REGAL GOLDFIELDS LIMITED

Exploration Program - 1988

GODFREY TOWNSHIP PROPERTY

Porcupine Mining Division
Ontario

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TABLE OF CONTENTS

Appendix

Appendix I — Copies of Assay Certificates

Maps

Surface Geology	1:1200	in pocket
Detailed Geology		
Lake Vein	1:24	"
Vein No. 2	1:24	"
Plan of Stripping	1:120	"
Magnetic Survey	1:1200	"
VLF-EM Surveys		
NAA - Cutler, Maine	1:1200	"
NSS - Annapolis, Maryland	1:1200	"

SUMMARY AND CONCLUSIONS

Geological and geophysical surveys have been completed on the Godfrey Township property of Regal Goldfields Limited.

Quartz veins have been exposed and sampled at several locations on the property. Generally, no more than trace gold values were found, although values of 0.310, 0.072, 0.030 oz/ton were obtained locally from narrow (<4"), widely spaced quartz veins in Claim P-13942.

Further exploration does not appear warranted on the dry part of the property since no indications of mineable mineral reserves were observed during the program. However, consideration might be given to additional work in the northeastern quarter of the property beneath the swamp, particularly in the area of the electromagnetic anomaly that extends between 4+00S - L2+00W and 4+00S - L13+00W, and which is interpreted to be related to a fault structure.

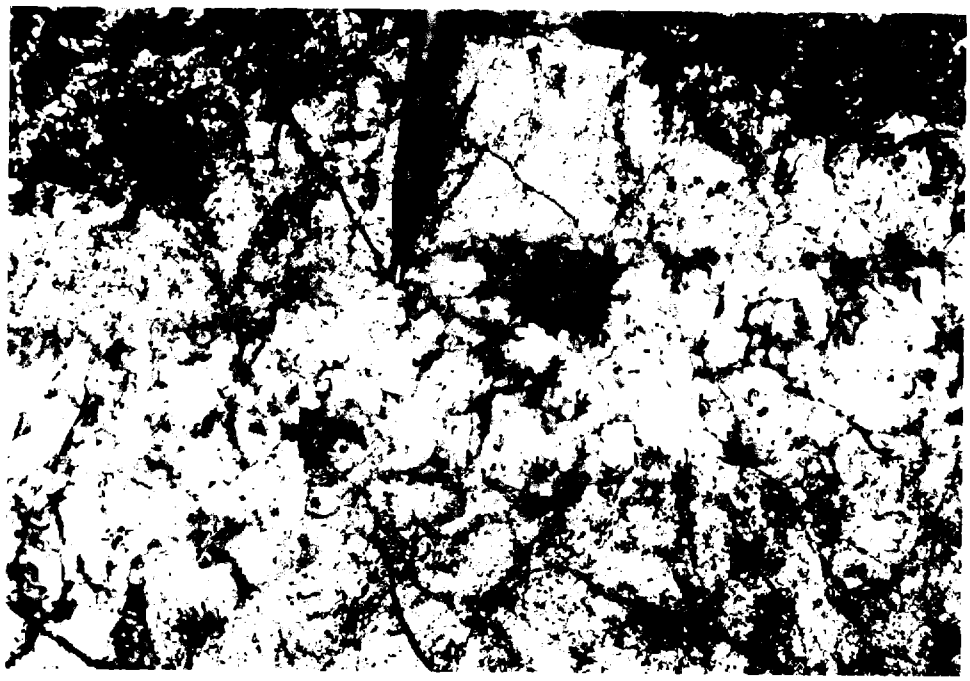
INTRODUCTION

During October, 1988, a base line was established along the northern boundary of the Godfrey Township property of Regal Goldfields Limited. Profile lines were cut to the south at 100 foot intervals, with stations established every 50 feet along the profile lines.

Stripping, washing, detailed mapping, and sampling of two quartz veins near Keeley Lake were done between October 16 and 21. Geological, magnetic, and VLF-EM surveys were undertaken between October 22 and 29. The geophysical surveys were completed using an IGS-2 system manufactured by Scintrex Limited of Concord, Ontario. Between November 8 and 13 an area 100' x 200' in claim P-13942 was stripped of its overburden using a John Deere 450-E bulldozer and a John Deere 490-D track-mounted backhoe equipped with a 3/4 yard bucket.

The work reported herein was completed at the end of November, 1988. Maps with geological, magnetic, and electromagnetic data as well as the detailed geology of the stripped areas are appended.

Stripping, sampling, and washing of Vein No. 2.



Visible gold in 2" quartz vein at L18+00W/7+00S.

LOCATION AND ACCESS

The property consists of a group of two patented mining claims located in Lot 11, Concession IV, of Godfrey Township, Porcupine Mining Division, Ontario.

These claims are situated west of Highway 576 along the western shore of Keeley Lake. Approximate co-ordinates for the claims are:

48° 31' 00"N; 81° 34' 30"W.

The Godfrey property can be reached from Timmins airport in 45 minutes by travelling west on Highway 101 to Highway 576. After driving north on Highway 576 for 11.8km, a gravel road turns to the west opposite the road leading to the Kamiskotia ski area. This road, known as the Genex Mine Road, is followed for 3.2km before it branches westward to the Lally Mine Road, which passes within 50m of the northeastern corner of the property in 2.1km. This access from Highway 576 is passable to two-wheel drive vehicles in summer but restricted to snow machine during the winter months.

CLIMATE

The Timmins area has a continental climate typical of central Canada. Precipitation totals approximately 993mm per annum and is evenly distributed throughout the year. Snow accumulations of 80 to 140cm are observed in average winters,

with continuous snow cover expected between early December and mid-April.

January temperatures have a mean maximum of -11°C and a mean minimum of -23°C for an overall mean of -17°C. In July, a maximum mean of 24°C is reached, with a minimum mean of 10°C for an average of 17°C.

TOPOGRAPHY

Keeley Lake has an elevation of 312m above sea level. The elevation on the property rises to a maximum of 330m. Relief is generally rolling, although several 15m cliffs are found near the southern boundary of the property.

Most of the claim group covers dry land with approximately 40% bedrock exposure. A wet, swampy area is found in the northern half of claim P-13941, where a small creek drains into Keeley Lake, which itself has no surface drainage outlet. Underground channels allow water to pass to Aconda Lake, then on to Twentythree Mile Creek and to the Mattagami River. A small part of the western half of claim P-13942 drains westward into Godfrey Creek, which, in turn flows northeast to the Mattagami River via the Kamiskotia River and eventually, James Bay.

LOCAL RESOURCES

Timmins is a city with a population in excess of forty-five thousand. There is a long history of mining in the area. A skilled labour force exists for mining as well as all the related support functions.

Hospital facilities and clinics are readily available in the city. Rail, highway, and air transportation are excellent to points south of Timmins as well as to some centers east and west of the city.

The claims are forested by several varieties of pine and spruce as well as some alder, birch, cedar, and poplar. Only a very small amount of this timber is merchantable, and no recent lumbering or pulpwood operations have taken place on the property.

Power is available at Highway 576, which is approximately 5km east of the property. Two hydroelectric lines follow the highway, the first being posted as 115kV while the second consists of two lower voltage three-phase lines. Telecommunications are also available from a line running parallel to Highway 576.

PROPERTY

The property consists of a group of two patented mining claims within Lot 11 of Concession IV, Godfrey Township. The claims are found adjacent to the western shore of Keeley Lake. Both surface and mining rights have been secured.

LIST OF CLAIMS

P-13941

P-13942

SURFACE RIGHTS

The claims are patented and include both mineral and surface rights.

HISTORY

Prospecting and mining activity in the Godfrey Township area is described by Middleton, 1975 (Open File Report 5118). Active prospecting of the Timmins area began as early as 1909 when gold was discovered in the Porcupine camp. Quartz veins in the Godfrey Township area were heavily explored between 1909 and the early 1930's. Two prospects were outlined during this period. The first, the Lally Mine, is located in Turnbull Township approximately two miles west of the property, and was claimed in 1909 by James Lally. In 1914, A. G. Burrows described the workings as two shafts, forty and sixty feet deep in a porphyry with numerous quartz veins. Larger, parallel veins were connected by smaller veinlets to produce a stockwork appearance.

The second prospect in Turnbull Township, again west of the property, was at the De Santis showing. This was explored between 1920 and 1924 by Peter de Santis. In 1927 a shaft was sunk to the 125-foot level where 1000 feet of drifting was carried out. This produced a total of 13 ounces of gold for a value of $146. (Beesley, 1987)

Copper-zinc mineralization was found in Godfrey Township in 1941, and this deposit was eventually brought into production by Canadian Jamieson Mines Limited between 1966 and 1971. A total of 434 000 tonnes of ore was mined with an average grade of

2.39% Cu and 4.05% Zn (Middleton, 1975).

Magnetic survey work covering much of Godfrey and adjoining townships was performed by the Dominion Gulf Company following World War II.

After a brief hiatus during the 1950s, exploration activity again boomed in the 1960s following the discovery of the Kidd Creek base metal deposit by the Texas Gulf Sulphur Company. This increased activity included numerous airborne and ground geophysical surveys, followed by some diamond drilling. Among the most active companies were Mespi Mines Limited, Cu-Kam Porcupine Mines Limited, and Hollinger Mines Limited in consortium with Imperial Oil Limited.

Other than the Canadian Jamieson Mine, the only producer in the area was the Genex Mine which operated for a few months in 1966.

