Geological Report on the Property of

GLEN AUDEN RESOURCES LIMITED

Maisonville and Grenfell Townships
Larder Lake Mining Division
District of Timiskaming

by

Nadia Caira, B.Sc.

Robert S. Middleton Exploration Services Inc.
P.O. Box 1637 Timmins, Ontario P4N 7W8
October 2, 1985

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SUMMARY

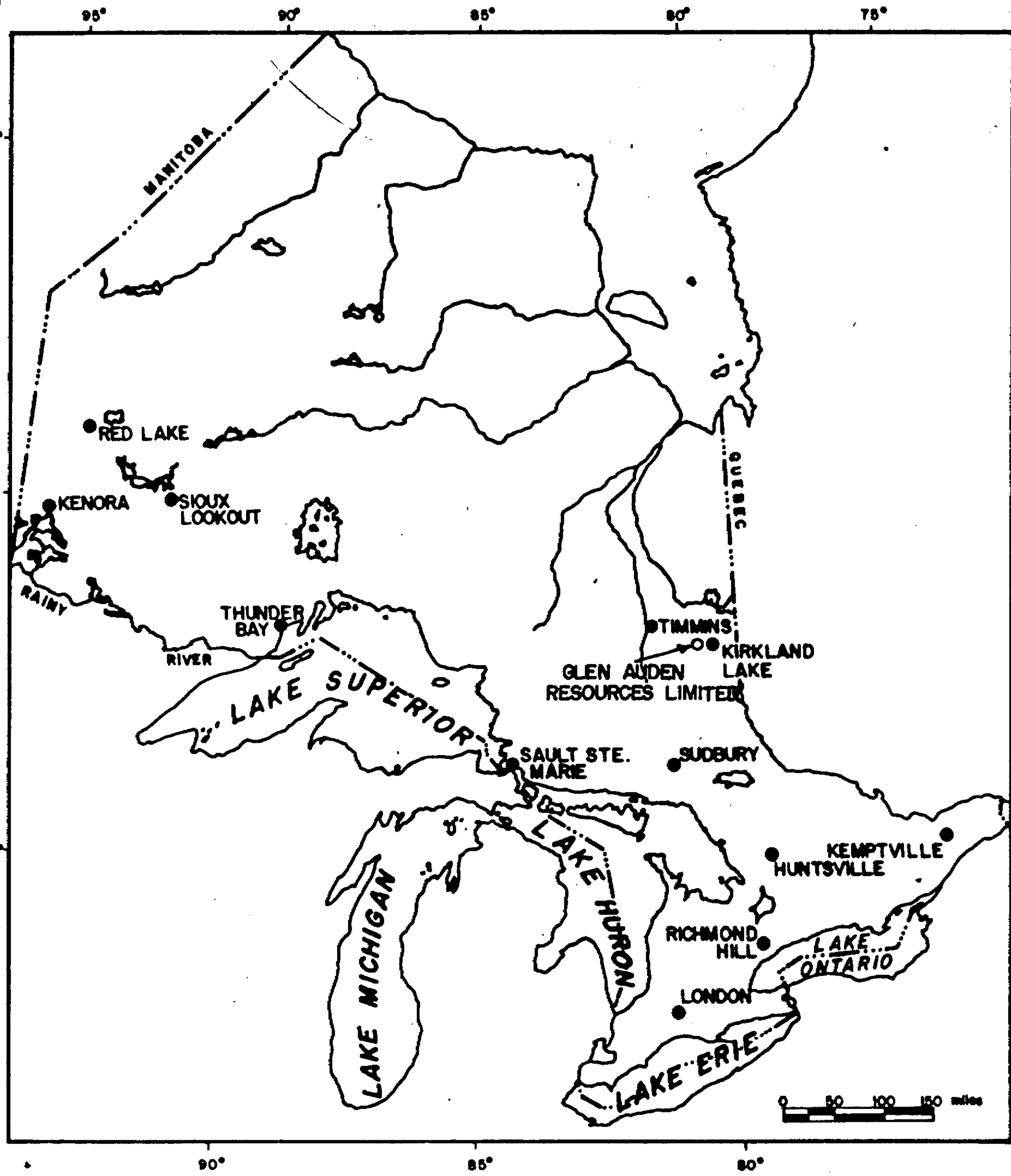
Glen Auden Resources hold a 122 claim property in Maisonville and Grenfell Townships, 12 miles northwest of the town of Kirkland Lake, Ontario. A number of gold showings and a former small gold producer is located within the property boundaries. The host rocks are iron-rich and iron-poor tholeiitic basalts and syenites with similar geological settings as certain gold deposits in the Kirkland Lake, Matachewan, Matheson and Timmins areas. Several areas of mineralization exist on the property within cherty sulphide facies exhalative horizons, north-south trending shear zones and within quartz-carbonate stringer zones within the iron-rich tholeiitic basalts and the syenites. The majority of these zones are good targets for large tonnage gold deposits.

INTRODUCTION

A reconnaissance geological mapping and sampling program was carried out from July 21 to September 11, 1985 on the Glen Auden Resources, Maisonville-Grenfell township property discovered several auriferous zones of mineralization. This report describes the 122 claim property held by the joint venture and is based on the geological mapping and a review of previous work records at the Resident Geologists office in Kirkland Lake. The property, which is located in the Larder Lake Mining Division of Ontario, encompasses a number of gold showings as well as a former gold producer. This is the first time, however, that the majority of the area has been assembled as one land package thereby allowing for a more comprehensive exploration program. In addition, the known gold showings are not zones of conductivity and therefore previous airborne surveys by the Ontario Geological Survey (1979) and others have not attracted much exploration effort. Weak conductors which may reflect graphitic horizons or structural (fault) zones do occur which may be related indirectly to gold mineralization. The geological mapping program has outlined several target areas for second stage exploration consisting of linecutting, induced polarization surveying , extensive trenching, and diamond drilling.

Location, Access and Facilities

The property is located in the south-west portion of



PROVINCE OF ONTARIO

REVISIONS	ROBERT S. MIDDLETON EXPLORATION SERVICES INC.		
	for GLEN AUDEN RESOURCES LIMITED		
	Title LOCATION MAP		
	FIG. I		
	Date: JULY 1985	Scale: 1"=160mi.	N.T.S.:
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Maisonville Township and virtually all of the land under Lake Sesekinika in Grenfell Township. Some land is also held in Concession VII of Grenfell Township. The general area covered by the largest part of the property would be portions of Con. I, II, III and IV, Lots 5, 6, 7, 8, 9, 10 and the east half of lot 11 in Maisonville Township.

Access is via highway 11 which traverses the west side of the property. Highway 570 extends east from highway 11 through the village of Sesekinika and provides access via bush roads and trails to the south and eastern part of the property. The Ontario Northland Railroad passes through the west part of the property as does the Trans Canada Pipeline (Northern Ontario Natural Gas Pipeline).

Electrical power lines follow highways 11 and 570. Ample water is available in the many lakes and ponds that occur in the area. A trained work force resides in the Kirkland Lake area servicing the operating gold and iron ore mines.

Property

The property comprises 122 unpatented mining claims of which twenty-three are virtually all water claims in Grenfell Township together with ninety-nine mainly land claims in Maisonville Township. The water claims encompass most of Lake Sesekinika.

The 122 contiguous claim group lies within Grenfell and Maisonville Townships, Larder Lake Mining Division, Ontario.

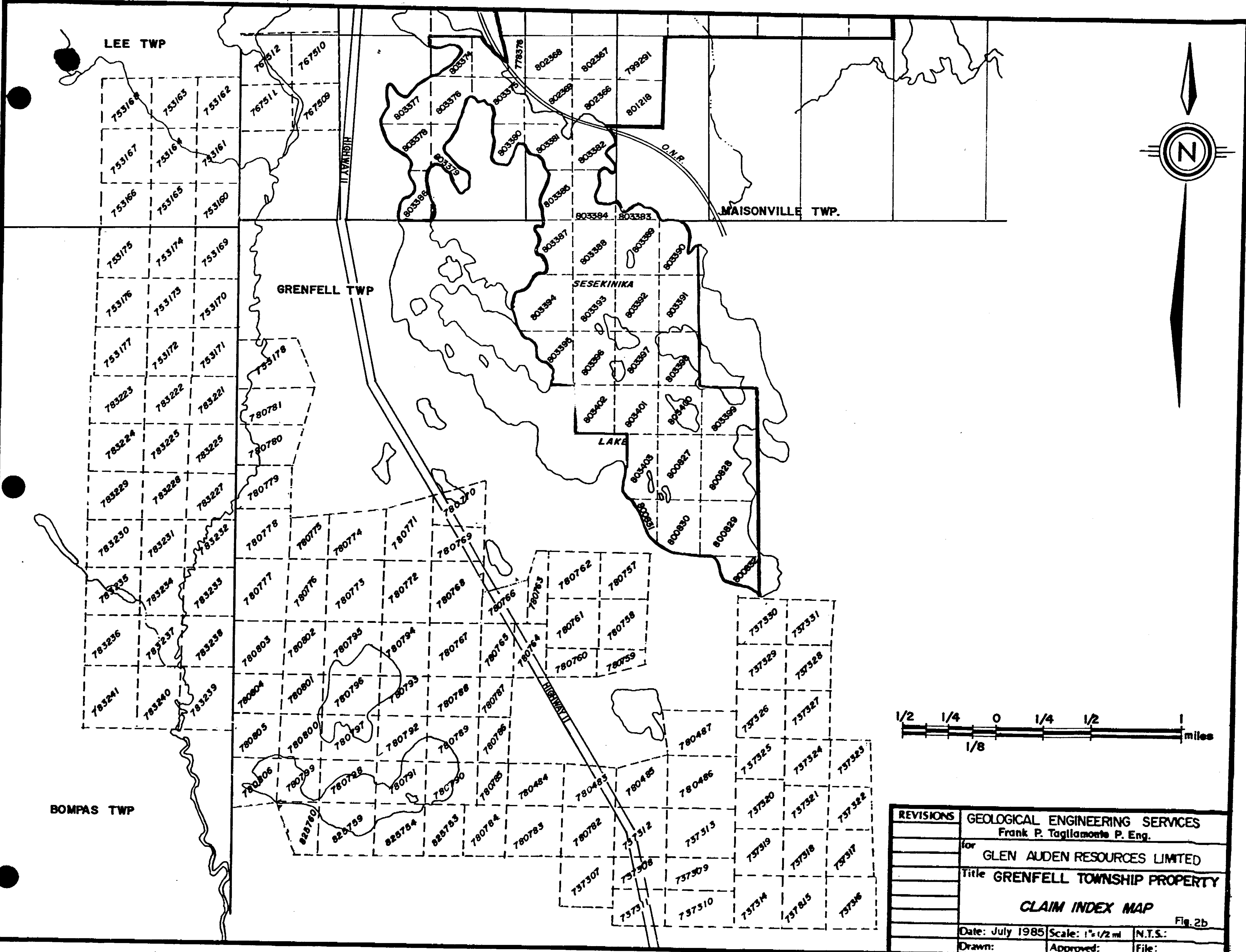
Claim Number	Expiry Date	Man Days Assessment Work Filed
L 799 289	June 21, 1986	20 days
L 799 290	June 21, 1986	20 days
L 799 291	June 21, 1986	80 days
L 799 678	May 31, 1986	20 days
L 800 344	May 31, 1986	20 days
L 800 345	June 25, 1986	20 days
L 800 346	June 25, 1986	20 days
L 800 347	June 25, 1986	20 days
L 800 348	June 25, 1986	20 days
L 800 349	June 25, 1986	20 days
L 800 827	August 24, 1986	80 days
L 800 828	August 24, 1986	80 days
L 800 829	August 24, 1986	80 days
L 800 830	August 24, 1986	80 days
L 800 831	August 24, 1986	80 days
L 800 832	August 24, 1986	80 days
L 801 217	June 21, 1986	20 days
L 801 218	June 27, 1986	80 days
L 801 219	June 27, 1986	20 days
L 801 220	June 27, 1986	20 days
L 801 221	June 27, 1986	20 days
L 801 222	June 27, 1986	20 days
L 801 876	June 25, 1986	20 days
L 801 877	June 21, 1986	20 days
L 801 878	June 21, 1986	20 days
L 802 331	June 27, 1986	20 days
L 802 332	July 16, 1986	20 days
L 802 333	July 16, 1986	20 days
L 802 334	July 16, 1986	20 days
L 802 335	July 16, 1986	20 days
L 802 336	July 16, 1986	20 days
L 802 337	July 16, 1986	20 days
L 802 338	July 16, 1986	20 days
L 802 339	July 16, 1986	20 days
L 802 340	July 16, 1986	20 days
L 802 341	July 16, 1986	20 days
L 802 342	July 16, 1986	20 days
L 802 343	July 16, 1986	20 days

Claim Number	Expiry Date	Man Days Assessment Work Filed
L 802 346	September 4, 1986	20 days
L 802 347	September 4, 1986	20 days
L 802 348	September 4, 1986	20 days
L 802 349	September 4, 1986	20 days
L 802 353	July 9, 1986	20 days
L 802 354	July 9, 1986	20 days
L 802 355	July 9, 1986	20 days
L 802 356	July 9, 1986	20 days
L 802 357	July 9, 1986	20 days
L 802 358	July 9, 1986	20 days
L 802 359	July 9, 1986	20 days
L 802 360	July 9, 1986	20 days
L 802 365	August 13, 1986	20 days
L 802 366	August 14, 1987	100 days
L 802 367	August 14, 1987	100 days
L 802 368	August 14, 1987	100 days
L 802 369	August 14, 1987	100 days
L 802 744	August 3, 1986	20 days
L 802 745	August 3, 1986	20 days
L 802 746	August 3, 1986	20 days
L 802 747	August 3, 1986	20 days
L 802 748	August 3, 1986	20 days
L 802 749	August 3, 1986	20 days
L 802 750	September 10, 1986	20 days
L 803 374	August 24, 1986	80 days
L 803 375	August 24, 1986	80 days
L 803 376	August 24, 1986	80 days
L 803 377	August 24, 1986	80 days
L 803 378	August 24, 1986	80 days
L 803 379	August 24, 1986	80 days
L 803 380	August 24, 1986	80 days
L 803 381	August 24, 1986	80 days
L 803 382	August 24, 1986	80 days
L 803 383	August 24, 1986	80 days
L 803 384	August 24, 1986	80 days

All the claims are registered in the name of Glen Auden Resources Limited, Suite 2400 - 130 Adelaide Street West, Toronto, Ontario M5H 3C2.

Some statistical data on the claims is as listed below.

Claim Number	Expiry Date	Man Days Assessment Work Filed
L 778 368	July 16, 1986	20 days
L 778 369	July 16, 1986	20 days
L 778 370	July 16, 1986	20 days
L 778 371	July 16, 1986	20 days
L 778 372	July 16, 1986	20 days
L 778 373	July 16, 1986	20 days
L 778 376	August 24, 1987	100 days
L 778 377	August 24, 1986	20 days
L 778 378	August 24, 1986	20 days
L 778 379	September 4, 1986	20 days
L 798 863	August 16, 1986	20 days
L 798 864	August 16, 1986	20 days
L 798 865	August 16, 1986	20 days
L 798 866	August 16, 1986	20 days
L 798 867	August 16, 1986	20 days
L 798 868	August 16, 1986	20 days
L 798 869	August 16, 1986	20 days
L 798 870	August 16, 1986	20 days
L 798 871	August 16, 1986	20 days
L 798 872	August 16, 1986	20 days
L 798 873	September 4, 1986	20 days
L 798 874	September 4, 1986	20 days
L 798 875	September 4, 1986	20 days
L 798 876	September 4, 1986	20 days
L 798 877	September 4, 1986	20 days
L 798 878	September 4, 1986	20 days



REVISIONS

GEOLOGICAL ENGINEERING SERVICES
Frank P. Tagliamonte P. Eng.

for GLEN AUDEN RESOURCES LIMITED

Title GRENFELL TOWNSHIP PROPERTY

CLAIM INDEX MAP

Fig. 2b

Date: July 1985	Scale: 1"=1/2 mi	N.T.S.:
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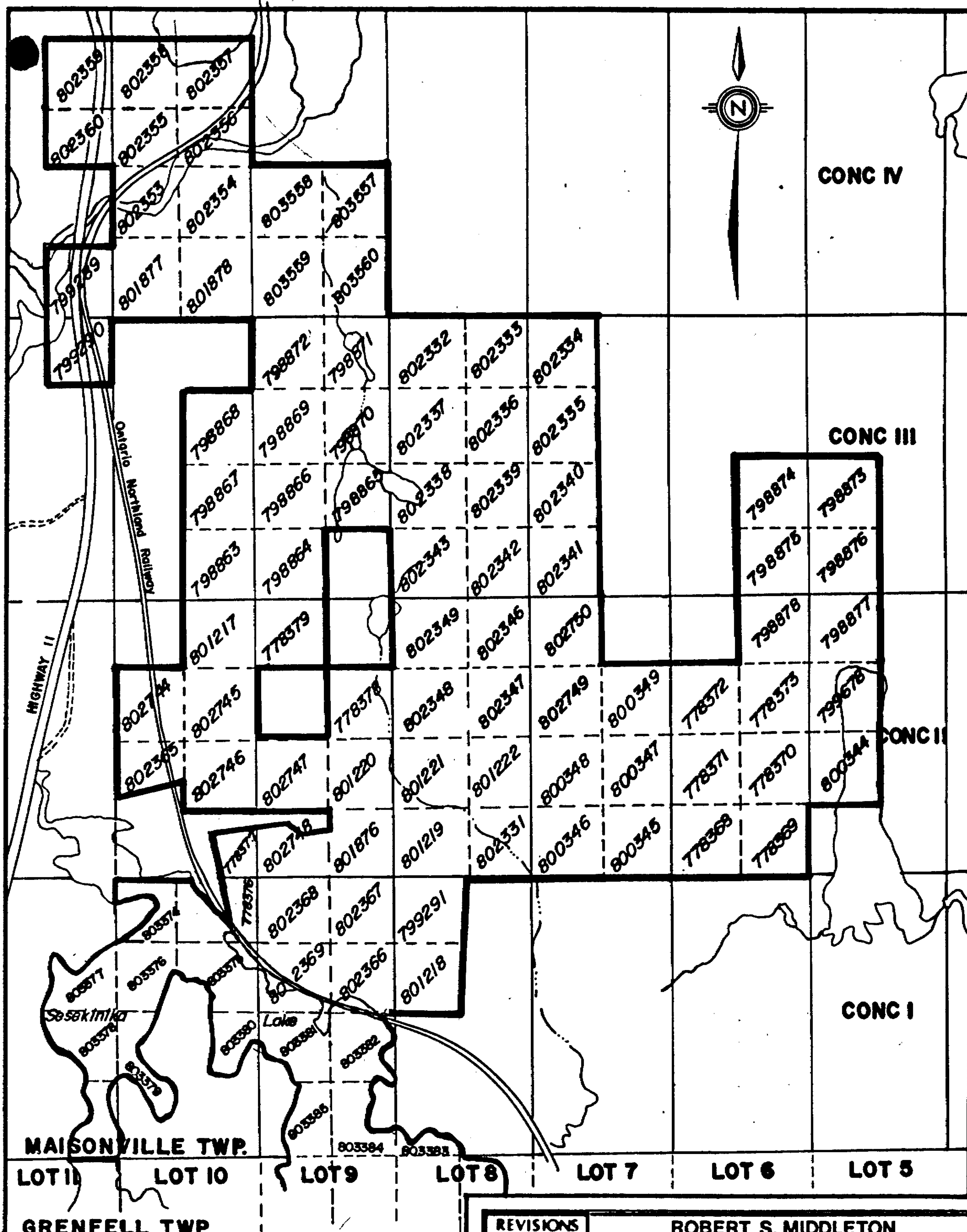


REVISIONS	ROBERT S. MIDDLETON EXPLORATION SERVICES INC.		
	for GLEN AUDEN RESOURCES LIMITED		
	Title **MAISONVILLE TOWNSHIP PROPERTY** *CLAIM INDEX MAP* FIG.2a		
	Date: July 1985	Scale: 1" = 1/2 mile	N.T.S.:
	Drawn:	Approved:	File:

Claim Number	Expiry Date	Man Days Assessment Work Filed
L 803 385	August 24, 1986	80 days
L 803 386	August 24, 1986	80 days
L 803 387	August 24, 1986	80 days
L 803 388	August 24, 1986	80 days
L 803 389	August 24, 1986	80 days
L 803 390	August 24, 1986	80 days
L 803 391	August 24, 1986	80 days
L 803 392	August 24, 1986	80 days
L 803 393	August 24, 1986	80 days
L 803 394	August 24, 1986	80 days
L 803 395	August 24, 1986	80 days
L 803 396	August 24, 1986	80 days
L 803 397	August 24, 1986	80 days
L 803 398	August 24, 1986	80 days
L 803 399	August 24, 1986	80 days
L 803 400	August 24, 1986	80 days
L 803 401	August 24, 1986	80 days
L 803 402	August 24, 1986	80 days
L 803 403	August 24, 1986	80 days
L 803 557	September 4, 1986	20 days
L 803 558	September 4, 1986	20 days
L 803 559	September 4, 1986	20 days
L 803 560	September 4, 1986	20 days

Total of 122 unpatented mining claims.

Topography and Vegetation

Topographical relief in most parts of the property is gentle to moderate. Throughout a good portion of the property, rapid changes in elevation of 50 to 100 feet occur. The iron-rich and iron-poor tholeiites and the diabase dikes form north-south trending ridges.

The highest area of relief is in the northwestern portion of the map-area where a ridge of typically resistant Cobalt Series sedimentary rocks rise 300 feet above the surrounding tholeiitic volcanic rocks.

Vegetation on the property consists of spruce, balsam and pine with minor stands of poplar and birch. Most of the southern part of the property is covered by Sesekinika Lake. Many summer cottages are on the islands and mainland shores of the lake.

HISTORY OF EXPLORATION

The area was first prospected in the early days of the Kirkland Lake gold rush since some aspects of the geology were similar to that of Kirkland Lake area (syenite porphyry intrusives with associated gold-molybdenite mineralization). Gold was found in 1914 in Con. II, Lot 9 of Maisonville Township and considerable activity took place in the 1930's. Most of this work however, is unrecorded. Numerous pits and trenches occur on the Glen Auden Resources Limited property which contain abundant quartz and/or pyrite mineralization but no record of this work can be located in the assessment files.

The Golden Summit mine which is located approximately 200 metres south of the southern border of the Glen Auden Resources property in Maisonville Twp. in Lot 6 Concession I is reported to have produced gold. An unspecified amount of gold production is unofficially reported by previous workers in the area from the Bennett Mine in Lot 9, Con.II which is located on the Glen Auden

Resources Limited property.

Descriptions of early exploration work and the properties on which work was done is given in the section on Economic Geology. Recent exploration work is described here.

The most recent work in the area was a magnetometer survey carried out on the "Bennett Claim" (Lot 9, Con. II, N 1/2, NW 1/4) by C.Forbes in 1984. This survey located a number of high gradient anomalies associated with magnetic phases of the tholeiitic volcanics. These rocks are intruded by syenite porphyry and host north-south trending shallow dipping and vertical quartz zones. This area corresponds to AREA 12 on the property (see Economic Geology).

Prospecting by C. Forbes on various parts of the property has been successful in discovering a new gold bearing structure. Significant assays of up to .726 oz/ton gold were obtained from grab samples of pyrite bearing quartz vein material from Con. II, Lot 7, S 1/2 (claim 800 346). This unrecorded showing contains a 2' wide glassy brecciated quartz and pyrite vein possibly trending 110 - 130° with numerous parallel and branching veins and veinlets (see Photo 5). Old pits 100 feet north of this old trench were observed to contain pyrite in both the quartz veins and in the iron-rich tholeiitic wallrocks. Considerable chloritization, silicification and carbonate alteration occurs in the vicinity of the quartz veins. The numerous poor exposures observed imply that a 50 foot wide quartz stockwork may be present. This area corresponds to AREA 5 (see Economic geology).

A north-south trending chert horizon in Lot 6, Con.III, S 1/2 has also been prospected by C. Forbes (1984). Assays as high as .143 oz Au/ton were obtained in grab samples of banded chert with pyrite. This area corresponds to AREA 1 (see Economic geology). In 1983, trenching was performed by Harold Barry in Lot 9, Con.I, N 1/2 and filed as mechanical work, however, sampling was not reported.

In 1979 an airborne electromagnetic and magnetic survey was released by the Ontario Geological Survey (1979) which covered both Maisonville and Grenfell Twps. This data can be used to trace major structures on the property including major shear zones and graphitic chert horizons.

In 1975 Ecstall Mining (Texas Gulf) did ground electromagnetic and magnetic surveys on small grids in various parts of Maisonville Township. Part of this work actually took place on the margin of the property in Lot 6-7, Con.III and V., Slankis, J.L. (1974). Earlier work by Imperial Oil in the same area tested two north trending EM conductors which revealed the presence of graphite - pyrite zones containing sphalerite mineralization. Exploration results have been compiled by Ploeger, F. et al (1979). Descriptions of early exploration work and the properties on which the work was done is described here.

An index of assessment work is shown in Fig. 3.

Bennett Mining Company Limited (33) (AREA 12 see Economic Geology)

In Maisonville Township, concession II, Lots 9 and 10, on former claim L3688, a two-compartment shaft was sunk to a depth of 530 feet and levels were cut at 125 foot intervals. Crosscutting and drifting were reported early in 1927, but in June the plant was dismantled (Kindle 1936, p.11).

About 800 feet (two holes, 133.5 and 174 feet) and 1,200 feet (one hole, 130 feet) southwest of the main shaft, diamond drilling was done in 1958 by Mr. S.A. Pain. The holes intersected diorite and volcanic rocks cut by syenite dikes and quartz veins (ODMNA files, Kirkland Lake).

