



41010NE0004 2.11774 GARNET

010

REPORT ON TRENCHING
GARNET LAKE PROPERTY
GARNET TOWNSHIP
ONTARIO
for
WESTERN PACIFIC ENERGY CORPORATION

P. J. WHITTAKER, MSc., Ph.D
OCTOBER 6, 1988

RECEIVED

OCT 31 1988

MINING LANDS SECTION

INTRODUCTION

Trenching by power backhoe was done to expose additional oxide facies iron formation. This was done at a roadside outcrop area, shown by previous grab samples to have gold values up to 0.144 oz/t (Winter, 1986).

PROPERTY, LOCATION AND ACCESS

CLAIM GROUP

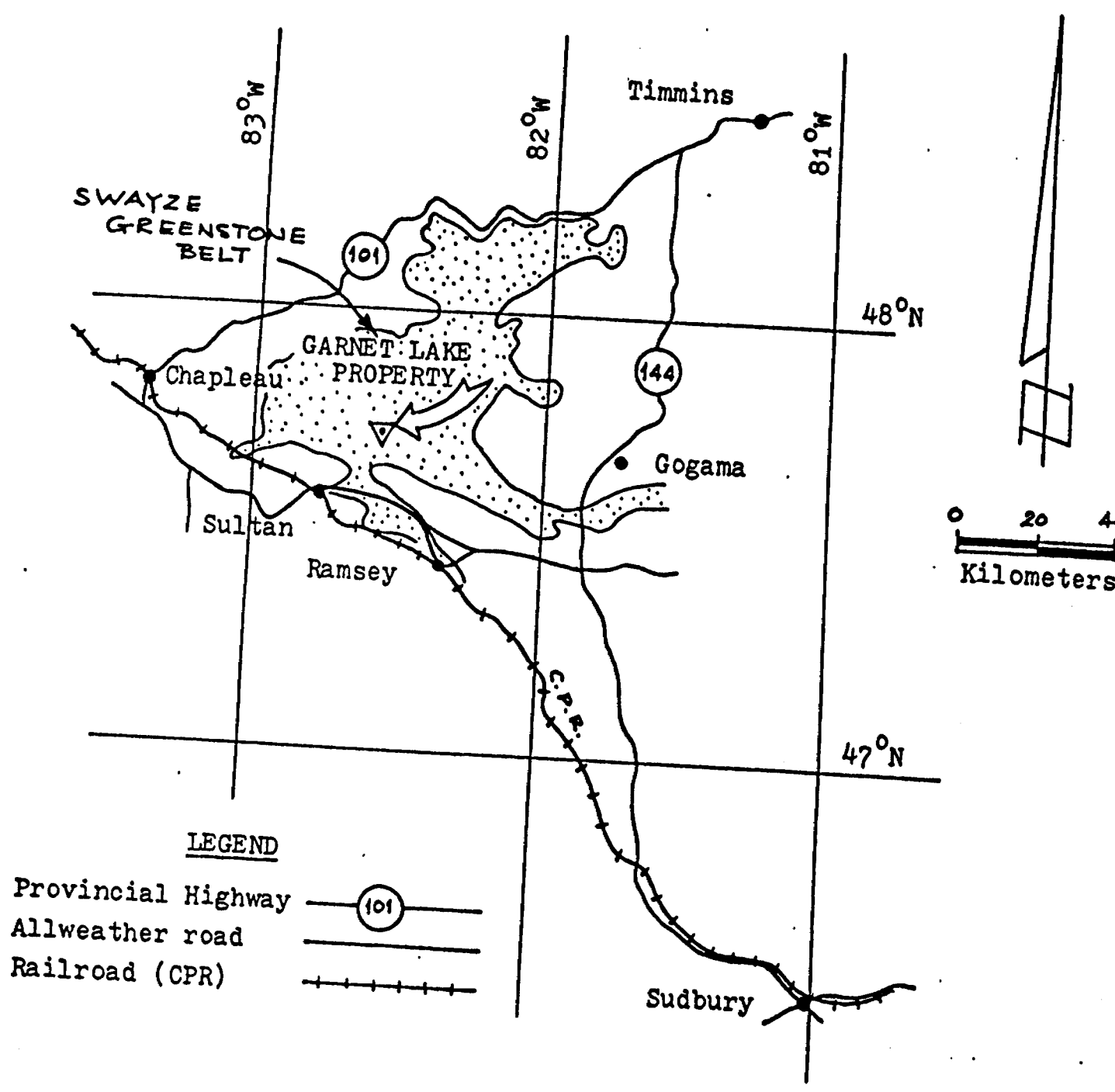
The property consists of 141 unpatented contiguous mining claims in good standing as shown in Figure 2 and as listed below after Plan M.829 Garnet Township as issued by the Surveys and Mapping Branch of the Ontario Ministry of Natural Resources. The claim numbers are as follows:

<u>CLAIM NUMBERS</u>	<u>NO. OF CLAIMS</u>
P.797501 to 797575 inclusive	75
P.798029 to 798048 inclusive	20
P.798055 to 798072 inclusive	18
P.798080 to 798099 inclusive	20
P.839741 to 839748 inclusive	8
	<hr/>
Total	141

LOCATION AND ACCESS

Garnet Township is located in the District of Sudbury, Porcupine Mining Division of northeastern Ontario at 47° -43' N latitude, 82° -30" W longitude (Figure 1) approximately 75 miles southwest of Timmins.

A good gravel road crosses the property and leads south 9 miles then west a distance of 18 miles to Sultan on the transcontinental line of the Canadian Pacific Railway. Highways 667 and 129 connect Sultan to Chapleau, 40 miles to the northwest (Winter, 1986). Trenching was done in the hachured claim (Figure 2).



LEGEND


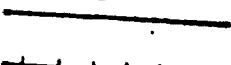
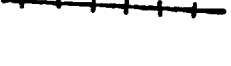
- Provincial Highway 
- Allweather road 
- Railroad (CPR) 

FIGURE 1

GENERAL LOCATION MAP
GARNET LAKE PROPERTY
DISTRICT OF SUDBURY
ONTARIO

(after Winter, 1986)