The Regal Goldfields Limited property itself was in part covered by a ground electromagnetic survey in 1955 by Broulan Reef Mines Ltd., as well as airborne magnetic and electromagnetic surveys in 1963 and 1964 by Mespi Mines Limited. No diamond drill holes have been reported on the property. Also, an airborne electromagnetic survey was flown over the township by Geoterrex Limited for the Ontario Geological Survey between March and October 1987. Results were published on Map 81077 of the O.G.S. Geophysical/Geochemical Series.

Several pits have been sunk on the property, although these

are now slumped and overgrown. The apparent target of five such pits were two quartz veins near Keeley Lake having a maximum width of 3 feet. The remainder of the digging was done in an area of frequent 1-2" quartz veins, but several pits were not able to pierce through the overburden.

The claims were purchased by Regal Goldfields Limited in 1987.

Exploration work began in October 1988 with the establishment of grid lines, followed by geological, magnetic, and VLF-EM surveys. Stripping and sampling of two quartz veins near Keeley Lake (claim P-13941) as well as stripping of a 100' x 200' area in claim P-13942 was completed in mid-November, 1988.

GENERAL GEOLOGY

The earliest reconnaissance geological mapping in Godfrey Township was performed by William A. Parks in 1899, (Niven's Base Line, 1899, Ont. Bur. Mines Annual Report, Vol. IX, 1900) with further work being done by A.G. Burrows as part of his study on the Porcupine area in 1911 (The Porcupine Gold Area, Ont. Bur. Mines Annual Report, Vol. XX, 1911, pt.2). Comprehensive mapping of Godfrey Township was first done by F.L. Finley (Kamiskotia Gold Area, Ont. Dept. Mines Annual Report, Vol. XXXIV, 1925, pt. 6.). Further work on the mineral occurrences within the township was carried out by Nelson Hogg between 1950 and 1954. Results of this study were published in Vol. LXIII, Part 7, 1954 of the Ontario Department of Mines Annual Report.

The geology of the Timmins area is summarized in the following table from Pyke (1982) and is applicable to the Godfrey Township property.

TABLE 1 TABLE OF LITHOLOGIC UNITS FOR THE TIMMINS AREA.

PHANEROZOIC

CENOZOIC

QUATERNARY

RECENT

Swamp and stream deposits.

PLEISTOCENE

Clay, sand, gravel, till.

Unconformity

PRECAMBRIAN

LATE PRECAMBRIAN

MAFIC INTRUSIVE ROCKS

Olivine diabase

Intrusive Contact

MIDDLE PRECAMBRIAN

MAFIC INTRUSIVE ROCKS

Quartz diabase.

Intrusive Contact

HURONIAN SUPERGROUP

GOWGANDA FORMATION

COBALT GROUP

Arkose, wacke, argillite, conglomerate.

Unconformity

EARLY PRECAMBRIAN (ARCHEAN)

MAFIC INTRUSIVE ROCKS

Diabase.

Intrusive Contact

FELSIC INTRUSIVE ROCKS

Quartz and feldspar porphyry, felsite, hornblende-biotite trondhjemite, porphyritic-monzonite, porphyritic granodiorite, leucocratic equigranular granodiorite, hornblende diorite, quartz diorite, diorite.

Intrusive Contact

METAMORPHOSED MAFIC INTRUSIVE ROCKS

Gabbro, quartz gabbro, pegmatoidal gabbro.

Intrusive and Gradational Contact

METAMORPHOSED ULTRAMAFIC INTRUSIVE ROCKS

Serpentinized diorite, peridotite, and lherzolite; pyroxene hornblendite; carbonatized dunite-peridotite, talc magnesite alteration.

Intrusive Contact

METAVOLCANICS AND METASEDIMENTS

METASEDIMENTS

Conglomerate, lithic wacke, siltstone, lithic arenite, iron formation (siliceous sulphide and oxide-bearing phases, minor carbonate phases).

METAVOLCANICS

FELSIC CALC-ALKALIC METAVOLCANICS

Massive, fine-grained flows, tuff, lapilli-tuff and breccia, schistose-sericitic varieties common.

MAFIC CALC-ALKALIC METAVOLCANICS

Massive fine-grained flows, pillowed flows, amygdaloidal flows, pillow breccia, tuff, lapilli-tuff and breccia, sheared and carbonatized pyroclastics and flows.

THOLEIITIC METAVOLCANICS

Massive fine- to medium-grained flows, pillowed flows and flow breccia, amygdaloidal variolitic and epidote veined flows, minor tuff, lapilli-tuff and breccia.

KOMATIITIC METAVOLCANICS

Massive polysutured serpentinized peridotitic komatiite, olivine spinifex, massive and pillowed basaltic komatiite, pyroxene spinifex, extensive carbonate and talc alteration.

The property lies approximately five miles west of the Mattagami River Fault, a major north-south trending break. The Mattagami River Fault is seen to intersect the northeast-southwest trending Destor-Porcupine Fault five miles to the south. Virtually all the past and present producing gold mines of the Timmins area are in close proximity to the Destor-Porcupine Fault.

Godfrey Township has been glaciated during Pleistocene time. Thick deposits of sand, gravel, and boulders cover only the northeastern corner of the property, while overburden of less than 1m is seen between the extensive outcroppings over the rest of the property. Glacial striae indicate an ice advance from between five and ten degrees east of true north.

Most bedrock in Godfrey Township is of Early Precambrian age (Archean). This includes felsic to intermediate metavolcanic and felsic intrusive rocks cut by numerous Middle Precambrian diabase dykes.

The schistocity of the volcanics strikes roughly east-west with a dip to the south of approximately 75 to 85 degrees. A northwest-southeast trending offshoot of the Mattagami River Fault cuts the township one mile north of the property. Contact relationships between the felsic metavolcanics and intrusives are indistinct.

MINERALIZATION

Mineralization in Godfrey Township and the immediately surrounding area includes both quartz vein and massive sulphide deposits. Hogg's 1954 report indicated that quartz veins are found in all the exposed rocks of the township except in diabase dykes, and are most prominent in quartz porphyries and rhyolites. These veins were observed to be seldom greater than two feet in width with little continuity, and the frequency of quartz veining was noted to decrease in the more basic rocks. Sparse sulphide mineralization was seen in the quartz veins, usually consisting of small grains of pyrite near the vein walls. Disseminated cubic pyrite was more commonly observed within the wall rocks adjacent to the quartz veins. Chalcopyrite, sphalerite, and galena have also been noted, as have variable values of gold and silver (Middleton, 1975). Furthermore, it was noted that quartz veins within the felsic intrusive rocks only contain carbonate and pyrite with variable gold values, while veins in the rocks hosting these intrusives often contain sphalerite, galena, pyrite and chalcopyrite. Tourmaline in quartz veins has also been observed at several locations.

Base metal showings in Godfrey Township and the surrounding area are all found to have sulphide mineralization within an interbedded series of rhyolitic and andesitic volcanics in which

the rhyolite forms lenticular bodies exhibiting both intrusive and extrusive characteristics (Hogg, 1954). Three known occurrences of copper-zinc mineralization include the Canadian Jamieson property in Lot 9, Concession VI, the Phillips-O'Neill property in Lot 11, Concession V, and the Phillips-O'Neill property in Lot 9, Concession III, south of Godfrey Lake. A fourth deposit in nearby Robb Township, the Kam-Kotia orebody, also exhibits common geological characteristics.

In all showings, rhyolite is the principal host rock for sulphide mineralization, with chalcopyrite, pyrite, pyrrhotite, and sphalerite occurring in that order. Also, the Jamieson property and the Phillips-O'Neill property south of Godfrey Lake both have intrusive diabase dykes parallel to the mineralized zones, possibly indicating a genetic relationship between the dyke and the mineralization (Hogg, 1954).

PRODUCTION

There has been no known mineral production from the Godfrey Township property held by Regal Goldfields Limited.

RESERVES

There are no known mineral reserves on the property.

GEOLOGY OF THE PROPERTY

The geology of the Godfrey Township property was mapped by R. Tilsley between October 16 and 25, 1988, with some assistance from R. Mueller. The mapping program revealed the following observations.

The primary lithological unit on the property is a very fine-grained, felsic metavolcanic rock. Most of this is massive, although a tuffaceous unit is noted between L2+00W and L4+00W south of 9+00S. The massive rhyolite is almost cherty in appearance because of its grain size and composition. Most exposures exhibit a white weathering surface and a grey to buff fresh surface.

Intruding into the felsic metavolcanics are later rhyolites (in part porphyritic), diabase dykes, and basaltic dykes.

Felsic intrusives were observed in outcrops centered at L3+00W/7+00S, near the shore of Keeley Lake. These are difficult to distinguish from the primary felsic metavolcanics, as they are also fine-grained and quite massive. Field distinctions were based on their degree of metamorphism, with the earlier unit exhibiting a schistocity not seen in the intrusive. Small amounts of apatite and leucoxene are also only present in the intrusives. Fine-grained porphyritic felsic intrusives between L19+00W and L23+00W from the baseline south to 4+00S have tabular feldspar phenocrysts up to 1mm in length

seen only in the fresh surface. The contact relationship between the felsic intrusive and the felsic metavolcanic host is indistinct.

Three basalt dykes are seen to intersect the older felsic volcanics on the property. One is seen at L19+00W/4+00S trending 070°, and cutting felsic metavolcanics. Two more such dykes are noted in the felsic intrusives at L20+00W/2+00S. These are all between 15 and 20 feet wide and consist of chlorite, carbonate, and quartz with some highly altered feldspars. Common accessories include ilmenite and apatite.