C.Cole (34) (300 metres northeast of TL4800N/3500E)

In Maisonville Township, near the boundary between concession III, Lot 7, north half, northeast quarter and concession IV, Lot 7, south half, southeast quarter, four pits were sunk by Crown Reserve Mining Company Limited in 1914. The pits are in fractured silicified mafic volcanic rocks cut by a feldspar porphyry dike. The volcanic rocks contain disseminated pyrite and blebs and irregular stringers of pyrite and pyrrhotite with minor amounts of chalcopyrite. Two samples analyzed by The International Nickel Company of Canada Limited contained 0.03 and 0.04 percent nickel, according to notes by W.S. Savage (in ODMNA files, Kirkland Lake); also see Shklanka, R. (1969).

Elzina Mines Limited (35) (AREA 10 see Economic Geology)

In Maisonville Township, concession IV, Lot 10, south half, narrow quartz-carbonate veins cut hornblende syenite and gabbro. The No. I vein, striking N60E and dipping 50 to 70N, ranges from 3 to 14 inches wide along its stripped length of 200 feet. Grab samples taken at intervals along the vein returned assays of: .02, .03, .02, .01, and .25 oz gold per ton (D.K. Burke 1938). Three holes have been drilled on the property, but no information on them is available.

The Golden Summit Mining Company Limited (36)
(approximately 200 metres south of TL1576N 4480E)

In Maisonville Township, concession I, Lot 6, north half (formerly the Jensen farm) a gold-bearing quartz vein was discovered south of Kapakita Creek, in 1913. The vein was 6 inches wide and was traced for 150 feet. In 1919, the Golden Summit Mining Company Limited was incorporated to take over the property, and in 1921, a pit on the discovery vein was deepened to a depth of 27 feet. In 1924 the company was reorganized to Golden Summit Mines Limited. During 1929 and ensuing years a shaft collared 450 feet west of the old pit was deepened to 405 feet and lateral work was done on the 125-, 250-, and 375-foot levels. A small mill installed in 1935 produced during 1936 and 1937. By 1937, when mining ended, some stoping had been done on the 125-foot level. From 737 tons of ore, total production worth $3,738 was recorded with the Ontario Department of Mines for 1936, 1937, and 1945, when mill clean-up was carried out (ODM 1953, p.16).

Most of the gold is in pyrite-containing quartz-carbonate veins cutting basalt, diorite, syenite, and lamprophyre. Assays of .16 oz gold and less were obtained in the shaft station at the 125-foot level, and .08 oz gold or less along the crosscut (Odell 1930). The shaft was sunk in the vicinity of two narrow east-trending quartz veins about 40 feet apart, the south vein being the discovery vein. Immediately east of the shaft is a strong shear zone trending north, parallel to the strike of the flow. The east wall of the shear is a lamprophyre dike about 50 feet wide. The most important vein encountered underground was exposed in the northwest crosscut on the 125-foot level. It was a high-grade quartz vein striking east and ranging in width from 2 inches to 10 inches. It had been intersected and displaced by a flat fault dipping west. The wall rocks adjacent to the vein were highly fractured and veined with red feldspathic material; they contained gold.

Hastings-Moffat (37) (AREA 7, AREA 9 see Economic Geology)

In Maisonville Township, concession II, Lot 8, south half, southwest quarter, five holes were drilled in 1934 by Erie Canadian Mines Limited, the exploration subsidiary of Sylvanite Gold Mines Limited. This drilling totalled 464 feet consisted of quartz veins striking and dipping in several directions, in an area having a diameter of about 400 feet. The host rock is syenite and altered mafic rocks. A few short intersections (average 2 feet) contained gold yielding about .02 oz gold per ton. The best assay of several samples from pits in Lot 8 and 9 yielded .17 oz gold per ton (Erie Canadian 1934 - ODMNA files, Kirkland Lake).

Labine-Smith (41) (Surrounded by the Glen Auden Resources property on Patented Ground-south and east of Area 12.)

In Maisonville Township, concession II, Lot 9, north half, southwest quarter and northwest quarter, and Lot 10, north half, northeast quarter, five pits and trenches were carefully sampled (ODMNA files, Kirkland Lake, report signed G.W. Dixon, August 10, 1914). Most assays for gold were less than .04 oz gold per ton and for silver were less than 1 ounce per ton.

A shaft with an average dip of 35 degrees, had been sunk to a depth of 80 feet on a narrow quartz vein carrying free gold and tellurides.

Sidney, A. Pain (45) (200 metres south of TL3192N/1000E 200 metres from property boundary)

In Maisonville Township, concession II, Lot 10, north half, northwest quarter, native gold was discovered in quartz veins and oxidized wall-rock on the former "Malouf" claim (Burrows and Hopkins 1914, p.35). The decomposed material from the quartz veins, which are narrow and dip gently west, was treated in an arrastra at the base of the hill near the railway track.

Warren Peterson (46) (In the northwest corner of CL 803558 AREA 16)

In Maisonville Township, concession IV, Lot 9, south half, northwest quarter, in the northwest quarter of the claim (formerly numbered L46158), is the main (copper) showing. The showing is on the east side of a north-trending ridge of mafic volcanic rocks and consists of syenite and mafic volcanic rocks cut by quartz stringers containing cubic pyrite and fine-grained chalcopyrite. A dike of "pebble" lamprophyre cut by a feldspar porphyry stringer occurs in the northeast corner of one pit. In 1952, three holes (totalling 1,000.5 feet) drilled near the showings intersected a number of weakly mineralized zones in sheared and massive mafic volcanic rocks cut by syenite dikes (ODMNA files, Kirkland Lake).

A. Pudden (47) LOT 8 - AREA 11, AREA 2 LOT 10 - in the vicinty of claim 778377

In Maisonville Township, concession II, Lot 8, north half, northwest quarter and southwest quarter, and in Lot 10, south half, southeast quarter, nine holes, totalling 416 feet, were drilled in 1955. The holes were spaced along a north-striking line about 1/2 mile long. Judging from the azimuth of eight of the nine holes, the veins dip east. The holes intersected quartz veins cutting mafic intrusive rocks containing sparsely disseminated pyrite and chalcopyrite (ODMNA files, Kirkland Lake).

J.G. Russell (48) (In a patented claim 100 metres south of CL 798865 southwest of Olson Lake)

In Maisonville Township, concession III, Lot 9, south half, southeast quarter, near the No. 1 post of claim L15833, a rusty silificied shear zone has been exposed by pits on the west-facing slope of a hill adjacent to a swamp. The strike of the shear zone, which is in mafic volcanic rocks, is N10W and the dip is about 65W. Irregular quartz stringers and feldspathic material cut the sheared rocks, which contain finely disseminated pyrite and minor molybdenite.

About 500 feet southwest, on the western side of a low outcrop, a quartz vein 4 to 6 inches wide strikes

About 500 feet southwest, on the western side of a low outcrop, a quartz vein 4 to 6 inches wide strikes north and dips 20 to 40 west through pillowed volcanic rocks. A narrow streak of darker pyrite-bearing quartz on the footwall is said to have contained gold and tellurides, according to notes by W.S. Savage (in ODMNA files, Kirkland Lake). In the south trench the vein forms a zone having a maximum width of 4 feet.

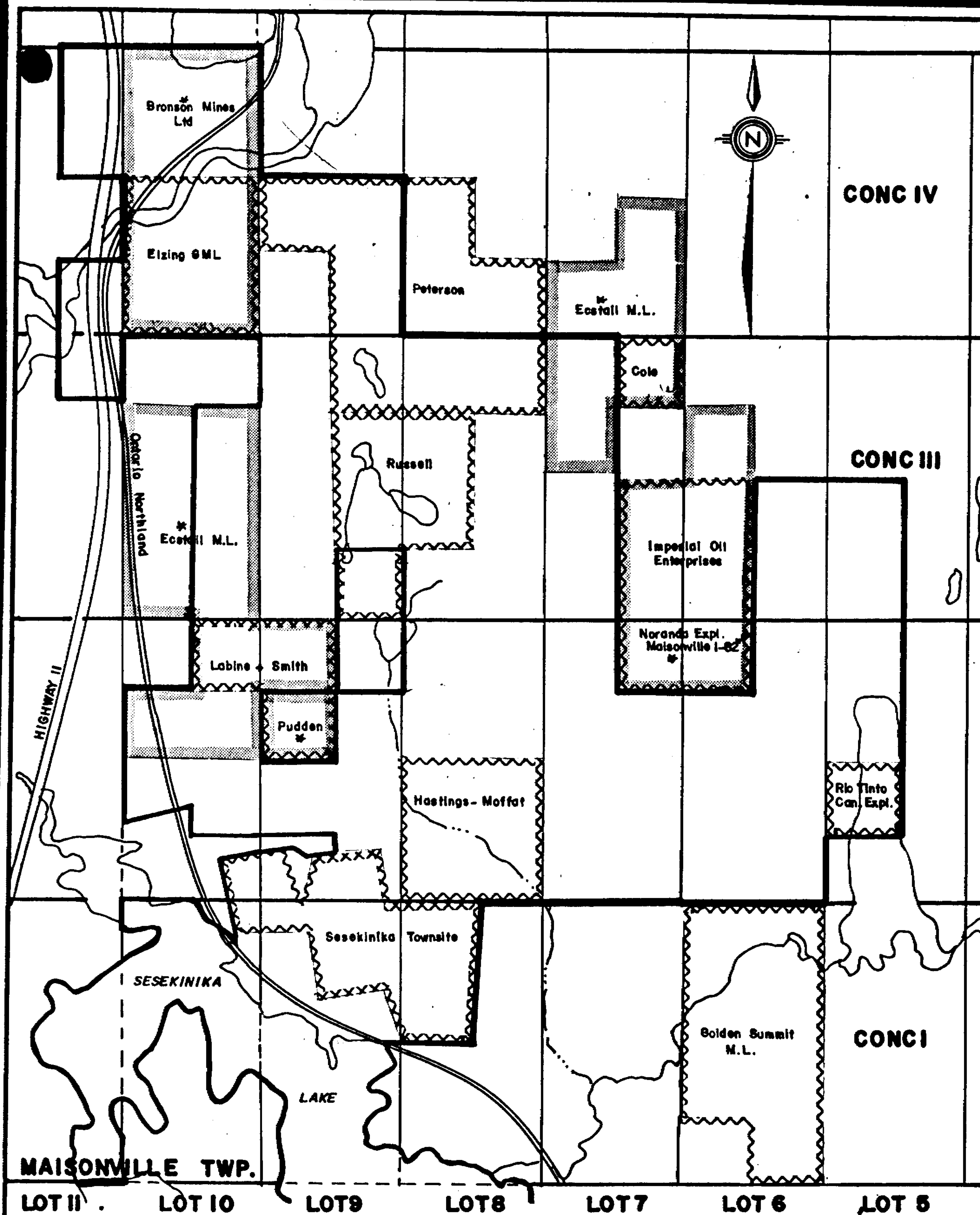
About 150 feet east of the trench, on the eastern side of a low north-trending ridge of volcanic rocks near the centre of the claim, brecciated andesite is cemented with a fine network of quartz-carbonate-feldspar stringers reported to have contained molybdenite.

On knoll about 250 feet south of the above showing, quartz-carbonate-feldspar stringers, an average of 1 inch wide, cut brecciated andesite containing pyrite and epidote. The eastern side of the knoll is cut by a syenite dike, and a sample from a trench cut through the knoll from east to west is said to have yielded .14 oz gold per ton across 22 feet, according to Savage.

Sesekinika Townsite (49) (AREA 7 see Economic Geology)

According to notes by Sylvanite Gold Mines Limited (in ODMNA files, Kirkland Lake), during 1914 some free gold was found by James L. Hughes on claim L4034 in Maisonville Township. The gold was in a narrow quartz vein dipping 15NW. About 1916, Hughes sold the property to Walter Young (of Toronto) and New York interests.

The part of the "Hastings-Moffat" claim L4035 (which is described separately but is redescribed here by Lovell since it is also part of this property) that is in Maisonville Township, concession II, Lot 8, south half, southwest quarter, was drilled during 1934 by Erie Canadian Mines Limited, the exploration subsidiary of Sylvanite. Five holes, totalling 464 feet, were drilled to intersect a quartz vein 2 feet wide that strikes east and dips 60N. A few short intersections (average 2 feet) contained gold yielding about .02 oz per ton. The best assay from several samples from pits in Lots 8 and 9 yielded .17 oz gold per ton (Erie



NOTE: - * covered with [shading]

- No previous work in Grenfell Township Property

REVISIONS	
	ROBERT S. MIDDLETON EXPLORATION SERVICES INC.
	for GLEN AUDEN RESOURCES LIMITED
	Title MAISONVILLE TOWNSHIP PROPERTY
	PREVIOUS WORK FIG. 3

Date: July 1985	Scale: 1" = 1/2 mile	N.T.S.:
Drawn:	Approved:	File:

Canadian Mines Limited 1934).

REGIONAL GEOLOGY

The Maisonville township property is located in the south part of the Kirkland Lake area and is underlain by Archean volcanic, sedimentary, and intrusive rocks which are part of the Abitibi Greenstone Belt. In the south part of the Kirkland Lake area, the Archean rocks are unconformably overlain by Proterozoic sedimentary rocks of the Cobalt series. Diabase dikes cut all of the rock types in the area the Cobalt sediments, which occur in the northwest corner of the property of interest.

In the Kirkland Lake area, the volcanic rocks of the Abitibi Greenstone belt are preserved in a synclinorium located between the Lake Abitibi Batholith and the Round Lake Batholith. The north and south limbs of the synclinorium are cut by two large east-striking fault zones: the Destor-Porcupine Fault Zone, and the Kirkland Lake-Larder Lake Fault Zone, respectively.

Rocks in the area have been affected by subgreenschist regional metamorphism.

The volcanic rocks in the Kirkland Lake Region were formed during cycles of volcanism associated with sedimentation and plutonism. Each cycle consisted of komatiitic volcanism followed by the tholeiitic, calc-alkalic, and finally, alkalic volcanism (Jensen O.G.S., 1979).

The Lower Supergroup on the south limb of the synclinorium, southeast of Kirkland Lake, contains a cycle of komatiitic, tholeiitic, and calc-alkalic volcanics represented by the Wabewawa, Catherine, and Skead Groups, respectively (Jensen 1979).

The volcanic cycle represented by the Upper Supergroup consists of komatiitic lavas of the Larder Lake Group succeeded by tholeiitic rocks of the Kinojevis Group and calc-alkalic rocks of the Blake River Group. The Maisonville-Grenfell Township property of Glen Auden Resources Limited is underlain by the tholeiitic rocks of the Kinojevis Group and partly by interflow tuffs of calc-alkalic composition of the Blake River Group. This rock series is similar to the Tisdale Group in the Timmins area which contains numerous well known gold deposits. Alkalic volcanic rocks of the Timiskaming Group unconformably overlies the Blake River and kinojevis Groups.

On the north limb of the synclinorium, the oldest rocks are calc-alkalic volcanic rocks of the Hunter Mine Group. Unconformably overlying the Hunter Mine Group is a komatiitic succession called the Stoughton-Roquemaure Group (Jensen, 1976a, 1978b, O.G.S.)

The sinking of volcanic rocks during their accumulation would explain the origin of the synclinorium. Various intrusive differentiates including monzonite, porphyritic syenite, mafic intrusive syenite, and augite syenite intruded the above mentioned rocks as plugs, dikes and/or sills. Gold mineralization frequently occurs around or within the syenite bodies as well as along north-south trending fault structures. Major north-south faults have been interpreted (Middleton 1976) based on the regional gravity data. These features are also discernible from the aeromagnetic data, O.G.S.(1979).

PROPERTY GEOLOGY

The oldest rocks on the property are the tholeiitic basalts of the Kinojevis Group and are divided into iron-rich and iron-poor, tholeiitic basalts. The coarser-grained variety (2-5mm) of the basalts were previously mapped as coarse-grained gabbro intrusives, however, more recent mapping in the area by L. Jensen O.G.S., has discovered that these "gabbro intrusions" are in fact coarse-grained iron-rich tholeiitic basalt flows. Similar coarse-grained flows occur on the Maisonville-Grenfell township property, and it is probable that no gabbro intrusives exist on the property to the authors knowledge.

These tholeiitic basalts have been intruded by a series of felsic syenitic dikes and mafic diabasic dikes. Rocks of the felsic variety vary from earlier trondhjemitic phases to porphyritic syenite, syenodiorite to a mafic syenite. Alteration around these dikes includes silicification, epidotization and the introduction of hydrogarnet and carbonate along fractures.

The predominant rock units that occur on the Maisonville-Grenfell Township property are massive (2-5 mm) coarse-grained, fine-grained, and pillowed iron-rich and iron-poor, tholeiitic basalts. These mafic volcanics are typically dark green to black in the more iron-rich varieties and a lighter green colour in the iron-poor basalts. The eastern portion of the property is underlain by predominantly iron-poor, tholeiitic basalts with a minor narrow iron-rich tholeiitic basalt sequence containing sheared chert, cherty tuffs and crystal tuff interflow units. Throughout the remainder of the property the coarse-grained iron-rich tholeiites form units 50 to 500 m thick that alternate with finer grained units 2-5 m thick. A few of the fine-grained map units represent a gradational and compositional change in the rocks from iron-rich tholeiite to an iron-poor tholeiite generally confirmed by the magnetism of the rock. The iron-rich tholeiites are strongly magnetic while the iron-poor tholeiites are weakly magnetic. Some of the coarse-grained iron-poor, magnesium tholeiites appear to grade laterally into fine-grained pillowed lavas of the same composition. Minor amounts of pillowed iron-rich tholeiitic basalt also occur.

These iron-rich tholeitic basalt flows are thought to be the extrusive equivalents of the gabbros occuring in the townships north of the property. The claims covering most of Sesekinika

Lake are underlain by predominantly iron-poor tholeiitic basalts that vary from massive coarse-grained (2-5 mm) flows, to fine-grained massive flows, to pillowed flows with minor variolitic and hyaloclastite phases. These mafic volcanics are medium green and weakly magnetic. Minor syenitic dikes and diabasic dikes with varying amounts of magnetite cut the mafic volcanics. These may correspond to several magnetic anomalies that occur on the regional aeromagnetic map.

Several interflow units of chert, cherty tuff, cherty oxide iron formations, crystal tuff, and tuff breccia of calc-alkalic dacite composition occur on the property overlying the iron-rich tholeiitic basalts. These may represent the waning phases of the volcanism. They may mark periods of quiesence the change from iron-rich tholeiitic basalt to iron-poor, tholeiitic basalts.

The shear zones consist of highly fractured, epidotized, material containing 5-15% pyrite as fine stratiform seams, stringer pyrite and as disseminations.

The lava flows are, in places pillowed, variolitic, amygdaloidal, and hyaloclastic. Little evidence of stretching or flattening is visible in the area. The only trace of movement is the presence of chlorite-carbonate rich slickensides at the flow contacts, and in some pillow selvages of the lava flows.

The presence of interflow tuff units of calc-alkalic composition may indicate an overlap of the later calc-alkalic

Blake River Group into the Kinojevis Group. The crystal tuff unit seems,from field relationships, to occur along the contact between iron-rich and the iron-poor, tholeiite flow contacts, following bedding contacts as determined from pillow tops and from other sedimentary horizon contacts.

Major diabase dikes were found, predominantly in the eastern portion of the property around Kapakita Lake. At this location the dikes cut predominantly iron-poor, tholeiitic basalts. However, throughout the remainder of the property, the similarity between the diabase dikes and the iron-rich coarse-grained (2-5 mm) tholeiitic basalts posed a constant problem throughout the mapping.

The major north trending diabase dikes are thought to follow fault zones and major joint directions.

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unconformity

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   f. amygdaloidal
   h. variolitic
   i. chlorite schist

Huronian (Cobalt Group) Metasediments

Fairly flat-lying sedimentary rocks form high ridges in the northwestern parts of the Maisonville property, north of the Whiteclay River. Cliffs about 200 feet high contain intermixed sedimentary rocks including conglomerate, arkose and a quartzitic graywacke. These rocks unconformably overly all other types of rock in the map area.

Unit 7a Conglomerate

The conglomerate forms the majority of the sedimentary rocks on the property. Subangular to subrounded pebbles (and boulders) from a variety of rock types comprise 5 to 40% of the conglomerate, and range from 1 cm. to two meters in diameter. Granite pebbles are predominant, but syenite, granodiorite gneiss, rhyolite, andesite, jasper iron formation, basalt, diabase, and a few pebbles of quartz vein material also were present. The matrix of most of the conglomerate that contains a high proportion of pebbles, is fine to medium grained greenish-grey or pink quartzite or pink or dark-red arkose. The matrix of most of the conglomerate that contains a low proportion of pebbles is a massive fine-grained argillaceous quartzite.

The immaturity of the sediment and subangularity of many pebbles indicates that the source rock was not subjected to chemical weathering, and the pebbles have not been transported far from their source. Many people believe that the conglomerate is a tillite.

Unit 7b Arkose

This rock is seen in areas where a high proportion of pebbles occur in the conglomerate. The matrix of the conglomerate is a pink or dark-red arkose and often forms thin pink beds of arkose within the conglomeritic unit.

Unit 7c Quartzite, greywacke

This unit forms the matrix of the conglomerate where a low proportion of pebbles occur. This rock has a greenish gray matrix, is medium grained and forms thin beds. Some outcrops in the quartzite-arkose sequences contain some evidence of water action such as graded bedding.

Mafic Intrusive Rocks

Unit 6 Diabase

Diabase dikes are seen cutting all of the rocks in the map area except for the Huronian metasediments. Weathered surfaces are dark grey or rusty brown and fresh surfaces are grey to greyish black. The coarser grained variety is sometimes mistaken for Unit 2d, massive (2-5 mm.) coarse-grained iron-rich tholeiitic basalt, and the darker fine-grained chill margins of the dikes are often mistaken for Unit 2a, the massive fine grained iron-rich tholeiitic basalt. The diabase dikes alter the mafic volcanics only slightly (chlorite and feldspar in the wall-rocks with lesser amounts of magnetite, pyrite, sericite, and calcite). Most of the diabase dikes fill faults and joints striking within 15 degrees of north.

Felsic Intrusive Rocks

In outcrop, these rocks show up as red to light pink zones cutting the dark green to black metavolcanic country rocks. The dikes show few or no inclusions whereas the larger stocks tend to contain numerous dark green, altered inclusions 1 cm. to 3 cm. in size. In some places, the dikes cut one another indicating that the syenitic rocks were produced during two or more pulses of igneous activity. Crystallization occurred with differentiation which generated other forms of syenite. The syenites are fractured into three strong joint directions and several less well developed irregular fracture directions. These joints are often injected by mineralized silica-rich fluids, that locally are auriferous.

Unit 5b Porphyritic Syenite

This rock occurs as red dikes crosscutting the green metavolcanics on the property. Fresh surfaces are pink to red in colour comprised of fine feldspar and sericite (70-75%) speckled with 10% fine hornblende needles (0.1 to 1 mm. long) or patches of chlorite 1 to 2 mm. in diameter, and 1 to 3% pyrite and magnetite or up to 5% adjacent to shear or fault zones, generally along contacts. Phenocrysts (5-10%) of partly altered euhedral plagioclase, 1 mm. to 4 mm. (average 2 mm.) in diameter also occur. These dikes have metamorphic haloes including a potassium metasomatism in the surrounding volcanic rocks. Varying amounts of pyrite and chalcopyrite mineralization also occurs with associated spiderweb quartz stringer systems adjacent to contacts with the metavolcanic rocks.

Unit 5c Syenodiorite

This equigranualr rock occurs as dikes crosscutting the mafic metavolcanic rocks. Unlike the other syenite dikes, these contain quartz that occurs interstitially to the feldspars. Weathering surfaces are pink to red in colour and are comprised of 85% feldspar and sericite, 5% hornblende needles or chlorite patches, 1 to 3% pyrite, and 5% clear quartz grains. The metamorphic aureole produced by these dikes is minimal with only minor amounts of a red hematitic alteration.

Unit 5d Mafic Syenite

This unit weathers a pink to white colour, while fresh surfaces are light grey. The matrix is aphanitic and contains 30-40% black acicular pyroxene (augite?) phenocrysts from 1-2 mm. in length. The rock is moderately magnetic to nonmagnetic and occassionally contains 1-2% disseminated pyrite. The contacts have metamorphic aureoles including silicification, epidotization and hematization of the country rock. It is difficult to tell true compositon from solely hand specimen examination due to the aphanitic matrix but it is thought that the rock is comprised of mostly feldspar and sericite.

Metasediments

The bulk of the sedimentary rocks in the area consists of interbedded cherty sulphide formations. Other rocks include argillite, graphite, a laminated siliceous sediment and a cherty oxide iron formation. In some localities massive chert beds occur over a considerable distance (400 meters); in others a cherty oxide iron formation with narrow graphite beds is predominant; and in many places a finely laminated siliceous metasediment occurs that often contains considerable sulfides; finally in a few localities massive chert and a cherty tuff occur.

Cherty Sulphide Facies Iron Formation

This unit occurs as 2 m. to 10 m. wide, massive, granular chert beds lying stratigraphically above the iron-rich tholeiitic basalts. In one location these chert horizons can be traced for distances of over 400 metres. Cherty sulphide facies iron formations are predominantly composed of white to light grey chert weathering a buff white colour. The chert occurs in outcrop as follows:

(a) AREA 1: 50 m. west of No. 2 of 798875

(b) AREA 3: 100 m. north of No. 2 of 802747 1-2% py

(c) AREA 4: L1600E/3240N and 20 m. east

(d) AREA 8: 160 m. W. of No. 1 of 802346 at TL 3192N at 3140E

(e) AREA 11: TL 3192N at 2480E

(f) CL80233: TL4800N 2830 E, 180 m. East of No. 1 of 802337, 200 m. east of CL802336 No. 2 of 802337

(g) CL802332: TL4800N/2720 m. E. and 50 m. south

Mineralization within the chert characteristically occurs as both statiform-type, 1-3 mm. thick layers. and as fine disseminations. Within shear zones, the cherts are highly fractured and contain stringer pyrite and associated epidote and carbonate. In general pyrite constitutes less than 8% of the chert. The cherts reflect the effect of folding within the tholeiites from varying attitudes and many of the chert layers seem disrupted and broken, the dilatent zones being filled by magnetite or pyrite.

