INTRODUCTION

This report includes excerpts and other references from a June, 1990, report from J.C. Steers,P.Eng., and a November 1990 report from H. Z. Tittley P.Eng., referring to 3 blocks of unpatented mining claims in Halkirk and Watten Townships in the Rainy River District, Ontario.

GROUP I (14 cls. - K1158870 to K1158883 inc.) staked Aug. 1990.
Halkirk Twp. access west 1.5 miles from Hwy. 11 at Pocket Pond. Water access by a boat landing 2 miles west of Great Bear Pass on Hwy 11, three miles up the west shore of Red Gut Bay to Conc. IV-V line and located on lot 8 conc. VI, lots 8, 9, 10 of conc. V.

GROUP II- Watten 17 cls. K1158860/869 inc, Halkirk K1130462/468 inc. K1130469/480 inc. K1158853/859 inc. 19 cls. staked March/Aug. 1990.
The Watten claims cover a portion of Grassy Portage Bay and parts of lots 1 through to 11 in I South Range, I North Range, II South Range, II North Range and conc. III. Halkirk claims in lots 21-24, I North Range, II North Range, II South Range and lots 11-12 conc. III.

Watten access is from a bush-road or by boat on Grassy Portage Bay from Nickel Siding Station. Halkirk access is from Hwy. 11, a mile west of Great Bear Pass. A vehicle access bush road goes to within 1/2 mile of a shaft on leased claims to the north thence by ATV south to the Kalrock claims.

GROUP III-Watten Twp. 7 cls.K1170531/32, K1170405/06, K1167621/23inc.
Located in lot 17 I North Range, II South Rang. Lots 15-16 II South Range. Access is 1.5 miles east of Windy Point Inlet on Hwy. 11. The #1 post of K1167622 edges on the Hwy.right-ofway. Staked Nov. 1990.

1990 PROSPECTING
The August/December 1990 program results consisting of stripping, trenching, sampling, linecutting and geophysical work are as follows:

TOPOGRAPHY
Group 1 consists of draws, full of water and swamp due to the activities of the beavers and, rolling hills. The inclines are brush-covered and the high ground is mixed forest.

Group II's topography is quick changing due to beaver activity resulting in several large interconnected and sometimes impassable beaver ponds and swamps. The Halkirk side is 45% beaver swamps with steep inclines covered with heavy brush. Tops are covered by birch, pine, spruce and windfalls. The Watten side is more rolling with less swamps. Grassy Portage Bay access is quite steep with the shores consisting of steeply declining rocks. Winter-use of an infrequently used road from the Bay can be used. Two visible drilling roads that access the interior claims can be used during dry weather conditions.

Group III is similar topography with high areas more like ridges. The swamps are similar to inlets of Grassy Bay, containing more water. Train tracks traverse the south boundary and Grassy Portage Bayshore.

FINDINGS
The southern portion of Group I, located off Redgut Bay, is highly altered. A weathered pit on claim K1158882 indicated the presence of visible chalcopyrite. Northwest of the pit is altered schist. The exposed rock is heavily oxidized making it difficult to define. Several small chalcopyrite veins crosscut this rock. A fresh exposure appears to be a hornblende schist with altered gabbro and a small area of granite-like syenite in the southeastern portion of the pit. The gabbro is typical of the Grassy Portage Sill with biotite epidote, hornblende, schist. Pyrite and chalcopyrite are visible.

Group II's west side (K1130467-8 etc) is medium grained in altered gabbro. The weathered Portage Bay shore line makes it difficult to establish the alteration line. A change in the grain size to a more coarse-grained gabbro is indicated on claim K1158862 in lot 6.

The outcrop at the edge of the swamp on the south side in lot 4 claim K1130462 indicates the gabbro alteration beginning. West of the swamp on the same outcrop biotite and hornblendite are present.

On K1130471, east side of the twp. line, a major faulting zone is indicated by the lineal change in the directional dip of the outcrops.

Mafic volcanics coming out of the lake on KI130489 are quite folded and change quickly to gabbros containing blebs of molybdenum and limenite stain. The area is magnetic enough to set the compass off.

Southward and exiting the swamp in II South Range, K1130476, altered tuff with biotite forms the bulk of the outcrop. One small weathered surface quartz vein was seen on K1130479, Lot 21, II South Range.

The south boundary runs in a band northeast to southwest. The east side of the road is sericite and mica schist. A low area separates these schisty rocks from the altered gabbros. Westerly moving bands of altered volcanics to coarse grained gabbros are visible.

V: AEM INVESTIGATIONS

I) INTRODUCTION
In the month of November, 1990 Messrs. Tittley, L. Salo and the writer investigated some conductors referred to in an undated, unsigned report which had been presented to Kalrock Resources Limited by H.Z. Tittley, P.Eng.,based on a claim map and showing the geology and AEM data for a broad area surrounding Kalrock's claims in Watten/Halkirk townships. Completing the November investigation Mr. Tittley issued a brief report on his AEM findings which report is hereto attached.

II) FINDINGS
ANOMALY 4 (K1158859)
The 7500 ft. anomaly is located in the SE corner of Group 2. About 50% is under Redgut Bay. No explanation for the apparent conductivity could be explained with ground geophysics. The area is altered coarsegrained gabbros.

ANOMALY 5
This 10,000 foot conductor is located along the southern portion of the Main Mafic Sill north and west of anomaly 4. No explanation for the apparent conductivity could be explained with ground geophysics. The area is altered coarsegrained gabbros.

ANOMALY 15 - Watten Twp. K1158862-8869 etc.
This 7500 feet conductor follows a slough running from Moosehorn Lake to Commissioners Bay to the west. The slough hosts the contact between the southwest arm of the Nickel Lake Sill to the south and mafic lavas to the north. A weak magnetic axis fails to explain the presence of the anomaly. It could have important potential.

Stripping uncovered the strongest VEM crossover with a large, highly mineralized quartzite band. Previous trenching has grown in. A weathered felsic rock with 30% disseminated cubic py was sampled.

ANOMALY 16 Halkirk Twp. K1167622
Both the VLF survey and the recent ground examination failed to map any conductivity along the slough. The conductor appears to be confined to the drift and talus-covered part of the slope. Complete examination was not made. Drilling is recommended to determine the cause and potential.

ANOMALY 17 Halkirk Twp. K1170405
An original x-over was detected 100m east of a transmitter set-up on claim K1170405. A strong response was obtained farther east along the south margin of a broad cedar swamp. About 75 m eastward very strong x-overs were obtained on the apex of, and the east slope of, an outcrop ridge. Stripping uncovered a broad rusty zone. A black sooty schist or sediment carrying 70% mg. and fg. pyrrhotite, magnetic, highly conductive and corresponding to the description of certain zinc zones in the Pocket Pond occurrence to the northeast was uncovered.

ANOMALY 21A-B-C-D Group 1 Halkirk Twp. K 1158870-883 inc.
Prospecting divided this anomaly into four sub-groups. A control base line was established from the west claim boundary to the lake from which the four anomalies were investigated by an AEM. "C" was not mineralized. A-B-D crossovers were stripped and sampled.

SAMPLE - CLAIM # ROCK TYPE AND ASSAY RESULTS

5 - K1130462 mg. altered hornblende gabbro 5% blebby sulph.+ chalcopyrite. CU(ppm)5330 NI(ppm)391 PD(ppb)350

15-2 K1170531 folded dike & quartzitic bands with 75% sulphides mainly py but also cp, po, and possibly sphalerite & arsenopyrite. CU(ppm)337 NI(ppm)98 ZN(ppm)129.

15-3 K1170406 mass. sulph. 50% py, 49% po, 1% cp.CU(ppm)649 NI(ppm)145

15-4 K1170406 sil. rock with unident. sulph. possibly cubanite. CU(ppm)104 NI(ppm)46.

16-1 fg. horneblende schist or mafic tuff. Not assayed

15-5 K1170531 grey schist rock/15% sulph/60% py or arsenide/40% non-mag. micaceous po or stained py. Low CO/Ni/ZN assays.

17-1 K1170531 sil. schist/10% py/minor po. Low AG/CO assays.

17-2 K1170531 black sooty schist/30% ag. po/40% vfg. po. Mag/highly conduct. CO(ppm)119 NI(ppm)263 ZN(ppm)114.

17-3 K1170531 black sooty schist/10% py/minor po. Low ZN.

21A-1 K1158877 fg. garnetiferous hornblende-biotite schist. Low assays

21A-2 K1158882 epidote garnetiferous skarn/20% non-mag. sulph. Low ZN.

21A-3 K1158876 dark hornblende rock/80% non-mag. po and minor cp. CO(ppm)545 CU(ppm)310 NI(ppm)82.

21A-4 K1158876 band of dense disseminated magnetite. No assays.

21A-5 K1158878 weak foliate mg. gabbro/10% fdiss. sulph Low assays

21A-6 K1158882 dark dense hornblendite/20% po. Low assays.

21A-7 K1158881 weathered sulph-rich/20% non-mag po. No assays

21A-8 K1158878 mg. gabbro rock/40% po/3% cp. CU(ppm)1290 NI(ppm)63

21A-9 K1158878 dark mafic rock/70% mass py. CU(ppm)359 ZN(ppm)38

210-1 K1158881 carb schist, magnesitee(?) x-over axis. Low assays

21B-2 K1158877 <1 cm. quartz vein/minor sulph. poss. arsenopyrite.

21B-3 K1158877 banded IF/75% sulph. mainly py. AG(ppm)2.2 CO(ppm)806 CU(ppm)2310 ZN(ppm)99

N-1 K1158879 low assays NI/ZN

N-2 K1158879 CU(ppm)1090 NI(ppm)367 ZN(ppm)8470

CERTIFICATE OF QUALIFICATION

I Joe-Anne G. Salo, Village of Connaught, City of Timmins, P0N 1A0, prospector, do hereby certify that I am qualified to report on Kalrock Resources Limited unpatented mining claims in Halkirk and Watten Townships, Ft. Francis Mining Division, District of Rainy River, Ontario.

1 - I am a 1976 graduate of Dunbarton H.S. Pickering, Ontario and a 1978 M.R.C. graduate of Centennial College, Scarborough, Ontario.

2 - In 1982 I completed a geological and technical course (Ingamar Explorations) and in 1983 a geological and drafting course (Hollinger Mines Limited).

3 - In 1990 I attended a Haileybury School of Mines program in mining geophysics.

4 - I am a recognized prospector having worked continuously in the field since 1980.

5 - I have first-hand field knowledge of the exploration conducted on Kalrock's properties and reviewed the June, 1990 J.C. Steers,P.Eng., report and the November 1990 report from H.Z. Tittley P.Eng.

6 - I have no personal interest, direct or indirect, in the property or securities of Kalrock Resources Limited, nor do I expect to receive any such interest in the future.

Respectfully submitted this 15th day of April, 1991.

Joe Anne G. Salo

Joe-Anne G. Salo

Swastika Laboratories
A Division of Assayers Corporation Ltd.
Assaying - Consulting - Representation
Established 1928

Geochemical Analysis Certificate

0T-0780-RG1

Company: **KALROCK RESOURCES LTD.**
Project:
Attn: A. LEWIS/ M. TITTLEY

Date: DEC-05-90
Copy 1. 321-3701 CHESSWOOD DR. DOWNSVIEW,ONT
2. FAX TO 416-636-8045

We hereby certify the following Geochemical Analysis of 26 ROCK samples submitted NOV-28-90 by M. TITTLEY.

Sample Number	Ag ppm	As ppm	Co ppm	Cr ppm	Cu ppm	Ni ppm	Zn ppm	
5			27		5330	391		3
5-B								
15-2	0.8		53		337	98	129	<
15-3			10		649	145		<
15-4					104	46		
15-5			10			55	113	
17-1	0.3		68					
17-2			119			263	114	<
17-3							82	
18			79		798	58		<
21A-1							54	
21A-2							34	
21A-3			545		310	82		<
21A-5			19		76	38		<
21A-6			18			74		<
21A-7			1					<
21A-8			1		1290	63		<
21A-9					359		38	
21B-2	0.2		29					
21B-3	2.2		806		2310		99	
HY11-1			26		837	34		<
HY11-2			26		4230	50		<
HY11-3			331		4420	501		<
N-1						50	34	
N-2					1090	367	8470	
210-1					295	88		

Certified by [signature]

Page 1 of 2

SWASTIKA LABORATORIES LIMITED

P.O. BOX 10, SWASTIKA, ONTARIO P0K 1T0

for office use only: LAB# ____ REPT # ____ Date ____ Carrier ____ ☐ppd. ☐col. ____ WB# ____

Request for analyses

PROJECT# ____

P.O.# ____

Submitted by KALROCK RESOURCES LIMITED
321-3701 CHESSWOOD DRIVE, DOWNSVIEW ON

AUTHORIZED BY H.Z. Titley DATE Nov. 21 '90

INSTRUCTIONS

Report to: (1) ~~321-3701~~ A. LEWIS KALROCK RESOURCES LTD
(2) H.Z. TITLEY 273 SHEPPARD Rd. OAKVILLE ON L6L 3X6
(3) ____

Invoice to: (1) ☒ (2) ☐ (3) ☐

Type of analysis

- ☐ Regular Assay Methods
- ☐ Check Assays
- ☐ Umpire Assays
- ☐ Whole Rock Analysis
- ☒ Geochem Assay Methods
- ☐ Control or Shipment Assays
- ☐ Deep Overburden Concentration
- ☐ Other ____

Disposal of unused materials

PULPS
- ☐ Discard
- ☒ Retain 6 months
- ☐ Retain more than 6 months at cost
- ☐ Return to ____

REJECTS
- ☐ Discard
- ☒ Retain 90 days
- ☐ Retain more than 90 days at cost
- ☐ Return to ____

Type of Sample	Sample Numbers	Au	Ag	Cu	Pb	Zn	Co	Ni	PGE	Other	As
Rock	5			X			X	X	X		
"	15-2			X		X	X	X	X		X
"	15-3			X			X	X	X		
"	15-4			X				X			
"	15-5					X					
"	17-2			X				X			
"	17-3					X					
"	18			X			X	X	X		
"	21A-1					X					
"	21A-2					X					
"	21A-3			X			X	X	X		
"	21A-5			X			X	X	X		
"	21A-6						X	X	X		
	21A-7						X		X		

Page 2 of 2

SWASTIKA LABORATORIES LIMITED

P.O. BOX 10, SWASTIKA, ONTARIO P0K 1T0

Request for analyses

for office use only
LAB # ____
REPT # ____
Date ____
Carrier ____
☐ ppd. ☐ col. ____
WB # ____

Submitted by KALROCK RESOURCES LIMITED
321-3701 CHESSWOOD DRIVE, DOWNSVIEW ON

PROJECT # ____

AUTHORIZED BY H.Z. Tithey DATE Nov 21 90

P.O. # ____

INSTRUCTIONS

Report to: (1) As per Sheet No1
(2)
(3)

Invoice to: (1) ☐ (2) ☐ (3) ☐

Type of analysis

- ☐ Regular Assay Methods
- ☐ Check Assays
- ☐ Umpire Assays
- ☐ Whole Rock Analysis
- ☐ Geochem Assay Methods
- ☐ Control or Shipment Assays
- ☐ Deep Overburden Concentration
- ☐ Other _____

Disposal of unused materials

PULPS
- ☐ Discard
- ☐ Retain 6 months
- ☐ Retain more than 6 months at cost
- ☐ Return to _____

REJECTS
- ☐ Discard
- ☐ Retain 90 days
- ☐ Retain more than 90 days at cost
- ☐ Return to _____

Type of Sample	Sample Numbers	Au	Ag	Cu	Pb	Zn	Co	Ni	PGE	Other As
Rock	21A-9					X				
"	21B-2		X				X			X
"	21B-3			X		X				
"	HY11-1			X			X	X	X	
"	HY11-2			X			X	X	X	
"	HY11-3			X			X	X	X	
"	N-1					X		X		
"	N-2			X		X		X		

SAMPLE LIST

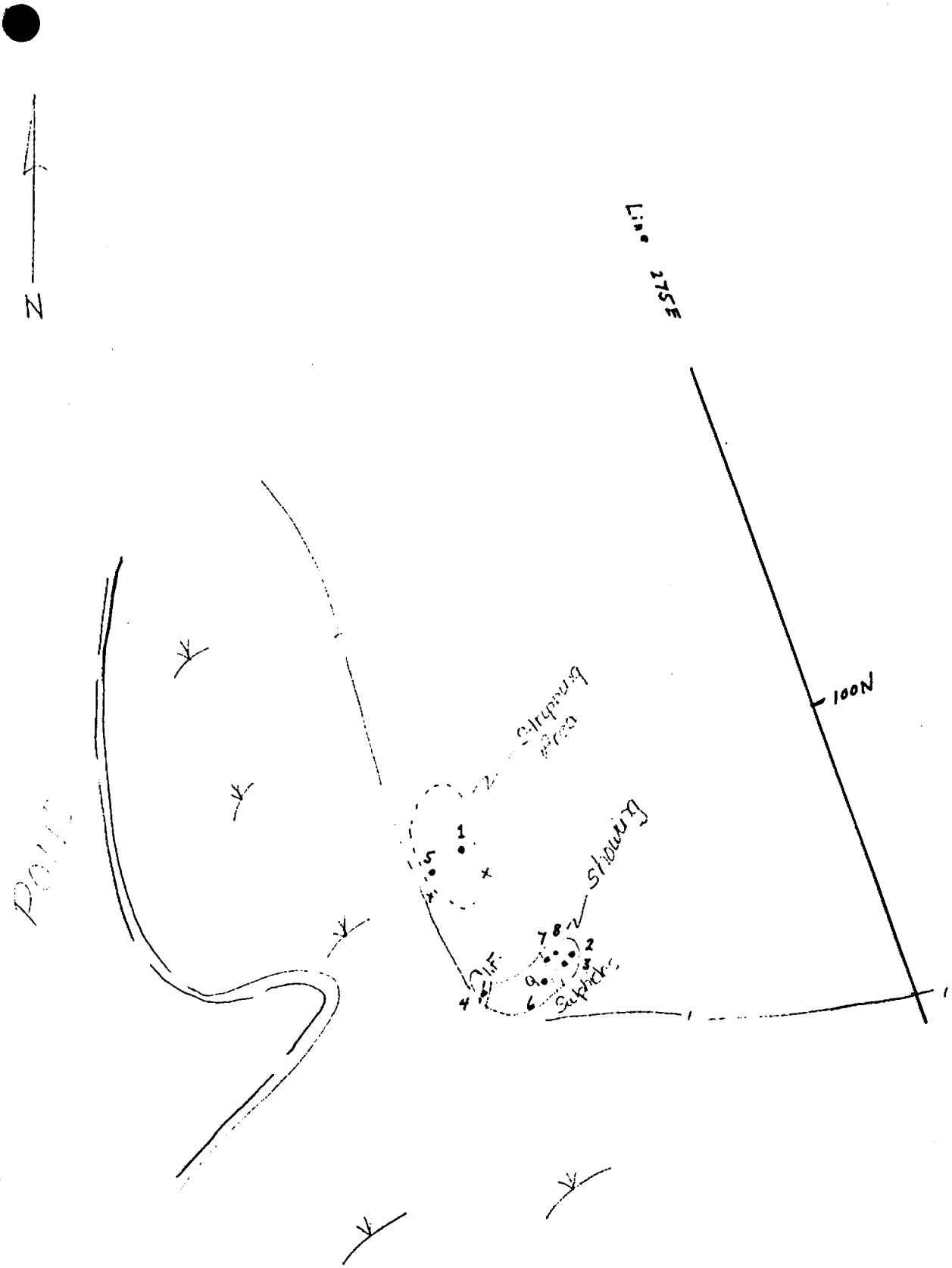
KALROCK RESOURCES LIMITED AEM Investigation Programme November, 1990

SAMPLE #	ANOMALY	NORT'G	EAST'G	LOCATION	DESCRIPTION	Ni	Cu	Zn	PGE	Ag	Co	Cr	As	REP
5	5	-	-	Rd, anomaly 5 area. West of twp line.	M.g. altered hornblende gabbro. with 5% blebby sulph includ cp.	X	X		X		X			No
5B	5	-	-	Rd, anomaly 5 area. West of twp line	C.g. with minor sulphides & unidentified FeO min or chromite.							X		Yes
15-1	15	75E	8N	Pit #1, x-over	Weathered felsic rock with 30% disseminated mainly cubic py.									Yes
15-2	15	75E	8N	Pit #1, x-over	Folded dk & quartzitic bands with 75% sulphides, mainly py but also cp, po, and poss. sphal & arseno.	X	X	X	X	X	X		X	Yes
15-3	15	75E	9N	Pit #1, x-over	Massive sulphides, 50% py, 49% po 1% cp.	X	X		X		X			Yes
15-4	15	75E	9N	Pit #1, x-over	Silicified rock with unidentified sulphide, poss cubanite.	X	X							No
15-5	15	75E	10N	Pit #1, x-over	Grey schistose rock with 15% sulph consisting of 60% py or arsenide and 40% non-magnetic micaceous po or stained py.	X				X	X		X	No
16-1	16	-	-	North face outcrop ridge 8 m South of #2 set-up.	F.g. hornblende schist or mafic tuff. (not saved)									No
17-1	17	26N	171E	Pit #1, x-over	Silicified schist with 10% py & minor po.					X	X		X	Yes
17-2	17	26N	171E	Pit #1, x-over	Black sooty schist with 30% m.g. po & 40% very f.g. po. Magnetic & highly conductive	X		X	X		X			Yes
17-3	17	26N	171E	Pit #1, x-over	Black sooty schist with 10% py and minor po.	X		X	X					Yes
18	18	-	-	Rd, area of anomaly 18 (Float)	Dk rock with 30% non-magnetic sulphides in interlayered bands, some cp.	X	X		X		X			Yes
21A-1	21A	103N	10E	Main conductor axis centre of outcrop.	Fg garnetiferous hornblend-biotite schist with possible Zn.			X						Yes
21A-2	21A	95N	11E	East margin of o/c	Epidotized garnetiferous skarn with 20% non-magnetic sulphides.			X						No
21A-3	21A	95N	11E	Near E margin o/c	Dk hornblende rock with 80% non-magnetic po and minor cp.	X	X		X		X			Yes
21A-4	21A	95N	11E	West end of gossan zone	Band of dense diss magnetite.									No
21A-5	21A	100N	12E	West margin stripped o/c	Weakly foliated ag gabbro \10% fine diss sulphides; py, po, cp ?	X	X		X		X	X		No
21A-6	21A	95N	13E	Centre gossan zone	Dk dense hornblendite with 20% po	X			X		X	X		No
21A-7	21A	95N	11E	Gossan zone	Weathered sulphide-rich rock, 20% non magnetic po	X			X					Yes
21A-8	21A	95N	11E	Gossan zone	M.g. gabbroic rock with 40% po & 3% cp.	X	X		X		X			Yes
21A-9	21A	95N	11E	Gossan zone	Dk mafic rock with 70% mass py		Cu	X						Yes
21B-1	21B	53N	353E	#2 Pit	Carb schist, magnesite ? from x-over axis.									Yes
21B-2	21B	52N	353E	#2 Pit	Less than 1 cm qtz vein with minor sulphides, poss. arsenopyrite					X	X		X	Yes
21B-3	21B	52N	352E	#2 Pit	Banded IF with 75% sulphides, mainly py.		X	X		X	X		X	Yes
21D-1	21D	00	990E	Wide outcrop ridge	Dk mafic vol rock with rusty		X	X						Yes

SAMPLE LIST

KALROCK RESOURCES LIMITED AEM Investigation Programme November, 1990

SAMPLE #	ANOMALY	NORT'G	EAST'G	LOCATION	DESCRIPTION	Ni	Cu	Zn	PGE	Ag	Co	Cr	As	REP
					Mainly py with minor cp.									
HY11-1	-	-	-	Grassy portage road cut	Massive anorthosite with diss & blebs po-cp.	X	X		X		X	X		No
HY11-2	-	-	-	Grassy portage road cut	Banded f.g. mafic rock with cp. blebs & minor bornite, interlayer in anorthosite.	X	X		X		X	X		Yes
HY11-3	-	-	-	Grassy portage road cut	Massive pyrrhotite in anorthosite	X	X		X		X			Yes
N-1	-	-	-	Trail to nomaly 21A 300 m E Manitou Rd	Banded IF with 1 cm band massive magnetite 20% mass po.	X		X						Yes
N-2	-	-	-	Trail to 21A	Main sulphide zone central to IF in gabbro. 70% po-cp & poss sph.	X	X	X						Yes



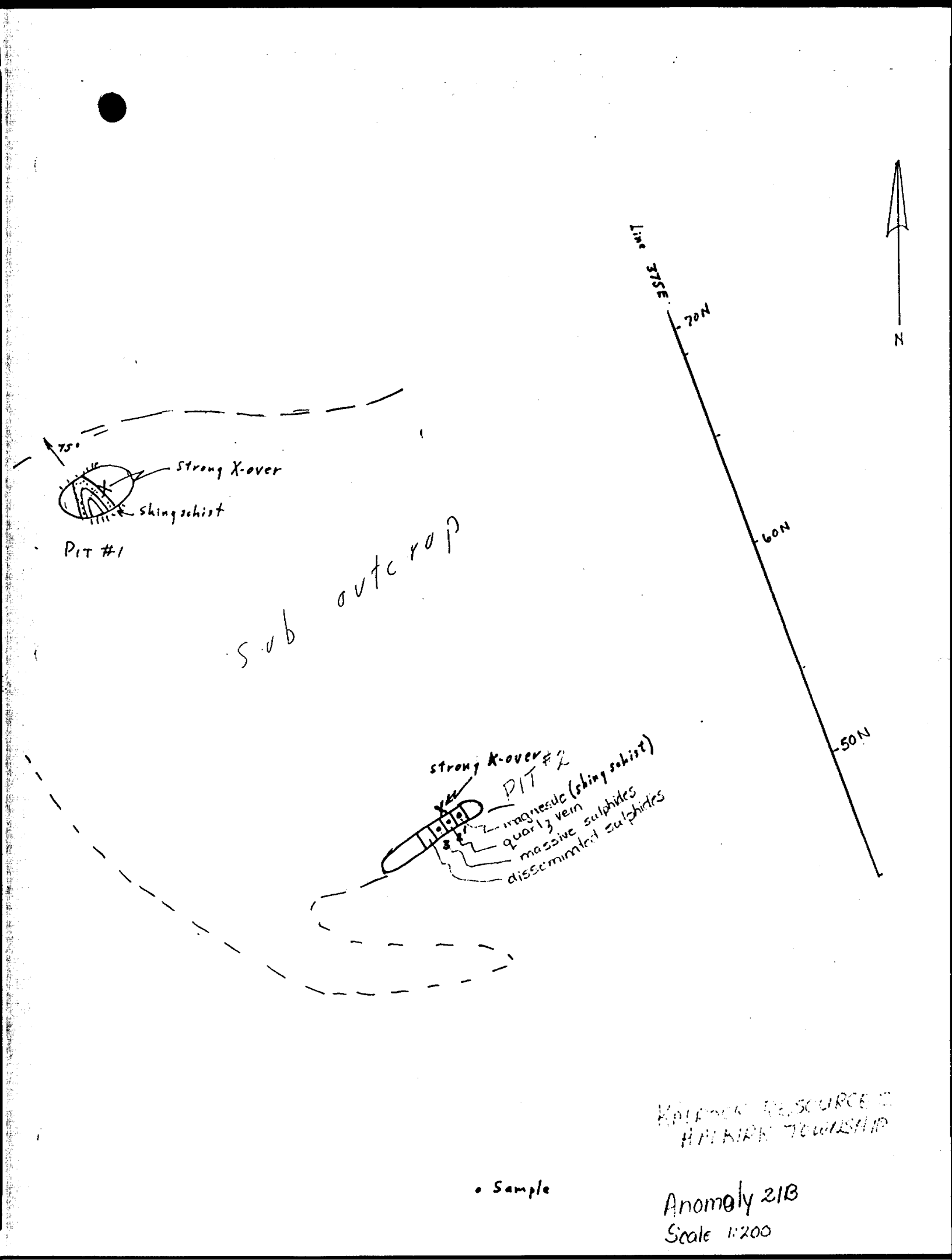
• Sample

KALROCK RESOURCES LIMITED

HALKIRK TWP.

