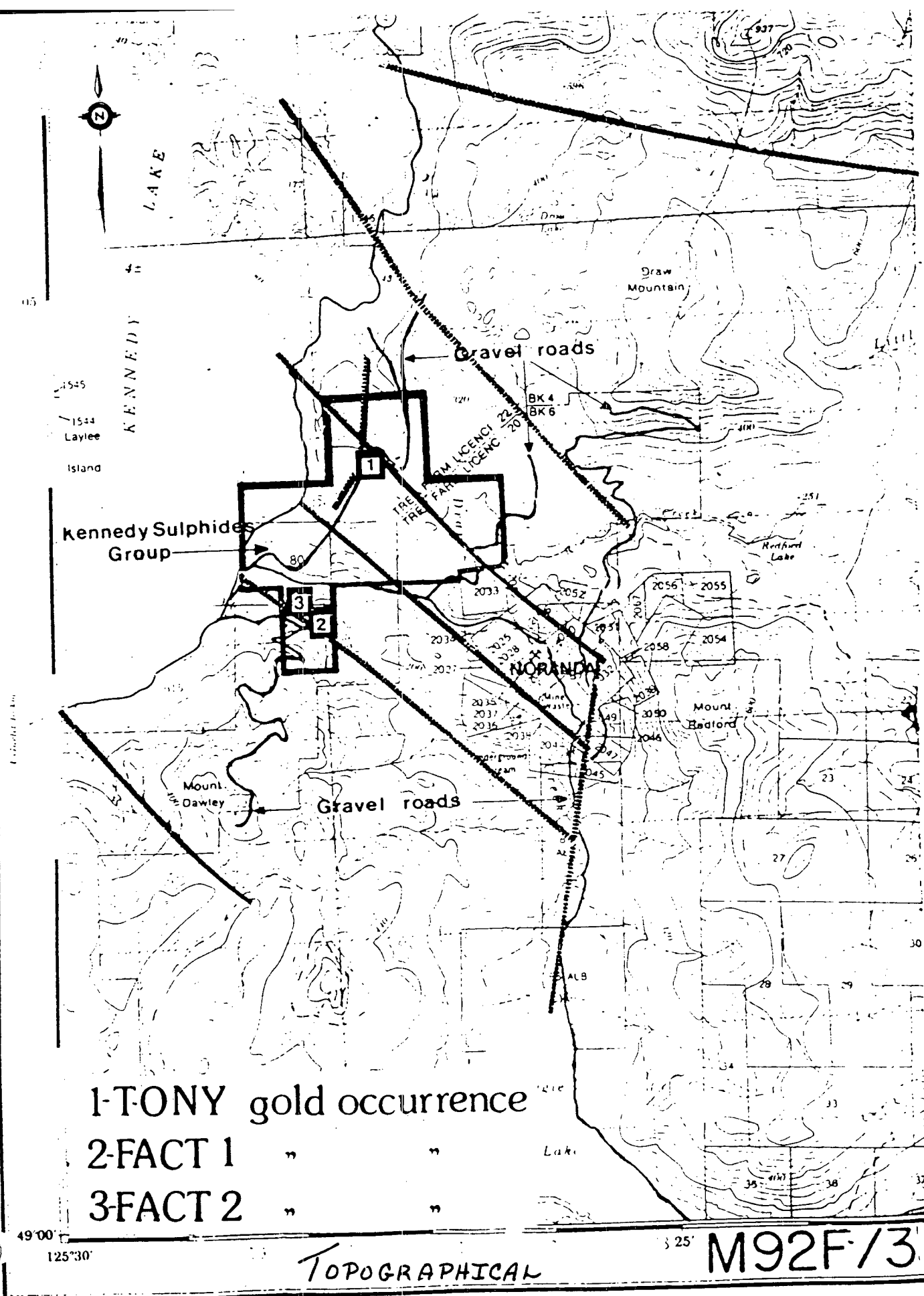


FIG. 2 -- CLAIMS MAP
 Kennedy Sulphides Grp
 Scale: 1 to 50,000
 500 1000 1500m METRES