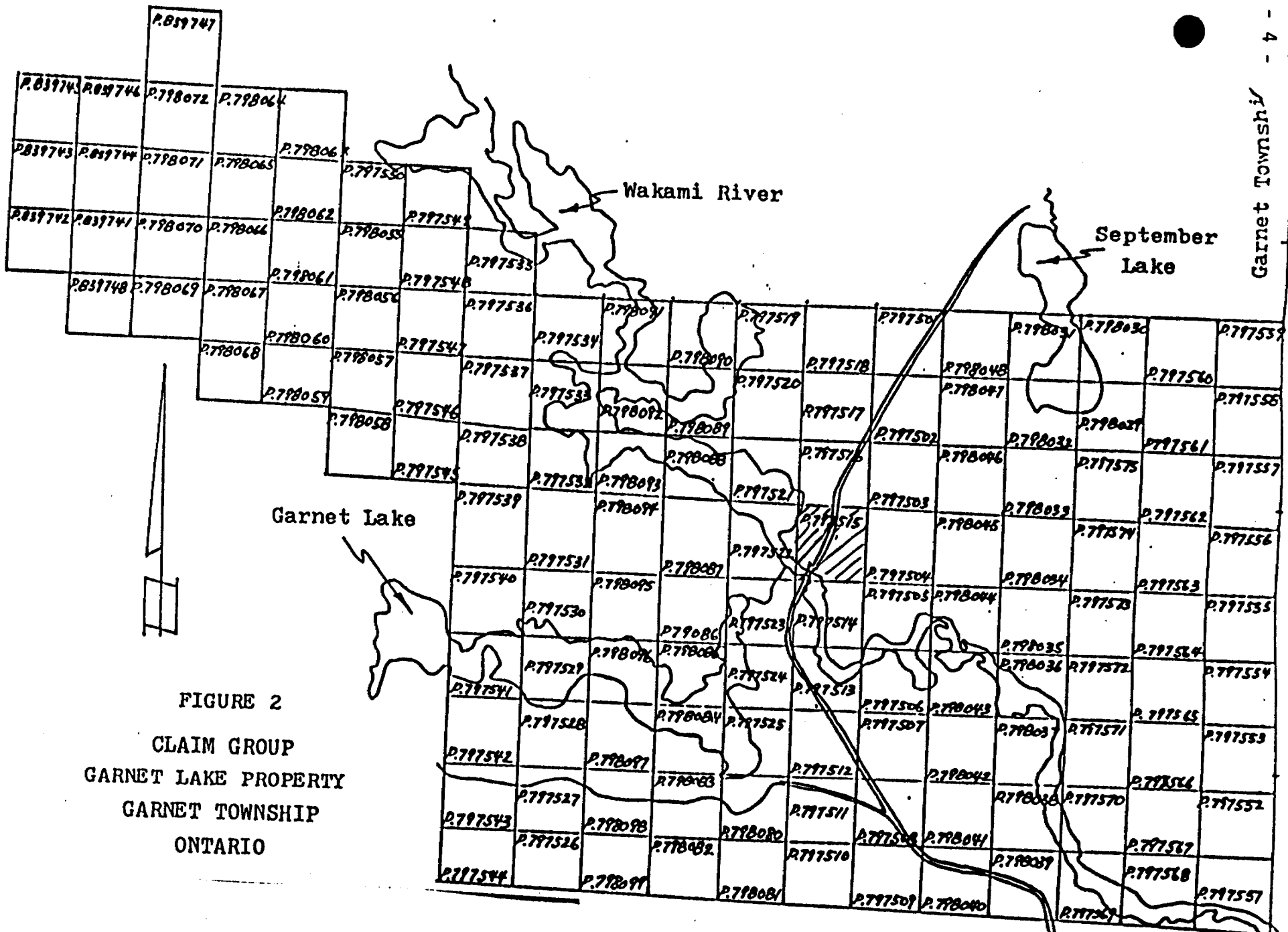


FIGURE 2
CLAIM GROUP
GARNET LAKE PROPERTY
GARNET TOWNSHIP
ONTARIO

Scale
1/4 1/2

To Sultan

PREVIOUS WORK

The only recorded assessment work is that reported by INCO Limited in the mid-1960's when 5 drill holes, numbers 31911, 31912, 31913, 31914 and 31915 were drilled along the northwest trending zone of chemical metasediments in the search for base metals (Assessment Files, Timmins, Ontario).

During 1985-1986, Noramco Explorations Inc. cut 56.22 line miles at 500 ft spacing with pickets at 100ft intervals. Five baselines and tielines were also cut. Geophysical surveys include 18.5 line-miles of ground magnetometer, 19.2 line-miles of VLF-EM and 14.7 line-miles of Self Potential surveys were done over selected areas. The area covered by cut grid-lines was mapped and all lithologies were sampled (Masson, 1986).

Diamond drilling was done between December 1, 1985 and February 14, 1986. Fourteen holes were drilled for a total of 5,630 ft of BQ core (Winter, 1986 B).

GEOLOGY

REGIONAL GEOLOGY

The Garnet property occurs in the south-central section of the Swayze greenstone belt (Figure 1). In Garnet, Cunningham and Benton Townships the belt is made up of a sequence of metamorphosed (greenschist facies) early Precambrian (Archean) volcanic rocks. The sequence is composed dominantly of basaltic flows and tuffs, with subordinate units of felsic porphyritic tuffs, clastic metasediments and by chemical metasediments represented by graphitic cherts and various facies of iron formation. The volcanic sequence has been intruded by gabbro-peridotite bodies, felsic porphyritic intrusions and diabase and lamprophyre dykes. Flanking the sequence to the south are granitoid intrusions and migmatites. Winter (1985) has outlined a more detailed account of the regional geology in an earlier report for Western Pacific Energy Corp.

PROPERTY GEOLOGY

The Garnet Lake property in east-central Garnet township is underlain by a west-northwest trending and steeply dipping sequence of metavolcanics that range from massive to porphyritic flows to tuffs and agglomerates. These metavolcanics are generally green to dark green in colour, range from fine to medium grained and when porphyritic contain phenocrysts of white plagioclase or quartz. Pillowed varieties are present in both the east-central and southwestern parts of the claim group. The composition appears to range from intermediate to mafic.

Ferruginous chert to magnetite iron formation with associated graphite occurs in the northwestern part of the property and trends east-southeasterly across the claims.

In the eastern part of the claim group, possibly three units, each approximately 1000 feet wide, of porphyritic felsic metavolcanics trend approximately east-west and dip steeply south. One unit is a feldspar porphyry and two units are quartz porphyries.

In the central and eastern part of the property sill-like to somewhat discordant bodies of mafic composition have intruded the metavolcanics and associated metasediments. These intrusives are gabbroic to dioritic in composition, massive and with a diabasic texture. A small fold-nose of this material also occurs in the southwestern corner of the property.

Outcrops of agglomerate or volcaniclastic conglomerate and associated finer grained units trending at 110° occur in the southwestern corner of the property. These units show considerable carbonate alteration.

In summary, the property consists of a sequence of west-northwest trending metavolcanics of intermediate to mafic composition containing intercalated chert, iron formation and associated sediments across the central region of the claims. Three bodies of porphyritic felsic metavolcanics, possibly sub-volcanic intrusives, occur in the eastern part of the claims and sill-like bodies of gabbro and diorite have intruded the sequence, in the central and eastern part of the claims.

TRENCHED AREA GEOLOGY

Outcrop exposure expanded by trenching is underlain by mafic metavolcanics and oxide facies iron formation. Mafic metavolcanics are intruded by narrow (30cm) felsic dikes and the exposed iron formation is cut by a mafic dike. Metavolcanics and iron formation strike east to east southeast and have vertical to steep southerly dips. These rocks have been metamorphosed to middle greenschist facies, reflected by extensive chloritization of the metavolcanics. Secondary mineralization occurs as 2 to 5 percent disseminated pyrite and trace chalcopyrite along the metavolcanic - iron formation fault contact. Minor malachite coats part of the iron formation near the contact. Late, near vertical quartz veins, striking north, have minor (1 to 2 percent) secondary disseminated pyrite at their margins. Lithologic descriptions are given in stratigraphic order.

MAFIC METAVOLCANICS

Mafic metavolcanics include massive and porphyritic flows. Both flow types are variably foliated from massive, to schistose in 2 to 5 cm wide chloritic shears. A rock cleavage defines an intermediate stage of brittle deformation.

Massive flows are fine-grained to medium-grained and equigranular. They are 5m or more thick and have grey-green weathered surfaces, darker on fresh surfaces. Weathering of this colour suggests an andisitic composition.

Porphyritic flows also weather grey-green and have 15 to 20 percent chalky white plagioclase phenocrysts. These subhedral phenocrysts are randomly oriented in a very fine-grained, equigranular matrix. Phenocrysts are 1mm to 6mm in length and have aspect ratios of 1.5 to 2.0.

Felsic dikes (granodiorite) cut the mafic volcanics and have undergone ductile and brittle deformation. Extensional fractures have been filled by

quartz and tourmaline veins. These dikes are pinkish grey on weathered surface and have ghost-phenocrysts suggesting a primary porphyritic texture. Felsic dikes are fine-grained to almost aphanitic.

Oxide facies iron-formation has cm scale magnetite beds that alternate with cm scale grey chert beds. Chert is aphanitic and magnetite is aphanitic to very fine-grained. Bedding is preserved in iron-formation closest to the contact with mafic metavolcanics. Two meters downslope from this contact, the iron-formation is a sedimentary breccia defined by sub-angular magnetite fragments up to 10 cm in size in a grey chert matrix. Fragments have a weak contact conformable preferred orientation.

A mafic dike cuts the iron formation with a strike oblique to the metavolcanic contact. This dike is 30-40 cm wide, dips 45 degrees southeast, and is very fine-grained. It has a chloritic, dark green, weathered surface and has undergone moderately brittle deformation.

STRUCTURE

Two major structural fabrics record post-depositional deformation. The earliest fabric is an east to east southeast striking foliation that records ductile strain. Compression would have been along a northeasterly oriented axis. This fabric is defined by a chloritic schistose foliation best developed in the mafic metavolcanics.

Later, cross-cutting, north to north northeast striking quartz veins and rock cleavage reflect brittle deformation. This is an extensional fabric with planar openings filled by siliceous fluids. Continued compression, to form this more northerly oriented fabric, would have been oriented along a north to north north easterly striking axis. The change in orientation of compressional axis defines a counter clockwise rotation in response to a moving compressional source (Fig.5).

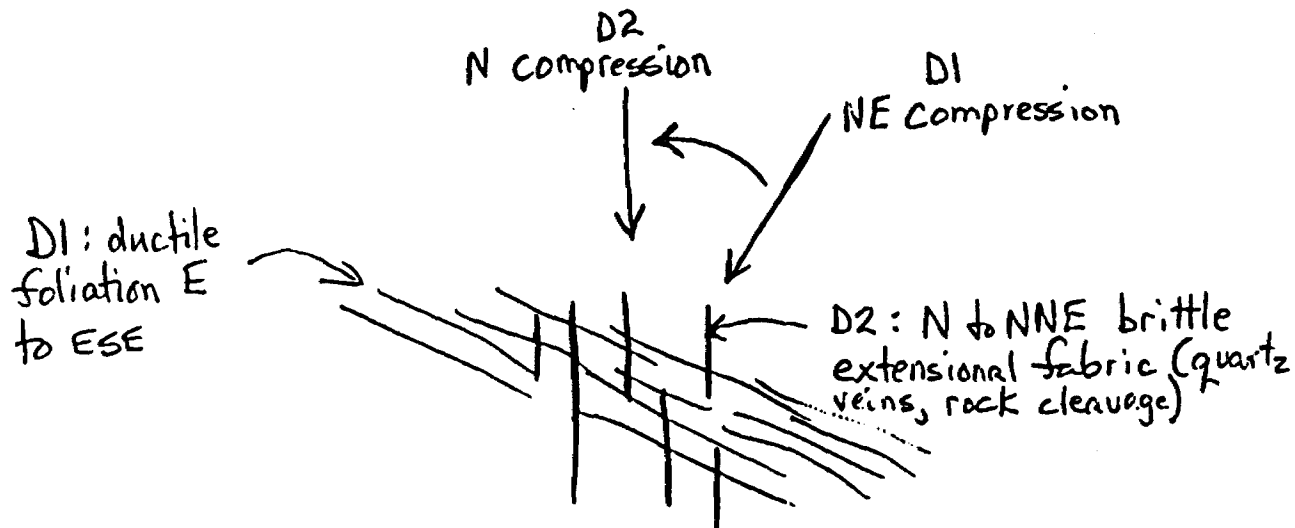


Fig. 5 Compressional fabrics reflect counter clockwise rotation of main compressional axes.