Most of the sulphide facies iron formations do not appear to form continuous layers, it appears that they form a series of disconnected, isolated lenses, perhaps in part forming an en-echelon type arrangement. All of the sulphide facies iron formations occur in the top or near to the top of the iron-tholeiites. The sulphide facies iron formation occurs in greater abundance than the oxide facies on the Maisonville Township Glen Auden Resources Ltd. property.

Unit 3b Slate, Argillite

Minor grey slatey sedimentary rocks form units up to .5 m. thick and occur in AREA 1 in trench - 1 (see detailed geology) in the eastern portion of the property interbedded with chert and cherty tuff units. The slate is highly friable, grey in colour, and occurs along the hanging wall of the cherty tuff, Unit 3f. The unit is no more than 12 cm. in width and contains only trace amounts of pyrite.

Unit 3c Laminated, Siliceous

This unit occurs in: Area 1, Area 2 and in Area 4 (see detailed geology section) as .5 m., and 5 metre wide beds, respectively. The rock is very finely laminated on a scale of 1-2 mm. and is comprised of finegrained white (quartz), light green (epidote), red, maroon (hematitic feldspar?) and dark green (chlorite) laminae. The matrix is aphanitic, strongly siliceous, and where sheared, contains up to 4% stringer pyrite. It is still unsure as to the origin of this unit as it usually occurs wholly within the iron-rich tholeiitic basalts in the middle of the iron-rich sequence, unlike the other metasediments and tuffs that occur stratigraphically along the contact with the iron-rich and the iron-poor tholeiitic basalts.

Unit 3d Cherty Oxide Iron formation

This unit occurs in Area 8 and in Area 16 as narrow 10-100 cm. wide beds within the iron-rich tholeiitic basalts near to the contact with iron-poor, magnesium tholeiitic basalts. The oxide facies iron formation typically consists of alternating layers of magnetite and chert. The magnetite layers are 1 mm. to 20 mm.

thick, and average approximately 5 mm. in thickness, and consist of fine-grained granular magnetite and chert. Chert layers are dark grey to black on fresh and white on weathering surfaces, and vary from few millimetres to 30 cm. or more in thickness yet commonly average approximately 1 to 3 cm., and are almost invariably present in greater amounts than their magnetite-rich layers. The chert looks sugary, recrystallized, granular and contains minor grains of pyrite, pyrrhotite and magnetite.

Unit 3e Graphite

This unit occurs as discontinuous layers from 1 cm. to 3 cm. thick within or interbedded with the sulphide facies iron formations in Area 1, Area 8 and Area 16. The layers are dark grey to black, soft and occur as thin layers within the cherty oxide iron formations.

Unit 3f Cherty Ash Tuff

This unit occurs in Area 1, foot wall to the sulphide facies iron formation. The cherty tuff typically consists of an aphanitic, siliceous, cherty, black matrix with 1-2% clear quartz eyes, 10-15% black biotite phenocrysts and 5% white plagioclasse crystals. The cherty tuff contains up to 5% stringer pyrite with associated epidote and carbonate along fractures within shear zones.

MAFIC METAVOLCANICS (Kinojevis Group)

The oldest and most extensive rock units on the property are the 50 m. to 500 m. wide iron-rich and iron-poor magnesium tholeiitic basalts of the kinojevis Group, primarily the massive (2-5 mm.) coarse grained and pillowed flows. On the aeromagnetic map the kinojevis group has a distinctly striped pattern caused by groups of iron-rich tholeiitic basalts alternating with low-iron, magnesium tholeiitic basalts of lower magnetic content.

A typical cycle of the kinojevis Group occurring on the Maisonville-Grenfell Township property consists of a greenish grey magnesium iron-poor basalt at the base, a black to dark green iron-rich, low-magnesium basalt as the main unit, and a thin cherty unit at the top. An overall iron enrichment trend occurs cyclically within the main trend in the volcanic sequence. According to L. Jensen, O.G.S., 1983 the lower 1000 m. of he kinojevis group also contains interflow-units of tuff breccia, crystal tuff and cherty tuff of calc-alkalic dacite and rhyolite composition, as well as chert, argillite, graphite and cherty oxide iron formation. It would appear that the eastern half of the Glen Auden Resources property occupies the lower portion of the kinojevis group. The reason why the beds of interflow tuff and interlayered beds of carbonaceous and argillaceous sediment of the lower 1000 metres of the kinojevis group have the composition of calc-alkalic rocks is not known. Their presence suggests a pause in the mafic volcanism and they may in fact represent an overlap of the Blake River volcanic event comprised predominantly of calc-alkalic rocks.

The upper part of the pillowed flows of the low-iron basalts is hyaloclastite material occurring as either matrix material within the pillow breccia or as thin 10 cm. - 100 cm. beds topping the pillow breccia unit. The pillow lavas in the iron-rich and iron poor tholeiites are variolitic in many places.

Iron-rich Tholeiitic Basalt

Unit 2a Massive, fine-grained

This rock is characterized by a rusty weathering surface a black to dark green coloured fresh and weathered surface and a high magnetite content, and occur as units 10 cm. to 30 cm. thick that often lie stratigraphically along the contacts of the more massive diabasic to gabbroic textured lava flows. Slightly coarser grained portions (1-2 mm.) also occur within this unit as 10m.-100m. thick beds. This fine-grained basalt grades rapidly upward into the coarse-grained diabasic and gabbroic textured basalt.

Occasional light green clusters of saussuritized plagioclase also occurs. Where traversed by quartz veining the rock is silicified and may contain disseminated pyrite concentrated along the vein selvages.

Unit 2b Pillowed

Some of the massive flows (Unit 2d) are separated from one another by pillowed lava flows from 15m to 200m thick. "The pillows are closely packed and have good pillow ellipsoidal shape. On weathered surfaces, the pillows are 0.3 to 0.9m. in diameter, and are characterized by their strongly weathered, rusty selvages. The selvages are 1 to 2cm. thick, and have pillow fragments and altered glass globules and shards in their thicker portions. The pillow tops are smooth, convex, curved surfaces and at the pillow base, tails project downward between underlying pillows. Where the pillow lavas directly overlie a more massive lava flow they are slightly flattened parallel to the strike of the lava flow and have no tails." In texture and mineralogy, the fine-grained pillowed basalt differs from the coarser grained massive basalt. Plagioclase laths 0.1 to 1mm. in length comprise 40 to 45 percent of the rock. Subhedral to anhedral platy augite grains 0.2 to 1mm. in size ophitically enclose the plagioclase and comprise 40 to 45 percent of the rock. Approximately 10 percent magnetite, quartz, and sulfides form the remaining portion of the rock.

Unit 2c Pillow Breccia

The pillow breccia within the iron-rich tholeiitic basalts is rare occurring in a few localities in the east central part of

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Jensen, L.S. and Langford, F.F., 1983, Geology and Petrogenesis of the Archean Abitibi Belt in the Kirkland Lake Area, Ontario, Ontario Geological Survey, Open File Report 5455, pp. 520.

the property. The hyaloclastite material in the iron-rich tholeiitic basalt, is similar to that found in the low-iron or iron-poor tholeiite, except for its dark green to black colour and its higher iron content. The hyoloclastite is an aphanitic, tuffaceous rock with a rough brown weathering surface. It is composed of shards and granules of chloritized tachylite in a chloritized matrix.

Unit 2d Massive (2-5 mm.) coarse grained flow

The massive iron-rich basalt has rounded, smooth, dark-green partly rusted weathering surfaces. On fresh surfaces, the basalt is a black to dark green rock mainly because it contains numerous hornblende grains 2-4mm., long and because of its high magnetite content. According to Jensen 1983, O.G.S. the rock is composed of 40 to 50 percent late magmatic hornblende, pseudomorphic after subhedral clinopyroxene, and ophitic to euhedral plagioclase which forms 25 to 30 percent of the rock. The remainder of the rock is composed of 5 to 10 percent titaniferous magnetite, 5 to 10 percent chlorite, and 2 to 8 percent interstitial quartz. In most places, the plagioclase is partly altered to epidote, chlorite and albite. According to Jensen 1983, the alteration occurred during the late cooling stage of he basalt. Near to the syenitic dikes the texture of the basalt is partly destroyed by the formation of fine actinolite, epidote and quartz.

Unit 2f Amygdaloidal

This unit occurs towards the upper portion of the flow, and consists of homogeneous medium-grained basalt which contains numerous irregular cooling fractures. The amygdules are from 0.5mm. to 2mm. in size and are filled with quartz and occassionally calcite and epidote. The amygdaloidal basalt often forms a knobby weathering surface due to the more resistant quartz amygdules. This unit is strongly magnetic.

Unit 2g Interflow Intermediate Crystal Tuff

These rocks occur as interflow units 10 cm. to 10 m. thick with a matrix ranging from green to light grey, and crystals ranging from 1 mm. to 4 mm. in size. Many of these units form the upper portion of the iron-rich tholeiitic basalt sequences and are useful as marker horizons for the tops of the iron-rich tholeiitic cycle. On the outcrop, it weathers a buff, light grey to green colour with white, partly kaolinized broken plagioclase crystals, angular to subrounded in shape and minor rounded quartz phenocrysts (1 mm. to 4 mm.). The crystals form from 45 to 70 percent of the rock set in an amorphous matrix. The origin of this unit is thought by the author to be formed from an overlap of the later Blake River calc-alkalic volcanic event with the later Kinojevis Group tholeiitic event.

Unit 2h Variolitic

The pillow lavas in the iron-rich tholeiitic flows are variolitic in many places. The variolites range in size from 1 to 5mm., and occur as layers around the chilled rims of the pillows. On the outcrop, the variolites show up as knobs more resistant to weathering than the enclosing dark green or rusty brown weathered surface of the fine-grained basalt. The variolites are comprised of plagioclase crystals.

Unit 2i Chlorite Schist

The sheared iron-rich tholeiite is strongly foliated, dark green and is composed primarily of chlorite and carbonate. This unit occurs in only a few localities on the property and usually marks lithologic contacts. Trace amounts of disseminated pyrite occur within these zones.

1. Iron-poor tholeiitic basalt

Unit 1a massive, fine-grained

This rock is characterized by a light to medium green weathering and fresh surface, an aphanitic matrix, and a weak magnetic suceptibility and occurs as flows 1.5 m. to 100 m. thick. In general, the massive flows occur toward the base of a formation of Iron-poor tholeiitic basalt and are in places separated from one another by pillow-lavas and pillow-breccias ranging from 15 to 100 m. thick. This fine-grained basalt grades rapidly upward into diabasic and gabbroic textured basalt. Where traversed by quartz spider-web veining the rock is silicified and may contain pyrite along the vein selvages.

Unit 1b Pillowed

In the iron-poor tholeiitic basalts, some of the more massive flows (Unit 1d) are separated by pillowed lava flows that are in greater abundance than in the iron-rich tholeiites. The pillows range from 0.3 to 1 m. in diameter and many have a preferred elongation. Where tightly packed the pillows are ellipsoidal and molded against those below. Some pillowed units are formed of loosely packed, irregular, bulb-shaped pillows. The interstices between the pillows are filled with a light green hyaloclastic material.

The pillows are easily visible because of the chilled rims, which are 2 to 3 cm. thick, that consist of dark green chloritized glass that is deeply weathered than the light coloured pillow interiors.

Unit 1c Pillow Breccia

Pillow breccia within the iron-poor, magnesium tholeiites occurs at the top of the main pillowed lava flow. Many of the pillow-breccia units grade into a solely hyaloclastite bed. The hyaloclastite material surrounding the pillow fragments is tuffaceous, light green in colour, aphanitic, siliceous and contains fragments and shards of chloritized tachylite. As soon as the hyaloclastite unit contains pillow fragments the unit constitutes a pillow-breccia, that is 10cm. to 50cm.thick and is generally associated with the pillow-lava flow. Where a pillow lava grades into a pillow breccia the pillows become smaller and vary widely in shape and form and are highly fragmented. The proportion of pillow fragments to hyaloclastite matrix ranges from 20 to 80 percent.

Unit 1d massive (2-5 mm.) coarse-grained

The massive iron-poor basalt has a smooth light-green partly rusted weathered and fresh surface. Compositionally the iron-poor basalts are similar to the iron-rich basalts except for the magnetite content. Near to the syenite dike contacts the rocks are chloritized, epidotized and partly silicified where cut by quartz veining.

Unit 1e hyaloclastite, fragmental

Thin hyaloclastite, fragmental units are characteristically interlayered with the lava flows. Many of the pillow lavas grade upward into hyaloclastite composed solely of angular and irregular chloritized glass shards and globules, 0.1 cm. to 2cm. in size. The hyaloclastite is aphanitic, light green and siliceous with a rough, rusty brown weathered surface. As soon as the hyaloclastite unit contains pillow fragments, the unit constitutes a pillow-breccia.

Unit 1f Amygdaloidal

This unit occurs towards the top of the flows and consists of a homogeneous fine-grained basalt. The amygdules are from 0.5 mm. to 2 mm. in size and are filled with quartz and occassionally calcite. This unit is weakly magnetic.

Unit 1h Variolitic

Pillow lavas in the iron-poor tholeiitic flows are variolitic in places. The variolites range in size from 1 to 6 mm., and typically occur as two or more concentric layers just beneath the chilled rim of the pillow. On the outcrop, the variolites show up as grey knobs more resistant to weathering than the enclosing matrix of fine-grained basalt. The variolites are composed primarily orf plagioclase crystals.

Unit 1i Chlorite-schist

The sheared iron-poor tholeiites are strongly foliated, medium green in colour and are comprised primarily of chlorite and carbonate. This unit occurs along the iron-poor tholeiite contacts or where the iron-poor tholeiitic basalt is in contact with a metasediment. Trace amounts of disseminated pyrite occurs within these zones.

STRUCTURAL GEOLOGY

The sedimentary rocks and the pillowed flows show strike directions from 050° in the southwestern part of the property to 195° throughout the remainder of the property with dips generally nearing vertical. Evidence for major folding occurs in the southwestern portion of the property just north of Sesekinika Lake from pillow top determinations and from the aeromagnetic map of the area, where the iron-rich tholeiitic basalts are traceable around the nose of a fold in this locality.

Several areas of highly sheared, fractured, carbonatized, silicified, epidotized and quartz-veined zones occur on the Maisonville-Grenfell touwnship property. These shear zones are listed below:

	Location	Attitude	Occurrence of shearing and faulting
1)	Area 1	185°/80E	sediment-mafic horizon, stringer pyrite
2)	Area 2	020°/vert	sediment-mafic horizon, stringer pyrite, quartz veining
3)	Area 4	175°/80E	sediment-mafic horizon, stringer pyrite, quartz veining 175/80°E
4)	Area 5	175°/vert	fault zone along iron-rich and iron-poor tholeiite contact-quartz veining 110°/vert
5)	Area 8	185°/55°W?	
6)	Area 9	180°/vert	syenite-mafic contact-quartz veining
7)	Area 10	170°/20°W	magnesium tholeiite (assoc syenite dikes)-

			quartz veining 170°/20°W
8)	Area 15	175°/70°E	
9)	Area 16	165°/	
10)	120m. W of No. 1 of 778378	180°/vert	iron-rich, iron-poor tholeiite contact
11)	200m. W of No. 1 of 79887	180°/vert	
12)	220m. W of No. 1 of 802347	175°/vert	

The location of many faults can be detected from lineaments that show up on the air photographs of the area. These lineaments are long linear valleys and depressions occupied by streams. The lineaments probably represent narrow shear zones or faults which were preferentially eroded by glaciation action. Where exposed in bedrock, the faults and shear zones are less than 15 m. wide with minor chlorite, carbonate, epidote, hematite and sericite with associated sulphide mineralization.

Both the tholeiitic basalt and the syenitic intrusions are fractured into three regular, strong joint directions and several well-developed irregular fracture directions that branch from the strong joint sets. The joint sets in both lithologies are filled with quartz veins. After the syenitic intrusion event the rocks cooled to fracture in a brittle manner.

Field observations indicate that the strongest joint directions from most to least prominent are as follows:

165-175° / 60-70°W
180-185° / vertical
100-105° / 65-75°NE
170-175° / 20-35°E
062-085° / 70°SE to vertical
125-135° / vertical

The north-south shallow and steeply dipping and the southeast steeply dipping veins are filled with dilatent quartz-carbonate with associated gold, molybdenite, pyrite and chalcopyrite.

The fold structure of the map-area is largely determined from attitudes of pillows in lava flows, and from the strikes and dips of contacts between massive flows. Additional information is derived from individual flows and fragmental and sedimentary units which can be used as marker horizons in the volcanic sequence. Pillows, amygdules, and hyaloclastic textures are undeformed throughout the sequence, indicating that no deformation from folding or faulting has affected rocks in the map-area. Features such as variations in thickness and continuity of flows are largely depositional features rather than structural features.

Many of the map-units and individual flows within the map-units of the tholeiitic sequences are continuous for several kilometres and have relatively constant thicknesses. The sedimentary units are discontinuous and may in fact be pockets or lenses rather than continuous beds.

The tholeiitic volcanic rocks on the Glen Auden Resources Limited property occupy the southern part of the southern limb of a synclinorium which occurs north of Kirkland Lake and extends eastward to Quebec.

ROCK ALTERATION AND METAMORPHISM

Rocks on the Maisonville-Grenfell Township, Glen Auden Resources Limited property have been affected by subgreenschist regional metamorphism. In many places the regional metamorphism is partly or wholly obscured by a deuteric alteration among the rocks that varies from flow to flow. The amount of alteration also depends on the type and composition of a particular flow.

In the least affected, iron-rich tholeiitic basalt flows, late magmatic hornblende and primary pyroxene are preserved with primary plagioclase in the massive and pillowed lavas. In other flows, the plagioclase is completely replaced by clinozoisite, epidote and calcite. In the pillowed flows, alteration of pyroxene to chlorite or uralite may or may not accompany the plagioclase alteration, and in the massive flows primary hornblende remains unaltered. Secondary quartz, calcite and chlorite occur in the amygdules in the amygdaloidal basalt flows.

In the iron-poor basalts, the plagioclase is replaced by fine-grained clinozoisite, epidote, calcite and albite, especially in the pillowed lavas. Pyroxene may or may not be replaced by chlorite and albite. The replacement of plagiaclase by light-coloured epidote and clinozoisite is responsible for the hardness and the lighter colour of the iron-poor tholeiitic basalts.

Locally, the volcanic rocks are affected by higher hornfelsic grades of metamorphism, particularily near the felsic syenitic dikes. Aureoles from 2 cm. to 300 m. occur around the dikes and more prominently around the longer plug-like bodies. The volcanic rocks in the aureoles are hornblende-hornfelsed and are composed of porphyroblastic diopside and biotite with plagioclase, quartz, magnetite and hornblende. The plagioclase is altered to epidote, kaolinite and albite.

Outward from the syenite dike contacts, the rocks of the hornblende-hornfels facies grade into rocks of epidote (albite) hornfels facies which are homogeneous rocks composed of actinolite, calcite, albite, quartz and epidote according to recent thin section examination (Jensen O.G.S., 1983). Numerous irregular spider-web veining, 1 mm. to 1cm., consisting of epidote, quartz, calcite, and pyrite cuts the metavolcanics. Garnet as well as specularite, quartz, massive epidote, with minor pyrite and chalcopyrite occur at the contacts.

Towards the Winnie Lake stock just east of Kapikita Lake in the eastern part of Maisonville Township, the metamorphic aureole of epidote-albite-hornblende occurs within the iron-poor, magnesium tholeiites.

Alkali metasomatism is common in shear and fault zones especially along lithologic contacts where and easy locus for shearing occurs.

ECONOMIC GEOLOGY

A number of gold occurrences are already known on the Glen Auden Resources Ltd., Maisonville-Grenfell Township property which can be categorized in a variety of settings. The area was first prospected in the early days of the Kirkland Lake gold rush since some aspects of the geology were similar to Kirkland Lake geology. Quartz veins hosted in coarse-grained iron-rich tholeiites with associated syenite porphyry with associated gold-molybdenite mineralization occurs frequently on the property. This type of zone can create an extensive stockwork setting which would be a target for large tonnage-low grade gold deposits. Pyrite mineralization often occurs along the contact of the quartz-veins or veinlets as well as in the alteration zones away from the veins. Highgrading of specific veins within this type of setting appears to be what happened throughout the property in the old days.

A second type of gold occurrence is quartz stockwork zones within syenite intrusives. A pervasive hematization and silicification is often associated with these zones together within pyritic haloes around the veins, that are often auriferous. These are often accompanied by molybdenite and pyrite mineralization.

A third type of gold occurrence is quartz-stock work zones associated with major North-south trending fault zones. Tensional vein zones trending roughly east-west occur near these north-south trending structures. Pyrite mineralization often occurs throughout the brecciated, rolled veins as matrix pyrite comprising up to 5% of the rock in places.

Banded chert horizons with stratiform-type, disseminated and stringer pyrite represent interflow exhalative chemical sediments which also are targets for large tonnage gold deposits. Several such horizons together with cherty tuff, cherty oxide facies and crystal tuff interflow units occur on the property.

Material mined from the past producing Gold Mines, mainly the Bennett Mine, at the Maisonville-Grenfell township property consisted mainly of quartz veins in silicified tholeiitic basalt, in syenites and in shear zones with tensional quartz veins in syenite and chert. Mineralization consisted of disseminated and stringer pyrite, chalcopyrite and gold. Minor molybdenite, stibnite, silver and gold tellurides and galena were also reported.

The ore zones around the past producing gold mines also show varying degrees of hematization, carbonatization, silicification, epidotization, and chloritization.

The better grade material appears to have been associated with well silicified sections along the contacts of the syenite-tholeiite or the tholeiite-sediment contacts which contain more pyrite, and intense quartz-carbonate veining. The location of ore-grade material in these past producing mines and on the remainder of the Glen Auden Resources Limited property appear to show a strong preference for certain structural and lithological zones such as sheared sediment iron-rich tholeiitic basalt; sheared cherty oxide iron formations containing quartz veins; major quartz-molybdenum veins steeply dipping striking northeast that have narrow alteration haloes that are pyritiferous and auriferous; in bleached syenites (porphyritic syenite) that are cut by quartz veins with red alteration haloes that are pyritiferous and auriferous; along the crystaltuff-tholeiitic basalt contact where the crystal tuff is fractured, cut by quartz veins with red alteration haloes that are pyritic; in major north-south vein systems that have been brecciated or rolled from faults with associated intense epidotization of wallrock with stringer veins subparallel to the strike of the main veins; in roughly east west trending veins dipping steeply south containing molybdenite and pale pyrite; in steeply dipping shear zones striking 160° and dipping 70° to the southwest.