ALBERNI MINING DIVISION

M92F/3W

TO SOUTH SEE MAP 92C.
 FIG



Produced by the SURVEYS AND MAPPING BRANCH,
 DEPARTMENT OF ENERGY, MINES AND RESOURCES.
 From aerial photographs taken in 1976 Culture check 1978
 Published in 1980

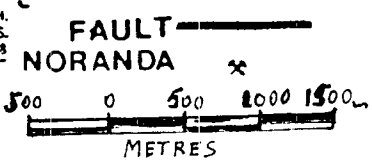


FIG. 3 -- SHOWINGS MAP

Kennedy Sulphides Grp
 Scale: 1 to 50,000

WAG

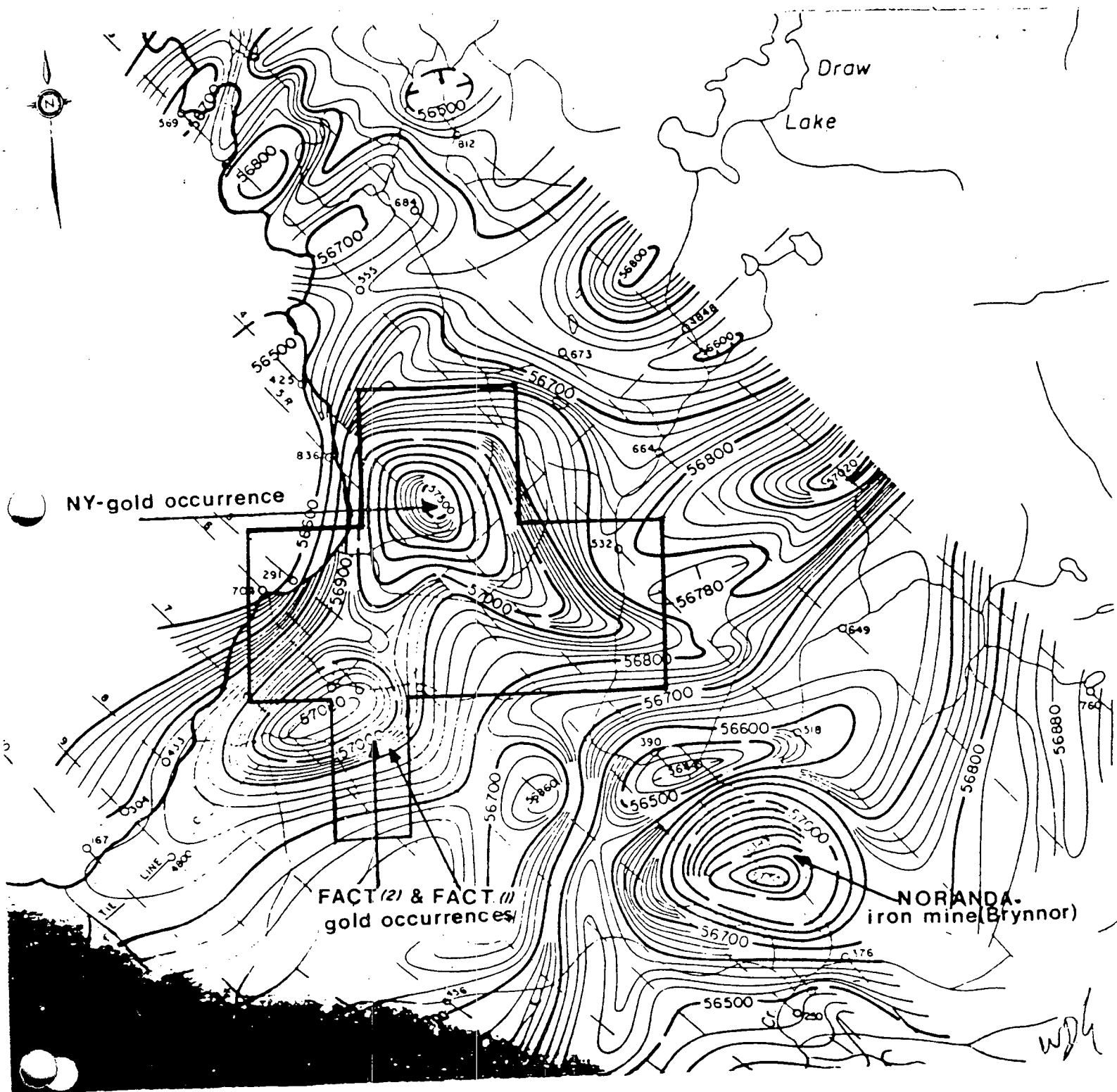
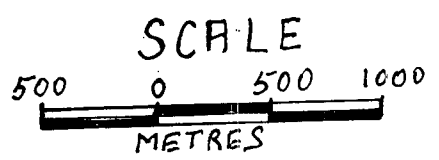
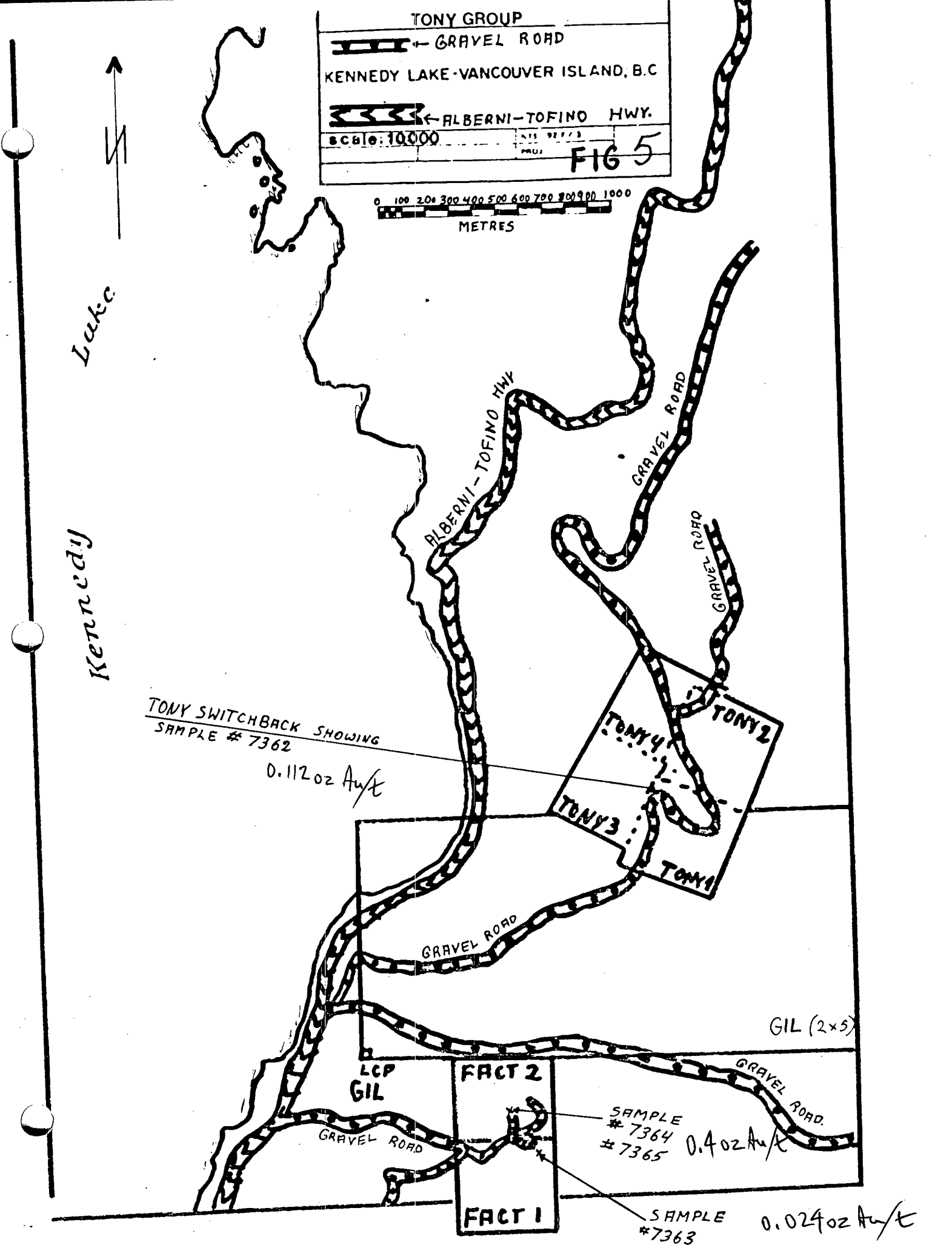
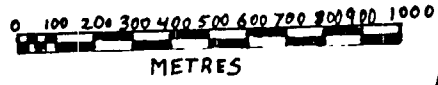