Two Middle Precambrian diabase dykes are also found on the property. The first was interpreted from the magnetic survey as trending 350-355°, from L10+00W/13+20S and L12+00W/0+00S. The width of the dyke was estimated at between 25 and 30 feet. A second dyke is exposed in outcrop in the northwest corner of the property along L26+40W from the baseline to 4+00S. This was medium to coarse grained and weathered brown to orange-brown with dark grey fresh surfaces. Plagioclase forms between 50 and 65% of the rock, clinopyroxene between 25 and 40%, magnetite between 4-5%, with apatite, pyrite, zircon, hornblende, epidote, chlorite, leucoxene, biotite, and calcite as accessory minerals.

Structurally, the volcanic rocks have a strong schistocity trending 080°-100° and dipping between 65° to the south and vertical. This can be seen primarily in the Early Precambrian felsic metavolcanics which underlie most of the property.

Exposure of the bedrock is very good. Approximately 35% of claim P-13941 and 40% of claim P-13942 are relatively free of overburden. Cedar and spruce swamp covers 60% of claim P-13941, with sand and gravel accounting for the remaining unexposed areas.

Glacial striae indicate an ice advance from 5-10° east of north.

QUARTZ VEINING

The massive felsic intrusive near the shore of Keeley Lake in claim P-13941 has been cut by two quartz-tourmaline veins. Named the Lake Vein and Vein No. 2, respectively, these were cleared of overburden and washed using a Honda Power pump. The Lake Vein is oriented roughly at 040°/60° and was uncovered over a distance of 86 feet, averaging between 6" and 36" in thickness. A total of 149.275kg of rock was taken from this vein, crushed, and sent for assay to Wawa Assaying Inc. in Wawa, Ont. Only trace amounts of gold were indicated in each sample. Vein No. 2 is vertical and north-south in strike between L3+33W/7+50S and L3+43W/6+45S, for a total length of 105 feet. Its width varies between 6" and 24". A total of 77.95kg of rock was taken from this vein, with only trace gold values again being reported.

The quartz is very massive and white in both veins, while the tourmaline is black and also massive. Often the tourmaline

is concentrated in one part of the quartz vein as stringers or a thick band along the edge. The Lake Vein exhibits a 6" zone along its contact with the felsic host rocks over a 40 foot length containing between 60% and 90% massive tourmaline. Occasionally, a sub-horizontal 1" vein of quartz and tourmaline is seen to diverge from the main vein into the felsic host rock. In the No.2 Vein, four-foot long bands of massive tourmaline are noted at its boundary with the host volcanics at two locations along the vein. In other locations, the felsic host rock is brecciated with a tourmaline matrix for up to 12" from the vein itself. Further observations within Vein No.2 include several open carbonate vugs up to 4" in diameter, as well as several clasts of felsic wallrock rafted into the vein.

The felsic metavolcanics are intersected by frequent quartz/tourmaline veins 1-4" wide. These are seen to strike generally 345-030° with dips to the east at between 20° and 80°, although the majority dip at angles of less than 40° to the east.

One such narrow, north-south trending quartz vein at L18W+00/7+00S contained approximately 50mg of visible gold in outcrop. A spectacular hand specimen with over 300mg of gold (estimated grade greater than 1000g/t) was encountered lying on surface within 20 feet of the visible gold intact in the vein.

STRIPPING PROGRAM

Between November 8 and 13 of 1988 an area 100' x 200' was cleared of its sand and gravel overburden using a John Deere 450-E bulldozer and a John Deere 490-D backhoe equipped with a 3/4 yard bucket. A Honda Power pump was then used to wash the remaining debris. A total of approximately 20 000 cubic feet of material was removed.

The goal of this exercise was to reveal any changes in frequency, thickness, and/or mineralization of quartz veining as one moved eastward from the gold showing at L18+00W/7+00S towards the topographic depression now occupied by a spruce and cedar swamp.

Nine narrow quartz veins were revealed, including three which had been examined during the geological survey of the property. Neither increased vein thickness along strike nor increased frequency towards the swamp were observed. A maximum vein thickness of 4" was noted. The veins were entirely composed of white quartz and tourmaline, which occurred in both massive and needle-like crystal form. Tourmaline content varied from 5% to 80%, with an average of approximately 50%.

Nine samples totalling 136.575kg were taken from veins in this area, crushed to 20 mesh, and sent for gold assay. (See Sampling Section)

SAMPLING

An extensive sampling program on the Regal Goldfields Limited property covered the Lake Vein, Vein No.2, and the area near the gold showing on L18+00W. Large (>10kg) samples were taken along the entire length of both the Lake Vein and Vein No. 2. Further samples were taken from any pits and many smaller quartz veins on the property. Altogether, 416kg of rock was sampled, with larger samples being taken to ensure an adequate vein representation at each site.

Sample preparation involved crushing the rock to 1/4" in a jaw crusher, then to 20 mesh using a rolls crusher. Next, the 20 mesh product was screened to remove any +20 mesh coarse gold. After screening, the product was sent to Wawa Assaying Inc. where it was pulverized to 80 mesh. The entire +80 mesh fraction was assayed for gold, as were two 1AT cuts of -80 mesh product.

The Lake Vein and Vein No.2 reported no more than trace gold values. Eight samples taken from narrow quartz veins elsewhere on the property produced estimated grades of between 0.004 oz/ton and 0.310 oz/ton. The highest estimated grade of 0.310 oz/ton (10.64g/t) came from a 12.825kg sample taken at L18+85W/7+25S. Free gold in the 20 mesh product was noted in four samples, including 18.2mg in a 12.475kg sample from L18+30W/7+25S. A summary of the sampling program follows.

LOCATION	SAMPLE NUMBER	SAMPLE WEIGHT (kg)	RAW FREE Au(mg)	-80 mesh(mg)	+80 mesh(mg)	ESTIMATED GRADE g/t	oz/ton
Lake Vein							
2+65W/7+64S A	8458	15.250				tr.	
2+65W/7+64S B	8465	10.375				tr.	
2+45W/7+50S A	8450	8.100				tr.	
2+45W/7+50S B	8464	13.425				tr.	
2+30W/7+25S A	8460	14.600				tr.	
2+30W/7+25S B	8461	14.750				tr.	
2+30W/7+25S C	8462	15.800				tr.	
2+30W/7+25S D	8463	14.975				tr.	
2+30W/7+20S A	8459	14.450				tr.	
2+25W/7+10S A	8451	12.300				tr.	
2+25W/7+10S B	8458	15.250				tr.	
		149.275 kg					
Vein No.2							
3+42W/6+45S A	8454	11.625				tr.	
3+42W/6+60S A	8468	13.250				tr.	
3+42W/6+70S A	8453	13.400				tr.	
3+42W/6+70S B	8466	17.600				tr.	
3+42W/7+00S A	8467	14.675				tr.	
3+40W/7+20S A	8455	7.400				tr.	
		77.950 kg					

LOCATION	SAMPLE NUMBER	SAMPLE WEIGHT (kg)	RAW FREE Au(mg)	+80 mesh (mg)	-80 mesh (mg)	ESTIMATED GRADE g/t	ESTIMATED GRADE oz/ton
Stripped area							
17+20W/6+70S A	8446	14.950				tr.	
17+20W/6+70S B	8447	14.425				nil	
17+20W/6+70S C	8471	18.750			.0144	0.48	0.014
17+20W/6+85S A	8448	12.775				nil	
17+20W/6+85S B	8449	13.950	1.7			0.12	0.004
17+20W/6+85S C	8472	19.000				tr.	
17+20W/6+85S D	8473	6.500			.0123	0.41	0.012
16+60W/6+50S A	8470	17.125	3.1		.0175	0.76	0.022
14+95W/7+20S A	8469	19.100			.0308	1.03	0.030
		136.575 kg					
Other samples							
18+30W/7+25S	8456	12.475	18.2	.0571	.0247	2.46	0.072
18+85W/7+25S	8457	12.825	3.5	.0650	.3065	10.64	0.310
21+00W/2+50S	8476	9.000			.0216	.72	0.021
18+15W/4+50S	8474	9.650				tr.	
18+00W/7+10S	8475	8.250				tr.	
		52.200 kg					
TOTAL		416.000 kg					

John Deere 490-D backhoe and 450-E bulldozer at work during stripping program in claim P-13942. (Nov. 8-13, 1988)

GEOPHYSICAL SURVEYS

The geophysical surveys employed a Scintrex IGS-2 (Integrated Geophysical System) fitted with sensors and processing circuits to permit collection of total field magnetic and vertical magnetic gradient data (MP-4), and measure three components of the VLF-magnetic field (VLF-4). The system includes a solid state memory in which measurements are stored in ASCII 7 bit, no parity format. Data retrieval is by RS-232C serial interface to digital printer, modem, microcomputer, or cassette tape recorder.

Both the IGS-2 field unit and the magnetic base station have solid state memories expanded to 48 kilobytes. This permits readings at up to 800 field stations before data dump is required. The magnetic base station is usually operated by an automotive 12 volt battery, which provides ample, steady, and reliable power. The expanded memory allows magnetic field measurements to be recorded each two or three seconds for continuous periods of ten to twelve hours.

The field magnetic data were microprocessor corrected for diurnal variation using a pre-programmed routine resident in the memory of the IGS-2 field unit referenced to continuous magnetic records obtained by an MP-3 proton magnetometer operating in base station mode, time syncronized with the IGS-2/MP-4 field unit. Accuracy is to 0.1nT.

Three components of the VLF magnetic field are recorded at

each survey station. One, two, or three navigation station signals can be received and vertical in-phase, vertical quadrature, and horizontal amplitude of the magnetic component of the VLF electromagnetic field can be read sequentially in less than one minute.

At the end of each field day during the surveys, all data were recovered in hard copy on a dot matrix digital printer. When hard copy had been obtained and verified, the solid state memories of the magnetic base station and the field unit were erased in preparation for the next survey day.