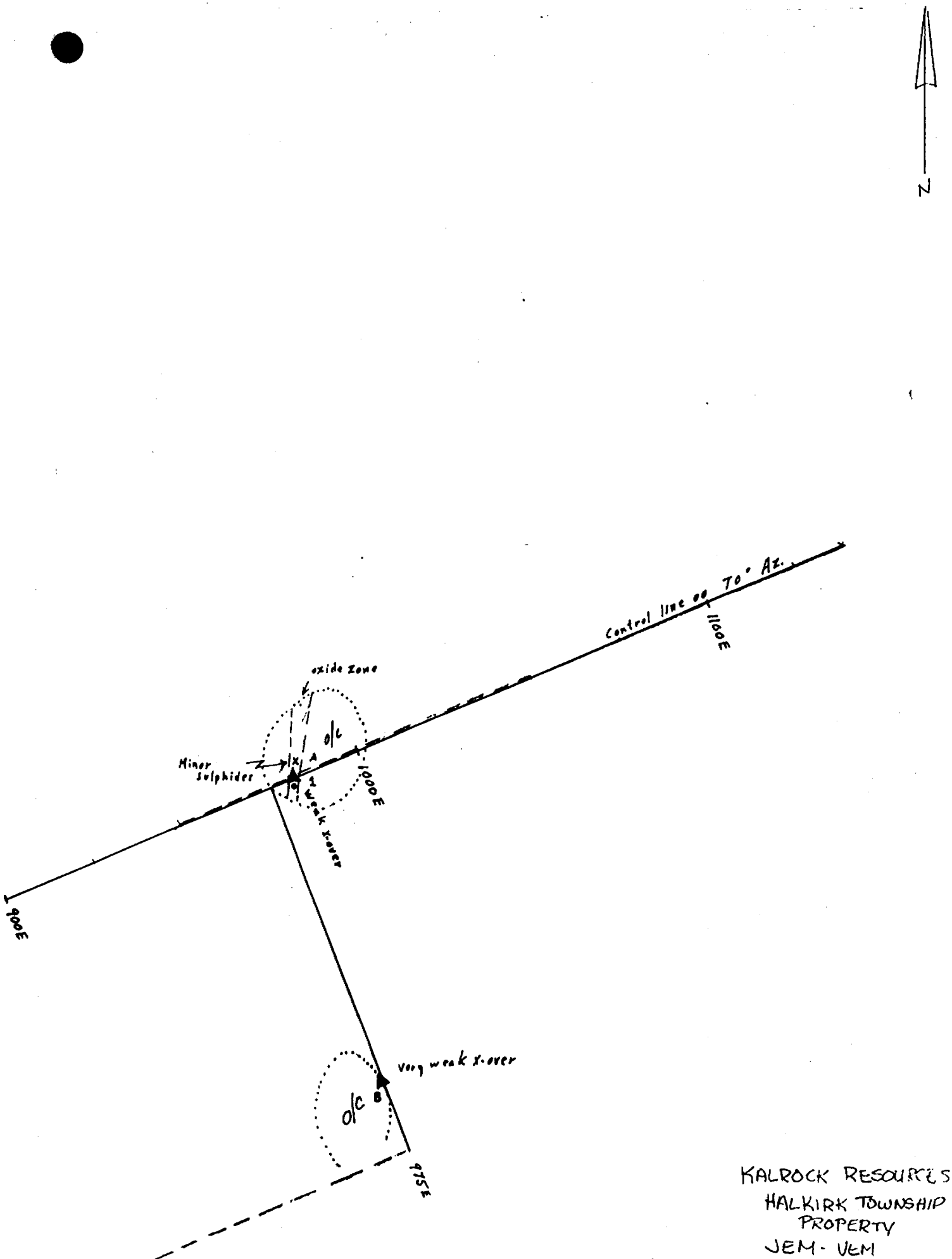
ANOMALY 21A

SCALE 1:200



• Sample

Anomaly 21B
Scale 1:200

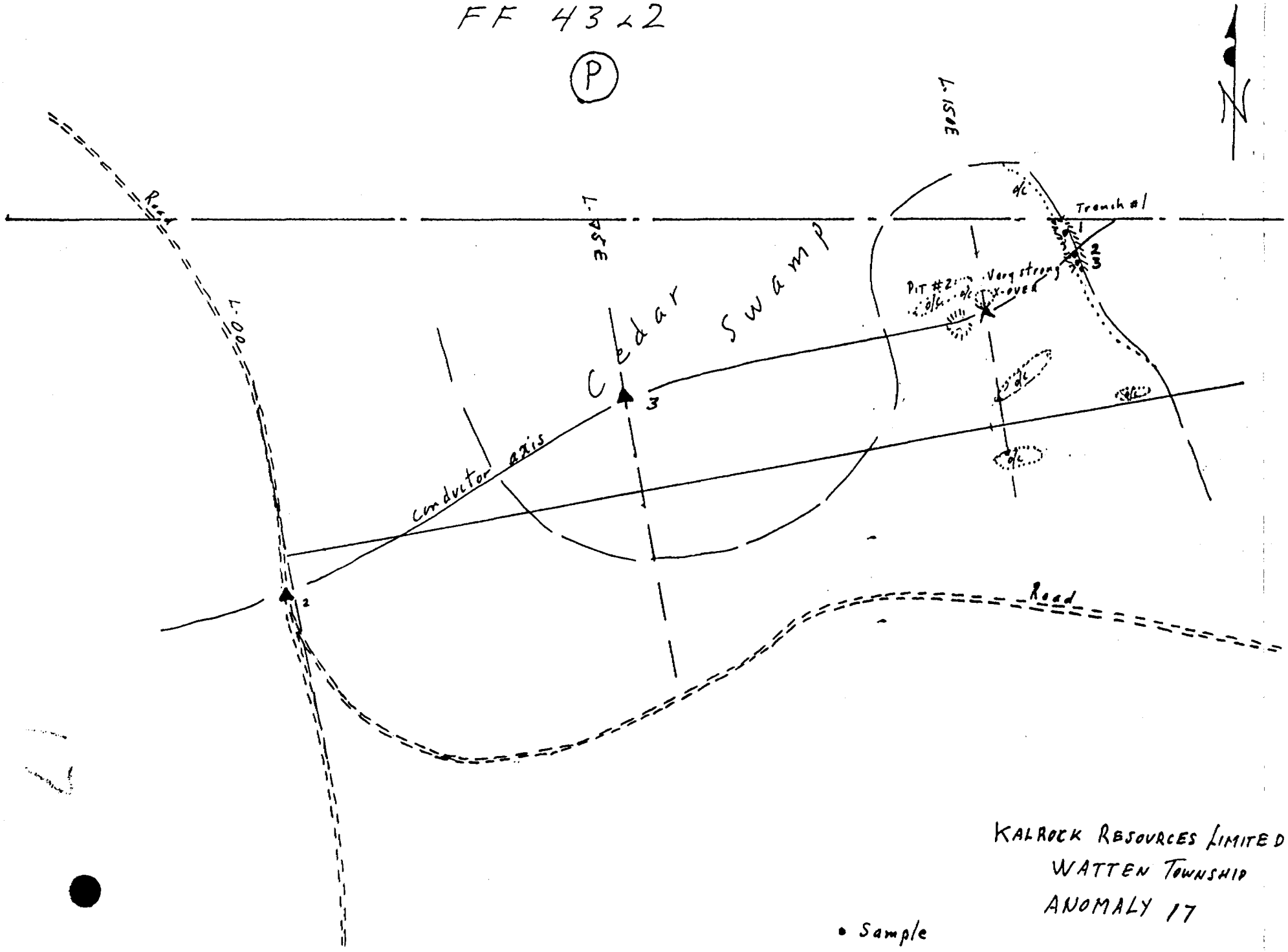


• Sample

KALROCK RESOURCES
HALKIRK TOWNSHIP
PROPERTY
JEM - UEM
SURVEY
ANOMALY 21-D

FF 43-2

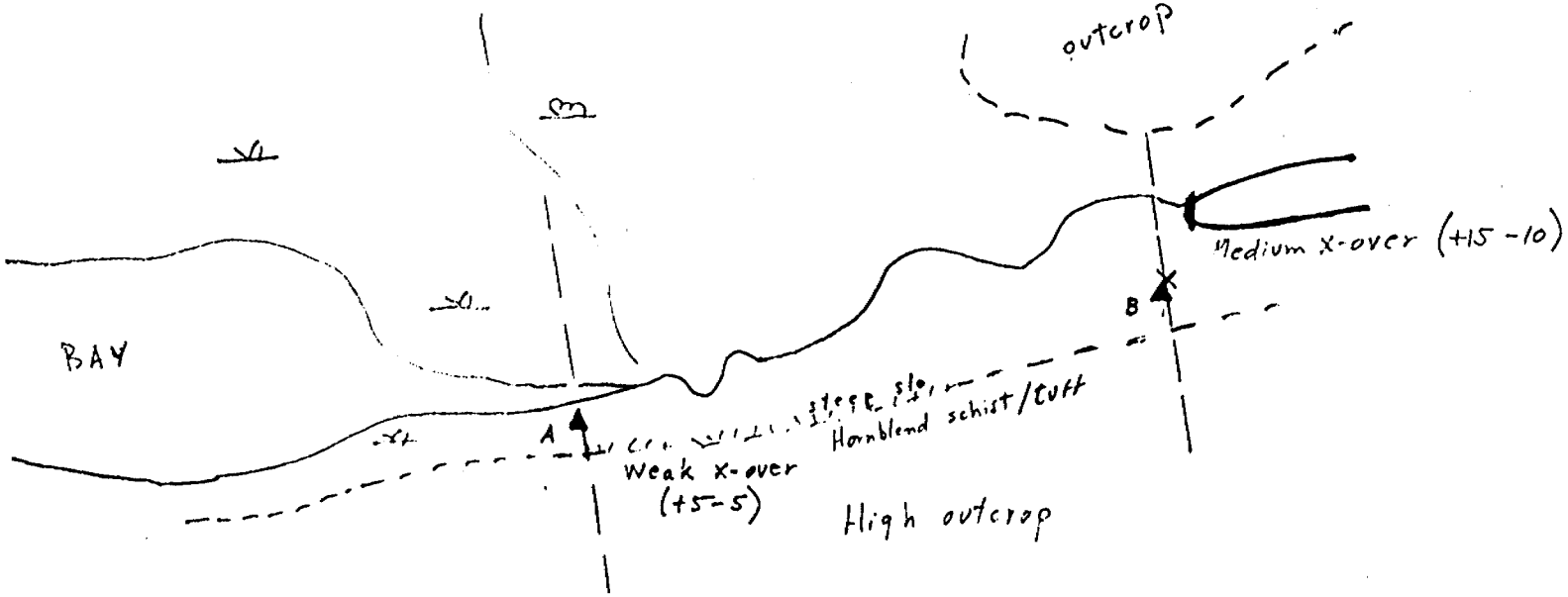
(P)



KALROCK RESOURCES LIMITED
WATTEN TOWNSHIP
ANOMALY 17

• Sample
▲ Transmitter set-up

SCALE, 1:1000



KALROCK RESOURCES LIMITED:

AEM INVESTIGATIONS

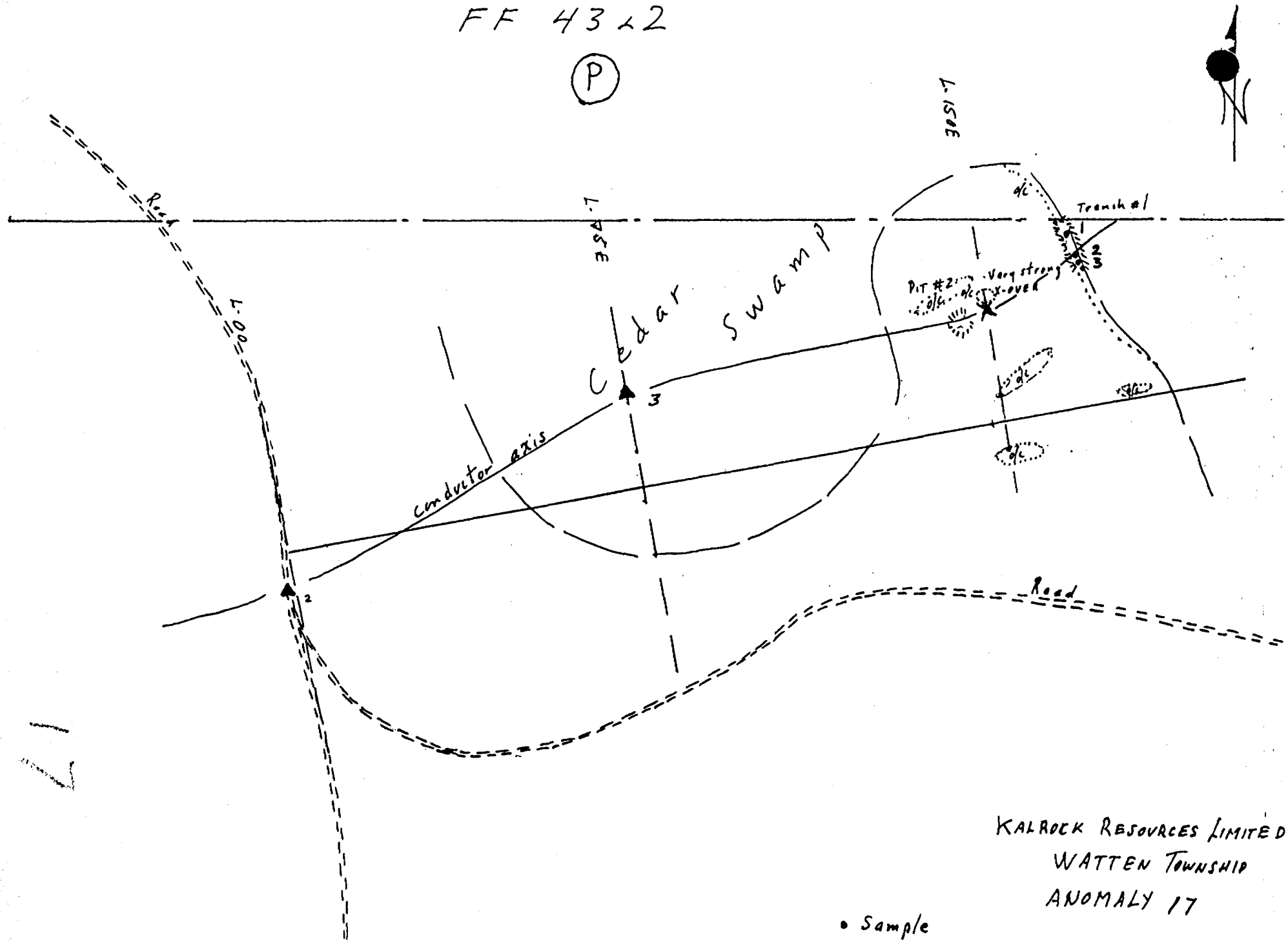
WATTEN TWP

ANOMALY 16

SCALE 1: 1250

FF 43-2

(P)

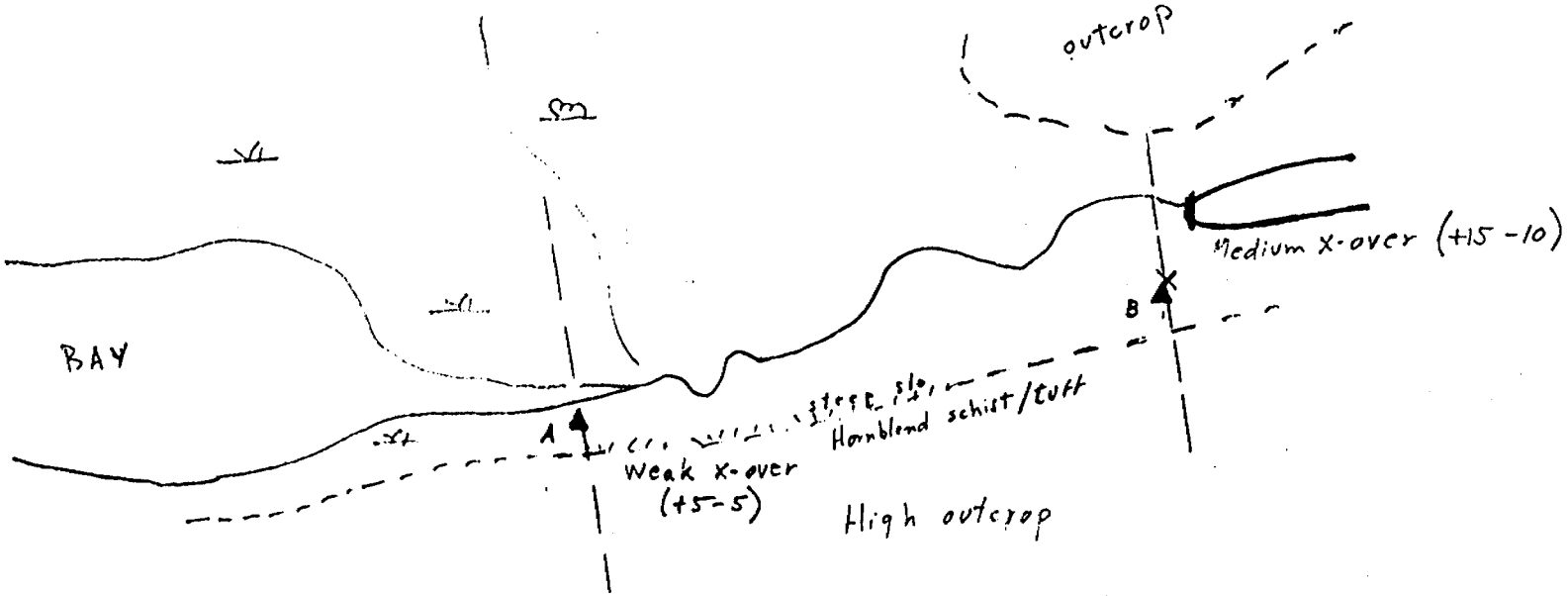


KALROCK RESOURCES LIMITED
WATTEN TOWNSHIP
ANOMALY 17

• Sample

▲ Transmitter set-up

SCALE. 1:1000



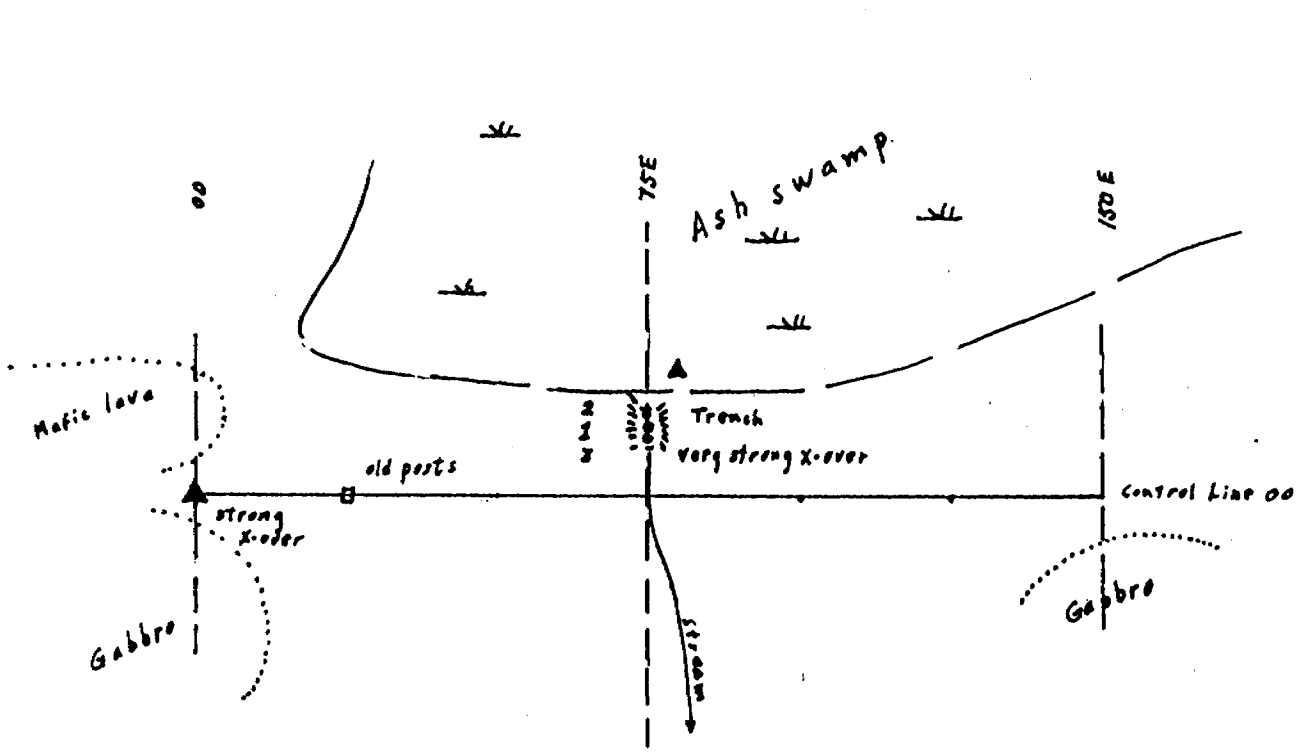
KALROCK RESOURCES LIMITED

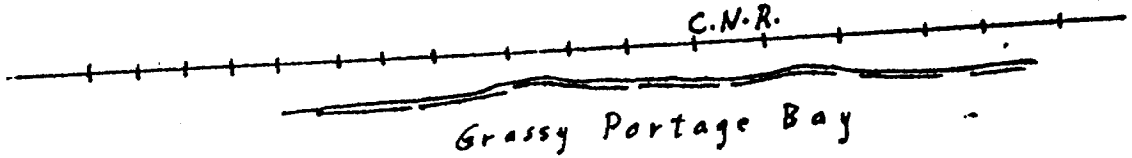
AEM INVESTIGATIONS

WATTEN TWP

ANOMALY 16

SCALE 1: 1250





KALROCK RESOURCES LIMITED

AEM INVESTIGATIONS

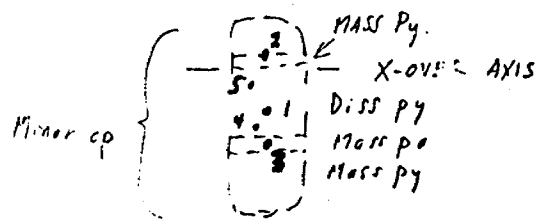
ANOMALY 15

WATTEN TWP

• Sample

SCALE 1: 1250

L - 75E



00 BL.

KALROCK RESOURCES LIMITED
AEM INVESTIGATIONS
ANOMALY 15

SCALE 1:200

REPORT ON

AEM INVESTIGATIONS

IN

HALKIRK and WATTEN TOWNSHIPS

DISTRICT OF RAINY RIVER

FOR

KALROCK RESOURCES LIMITED

November. 1990

H. Z. Tittley

SUMMARY & CONCLUSIONS

The ground investigation of 10 airborne electromagnetic anomalies located 4 massive sulphide zones containing minor to significant amounts of copper mineralization and massive pyrrhotite sections.