FIG. 4 -- MAGNETIC CONTOURS M.
 (From Noranda Airborne Survey, Brynnor Mine Area)



TONY GROUP
 ← GRAVEL ROAD
 KENNEDY LAKE - VANCOUVER ISLAND, B.C.
 ← ALBERNI-TOFINO HWY.
 Scale: 10000
 FIG 5



TONY SWITCHBACK SHOWING
 SAMPLE # 7362

0.11202 Au/t

TONY 1
 TONY 2
 TONY 3
 TONY 4

LCP
 GIL

FACT 2

FACT 1

GIL (2x5)

SAMPLE # 7364
 # 7365 0.402 Au/t

SAMPLE # 7363 0.02402 Au/t

TONY 4

INITIAL POST
FOR
TONY 2 and TONY 4



FINAL POST
FOR
TONY 1 and TONY 3

TONY 2

TONY 3

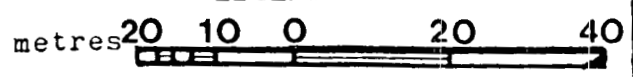
BOUNDARY

TONY-SWITCHBACK
TRENCH 1

ROAD
GRAVEL

TONY 1

LEGEND



SCALE 1:1000

KENNEDY SULPHIDES GROUP
VANCOUVER ISLAND

TONY-SWITCHBACK
TRENCH

FIG-6

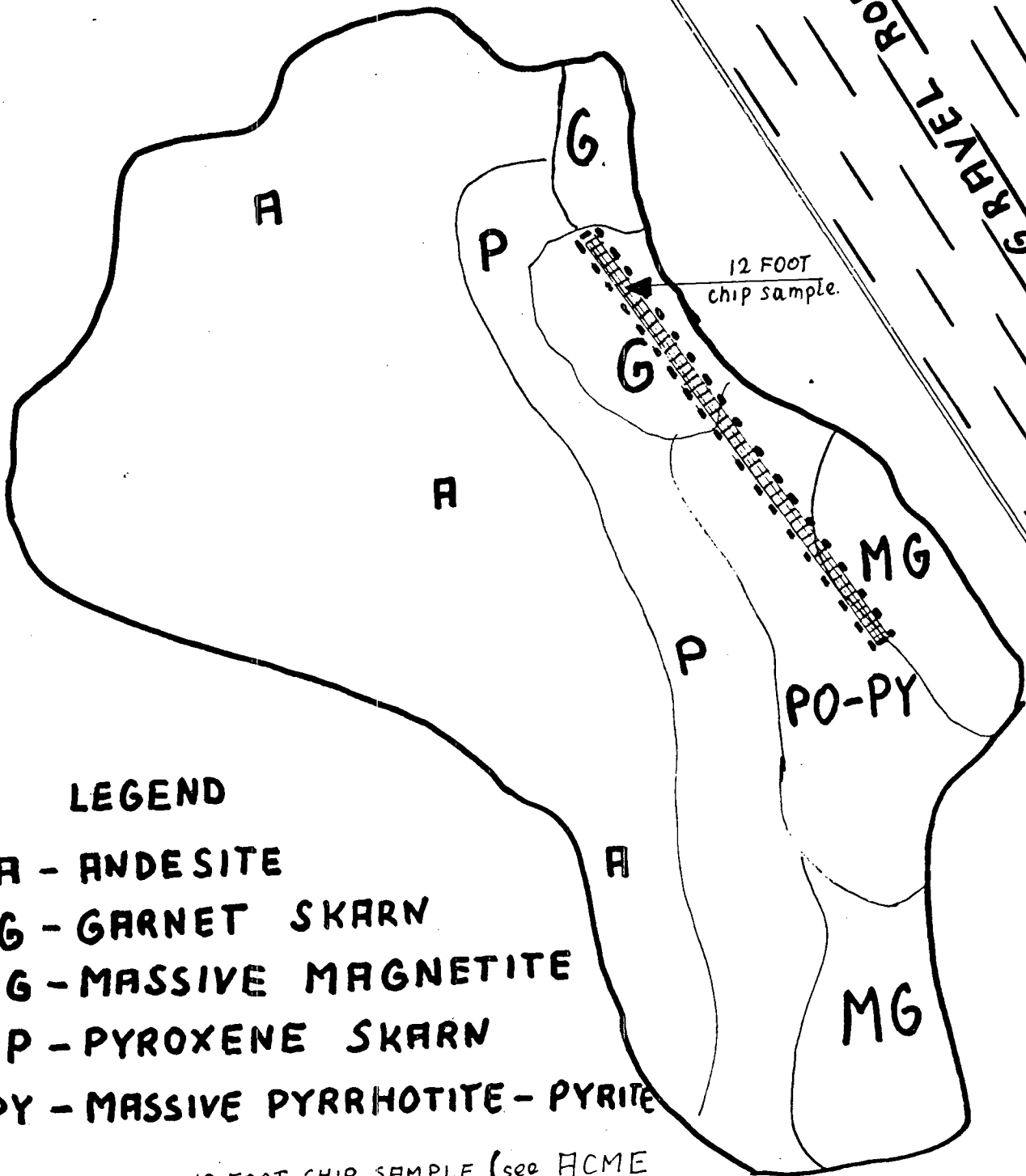