The magnetic base station was set up at the northeast corner of the property where the baseline meets L0+00. Magnetic data are presented on a map sheet drawn at a scale of 1:1200 to cover the area within the property boundaries. The scale was chosen to permit plotting of closely-spaced measurements. Both the corrected total magnetic field determinations and vertical magnetic gradient data are shown on the plans. The total magnetic field data are plotted on the east side of the lines and the magnetic gradient to the west. The total field is in the order of 59 000nT (base field). The first and second digit of the total magnetic field is normally omitted. Only the last three digits are plotted, unless the field is changing from above 59 000nT to below 59 000nT (or vice versa).

The vertical in-phase component determinations are plotted to the west of the lines and the vertical quadrature on the

east. Both are expressed in percent. The horizontal amplitude vector of the magnetic component of the electromagnetic field transmitted by the navigation station being measured is shown where relative change indicates the axis of a conductive structure. These values are not absolute values but are instantaneous measurements of the primary field strength which is known to vary diurnally. Since the strength of the primary field has not been monitored by a VLF recording base station, no data exist to permit normalization of these values. Therefore, the values are indicative of location of conductive axes, but cannot be used comparatively.

MAGNETIC SURVEY

The detailed magnetic survey of the Regal Goldfields Limited Godfrey Township property was intended to provide structural information about the rocks underlying the claims, and to detect any sulphide-bearing quartz veins or zones which may be present within the claim group. The survey included a total of 1400 magnetic readings at 25 foot intervals.

Two diabase dykes were indicated by the survey. One such dyke has a bearing of 350°-355° and crossed the claims between L10+00W/13+20S and L12+00W/0+00, with an estimated width of between 25 and 30 feet. This dyke is not visible in any outcrops on the property. The second dyke is found in outcrops near the northwest corner of the property. Anomalous readings

of up to 1 000nT above the background are encountered near the diabase.

Any contrasts between the intrusive and extrusive felsic rocks were not defined by a magnetic expression, indicating that there is very little compositional difference between the two rock types.

VLF-EM SURVEYS

VLF-EM surveys were completed over the property using signals from two transmitting stations, namely Cutler, Maine (NAA) at 24.0 kHz, and Annapolis, Maryland (NSS) at 21.4 kHz.

The only prominent electromagnetic feature on the property trends roughly east-west between lines 2+00W and 13+00W along 4+00S. Peak to peak distances along the grid lines indicate that the depth of the conductive axis is approximately 200 feet and thus interpreted to be fault-related.

REFERENCES

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1911: The Porcupine Gold Area, Ontario Bureau of Mines Annual Report, Volume XX, 1911, pt. 2.

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Hogg, Nelson
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Pyke, D.R.
1982: Geology of the Timmins Area, Ontario Geological Survey, Report 219. 141 p.

CERTIFICATE

I, Ralph P. Mueller, of the town of Newmarket, Province of Ontario, hereby certify:

1. I am a Project Geologist and reside at 438 Tecumseth St., Apt. 2, Newmarket, Ontario.

2. I am a graduate of McMaster University, 1988, B.Sc., Geology.

3. I have been employed as a geologist since graduation.

4. This report is based on my work and personal observations of the property in October and November of 1988, as well as information obtained from current technical literature, and reports published by the Ontario Department of Mines, Ontario Division of Mines, and the Ontario Geological Survey.

5. I have no interest, direct or indirect, in the properties or securities of Regal Goldfields Limited, or any affiliate, nor do I expect to receive any such interest.

Dated at Aurora, Ontario this 18 day of January, 1989.

R. Mueller

Ralph P. Mueller, B.Sc.

CERTIFICATE

I, James E. Tilsley, of the town of Aurora, Province of Ontario, hereby certify:

1. I am a Consulting Geologist and reside at 5 Steeplechase Avenue, Aurora, Ontario.

2. I am a graduate of Acadia University, 1959, B.A., Geology.

3. I am a member of the Association of Professional Engineers of Ontario, The Association of Professional Engineers of Manitoba, The Association of Professional Engineers of Nova Scotia, Chartered Engineers (Great Britian), and designated Consulting Engineer, Ontario Association of Professional Engineers, 1975.

4. I have been employed as a geologist since graduation, with consulting groups since 1964 and in private practice since 1980.

5. This report is based on geological and geophysical surveys carried out under my supervision and on the study of records relating to the property as available from the assessment files of the Ministry of Natural Resources, province of Ontario, maps and reports published by the Ontario Bureau of Mines, the Ontario Department of Mines, and the Ontario Geological Survey.

6. I have no interest, direct or indirect, in the properties or securities of Regal Goldfields Limited, or any affiliates, nor do I expect to receive any such interest.

Dated at Aurora, Ontario this 18 day of January, 1989.

REGISTERED PROFESSIONAL ENGINEER PROVINCE OF ONTARIO

J. E. Tilsley, P.Eng.

APPENDIX I

COPIES OF ASSAY CERTIFICATES

WAWA ASSAYING INC.
P.O. Box 1998 - Wawa, Ontario P0S 1K0 - 705-856-4443

CERTIFICATE OF ANALYSIS

№ 2112

CLIENT: JAMES E TILSLEY AND ASSOCIATES LTD.
Ban Project

DATE: November 2, 1988

SAMPLE NO.	DESCRIPTION	Oz/Ton Au	g/tonne Au					
8446	+80 mesh , 0.37g	tr						
8446	-80 mesh, 293.52	tr						
8446		tr						
8447	+80 mesh, 0.17g	nil						
8447	-80 mesh, 397.93g	nil						
8447		nil						
8448	+80 mesh, 3.03g	nil						
8448	-80 mesh, 355.33g	nil						
8448		nil						
8449	+80 mesh, 13.48g	nil						
8449	-80 mesh, 405.37g	tr						
8449		tr						
8450	+80 mesh, 0.33g	tr						
8450	-80 mesh, 413.34g	tr						
8450		tr						
8451	+80 mesh, 0.11g	tr						
8451	-80 mesh, 388.30g	tr						
8451		tr						
8452	+80 mesh, 1.83g	tr						
8452	-80 mesh, 400g	tr						

Samples, Pulps and Rejects discarded after two months.

Wawa Print & Litho. Inc

Assayer: Rudy Hamm

WAWA ASSAYING INC.
P.O. Box 1998 - Wawa, Ontario P0S 1K0 - 705-856-4443

CERTIFICATE OF ANALYSIS

№ 2113

CLIENT: JAMES E TILSLEY AND ASSOCIATES LTD.
Ban Project

DATE: November 2, 1988

SAMPLE NO.	DESCRIPTION	Oz/ton Au	g/tonne Au					
8452		tr						
8453	+80 mesh, 0.90g	tr						
8453	-80 mesh, 396g	tr						
8453		tr						
8454	+80 mesh, 3.87g	tr						
8454	-80 mesh, 400g	tr						
8454		tr						
8455	+80 mesh, 1.58g	tr						
8455	-80 mesh, 292g	tr						
8455		tr						
8456	+80 mesh, 15.43g	0.108						
8456	-80 mesh, 313g	0.024						
8456		0.024						
8457	+80 mesh, 12.31g	0.154						
8457	-80 mesh, 409g	0.300						
8457		0.296						
8458	+80 mesh, 26.84g	tr						
8458	-80 mesh, 396g	tr						
8458		tr						
8459	+80 mesh, 4.55g	tr						

Samples, Pulps and Rejects discarded after two months.

Wawa Print & Litho, Inc

Assayer: [signature]

WAWA ASSAYING INC.

P.O. Box 1998 - Wawa, Ontario P0S 1K0 - 705-856-4443

CERTIFICATE OF ANALYSIS

№ 2114

CLIENT: JAMES E TILSLEY AND ASSOCIATES LTD.
Ban Project

DATE: November 2, 1988

SAMPLE NO.	DESCRIPTION	Oz/Ton Au	g/tonne Au					
8459	-80 mesh, 385.5g	tr						
8459		tr						
8460	+80 mesh, 24.64g	tr						
8460	-80 mesh, 396g	tr						
8460		tr						
8461	+80 mesh, 13.05g	tr						
8461	-80 mesh, 383g	tr						
8461		tr						
8462	+80 mesh, 4.75	tr						
8462	-80 mesh, 316g	tr						
8462		tr						
8463	+80 mesh, 3.15g	tr						
8463	-80 mesh, 302g	tr						
8463		tr						

Samples, Pulps and Rejects discarded after two months.

Wawa Print & Litho. Inc.

Assayer: Ruby Jones

WAWA ASSAYING INC.

P.O. Box 1998 - Wawa, Ontario P0S 1K0 - 705-856-4443

CERTIFICATE OF ANALYSIS

Nº 2258

CLIENT: JAMES E. TILSLEY & ASSOCIATES LTD.

DATE: November 07, 1988

SAMPLE NO.	DESCRIPTION	oz/Ton Au						
8464	+200 Mesh, 35.45g	tr						
8464	-200 Mesh, 413.85g	tr						
8464		tr						
8465	+200 Mesh, .09g	tr						
8465	-200 Mesh, 365.11g	tr						
8465		tr						
8466	+200Mesh, 22.73g	tr						
8466	-200 Mesh, 402.57g	tr						
8466		tr						
8467	+200 Mesh, .04g	tr						
8467	-200 Mesh, 366.35	tr						
8467		tr						
8468	+200 Mesh, .01g	tr						
8468	-200 Mesh, 378.85g	tr						
8468		tr						
8469	+200 Mesh, 0g	tr						
8469	-200 Mesh, 417.36g	0.030						
8469		0.030						
8470	+200 Mesh, .02g	tr						
8470	-200 Mesh, 414.81	0.012						

Samples, Pulps and Rejects discarded after two months.