Deformation of the felsic dikes has formed pinch and swell structures and boudins. A 1m dike boudin best records deformation (Inset, Fig 3). Initial ductile deformation of the dike formed the boudin. This event would be contemporaneous with the D1 east to east southeast striking foliation in the host mafic volcanics. Continued compression along a north oriented axis resulted in a north-striking, silica-filled extensional fabric almost perpendicular to the strike of the boudin. The boudin exhibits a tourmaline-filled oblique rotational fabric. This oblique fabric is oriented to the southeast, defines a clockwise sense of rotation, and crosscuts the earlier quartz filled extensional fabric.

Ductile and brittle deformational fabrics define strain in response to:

1. Northeast compression rotating counterclockwise to
2. North or northeast compression.

Relaxation of compression would lead to a

3. Clockwise rotational fabric as the latest deformational event. (Fig 6).

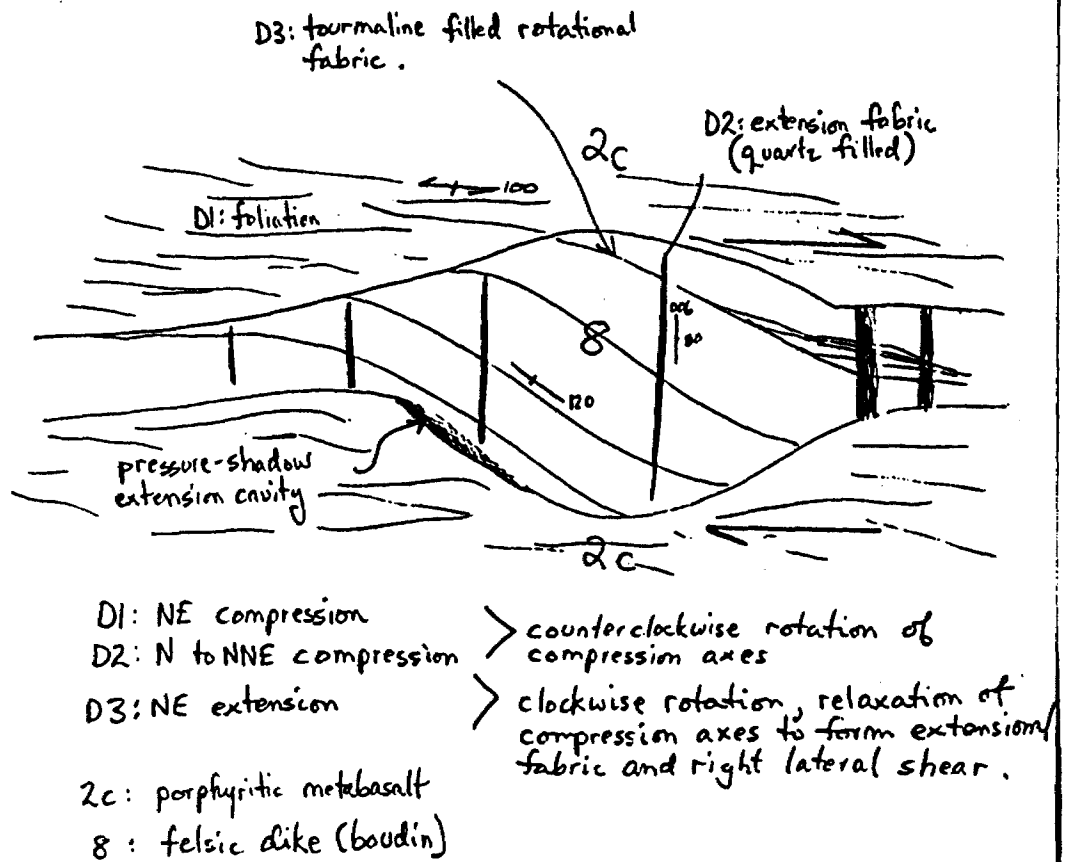


Fig. 6 Summary of kinematic indicators showing deformation (D1, D2, D3 events, Garnet property).

MINERALIZATION

Sulphide mineralization includes pyrite, arsenopyrite and trace chalcopyrite. These are secondary phases related to the faulted contact between mafic metavolcanics and iron formation. Lesser amounts are distributed along quartz vein contacts in metavolcanics. The relative proportions of py:aspy:cpy are approximately 55:40:5.

Pyrite is very fine-grained to fine-grained and is disseminated (2-5%) along the fault contact and across its width (10-30cm). Pyrite grains are generally subhedral to anhedral. A few euhedral pyrite grains occur up to 3mm in size in quartz-carbonate filled tensional shear openings.

Arsenopyrite occurs in two forms and was observed along the fault contact. A distinct "garlic" odour is given off when the rock is freshly broken. Arsenopyrite occurs as acicular euhedra and as amorphous to very fine-grained 1mm - 2mm aggregates.

Acicular arsenopyrite is silvery white, metallic, and randomly oriented. In places they form a "felted" texture defined by 0.5 mm long needles.

Arsenopyrite in aggregates is anhedral and equigranular. Aggregates are grey-white with a dull sub-metallic sheen. Aggregates are 2 to 3 mm in size and have irregular shape.

Chalcopyrite occurs in trace amounts (1-2%) and is very fine-grained. Secondary malachite staining was observed coating iron formation adjacent to the fault contact.

Samples (Fig.7)

A total of 34 rock chip samples were taken from the outcrop area. Two sections were chip sampled at 50 cm intervals across the iron formation, along lines roughly perpendicular to the fault contact. These lines are about 4m apart. Six 20-30 cm long chip samples were taken along strike of the fault contact. Two chip samples were taken from separate parts of the deformed felsic dikes. Two grab samples were taken, one from a lensoid quartz-carbonate filled tension gash with pyrite. The second is from a vuggy quartz vein with 2 cm chlorite clots, at the volcanic - iron formation contact.

WORK SUMMARY: NORAMCO EXPLORATIONS INC.

<u>DATE</u>	<u>TYPE OF WORK</u>	<u>PERSONNEL</u>
Sept 26-30	Power trenching	1 backhoe operator
Sept 26-30	Supervisor and sampling	1 Noramco Geological technician
Sept 28-30	Geological mapping	1 Noramco Geologist
Oct 5-7	Drafting	1 Noramco draftsman
Oct 5-7	Report preparation	1 Noramco draftsman
Oct 7	Report typing	1 Noramco typist

Backhoe contractor: Erana Mines Ltd.
Sudbury, Ontario

<u>PERSONNEL</u>	<u>DAYS</u>
Backhoe operator	← 5 (34 hours of Backhoe time)
Noramco Technician	5 ✓
Noramco geologist	← 6
Noramco draftsman	3 ✓
Noramco typist	1 ✓
Total	20 days + 34 hours backhoe

ASSAYS (Appendix 1)

Assays were done by Bondar-Clegg & Company., Ottawa, Ontario. Thirty - four (34) rock chip samples were submitted. Results are given in Appendix 1.

CONCLUSIONS

Prior assay results indicate values up to 0.144 oz/t gold. Exposure of the iron formation and volcanic contact exhibits secondary pyrite and arsenopyrite within the 20 to 30 cm wide fault contact. In the absence of assay results, it is suggested that this mineralized contact zone is of interest for Au Potential. The deformed felsic dikes are also considered to be of interest.

RECOMMENDATIONS

It is recommended that additional work be directed at locating more iron formation . In particular, exploration of the contact zone is of high priority. This can be accomplished through the use of detailed ground magnetometer surveys and further power trenching or stripping. Attention should also be given to late north-striking quartz veins cutting the fault contact and iron formation.