TONY SWITCHBACK

SHOWING

FIG-7

OUTCROP GEOLOGY & SWITCHBACK TRENCH



LEGEND

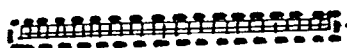
A - ANDESITE

G - GARNET SKARN

MG - MASSIVE MAGNETITE

P - PYROXENE SKARN

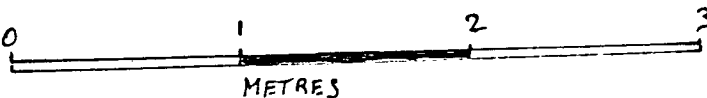
PO-PY - MASSIVE PYRRHOTITE - PYRITE

 ← 12 FOOT CHIP SAMPLE (see ACME

ASSAY CERTIFICATE #7362). ALSO SAMPLE TAKEN FOR

METALLURGIC TEST (SEE BONDAR CLEGG ASSAY SHEETS)

SCALE 1:75



200 300 400 500 600 700 800 900

SCALE - 1:5000

100m 0 100m 200 metres

CONTOUR INTERVAL,
100- Feet.

LEGEND

GEOLOGY - TONY GAGIL

FIG-8

- (P) - PORPHYRY
- (L) - LIMESTONE
- (S) - SCARN
- (G) - GARNET
- (I) - GRANITE
- (PY) - PYROXENITE
- Contact of (L) and (PY)

Kennedy Lake

ALBERNI-TOFINO R.V.