Assayer: _____

WAWA ASSAYING INC.
P.O. Box 1998 - Wawa, Ontario P0S 1K0 - 705-856-4443

CERTIFICATE OF ANALYSIS

Nº 2259

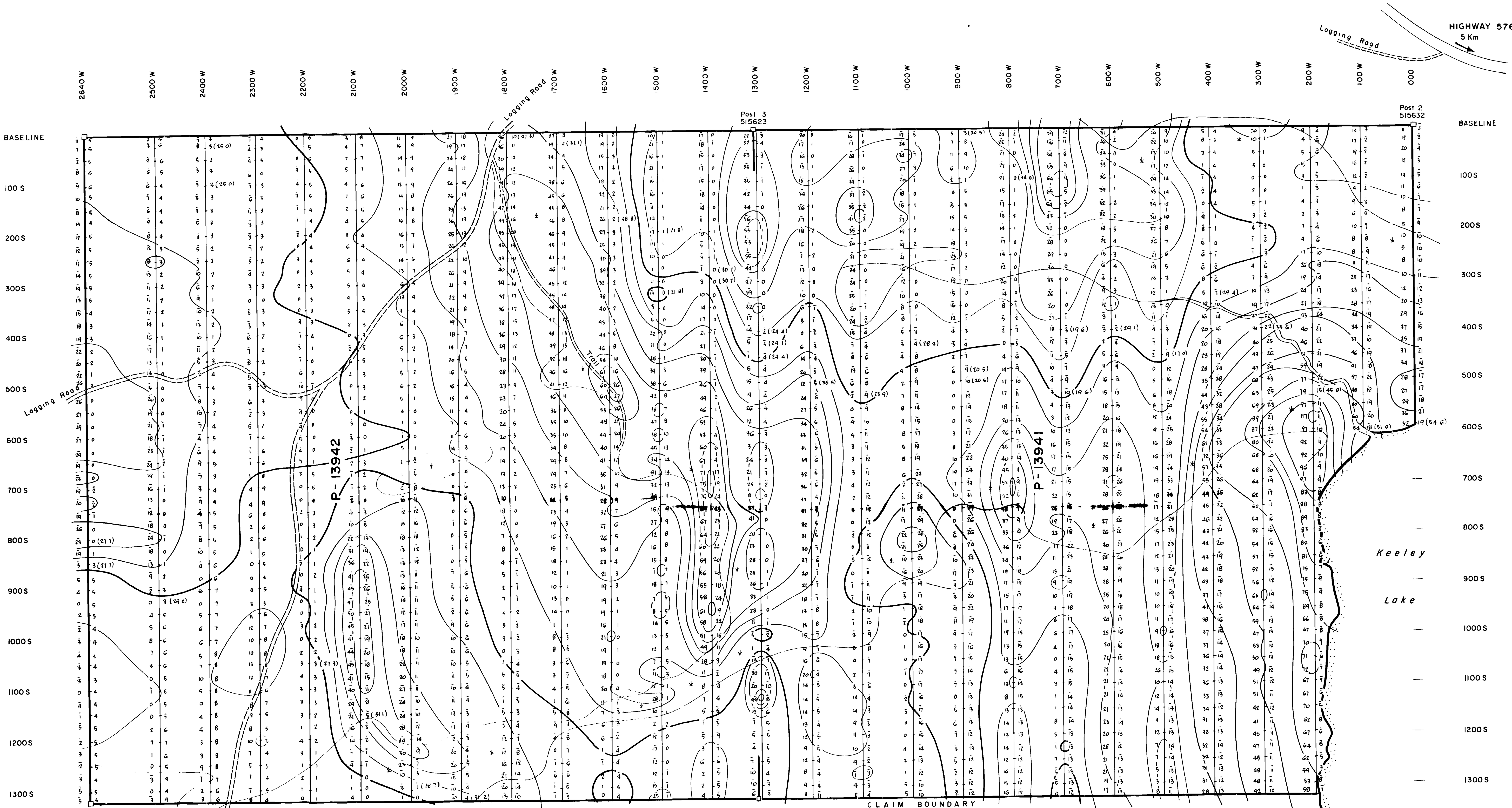
CLIENT: JAMES E. TILSLEY & ASSOCIATES LTD.

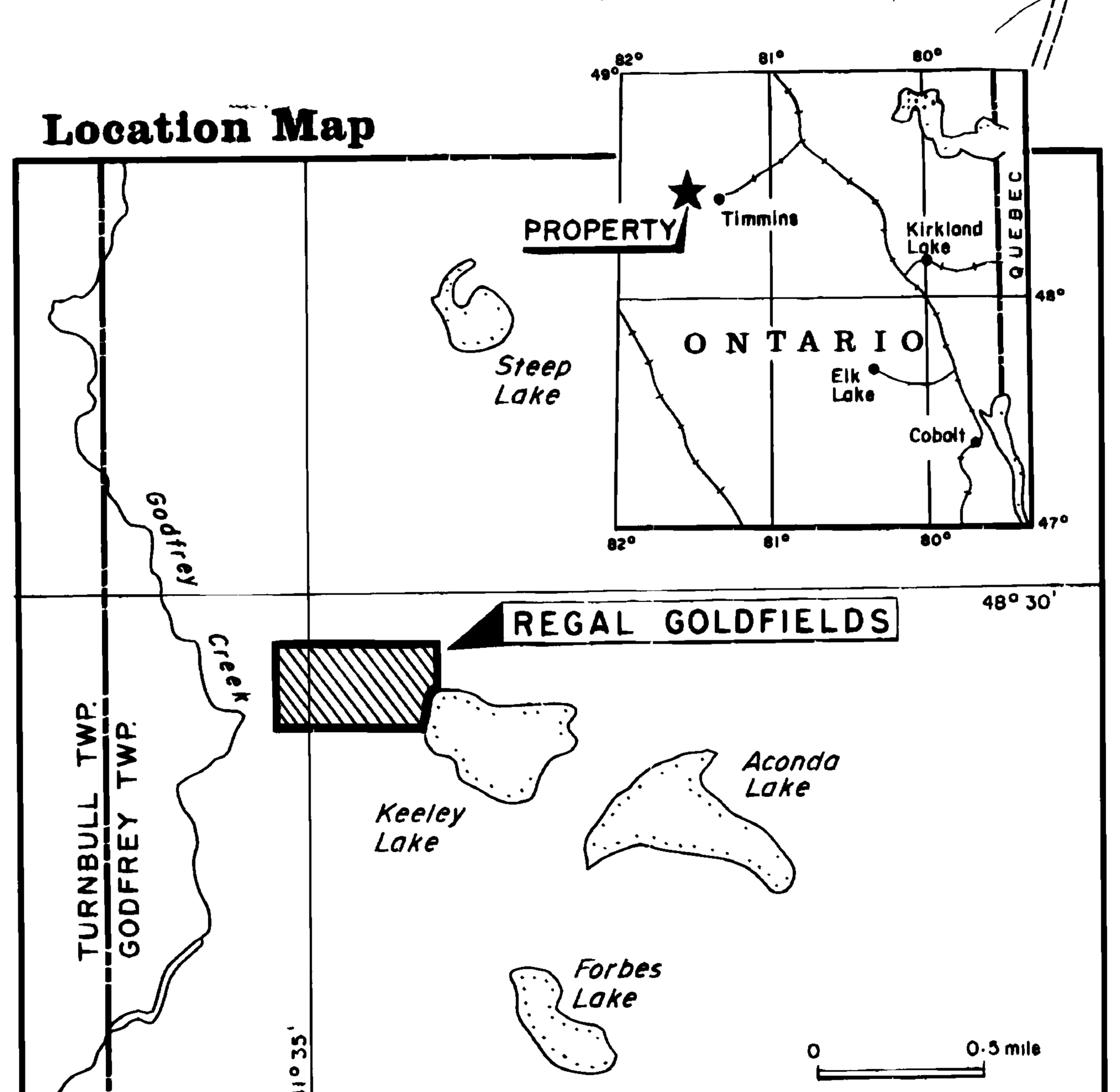
DATE: November 08, 1988

SAMPLE NO.	DESCRIPTION	oz/Ton Au						
8470		0.022						
8471	+200 Mesh, .66g	tr						
8471	-200 Mesh, 364.62g	0.016						
8471		0.012						
8472	+200 Mesh, .03g	tr						
8472	-200 Mesh, 411.61 g	tr						
8472		tr						
8473	+200 Mesh, 1.55g	tr						
8473	-200 Mesh, 345.67g	0.024						
8473		tr						
8474	+200 Mesh, .03g	tr						
8474	-200 Mesh, 280.56g	tr						
8474		tr						
8475	+200 Mesh, .45g	tr						
8475	-200 Mesh, 454.96	tr						
8475		tr						
8476	+200 Mesh, 12.43g	tr						
8476	-200 Mesh, 387.42g	0.018						
8476		0.024						

Samples, Pulps and Rejects discarded after two months.