TABLE 2 Description, Location, Results of Lithogeochemical Samples

SAMPLE NO.	LOCATION	DESCRIPTION	Au Ag ppb/ppm
67851	60m W of No. 1 of 802749 near old	2-3% coarsely disseminated pyrite in coarsegrained hi-iron tholeiitic basalt (Unit 2d)	<10/<.2
67852	near old trenches 30m W of No. 1 of 802749	2-3% coarsely diss. pyrite in (Unit 2d)-associated 1cm rusty quartz stringers	20/1
67853	50m W of No. 1 of 802749 old trenches	same as above	50</<.2
67854	10m N of TL 4800N at 7 + 60 E	weakly silicified, carbon-atized, weakly hematized fine grained high iron tholeiitic basalt, (Unit 2a) with 2% finely diss. pyrite -assoc. syenite intrusion	50/.02
67855	CL 801878 old trench 40m W of No. 1 of 801878	Shear zone with associated quartz stockworking within high iron, tholeiiic basalt, trace finely diss. pyrite; assoc. syenite intrusion	140/1.4

AREA 10

SAMPLE NO.	LOCATION	DESCRIPTION	Au Ag ppb/ppm
67856	CL 801878 240m S of No. 1 post of 801877	6cm wide grey quartz vein within syenite intrusion, trace finely diss. pyrite	20/<.2
67857	(old pit) 120m W of No. 1 of 801877	Shear zone with up 3% fine-ly diss. pyrite assoc. with vein selvage (Unit 2a)	60/2.6
67858	CL 801877 (old pit) 145m W of 801877 20m S of 801877	Shear zone with up to 5% diss. pyrite and pyrite along fractures within silicified (Unit 1a)	10/<.2
67859	CL 801877 (old pit) same as 67853	40cm chip sample across shear zone wihin iron tholeiites and assoc. 1-4cm quartz veins	50/<.2

SAMPLE NO.	LOCATION	DESCRIPTION	Au Ag ppb/ppm
67860	CL 801877 (trench) 180m W of No. 1 801877 20m S	flyrock of milky white quartz vein (6cm) with trace to 1/2% diss. pyrite; assoc. syenite dike trending E-W	60/<.2
67861	CL 801877	6cm wide quartz vein within high iron tholeiitic basalt; assoc. with nearby syenite intrusion	50/<.2

AREA 16

SAMPLE NO.	LOCATION	DESCRIPTION	Au Ag ppb/ppm
67862	220m E of No. 1 post of 801878	oxidized shear zone (12cm-24cm) sericite clay schist; assoc. 4cm-8cm vuggy quartz veining; trace finely diss. pyrite (veining 020°/80NW)	11,000/22.0

AREA 17

SAMPLE NO.	LOCATION	DESCRIPTION	Au Ag ppb/ppm
67863	(old pit) 43m E of No. 1 post of 803559	flyrock of vuggy vein (12cm) with 10% wallrock of silicified, pyritized basalt	50/<.2
67864	trenches located 30m E of No. 1 of 803559	flyrock of coarse crystalline quartz vein with 10% highly silicified, pyritic wallrock near syenite dike	140/19.4
67865	trenches at 10m north of No. 1 of 67864	Grab of alteration envelope (90%) around vuggy quartz vein (10%-of sample); 10-15% coarse cubic pyrite in a chloritic mafic host; near syenite dike	360/11.4
67866	old shaft at 272m E of No. 1 of 803559	70:40% Quartz: (carbonate vein; coarse grained (crystalline); trace pyrite, chalcopyrite, specularite (galena?) Vein is hosted in high iron tholeiitic basalt	<10/<.2

SAMPLE NO.	LOCATION	DESCRIPTION	Au Ag ppb/ppm
67867	On L 1600 E at 4300 N	Coarse calcite veins (4-6cm) within high iron tholeiitic basalt; assoc. syenite stringers; contain up to 3% coarsely diss. chalcopyrite, pyrite.	<10/<.2
67868	160m W of No. 1 of 798868	fracture zone within iron-poor tholeiitic basalts; 2-3% stringer pyrite along fractures; silicified wall-rock	<10/<.2
67869	Old pit in SW corner of CL 798866	flyrock of quartz (carbonate) vein with trace pyrite; within unaltered Iron-poor pillowed tholeiitic basalt	<10/<.2
67870	Old trench in centre of claim 798866	flyrock of quartz: epidote (50:50%) vein material; de-void of sulphides; altered silicified wallrock-coarse needles of epidote	40/<.2
AREA 4			
67871	20m E of line 1600 E 3240 N	contact of high iron tholeiitic basalt with sheared sediments	20/<.2
67872	15m E of L 1600 E/32 + 50N	silicified, foliated sheared metasediments with 3% finely disseminated pyrite	<10/<.2
67873	20m E of L 1600E/ 32 + 60N (old pit)	Sheared wallrock (high iron tholeiites?) intensely silicified, hematized, strongly limonitic; 3-5% diss. pyrite and fracture con-trolled pyrite	10/<.2
67874	old pit 20m E of L 1600E/32 + 58N	flyrock of white, 6cm wide quartz vein; trace pyrite	120/<.2
67875	L 31 + 92N/17 + 50E	24cm wide quartz vein with diss. molybdenite and strong-ly pyrite mafic xenoliths	700/1.8

SAMPLE NO.	LOCATION	DESCRIPTION	Au Ag ppb/ppm
AREA 12			
67876	shaft at Old Bennett Mine	Quartz carbonate vein flyrock strongly hematitic along fractures strong jarosite; with trace pyrite, trace chalcopyrite	<10/<.2
67877	Old Bennett Mine	Grey to dark grey (variably magnetic chert with calcite along fractures; strong hematite stain, assoc. epidote clots; 3-5% finely diss. pyrite and trace chalcopyrite	40/<.2
AREA 4			
67878	Old pit on line 31 + 92N/1400E	fracture zone within high iron tholeiitic basalt; carbonate along fractures; assoc. epidote; 1% diss. and fracture coating pyrite	50/<.2
AREA 12			
67879	trench at 42m E of No. 1 of 802745	flyrock of rusty quartz vein with 1cm selvage of strongly pyritized wallrock; 4% finely diss. pale pyrite; host is coarse (3-5mm) high iron tholeiitic basalt	1500/3.4
67880	trench-same as above	flyrock of intensely pyritized silicified wallrock adjacent to vein contact; 5-8% finely diss. pale pyrite	600/2.2
67881	trench-same as above	unaltered outcrop in trench of coarse-grained high iron basalt with 2% diss. pyrite along hanging wall of vein	<10/<.2
67882	old pit at 100m E and 100m S of No. 4 of 802744	Pyritic cherty and argillaceous sediments	<10/<.2

SAMPLE NO.	LOCATION	DESCRIPTION	Au Ag ppb/ppm
67883	20m W of L 1600 E/2730N	2 metre wide quartz vein with xenoliths of iron tholeiitic basalt; assoc. hematite staining	60/<.2
67884	old pit at 100m W of O.N.R.	flyrock of massive, coarsely crystalline white quartz with trace galena, pyrite, chalcopyrite	<10/4.4
67885	L 1600E/2840N	old pit-quartz flyrock; quartz is coarsely crystalline; vuggy; trace finely diss. pyrite; vein is 24cm wide.	50/<.2
67886	L 1600/2800N	old pit- 3-7' wide vein network; quartz is white, trace diss. pyrite; wallrock alteration is limited to 3cm of silicified, pyritized; assoc. syenite dike.	<10/<.2
67887	trench at 35m W of No. 1 of 802745	flyrock 50:50% wallrock: quartz vein material wallrock is intensely carbonatized and pyritized and quartz vein is vuggy with trace pyrite	1750/5.2
67888	same as 67887	Sample of 90:10% quartz: wallrock. The quartz is darker grey with finely diss. pyrite	30/<.2
67889	same as 67887	quartz vein, medium grained	1500/5.2
67890	East central claim 778379	flyrock of 15cm wide quartz vein; coarse grained, vuggy, trace pyrite with vein selvages altered to epidote and chlorite	1830/2.4
67891	94m W of L 1600E/2760N	Subcrop of high iron basalt with 3% coarsely cubic pyrite, 5% epidotized feldspars	10/<.2

SAMPLE NO.	LOCATION	DESCRIPTION	Au Ag ppb/ppm
AREA 15			
67892	70m east of No. 3 of 802334	Iron-rich tholeiitic basalt with 1% diss. pyrite	<10/<.2
67893	190m E of No. 3 post 802334	10-15cm wide quartz vein; grey to white, strong iron stain along fractures, trace pyrite with 5% heavily pyritized wallrock xenoliths	<10/<.2
67894	same as 67893	Wallrock of 10-15cm wide quartz vein, alteration includes an intense epidotization carbonatization with up to 8% fine cubic pyrite. Host is Unit 2d	20/<.2
AREA 9			
67895	L 2450/15 + 65N	Fracture zone within Iron-poor tholeiitic basalts with 1/2%-1% fracture controlled pyrite; assoc. syenite intrusion	<10/<.2
67896	old trench at L 24 + 50E/ 15 + 60N	Iron-poor basalt injected by red feldspathic stringers, calcite stringers, up to 5% pyrite along fractures, trace as fine disseminations	240/<1.0
67897	60m E of L 2450E/ 15 + 60N	flyrock from old trench of quartz-carb vein brecciated; with 1/2% fine matrix pyrite around qc fragments in breccia	650/<.2
67898	L 4800N/2630E	Silicified iron-rich tholeiite with up to 5% diss. pyrite	40/<.2
67899	25cm S of L 4800N/2440E	Iron-rich tholeiites with hematite staining and 1-2% diss. pyrite	<10/<.2
67900	25m S of L 4800N/2440E	Massive white quartz vein with epidote and trace pyrite and specularite	<10/<.2
18280	80m S of L 4800N/2700E	Cherty argillaceous sediments with stratiform pyrite (1-2%)	10/<.2

SAMPLE NO.	LOCATION	DESCRIPTION	Au Ag ppb/ppm
18281	L 4800N/2840E	old pit-of cherty argillaeous sediments with 3% pyrite as blebs and streaks parallel to bedding	<10/<.2
18282	200m E of No. 1 of 802337	as 18281 - 1% pyrite, increase in epidote stringers, cherts are slightly magnetic	<10/.2
18283	170m E of No. 1 of 802746	24cm wide quartz vein with 1% diss. Wallrock is silicified for 24cm.	<10/<.2
AREA 5			
18284	NE corner of CL 800346	Shear zone 50% diss. pale pyrite within brecciated quartz carbonate vein (up to 30% matrix pyrite); trace diss. molybdenite	.96/oz/ton
18285	NE corner of CL 800346	Wallrock of vein; high iron tholeiite; coarsegrained; epidote along fracture surfaces	650/<.2
AREA 15			
18286	65m W of No. 2 of 802335	Shear zone 074/80°E within high iron tholeiites; 3% finely disseminated pyrite	20/<.2
18287	L 3220E/ 400N Near old pit	Rusty 10cm wide quartz vein with 3% pale coarse cubic pyrite and diss. pyrite	70/5.2
18288	Near pit 165°/55E	50:50 wallrock: vein material; wallrock is carbonatized, chlorite, epidote with 2% finely diss. pyrite Vein is grey, coarsely crystalline with trace fine pyrite, chalcopyrite, molybdenite	40/1.6

SAMPLE NO.	LOCATION	DESCRIPTION	Au Ag ppb/ppm
18289	140m S of No. 1 of 802340 and 65m W	Quartz-carbonate vein (30cm wide); light grey coarsely crystalline with epidote, chlorite inclusions; trace diss. pyrite, chalcopyrite, and stibnite	10/2.4
18290	same as 18289 old trench	Intensely epidotized wall-rock of vein in 18289 medium grained; granular; 80% epidote; 2% diss. pyrite	30/2.0
18291	230m W of No. 2 of 802340	Tholeiitic dacite ? with diss. pyrite; carbonate and epidote along fractures	<10/<.2
18292	10m W of No. 1 post of 802339	50:50 vein: wallrock sample; vein is grey, coarsely crystalline with trace diss. pyrite: wallrock is chloritized, with 1% diss. pyrite	<10/<.2
18293	Centre of CL 802333	Silicified, pillowed high-iron tholeiite; assoc. ladder veining; trace diss. pyrite; associated syenite dike	20/<.2
AREA 14			
18294	190m E of No. 3 post of 802336	Cherty sediments with 3% stratiform pyrite	<10/<.2
AREA 15			
18295	73m W of No. 2 of 802336	Quartz vein (18cm wide) 142/85°NE; chlorite inclusions; trace diss. pyrite	10/<.2
18296	65m W of L 3220E/ 4200N	Quartz vein; (10cm wide); dark grey; coarsely crystalline; trace diss. pyrite; 20% inclusions of silicified, green, chloritized wallrock with trace pyrite	<10/<.2

SAMPLE NO.	LOCATION	DESCRIPTION	Au Ag ppb/ppm
AREA 7			
18297	100m N of No. 1 of 802368	Quartz vein; white to light grey; coarsely crystalline with trace disseminated pyrite	210/<.2
18298	old pit 180m N of No. 1 of 802368	Quartz vein (45cm wide); trace to 1% diss. pyrite; trace diss. molybdenite	270/<.2
AREA 3			
18299	150m S of No. 3 of 778378	Chert, banded with pyrite and epidote bands; 2% pyrite as fine cubes and stratiform bands	90/<.2
18300	30m E of No. 1 of 182991 location	Chert with 1% pyrite; massive	40/<.2
67644	76m E of L 1600E/ 2120N	Intensely silicified low iron tholeiite; qtz stringer zone; pervasive epidotization (25cm) 2-3% pyrite; assoc. syenite dike (5cm)	15 ppb
67645	190m E of L 1600E/ 2120N	Old pit, brecciated, rehealed fracture zone; veins have trace pyrite, molybdenite, malachite. Wallrock is carbonatized and silicified.	<10
67646	as 67645	90% carbonatized, silicified high iron tholeiite with trace pyrite; assoc 10% quartz stringers	<10
67647	10m N of S CL line of 802746 (near power line)	Old pit; high iron tholeiite with 1% sulphides; hematite, carbonate, quartz	<10 ppb
67648	30m N of S CL of 802746	Old pit; iron tholeiite with trace pyrite; epidote; carbonate, quartz	35 ppb
67649	225m E of No. 3 of 802337	Old pit; iron tholeiite with 1-2% pyrite; hematite; epidote	<10

SAMPLE NO.	LOCATION	DESCRIPTION	Au Ag ppb/ppm
AREA 8			
67951	100m N of No. 1 of 802346	Sediments; graphite-magnetite horizon; mixed sediment-volc. sequence; shear zone with 2-3cm grey massive magnetite beds with trace to 1/2% pyrite	<10
67952	150m W of No. 1 of 802346	Chert black; 2cm wide; 3-4% fracture controlled pyrite; 1% diss. pyrite	<10
67953	Same as 67952	Chert; lighter grey colour; 3% diss. pyrite	<10
AREA 11			
67954	40m S of L 3190N/ 2460E	Cherty and/or silicified rock with quartz-carbonate veining; trace pyrite and chalcopyrite	265 ppb
67955	40m E of L 2450E/ 3400N	Old pit; magnesium rich tholeiite with epidote calcite along fractures; trace pyrite	<10
67956	5m S of L 3192E/ 2500E	Old pit; Cherty argillite; ≤ 15% pyrite as 'blebs' and grains; flyrock	30 ppb
67957	4m N of L 3192N/ 2520E	Massive grey chert with 1% diss. pyrite	90 ppb
AREA 2			
67958	L 2450E/2480E	Old pit; flyrock from shear zone with high-iron tholeiites; coarse calcite and feldspathic stringers, tr-1/2% pyrite along fractures	5 ppb
67959	20m E of L 2450E/ 24 - 80N	trench; shear zone; chloritic high-iron tholeiite with magnetite seams; 2-3% stringer pyrite	65 ppb
67960	20m E of L 2450E/ 2500N	Silicified, banded sediment; calc-silicate? 4-5% stratiform pyrite within shear zone	80 ppb

SAMPLE NO.	LOCATION	DESCRIPTION	Au Ag ppb/ppm
67961	20m E of L 2450E/ 2450N	fracture zone within high iron tholeiite with coarse calcite, epidote, chlorite and 1% diss. chalcopyrite	15 ppb
67962	as 67961	Breccia zone with intense quartz-calcite stringers wallrock was silicified, ipidotized, carbonatized and hematized with coarse pale pyrite	30 ppb
67963	140m N of No. 1 of 778378	Fractured iron-poor tholeiite with 2-3% diss. pyrite and fracture controlled pyrite	<10
AREA 6			
67964	Old pit on power-line 10m E of No. 2 of 778378	Quartz-stringer zone with sample of silicified, carbonatized host rock and 5-10% coarse diss. pyrite within crystal tuff	<10
67965	L 1600E/1170N	Silicified crystal tuff with 4% diss. pyrite cut by 1cm wide quartz stringers	<10
67966	L 1600E/1170N	5cm wide white, vuggy quartz vein, 2% pale pyrite	10
67967	200m W of No. 1 of 798877 L 5192E/ 31 + 90N	Unit 1a, iron-poor tholeiites injected by fine ep-quartz stringers with diss. pyrite	
67968	Same as above	75cm wide prevasively epidotized rock along fault	
AREA 1			
67969	50m W of No. 1 of 798878	Sheared, brecciated chert, shaley argillite horizon with up to 5% stringer pyrite	
67970	240m W of No. 1 of 798878	Fractured iron-poor tholeiite with 2% stringer pyrite	

SAMPLE NO.	LOCATION	DESCRIPTION	Au Ag ppb/ppm
67971	E of Pit 2-1	Iron-poor tholeiitic basalt with 4% stringer pyrite	
67972	Trench 4-1	Siliceous sediment horizon with massive pyrite seams, diss. pyrite, and stringer pyrite	
67973	Pit 1-1	Sheared, Brecciated, chert with chlorite-carbonate slips and 5-10% stringer pyrite	
67974	Pit 1-1	Black chert, 8% stringer pyrite	
67975	TR 1-1	Grey fractured chert, 5% stringer pyrite	475 ppb
67976	210m N of No. 3 of 798875	Iron-rich tholeiitic basalt, silicified with 3% stringer pyrite	
67977	L 1576N/2480E	Iron-poor tholeiite next to porphyritic syenite dike, country rock silicified, epidotized with 2% pyrite and trace chalcopyrite	110 ppb
AREA 9			
67978	10m S of L 1576N/ 2510E	Intensely epidotized zone within iron-poor tholeiite, tr pyrite	300 ppb
67979	L 1576N/2515E	Massive pyrite lense with 40% pyrite, 1m wide	
67980	L 1560N/3100E	2m wide shear zone with 3-4% stratiform pyrite bands	
67981	100m W of No. 1 of 801219	Silicified, hematized, epidotized iron-rich tholeiite with trace pyrite and chalcopyrite	
67982	L 1576N/3660E	Strongly foliated, iron tholeiite with chlorite-carbonate slips, quartz-carbonate stringers, tr pyrite, chalcopyrite	50 ppb

SAMPLE NO.	LOCATION	DESCRIPTION	Au Ag ppb/ppm
AREA 5			
67983	40m N of L 1576N/ 3660E	Intensely silicified tholeiitic basalt with silica-chlorite stringers with trace pyrite	
67984	90m N of L 1576N/ 3660E	Silicified tholeitic basalt, chlorite-carbonate slips with coarse calcite, hematite stringers, trace pyrite	
67985	90m N of L 1576N/ 3660E	Sericite schist-sheared hyaloclastite material, trace pyrite	
67986	140m N of 1576N/ 3660E	Quartz-fracture zone with quartz stringers with pyritic host rock fragments	
67987	Same as 67986	Wallrock material of vein, iron-poor tholeiite is silicified, epidotized, carized with 4% finely diss. pyrite	
AREA 9			
67988	65m E of L 2450E/ 1300N	Pyritic material in iron tholeiitic basalt, 5% diss. pyrite	115 ppb
67989	10m E of L 2450E/ 1170N	Quartz vein with 50% WR: 50% vein, 4% coarsely diss. pyrite	11,500 ppb
67990	L 2450E/1170N	Iron-rich tholeiite with 3-4% stringer pyrite	
67991	70m E of 1600E/ 1380N	30-45cm wide white bull quartz; trace pyrite	
67992	70m E and 40m S of L 1600E/ 1380N	Iron-poor pillowed basalt, strongly epidotized, silicified with trace pyrite	
67993	70m E of L 1600E 1380N	Quartz vein with 10% wallrock inclusions with 3% pyrite	

SAMPLE NO.	LOCATION	DESCRIPTION	Au Ag ppb/ppm
AREA 1			
67994	AREA 1	Intensely silicified, carbonatized sediment with 5% stringer pyrite	
67995	AREA 1	Silicified sediments; 3% finely diss. pyrite	
AREA 2			
67996	L 2450E/2480N	Silicified sediment, sheared, epidote-carbonate along slips tr. pyrite	
67997	L 2450E/2470N	Strongly foliated iron-rich tholeiitic basalt with 10% stringer pyrite	
67998	AREA 6	Flyrock from pit, strongly pyritic iron-rich tholeiite with 5-7% diss. pyrite	
67994	CL 803558	Weakly sheared iron-rich tholeiite with 5-7% diss. pyrite	
68000	CL 803558	12-20cmwide shear zone within iron-rich tholeiitic basalts, assoc. drusy 2cm qtz-ep veining	
AREA 16			
67906	AREA 16	Grey cryptocrystalline vein with assoc. sheared pyritic iron rich tholeiite	
67907	AREA 16	Cherty-oxide iron formation sub-parallel to shear zone, assoc. epidote-garnet-calcite stringer	

LEGEND(Area maps)

FELSIC INTRUSIVE ROCKS

5b Porphyritic Syenite
5c Syenodiorite
5d Mafic Syenite
intrusive contact

METASEDIMENTS

3a Cherty sulphide iron formation
3b Slate, argillite
3c Laminated, siliceous
3d Cherty oxide iron formation
3e Graphite
3f Cherty tuff

MAFIC METAVOLCANICS(Kinojevis Group)

2 Iron-rich tholeiitic basalts
1 tholeiitic basalts
a Massive, fine-grained
b Pillowed
c Pillow breccia
d Massive (2-5mm) coarsegrained
e Hyaloclastic, fragmental
f Amygdaloidal
g Crystal tuff(felsic)—overlap of Blake River Group
h Variolitic
i Chlorite Schist

vein inclined, vertical
bedding inclined, vertical
pillow lava top(arrow)
foliation
fault
shear
geological contact
outcrop
fracture inclined, vertical
shaft
pit
trench
rock sample location
quartz stringer zone
swamp

carb	carbonatization
sil	silicification
ep	epidotization
hem	hematization
gt	garnet
mt	magnetite
py	pyrite
cp	chalcopyrite
gn	galena
mo	molybdenite
gf	graphite
q,qv	quartz vein

AREA 1 (see Figure 9)

In the eastern part of the Maisonville-Grenfell township property north-northwest of Kapakita Lake a series of trenches and pits occur. The main pit is in a shear zone along the chert-tholeiitic basalt contact. The banded chert zone represents an exhalative chemical sediment horizon that has undergone an intensive period of fracturing with associated alteration including sericitization and epidotization. Previous assays from prospector C. Forbes (1984) gave values up to 143 oz. Au/ton from a grab sample of banded chert with stratiform-type pyrite. During the geological mapping a sample of grey, fractured chert with 5% stringer pyrite returned 475 ppb Au.

A pace and compass grid was put in for better controll in the mapping and sampling of these pits and trenches. The No. 2. post of claim 798875 is the 0+00N/0+00W point for the grid.

The main pit (PIT 1-1) is in a strongly foliated tholeiitic basalt (Unit 2d) with chlorite-carbonate slip surfaces and up to 4% stringer pyrite. The basalt is composed of actinolite, chlorite, biotite, feldspar, pyroxene and magnetite. Varying quantities of epidote, quartz, and calcite are dispersed throughout the rock. Footwall to the basalt is a sheared chert-cherty tuff horizon with up to 10% stringer and stratiform pyrite. The chert horizon here is striking roughly 185° and dips steeply to the east.

In the trenches north of PIT-1, a grab sample returned 475 ppb or .146 oz./ton Au. from a grey chert with 5% stringer pyrite. Slate, cherty tuff and a pyritic laminated siliceous sediment?, also occur here. The chert horizons in this area are mixed chemical and volcaniclastic sediments. The cherts are often banded, the banding consisting of varying proportions of chert, sulphide, carbonate and epidotized tuffaceous laminae, with thicknesses ranging from .1mm to 4mm.

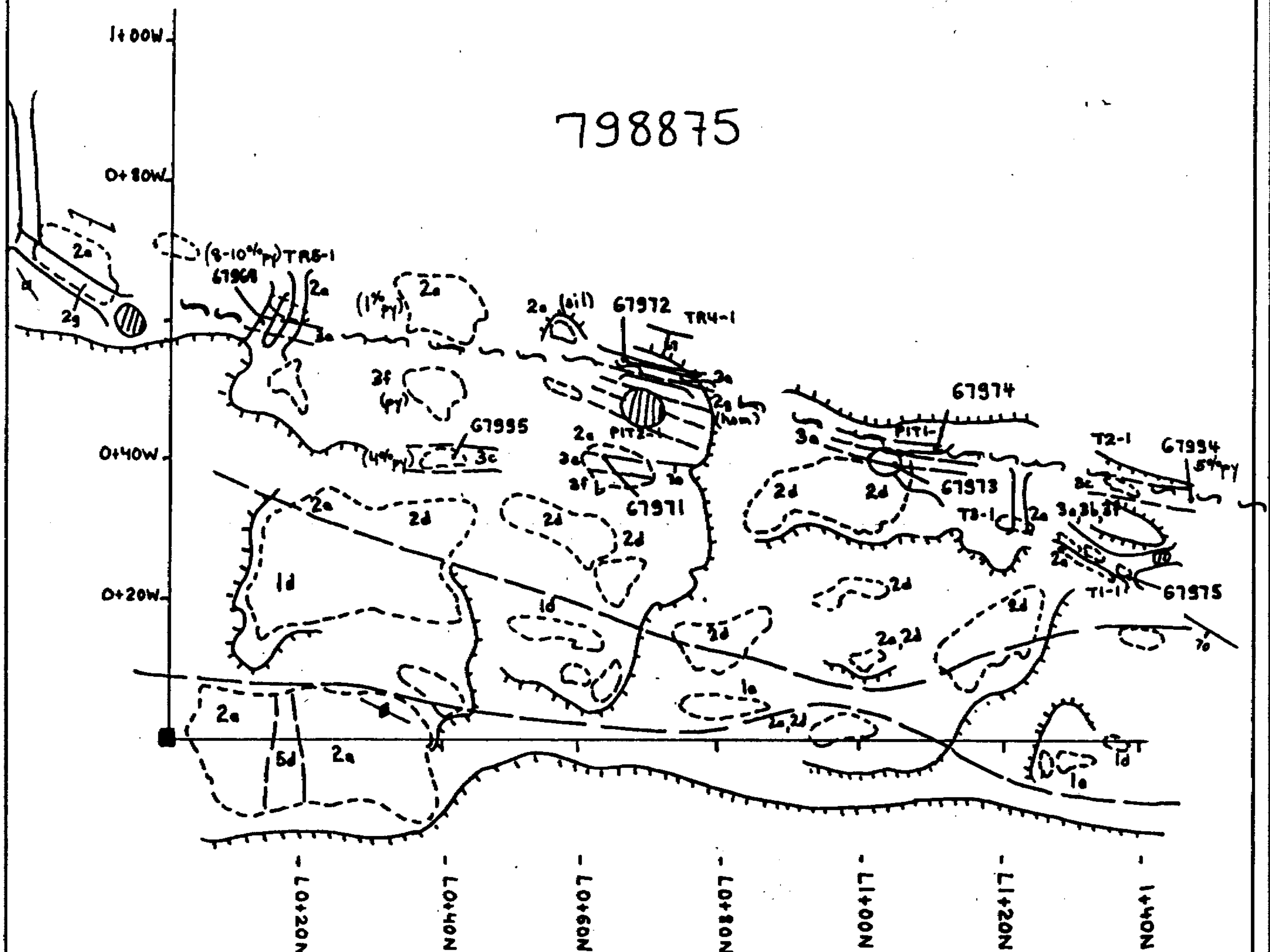
In the trenches to the south of PIT-1, the chert horizon is at least 1 metre wide and contains up to 8% stringer pyrite. A 5 metre wide crystal tuff horizon also occurs here, hanging wall to the chert. The tuff is strongly hematized and contains up to 2% disseminated pyrite with up to 30% subhedral broken feldspar crystals ranging from 1mm. to 4mm. in diameter.

In the trench south of here, (TR5-1), the sheared pyritic chert horizon is slightly narrower and contains 8-10% stringer pyrite. Finally in the last trench, TR6-1, the chert appears to have pinched out leaving the crystal tuff hanging wall to the strongly foliated sheared iron-rich tholeiite.

Both west and east of the sheared sediment horizon the iron-rich tholeiites are intensely fractured and contain fine quartz-carbonate stringers with associated garnet-epidote-carbonate along the fractures with up to 3%

	Au(ppb)	Mo(ppm)	As(ppm)	Zn(ppm)
67969		50	21.5	1100
67972		45	10.5	
67973		100	35.1	900
67974			65.2	900
67975	475	160	21.5	270
67994			38.3	1500

798875



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	for GLEN AUDEN RESOURCES LIMITED		
	Title Detailed Geology AREA I Fig. 9		
	Date: Oct 1985	Scale: 1:100	N.T.S.:
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stringer pyrite. The mineralogy implies that upper green-schist facies metamorphism occurs here.