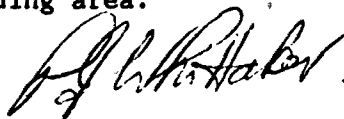
REFERENCES

- MASSON, S.L., 1986
Geological Survey Report on the Garnet Lake Property, Garnet Township, District of Sudbury, Ontario for Western Pacific Energy Corporation, 20p.
- WINTER, L.D.S., 1985
Geological Report on the Garnet Lake Property, Garnet Township, District of Sudbury, Ontario for Western Pacific Energy Corporation. 18p.
- WINTER, L.D.S., 1986A
Report on the Exploration Programme on the Garnet Township Property, Ontario for Western Pacific Energy Corporation, 11p.
- WINTER, L.D.S., 1986B
Report on the Diamond Drilling Programme on the Garnet Township Property, Ontario for Western Pacific Energy Corporation, December 1985 - February 1986, 9p.

CERTIFICATE OF QUALIFICATION

I, Peter James Whittaker do hereby certify that:

1. I am a geologist and reside at R.R. #1, 14 Shelp Street, North Bay, Ontario.
2. I am a member of the Geological Association of Canada.
3. I graduated from:
 - Laurentian University (Sudbury, Ontario) in Geology with an Honours Bachelor of Science degree in 1976.
 - McMaster University (Hamilton, Ontario) in Geology with a Master of Science degree in 1979.
 - Carleton University (Ottawa, Ontario) in Geology with a Doctor of Philosophy degree in 1983.
4. I have practiced my profession continuously for twelve (12) years.
5. My report on the Garnet Lake property, Garnet Townships, Ontario is based on my personal knowledge of the geology of the area, work on the property and on a review of published and unpublished literature on the property and surrounding area.



P.J. Whittaker
M.Sc., Ph.D

October 7, 1988

Qual.
2.10638

REPORT: 088-53127.4

PROJECT: GARNET

PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	RU PPM
92951		0.43
92952		0.18
92953		0.09
92954		0.41
92955		0.09
92956		0.08
92957		0.03
92958		0.10
92959		0.11
92960		0.05
92961		0.03
92962		<0.03
92963		<0.03
92964		<0.03
92965		<0.03
92966		0.34
92967		2.15
92968		0.73
92969		0.31
92970		0.69
92971		<0.03
92972		0.03
92973		<0.03
92974		0.64
92975		1.51
92976		0.31
92977		0.28
92978		8.19
92979		1.46
92980		0.39
92981		0.05
92982		0.08
92983		<0.03
92984		0.03

Bondar-Clegg & Company Ltd.
 5420 Canotek Road
 Ottawa, Ontario
 K1J
 (749-2220 Telex 053-3233

BC
BONDAR-CLEGG

**Geochemical
 Lab Report**

RECEIVED
OCT 18 1988
 REFERENCE NO:

REPORT: 090-53127.0 (COMPLETE)

CLIENT: NOKAMCO EXPL. LTD. NORTH BAY
 PROJECT: GARNET

SUBMITTED BY: YODD
 DATE PRINTED: 14 OCT 88

ORDER	ELEMENT	NUMBER OF ANALYSES	LOWER DETECTION LIMIT	EXTRACTION	METHOD
1	Au Gold	34	5 PPB	AQUA REGIA	EA-AA @ 10 gm weight
2	Au Rew Au Reweighs	5	1 PPB		
3	Au Rew Au Reweighs	5	1 PPB		

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
ROCK	34	-200	34	Crush, Pulverize	-200 34

REPORT COPIES TO: MR. P.J. WHITTAKER

INVOICE TO: MR. P.J. WHITTAKER

REPORT: 088-53127.0

PROJECT: GARNEY

PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Au Rew PPB	Au Rew PPB
92951		229		
92952		56		
92953		14		
92954		83		
92955		10		
92956		10		
92957		<5		
92958		11		
92959		<5		
92960		<5		
92961		<5		
92962		<5		
92963		<5		
92964		<5		
92965		<5		
92966		232		
92967		2025	1919	1943
92968		740	720	991
92969		34		
92970		53		
92971		13		
92972		<5		
92973		<5		
92974		746		
92975		1453	1369	474
92976		196		
92977		92		
92978		6458	6095	7055
92979		1161	1141	1108
92980		276		
92981		31		
92982		6		
92983		53		
92984		8		

Details of Assessment Work Breakdown

FIELD WORK

<u>Type of Work</u>	<u>Name & Address</u>	<u>Dates Worked</u>	<u>Number of 8 hour days</u>
.....	
.....	
.....	
.....	
.....	
.....	

CONSULTANTS

<u>Name & Address</u>	<u>Dates Worked (specify in field or office)</u>	<u>Number of 8 hour days</u>
.....	
.....	
.....	

DRAUGHTSMAN, TYPING, OTHERS (specify)

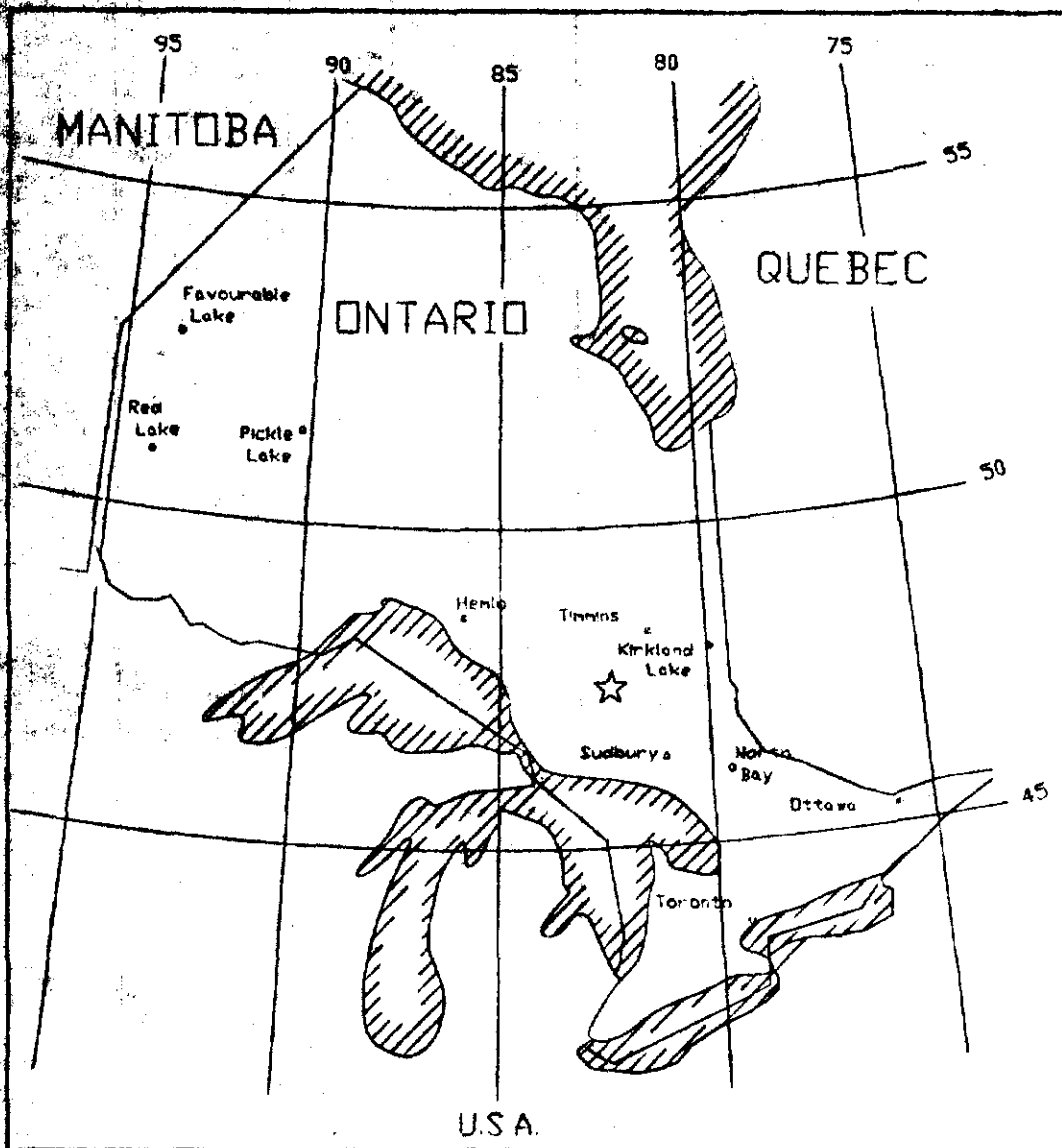
<u>Name & Address</u>	<u>Type of Work</u>	<u>Dates Worked</u>	<u>Number of 8 hour days</u>
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TOTAL 8 HOUR TECHNICAL DAYS _____