Assayer: _____





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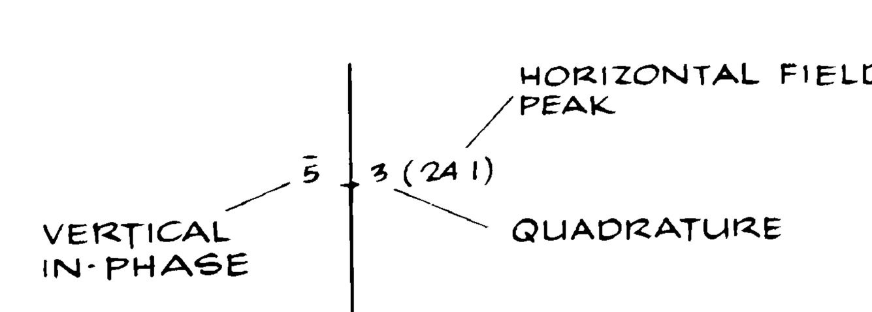

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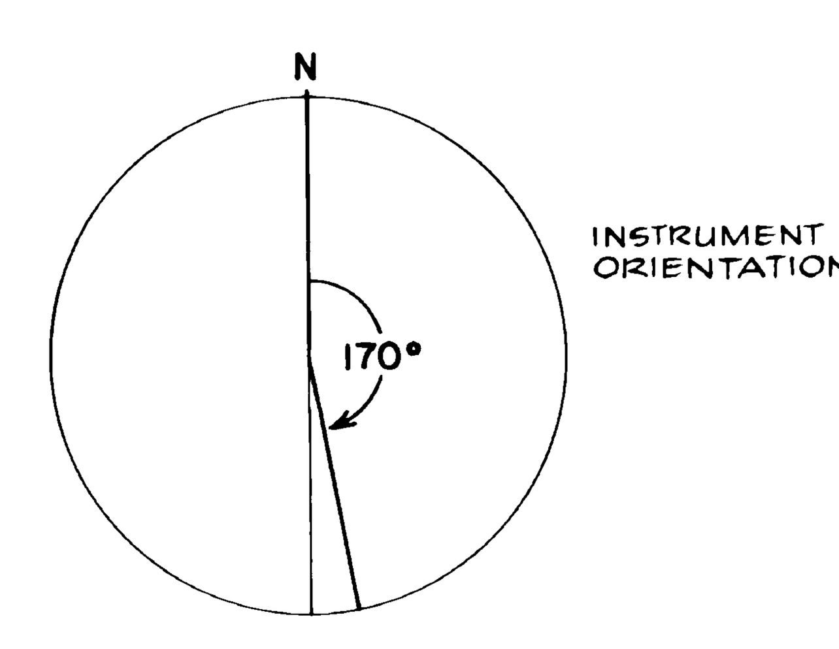
CONSOLE 8507254
SENSOR 8601168



OM88-5-C-257

REGAL GOLDFIELDS LIMITED

KEELEY LAKE PROPERTY

GODFREY TOWNSHIP, PORCUPINE MINING DIVISION
ONTARIO

VLF-EM SURVEY

NSS (21.4 kHz) - ANNAPOLIS, MARYLAND

by

JAMES E TILSLEY & ASSOCIATES LIMITED

0 100 200 300 400 500
Feet

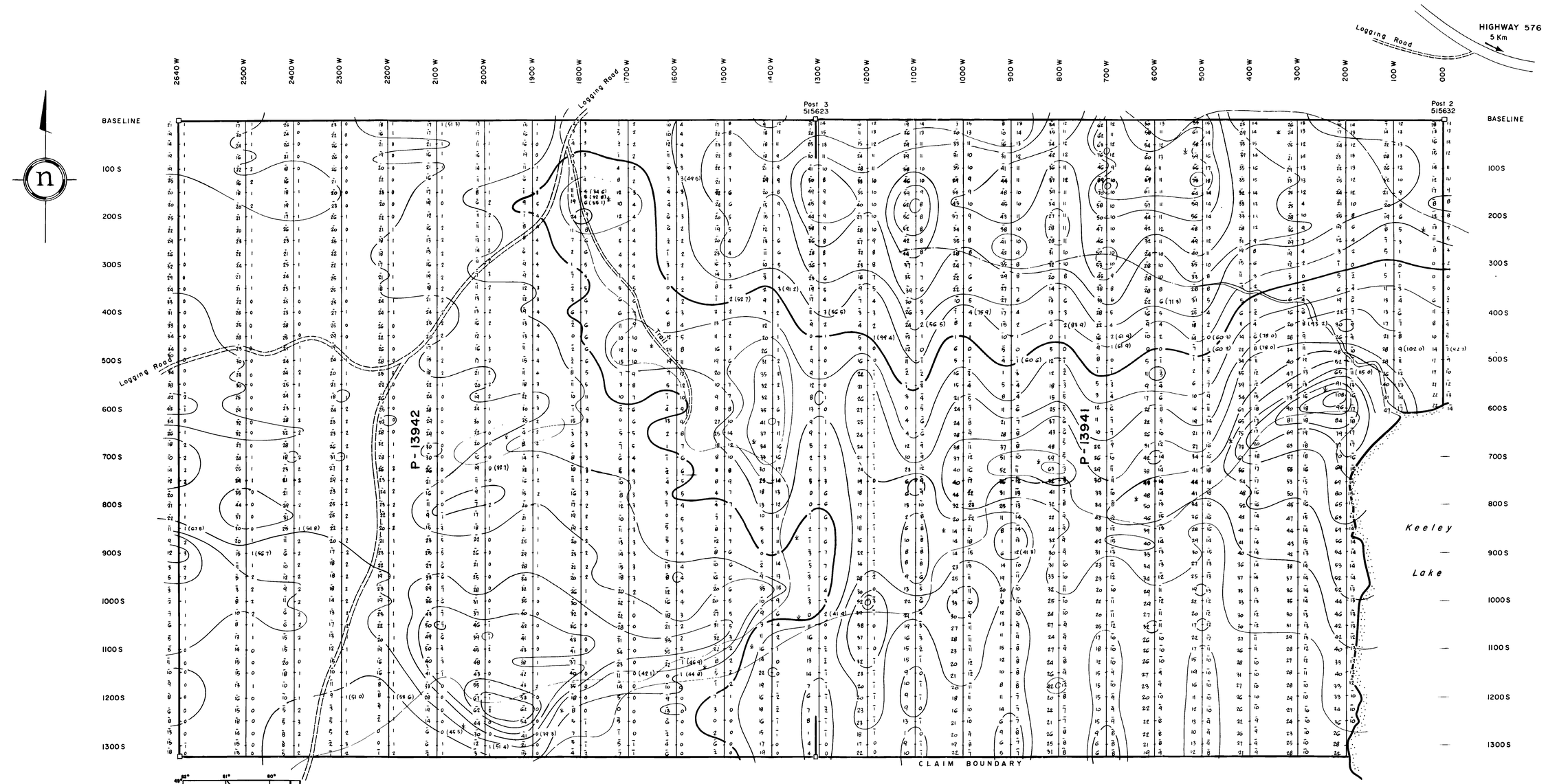
Scale 1 1200

DEC. 1988

...ller, B.Sc., October - November 1988

42A05NE0047 63.5477 GODFREY

200



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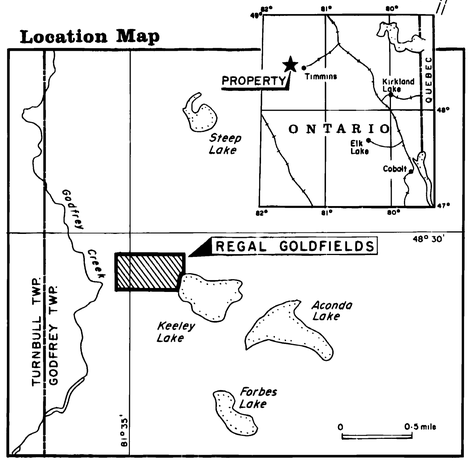

LEGEND

HORIZONTAL FIELD PEAK

VERTICAL IN-PHASE — 5 | 3 (24·1) — QUADRATURE

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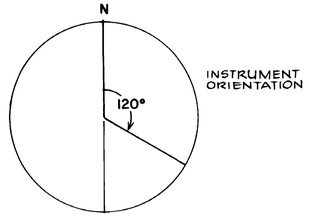
SERIAL NUMBER:
CONSOLE 8507254
SENSOR 8601166



OP88-3 C-254 63-5777

REGAL GOLDFIELDS LIMITED

KEELEY LAKE PROPERTY

GODFREY TOWNSHIP, PORCUPINE MINING DIVISION
ONTARIO

VLF-EM SURVEY

NAA (24·0 kHz) - CUTLER, MAINE

by

JAMES E. TILSLEY & ASSOCIATES LIMITED

0 100 200 300 400 500
Feet

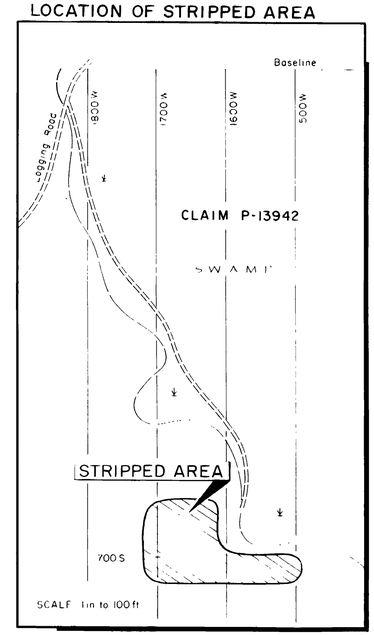
Scale 1 1200

REGISTERED PROFESSIONAL ENGINEER PROVINCE OF ONTARIO

DEC. 1988

Ter. B.Sc. October - November 1988

LOCATION OF STRIPPED AREA



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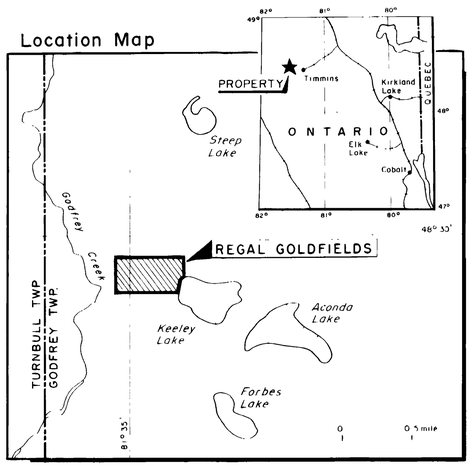