These iron formation-type deposits are associated with gabbroic intrusions and, in two cases (anomalies 21B and 15), are similar to nearby zinc-rich occurrences.

All warrant further examination to determine width and economic potential.

One anomaly which could not be explained by trenching (anomaly 16) and a well situated weaker conductor (anomaly 23), should also be investigated further to determine their cause.

METHODS

The nature of the investigation was based primarily on the study of recent activity in the area which focused on zinc mineralization associated with thin dark sedimentary bands interlayered with gabbroic sills. Since fair copper mineralization occurs along the west margin of the main Grassy Portage Bay sill, the writer believes that untested conductors could represent a combination of both types of mineralization.

Based on this concept, anomaly 21 which is covered by Kalrock Resource's Redgut bay property was tested first. Fortunately or unfortunately, the east-west interpretation was found to be invalid and instead, it consists of 4 northwest and north northwest-trending conductors.

All six channel AEM anomalies that are not due to magnetic permeability were readily detected and traced out with the portable vertical loop electromagnetic apparatus which is basically a Crone JEM unit operated in the vertical loop mode. Strong signal interference originating from a power transmission line north of the Redgut Bay property and a second line running along highway 11 precluded detection of some of the weaker single and two channel anomalies. In quieter areas where a wider transmitter-receiver separation is possible, weak anomalies can usually be traced.

Navigating to AEM response sites was aided by air photos. Once a cross over was obtained, a new set-up was made from which two x-overs were obtained, thus providing a strike direction. A blazed control line was then driven through the x-over points and short profiles were read. Cross-over points were also located where trenching seemed possible.

Trenching and especially sampling becomes the most difficult tasks owing to the electrochemically active nature of the sulphide mineralization. Once the bedrock is reached through roots and a thin layer of soil, an equally thick layer of gossan must be removed with chisels and sledges. Sampling of the fresh lower material is tedious and not always successful. At one site, a second trench was required to obtain representative samples of the conductive material.

INVESTIGATIONS

ANOMALY 21A

The anomaly lies in the western part of the Redgut Bay property. It was located and traced over 300 metres in a north-northwesterly direction. As a broad muskeg covers the southern part, the anomaly was traced over an area of shallow outcrop along the east edge of a small pond.

Stripping and trenching revealed a 5 m-wide zone of sulphide and magnetite iron formation bounded in gabbroic rock. Chalcopyrite ranging up to 1% was observed in a silicified 30 cm pyrrhotiferous section. Based on x-over shifts between north and south transmitter set-ups, the zone is expected to be more than double the 5 m width exposed in the trenches. The dip of the formations varies between 80° and 50° west which is supported by the EM data.

Though ground positioning is very accurate, relative to the lakes and ponds, the true location of the lot line (and the property boundary) could not be ascertained. Trenching was carried out 10 m west of the Kalrock claim line and 30 m east of the eastern boundary of the adjoining property. Pending a survey, it is assumed that the stripping is on Kalrock ground but that the northwest part of the conductor is not (see sketch).

ANOMALY 21B

Similarly, this anomaly was traced over 250 m in a northwesterly direction. Although a very sharp x-over was obtained along the crest of a sub-outcrop ridge, stripping revealed a sharp fold plunging 75° north, but no conductive material. In a second pit, only 25 m further east, an 8 m wide gossan zone was exposed. Some conductive material consists of disseminated pyrrhotite in a dark sooty matrix and massive pyrite across 20 cm and 30 cm respectively. Again, the overall zone is expected to be at least 50% wider than the exposed portion.

A grey shiny schist was encountered at both sites. Hand specimens are tentatively identified as magnesite, largely because of its sparkle and slippery texture. Minor hydrothermal quartz is present also.

Away from folds, the foliation is vertical. The formations appear derived from mafic volcanics. Since conductors 21A and 21B would converge to the north, they are possibly one and the same.

Dark sooty material of a sedimentary nature is also present at the Pocket Pond occurrence where it is intimately associated with the zinc mineralization.

ANOMALY 21C

This anomaly consists of 2 two channel AEM responses. It was encircled by a 100 m search traverse and crossed by a north-south profile, but no measurable dips were obtained.

The area is south of a major outcrop ridge which consists primarily of well foliated grey-green schistose hornblende. The abundance of large granitoid glacial erratics suggests that the felsic intrusive rocks, seen in outcrops to the east, extend into this area.

Ground conditions do not favour an overburden-type response. The anomaly should be tested further using grid lines and electromagnetic units equipped with 60 cycle filters such as the Geonics EM-17 or Parametrics Max-Min II.

ANOMALY 21D

Anomaly 21D consists of 2 and possibly 3 two channel responses. At its position along the control line, there is an outcrop ridge with a rusty zone which contains a 5 mm seam of massive sulphides. The rocks are mainly hornblende schist striking 170°.

From a transmitter set-up on the mineralization, a search traverse was read across the area south of the control line. No x-over was obtained but on a closer short profile, a weak conductive response was observed over an outcrop ridge. From a set-up at this second site no x-over was obtained along the control line.

The bulk of this anomaly lies to the south-southeast towards a wide drift-covered area. Although some outcrops are shown on the geological map, additional follow-up seemed too time consuming owing to the 3.2 km trek to highway 812. Any systematic coverage of the property should include this anomaly.

ANOMALY 23

This 3 km string of 1, 2 and 3 channel anomalies lies along the east boundary of the Redgut Bay property. Towards the south it becomes more central to main Grassy Portage Bay Sill.

Unfortunately, after closer scrutiny of the aerial photos it is evident that our search from two transmitter set-up was conducted on an adjoining pond to the one we had targeted. Actually, our marked trail which extends from a series of old roads intersected the anomaly south of the patented claim. In retrospect however the weak response on the Kalrock claim might not have been detectable.

The writer strongly recommends this anomaly for its large low grade copper-nickel potential with possibility of PGE metals. It should be examined south of the patented claims with power line noise-rejecting equipment.

ANOMALY 17

This anomaly consists of an 800 m string of 6 channel anomalies that are central to a northeast-trending sill of hornblende gabbro.

An original x-over was detected 100 m east of a transmitter set-up located near the boundary between lots 17 and 18. From this x-over site, a strong response was obtained farther east along the south margin of a broad cedar swamp. Again, 75 m to the east, very strong x-overs were obtained on, the apex of, and the east slope of, an outcrop ridge.

Stripping at the latter site uncovered a broad rusty zone and a black sooty schist or sediment carrying 70% medium-grained and fine-grained pyrrhotite. The material which is magnetic and highly conductive corresponds to the description of certain zinc zones in the Pocket Pond occurrence to the northeast.

The conductor is covered by a block of 7 new claims and until a survey is carried out, the amount of strike length lying across the southeast corner of a patented claim is unknown. It appears to be very near the stripping area.

ANOMALY 16

This anomaly consists of an elongated string of 1 to 6 channel responses that lie along a slough located at the base of a 10 m ridge of mafic volcanic rocks.

From a set-up located at the bottom of a grassy bay, a medium but noisy x-over was obtained at the base of the ridge's north slope. A second transmitter set-up at this location failed to locate a proper response near the original set-up; probably due to the high level of power line interference.

The conductor appears confined to the drift- and talus-covered part of the slope and could not be examined with the available prospecting tools.

Ninety percent of the conductor's strike is covered by a block of 7 claims that were staked on behalf of Kalrock Resources.

This conductor which lies along the volcanic-gabbro contact should be examined by drilling to determine the cause and potential.

ANOMALY 15B

This anomaly is a single 6 channel response located in lot 16. 100 m north of anomaly 15.

A circular 100 m traverse was made but no significant dip angles were encountered, suggesting that the response may be a paired peak associated with the very strong anomaly 15.

The area is along a high outcrop ridge where control is more difficult. It may have been improperly covered. The whole presentation of this anomaly should be re-examined and the results considered when carrying out further investigations in this area.

ANOMALY 15

The anomaly which consist of an 2200 m string of 6 channel AEM anomalies was readily located in the area of lot 15.

The first set-up was made on the south margin of an ash swamp and a profile was read to the west. Although very strong x-overs were obtained near the original set-up, they were always at the edge of low outcrops.

Finally, it was decided to trench the bottom of a small stream that normally drains the swamp. Though the bedrock was found to be very irregular and very irregularly weathered, good samples of highly massive pyrrhotite occurring over a 20 cm width, were extracted. Minor chalcopyrite is visible with most of the sulphides. As elsewhere, the overall zone is expected to be at least 3 times wider than the 1.6 m section exposed in the trench.

The anomaly occupies the contact between mafic lavas to the north and a sill of medium-grained gabbro to the south. It is strongly recommended that this anomaly be examined further as a possible source of combined copper-nickel-zinc mineralization.

ANOMALY 5

This anomaly was investigated in the area of a 6 channel response located west of the township line in the western part of the anomaly.

Although dip angles ranging up to 6 degrees were measured on both high and low frequencies, no x-over could be located from the first set-up. A second transmitter set-up was made higher on the rocky ridge but no dip angles were observed.

The effects of magnetic susceptibility are the suspected cause. Examination of ground geophysical data in this area provides support for this view.

The anomaly but not necessarily the area is of no further interest.

H. Z. Tittley P.Eng.

At the request of J. E. Steers & Associates Inc., a plan based on a claim map and showing the geology and AEM data was prepared for a broad area surrounding the Nor-Norock properties of Watten and Halkirk townships in the Rainy Lake Area of Ontario.

The purpose of the plan is to show the disposition of surface and mining rights, primarily along the large mafic sill and a few secondary attendant mafic intrusions.

Examination of published government AEM data covering the area, revealed the necessity of replotting most of the anomaly intercepts in order to obtain better overall definition of the conductors.

Although many conductors are present, only those 23, that are most closely associated with the mafic intrusive rocks and not due to Iron Formation or have not been previously examined, are plotted on the plan.

The following observations cover these conductive anomalies:

1 This anomaly lies in a narrow band of sedimentary-volcanic rocks that occurs along the margin of the massive granites to the north, and the northeast end of the Main Mafic Sill, in the Redgut Bay Area of Rainy Lake. Positioning of the anomaly is problematic, as the presence of a drill hole (N65) suggests that a conductor might have been previously tested in this area.

2 This anomaly lies very close to the northern Redgut Bay copper deposit, and probably due to the encouraging copper mineralization encountered in drill holes and trenches.

3 The anomaly extends for 9000 feet along the south margin of the Main Mafic Sill. Fifty percent it's length is under Redgut Bay where, at it's southern end, it appears to have been drill-tested by one hole (N73) shown on the published geological map (Map 2278) and one hole shown on the on the Data Series map (P2032). From the amount of rock exposure along the jagged shore, it should be a simple task to evaluated this anomaly.

4 The anomaly extends for 7500 feet along the same stratigraphic horizon as anomaly 3. It lies in the southeast corner of Nor-Norock's Southern Property. Although ground geophysics have been carried out in this area, there appears to be no satisfactory explanation for the conductivity. One possible reason, is that the responses are due to magnetic permeability originating from the highly magnetic bands.

5 This 10,000 ft conductor lies along the southern portion of the Main Mafic Sill north of, but mainly to the west of, anomaly 4. It is mostly south of the Nor-Norock Southern Property, but where it enters the southeast corner of the property, and examined, no satisfactory explanation for the conductivity was established by the ground geophysics. Again, the very strong aeromagnetic responses suggest the possibility of permeability effects.

6 The anomaly which is central to Nor-Norock's Southern property trends northeasterly for 7500 feet, next to the axis of the anorthositic phase of the Main Mafic Sill, and westerly for 4000 feet, diagonally across the northern part of the sill. In the southern part, the overall conductor is associated with fine-grained gabbro dyke material and a series of gossans. Although ground electromagnetics have been conducted, no significant conductor was revealed. Magnetic permeability effects are not suspected. The southwest part of the anomaly should be examined along an east-west grid of lines using conventional prospecting and powerful electromagnetic methods.

7 This short 2000 ft anomaly lies along the south margin of the Main Mafic Sill. The area is north of Blind Bay which is at the western end of Swell Bay of Rainy Lake. It is associated with the weaker section of a moderate aeromagnetic feature. This fact plus the presence of two satellite responses suggest the possibility of some structural control. The 1979 Data Series map (P2032) does not show any exploration activity for this area. Study of the recent history of this area should be a priority.

8 The conductor is composed of three separate responses occurring on the south contact of the Main Mafic Sill half a mile west of anomaly 7. It is bounded by east-west, northerly and northwesterly faults and lies in a swampy area which may not be amenable to prospecting methods. The area is readily accessible via either the west arm of Blind Bay or Duck Bay to the west. As with 7 above, the recent history should be studied.

9 This anomaly which extends for 5000 feet along the central part of Grassy Portage Bay may be partly due to a lake bottom overburden-type response. In the southwestern part however it is directly coincident with the north contact of the Main Mafic Sill which is the most favourable copper-nickel environment encountered thus far in the Rainy Lake Area. The anomaly lies within two claims west of Nor-Norock's west boundary. It can probably be tested by drilling only.

10 The anomaly consists of 3 AEM responses located along the south shore of Grassy Portage Bay which also follows the north contact of the Main Mafic Sill and the favourable host horizon for copper-nickel mineralization. Diamond drill hole N84, shown on the published geological map of the Rice Bay Area, appears to have tested the continuation of this horizon, 1600 feet further to the west-southwest.

11 This single AEM response is central to the Main Sill an approximately one half mile north of anomaly 8. There is no evidence of early work in this area. The anomaly is highly recommended for acquisition.

12 This anomaly consists of a 7700 ft long broken string of single channel anomalies that lies mainly under the waters of Commissioners Bay in Rainy Lake. In the eastern part it is central to the Main Sill while towards the west it appears to end along the southwest margin of the sill. It is on the same stratigraphic horizon as anomaly 11, and should be viewed with the same fervour.

13 This anomaly has a very strong conductive response and extends for 2.5 miles along the south margin of the Nickel Lake gabbroic sill. Most of it's length is covered by the waters of Grassy Portage Bay, but at the eastern end, south of Nickel Lake, there is a test pit along the shore which can probably explain the cause of the anomaly. Magnetite from the pit as well as strong aeromagnetics point to possible permeability effects.

14 The anomaly lies mainly in Commissioners Bay along the westerly extension of a narrow band of slaty sediments and Iron Formation that is included in the Nickel Lake Sill. Drill hole N85 in Commissioners Bay may have tested this feature.

15 The conductor follows a slough that extends over 7500 feet from Moosehorn Lake to the east and Commissioners Bay to the west. The slough also hosts the contact between the southwest arm of the Nickel Lake Sill, to the south, and mafic lavas to the north. Although ground geophysics have been carried out, no explanation for the anomaly can be gleamed from the government Data Series Map (P2032). Combined with a weak magnetic axis, this anomaly is capable of great potential. As a first step, the history should be reviewed.

16 This anomaly is also hosted by a slough that covers the contact between mafic lavas to the south and a minor gabbroic sill situated inside the crescent formed by the Nickel Lake Sill. Structurally, anomalies 15 & 16 might occupy separate limbs of a minor anticline. Although ground geophysics are shown to have been carried out, the VLF survey failed to map any conductivity along the slough. The history of this area lying 1/4 mile south of Highway 11 should be studied.

17 This conductor consists of a string of 6 channel responses that are associated with a weak magnetic response centred on the minor gabbroic sill mentioned with 16 above. Records on hand do not show wether the VLF anomaly outlined in earlier work was ever tested. The anomaly which is less than 1/4 mile south of Highway 11, could probably be readily prospected with the aid of magnetic and electromagnetic equipment.

18 The anomaly lies in a swampy area of scattered outcrops along the northeast part of the Nickel Lake Sill. Ground geophysics followed by drilling encountered copper-zinc mineralization in a zone that is normal to the airborne conductor. Mapping shows a northeasterly strike and a northwesterly dip that would provide an attitude that would not be encountered by drilling northerly. All previous work should be carefully reviewed.

19 The anomaly is a relatively small cluster of 12 AEM responses which is located in an area of poor rock exposure, 1 mile removed from the nearest mafic intrusive formation. Though the area is surrounded by schistose sediments, a minor intrusive plug can exist, as suggested by a north northwesterly-trending magnetic anomaly. No work appears to have been done. The anomaly straddles the Manitou Road in Halkirk Township.

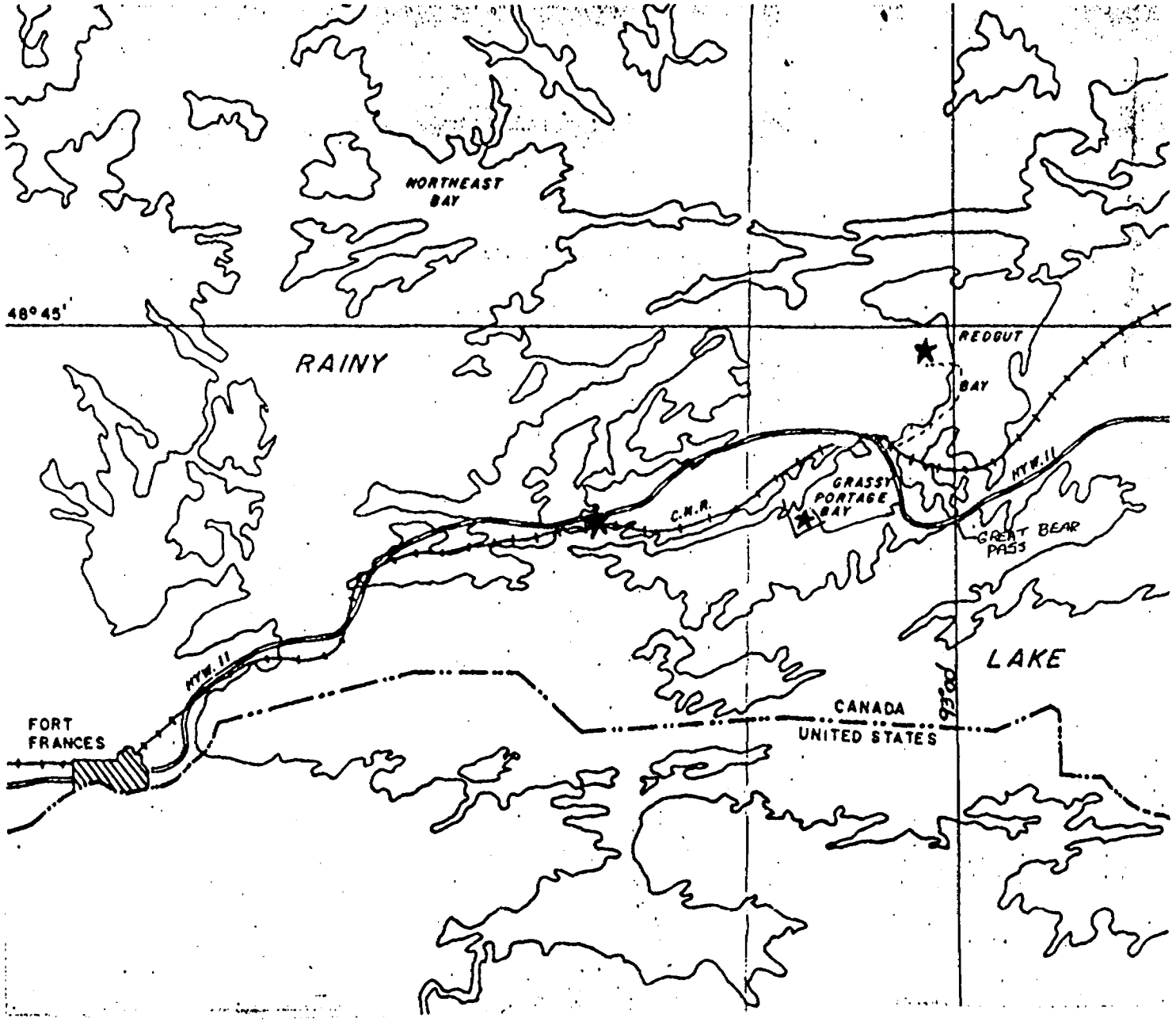
20 This anomaly straddles the common boundary in the northern parts of Watten and Halkirk townships. It is not directly associated with mafic intrusive rocks. Though it appears tested by drill hole N23 near the township boundary, the presence of a weak magnetic expression which extends towards the west-northwest and a minor body of hornblende gabbro, may indicate some potential.

21 This anomaly is selected because of the unexpected strike and location inside the crescent at the northeast end of the Maim Mafic Sill. Although a considerable amount of ground geophysics has been carried out in this area, no east-west striking conductor appears to have been mapped. At the east end of the conductor, encouraging copper values ranging up to 0.83% copper were encountered in Hole N64 while 1000 feet further north drill hole N59 intersected 13 feet of 1.04% copper. Along with the North Redgut Bay copper occurrence, this anomaly should be covered by staking.

22 The anomaly lies mainly in Swell Bay along the projection of a narrow mafic body or sill of probable hypabyssal origin. With a strike length of nearly 3.5 miles, the writer would like to suggest the possibility of a shear zone with a potential for gold which is present at three localities in similar formations towards the east end of Swell Bay.

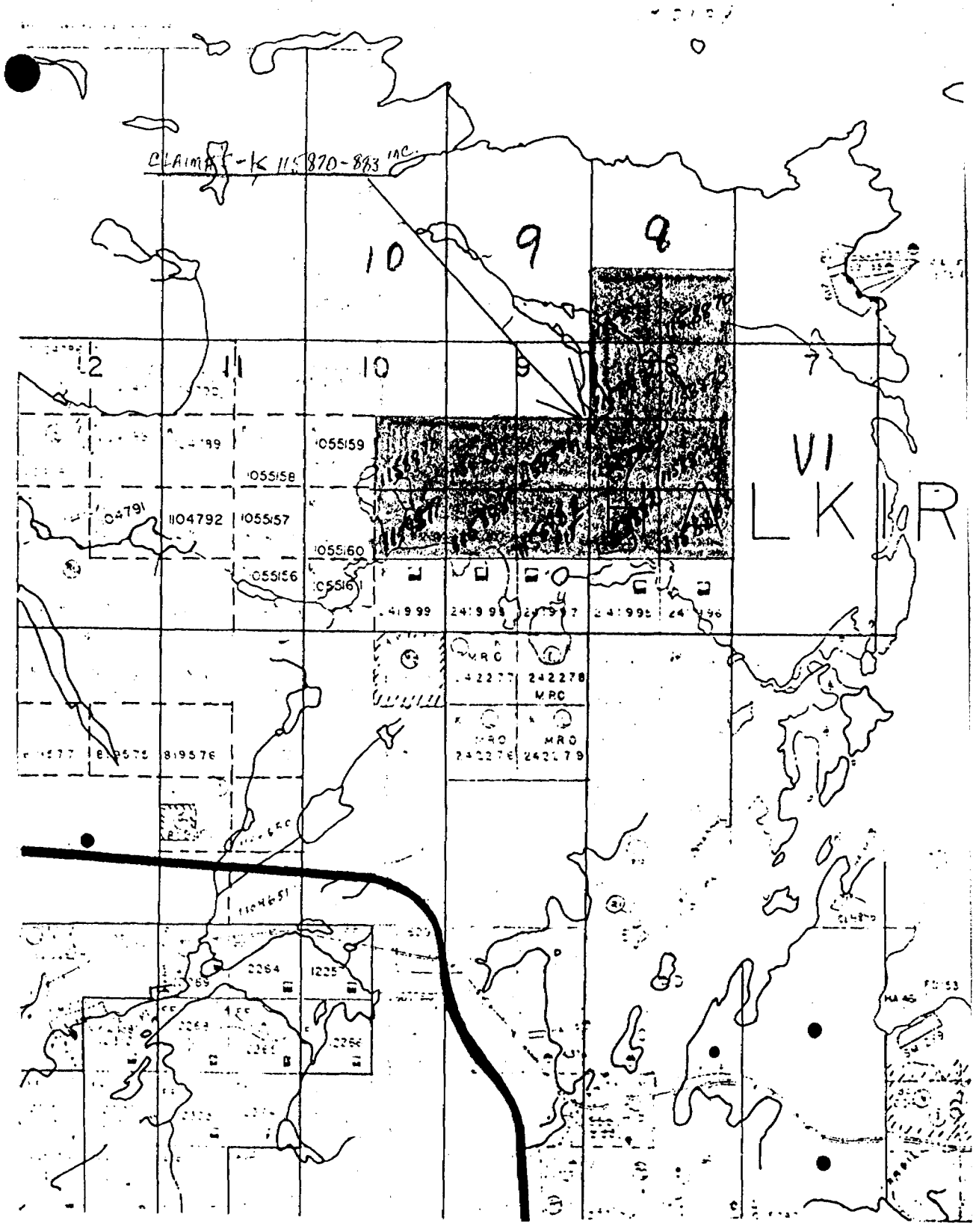
23 This anomaly is interpreted as much on the basis of topography and geology as from the AEM data. It is 9500 feet long and transects the Main Mafic Sill through the crescent at the northeast end of the sill. Near the south end of the conductor, where it extends under Redgut Bay, there are several trenches that may explain the nature of the conductor in this area. In any case, since the southern part of the conductor appears connected with anomaly 3, it is felt that the northern part should be viewed separately. Following a close study of the history, a compilation of the peninsula should be prepared to guide staking and future work.