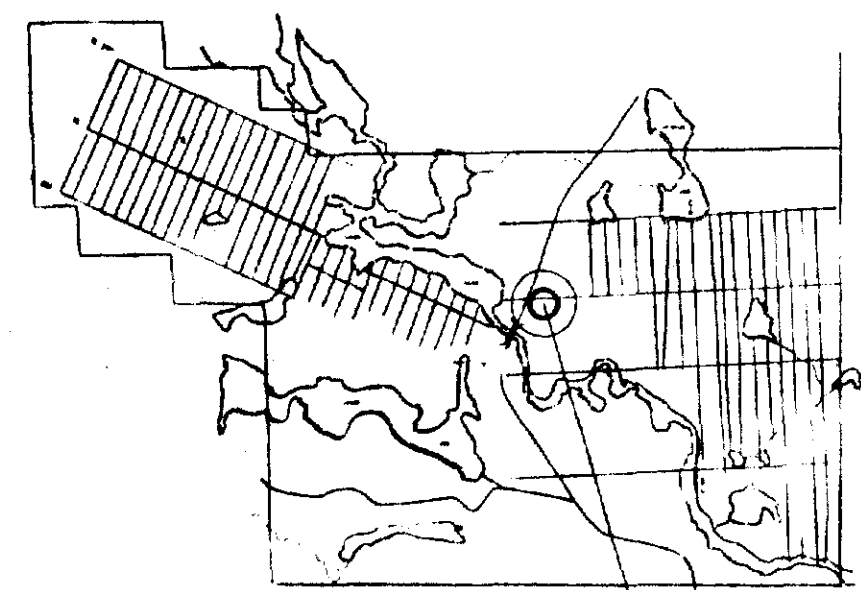
LINE-CUTTING

<u>Name</u>	<u>Address</u>	<u>Dates Worked</u>	<u>Number of 8 hour days</u>
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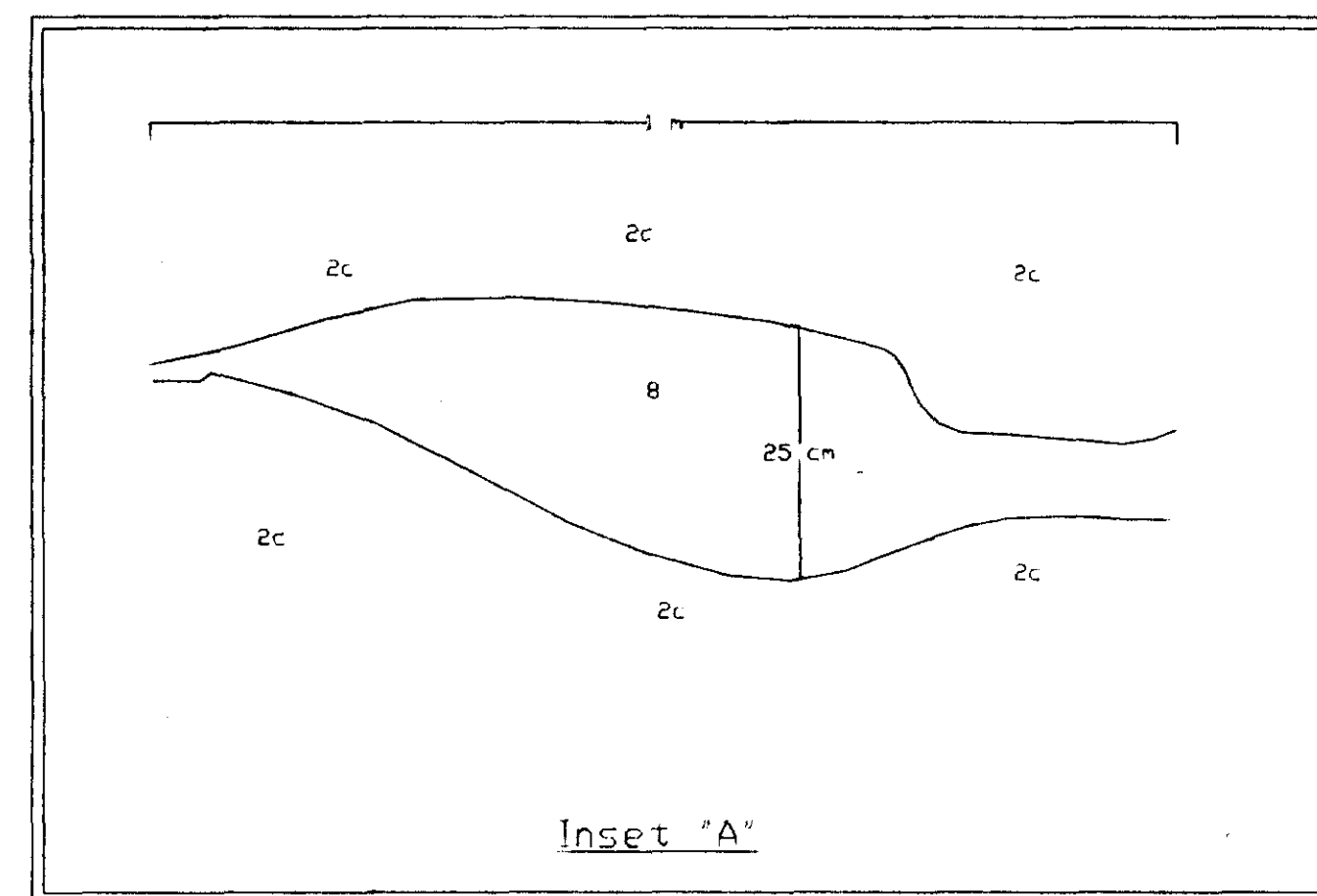
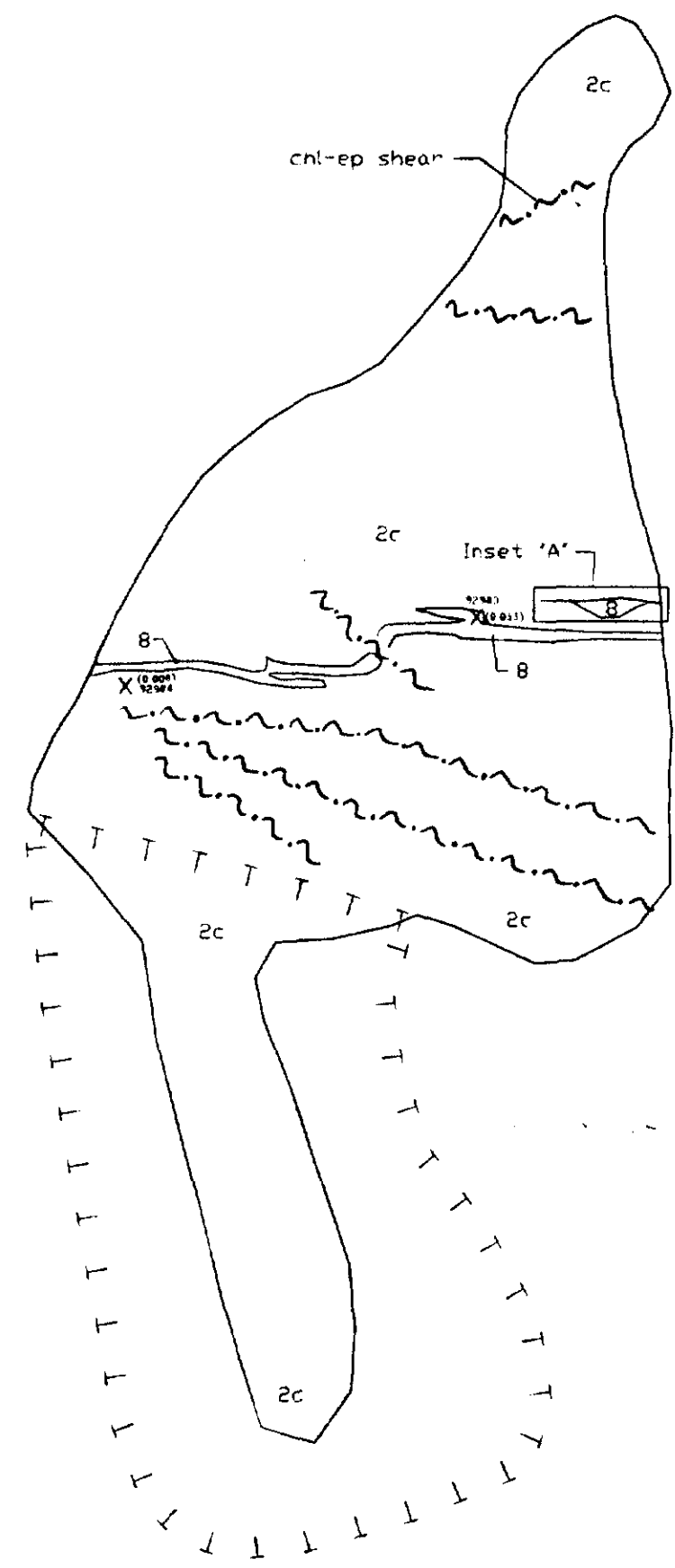
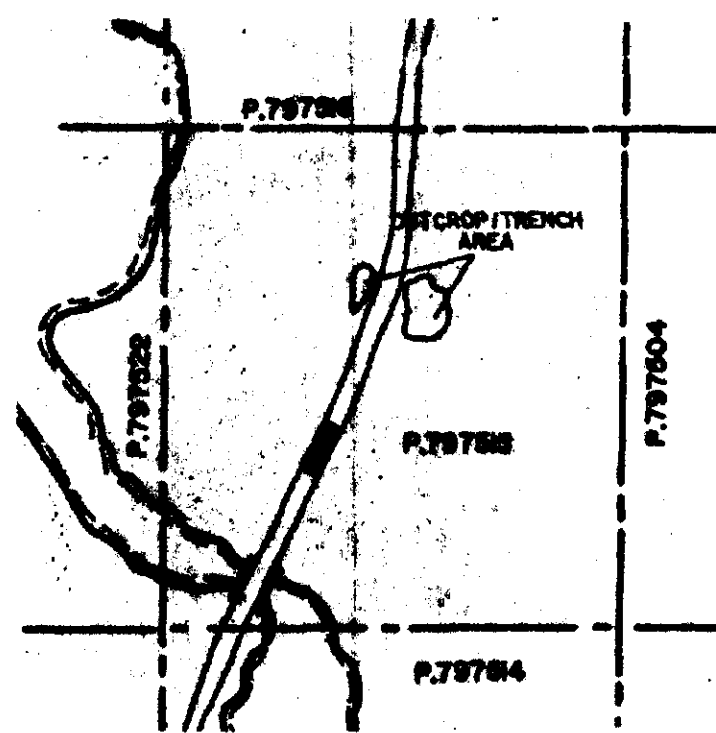
TOTAL 8 HOUR LINE-CUTTING DAYS _____