Disseminated sulphides coupled with stratiform-type and stringer sulphides are associated with this stratabound exhalative chert horizon which can be traced using induced-polarization methods.

Weakly to moderately anomalous copper values from 240 to 560 ppm. occur within the sedimentary chert-argillite horizon with associated stringer pyrite. The brecciated iron-tholeiite also returns values up to 560 ppm. copper. Similarily, moderately to strongly anomalous zinc values up to 1500 ppm. occur within both the fractured chert and basalt sequences containing 5-8% stringer pyrite. Weakly anomalous lead values up to 20 ppm. also occur here.

Four out of five samples of the brecciated chert horizon along its 100 metre length return strongly anomalous in molybdenum, up to 160 ppm. There also is an important enrichment in arsenic reaching values of up to 65.2 ppm. within the cherts. These two elements are important as pathfinder elements in the Kirkland Lake, Matachewan Matheson and Timmins gold areas.

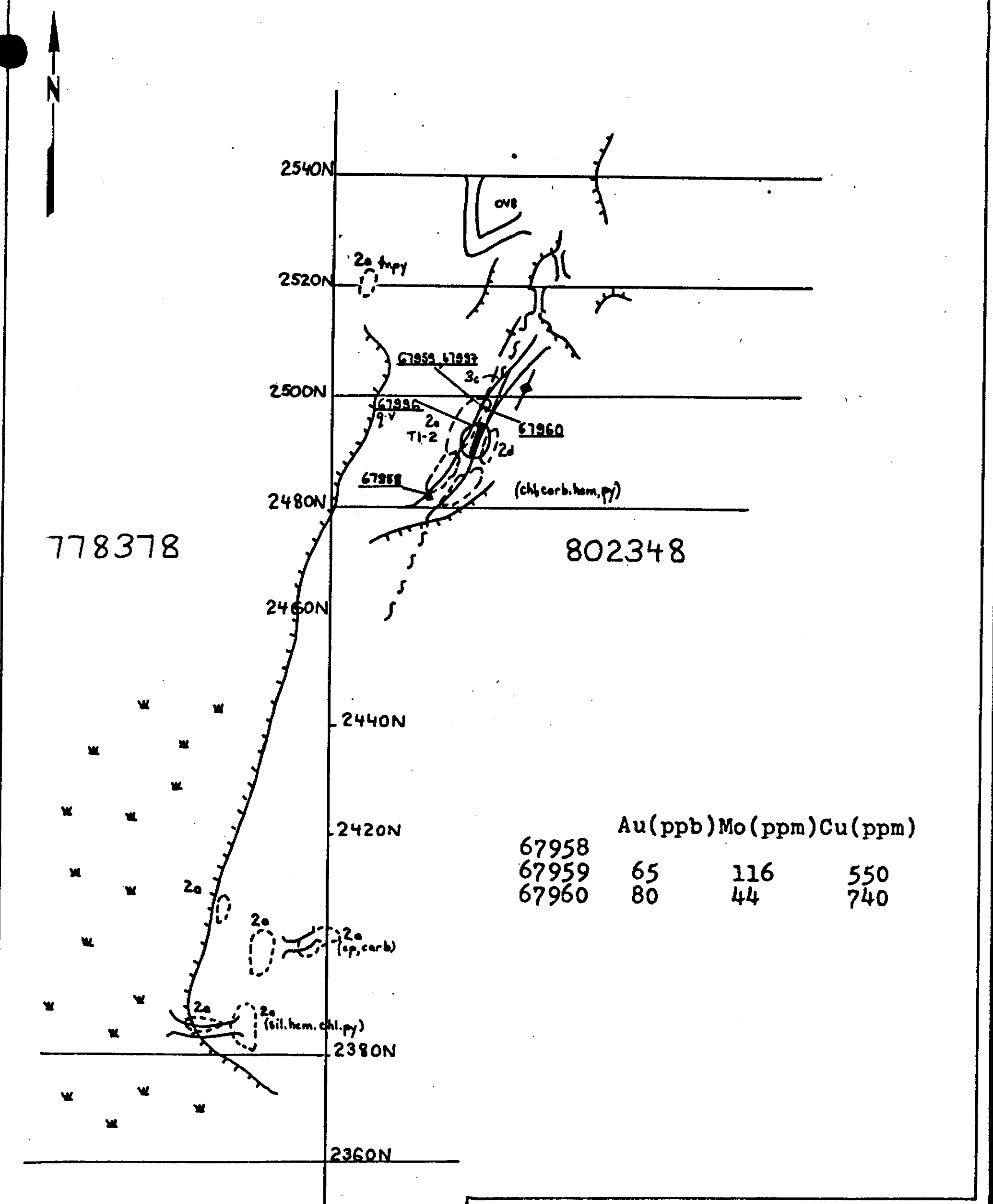
AREA 2 (see Figure 10)

On line 2450E between 2480N and 2520N, a series of trenches occur in a sheared fractured, siliceous sediment horizon in contact with an iron-rich tholeiitic basalt. Weakly anomalous gold values up to 80 ppb. occur here within the laminated, siliceous sediment containing 4-5% stratiform pyrite; a highly fractured iron tholeiite with 40% stratiform pyrite; in a highly fractured iron tholeiite with 4% stringer pyrite. A small pace and compass grid covers the area for better controll in mapping and sampling.

The main shear zone is striking 025° and is dipping vertically. A grey, sugary textured quartz vein parallels the sediment horizon and varies from 40-50cm. in width. The vein contains calcite-chlorite-epidote-hematite coated fracture surfaces. Mineralization consists of up to 2% finely disseminated pyrite.

Approximately 100 metres to the south of these trenches an east-west trench occurs that appears to have been searching for the southern extension of the shear zone. The trench is in silicified, epidotized, hematized iron-rich tholeiite. It appears that the shear zone is either to the east or west of this trench hidden by overburden cover.

All of the samples taken here return moderately to strongly anomalous in molybdenum, up to 116 ppm. Weakly to moderately anomalous copper and zinc values up to 740 ppm. and 240 ppm., respectively occur within both the fractured basalt with up to 3% stringer pyrite and in the fractured laminated sediment with up



	Au(ppb)	Mo(ppm)	Cu(ppm)
67958			
67959	65	116	550
67960	80	44	740

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Title
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AREA 2

Fig. 10

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to 5% stringer and stratiform pyrite. Weakly anomalous gold values up to 80 ppb. occur within the laminated siliceous sedimentery horizon.

AREA 3

An east north-east trending cherty sulphide facies iron formation occurs 200 metres north of the No. 2 post of 802747. The chert horizon is a 1-3 metre wide bed that occurs stratigraphically along the variolitic iron-poor magnesium tholeiite and the iron-rich tholeiite contact. The chert can be traced eastward from the claim line for 60 metres. The strike varies from 065° to 080° and dips vertically. Two rock grab samples were taken here and both returned weakly anomalous gold values of up to 90ppb.

The northern contact is the variolitic basalt (unit 1h) with an intense silica-epidote alteration along hairline fractures and an associated pink carbonate. Minor amounts of disseminated pyrite occur throughout the matrix. The chert (Unit 3a) is grey, aphanitic with 1-3% disseminated, stratiform, and stringer pyrite. The chert is moderately fractured and is semi-banded to massive with epidote-pyrite bands and epidotized, carbonatized fracture surfaces. The southern contact of the chert is the coarse grained iron-rich tholeiitic basalt (Unit 2d). The rock is strongly magnetic and contains spider-web silica-epidote stringers striking 080°/80S and 025°/80W. It appears that the chert may pinch out to the east and is lost in the overburden to the west.

Weakly anomalous copper up to 310 ppm. and moderately anomalous zinc values up to 590 ppm. occur within the chert horizon. The banded variety of chert, the banding consists of epidote and carbonate probably tuffaceous in origin, carries the anomalous zinc values together with slightly higher than background copper values. The weakly anomalous gold value (85 ppb) alos occurs in the banded variety as compared to 40 ppb. Au in th massive variety. A significant enrichment in tungsten with moderately anomalous values up to 14 ppm. occurs in both the banded and the massive chert varieties. Weak to moderately anomalous molybdenum values from 16-30 ppm. occur in the banded and the massive varieties, respectively. Finally, weakly anomalous arsenic values up to 5 ppm. occur in both varieties of chert.

The anomalous tungsten and molybdenum values are important as indicator elements to known gold deposits in the area.

<u>AREA 4</u> (see figure 11)

In the southwest corner of claim 798864 on line 1600E from 3220N to 3260N a north-south trending sheared laminated, siliceous sediment (Unit 3c) occurs within an iron-rich tholeiitic basalt flows (Unit 2h, Unit 2d).

Weakly anomalous gold values up to 115 ppb. occur here associated with quartz veining within the iron rich tholeiitic basalt. The shear zone appears to be striking 175° and dips near vertical. The veining is subparalleling the main shear direction at 175°/75-80°E with minor veining at 080°/85S.

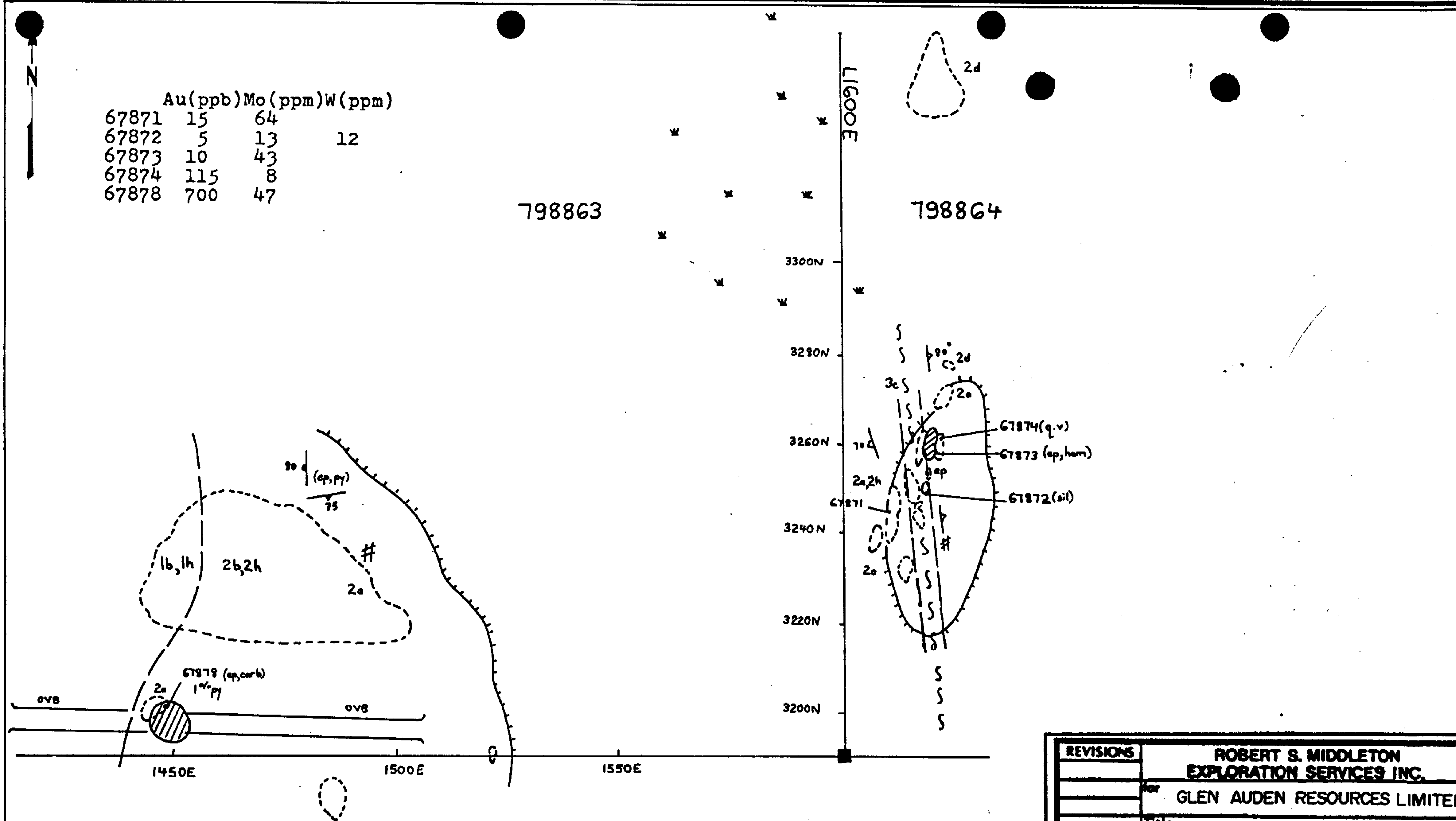
The shear zone is confined to the contact between the massive coarse-grained iron-rich tholeiitic basalt (Unit 2d) and the laminated, siliceous metasediment (Unit 3c). Shearing is indicated by strongly foliated dark green basalts with chlorite-carbonate slips, stringer pyrite, epidotization and hematization. Up to 3% disseminated pyrite occurs within the coarse grained tholeiite that is cut by an erratic quartz stringer zone associated with the shear zone.

The siliceous sediments occur as an 8 metre wide bed with an aphanitic, siliceous matrix with pale green, maroon, beige and purple 1-2 mm. laminae. Up to 4% pyrite mineralization occurs as stratiform and stringer types with associated carbonate, hematite and limonite coatings along fractures.

Minor quartz stringers from 3-5 mm. in width strike 158° and dip 070° to the west and occur within the sheared siliceous sediment horizon. The sheared sediment horizon can be traced for 40 metres until it is lost in the overburden. Approximately 200 metres east of the shear zone in Area 4, on the southern claim line of claim 798864 a 24 cm. wide roughly northeast striking vein occurs dipping 046° NW. The vein contains 25% strongly pyritic host rock inclusions and disseminated molybdenite. Strongly anomalous gold values occur within this vein up to 700 ppb. This vein has previously been pitted to uncover it along strike but the pits are filled with overburden cover.

Disseminated sulphides coupled with stringer sulphides within both the sedimentary horizon and the fractured iron-rich tholeiite can be traced using induced polarization method.

Two weakly to strongly anomalous gold values occur within quartz veins with disseminated molybdenite and trace amounts of pyrite. The contact of the iron-rich tholeiites and the sediments returns strongly anomalous molybdenum values up to 64 ppm. and weakly anomalous copper up to 260 ppm. The sheared sedimentary horizon contains weakly anomalous lead, up to 102 ppm., weakly anomalous molybdenum, up to 13 ppm. and moderately anomalous tungsten, up to 12 ppm. The sheared portion of the iron-rich tholeiite with an intense silicification and hematization with 5% pyrite returns strongly anomalous molybdenum up to 43 ppm. All five rocks grab samples return weakly to strongly anomalous in molybdenum ranging from 8 ppm. to 64 ppm. This is an important indicator element to various gold mines in the area.



	Au(ppb)	Mo(ppm)	W(ppm)
67871	15	64	
67872	5	13	12
67873	10	43	
67874	115	8	
67878	700	47	

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Title: Detailed Geology AREA 4

Fig. 11

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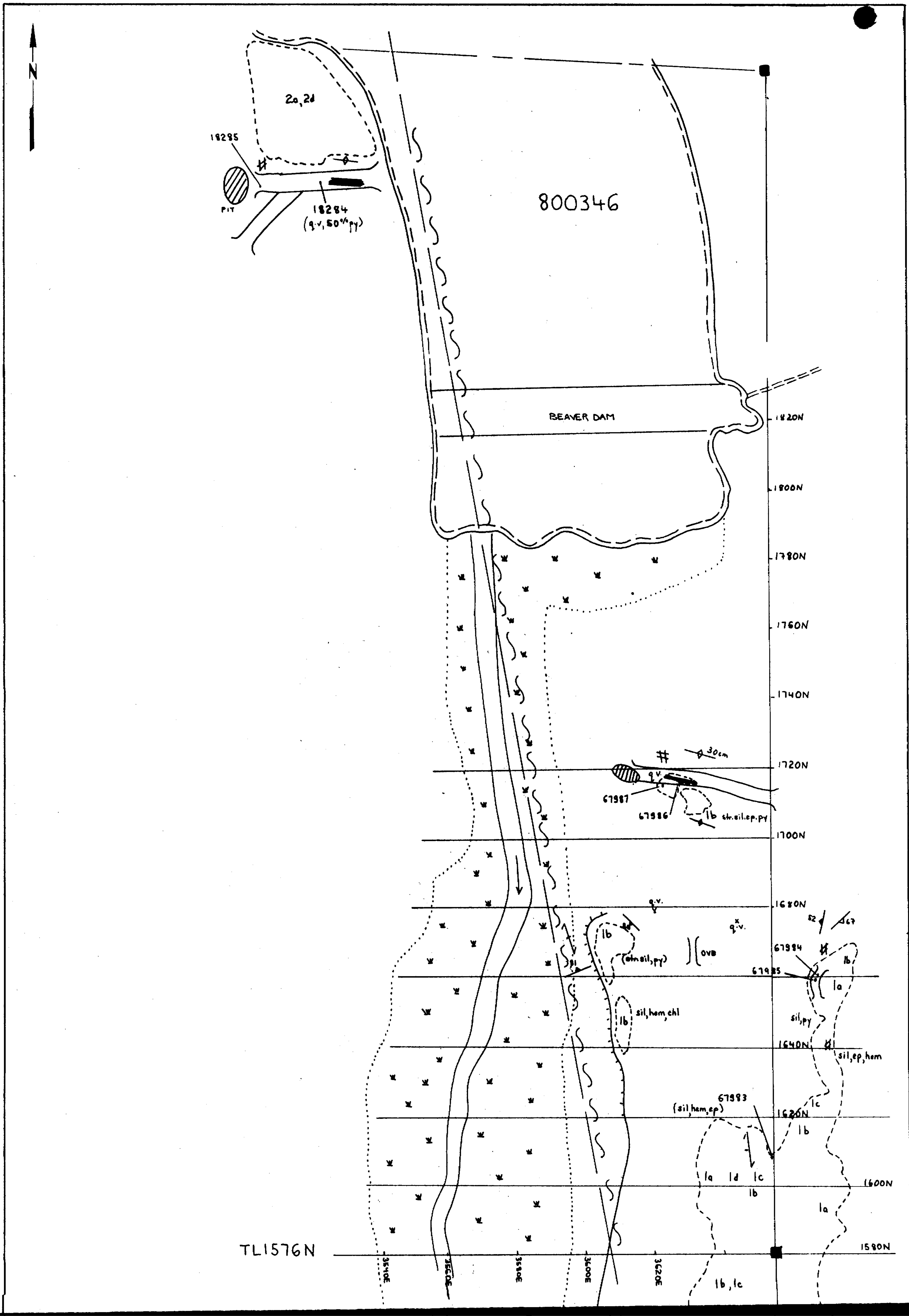
<u>AREA 5</u> (see fig. 12)

In the south-eastern corner of the Maisonville-Grenfell township property in the northeastern corner of claim 800346 a series of trenches occur. The trenches are following east-west tensional veins along a major north-south trending fault zone along the contact between the iron-rich and the iron-poor tholeiites. This fault zone shows up on the aerial photographs as a strong lineament along a linear depression occupied by a stream.

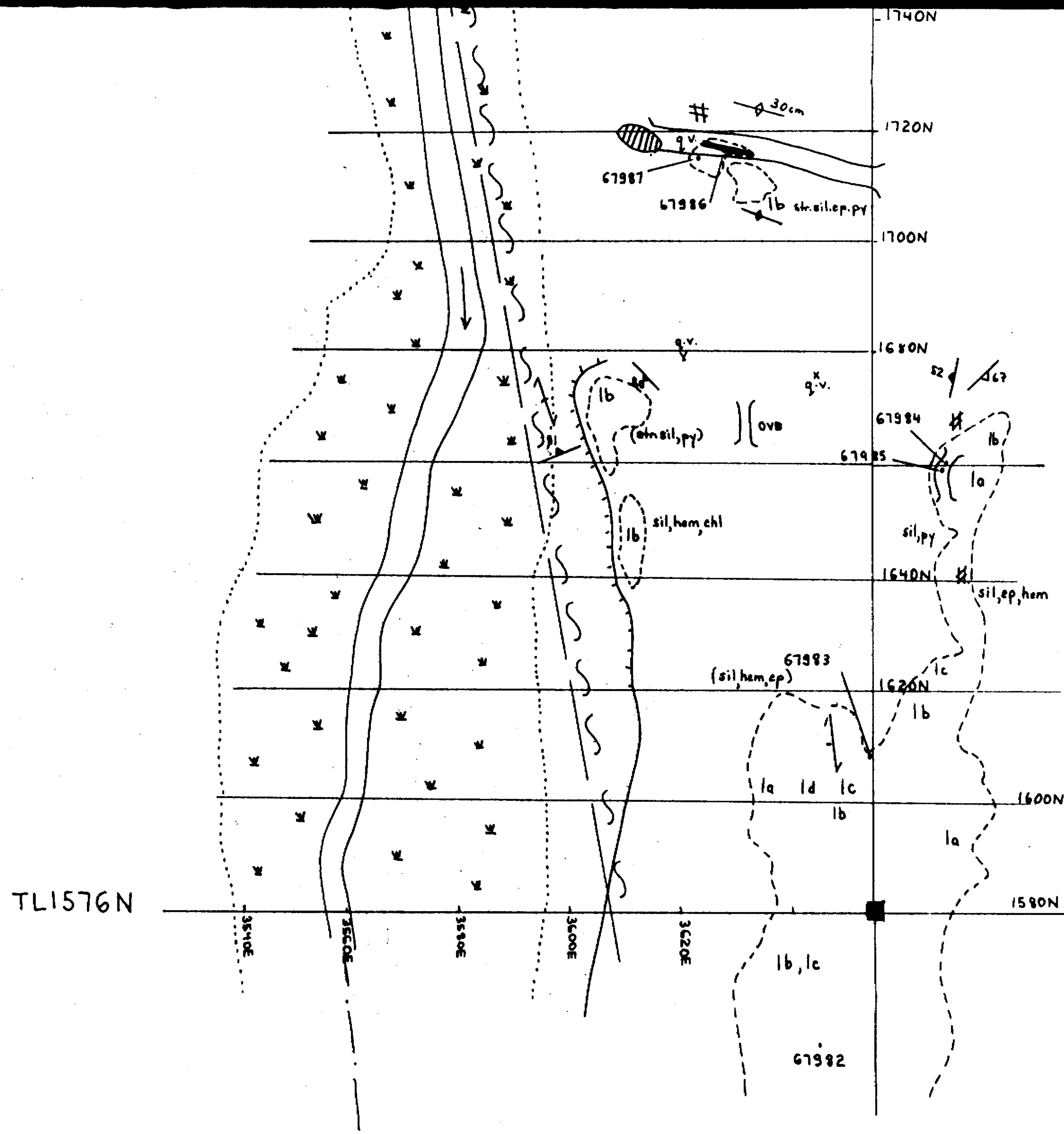
In the outcrop the shearing is indicated by a strong foliation 165°-175°, dipping vertically. A major fracture system striking approximately 110-120° dipping 50° to vertically is prominent that is injected by auriferous quartz veins. In the vicinity of the shear zone the iron-poor magnesium pillowed tholeiites are strongly silicified with chlorite-carbonate-epidote-hematite along fractures.

On line 1680N at 360E an old trench occurs in a fracture zone with quartz-carbonate stringers following two main directions 050°/67NW and 012°/52°W.

Strongly anomalous gold values up to .96 oz/ton gold occur north of here, west of the beaver pond (see fig. 12) in a previously trenched brecciated, rolled 100 cm. wide quartz-pyrite-molybdenite vein. The vein contains up to 60%



N
2a,2d
18285
PIT
18284
(q.v, 50% py)
800346
BEAVER DAM
1820N
1800N
1780N
1760N
1740N
1720N
30cm
q.v.
67987
67986
1b str.sil,ep,py
1700N
1680N
q.v.
q.v.
1b
(str.sil,py)
OVB
52
67
67984
67985
1b
1a
sil,py
1b
sil,hem,chl
1640N
sil,ep,hem
67983
(sil,hem,ep)
1620N
1c
1b
1a
1d
1c
1b
1600N
1a
TL1576N
1580N
3540E
3560E
3580E
3600E
3620E
1b,1c



	Au(ppb)	Mo(ppm)
18284	.96oz/ton	44
18285	650	23
67986	365	80
67987	10	150

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for GLEN AUDEN RESOURCES LIMITED

Title: Detailed Geology AREA 5

Fig. 12

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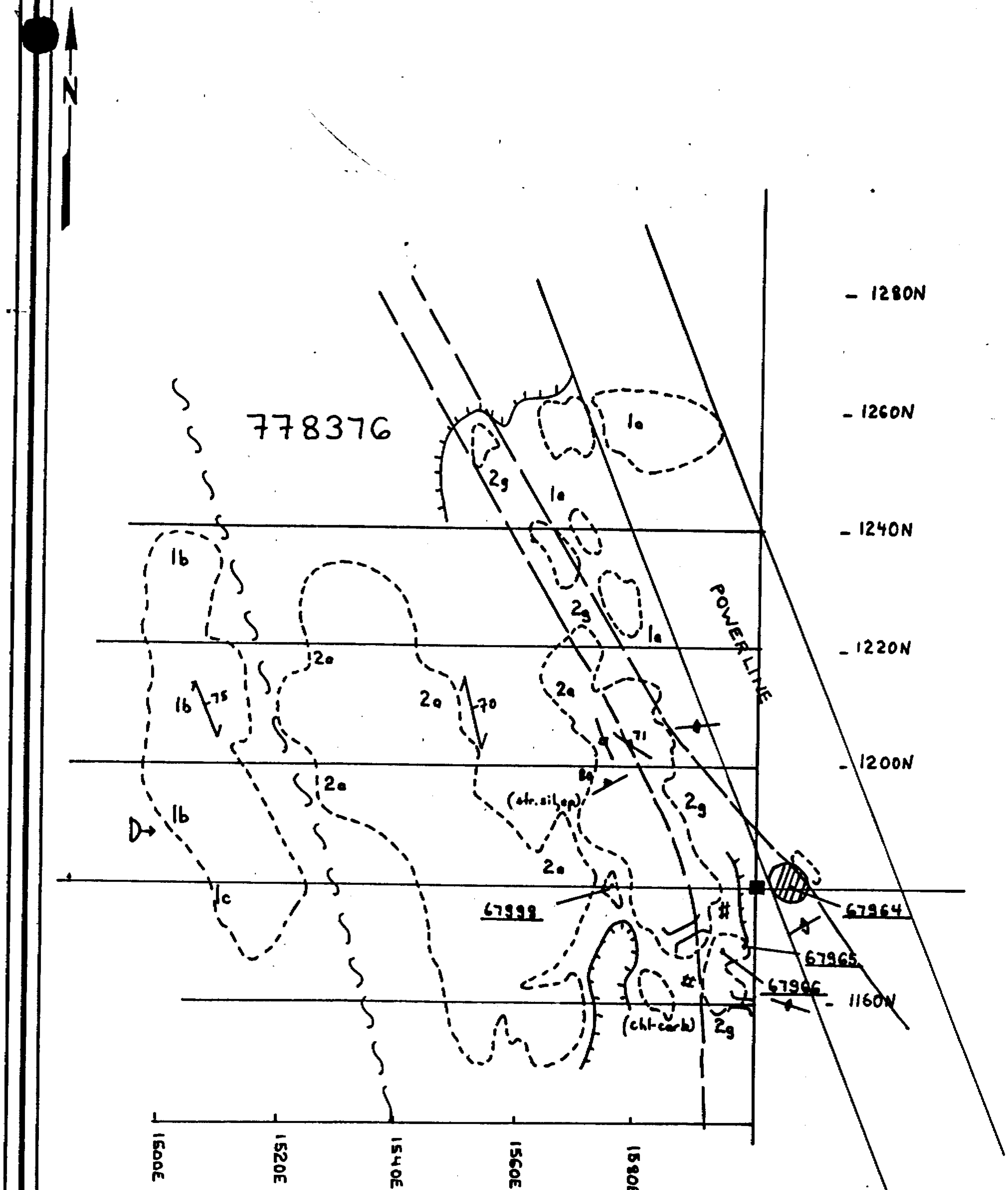

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	for GLEN AUDEN RESOURCES LIMITED		
	Title: Detailed Geology AREA 6 Fig. 13		
	Date: Oct 1985	Scale: 1:100	N.T.S.:
	Drawn: NC	Approved:	File: M-78

matrix pyrite and fine grey disseminated molybdenite. The wallrock of this vein returned 650 ppb. Au.