H.Z. Tittley



Location Map

Figure 1.



Kalrock RESOURCES Limited

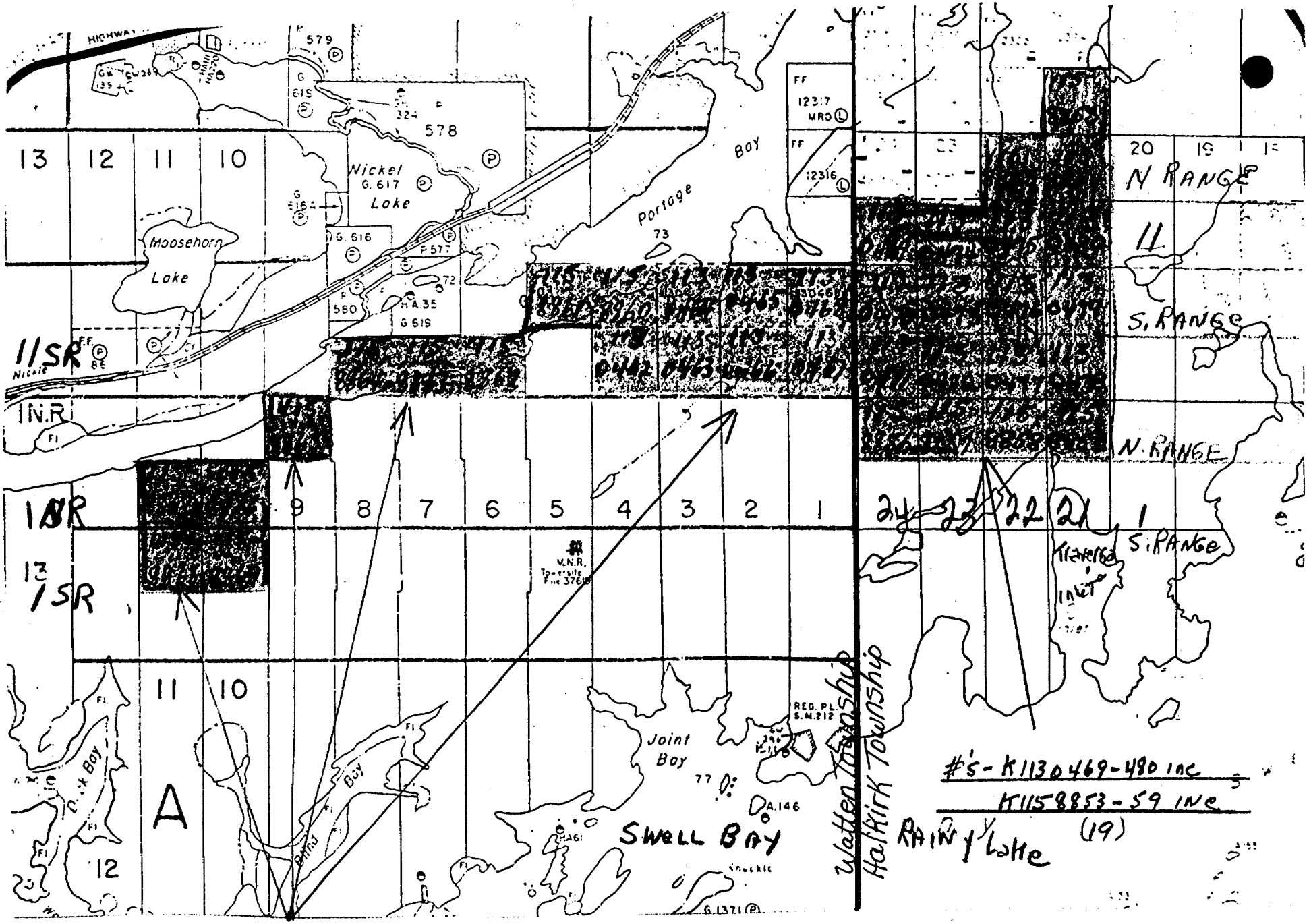
Claim Group I

14 CLAIMS # - K1158870 - K1158883 INC.

Halkirk Township - Kenora Mining Division

20cm = 1/4 mile

Figure 2-a



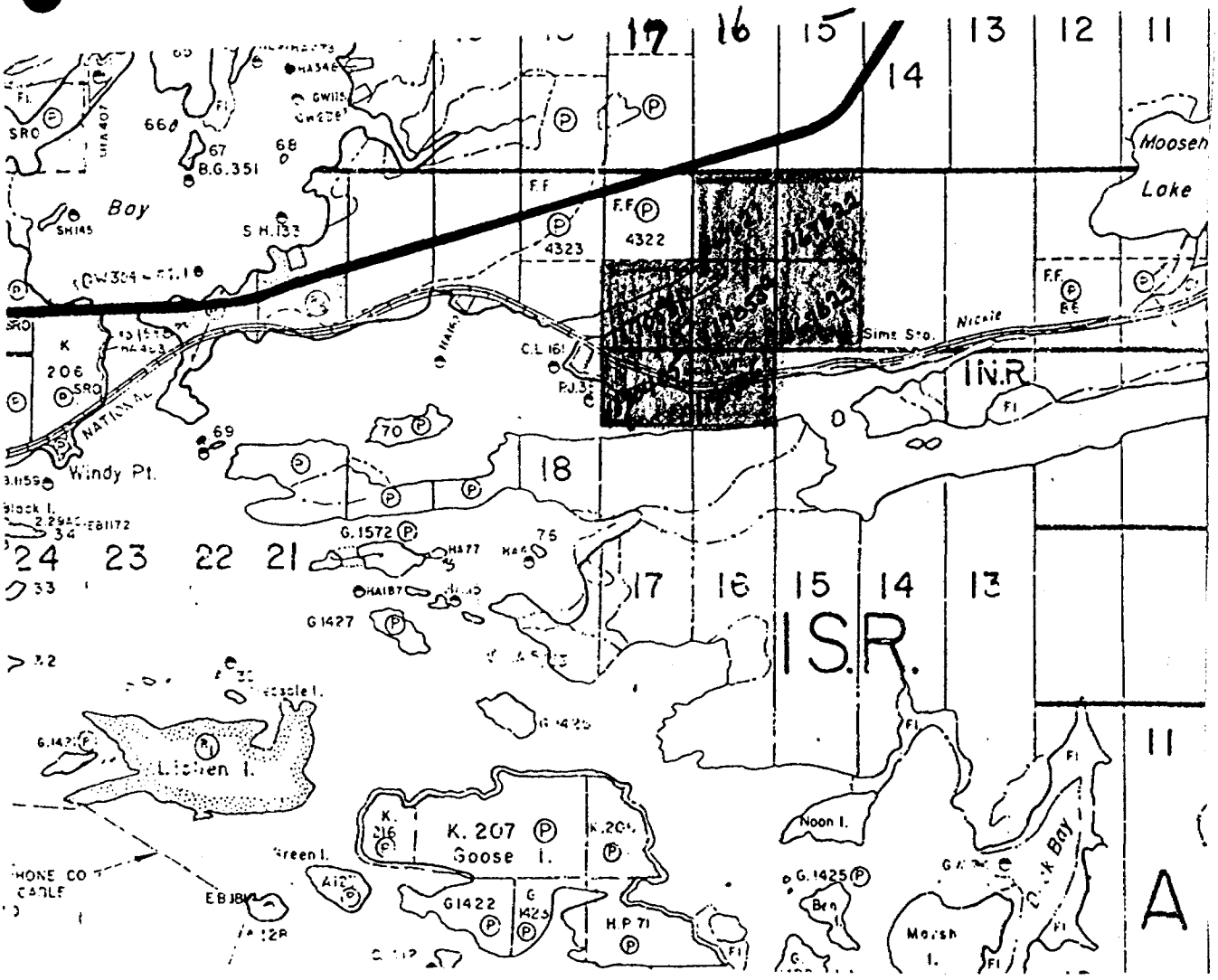
K1158860-869 inc (10) K1130462-468 (7)

Watten - Halkirk Townships
Kenora Mining Division

Kalrock RESOURCES Limited
Claim Group II

20cm = 1/4 mile

ADDN 2-A



Kalrock RESOURCES Limited

Claim Group III

K1170532, K1167621, K1167622, K1167623

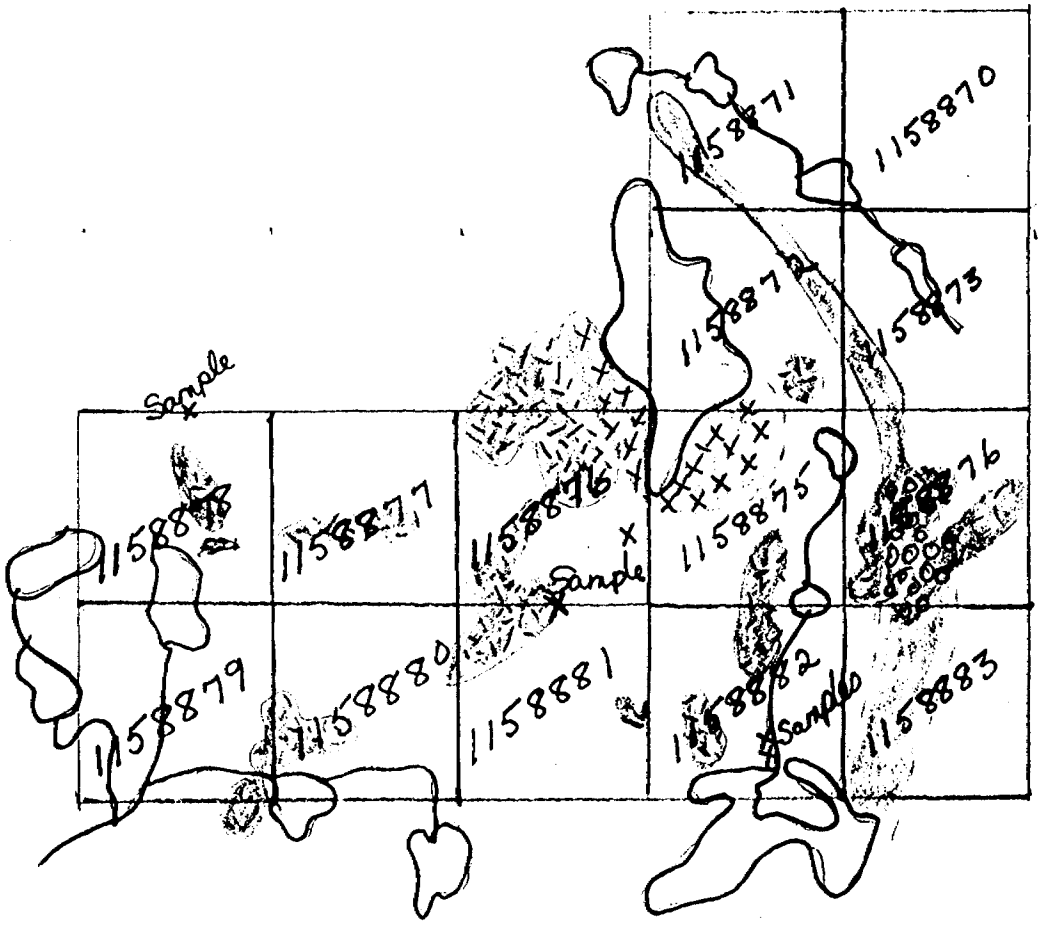
7 Claims # K1170405, K1170406, K170531

Watten Township

Kenora Mining Division

20cm = 1/4 mile

Figure 2-C



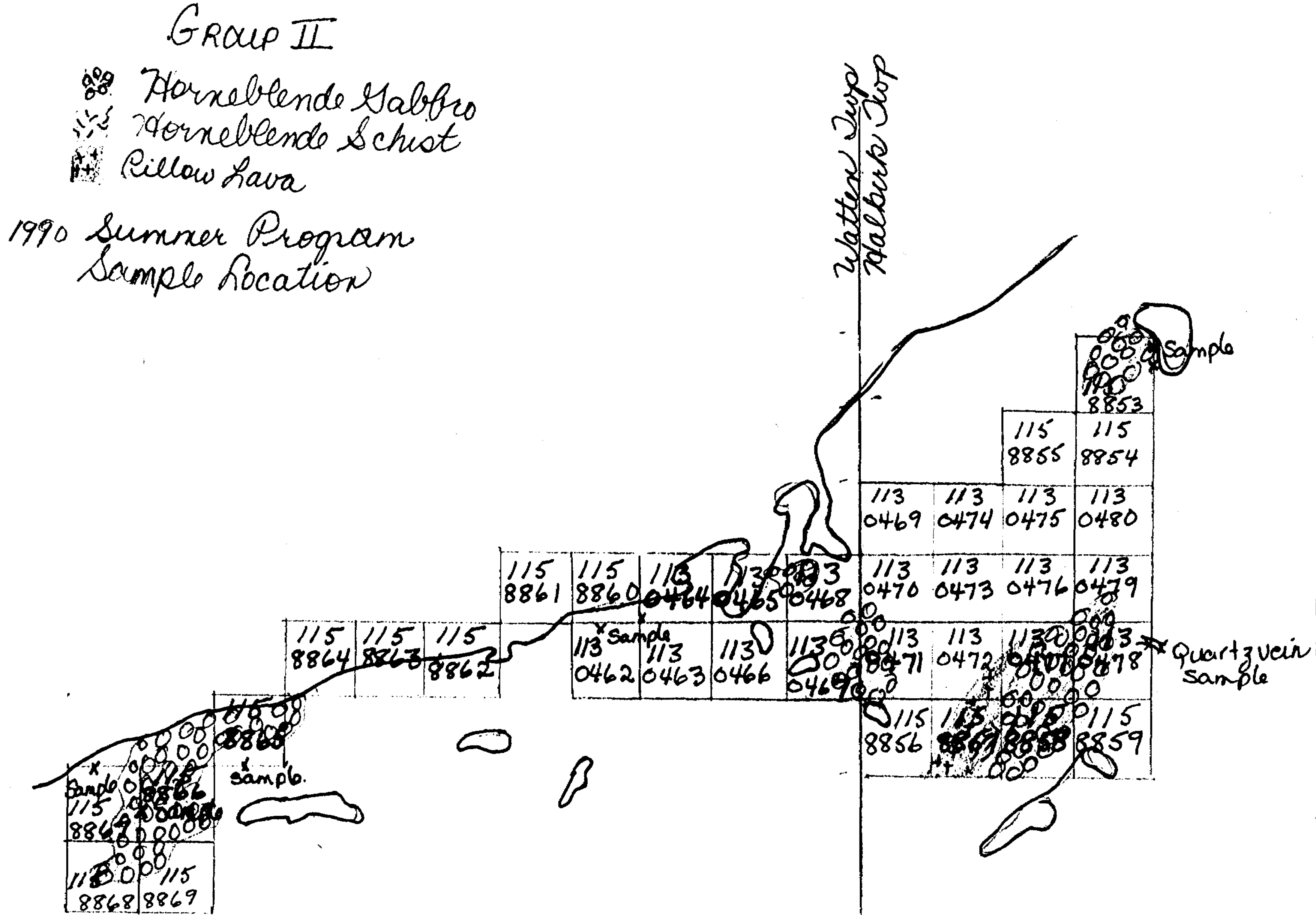
14 Claim #s - K 1158870 - 1158883 inc

GROUP I

- Hornblende schist
- Hornblende gabbro
- Gabbro
- Granite

1990 Summer Prospecting
- Sample Locations -

Figure 3



Group II
Horneblende Gabbro
Horneblende Schist
Pillow Lava
1990 Summer Program
Sample Location
Watten Twp
Halkirk Twp
Sample
8853
115 8855
115 8854
113 0469
113 0474
113 0475
113 0480
115 8861
115 8860
0464
0465
0468
113 0470
113 0473
113 0476
0479
115 8864
115 8863
115 8862
113 0462
113 0463
113 0466
0471
113 0472
0478
Quartz vein sample
115 8856
8859
sample
8865
8866
115 8867
115 8869
8868

Appendix I

Kalrock **RESOURCES** Limited

Section of O.G.S. Preliminary Map P.2032

Warren - Halkirk Township
Property

March 1991
JGS

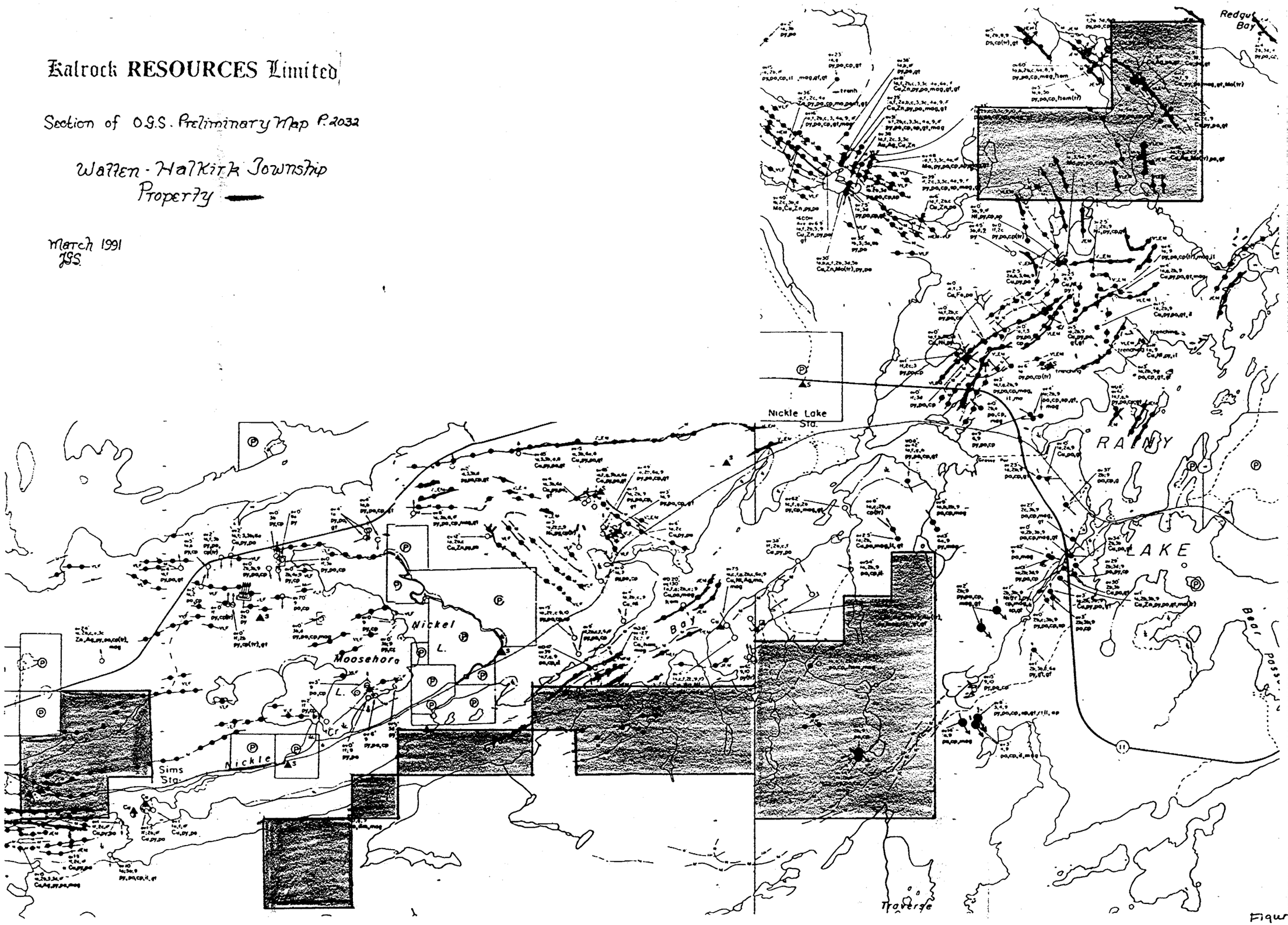


Figure5

Appendix II

CRONE GEOPHYSICS LIMITED

HEAD OFFICE:
3607 WOLFEDALE RD.
MISSISSAUGA, ONTARIO
CANADA L5C 1V8

Phone: (416) 270-0096 .
Telex: 06-961260
Cable: CRONGEO, TORONTO

AUSTRALIAN OFFICE:
244 NEWBRIDGE RD.
MOOREBANK, N.S.W. 2170

Phone: (02) 602-0937

U.S. OFFICE:
8525 E. ORCHARD RD., SUITE 308
ENGLEWOOD, COLORADO, 80110

C E M

THE CRONE ELECTROMAGNETIC INSTRUMENT DESIGNED TO BE USED WITH THE HORIZONTAL SHOOTBACK EM METHOD AS WELL AS VERTICAL LOOP AND HORIZONTAL LOOP METHODS

- The Shootback EM Method is a simple field method that does not require accurate survey lines. It retains its effectiveness even in rugged terrain areas. The method has been in use since 1957 and has located many mineral deposits. Interpretative model study curves are available.

- The equipment is flexible in that it can be used with the Shootback, Vertical Loop or Horizontal Loop, (in phase only), EM Methods with coil separations up to 200 meters, (600').

- The equipment is rugged, reliable and easy to operate.

• EQUIPMENT SALES AND RENTALS •

CEM SPECIFICATIONS

The complete CEM instrument consists of two identical coils both capable of receiving and transmitting alternating magnetic fields at three fixed frequencies. Battery supply is contained in a aluminum box mounted on a magnesium packframe.

Coil dimensions and weight: Diameter of 56 cm (22"); 3.8 Kg (8.3 lb).

Complete unit shipped in two wooden shipping boxes:
Dimensions and weight of one empty box: 31 x 61 x 77 cm (12" x 24" x 30"), 13 Kg (29 lb).
Weight of one shipping box complete with coil, packframe, batteries and earphones: 23 Kg (51 lb).
Shipping weight of complete unit (2 boxes): 46 Kg (102 lb).

Standard Frequencies: 390, 1830 and 5010 Hz (others available upon request).
Field tilt measurement by visual null on field strength meter and audio null through crystal earphones.
Inclinometer range of 200° , accuracy ± 0.5 degrees.
Receiver gain control: Linear calibrated 10 turn pot.
Field strength measurements from meter.
Operating range of coils: Up to 200 meters (600').

Battery Supply: 3 of 6 volt lantern batteries, Eveready #731 weight per battery; 1.3 Kg (2.8 lb).
audio battery supply; 1 of 9 volt, Eveready #216
Normal operational lifetime of battery supply – 3 to 6 weeks.