LEGEND

8473 - 6 500Kg 0 024
(X) Sample location, number, weight and estimated grade

(MISSING) 63 5477

REGAL GOLDFIELDS LIMITED

KEELEY LAKE PROPERTY
GODFREY TOWNSHIP, PORCUPINE MINING DIVISION
ONTARIO

PLAN OF STRIPPING

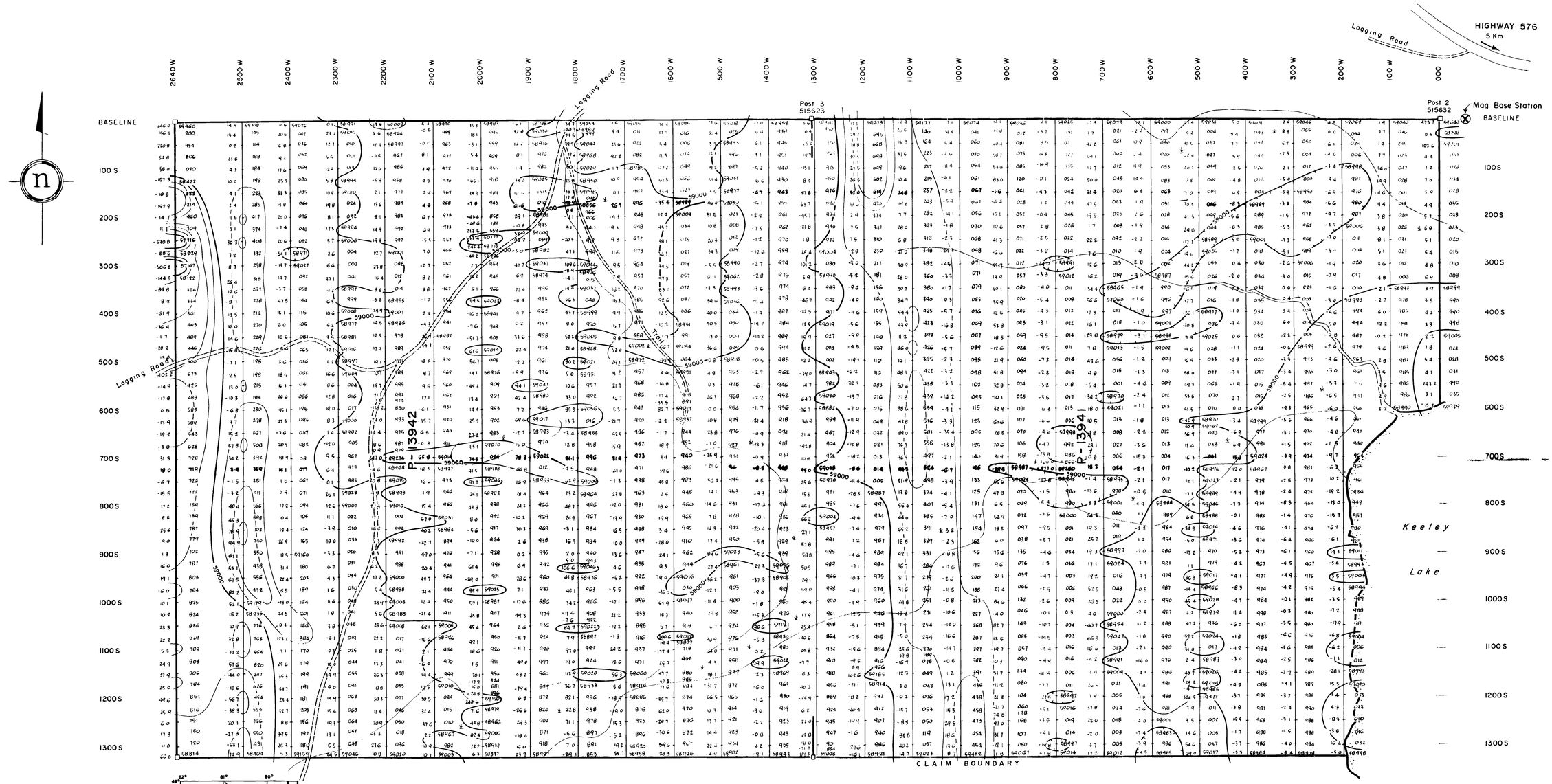
by

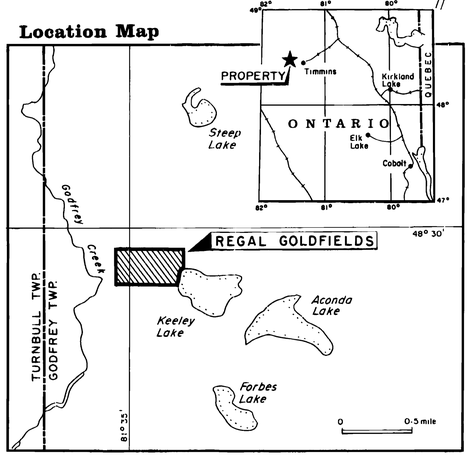
JAMES E TILSLEY & ASSOCIATES LIMITED

0 10 20 30 40 50
Feet

Scale 1:120

REGISTERED PROFESSIONAL ENGINEER PROVINCE OF ONTARIO
DEC 1988





LEGEND

120 — GRADIENT

58914 — TOTAL MAGNETIC FIELD IN GAMMAS

MAGNETIC CONTOUR INTERVAL - 200 $

INSTRUMENT · SCINTREX IGS-2, MP-4
SERIAL NUMBER
FIELD UNIT 8507254
BASE STATION 8507256

SENSOR SEPARATION · 1 METRE
BASE FIELD - 59000 GAMMAS

REGAL GOLDFIELDS LIMITED

KEELEY LAKE PROPERTY

GODFREY TOWNSHIP, PORCUPINE MINING DIVISION
ONTARIO

MAGNETOMETER SURVEY

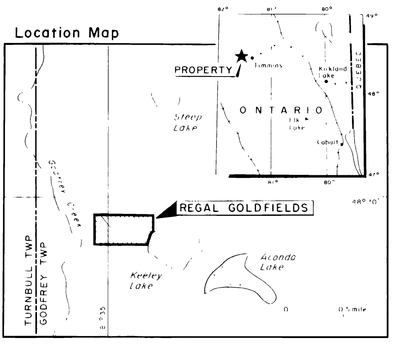
by

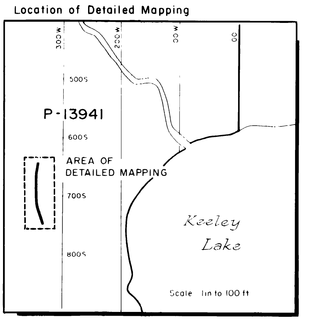
JAMES E. TILSLEY & ASSOCIATES LIMITED

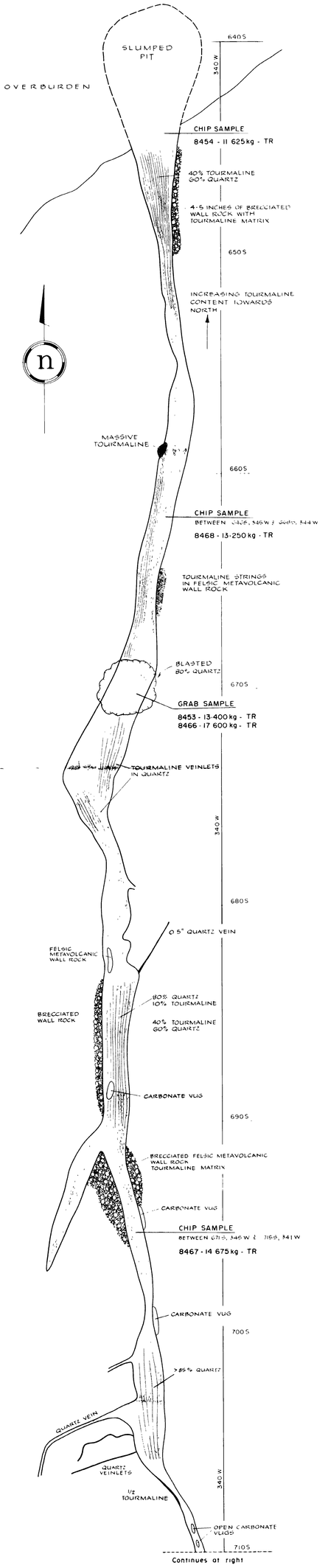
0 100 200 300 400 500
Feet

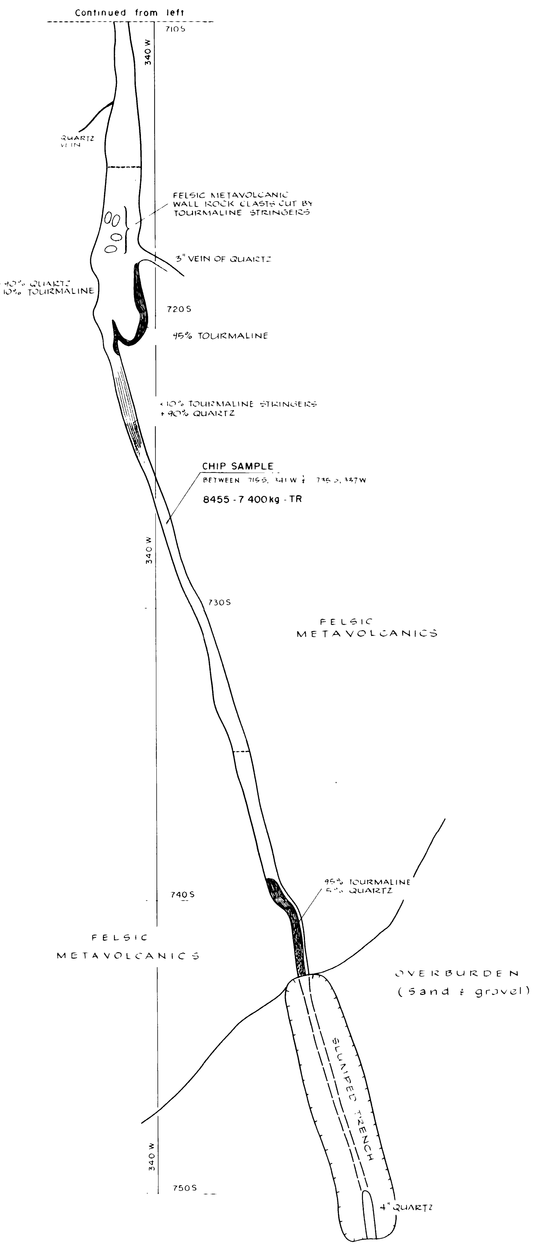
Scale 1 1200

DEC. 1988









EAST 5 C 354 E55771

REGAL GOLDFIELDS LIMITED

KEELEY LAKE PROPERTY