A pace and compass grid was put in over the shear zone with flags every 10 metres. The shear zone is striking 170° and dips near vertical while the auriferous veins are striking from 110-120° with numerous parallel and branching veins and veinlets. Considerable chloritization, silicification and carbonate alteration occurs in the vicinity of the quartz veins and up to 200 metres in length and width of quartz stockwork may occur here. Another gold bearing vein approximately, 200 meters south-southeast of the main vein west of the beaver pond, occurs within iron tholeiite. The vein strikes 112° and dips 52° northeast. The vein here is 30 cm. wide and contains up to 4% pyrite. Moderately anomalous gold values up to 365 ppb. occur here. This area, therefore may be a 200 metre x 150 metre wide quartz stockwork zone and further work is waranted.

Strongly anomalous molybdenum values up to 150 ppm. occur within the wallrocks of the veins while the veins themselves carry value up to 80 ppm. Mo. The molybdenum-gold association here is obvious whereby anomalous gold values are coincident with anomalous molybdenum values.

AREA 6 (see fig. 13)

In the south western part of the property, on line 1600E at

1160N several pits and trenches occur in fractured iron-rich tholeiitic basalt and silicified crystal tuff cut by quartz stringers. The crystal tuff horizon is strongly fractured and is cut by an erratic quartz stockwork system that has intensely silicified the hostrock. A major shear zone occurs 40 m. west of the crystal tuff horizon along the iron-poor and iron-rich tholeiitic basalt contact. The shear is striking 175° and dips steeply to the east. The shearing event probably formed the east-west trending tensional fractures within the more competent felsic crystal tuff that were later injected by quartz-pyrite veins.

In detail, the crystal tuff horizon is stratigraphically topping the iron-rich tholeiitic basalts and forms a bed from 10 m. to 20 m. in width. The rock consists of up to 30%, 1 mm. to 4mm. subangular broken feldspar crystals set in an aphanitic, siliceous, grey to dark grey groundmass. A pervasive hematization exists along the contact producing a pink-red rock that looks similar to the porphyritic syenite, unit 5b. Mineralization includes 5-10% disseminated pyrite along the silicified vein selvages and up to 3% pale pyrite within the quartz-carbonate stringers. The veins also contain inclusions of highly pyritic wallrock. The vein widths vary from 2 cm. to 10 cm. and strike 110°/75E and 060°/vertical, respectively. The quartz-stockwork system can be traced for 60 metres to the north and then is lost in the overburden. The system is also lost in overburden to the south of the pit on the hydroline. Southwest of pit 1 (see fig. 13) a trench exists striking 080° within the sheared iron tholeiites.

This fracture zone occurs on a roughly E-W trending fold axis occuring in the Southwestern portion of the property. A weakly anomalous molybdenum value of 18ppm. occurs within this quartz fracture zone.

AREA 7

In the southwestern corner of the property along the eastern claim line of Claim 802748 a trench and pit occur on what used to be called the Sesekinika Townsite property (see previous history). The pit is in a fractured, silicified iron-rich tholeiite cut by porphyritic syenite (Unit 5b) with associated quartz veins striking 170°/20°W. The main vein in the pit is 50 cm. in width and contains 1% pale pyrite and molybdenite mineralization. To the south the trench is in a fractured, silicified iron-rich basalt with a 35 cm. wide quartz vein that contains molybdenite and pale pyrite. To the west the vein pinches down to 6 cm. and then is lost in the overburden. A quartz stockwork system covers an area of 200 metres x 100 metres in this location, and possibly more. Weakly anomalous gold values up to 270 ppb. occur in this area. Moderately to strongly anomalous molybdenum up to 120 ppm. also occur here.

Work carried out in this area in the early 1900's included pitting, trenching and drilling on the Sesekinika Townsite property No. 49 (see O.D.M.N.A. Files, Kirkland Lake) by Sylvanite Gold Mines Limited.

During 1914 some free gold was found here in a narrow quartz vein dipping 15°NW.

Drilling by Erie Canadian Mines Limited, totalling 464 feet, five holes intersected a 2 foot wide quartz vein that strikes east and dips 60N.

AREA 8

In the south-eastern corner of claim 802342, on line 3220E between 3100 to 3300N, several trenches occur in sheared iron-rich tholeiitic basalts cut by porphyritic syenite dikes, with associated cherty oxide facies iron formation (Unit 3d). An intense quartz stockwork system occurs over this area, with associated disseminated pyrite. The more major vein directions are 175°/80E, 080°/vertical and 010°/55°E. The main north-south trending trench may have been following a vein, however the trench contents are now masked by overburden. To the southwest approximately 100 metres, a 5-10 metre wide cherty sulphide iron formation (Unit 3a) occurs. The horizon is striking 110° and dips steeply to the south. The chert is a dark grey to light grey in colour with up to 4% stringer pyrite and 1% stratiform pyrite.

Moderately to strongly anomalous zinc values up to 2100 ppm. and weakly anomalous copper values up to 270 ppm. occur within the grey cherty-sulfide horizon to the south. Weakly anomalous molybdenum values up to 23 ppm. occur within both cherty oxide and the cherty sulfide facies iron formations.

<u>AREA 9</u> (Sesekinika Townsite Property)

On line 2450E from 1100N to 1700N several trenches and pits occur. At 1640N the trenches are in iron poor tholeiitic basalt with associated north-south porphyritic syenite dikes and associated quartz veining. Moderately to strongly anomalous gold values from 650 to 11,500 ppb. occur within, iron-poor basalt injected by red feldspathic and calcite stringers with 5% stringer pyrite, and a brecciated quartz-calcite vein (6 cm.?) with 1/2% matrix pyrite around the quartz fragments. The vein system may be going roughly east-west here, unfortunately none were found in outcrop. All grab samples were taken from flyrock in the trenches. Going south for approximately 40 metres on TL1576N at 2550E, a 1 m. wide massive pyrite bed occurs comprised of 50% coarsely crystalline pyrite. Deep overburden cover to the north and south hindered possible strike extension of this horizon. A weakly anomalous gold value of 300 ppb. occurs within an intensely fractured epidotized iron-poor tholeiitic basalt with trace pyrite near to this horizon. Following the iron-rich, iron-poor tholeiitic basalt horizon southward from TL1576N for 150 metres another trench occurs in the iron-rich tholeiitic basalt, with 5% disseminated pyrite. A grab sample from here yielded 115 ppb. gold.

At 2450E/1170N several more trenches occur. The trenches are in the iron-rich tholeiitic basalt unit along the contact with the iron-poor tholeiites. One sample from flyrock of a quartz vein with 50% wallrock material and 4% coarsely disseminated pyrite yielded 11,500 ppb. gold.

Strongly anomalous molybdenum values up to 120 ppm. occur within fractured iron tholeiite with 3% disseminated pyrite. A moderately anomalous copper value up to 1620 ppm. occurs with a strong arsenic enrichment up to 126 ppm (As) within the massive pyrite lense.

The strong molybdenum, and arsenic enrichment are important here as they are pathfinder elements to gold mines in the area.

AREA 10

In the northwest corner of the property south of the White-Clay River, in the northeast corner of claim 801877, several trenches, pits and one shaft occur within narrow quartz-carbonate veins that cut syenite (Unit 5c) and iron-poor

(Unit 1a). This area was worked on by Elzina Mines Limited in the early 1900's (see Previous History). The trenches and pits are in: syenite intrusions cut by narrow 6-10 cm. wide grey quartz veins with finely disseminated pyrite; roughly north south trending shear zones (175°/20°W) injected by narrow quartz veins within the iron-poor tholeiites; quartz veins in iron-rich tholeiitic basalts. The syenite intrusions seem to be trending roughly north-south along the contact between the iron-rich (Unit 2a) and the iron-poor (Unit 1a) tholeiitic basalt flows. Rock samples return weakly anomalous gold values up to 60 ppb. in the narrow quartz veins while a 50 cm. wide chip sample across the shear zone returns 50 ppb. The main vein direction is east-west dipping steeply to the south with a minor direction of 175°/steeply to the west. Mineralization includes trace to 1% finely disseminated pyrite in the veins up to 3% disseminated pyrite along vein selvages. The shear zone consists of 5% disseminated and stringer pyrite within silicified iron-poor tholeiitic basalt.

Weakly anomalous copper values and arsenic values up to 440 ppm. and 7.0 ppm. occur with weakly anomalous gold values up to 45 ppb., and with moderately anomalous tungsten values up to 10 ppm. within the narrow quartz veins.

Area 11

In the northwest corner of claim 802349 on TL 3192N at 2500E, a series of pits ocur within a fractured chert-argillite horizon. The pit is in a grey chert horizon cut by quartz-carbonate stringers, within the iron-rich tholeiitic basalt sequence. Grab samples from the main pit return from 90 ppb. to 265 ppb. in gold. The fractured chert horizon is lying stratigraphically towards the top of the iron-rich tholeiitic basalt sequence near to the iron-poor tholeiitic basalt contact.

The main chert horizon represents an exhalative chemical sedimentary horizon mineralized with 3% disseminated pyrite with minor chalcopyrite. The horizon is striking roughly 190° and occurs just east of a north-south trending shear zone.

In detail the chert is grey, sugary textured with erratic fine, 1 cm. wide quartz-carbonate veining. A cherty argillite unit also occurs here with up to 15% disseminated pyrite.

Approximately 160 metres north of the chert horizon another pit occurs in strongly epidotized iron-poor magnesium tholeiite with trace amounts of pyrite.

Moderately anomalous copper values occur in this area up to 760 ppm. coincident with strongly anomalous molybdenum values of up to 230 ppm. and weakly anomalous gold of 265 ppb. within the chert horizon. Moderately anomalous zinc values up to 610 ppm.

with strongly anomalous arsenic values of 32.2 ppm. also occur within the fractured chert. One chert sample returns 480 ppm. molybdenum.

AREA 12

In the southwestern corner of CL778379 just west of the Bennett Mine Shaft a series of pits and trenches occur. The trenches and pits are in a fracture zone within the iron-rich tholeiitic basalts. The tholeiites are intruded by syenite porphyry dikes and host north-south and east-west trending shallow dipping and vertical quartz zones.

Several moderately to strongly anomalous gold values up to 1830 ppb. occur here within vuggy quartz veins with strongly pyritic vein selvages.

The main roughly north-south trending trench extends for 100 metres and is following a vein striking 170°-180° and dipping 036°W. The vein is approximately 50 cm. in width here and has an intensely pyritized selvage. The pyritized vein selvage consists of 5-8% disseminated pyrite and returns gold values of up to 1750 ppb. The vein itself returns 30 ppb. gold. Several pits occur north of this main trench in quartz veins within iron-rich tholeiites and associated syenite porphyries. Moderately anomalous gold values up to 600 ppb. occur here. Approximatly 250 metres northeast from here, a 15 cm. wide vuggy quartz vein with trace pyrite and a strongly epidotized, chloritic vein selvage returns 1830 ppb. gold.

Approximately 40-80 metres west of the main trench a 2-4 metre wide vein occurs striking 185° and dips vertically. Several small trenches occur within the iron-rich tholeiite cut by quartz stringers. Weakly anomalous gold values occur within this area.

The Bennett Mine shaft occurs approximately 200 metres east of the main trench zone. A two-compartment shaft was sunk to a depth of 530 feet and levels were cut at 125 foot intervals. Cross cutting and drifting were reported early in 1927. Approximately 2000 feet of diamond drilling was done in 1958 just west of the shaft. The holes intersected diorite and volcanic rocks cut by syenite dikes and quartz veins (O.D.M.N.A. files, Kirkland Lake).

About 150 metres and 250 metres north of the main shaft two quartz veins striking possibly northeast occur within the iron-rich tholeiite. The veins returned 700 ppb. and 1830 ppb. gold respectively. The veins vary from 15 cm. to 30 cm. in width and contain pyrite and molybdenite mineralization.

It appears that this area may be a 400 metre x 400 metre wide quartz stock work zone probably related to the east west and east-northeast striking porphyritic syenite dikes cutting the volcanic rocks.

Several moderately to strongly anomalous molybdenum values up to 140 ppm. occur within both the veins and the iron tholeiitic wallrock material. The values are generally higher in the vein selvage material than they are in the veins. One sample of the fractured iron tholeiite returned an arsenic enrichment of up to 11.9 ppm. with coincident anomalous molybdenum values of up to 95 ppm.

One vein sample returned 1200 ppm copper. Two of the moderately anomalous gold samples have coincident tungsten enrichments up to 16 ppm.

AREA 13

In the eastern portion of the property along the north-south access road heading off of the Highway 570, a series of A.E.M. anomalies occur in claims 778372 and 800349. To the north of here, approximately two hundred metres, several two and three channel EM anomalies occur that were previously drilled by Noranda, 1984. They encountered cherty sulphide facies iron formations with graphitic seams. From the regional mapping in Maisonville Township by H. Lovel O.G.S., a major north-south trending fault extends south from Wolf Lake along these EM anomalies.

AREA 14

In the northeastern portion of the property near TL4800N at 2880E, extending southward through claims 802333 and 802336, a 5 metre wide cherty sulphide facies iron formation occurs. The chert is striking 170° in the north and changes to 185° in the south. Unfortunately no grab samples returned anomalous gold values.

In detail, the chert grades into a cherty argillite in places and contains from 1% to 3% disseminated and stratiform-type pyrite with minor amounts of magnetite and epidote. The maximum strike length of this exhalative horizon is 800 metres.

Moderately anomalous copper and zinc values of up to 500 ppm. and 400 ppm. respectively occur within the southern extension of the chert-sulphide horizon. Strongly anomalous molybdenum values of up to 78 ppm. also occur within this horizon.

AREA 15

In the north-central section of the property, just east of the exhalative chert horizon discussed in AREA 14, a roughly north-south trending shear zone occurs within iron-rich tholeiitic basalts cut by syenite dikes and quartz stockwork veins. Several gold occurrences in the area are associated with quartz veins hosted in iron-rich tholeiites with associated syenite porphyries. The Bennett Mine, for example, occurs within this setting.

Weakly anomalous gold values from 40 to 70 ppb. occur here from narrow quartz veins with up to 3% pyrite. The main vein system is striking 170°-175° and 90°-110° and dips 50°-70° east and 45°-55° north, respectively.

Several pits and trenches occur on narrow quartz veins within strongly pyritized vein selvages within strongly pyritized vein selvages within the iron-rich tholeiitic basalts. An intense epidotization and carbonatization with up to 8% cubic pyrite accompanies the vein system. The veins are generally grey, coarsely crystalline with epidote-chlorite inclusions and trace-1/2% disseminated pyrite, chalcopyrite and molybdenite.

Several roughly southeast trending porphyritic syenite dikes cut the iron-rich tholeiites. The syenites generally are cut by intense ladder veining and have a red hematitic alteration associated with them.

Several samples of quartz vein and vein selvage material returns moderately anomalous in copper, up to 1400 ppm. Disseminated chalcopyrite was observed in these samples. Weakly anomalous zinc values (up to 400 ppm.) are associated with these copper values.

Several moderately anomalous molybdenum values up to 95 ppm. occur within strongly epidotized, chloritized wallrock of the southeast trending quartz veins. One weakly anomalous gold value up to 65 ppb. occurs with an anomalous molybdenum sample of up to 44 ppm. and a moderately anomalous copper sample of 1400 ppm. The sample is of a 10 cm. wide rusty quartz vein with 3% pale cubic and disseminated pyrite. The vein is striking 165° and dipping 70°E. One sample of intensely epidotized wallrock of a southeast striking vein returns 59 ppm. Mo.

AREA 16

A north south trending shear zone occurs approximately 200 metres west of the No. 1 of 803559 along the iron-rich tholeiitic basalts and the cherty oxide facies iron formation contact. Strongly anomalous gold values occur within this shear zone up to .96 oz/ton. Several quartz stringers occur subparallel to the main shear zone with strongly pyritic vein selvages.

Approximately 200 metres to the north of this shear a trench occurs in weakly sheared iron-tholeiite cut by syenite dikes.

AREA 17

Several pits and trenches occur in iron-rich tholeiites in the top northeastern corner of the property along the southern claim line of 803557. The iron-tholeiites are cut by an extensive quartz stockwork system. Several syenite dikes, trending roughly northeast cut the volcanics here. The trenches in the area are trending in several directions and most are filled with overburden cover.

Several samples of flyrock return gold values up to 360 ppb. from a vein selvage, of strongly chloritic basalt with 10-15% cubic pyrite. The quartz veins with 10% pyritic wallrock inclusions return weakly anomalous gold values of up to 140 ppb. and strongly anomalous molybdenum of up to 73 ppm. The intensely chloritized wallrock with 15% pyrite also returns 14 ppm. tungsten as well as 360 ppb. gold.

In detail, the shear zone strikes 175° and dips steeply to the east. The shearing has produced a strongly foliated iron-rich basalt with chlorite-carbonate slips that is injected by narrow 1-4 cm. wide grey quartz-epidote veins and a fractured, cherty oxide facies iron formation that is cut by an erratic display of quartz veining. According to the preliminary map of Maisonville township several holes were drilled approximately 150 metres north of this shear zone on a sulphide prospect in 1956, however due to overburden cover the old hole locations are hidden. Several trenches, however, were found within weakly sheared iron-rich tholeiites with trace pyrite and are cut by syenite dikes with associated quartz stringers.

CONCLUSIONS

1. Several disseminated sulphide zones both with quartz stockwork settings and with stratabound exhalative chert zones occur on the property in Maisonville and Grenfell townships.

2. Similar host rocks, including iron tholeiites and associated porphyritic syenite dikes occur on the Glen Auden Resources Limited property that exhibit similar geological settings to some gold deposits in the Kirkland Lake, Matachewan, Matheson and Timmins area.

3. Specifically, the Glen Auden Resources Limited property has syenite porphyry intrusives with associated gold-molybdenite mineralization similar to the Kirkland Lake area.

4. Tensional vein zones trending east-west occur near major north-south trending structures.

5. Both the north-south trending shallow dipping and vertical quartz zones and the east-west steeply dipping quartz zones carry anomalous gold values.

6. The contacts of the porphyritic syenite dikes and intrusions are important in localizing shearing and in forming tensional vein structures and stockwork systems.

7. Several exhalative chert horizons occur on the property including both sulphide facies and oxide facies iron formation The sulphide facies occur in greater abundance.

8. The Maisonville-Grenfell Township property is totally underlain by Archean mafic volcanics (tholeiitic basalts) that are part of the Kinojevis Group (Jensen, L.S. (1978)).

9. The Kinojevis Group of rocks is similar to the Tisdale Group in Timmins which contains numerous well known gold deposits.

10. Gold mineralization frequently occurs around or within the syenite bodies as well as along north-south fault structures.

11. Several north-south trending fault structures occur on the Maisonville-Grenfell Township property, many of which can

Maisonville-Grenfell Township property, many of which can be identified on aerial photographs, regional gravity data Middleton, R. as well as on the aeromagnetic data, O.G.S. (1979).

12. Molybdenite mineralization seems to be an important component to gold mineralization.

13. Several interflow intermediate to felsic crystal tuff horizons occur on the property which may represent a slight overlap of the Blake River Volcanism, calc-alkalic event.

14. Arsenic and Tungsten values seem to be important indicators of gold enrichment in veins and selvages.

RECOMMENDATIONS

The Maisonville and Grenfell Townships property contains a number of gold showings which have been only partly exposed by old hand trenches, most of which are hidden by overburden, as well as a small zone (Bennett) which has been in part, mined. A number of the showings have geological settings which suggest potential for large tonnage gold deposits. These targets could be trenched and perhaps drilled at an early stage; however, detailed mapping and induced polarization surveys should be carried out to trace the extent and direction of these zones.

Disseminated sulphides are associated both with quartz-stockwork settings and stratabound exhalative chert zones which can be traced using induced polarization methods. Tensional vein zones trending roughly east-west occur near major north-south trending structures and therefore two line directions may be required since the majority of the rocks trend northwesterly to north-south. Trenching of a number of showings on the property using a bulldozer and backhoe should be done as well to follow up and expose any shallow I.P. anomalies. Diamond drilling of deeper I.P. anomalies and known gold showings should be done as follow-up to the trenching.

The I.P. surveys should be conducted with an "a" spacing of 12.5 metres with n=1,2,3 and 4, on 50 metre grid line intervals on north-south, east-west or both line directions.

Area 1 An I.P. survey, on 50 metre east-west lines over claims 798874, 798875 and 798878, with trenching of near surface I.P. anomalies and in the vicinity of the old pits and trenches.

Area 2 Trenching in the vicinity of the old trenches and pits.

Area 4 and Area 12 An I.P. survey, on 50 metre east-west lines is recommended over claims 798864, 801217, 778379 and the eastern half of claim 798863 with trenching of any near surface anomalies.

Area 5 An I.P. survey for tracing the extent of the zone on 50-metre east-west and north-south lines over claims 800346 and 800348 to find the extent of the north-south fault zone and the east-west auriferous tensional veins. Trenching is also recommended in the vicinity of the trenches.

Area 7 An I.P. survey covering the eastern half of claim 802748 and all of claim 801876 extending north into claims 802747 and 801220 with north-south and east-west lines spaced 50 metres apart with trenching of any near surface I.P. anomalies.

Area 8 Trenching with a bulldozer and backhoe is recommended in the vicinity of the trenches to better expose the overburden covered outcrops in the southeastern corner of claim 802342.

Area 9 Bulldozer work is recommended in the vicinity of the old treches and pits, in order to establish the true vein directions.

Area 11 Trenching in the vicinity of the old pits and trenches followed by I.P. survey over claim 802343 and claim 802349 on 50 mertre east-west lines.

Area 13 An I.P. survey is recommended over claims 800349, 800347, 7783772, 778371, 800345 and 778368 to find the extension of the pyritic graphite horizon that shows up on A.E.M. anomalies.

Area 16 An I.P. survey is recommended over claim 803558 and 803559 on east-west lines spaced 50 metres apart to find the north and south strike extension of the shear zone that returned .96 oz./ton Au.

Area 17 Bulldozer and backhoe work is recommended in the vicinity of the pits and trenches in order to establish true vein directions followed by an I.P. survey over claims 803557 and 803560 on a specific grid system at 50 metre line spacings.

BUDGET

Phase I	
Line-cutting at $300/claim on 23 claims	$ 6,900
Sub Total	$ 6,900
Phase II	
I.P. Surveys on specific areas 55 miles at $1,300/mi.	$ 71,500
Trenching 40 days at $500/day	20,000
Sampling and assaying	7,000
Sub Total	$ 98,500
Phase III	
Diamond drilling of 2 known showings with a series of short holes = 2800 ft. at $25/ft.	70,000
Assaying and Supervison	10,000
Sub Total	$ 80,000
TOTAL	$185,400

Further drilling and trenching to be contingent on results of Phases I, II and III.

Respectfully Submitted,

Nadia Caira

Nadia Caira, B.Sc.
October 2, 1985

REFERENCES

Fyon, Andy J. and Crocket, J.H. — Gold Exploration in the Timmins Area Using Field and Lithogeochemical Characteristics of Carbonate Alteration Zones O.G.S. Study 26.