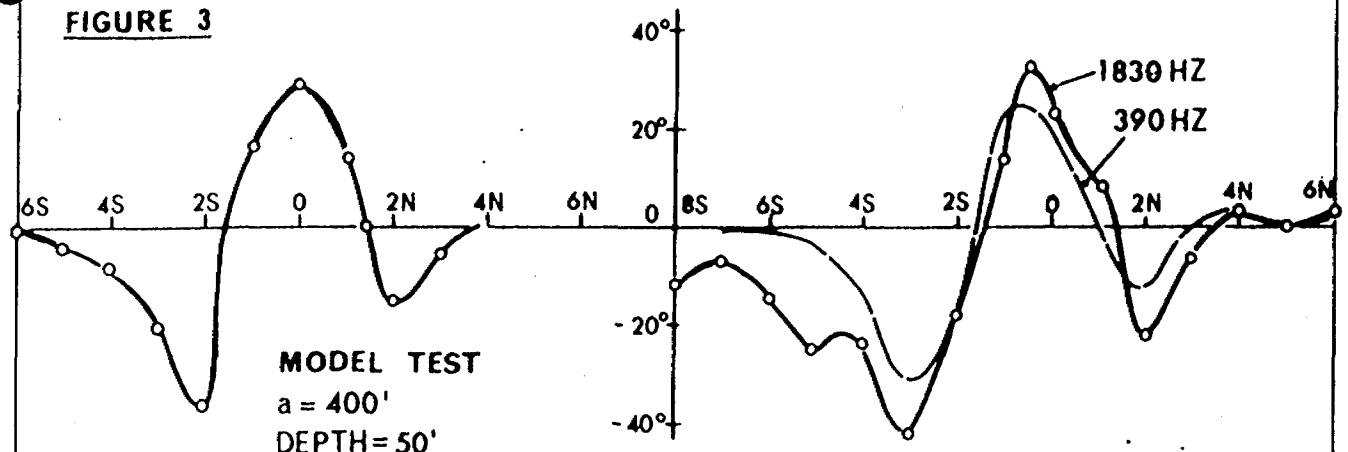
OPTIONAL EXTRAS

- Recharge battery supply and audio pack – 3 of 6 volt Gel cells
- Clip on battery pack (two of 9 volt Eveready #216) for use of coil as a visual receiver only (Vertical loop surveys).
- Plug in battery supply and audio pack for use of coil as audio and visual receiver only (Vertical loop surveys).
- Canvas knapsack for carrying coil with above options.

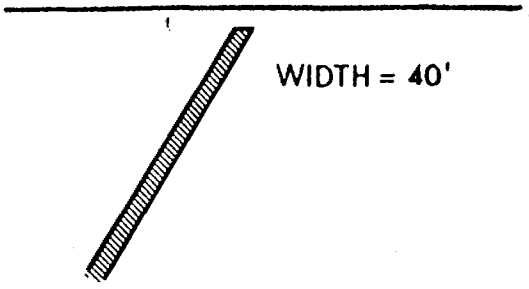
Note that the CEM coil is used as a receiver with the Crone VEM – large Vertical Loop system with a range of 800 meters, (2600').

HORIZONTAL SHOOTBACK E.M. METHOD

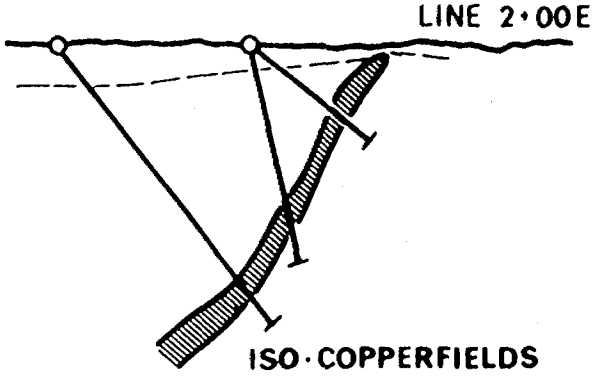
FIGURE 3



MODEL TEST
a = 400'
DEPTH = 50'
DIP = 60°

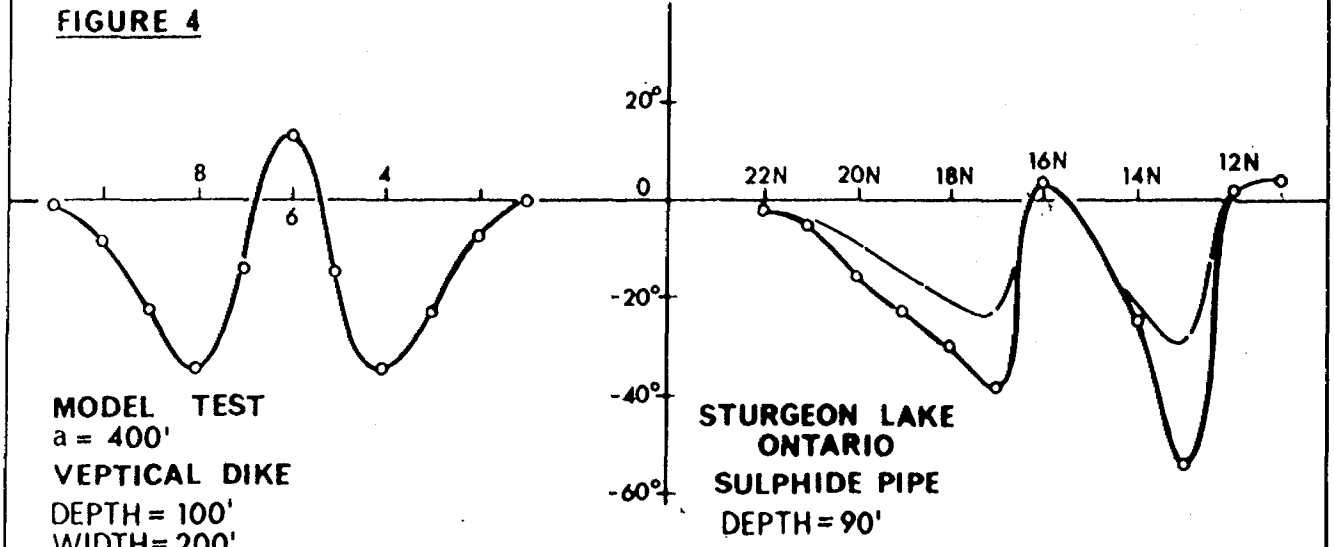


a = COIL SEPARATION



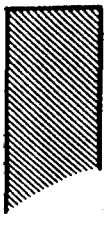
ISO·COPPERFIELDS
HEBECOURT TWP.
QUEBEC

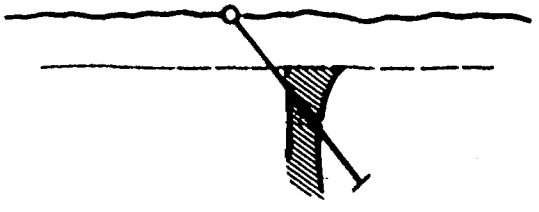
FIGURE 4



MODEL TEST
a = 400'
VEPTICAL DIKE
DEPTH = 100'
WIDTH = 200'

STURGEON LAKE
ONTARIO
SULPHIDE PIPE
DEPTH = 90'





Appendix III

Appendix II

EM METHOD

Transmitter

Receiver

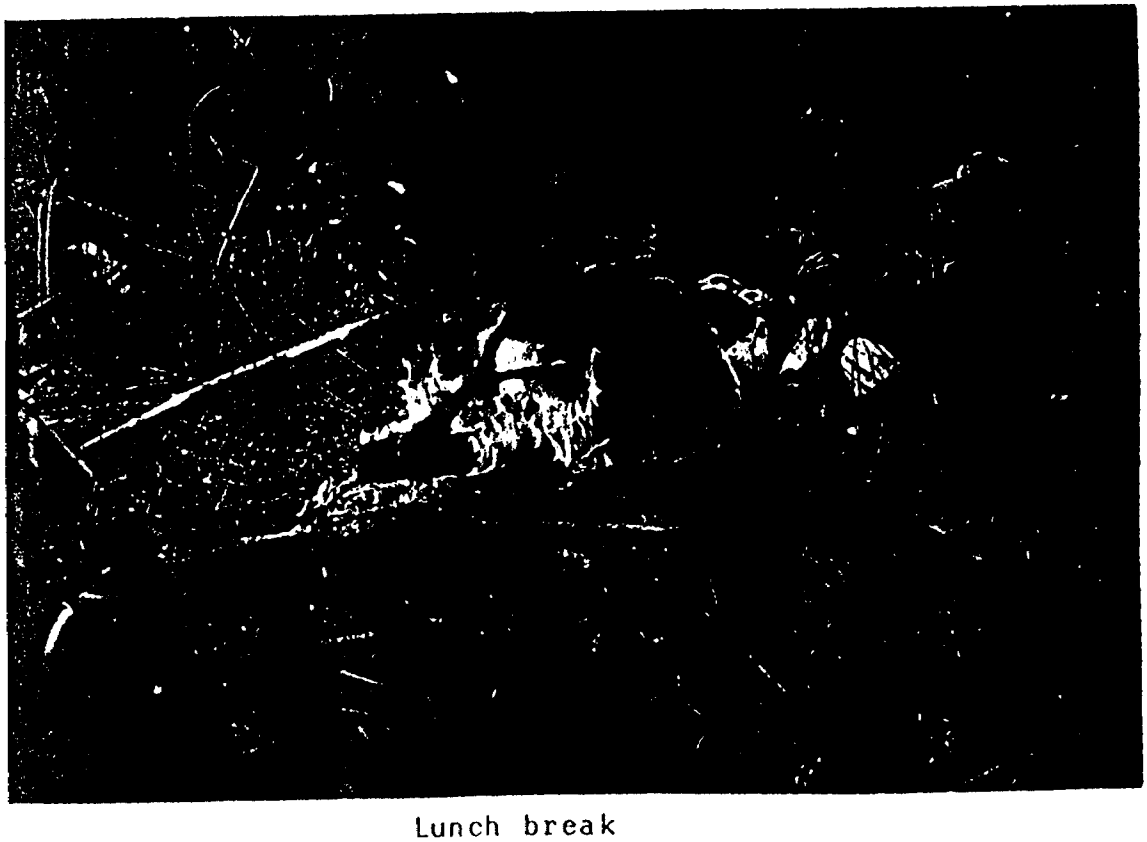
Trenching
Conductor axis

Sample 15-3

Anomaly 21A

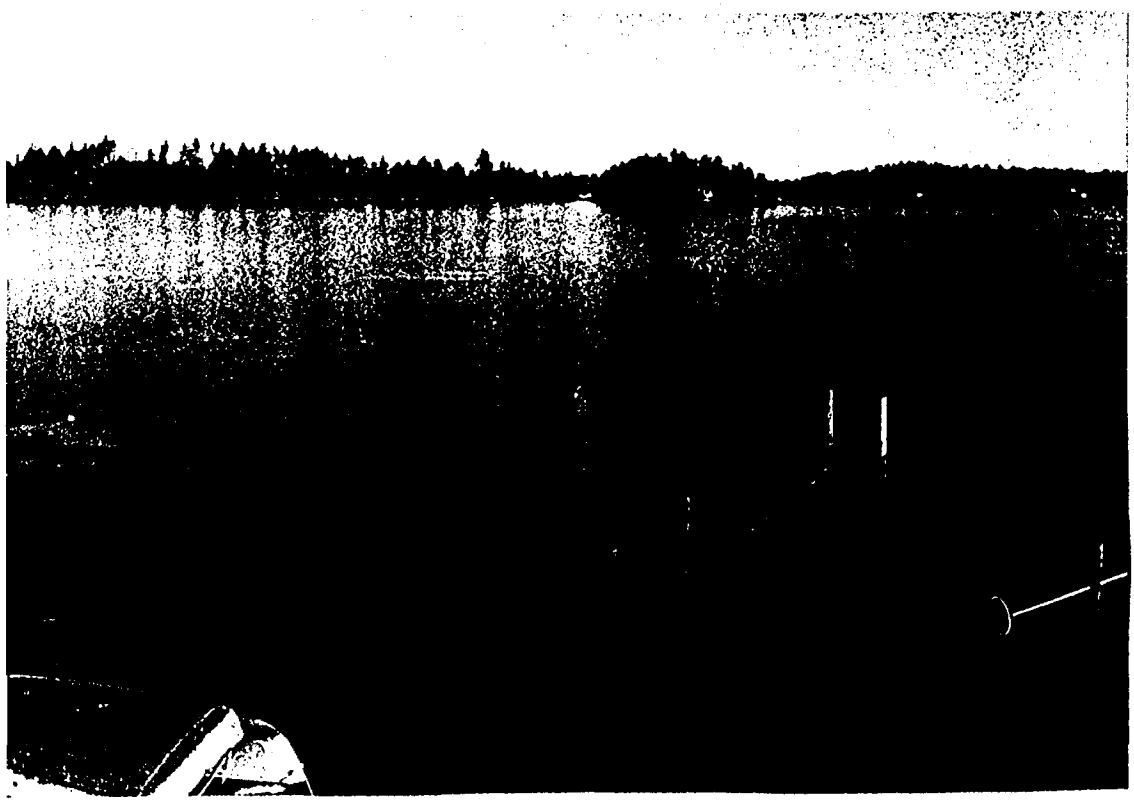
Anomaly 21B

Anomaly 21 Area



Lunch break

Goimg in



Freeze-up

Swastika Laboratories
P.O. Box 10
Swastika, Ontario
P0K 1T0

INVOICE

23856

12-05-90

Lalrock Resources Ltd
321-3701 Chesswood Dr
Downsview, Ontario

Same

1	1	Ag	4.500	18.00
17	1	Co	3.500	59.50
15	1	Cu	3.500	52.50
17	1	Ni	3.500	59.50
10	1	Zn	3.500	35.00
13	1	Pd	8.750	113.75
26	1	Sample Handling Cert#0T-0780-RG1	3.000	78.00

Net 30 Days

416.25

ONTO-DOMINION BANK

CURRENT ACCOUNT NUMBER

1990

No. 9

THE TORONTO-DOMINION BANK

CURRENT ACCOUNT

COMMERCIAL BANKING CENTRE
5555 KEELE ST. AT STEELES AVE. W.,
DOWNSVIEW, ONTARIO M3J 3B2

JAN. 14 1990

PAY TO THE ORDER OF Swastika Laboratories $63.13

The sum of 63 & 13 cts DOLLARS

KALROCK RESOURCES LIMITED

Lewis

⑆14822⑆004⑆ 1482⑈0593703⑈ ⑈0000006313⑈

DEPOSIT
DEP.
LL MATU
LL PURC

Final balance shown on this statement

Add amount of any deposits made after statement closing date

TORONTO DOMINION BANK
TORONTO, ONTARIO
0267-129

The Toronto-Dominion Bank
JAN 23 1990
Government Rd. W.
Kirkland Lake, Ont.

DEPOSIT TO CREDIT OF
SWASTIKA LABORATORIES
0813-0876806

No. 8

THE TORONTO-DOMINION BANK

CURRENT ACCOUNT

COMMERCIAL BANKING CENTRE
5555 KEELE ST. AT STEELES AVE. W.,
DOWNSVIEW, ONTARIO M3J 3B2

Dec 28 1990

PAY TO THE ORDER OF Swastika Laboratories $416.25

The sum of 416 dlrs 25 cts DOLLARS

KALROCK RESOURCES LIMITED

⑆14822⑈004⑆ 1482⑈0593703⑈ ⑈0000041625⑈

DEPOSIT TO THE CREDIT OF
SWASTIKA LABORATORIES
TR. #19282-004 ACC. #0613-0876806
Jan 2/91
23856

JA '91 02
TORONTO DOMINION BANK
TORONTO DATA CENTRE
TORONTO, ONTARIO

(5)

Acme Analytical Laboratories
P.O. Box 10
Ancaster, Ontario
L9G 3L0

23986

01-02-91

1 of 1

GST Registration Number: R 100294743

Kalrock Resources Ltd
321-3701 Chesswood Dr
Downsview, Ontario

Same

R050	5	1	As	3	6.300	31.50
	5	1	Cr	3	5.500	27.50
			Cert#0T-0790-RG1			
			3-GST @ 7 %, Excluded			4.13

at 1
Jan. 14/90

Net 30 Days

TOTAL 63.13

63.13

Joe-Anne Salo
General Delivery
Connaught Ont
P0N-1A0
(705) 363-2108

Ministry Northern Development
& Mines
Mining Lands Section
Sudbury Ontario.

Mr. C. Stevenson

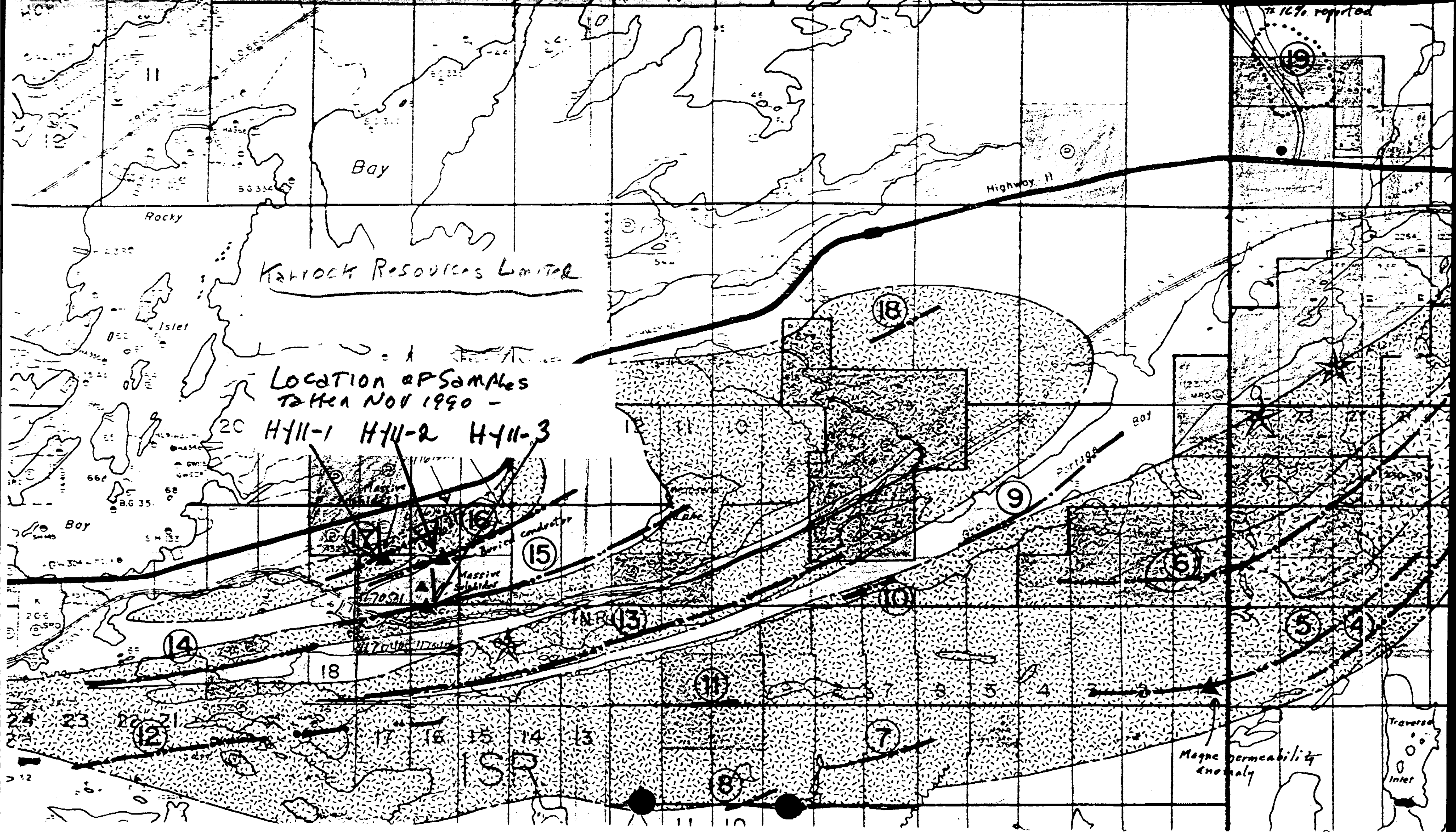
I've done the best I can with the notes. Enclosed please find 15 map sketches for the Kalrock Resources VEM Survey.

I hope they are what you are looking for, please let me know if they are not.

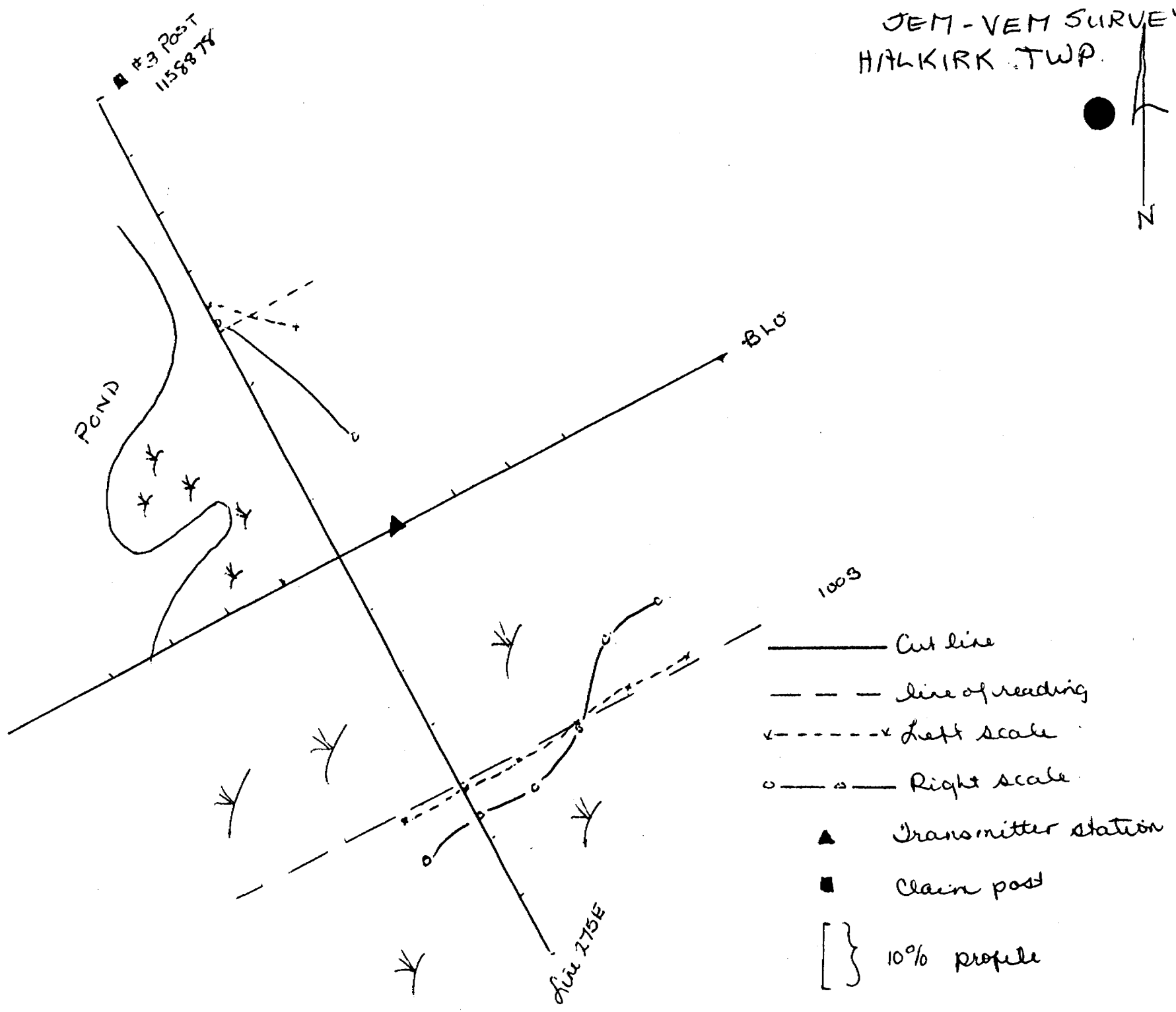
If you require anything else, I'm home Tues, Wed and Thurs mornings until 2:30 pm.

Have a nice day.