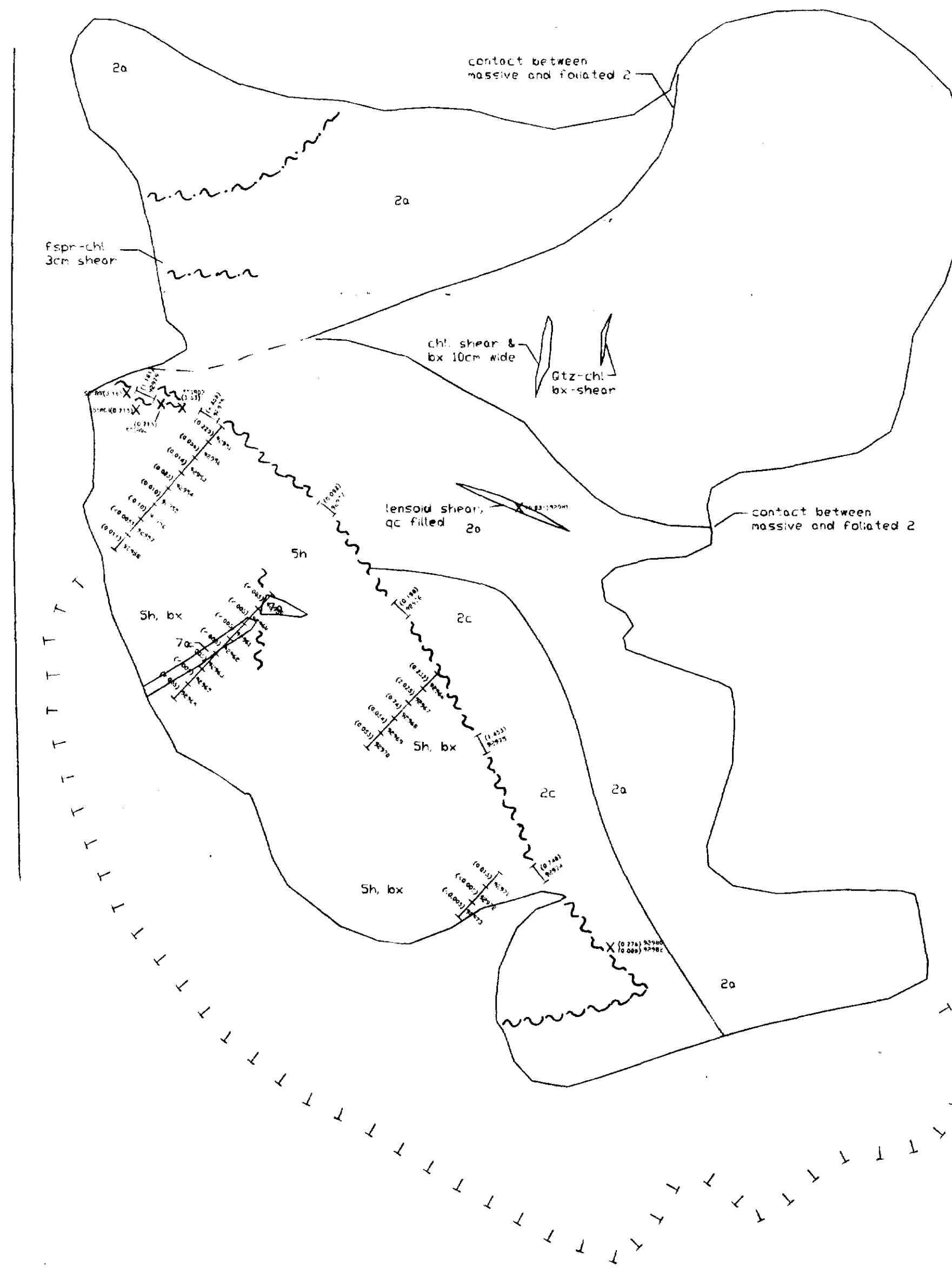
GARNET LAKE AREA ☆



OUTCROP LOCATION



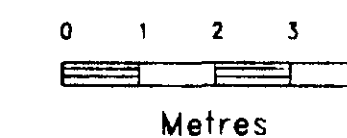
ROAD



- Legend**
- 8 Folitic (granodiorite) dike
 - 7a Mafic (gabbro) dike
 - 5h Oxide facies iron formation
 - Mafic Volcanics
 - 2c Porphyritic flow
 - 2a Massive flow
- Symbols**
- Outcrop outline
 - Geological contact observed, assumed
 - - - Fault with displacement
 - - - Fault, strike and dip
 - Shear
 - ch-ep Chlorite, epidote, plagioclase
 - bx Sedimentary breccia
 - Chip sample, (sample assay), sample number
 - Grab sample, (sample assay), sample number