1000

FINAL POST FOR TONY 2/and 4

CONTACT OF LIMESTONE + PYROXENITE

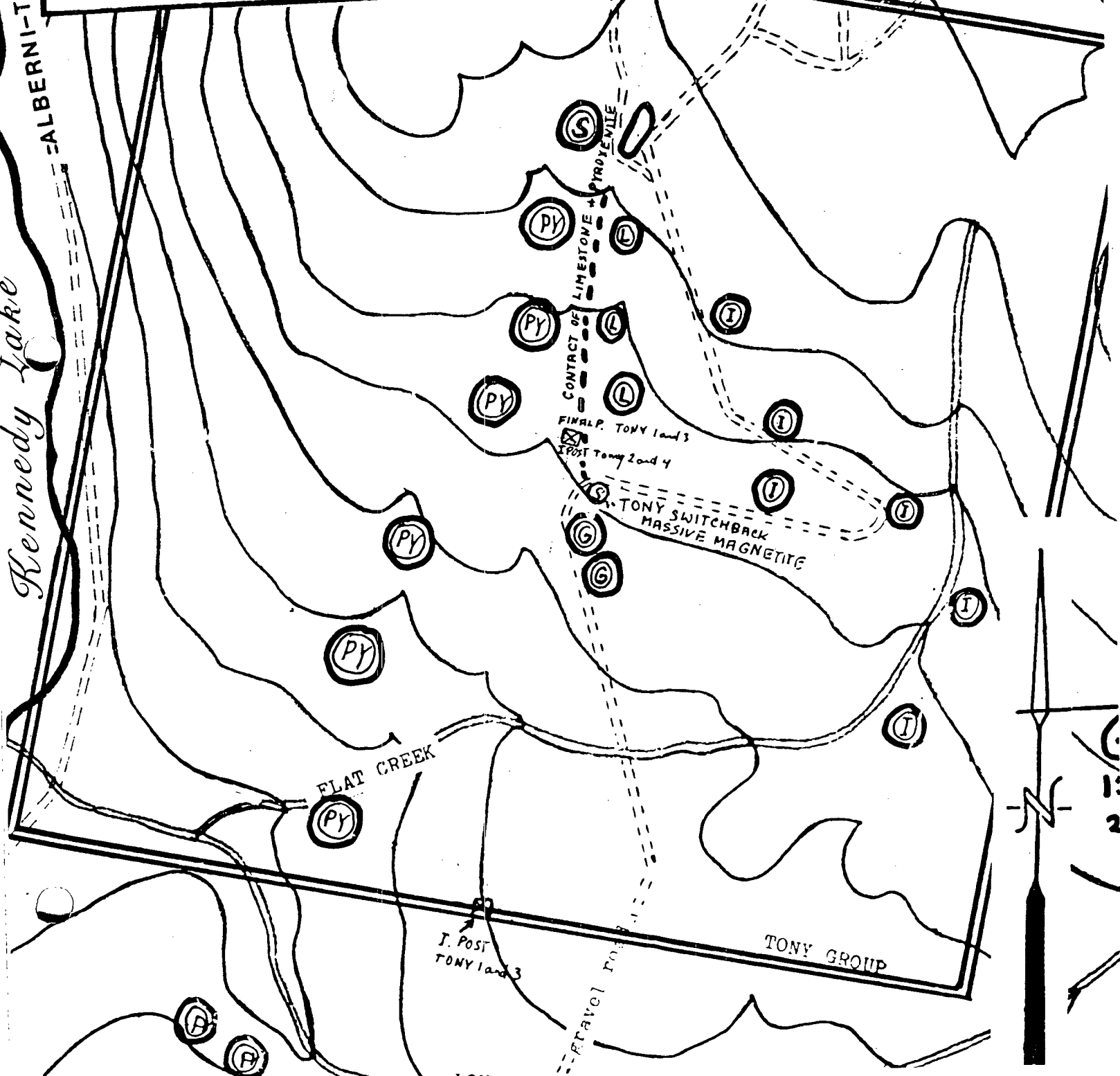
FINAL P. TONY land 3
POST TONY 2 and 4

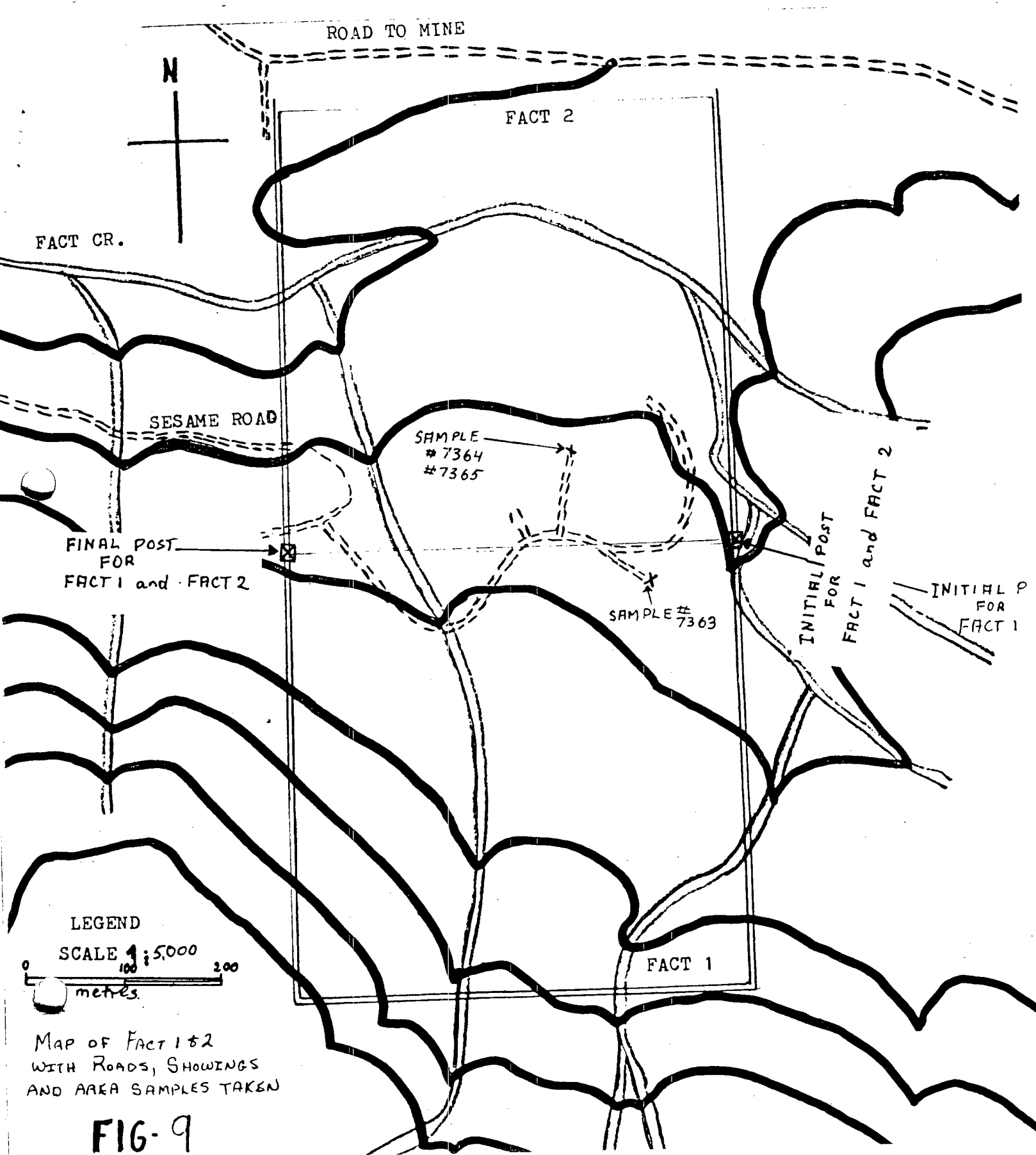
TONY SWITCHBACK MASSIVE MAGNETITE

FLAT CREEK

J. Post TONY land 3

TONY GROUP





ROAD TO MINE

N

FACT 2

FACT CR.

SESAME ROAD

SAMPLE # 7364
7365

FINAL POST FOR
FACT 1 and FACT 2

SAMPLE # 7363

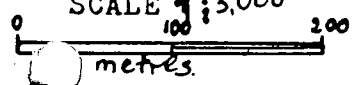
INITIAL POST FOR
FACT 1 and FACT 2

INITIAL P FOR
FACT 1

FACT 1

LEGEND

SCALE 1:5,000



MAP OF FACT 1 & 2
WITH ROADS, SHOWINGS
AND AREA SAMPLES TAKEN

FIG-9