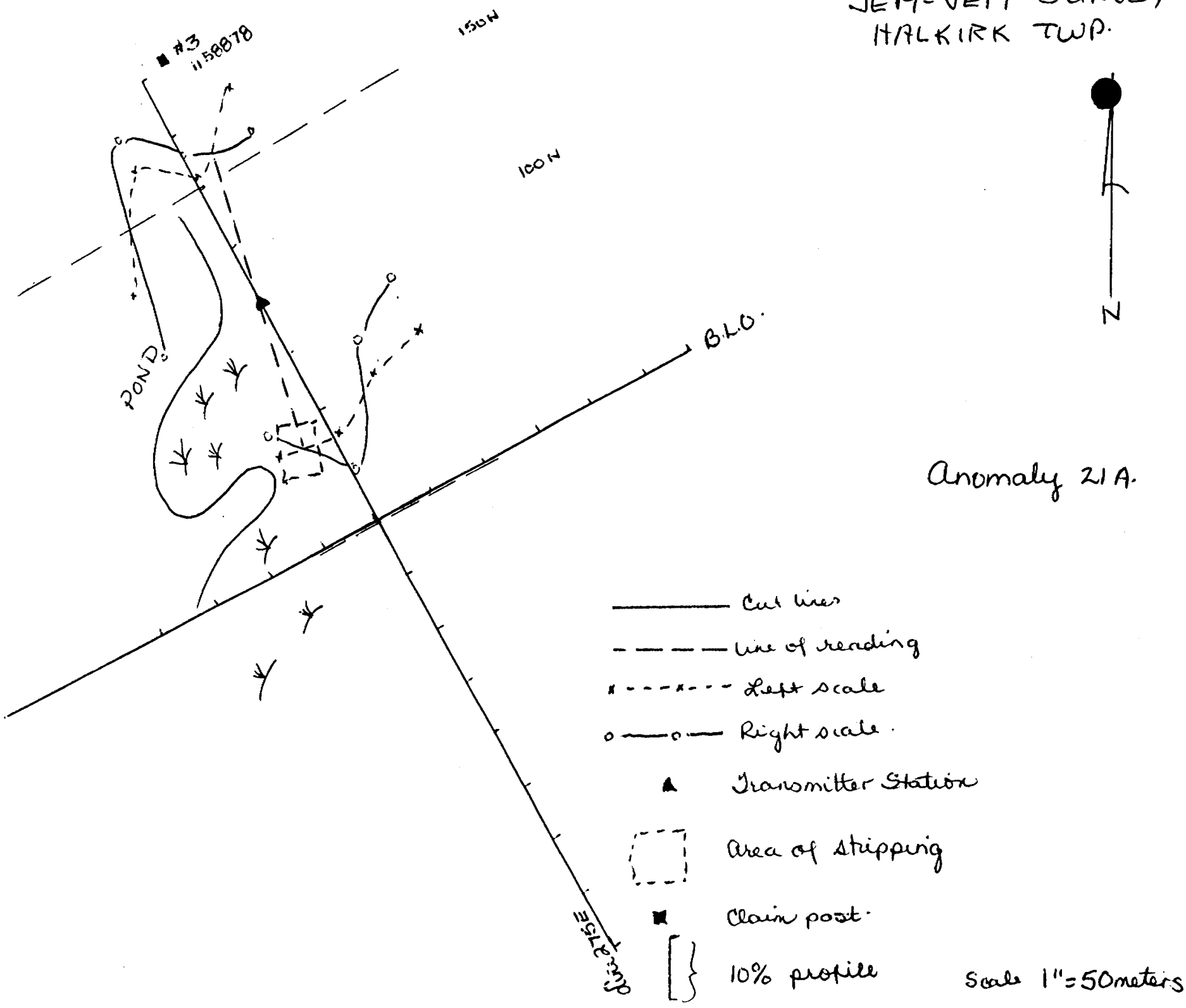
Joe Anne Salo



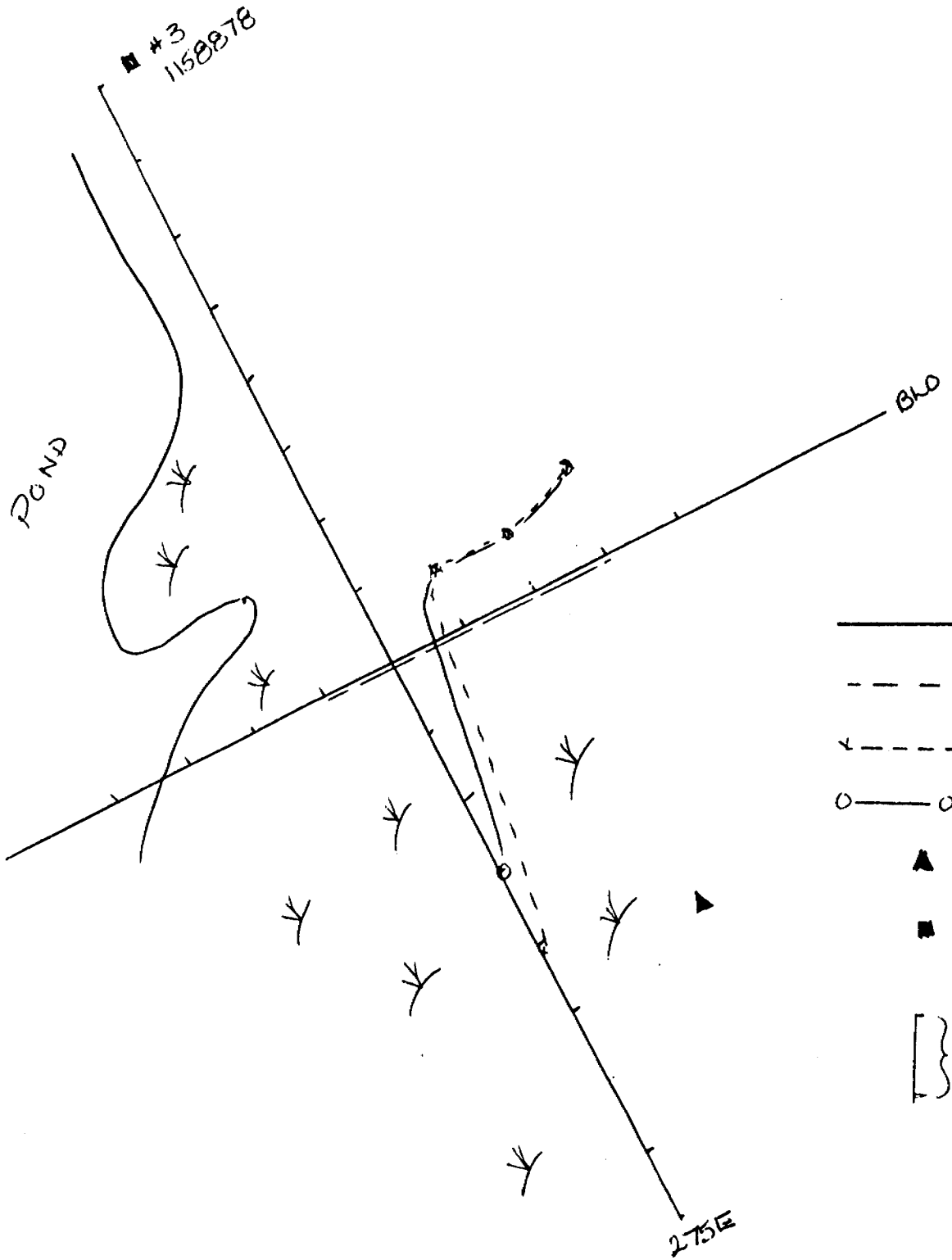
Kalrock Resources Limited
Location of Samples Taken Nov 1990 -
HY11-1 HY11-2 HY11-3
Highway 11
Bay
Rocky
Islet
Massive Sulphides
Portage
Bay
Magne permeability anomaly
Traverse
Inlet
16% reported
ISR


JEM-VEM SURVEY
HALKIRK TWP.
N
#3 POST
115878
POND
BLO
1003
Line 175E
Cut line
line of reading
Left scale
Right scale
Transmitter station
Claim post
10% profile
Scale 1"=50meters

JEM-VEM SURVEY
HALKIRK TWP.



JEM- VEM SURVEY
HALKIRK TOWNSHIP



Cut line

line of reading

Left scale

Right scale

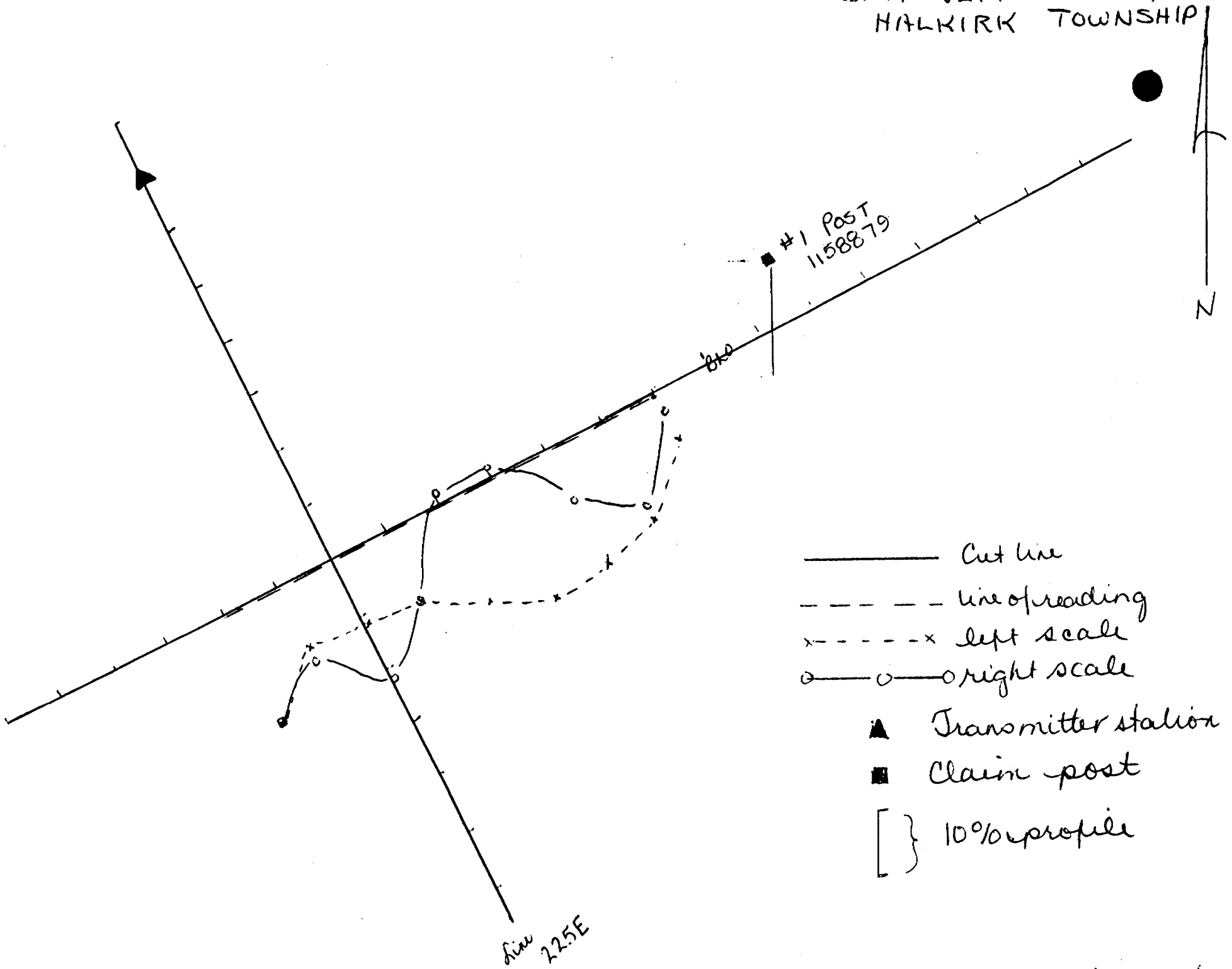
Transmitter Station

Claim post

10% profile

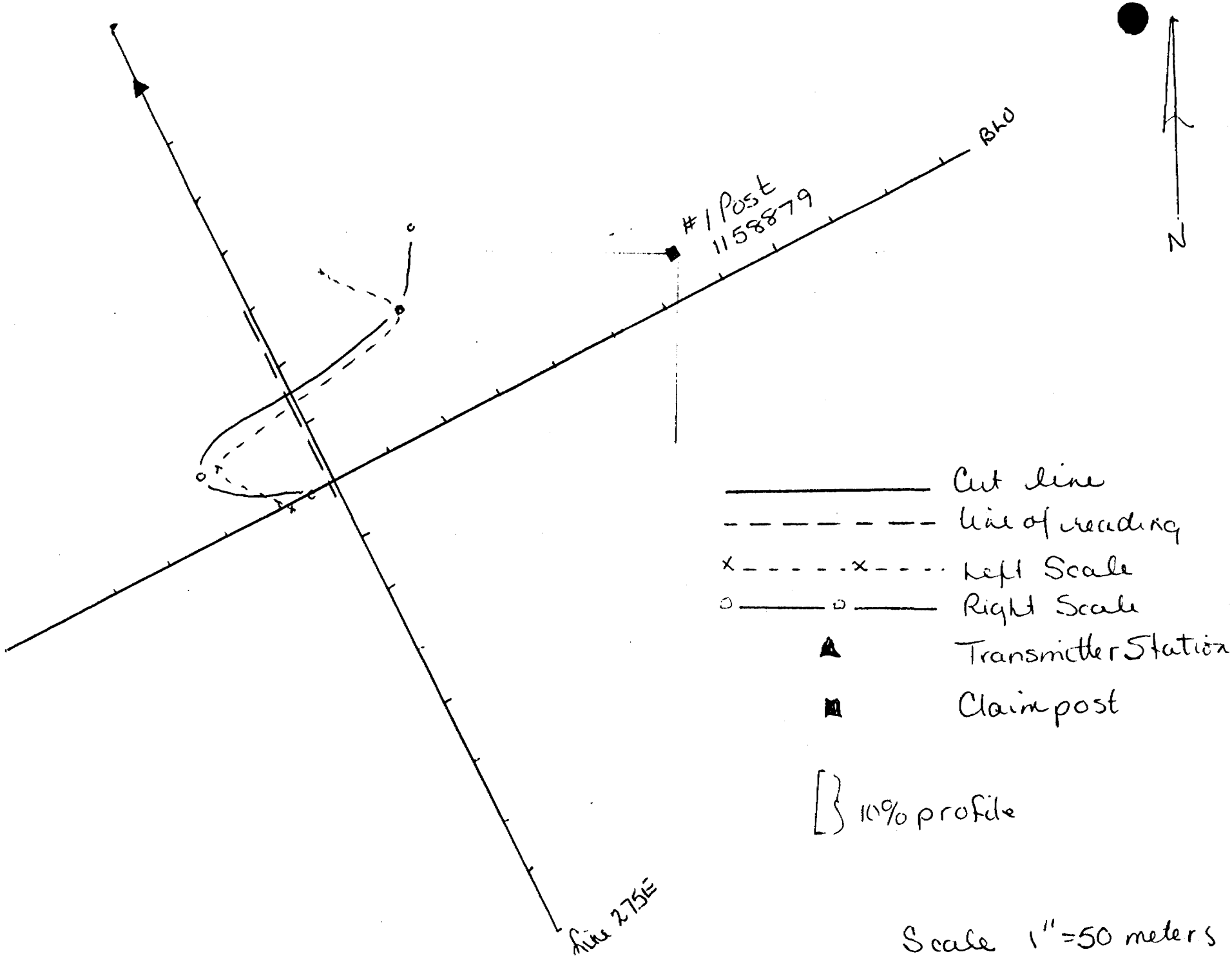
Scale 1" = 50 meters

JEM - VEM SURVEY
HALKIRK TOWNSHIP



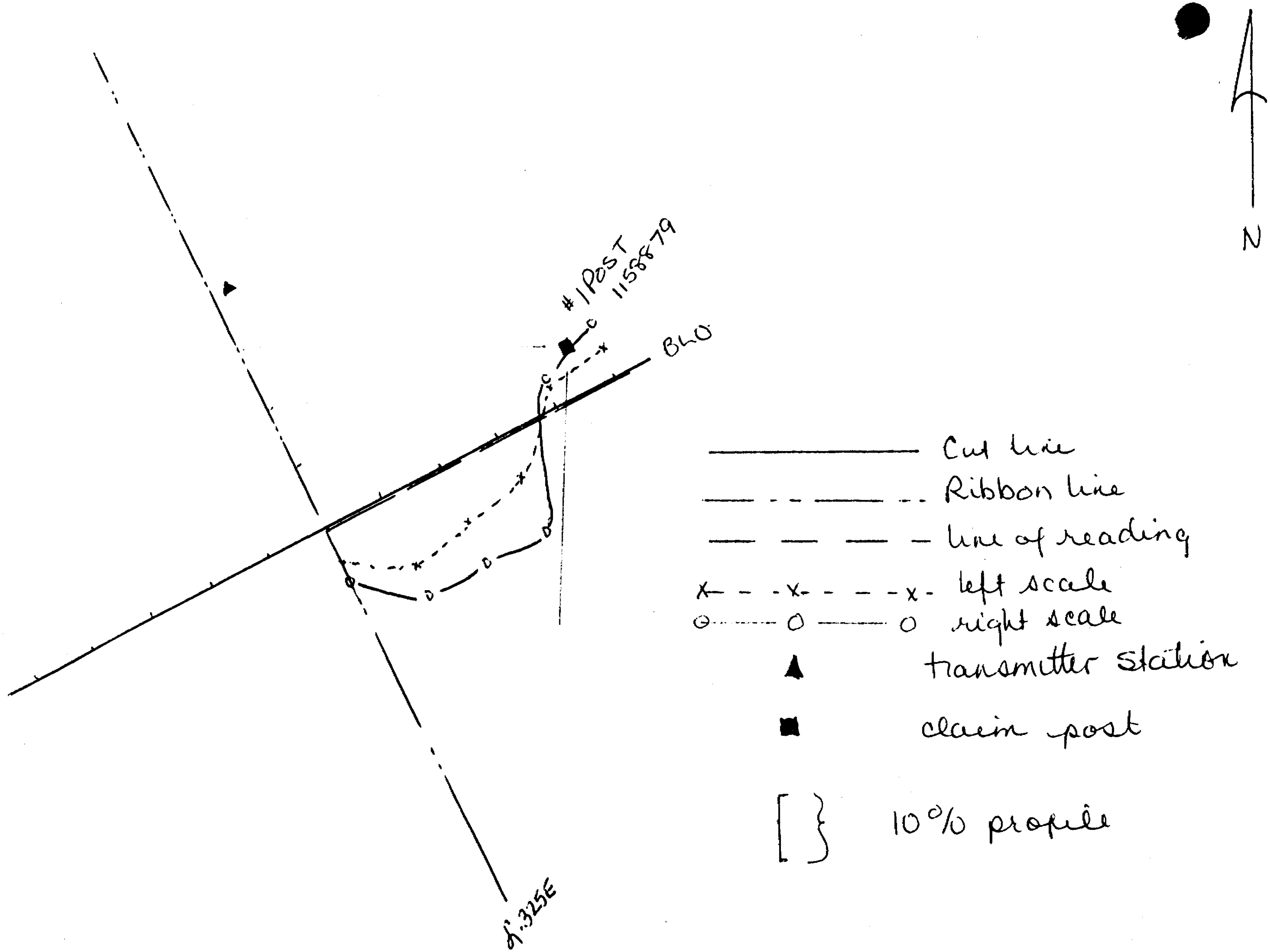
Scale 1" = 50 meters

JEM- VEM SURVEY
HALKIRK TOWNSHIP



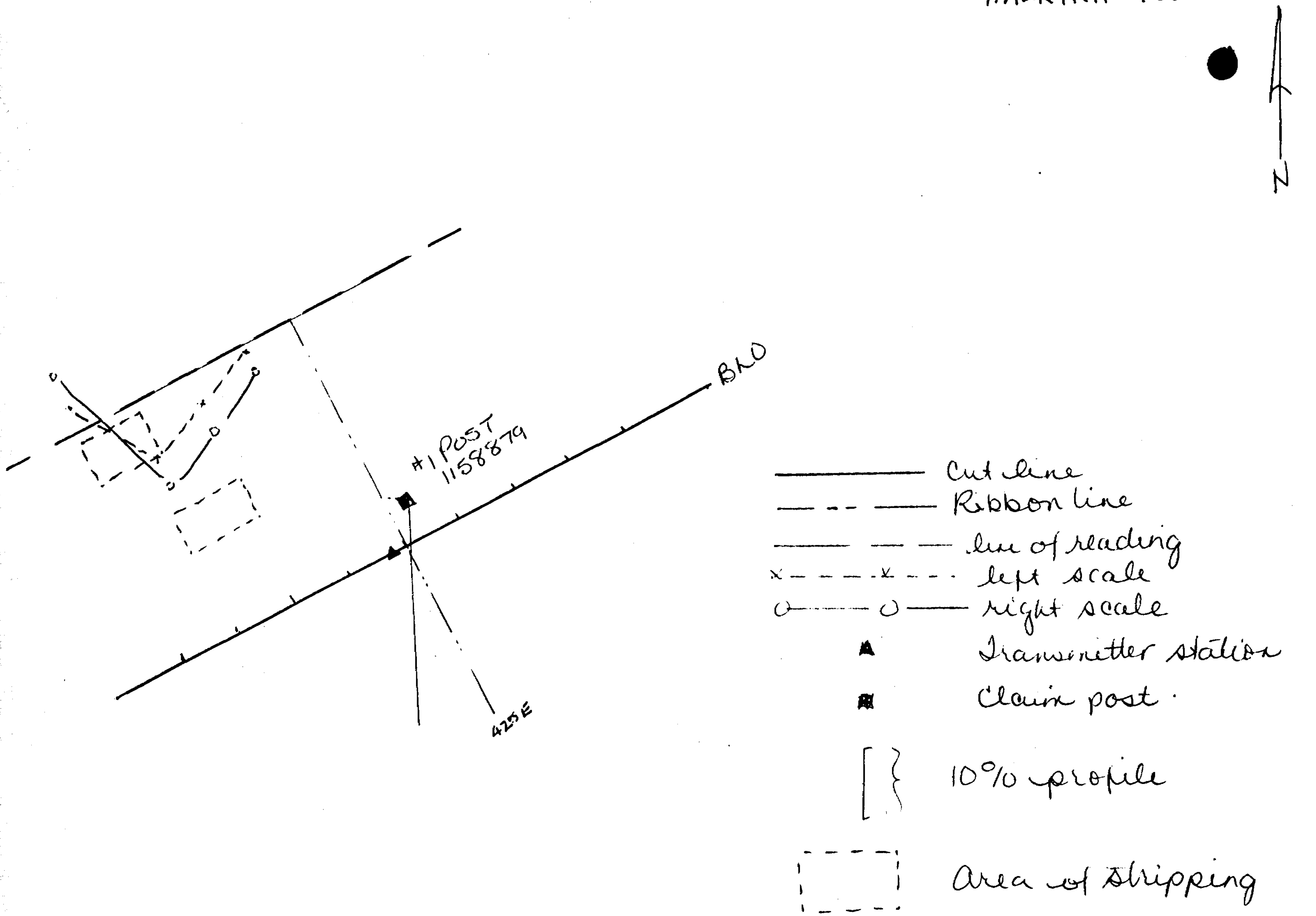
Scale 1" = 50 meters

JEM- VEM SURVEY
HALKIRK TWP.