GODFREY TOWNSHIP, PORCUPINE MINING DIVISION
ONTARIO

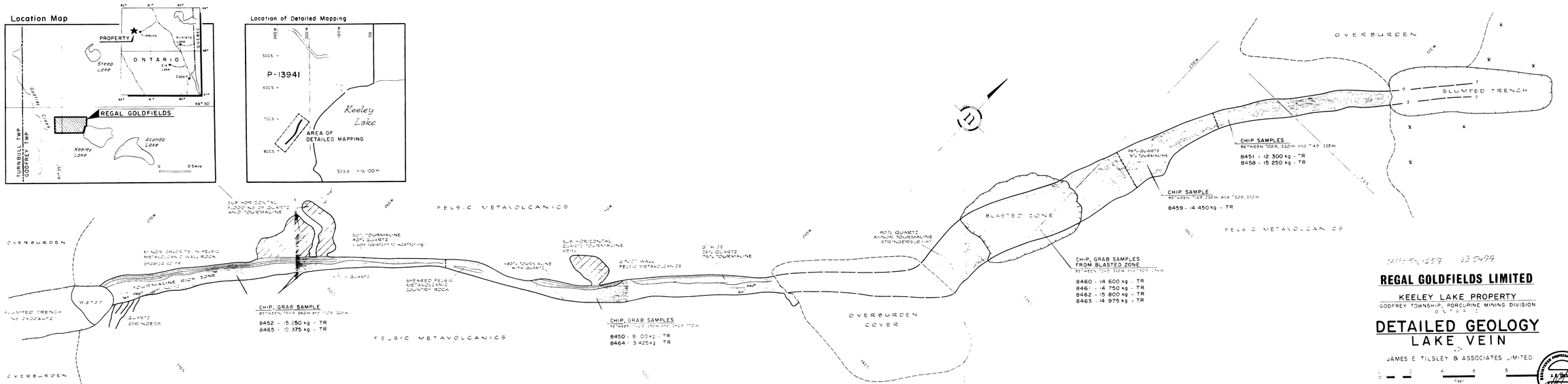
DETAILED GEOLOGY
VEIN No. 2

(1)

JAMES E TILSLEY & ASSOCIATES LIMITED

0 2 4 6 8 10
Feet
Scale 1:24

DEC 1988



250

REGAL GOLDFIELDS LIMITED

KEELEY LAKE PROPERTY

GODFREY TOWNSHIP, PORCUPINE MINING DIVISION
ONTARIO

DETAILED GEOLOGY
LAKE VEIN

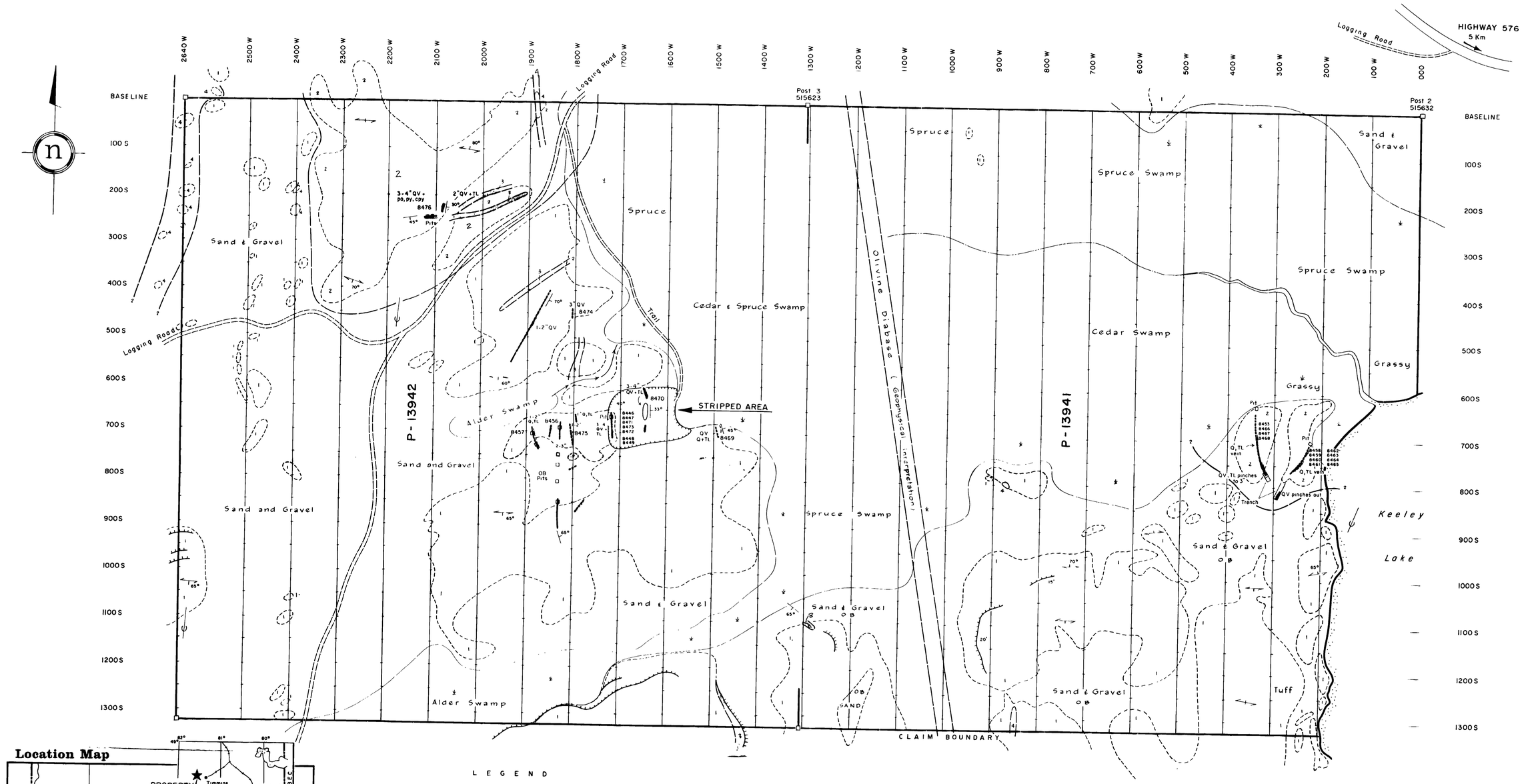
JAMES E. TILSLEY & ASSOCIATES LIMITED

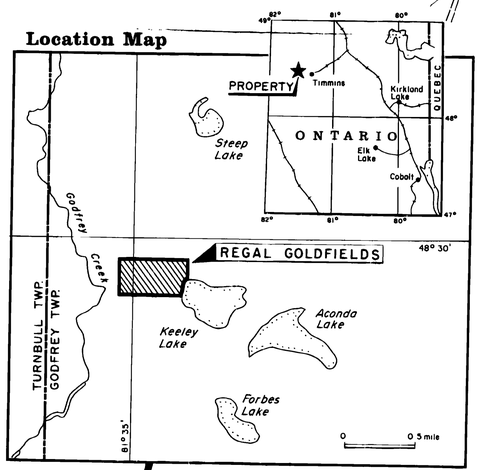
1" = 2 4 6 8 Feet

Scale 1" = 24

J. E. TILSLEY
REGISTERED PROFESSIONAL ENGINEER
PROVINCE OF ONTARIO

DEC. 1988





LEGEND

- Quartz tourmaline vein
- 4 Diabase dyke
- 3 Basalt dyke
- 2 Massive felsic intrusive, in part porphyritic
- 1 Felsic metavolcanics
- Schistosity
- Strike/dip of quartz vein (QV) or dyke
- Steep slope or cliff
- Swamp boundary
- Outcrop or area of outcrops
- Pit

ON 88-5 C 357 C3 54977

REGAL GOLDFIELDS LIMITED

KEELEY LAKE PROPERTY

GODFREY TOWNSHIP, PORCUPINE MINING DIVISION
ONTARIO

SURFACE GEOLOGY

by
JAMES E. TILSLEY & ASSOCIATES LIMITED

0 100 200 300 400 500
Feet
Scale 1 1200

DEC. 1988

sley, P.Geol & R P. Mueller, B.Sc. Oct 1988

42A05NE0047 63 5477 GODFREY

260