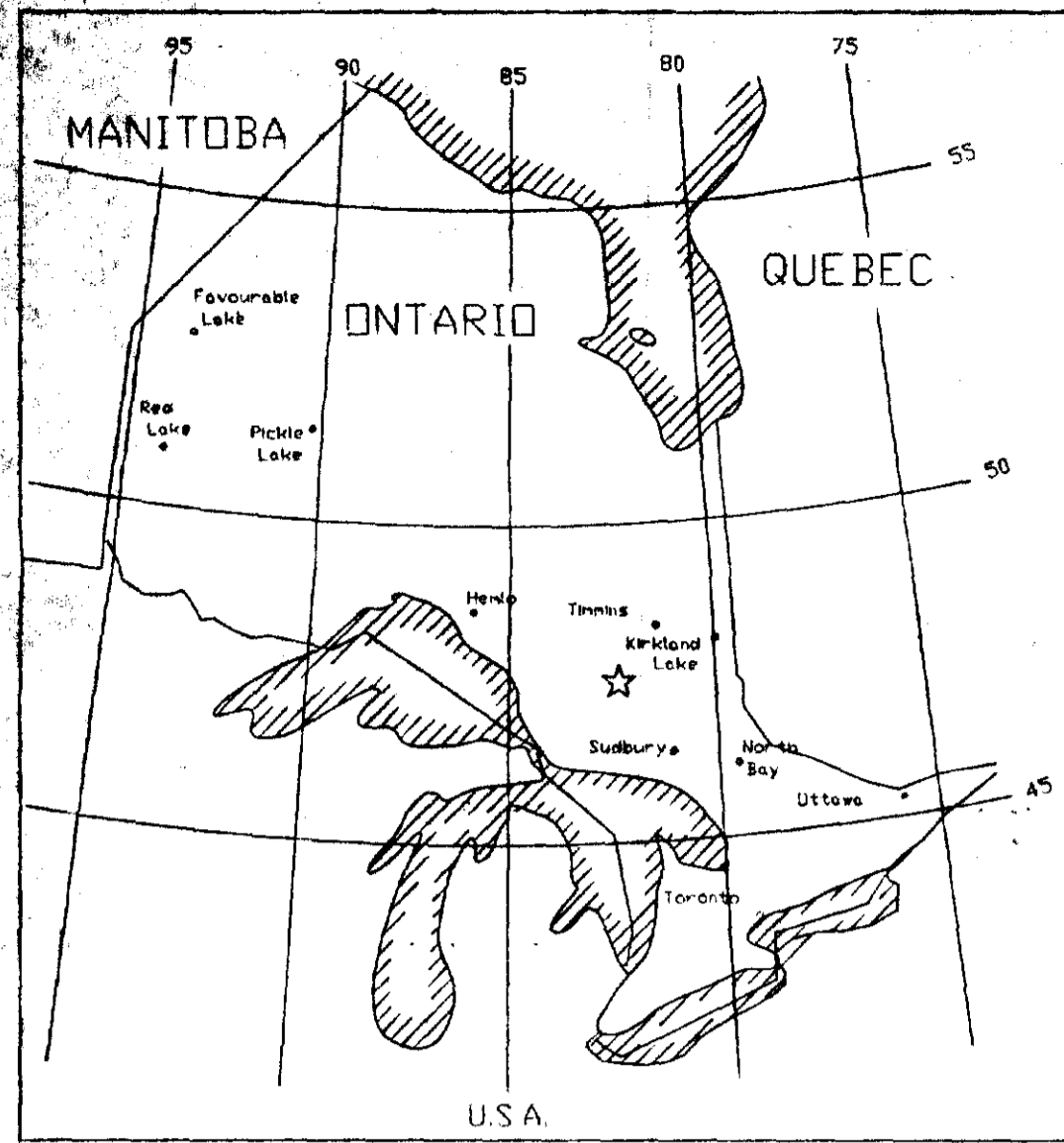
NOTE: Assay values are in g/t Au

2.11774

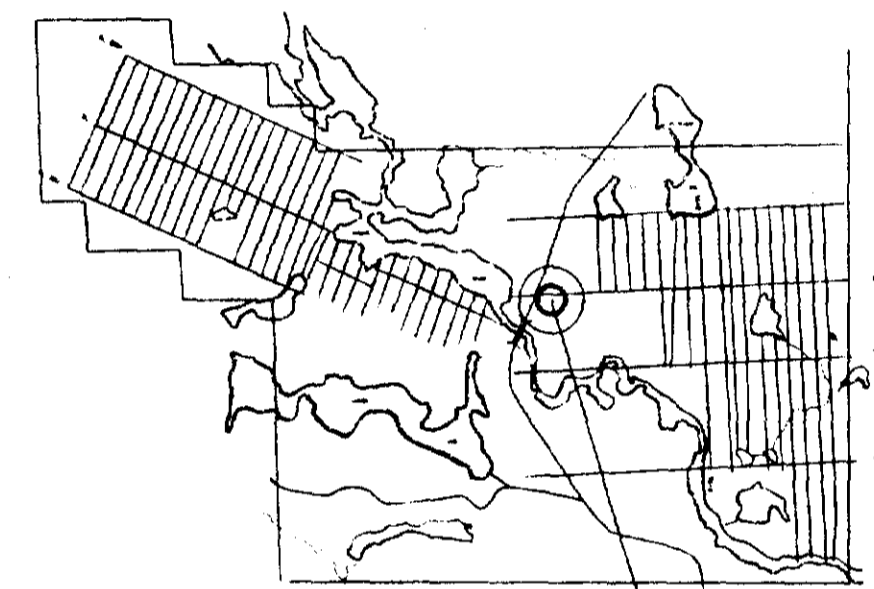


Claim # P.797515

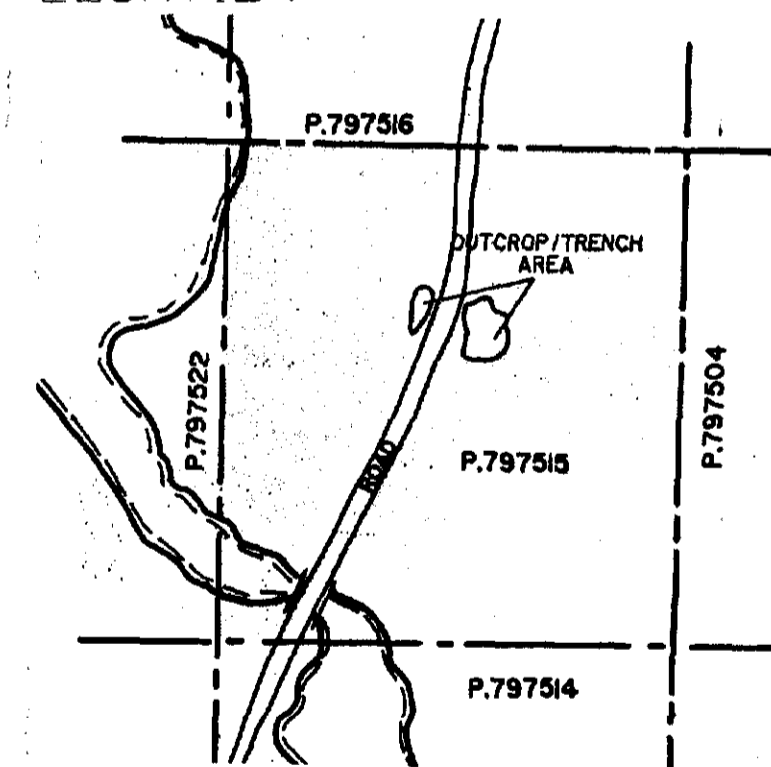
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PROPERTY NAME	GARNET LAKE PROPERTY
CLAIM # P.797515	
ROAD OUTCROP AND TRENCHING	
SAMPLE LOCATION	
LOCATED BY	P. J. WHITTAKER
DATE	SEPT. 1988
SCALE	1:100
COMPILED BY	RPA
DRAWN BY	DKS



GARNET LAKE AREA ☆

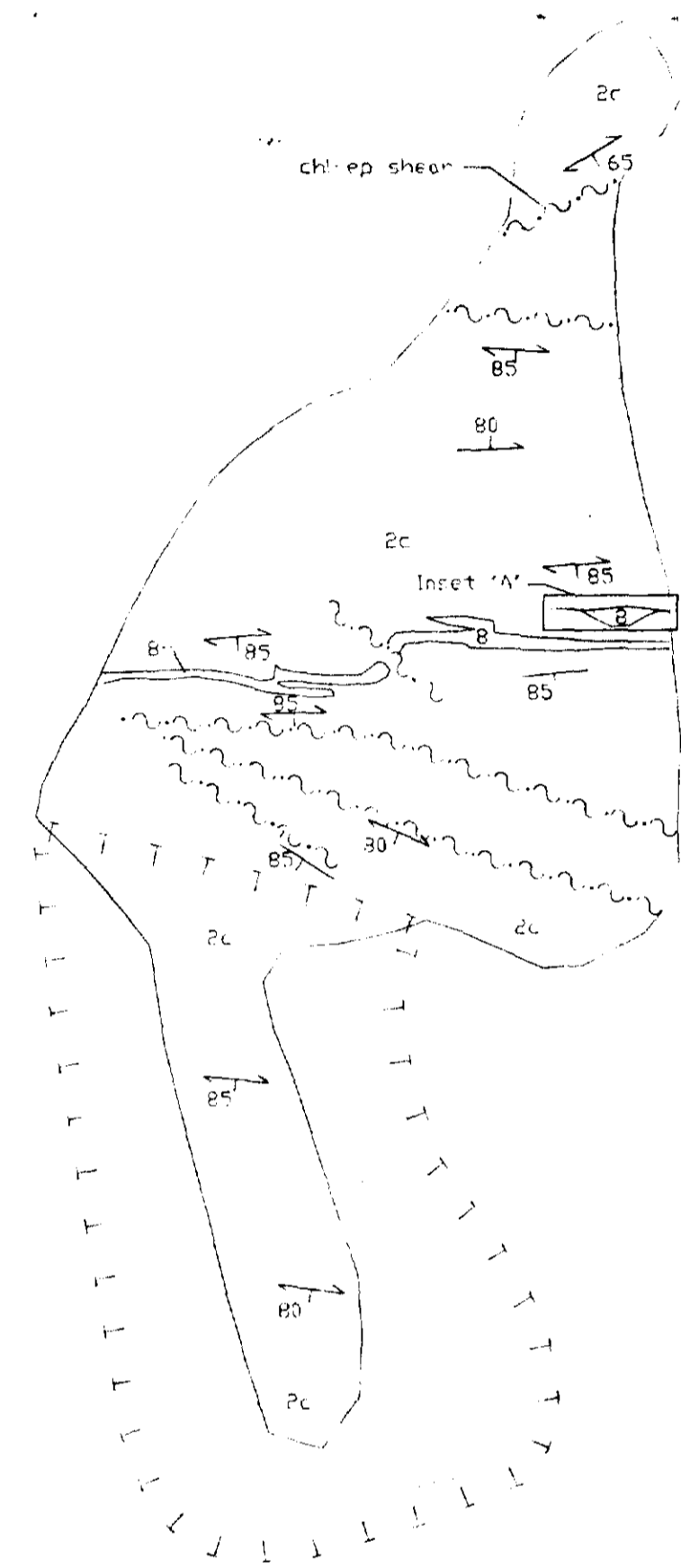
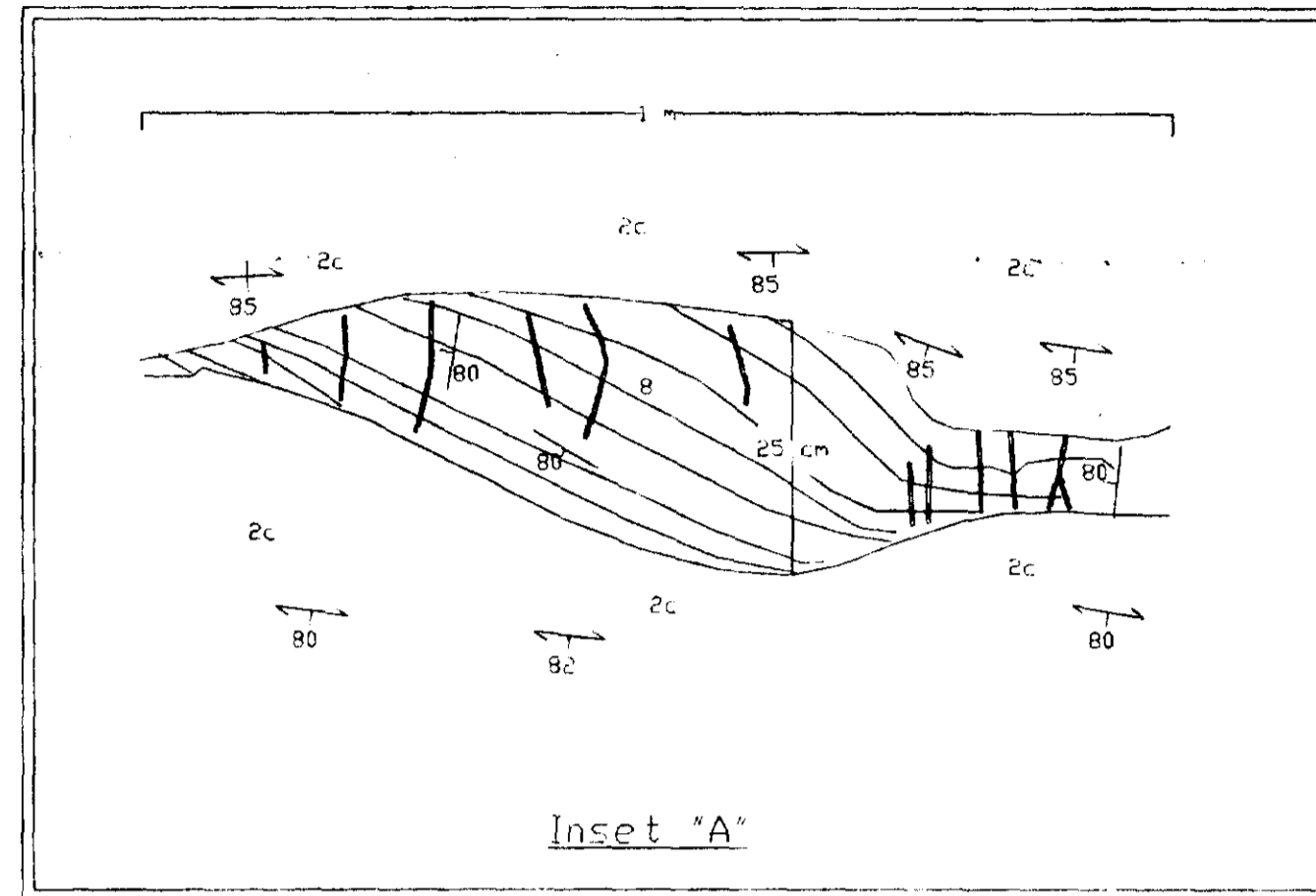