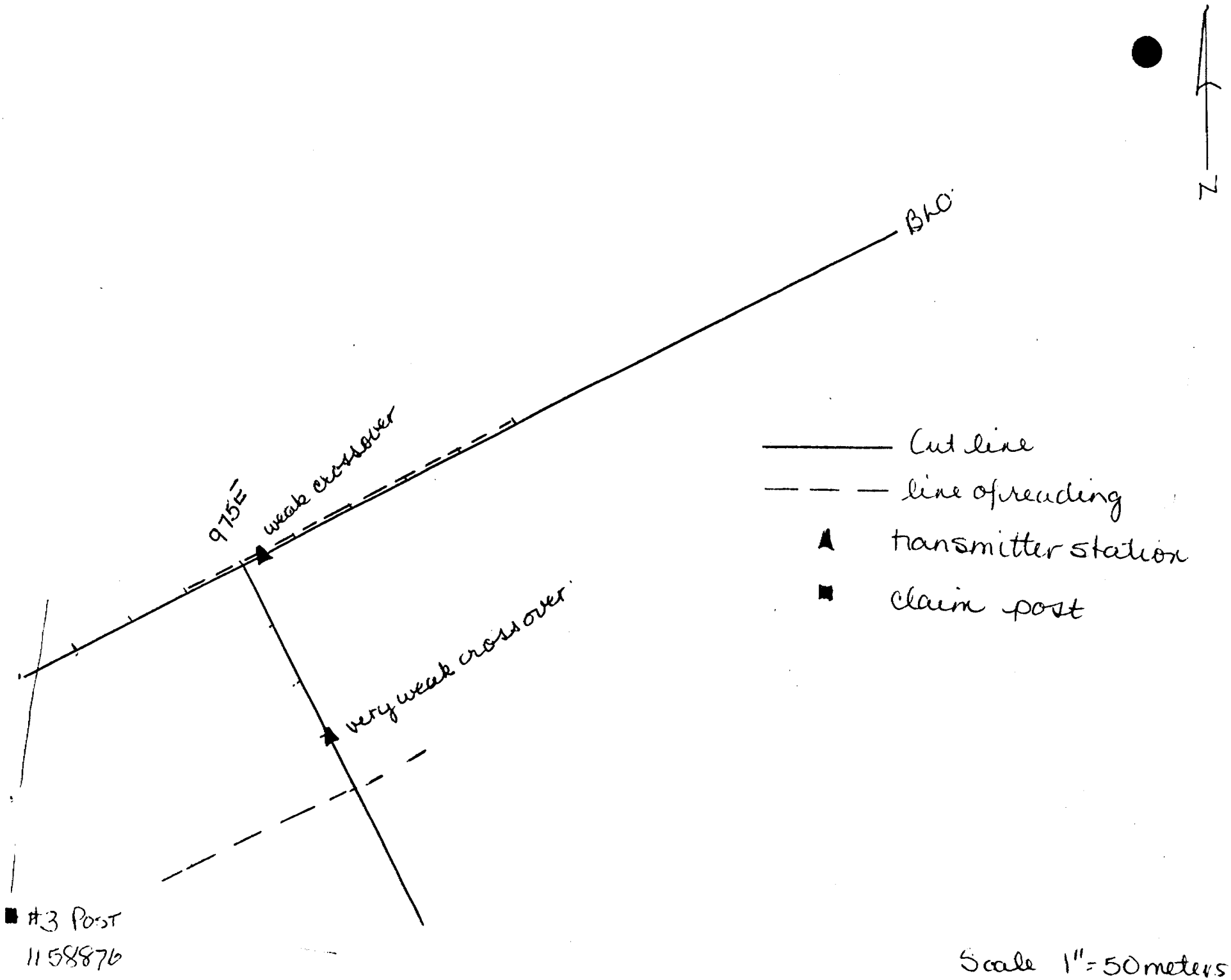
Scale 1" = 50 meters

JEM- VEM SURVEY
HALKIRK TOWNSHIP



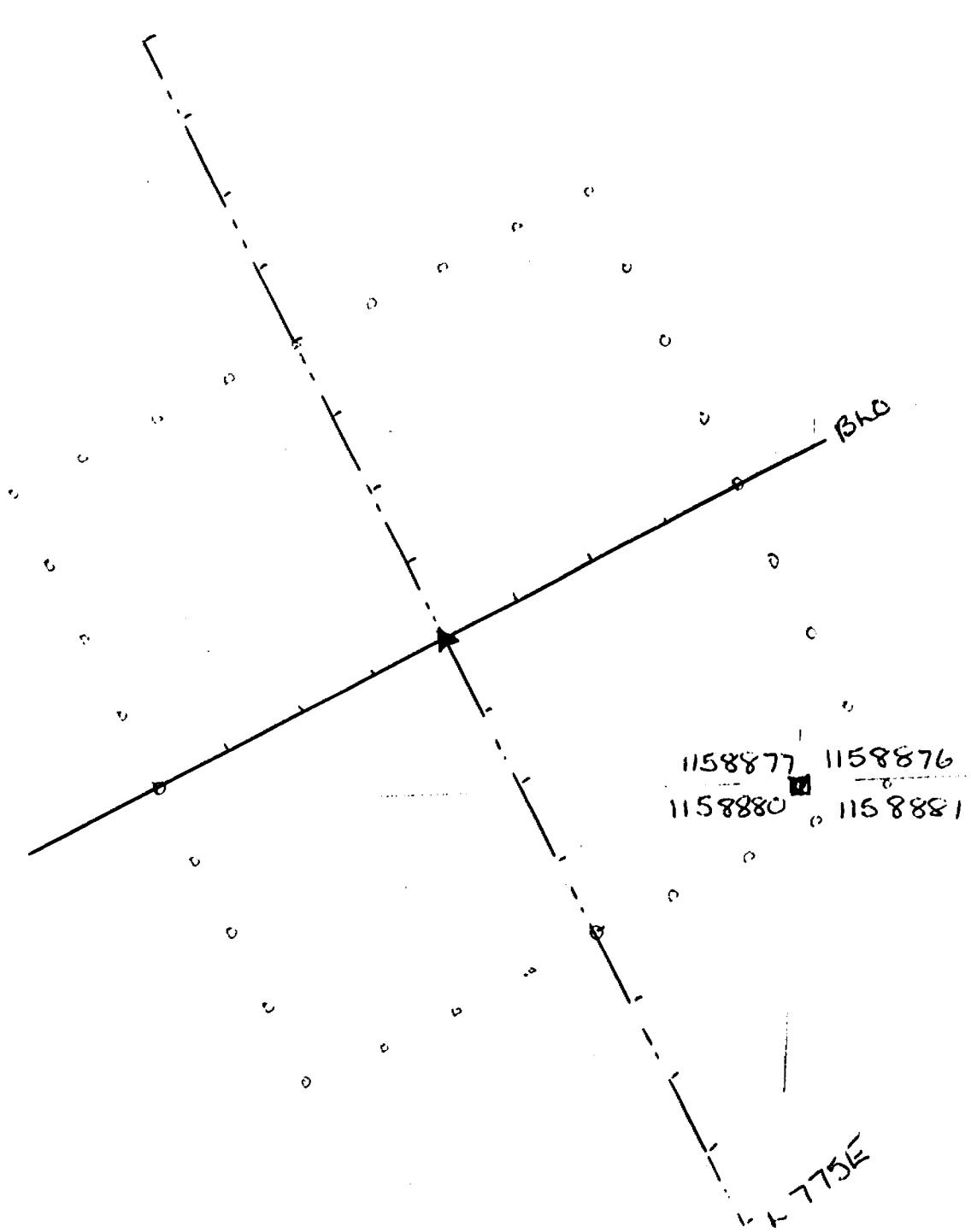
Scale 1" = 50 meters

JEM-VEM SURVEY
HALKIRK TOWNSHIP



Scale 1" = 50 meters

JEM-VEM SURVEY
HALKIRK TOWNSHIP



N

——— Cut line

—·—·— Ribbonline

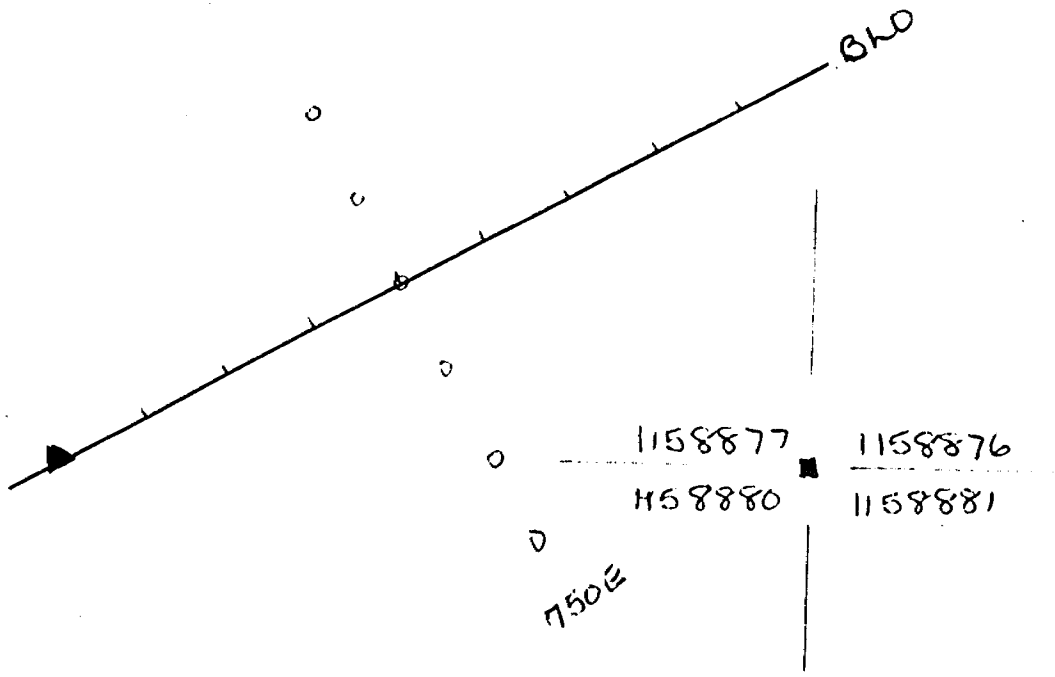
▲ transmitter station

○ location of reading
-no values recorded

■ claim post

Scale 1"=50 meters

JEM-VEM SURVEY
HALKIRK TOWNSHIP



N

cut line

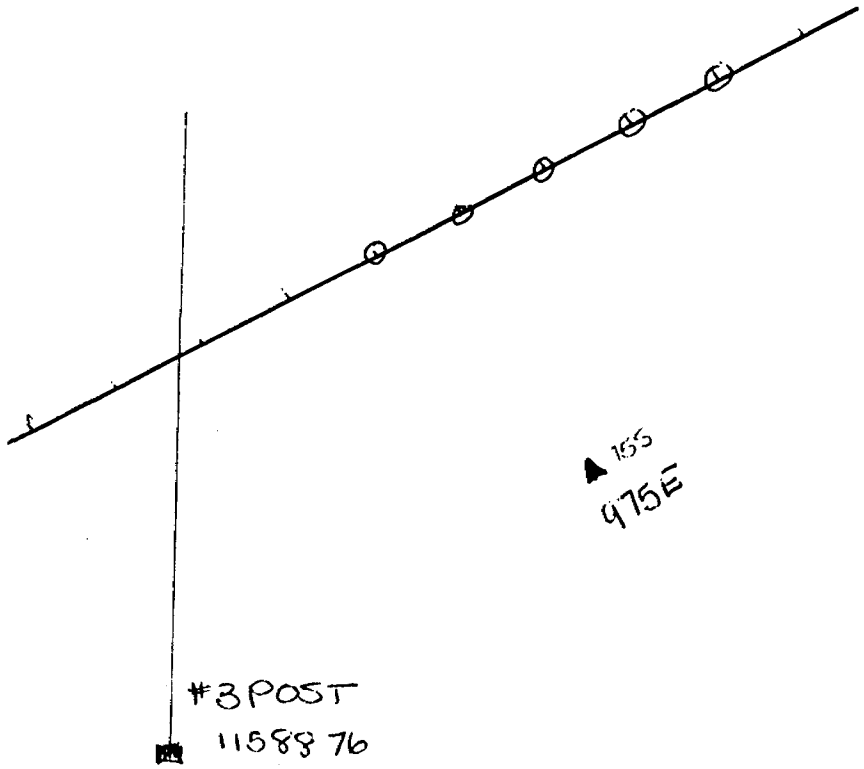
reading station
-no values recorded

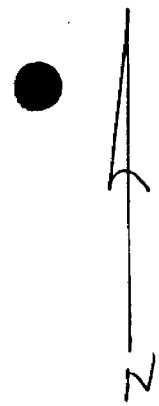
transmitter station

claim post

Scale 1"=50 meters

JEM-VEM SURVEY
HALKIRK TOWNSHIP





——— cut line

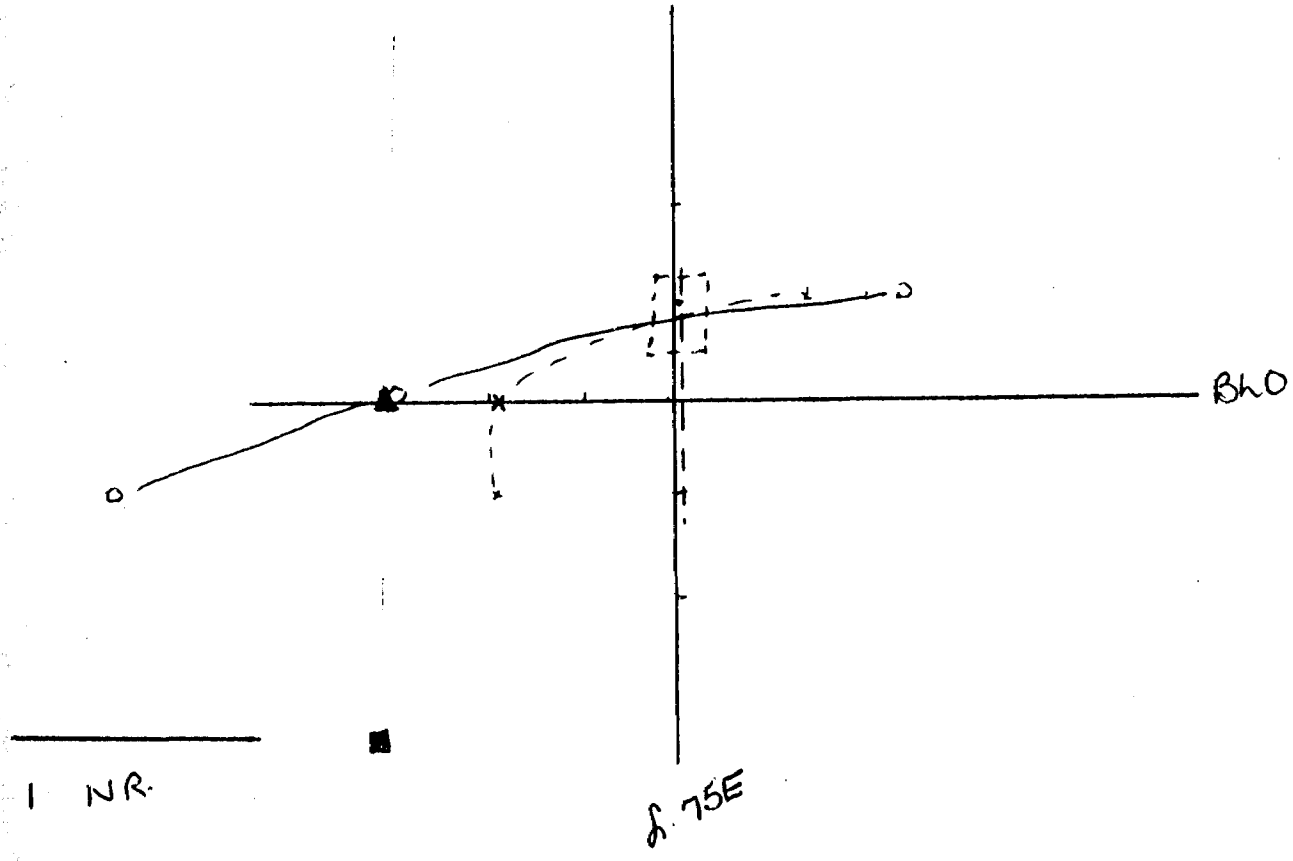
▲ transmitter station

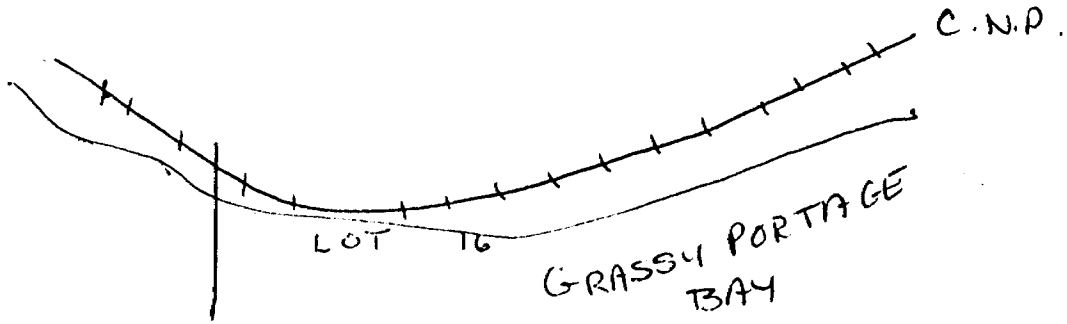
■ claim post

ooo reading locations
-no values recorded

Scale 1" = 50 meters

VEM SURVEY
WATTEN TWP.





Cut line
Line of reading
x— — x— — left scale
O— — O— — right scale
transmitter station
located claim post
Stripped area

1"=50meters

Note: Anomalies 16 + 17 were read with the VEM however no dept scale readings were recorded. The location of the crossovers are shown on the sketches in original report (copy included).

A transmitter set up and control base line were also done on claim 1158856 in Naburn Township, with no significant readings no notes were taken.

Ontario

900

Ministry of Northern Development and Mines

Ministère du Développement du Nord et des Mines

Geoscience Approvals Section
Mining Lands Branch
159 Cedar Street, 4th Floor
Sudbury, Ontario
P3E 6A5

Toll Free: 1-800-465-3880
Telephone: (705) 670-7264
Fax: (705) 670-7262

December 3, 1991

Our File: 2.14133
Transaction #: W.9110.077, W.9110.78 & 79

Mining Recorder
Ministry of Northern Development
and Mines
808 Robertson Street
P.O. Box 5200
Kenora, Ontario
P9N 3X9

Dear Sir/Madam:

RE: NOTICES OF INTENT DATED OCTOBER 31, 1991 FOR EXPENDITURES AND AN ELECTROMAGNETIC SURVEY ON MINING CLAIMS K 1130462 ET AL. IN HALKIRK TOWNSHIP. (+WATTEN).

The assessment work credits as listed on the Notice of Intent for Report of Work W9110.079 have been approved as of the above date.

No credits have been granted for Reports of Work W9110.077 and W9110.78 as the information requested was not submitted within the 30 day time limit as outlined on the Notice of Intent.

Please indicate this on your records.

Yours sincerely,

Ron C. Gashinski
Senior Manager, Mining Lands Branch
Mines and Minerals Division

CDS/jl
Enclosures:

cc: Joe-Anne Salo, Connaught, Ont.
Mr. A.J. Lewis, Downsview, Ontario
Resident Geologist, Kenora, Ontario
✓ Assessment Files Office, Toronto, Ontario
Resident Geologist, Kenora, Ontario

Ministry of Northern Development and Mines

Ontario

Technical Assessment Work Credits

File: 2.14133

Date: Oct. 31, 1991

Mining Recorder's Report of Work No.: W.9110.077

Recorded Holder: Kalrock Resources Limited

Township or Area: Halkirk Township

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical	K.1158876-881 incl.
Electromagnetic 0.0 days	
Magnetometer ____ days	
Radiometric ____ days	
Induced polarization ____ days	
Other ____ days	
Section 77 (19) See "Mining Claims Assessed" column	
Geological ____ days	
Geochemical ____ days	
Man days ☒ Airborne ☐	
Special provision ☐ Ground ☒	
☐ Credits have been reduced because of partial coverage of claims.	
☐ Credits have been reduced because of corrections to work dates and figures of applicant.	

Special credits under section 77 (16) for the following mining claims

No credits have been allowed for the following mining claims

☐ not sufficiently covered by the survey ☐ insufficient technical data filed

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical - 80; Geologocal - 40; Geochemical - 40; Section 77(19) - 60.

Ministry of Northern Development and Mines

Ontario

Technical Assessment Work Credits

File 2.14133

Date Oct. 31, 1991

Mining Recorder's Report of Work No. W.9110.078

Recorded Holder: A.J. Lewis

Township or Area: Halkirk Township

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical	K.1130471-472 1130477-479 incl.
Electromagnetic 0.0 days	
Magnetometer ____ days	
Radiometric ____ days	
Induced polarization ____ days	
Other ____ days	
Section 77 (19) See "Mining Claims Assessed" column	
Geological ____ days	
Geochemical ____ days	
Man days [X] Airborne [ ]	
Special provision [ ] Ground [X]	
[ ] Credits have been reduced because of partial coverage of claims.	
[ ] Credits have been reduced because of corrections to work dates and figures of applicant.	

Special credits under section 77 (16) for the following mining claims

No credits have been allowed for the following mining claims

[ ] not sufficiently covered by the survey [ ] insufficient technical data filed

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical - 80; Geological - 40; Geochemical - 40; Section 77(19) - 60.

Ontario

Ministry of Northern Development and Mines

Technical Assessment Work Credits

File: 2.14133

Date: Oct. 31, 1991

Mining Recorder's Report of Work No.: W.9110.079

Recorded Holder: A.J. Lewis

Township or Area: Halkirk Township + WATTEN.

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical	$ 379.50 spent on assaying samples taken from Mining Claims:
Electromagnetic ____ days	K.1130462
Magnetometer ____ days	1158876-879 incl. ✓
Radiometric ____ days	1158881-882 ✓
Induced polarization ____ days	1170406 ✓
Other ____ days	1170531 ✓
Section 77 (19) See "Mining Claims Assessed" column	
Geological ____ days	25.3 days credit allowed which may be grouped in accordance with Section 76(6) of the Mining Act R.S.O. 1980.
Geochemical ____ days	
Man days ☐ Airborne ☐	
Special provision ☐ Ground ☐	
☐ Credits have been reduced because of partial coverage of claims.	
☐ Credits have been reduced because of corrections to work dates and figures of applicant.	

Special credits under section 77 (16) for the following mining claims

No credits have been allowed for the following mining claims

☐ not sufficiently covered by the survey ☐ insufficient technical data filed

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical - 80; Geologocal - 40; Geochemical - 40; Section 77(19) - 60.

Ministry of Northern Development and Mines
Ontario

DOCUMENT NO. W 9110·077

Report of Work
(Geophysical, Geological and Geochemical Surveys)

Mining Act

Instructions
- Please type or print.
- Refer to Section 77, the Mining Act for assessment work requirements and maximum credits allowed per survey type.
- If number of mining claims traversed exceeds space on this form, attach a list.
- Technical Reports and maps in duplicate should be submitted to Mining Lands Section, Mineral Development and Lands Branch.

Type of Survey(s)	Mining Division	Township or Area
AEM ~~Investigations~~	Kenora	Halkirk Township M-2081

Recorded Holder(s): Kalrock Resources Limited 2.14133
Prospector's Licence No.: T1361
Address: 321-3701 Chesswood Dr., (Downsview) Toronto Ont M3J 2P6
Telephone No.: 638-1505
Survey Company:
Name and Address of Author (of Geo-Technical Report): JG Sato, General Delivery Connaught
Date of Survey (from & to): 04 11 90 13 11 90 (Day Mo. Yr. Day Mo. Yr.)

Credits Requested per Each Claim in Columns at right

Special Provisions	Geophysical	Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	- Electromagnetic	
	- Magnetometer	
For each additional survey: using the same grid:	- Other	
Enter 20 days (for each)	Geological	
	Geochemical	
Man Days	Geophysical	Days per Claim
Complete reverse side and enter total(s) here	- Electromagnetic	16.5
	- Magnetometer	
	- Other	
	Geological	~~[illegible]~~
	Geochemical	
Airborne Credits		Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	
	Magnetometer	
	Other	

Total miles flown over claim(s).

Date	Recorded Holder or Agent (Signature)
MAY 12/91	JG Sato

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Number	Mining Claim Prefix	Number	Mining Claim Prefix	Number
K	1158876				
K	1158877				
K	1158878				
K	1158879				
K	1158880				
K	1158881				

Total number of mining claims covered by this report of work. 6.

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in this Report of Work, having performed the work or witnessed same during and/or after its completion and annexed report is true.

Name and Address of Person Certifying: Joe-Anne Sato - General Delivery Connaught P0N 1A0
Telephone No.: 363-2108
Date: March 14/91
Certified By (Signature): JG Sato

For Office Use Only

Total Days Cr. Recorded	Date Recorded	Mining Recorder
99	May 3/91 Mar 25/91	[signature]
	Date Approved as Recorded	Provincial Manager, Mining Lands
	"SEE REVISED WORK STATEMENT"	

Received Stamp: RA... ED FIRST MAR 25 1991 8:15 AM PM 123456

1362 (89/06)

Ministry of Northern Development and Mines

Ontario

DOCUMENT No. W0110.78

2.14133

Report of Work
Mining Act
(Geophysical, Geological and Geochemical Surveys)

Instructions
- Please type or print.
- Refer to Section 77, the Mining Act for assessment work requirements and maximum credits allowed per survey type.
- If number of mining claims traversed exceeds space on this form, attach a list.
- Technical Reports and maps in duplicate should be submitted to Mining Lands Section, Mineral Development and Lands Branch.

Type of Survey(s)	Mining Division	Township or Area
AEM Investigations	Kenora	Holbrik Twp

Recorded Holder(s)	Prospector's Licence No.
~~Kabrook Resources Limited~~ A.J. LEWIS	~~T-1357~~ P.3648O

Address	Telephone No.
3213701 Chesswood Drive Downsview	638-1505

Survey Company

Name and Address of Author (of Geo-Technical Report)	Date of Survey (from & to)
J.J. Sala - Gen Del Connaught Ont	From: Day 4 Mo. 6 Yr. 90 To: Day 20 Mo. 11 Yr. 90

Credits Requested per Each Claim in Columns at right

Special Provisions		Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	Geophysical - Electromagnetic	
	Geophysical - Magnetometer	
For each additional survey: using the same grid: Enter 20 days (for each)	Geophysical - Other	
	Geological	
	Geochemical	
Man Days Complete reverse side and enter total(s) here	Geophysical - Electromagnetic	17.56
	Geophysical - Magnetometer	
	Geophysical - Other	
	Geological ~~100 days~~	
	Geochemical	
Airborne Credits Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	
	Magnetometer	
	Other	

Total miles flown over claim(s).