Grunsky, E.C. — No. 58 Abitibi Alteration Study

Jensen, L.S. — Geology of Thackeray, Elliot, Tannahill, and Dokis Townships, O.G.S. Report 165

Jensen, L.S. and Langford F.F. 1983 — Geology and Petrogenesis of the Archean Abitibi Belt in the Kirkland Lake Area, Ontario; O.G.S. Open file Report 5455, p520

Jensen, L.S. — No. 10 Regional Stratigraphy and Structure of the Timmins-Kirkland Lake Area, District of Cochrane and Timiskaming and the Kirkland Lake - Larder Lake Area

Kerrich, R. — Geochemistry of Gold Deposits in the Abitibi Greenstone Belt, Special Volume 27 The Canadian Institute of Mining and Metallurgy

Lovell, H. L., — Geology of the Bourkes Area, O.G.S., Report 92 1971

Lovell, H. L., — Geology of the Matachewan Area 1967

Pyke, D. R. — Geology of the Timmins Area, O.G.S. Report p. 219

Tagliamonte, Frank P. — Report on the Property of Glen Auden Resources Limited and Adola Mining Corp. Maisonville and Grenfell Townships.

CERTIFICATION

I, Nadia M. Caira, B.Sc., of Timmins, Ontario, certify that:

1. I am a graduate of the University of British Columbia, Vancouver, B.C., with a B.Sc. degree in Geology obtained in 1981.

2. I have been practising my profession in Canada since 1981.

3. I have no direct or indirect interest in the properties, leases or securities of Glen Auden Resources Ltd., Maisonville-Grenfell Township property, nor do I expect to receive any.

Dated this October 2, 1985 Timmins, Ontario.

Nadia Caira

Nadia M. Caira, B.Sc.

A P P E N D I X

BARRINGER MAGENTA
304 CARLINGVIEW DRIVE
REXDALE, ONTARIO
M9W 5G2
(416) 675-3870
3750 - 19TH STREET
SUITE 105
CALGARY, ALBERTA
T2E 6V2
(403) 276-9701

FILE: T5_0520
DATE: 18/09/85
MATRIX: AQ REG

R. S. MIDDLETON EXPLORATION SERVICES (N. CAIRA) PROJ: M-78 WO NO: 85-0520

SAMPLE ID	CU PPM	ZN PPM	PB PPM	AG PPM	AU PPB	AU-FA OZ/TON	MO PPM	AS PPM	SB PPM	W PPM
067851	89	39	3	<.2	<5	---	7	.7	<.2	<4
067852	2100	41	9	.3	20	---	68	<.2	<.2	5
067853	650	51	5	<.2	45	---	22	.4	<.2	<4
067854	470	20	4	<.2	45	---	31	1.7	<.2	28
067855	79	18	6	.4	135	---	83	1.0	.4	12
067856	32	9	13	<.2	15	---	25	.5	<.2	4
067857	88	61	5	.7	55	---	6	2.8	<.2	8
067858	440	33	<1	<.2	10	---	<1	7.0	<.2	6
067859	240	53	<1	<.2	45	---	<1	.5	<.2	6
067860	21	7	<1	<.2	60	---	4	.9	<.2	<4
067861	19	18	12	<.2	45	---	140	.7	<.2	10
067862	180	18	21	5.5	11000	.320	6	5.3	<.2	<4
067863	44	28	6	<.2	45	---	6	1.0	<.2	<4
067864	21	20	300	4.9	140	---	73	.9	<.2	4
067865	42	55	230	2.9	360	---	23	.3	<.2	14
067866	200	19	260	<.2	<5	---	7	.7	<.2	<4
067867	2200	72	5	<.2	5	---	7	.5	<.2	<4
067868	450	25	<1	<.2	5	---	1	.8	<.2	<4
067869	20	16	<1	<.2	<5	---	4	1.2	<.2	<4
067870	15	15	<1	<.2	35	---	4	.9	.2	<4
067871	260	36	<1	<.2	15	---	64	1.2	<.2	<4
067872	62	110	102	<.2	5	---	13	2.1	.2	12
067873	46	24	<1	<.2	10	---	43	2.5	.2	<4
067874	12	7	<1	<.2	115	---	8	.4	.2	<4
067875	19	9	<1	.4	700	---	47	.8	.2	<4
067876	130	33	<1	<.2	5	---	10	1.9	<.2	<4
067877	64	54	<1	<.2	35	---	40	1.0	<.2	<4
067878	110	85	23	<.2	50	---	95	11.9	.4	<4
067879	19	14	3	.8	1500	.030	27	.7	<.2	<4
067880	73	62	<1	.6	600	---	8	1.1	<.2	20
067881	69	49	<1	<.2	5	---	9	.9	<.2	<4
067882	1000	540	8	<.2	<5	---	13	19.0	.2	<4
067883	1200	42	<1	<.2	60	---	10	.5	<.2	<4
067884	82	43	1300	1.1	<5	---	3	4.0	<.2	<4
067885	19	10	8	<.2	50	---	9	.7	.2	<4
067886	11	6	3	<.2	<5	---	4	.4	<.2	<4
067887	21	20	7	1.3	1750	.030	140	1.3	.2	16
067888	21	46	<1	<.2	25	---	16	.7	.2	<4
067889	38	25	5	1.3	1500	.040	28	1.2	<.2	6
067890	29	4	4	.6	1820	.050	15	.5	.2	<4
067891	13	10	<1	<.2	10	---	19	<.2	.2	40
067892	32	50	<1	<.2	<5	---	2	<.2	<.2	<4
067893	38	5	8	<.2	<5	---	21	.7	<.2	<4
067894	110	9	27	<.2	20	---	59	.9	<.2	<4
067895	69	48	<1	<.2	<5	---	4	.3	<.2	<4

FROM OM86-6-C-86
added July 1989

BARRINGER MAGENTA

304 CARLINGVIEW DRIVE
REXDALE, ONTARIO
M9W 5G2
(416) 675-3870

3750 - 19TH STREET
SUITE 105
CALGARY, ALBERTA
T2E 6V2
(403) 276-9701

FILE: T5_0520
DATE: 18/09/85
MATRIX: AQ REG

R. S. MIDDLETON EXPLORATION SERVICES (N. CAIRA) PROJ: M-78 WO NO: 85-0520

SAMPLE ID	CU PPM	ZN PPM	PB PPM	AG PPM	AU PPB	AU-FA OZ/TON	MO PPM	AS PPM	SB PPM	W PPM
067896	150	54	2	.3	235	---	3	1.8	<.2	8
067897	150	37	17	<.2	650	---	48	.6	<.2	<4
067898	120	55	<1	<.2	35	---	3	.5	<.2	16
067899	71	56	<1	<.2	<5	---	3	<.2	<.2	<4
067900	34	10	2	<.2	5	---	5	.5	<.2	<4
18280	290	300	35	<.2	10	---	7	5.6	<.2	<4
18281	200	58	5	<.2	10	---	9	2.1	<.2	<4
18282	84	49	<1	<.2	<5	---	12	.6	<.2	<4
18283	95	5	<1	<.2	<5	---	14	.4	.2	30
18284	21	7	11	1.4	4750	.960	49	2.5	.2	12
18285	72	34	<1	<.2	650	---	23	<.2	<.2	<4
18286	100	73	<1	<.2	15	---	1	<.2	<.2	<4
18287	1400	11	170	1.3	65	---	44	.6	<.2	<4
18288	570	39	160	.4	40	---	17	.5	<.2	<4
18289	46	5	85	.6	10	---	16	.2	<.2	<4
18290	85	6	44	.5	30	---	56	.4	<.2	<4
18291	110	47	6	<.2	<5	---	5	1.3	<.2	<4
18292	110	19	51	<.2	15	---	95	.4	<.2	<4
18293	6	42	<1	<.2	<5	---	2	<.2	<.2	<4
18294	560	400	<1	<.2	<5	---	78	2.6	.2	<4
18295	32	8	22	<.2	10	---	6	.4	<.2	<4
18296	40	8	47	<.2	5	---	100	.4	<.2	<4
18297	15	8	36	<.2	270	---	23	.4	.2	<4
18298	9	5	5	<.2	5	---	120	.4	<.2	<4
18299	310	590	3	<.2	85	---	16	4.5	.2	14
18300	160	110	<1	<.2	40	---	30	4.4	<.2	12

FROM OM86-6-C-86

BARRINGER MAGENTA

304 CARLINGVIEW DRIVE
REXDALE, ONTARIO
M9W 5G2
(416) 675-3870

3750 - 19TH STREET
SUITE 105
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FILE: T5_0583
DATE: 16/09/85
MATRIX: AQ REG

R. S. MIDDLETON EXPLORATION SERVICES (N. CAIRA) PROJ: M-78 WO NO: 85-0583 PAGE: 1

SAMPLE ID	CU PPM	ZN PPM	PB PPM	AG PPM	AU PPB	MO PPM	AS PPM	SB PPM
67967	280	11	2	<.2	<5	2	<.2	<.2
67968	12	8	<1	<.2	<5	[illegible]	<.2	<.2
67969	240	1100	11	<.2	<5	50	21.5	.3
67970	560	50	<1	<.2	<5	<1	.2	<.2
67971	59	52	3	<.2	<5	7	10.5	.2
67972	210	500	19	.4	10	45	35.1	.9
67973	280	900	13	.3	<5	100	65.2	.7
67974	170	270	10	<.2	<5	13	21.5	1.3
67975	540	1500	18	.5	475	[illegible]	38.3	.9
67976	98	75	<1	<.2	10	[illegible]	1.4	<.2
67977	55	90	4	<.2	110	7	2.4	<.2
67978	18	37	7	<.2	300	2	<.2	<.2
67979	[illegible]	42	12	.6	<5	10	126	.6
67980	340	80	6	<.2	<5	4	.9	<.2
67981	800	190	1000	1.4	20	75	.7	<.2
67982	74	51	12	<.2	30	9	.9	<.2
67983	78	30	<1	<.2	20	7	.9	<.2
67984	39	47	<1	<.2	<5	1	<.2	<.2
67985	29	15	<1	<.2	<5	2	<.2	<.2
67986	[illegible]	6	2	<.2	365	80	.5	<.2
67987	[illegible]	[illegible]	1	<.2	10	150	.3	<.2
67988	120	20	<1	<.2	115	120	1.0	<.2
67989	42	34	<1	[illegible]	[illegible]	8	2.4	<.2
67990	260	38	<1	.3	[illegible]	17	2.0	<.2

FROM OM86-6-C-86

W850800300

Ministry of Natural Resources
Ontario

Report of Work
(Geophysical, Geological, Geochemical and Expenditures)

2

42A01NE0046 2.8560 MAISONVILLE

900

(File L778376)

Type of Survey(s)	Township or Area
Geological Mapping	Maisonville

Claim Holder(s)	Prospector's Licence No.
Premier Explorations Inc. & Gyro Capital Inc.	T-1762 & T1331

Address: 33 Premier Avenue West, Kirkland Lake, Ont. P2N 2S7 & Suite 1710 - 390 Bay Street, Toronto, Ontario M5H 2Y2

Survey Company	Date of Survey (from & to)	Total Miles of line Cut
Robert S. Middleton Exploration Services Inc.	26 07 85 (Day Mo. Yr.) – 15 08 85 (Day Mo. Yr.)	15.62

Name and Address of Author (of Geo-Technical report): Nadia Caira, c/o R.S. Middleton, P.O. Box 1637, Timmins, Ont. P4N 7W8

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	
	- Magnetometer	
For each additional survey: using the same grid: Enter 20 days (for each)	- Radiometric	
	- Other	
	Geological	20
	Geochemical	

Man Days		Days per Claim
Complete reverse side and enter total(s) here	Geophysical	
	- Electromagnetic	
	- Magnetometer	
	- Radiometric	
	- Other	
	Geological	
	Geochemical	

Airborne Credits		Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	
	Magnetometer	
	Radiometric	

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.	Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.
	see attached list				

RECEIVED
AUG 27 1985
MINING LANDS SECTION

LARDER LAKE MINING DIV.
RECEIVED
AUG 19 1985
AM 7 8 9 10 11 12 1 2 3 4 5 6 PM

Expenditures (excludes power stripping)

Type of Work Performed

Performed on Claim(s)

Calculation of Expenditure Days Credits

Total Expenditures				Total Days Credits
$	÷	15	=	

Instructions
Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

Total number of mining claims covered by this report of work: 58

Date	Recorded Holder or Agent (Signature)
August 15, 1985	R. Bruce Durham (signature)

For Office Use Only

Total Days Cr. Recorded	Date Recorded	Mining Recorder
1160	AUG 19 1985	(signature)
	Date Approved as Recorded	Branch Director

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 Postal Address of Person Certifying: R. Bruce Durham, P.O. Box 1637, Timmins, Ontario

Date Certified	Certified by (Signature)
Aug. 15, 1985	R. Bruce Durham (signature)

1362 (81/9)

List of 56 Claims

Claim #	Recorded Holder
L 778 378	Premier Explorations Inc.
L 778 379	Premier Explorations Inc.
L 798 863	Premier Explorations Inc.
L 798 864	Premier Explorations Inc.
L 798 865	Premier Explorations Inc.
L 798 866	Premier Explorations Inc.
L 798 867	Premier Explorations Inc.
L 798 868	Premier Explorations Inc.
L 798 869	Premier Explorations Inc.
L 798 870	Premier Explorations Inc.
L 798 871	Premier Explorations Inc.
L 798 872	Premier Explorations Inc.
L 799 289	Premier Explorations Inc.
L 799 290	Premier Explorations Inc.
L 800 347	Premier Explorations Inc.
L 800 348	Premier Explorations Inc.
L 800 349	Premier Explorations Inc.
L 801 217	Premier Explorations Inc.
L 801 877	Premier Explorations Inc.
L 801 878	Premier Explorations Inc.
L 801 876	Premier Explorations Inc.
L 802 332	Premier Explorations Inc.
L 802 333	Premier Explorations Inc.
L 802 334	Premier Explorations Inc.
L 802 335	Premier Explorations Inc.
L 802 336	Premier Explorations Inc.
L 802 337	Premier Explorations Inc.
L 802 338	Premier Explorations Inc.
L 802 339	Premier Explorations Inc.
L 802 340	Premier Explorations Inc.
L 802 353	Premier Explorations Inc.
L 802 354	Premier Explorations Inc.
L 802 355	Premier Explorations Inc.

Claim #	Recorded Holder
L 802 356	Premier Explorations Inc.
L 802 357	Premier Explorations Inc.
L 802 358	Premier Explorations Inc.
L 802 359	Premier Explorations Inc.
L 802 360	Premier Explorations Inc.
L 802 365	Premier Explorations Inc.
L 802 744	Premier Explorations Inc.
L 802 745	Premier Explorations Inc.
L 802 746	Premier Explorations Inc.
L 802 747	Premier Explorations Inc.
L 802 749	Premier Explorations Inc.
L 803 557	Premier Explorations Inc.
L 803 558	Premier Explorations Inc.
L 803 559	Premier Explorations Inc.
L 803 560	Premier Explorations Inc.
L 778 370	Gyro Capital Inc.
L 778 371	Gyro Capital Inc.
L 778 372	Gyro Capital Inc.
L 778 373	Gyro Capital Inc.
L 778 376	Gyro Capital Inc.
L 778 377	Gyro Capital Inc.
L 778 368	Gyro Capital Inc.
L 778 369	Gyro Capital Inc.
L 799 678	Gyro Capital Inc.
L 800 344	Gyro Capital Inc.

√

Mining Lands Section File No 28560

Control Sheet

TYPE OF SURVEY
____ GEOPHYSICAL
✓ GEOLOGICAL
____ GEOCHEMICAL
____ EXPENDITURE

MINING LANDS COMMENTS:

Assessment files office: 3 pages Assay results added from OM86-6-C-86 to Appendices, July 1989

L.D.
Lgd.

Signature of Assessor

Nov. 28/85

Date

1986 01 10

Your File: #300
Our File: 2.8560

Mining Recorder
Ministry of Northern Development and Mines
4 Government Road East
Kirkland Lake, Ontario
P2N 1A2

Dear Sir:

RE: Notice of Intent dated December 18, 1985
Geological Survey on Mining Claims
L 778377, et al, in Maisonville Township

The assessment work credits, as listed with the above-mentioned Notice of Intent, have been approved as of the above date.

Please inform the recorded holder of these mining claims and so indicate on your records.

Yours sincerely,

S.E. Yundt
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3
Phone:(416)965-4888

DK/mc

cc: Premier Explorations Inc
33 Premier Avenue West
Kirkland Lake, Ontario
P2N 2S7

Gyro Capital Inc
Suite 1710
390 Bay Street
Toronto, Ontario
M5H 2Y2

Mr. G.H. Ferguson
Mining & Lands Commissioner
Toronto, Ontario

Resident Geologist
Kirkland Lake, Ontario

Encl.

Ontario

Ministry of Northern Affairs and Mines

Technical Assessment Work Credits

File
2.8560

Date	Mining Recorder's Report of Work No.
1985 12 18	300

Recorded Holder

PREMIER EXPLORATIONS INC/GYRO CAPITAL INC

Township or Area

MAISONVILLE TOWNSHIP

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical	L 778378-79
Electromagnetic ______ days	798863 to 72 inclusive
Magnetometer ______ days	799289-90
Radiometric ______ days	800347 to 49 inclusive
Induced polarization ______ days	801217
Other ______ days	801876 to 78 inclusive
Section 77 (19) See "Mining Claims Assessed" column	802332 to 40 inclusive
Geological 20 days	802353 to 60 inclusive
Geochemical ______ days	802365
Man days ☐ Airborne ☐	802744 to 47 inclusive
Special provision ☒ Ground ☒	802749
☐ Credits have been reduced because of partial coverage of claims.	803557 to 60 inclusive
☐ Credits have been reduced because of corrections to work dates and figures of applicant.	778370 to 73 inclusive
	778376
	778368-69

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

10 DAYS GEOCHEMICAL

L 778377
799678
800344

No credits have been allowed for the following mining claims

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

CREDITS REDUCED ON L 778377 DUE TO UNDER-SIZED CLAIM.

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.

828 (85/9)

Ministry of Natural Resources
Ontario

Jan 2, 1986

1985 12 18

Your File: #300
Our File: 2.8560

Mining Recorder
Ministry of Northern Development and Mines
4 Government Road East
Kirkland Lake, Ontario
P2N 1A2

Dear Sir:

Enclosed are two copies of a Notice of Intent with statements listing a reduced rate of assessment work credits to be allowed for a technical survey. Please forward one copy to the recorded holder of the claims and retain the other. In approximately fifteen days from the above date, a final letter of approval of these credits will be sent to you. On receipt of the approval letter, you may then change the work entries on the claim record sheets.

For further information, if required, please contact Mr. R.J. Pichette at 416/965-4888.

Yours sincerely,

R. Pichette

S.E. Yundt
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3

R.D.K. DK/mc

Encls.

cc: Premier Explorations Inc
33 Premier Avenue West
Kirkland Lake, Ontario
P2N 2S7

Gyro Capital Inc
Suite 1710
390 Bay Street
Toronto, Ontario
M5H 2Y2

Mr. G.H. Ferguson
Mining & Lands Commissioner
Toronto, Ontario

Ministry of Natural Resources

Ontario

Notice of Intent for Technical Reports

1985 12 18

2.8560/#300

An examination of your survey report indicates that the requirements of The Ontario Mining Act have not been fully met to warrant maximum assessment work credits. This notice is merely a warning that you will not be allowed the number of assessment work days credits that you expected and also that in approximately 15 days from the above date, the mining recorder will be authorized to change the entries on his record sheets to agree with the enclosed statement. Please note that until such time as the recorder actually changes the entry on the record sheet, the status of the claim remains unchanged.

If you are of the opinion that these changes by the mining recorder will jeopardize your claims, you may during the next fifteen days apply to the Mining and Lands Commissioner for an extension of time. Abstracts should be sent with your application.

If the reduced rate of credits does not jeopardize the status of the claims then you need not seek relief from the Mining and Lands Commissioner and this Notice of Intent may be disregarded.

If your survey was submitted and assessed under the "Special Provision-Performance and Coverage" method and you are of the opinion that a re-appraisal under the "Man-days" method would result in the approval of a greater number of days credit per claim, you may, within the said fifteen day period, submit assessment work breakdowns listing the employees names, addresses and the dates and hours they worked. The new work breakdowns should be submitted direct to the Land Management Branch, Toronto. The report will be re-assessed and a new statement of credits based on actual days worked will be issued.

Ministry of Natural Resources
Ontario

Geotechnical Report Approval

File 2-8560

Mining Lands Comments

Clarence:

Do you feel that we should ask them to show traverse lines?

Dennis Kimvig

Dennis - no need to because the pattern of outcrops show where they traversed. Good report!

☐ To: Geophysics

Comments

☐ Approved ☐ Wish to see again with corrections

Date	Signature

☑ To: Geology - Expenditures Clarence Kustra

Comments

☑ Approved ☐ Wish to see again with corrections

Date	Signature
Nov 13/85	C Kustra

☐ To: Geochemistry

Comments

☐ Approved ☐ Wish to see again with corrections

Date	Signature

☐ To: Mining Lands Section, Room 6462, Whitney Block. (Tel: 5-1380)

1593 (81/10)

REGISTERED

October 9, 1985

Report Of Work #300

Premier Explorations Inc
33 Premier Avenue West
Kirkland Lake, Ontario
P2N 2S7

Dear Sirs:

RE: MiningfClaims L 778378, et al,
in Maisonville Township

I have not received the reports and maps (in duplicate) for the Geological Survey on the above-mentioned claims.

As the assessment "Report of Work" was recorded by the Mining Recorder on August 19, 1985 the 60 day period allowed by Section 77 of the Mining Act for the submission of the technical reports and maps to this office will expire on October 18, 1985.

If the material is not submitted to this office by October 18, 1985, I will have no alternative but to instruct the Mining Recorder to delete the work credits from the claim record sheets.

For further information, please contact Mr. Arthur Barr at (416)965-4888.

Yours sincerely,

S.E. Yundt
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3
Phone:(416)965-4888

AB/mc

cc: Gyro Capital Inc
Suite 1710
390 Bay Street
Toronto, Ontario
M5H 2Y2

Nadia Caira
c/o R.S. Middleton
P.O. Box 1637
Timmins, Ontario
P4N 7W8

Mining Recorder
Kirkland Lake, Ontario

Encl.

Ontario

File ______

Ministry of Natural Resources

GEOPHYSICAL – GEOLOGICAL – GEOCHEMICAL TECHNICAL DATA STATEMENT

TO BE ATTACHED AS AN APPENDIX TO TECHNICAL REPORT
FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT
TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

Type of Survey(s) GEOLOGICAL

Township or Area MAISONVILLE & GRENFELL TWPS

Claim Holder(s) GLEN AUDEN RESOURCES LIMITED

Survey Company R.S. MIDDLETON EXPL. SERVICES INC.

Author of Report NADIA M. CAIRA

Address of Author c/o BOX 1637 TIMMINS, ONT.

Covering Dates of Survey July 21 – Sept. 11, 1985 (linecutting to office)

Total Miles of Line Cut NA

SPECIAL PROVISIONS CREDITS REQUESTED

ENTER 40 days (includes line cutting) for first survey.

ENTER 20 days for each additional survey using same grid.

	DAYS per claim
Geophysical	
–Electromagnetic	
–Magnetometer	
–Radiometric	
–Other	
Geological	20
Geochemical	

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)

Magnetometer ______ Electromagnetic ______ Radiometric ______
(enter days per claim)

DATE: OCT. 17/85 SIGNATURE: Nadia Caira
Author of Report or Agent

MINING CLAIMS TRAVERSED
List numerically

see list
(prefix) (number)

If space insufficient, attach list

TOTAL CLAIMS 58

OFFICE USE ONLY

Res. Geol. ______ Qualifications 26239

Previous Surveys

File No.	Type	Date	Claim Holder

837 (5/79)

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS – If more than one survey, specify data for each type of survey

Number of Stations ______ Number of Readings ______

Station interval ______ Line spacing ______

Profile scale ______

Contour interval ______

MAGNETIC

Instrument ______

Accuracy – Scale constant ______

Diurnal correction method ______

Base Station check-in interval (hours) ______

Base Station location and value ______

ELECTROMAGNETIC

Instrument ______

Coil configuration ______

Coil separation ______

Accuracy ______

Method: ☐ Fixed transmitter ☐ Shoot back ☐ In line ☐ Parallel line

Frequency ______ (specify V.L.F. station)

Parameters measured ______

GRAVITY

Instrument ______

Scale constant ______

Corrections made ______

Base station value and location ______

Elevation accuracy ______

INDUCED POLARIZATION / RESISTIVITY

Instrument ______

Method ☐ Time Domain ☐ Frequency Domain

Parameters – On time ______ Frequency ______

– Off time ______ Range ______

– Delay time ______

– Integration time ______

Power ______

Electrode array ______

Electrode spacing ______

Type of electrode ______

SELF POTENTIAL

Instrument ____________________ Range __________

Survey Method ____________________

____

Corrections made ____________________

____

RADIOMETRIC

Instrument ____________________

Values measured ____________________

Energy windows (levels) ____________________

Height of instrument ____________________ Background Count __________

Size of detector ____________________

Overburden ____________________

(type, depth – include outcrop map)

OTHERS (SEISMIC, DRILL WELL LOGGING ETC.)