OUTCROP LOCATION

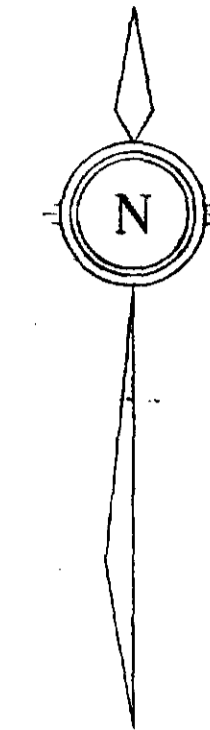
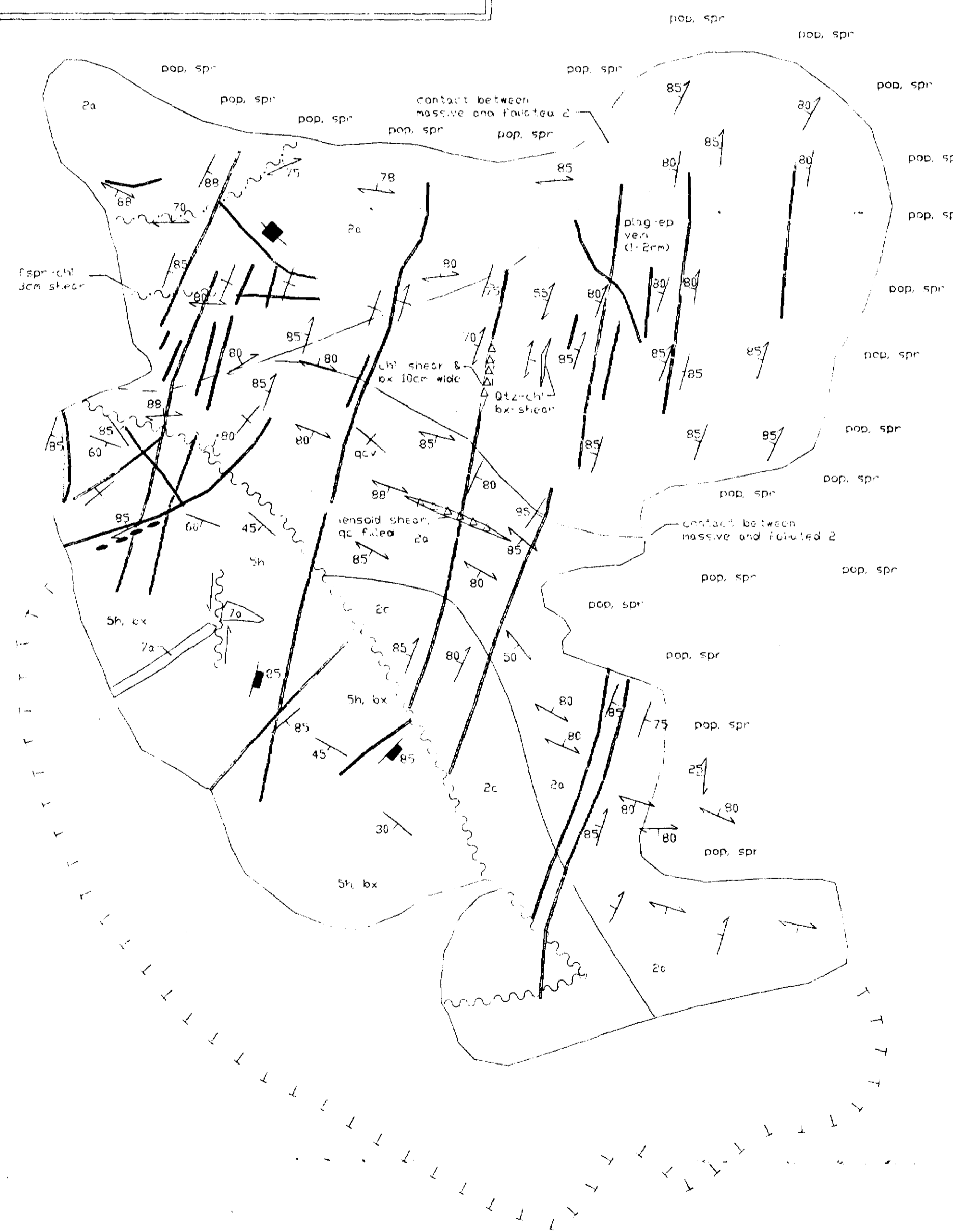


Legend

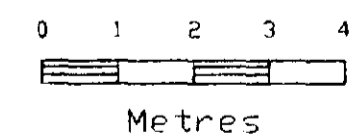
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- Quartz vein
- QC Quartz-carbonate vein
- Outcrop outline
- Geological contact, assumed
- Fault with displacement
- Fault, strike and dip
- Shear
- Joint, strike and dip
- Strike and dip, inclined, vertical
- Rock cleavage, inclined, vertical
- Foliation, inclined, vertical
- Mixed poplar, spruce bush
- Chlorite, epidote, plagioclase
- Telluric breccia
- Sedimentary breccia
- Magnetite boudins



ROAD



2.11774



Claim # P.797515

COMPANY NAME NORAMCO EXPLORATIONS INC.	
PROPERTY NAME GARNET LAKE PROPERTY	
CLAIM # P.797515 ROAD OUTCROP AND TRENCHING GEOLOGY	
CHECKED BY: D. WHITTAKER	COMPILED BY:
DATE: E. 1988	DATE:
SCALE: 1:100	PROJECT NO.:
	DRAWING NO.:
	CHECKED BY: RPA
	DRAWN BY: DKS