Date	Recorded Holder or Agent (Signature)
MAY 12/91	J.J. Sala

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Mining Claim Number	Mining Claim Prefix	Mining Claim Number	Mining Claim Prefix	Mining Claim Number
K	1130471				
K	1130472				
K	1130477				
K	1130478				
K	1130479				

Total number of mining claims covered by this report of work.

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in this Report of Work, having performed the work or witnessed same during and/or after its completion and annexed report is true.

Name and Address of Person Certifying	Telephone No.	Date	Certified By (Signature)
J.J. Sala - General Delivery Connaught	363-2108	March 19/91	J.J. Sala

For Office Use Only

Total Days Cr. Recorded	Date Recorded	Mining Recorder
87.8	May 31/91	
	Date Approved as Recorded	Provincial Manager, Mining Lands
	"SEE REVISED WORK STATEMENT"	

Received Stamp

KENORA MINING DIV. RECEIVED FIRST MAR 25 1991 AM 8:45 PM 7 8 9 10 11 12 1 2 3 4 5 6

1382 (89/06)

Ministry of Northern Development and Mines

Ontario

DOCUMENT No. W9110.79

2.14133

Report of Work
Mining Act (Expenditures, Subsection 77(19))

Instructions
- Please type or print.
- Refer to Subsection 77(19), the Mining Act for assessment work requirements and maximum credits allowed under this Subsection.
- Technical Reports, maps and proof of expenditures in duplicate should be submitted to Mining Lands Section, Mineral Development and Lands Branch.

Type of Work Performed	Mining Division	Township or Area
Assays	Kenora	Nalbin Township

Recorded Holder	Prospector's Licence No.
~~Kabook Resources Limited~~ A.J. LEWIS	~~T-7362~~ A.36480

Address	Telephone No.
321-3701 Chesswood Dr. Downsview	638-1505

Work Performed By: Swastika Laboratories

Name and Address of Author (of Submission)	Date(s) When Work was Performed: From (Day, Mo., Yr.)	To (Day, Mo., Yr.)
J.G. Salo	29 10 90	30 11 90

All the work was performed on Mining Claim(s): Indicate no. of days performed on each claim. *See Note No. 1 on reverse side

Mining Claim	No. of Days	Mining Claim	No. of Days	Mining Claim	No. of Days	Mining Claim	No. of Days	Mining Claim	No. of Days	Mining Claim	No. of Days

Instructions
Total days credits may be distributed at claim holder's choice. Enter number of days credits per claim in the expenditure days credit column (below).

Calculation of Expenditure Days Credits: Total Expenditures $ 479.38 ÷ 15 = Total Days Credits 31.9

Total Number of Mining Claims Covered by this Report of Work: 3

Mining Claims (List in numerical sequence). If space is insufficient, attach schedules with required information

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.	Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.	Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.	Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.
K	1130478	8.3									
K	1130480	20									
K	1130476	3.6									

Total Number of Days Performed	Total Number of Days Claimed	Total Number of Days to be Claimed at a Future Date

Certification of Beneficial Interest *See Note No. 2 on reverse side

I hereby certify that, at the time the work was performed, the claims covered in this report of work were recorded in the current recorded holder's name or held under a beneficial interest by the current recorded holder.	Date	Recorded Holder or Agent (Signature)
	MAY 12/91	J.G. Salo

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Address of Person Certifying	Telephone No.	Date	Certified By (Signature)
J.G. Salo - General Delivery Connaught	363 2108	Mar 14/91	J.G. Salo

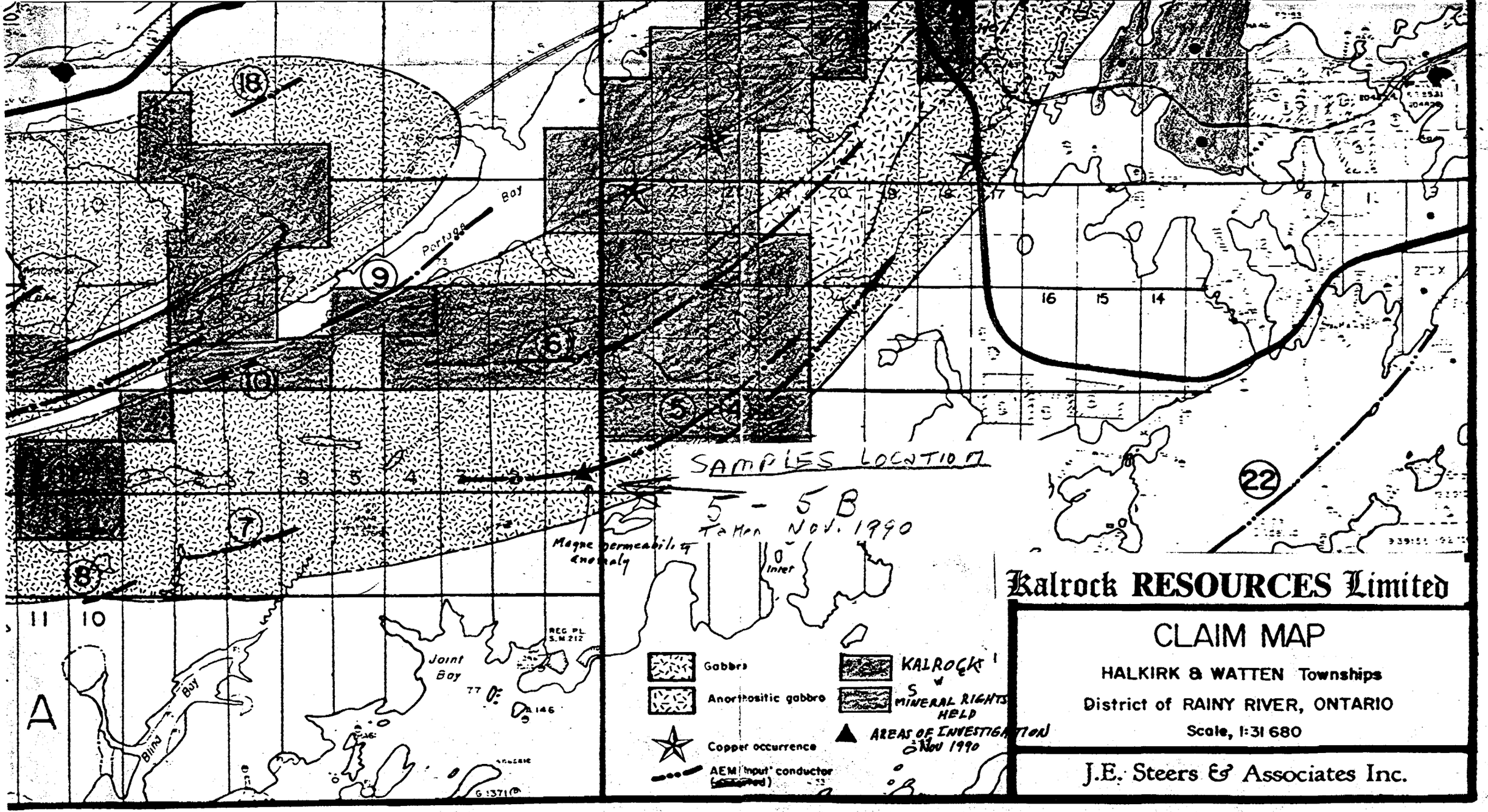
For Office Use Only

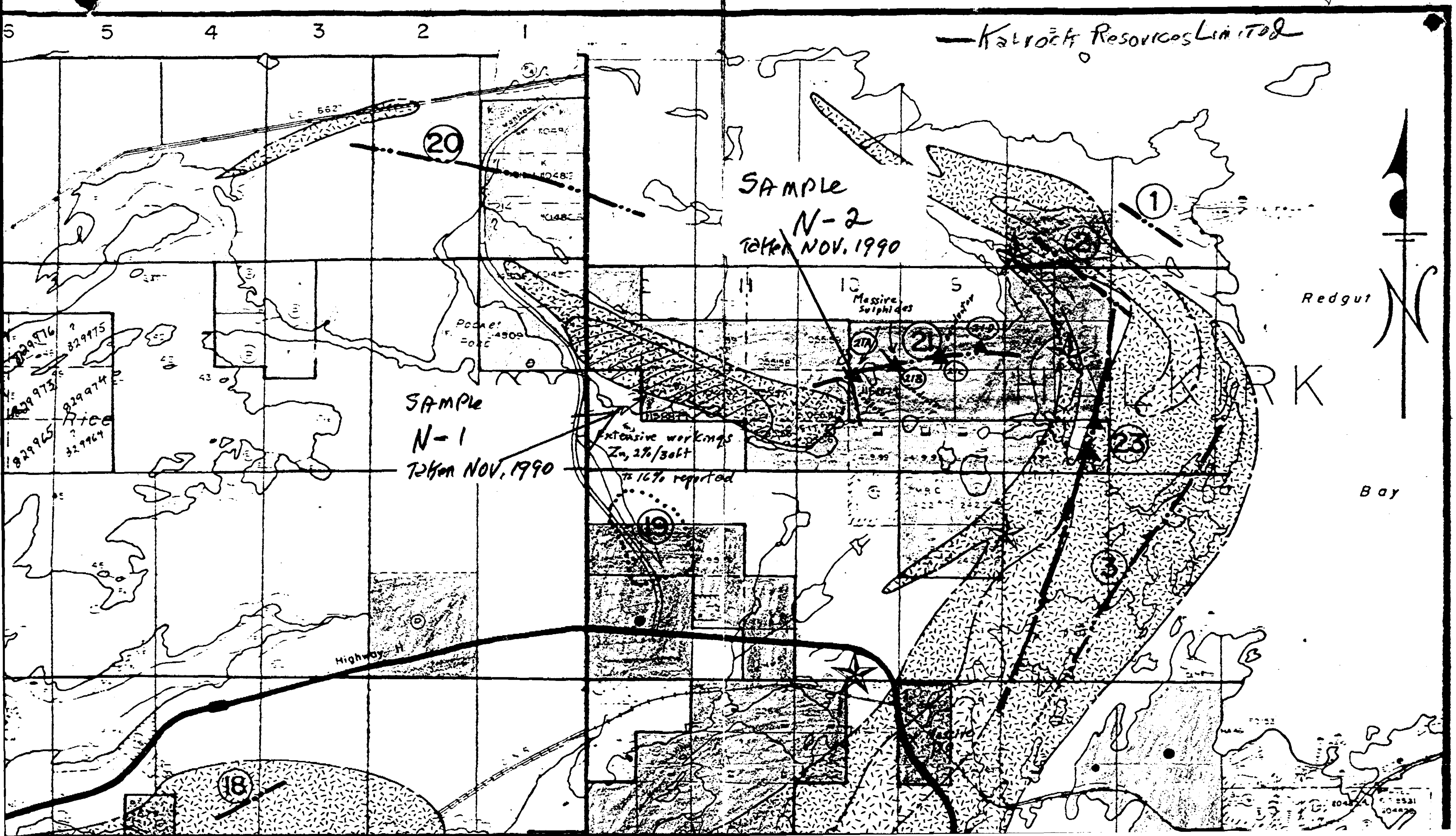
Total Days Cr. Recorded	Date Recorded	Mining Recorder
31.9	May 31/91	
	Date Approved as Recorded	Provincial Manager, Mining Lands

Received Stamp: KENORA MINING DIV. RECEIVED MAR 25 1991 AM 7 8 9 10 11 12 1 2 3 4 5 6 PM

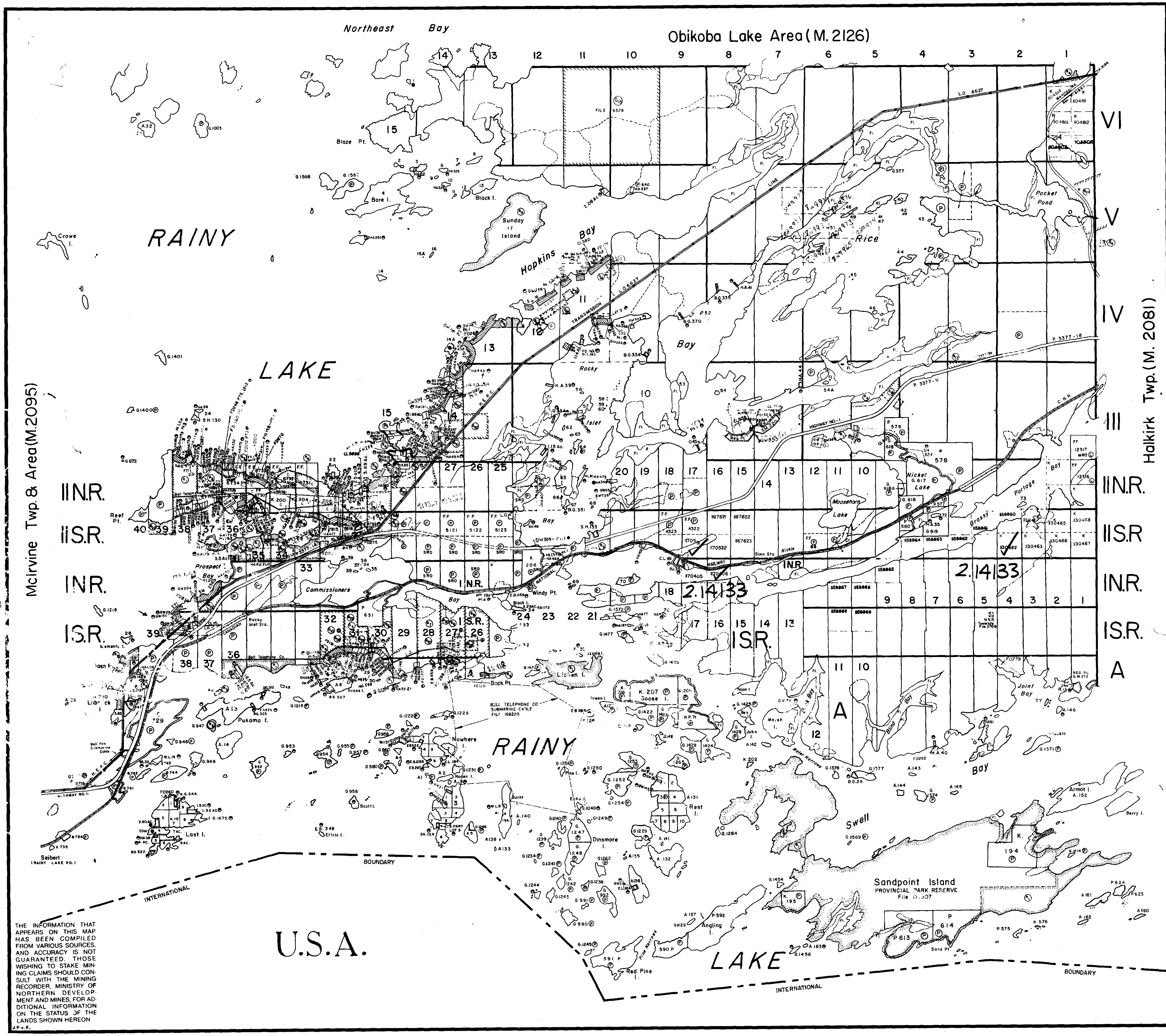
A7R (89/04)

Date	Employee	Hours	Total	Category	Group	Work Performed
~~Aug~~ 1990 Sept 4	Joe Anne	7:30 - 5:45	10 hrs 15 min	Technical	2	Prospecting from #2 of 1158859 to #1 of 1130480 - sampling of quartz vein
Sept 5	Joe Anne	6:45 - 5:10	10hrs 25min	"	2	Prospecting from #2 of 1158854 to #1 of 1158853 to #4 of 1158853 to #1 of 115855 to #3 of 1158855 to #2 of 1158854 - samples of magnetic area - samples outcrop by beaver pond
Sept 6	Joe Anne	7:15 - 5:-	9hrs 45min	"	2	Prospecting from #2 of 1158859 to #3 of 1158856 Prospecting rusty gossan on road
Sept 7	Joe Anne	7:05 - 6:15	11hrs 10min	"	2	Prospecting from #3 of 1130471 to #4 of 1130469
Sept 8	Joe Anne	7:45 - 6:-	10hrs 15mins	"	2	Prospecting from #4 of 1130469 to #1 of 1130471 to #2 of 1130473
Sept 9	Joe Anne	6:50 - 5:-	10hrs 10mins	"	2	Prospecting from #1 of 1130468 to #4 of 1130464 to #1 of 1130462 - samples of areas leaving swamp
Sept 10	Joe Anne	7:20 - 5:15	9hrs 55mins	"	2	Prospecting from #1 of 1130462 to #4 of 1130461 lake shore to #1 of 1158865 - samples -
Sept 11	Joe Anne	8:30 - 4:45	8hrs 15mins	"	2	Prospecting from #1 of 1158865 to #2 of 1158866 to #3 of 1158865 to #2 of 1158866 to #1 of 1158867 to #4 of 1158867 - samples
			80 hours 10 mins			


SAMPLES LOCATION
5 - 5B
Taken Nov. 1990
Magnetic permeability Anomaly
Outer
Inner
Portage Bay
Joint Bay
Blind Bay
REG. PL. S.M. 212
Gabbro
Anorthositic gabbro
Copper occurrence
AEM 'input' conductor (extrapolated)
KALROCK
MINERAL RIGHTS HELD
AREAS OF INVESTIGATION Nov 1990
Kalrock RESOURCES Limited
CLAIM MAP
HALKIRK & WATTEN Townships
District of RAINY RIVER, ONTARIO
Scale, 1:31 680
J.E. Steers & Associates Inc.



Katrock Resources Limited
SAMPLE
N-2
Taken NOV. 1990
Massive Sulphides
SAMPLE
N-1
Taken NOV. 1990
Extensive workings
Zn, 2%/30ft
16% reported
Pocket Pond
Highway 11
Redgut
Bay
Rice
20
1
2
21
23
19
3
18



THE TOWNSHIP OF WATTEN

DISTRICT OF RAINY RIVER

KENORA MINING DIVISION

SCALE: 1-INCH = 40 CHAINS

LEGEND

PATENTED LAND	Ⓟ
CROWN LAND SALE	C.S.
LEASES	Ⓛ
LOCATED LAND	Loc.
LICENSE OF OCCUPATION	L.O.
MINING RIGHTS ONLY	M.R.O.
SURFACE RIGHTS ONLY	S.R.O.
ROADS	
IMPROVED ROADS	
KING'S HIGHWAYS	
RAILWAYS	
POWER LINES	
MARSH OR MUSKEG	
MINES	⚒
CANCELLED	C
PATENTED FOR SRO	◒

NOTES

400' Surface Rights Reservation along the shores of all lakes and rivers.

Lot And Concession Lines Hereon Are Projected From The Best Information Available, But Their [illegible] Position Is Not Guaranteed. For Official Survey Purposes Consult Survey Plan And Field Notes Of Record In The Ministry of Natural Resources

Islands Numbered 1 To 77 Inclusive Form Part Of Watten Twp.

All Islands In Rainy Lake Withdrawn From Staking Under Sec. 39 Sub Sec c Of The Mining Act.

● PATENTED for surface and mining rights.
◒ PATENTED S.R.O.
Used only with summer resort locations or when space is limited.

Flooded Lands Shown Thus:

Flooding Rights Reserved Up To [illegible] Above Mean Sea Level On All Land Bordering On Rainy Lake. File: 4922, 5476.

AREAS WITHDRAWN FROM STAKING

S.R. – SURFACE RIGHTS   M.R. – MINING RIGHTS

	Section	Order No.	Date	Disposition	File
R1	PUBLIC RESERVE		NOV 14/6?	S.R	163472
R2	42(R.S.O.1960)		OCT 9/69	S.R	"
R3	~~RESERVE~~			~~S.R~~	
R4	RESERVE		NOV 27/67	S.R	"
R5	42(R.S.O.1960)		MAR 25/65	S.R	23803
R9	RE-OPENED DEC 10/86				
R8	SEC. 36/80	W.58/82	NOV 23/82	S.R & M.R	

SAND and GRAVEL

G1	M.T.C. PIT 571	G15	M.T.C. Gravel Reserve	G29	Gravel File 30706
G2	" " 572	G16	M.T.C PIT 879	G30	" " 13429-30
G3	" " 574	G17	" " 880	G31	" " 37750
G4	" " 575			G32	" 0578
G5	" " 576	G19	" " 1657	G33	" [illegible]-45
G6	" " 577	G20	" " 1748	G34	" " 10578
G7	" " 604	G21	Gravel File 37682	G35	" 837779
G8	" " 605	G22	Gravel	G36	" " 37683
G9	" " 633	G23	Sand File 28007		(G) QUARRY PERMIT
G10	" " 651	G24	Gravel File 3768[illegible]		
G11	" " 802	G25	M.T.C. PIT 1747		
G12	" " 803	G26	Gravel File [illegible]		
G13	" " 813	G27	" " [illegible]		
G14	" " 814	G28	" " 20307		

PLAN NO.-M.2128

ONTARIO

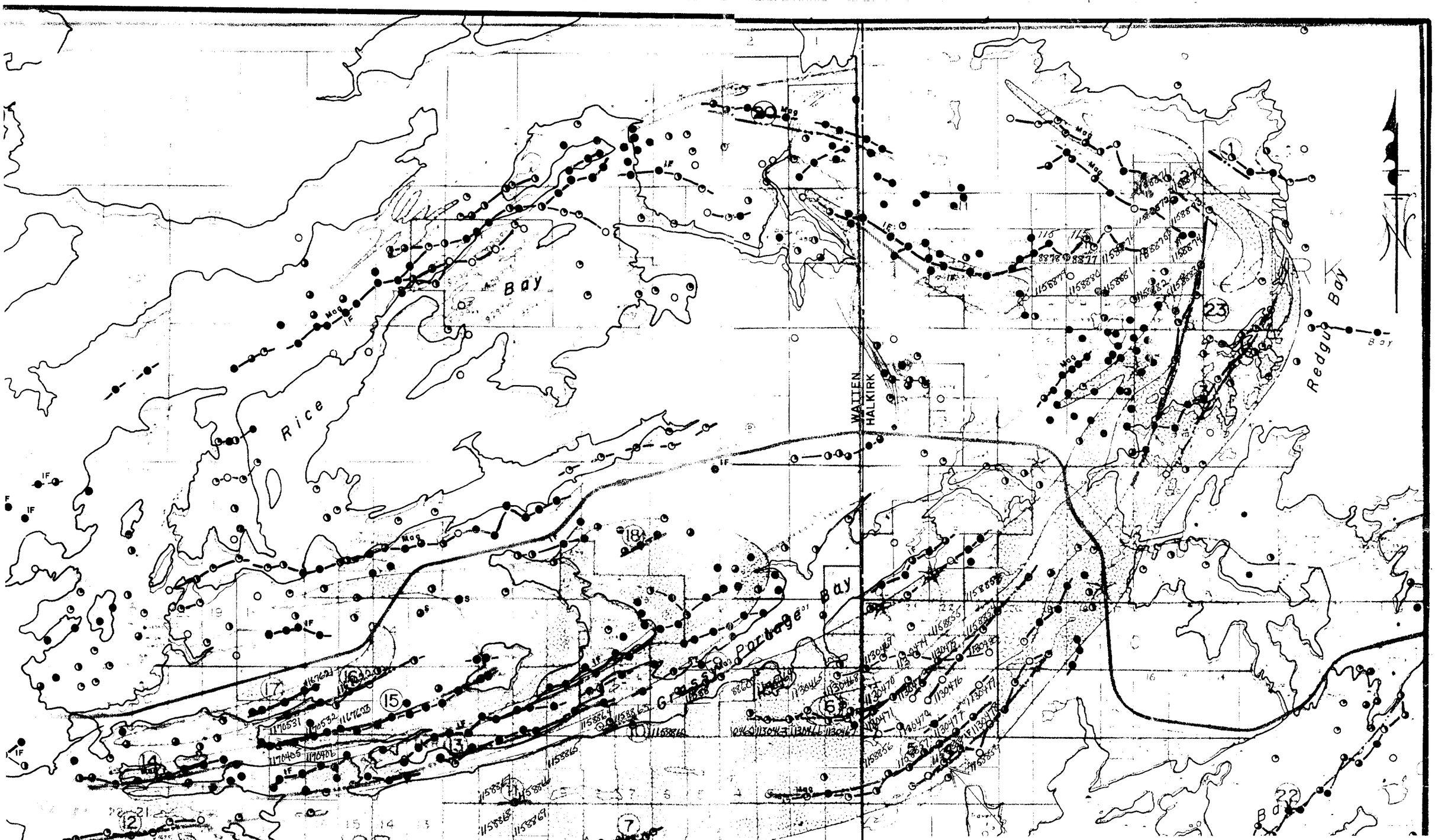
MINISTRY OF NATURAL RESOURCES

SURVEYS AND MAPPING BRANCH

200

52C11NE0056 2.14133 WATTEN

210



2.14133 AEM INVESTIGATIONS

KALROCK RESOURCES LIMITED

HALKIRK & WATTEN TOWNSHIPS, ONTARIO

Nov. 1990 Scale 1:2000