Type of survey ____________________

Instrument ____________________

Accuracy ____________________

Parameters measured ____________________

____

Additional information (for understanding results) ____________________

____

____

AIRBORNE SURVEYS

Type of survey(s) ____________________

Instrument(s) ____________________

(specify for each type of survey)

Accuracy ____________________

(specify for each type of survey)

Aircraft used ____________________

Sensor altitude ____________________

Navigation and flight path recovery method ____________________

____

Aircraft altitude ____________________ Line Spacing __________

Miles flown over total area ____________________ Over claims only __________

GEOCHEMICAL SURVEY – PROCEDURE RECORD

Numbers of claims from which samples taken ____________

____

____

Total Number of Samples ____________

Type of Sample ____________
(Nature of Material)

Average Sample Weight ____________

Method of Collection ____________

____

Soil Horizon Sampled ____________

Horizon Development ____________

Sample Depth ____________

Terrain ____________

____

Drainage Development ____________

Estimated Range of Overburden Thickness ____________

____

____

SAMPLE PREPARATION

(Includes drying, screening, crushing, ashing)

Mesh size of fraction used for analysis ____________

____

____

____

General ____________

____

____

____

____

____

____

____

____

____

ANALYTICAL METHODS

Values expressed in:

- per cent ☐
- p. p. m. ☐
- p. p. b. ☐

Cu, Pb, Zn, Ni, Co, Ag, Mo, As,-(circle)

Others ____________

Field Analysis (____________ tests)

Extraction Method ____________

Analytical Method ____________

Reagents Used ____________

Field Laboratory Analysis

No. (____________ tests)

Extraction Method ____________

Analytical Method ____________

Reagents Used ____________

Commercial Laboratory (____________ tests)

Name of Laboratory ____________

Extraction Method ____________

Analytical Method ____________

Reagents Used ____________

General ____________

____

____

____

____

____

____

____

____

____

List of 58 Claims

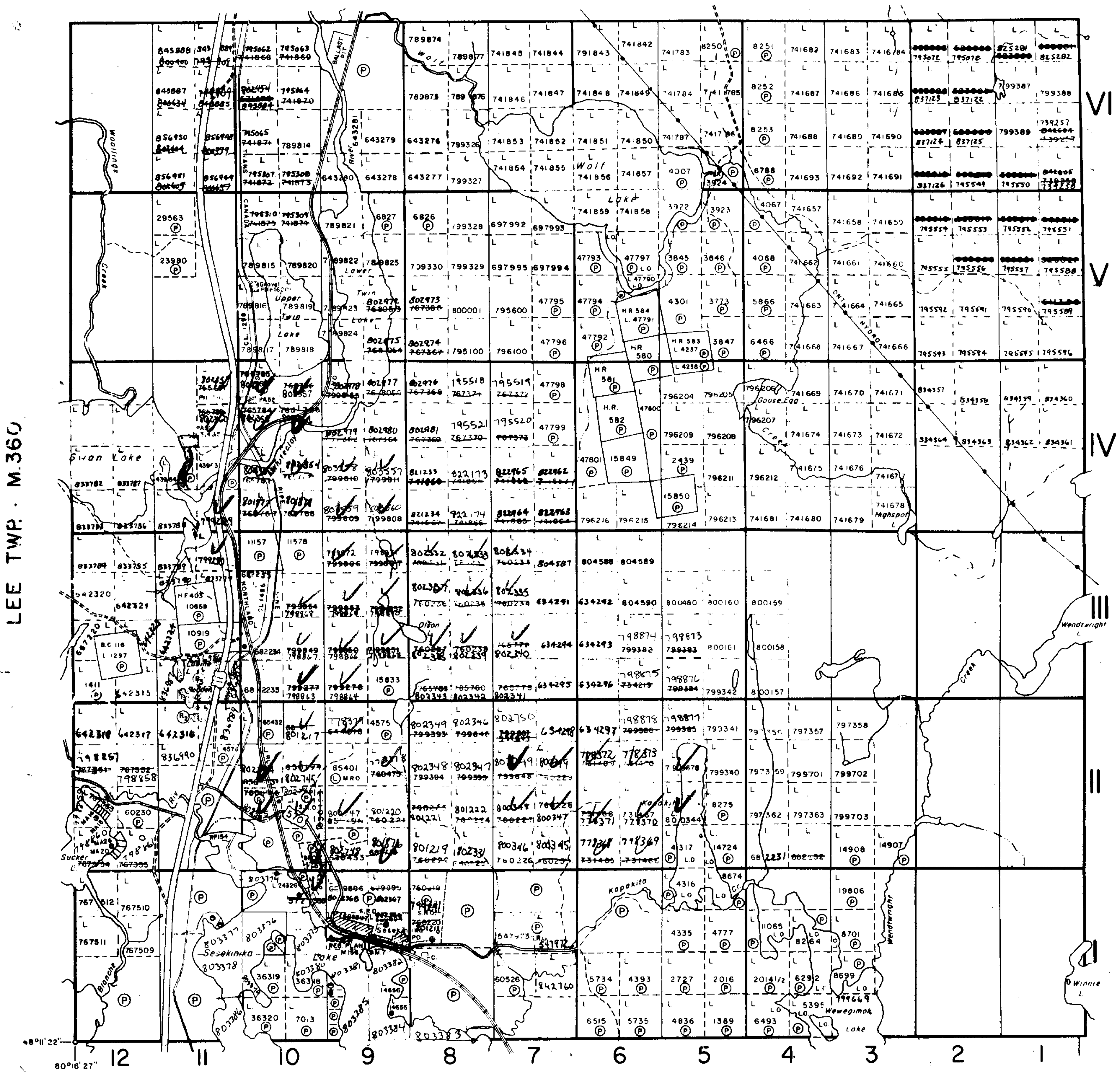
Claim #	Recorded Holder
L 778 378	Premier Explorations Inc.
L 778 379	Premier Explorations Inc.
L 798 863	Premier Explorations Inc.
L 798 864	Premier Explorations Inc.
L 798 865	Premier Explorations Inc.
L 798 866	Premier Explorations Inc.
L 798 867	Premier Explorations Inc.
L 798 868	Premier Explorations Inc.
L 798 869	Premier Explorations Inc.
L 798 870	Premier Explorations Inc.
L 798 871	Premier Explorations Inc.
L 798 872	Premier Explorations Inc.
L 799 289	Premier Explorations Inc.
L 799 290	Premier Explorations Inc.
L 800 347	Premier Explorations Inc.
L 800 348	Premier Explorations Inc.
L 800 349	Premier Explorations Inc.
L 801 217	Premier Explorations Inc.
L 801 877	Premier Explorations Inc.
L 801 878	Premier Explorations Inc.
L 801 876	Premier Explorations Inc.
L 802 332	Premier Explorations Inc.
L 802 333	Premier Explorations Inc.
L 802 334	Premier Explorations Inc.
L 802 335	Premier Explorations Inc.
L 802 336	Premier Explorations Inc.
L 802 337	Premier Explorations Inc.
L 802 338	Premier Explorations Inc.
L 802 339	Premier Explorations Inc.
L 802 340	Premier Explorations Inc.
L 802 353	Premier Explorations Inc.
L 802 354	Premier Explorations Inc.
L 802 355	Premier Explorations Inc.

Claim #	Recorded Holder
L 802 356	Premier Explorations Inc.
L 802 357	Premier Explorations Inc.
L 802 358	Premier Explorations Inc.
L 802 359	Premier Explorations Inc.
L 802 360	Premier Explorations Inc.
L 802 365	Premier Explorations Inc.
L 802 744	Premier Explorations Inc.
L 802 745	Premier Explorations Inc.
L 802 746	Premier Explorations Inc.
L 802 747	Premier Explorations Inc.
L 802 749	Premier Explorations Inc.
L 803 557	Premier Explorations Inc.
L 803 558	Premier Explorations Inc.
L 803 559	Premier Explorations Inc.
L 803 560	Premier Explorations Inc.
L 778 370	Gyro Capital Inc.
L 778 371	Gyro Capital Inc.
L 778 372	Gyro Capital Inc.
L 778 373	Gyro Capital Inc.
L 778 376	Gyro Capital Inc.
L 778 377	Gyro Capital Inc.
L 778 368	Gyro Capital Inc.
L 778 369	Gyro Capital Inc.
L 799 678	Gyro Capital Inc.
L 800 344	Gyro Capital Inc.

List of 58 Claims

Claim #	Recorded Holder
L 778 378	Premier Explorations Inc.
L 778 379	Premier Explorations Inc.
L 798 863	Premier Explorations Inc.
L 798 864	Premier Explorations Inc.
L 798 865	Premier Explorations Inc.
L 798 866	Premier Explorations Inc.
L 798 867	Premier Explorations Inc.
L 798 868	Premier Explorations Inc.
L 798 869	Premier Explorations Inc.
L 798 870	Premier Explorations Inc.
L 798 871	Premier Explorations Inc.
L 798 872	Premier Explorations Inc.
L 799 289	Premier Explorations Inc.
L 799 290	Premier Explorations Inc.
L 800 347	Premier Explorations Inc.
L 800 348	Premier Explorations Inc.
L 800 349	Premier Explorations Inc.
L 801 217	Premier Explorations Inc.
L 801 877	Premier Explorations Inc.
L 801 878	Premier Explorations Inc.
L 801 876	Premier Explorations Inc.
L 802 332	Premier Explorations Inc.
L 802 333	Premier Explorations Inc.
L 802 334	Premier Explorations Inc.
L 802 335	Premier Explorations Inc.
L 802 336	Premier Explorations Inc.
L 802 337	Premier Explorations Inc.
L 802 338	Premier Explorations Inc.
L 802 339	Premier Explorations Inc.
L 802 340	Premier Explorations Inc.
L 802 353	Premier Explorations Inc.
L 802 354	Premier Explorations Inc.
L 802 355	Premier Explorations Inc.

Claim #	Recorded Holder
L 802 356	Premier Explorations Inc.
L 802 357 1/4	Premier Explorations Inc.
L 802 358	Premier Explorations Inc.
L 802 359	Premier Explorations Inc.
L 802 360	Premier Explorations Inc.
L 802 365	Premier Explorations Inc.
L 802 744	Premier Explorations Inc.
L 802 745	Premier Explorations Inc.
L 802 746	Premier Explorations Inc.
L 802 747	Premier Explorations Inc.
L 802 749	Premier Explorations Inc.
L 803 557	Premier Explorations Inc.
L 803 558	Premier Explorations Inc.
L 803 559	Premier Explorations Inc.
L 803 560	Premier Explorations Inc.
L 778 370	Gyro Capital Inc.
L 778 371	Gyro Capital Inc.
L 778 372	Gyro Capital Inc.
L 778 373	Gyro Capital Inc.
L 778 376	Gyro Capital Inc.
L 778 377	Gyro Capital Inc.
L 778 368	Gyro Capital Inc.
L 778 369	Gyro Capital Inc.
L 799 678 1/2	Gyro Capital Inc.
L 800 344 1/4-1/2	Gyro Capital Inc.



THE TOWNSHIP OF

MAISONVILLE

DISTRICT OF TIMISKAMING

LARDER LAKE MINING DIVISION

SCALE: 1-INCH 40 CHAINS

LEGEND

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

NOTES

400' surface rights reservation along the shores of all lakes and rivers.

Areas withdrawn from staking under Section 43 of the Mining Act, R.S.O 1970. (Sec.42, R.S.O.'60)

Order No.	File	Date	Disposition
	22032	11/8/70	S.R.O.
NR.W.5/81	22032	23/1/81	S.R.O.

Aug. 8/85

All islands in Sesekinika Lake are withdrawn from staking by Order-in-Council dated Dec. 7, 1921.

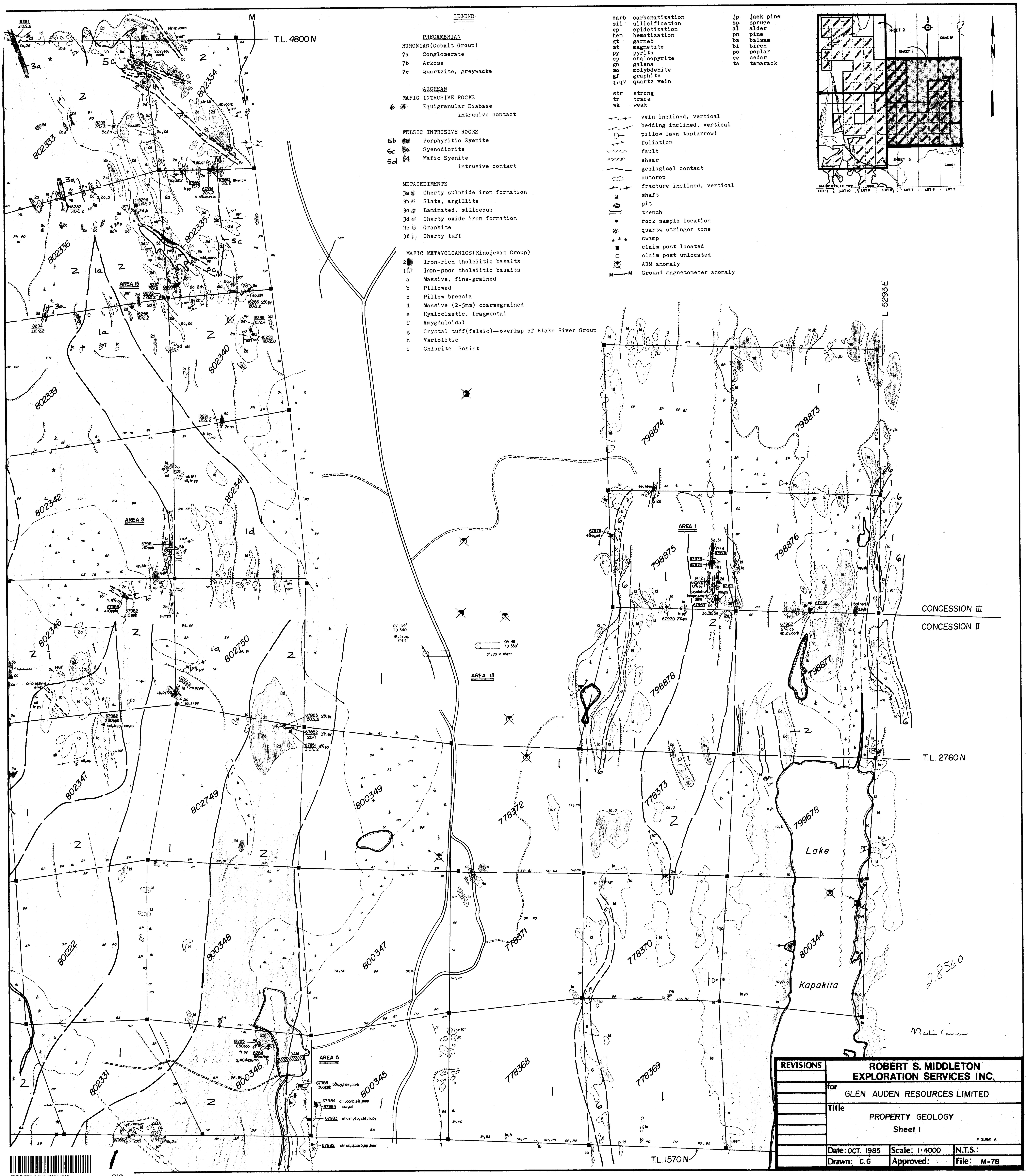
withdrawn from staking, sec 31 (6), pending application under Public Lands Act.

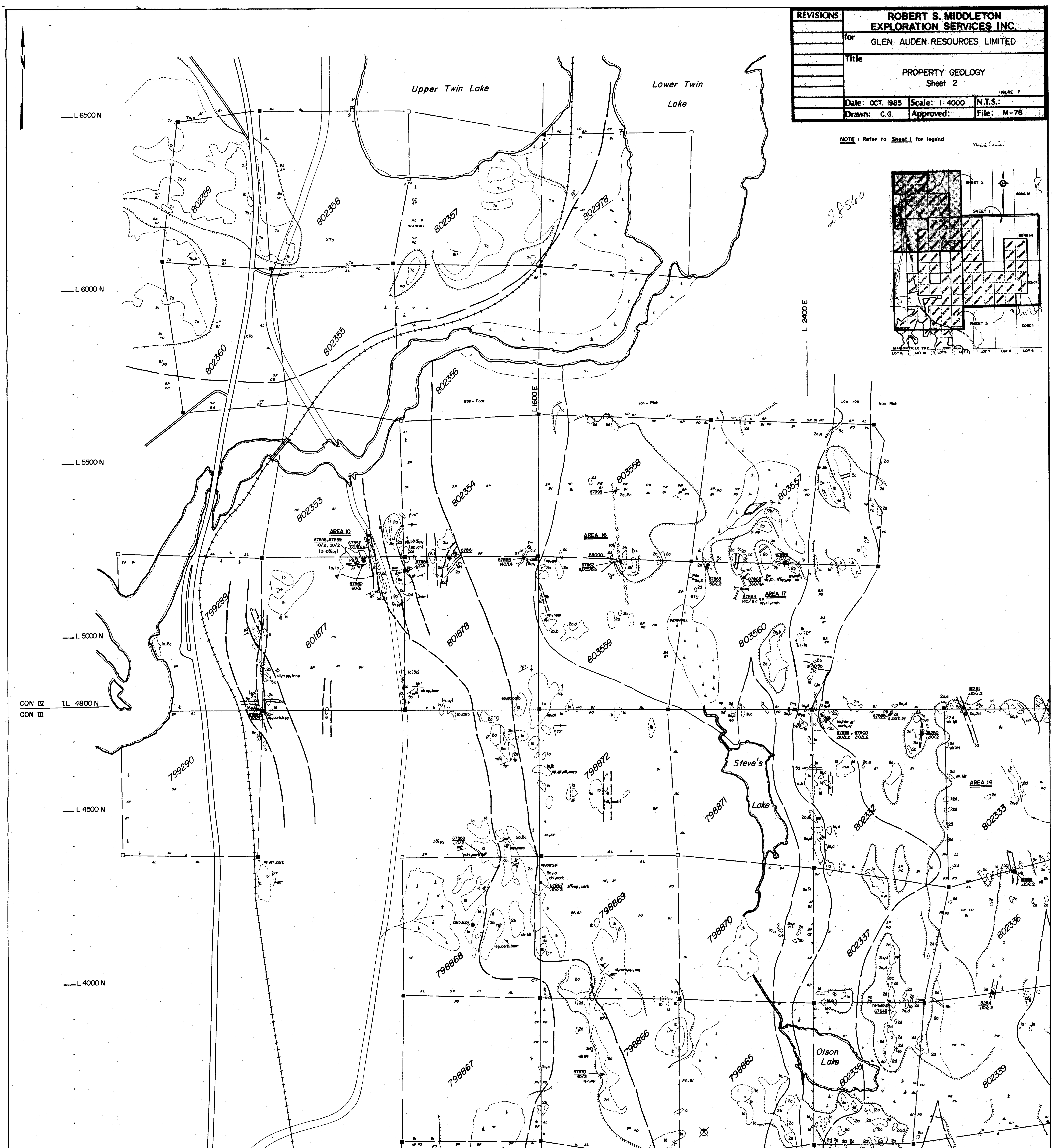
PLAN NO. M.361 #2

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH

42A01NE0046 2.8560 MAISONVILLE

200


LEGEND
PRECAMBRIAN
HURONIAN(Cobalt Group)
7a Conglomerate
7b Arkose
7c Quartzite, greywacke
ARCHEAN
MAFIC INTRUSIVE ROCKS
6 Equigranular Diabase
intrusive contact
FELSIC INTRUSIVE ROCKS
6b Porphyritic Syenite
6c Syenodiorite
6d Mafic Syenite
intrusive contact
METASEDIMENTS
3a Cherty sulphide iron formation
3b Slate, argillite
3c Laminated, siliceous
3d Cherty oxide iron formation
3e Graphite
3f Cherty tuff
MAFIC METAVOLCANICS(Kinojevis Group)
2 Iron-rich tholeiitic basalts
1 Iron-poor tholeiitic basalts
a Massive, fine-grained
b Pillowed
c Pillow breccia
d Massive (2-5mm) coarsegrained
e Hyaloclastic, fragmental
f Amygdaloidal
g Crystal tuff(felsic)—overlap of Blake River Group
h Variolitic
i Chlorite Schist
carb carbonatization
sil silicification
ep epidotization
hem hematization
gt garnet
mt magnetite
py pyrite
cp chalcopyrite
gn galena
mo molybdenite
gf graphite
q,qv quartz vein
str strong
tr trace
wk weak
jp jack pine
sp spruce
al alder
pn pine
ba balsam
bi birch
po poplar
ce cedar
ta tamarack
vein inclined, vertical
bedding inclined, vertical
pillow lava top(arrow)
foliation
fault
shear
geological contact
outcrop
fracture inclined, vertical
shaft
pit
trench
rock sample location
quartz stringer zone
swamp
claim post located
claim post unlocated
AEM anomaly
Ground magnetometer anomaly
T.L. 4800 N
L 5293 E
CONCESSION III
CONCESSION II
T.L. 2760 N
T.L. 1570 N
AREA 15
AREA 8
AREA 13
AREA 1
AREA 5
Lake
Kapakita
REVISIONS
ROBERT S. MIDDLETON
EXPLORATION SERVICES INC.
for
GLEN AUDEN RESOURCES LIMITED
Title
PROPERTY GEOLOGY
Sheet 1
FIGURE 6
Date: OCT. 1985
Scale: 1:4000
N.T.S.:
Drawn: C.G
Approved:
File: M-78
2.8560
42A01NE0046 2.8560 MAISONVILLE
210


REVISIONS
ROBERT S. MIDDLETON EXPLORATION SERVICES INC.
for GLEN AUDEN RESOURCES LIMITED
Title PROPERTY GEOLOGY Sheet 2
FIGURE 7
Date: OCT. 1985
Scale: 1:4000
N.T.S.:
Drawn: C.G.
Approved:
File: M-78
NOTE: Refer to Sheet I for legend
SHEET 2
SHEET I
SHEET 3
Upper Twin Lake
Lower Twin Lake
Steve's Lake
Olson Lake
L 6500 N
L 6000 N
L 5500 N
L 5000 N
CON IV
T.L. 4800 N
CON III
L 4500 N
L 4000 N
L 3500 N
L 1600 E
L 2400 E
Iron - Poor
Iron - Rich
Low Iron
AREA 10
AREA 16
AREA 17
AREA 14
DEADFALL
802359
802358
802357
802978
802360
802355
802356
802353
802354
803558
803557
799289
801877
801878
803559
803560
799290
798872
798871
802332
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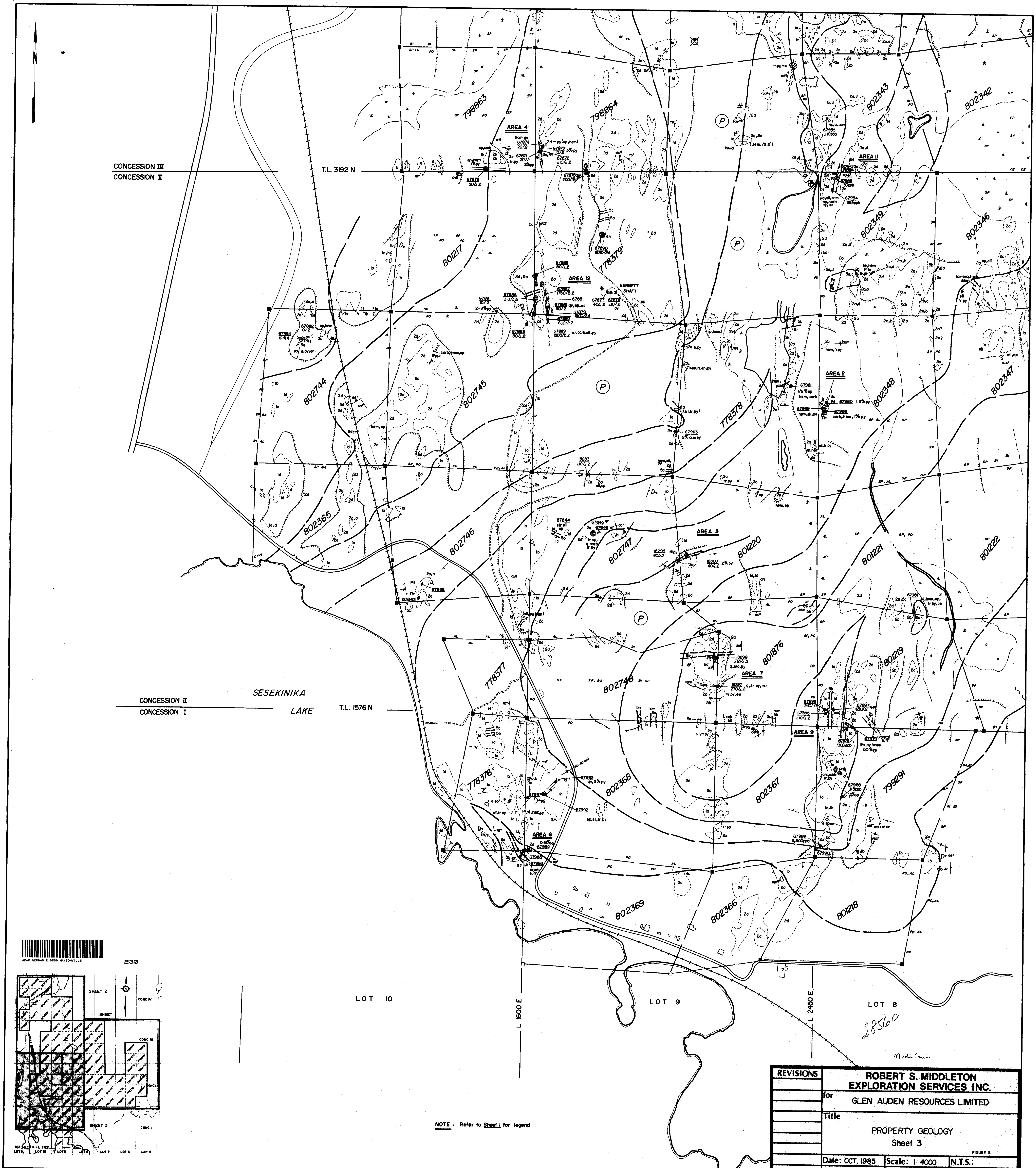
798870
802337
802336
798868
798866
798865
798867
802338
802339
220


CONCESSION III
CONCESSION II
T.L. 3192 N
CONCESSION II
CONCESSION I
SESEKINIKA
LAKE
T.L. 1576 N
AREA 4
AREA 11
AREA 12
BENNETT SHAFT
AREA 2
AREA 3
AREA 7
AREA 9
AREA 6
LOT 10
LOT 9
LOT 8
L 1600 E
L 2450 E
NOTE : Refer to Sheet I for legend
SHEET 2
SHEET 1
SHEET 3
CONC IV
CONC III
CONC II
CONC I
230
28560
REVISIONS
ROBERT S. MIDDLETON EXPLORATION SERVICES INC.
for GLEN AUDEN RESOURCES LIMITED
Title
PROPERTY GEOLOGY
Sheet 3
FIGURE 8
Date: OCT. 1985
Scale: 1: 4000
N.T.S.:
Drawn: C.G.
Approved:
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