

41P14NW0033 63A.61 SOTHMAN

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SHERWOOD GOLD MINES LIMITED

SOTHMAN GROUP

GEOLOGICAL REPORT

INTRODUCTION

Sherwood Gold Mines Limited, head office 1101 Federal Building, Toronto, Ontario, holds thirty-seven unpatented claims in Sothman Township, District of Sudbury. The group comprises claims numbered S40373 to S40404 inclusive, S40378A, S40383A, S49700, S41083 and S41084.

Geological mapping of claims S40388-90 inclusive, S40395-97 inclusive, S40400-02 inclusive, was conducted by D.W. Tully, geologist at Upper Canada Mines, in August and September, 1947. In 1948 Mr. Tully mapped geologically the remaining twenty-eight claims.

Review in the field of the detailed and general geological mapping was made by J.W. McBean, Chief Geologist of Upper Canada Mines Limited, in the period from August nineteenth to twenty-second, 1947. Report and map compilation is a joint effort of D.W. Tully and J.W. McBean.

LOCATION AND ACCESS

The Sothman claim group of Sherwood Gold Mines Limited is located in the north-east quarter of Sothman Township. On the accompanying two hundred scale map, a key plan, on a scale of forty chains to one inch, shows relation of claim group to north boundary of Sothman Township.

The most convenient means of access to the Sherwood Camp on Reading Lake is by air from South Porcupine.

PREVIOUS GEOLOGICAL WORK

The generalized geology of Sothman Township on a scale of one and a half miles to one inch, is included in the Ontario Department of Mines map of Grassy River area, number 35j. Passing comment on geology of Sothman Township is made by T.L. Gledhill in Ontario Department of Mines Report 1926, volume thirty-five, part six.

HISTORY

Thirty-two claims of the Sherwood Gold Mines Limited, Sothman Group, were recorded in October, 1945. After completion of survey in 1947, this number was raised to thirty-four on the subdivision of two large claims. Three claims, S49700, S41083 and S41084 were added in 1948.

R. Basher, prospector for Upper Canada Mines Limited, panned gold from a rusted zone on claim S40388 in May, 1946. The program of trenching and stripping that followed traced a shear zone for approximately two hundred feet.

Trenching on the shear zone of claim S40388 continued in 1947. Prospecting was extended also to other claims of the group. Geological mapping of claims was started in 1947 and completed in 1948.

MAPS AND SURVEY CONTROLS

Mr. G.F. Summers, O.I.S., surveyed thirty-four of the thirty-seven claims of the Sothman group in 1947. Positions of lakes and rivers included in claims were established at the same time. These surveyed topographic features and claim lines served as excellent bases for geological traverses.

From chained positions on east-west claim lines, north-south pace and compass traverses were made by geologist and assistant at two hundred foot intervals. Outcrop areas when encountered were accurately located by picket lines run from adjacent claim boundaries.

Red lines on two hundred foot scale map indicate positions of geological traverses. General field mapping was conducted on a scale of two hundred feet to one inch. A transit and tape survey, on a scale of twenty feet to one inch, was made of trenches and outcrops of the central portion of claim S40388.

TOPOGRAPHY AND FOREST COVER

A mantle of sand clay and gravel covers the map area. Low knolls of clay occur in claim S40398. Extensive gravel deposits lie north and west of Reading Lake. Outcrop areas are small and scattered.

The terrain is low and rolling. Low knolls and numerous land-locked lakes with steep banks give the topography a kame and kettle appearance. Maximum local relief does not exceed one hundred feet.

The claims are forested with a mixed growth of pine, birch and poplar. The species of pine include jackpine, white, red and Norway pine. Local areas of dense underbrush are common.

GENERAL GEOLOGY

The consolidated rocks of the claim group are Precambrian in age. The oldest series of rocks range from andesite to rhyolite in composition. The relative age relationship of rhyolite to andesite is not known.

Dikes and masses of feldspar porphyry, diorite porphyry and diabase intrude the volcanic series. Relative ages of intrusives was not determined. Areas of diorite, gabbro and serpentized peridotite were mapped.

The following table is a tentative classification of rock formations, the presumed oldest is at the bottom of the list:

Precambrian

Intrusives - Diabase, diorite porphyry, feldspar porphyry (locally quartz bearing), diorite, gabbro, serpentine (peridotite), hornblendite.

Volcanics - Sericite schist, rhyolite, rhyolite breccia, andesite, andesite agglomerate.

Volcanics

Rhyolite and rhyolite breccia are white to grey weathering. Rhyolite breccia is widespread in distribution in claim S40388. Rhyolite of claim S40397, S40390 and S40395 is massive.

Sericite schist with massive sections resembling rhyolite is trenched on south claim boundary of S40395. The original rock is presumed to be rhyolite.

Chloritized dark weathering andesite and andesite agglomerate outcrop in claim S40388. The agglomerate lenses are small and ill-defined. An unusual development of hornblende crystals in intersecting sheets at varying angles to one another, lend a bladed appearance to the weathered andesite of some outcrops in claim S40388. Microscopically, the arrangement of aggregates of platy hornblende suggests a secondary origin for this structure. Prospectors describe this type as the "chicken feet rock".

Gradation in grain size from the coarse grained section of an andesite flow to a fine grained fragmental top was noted in claim S41084. Pillow structures are also recorded from here.

A soft, grey-green weathering massive rock from claim S40380 is classed as andesite. Outcrops are poor and complete sections are lacking. Breccia zones and fine grained white spotted phases of this rock were observed.

A grey weathering fine grained rock is mapped as andesite in claim S40392. The rock is highly altered. In thin section, it consists of aggregates of secondary quartz, feldspar and carbonate. Laths of biotite and chloritized hornblende are present in minor amounts. Grains of apatite are abundant. Possibly this rock is an altered grained lava.

Intrusives

An east-west striking diabase dike intrudes andesite lava in claim S41084.

Diorite porphyry is a field term applied to a dike of feldspar porphyry in

claim S40388. Prominent white laths of feldspar in a dark green matrix give this rock a distinctive character. It is possible that this rock type is a phase of the feldspar porphyry.

The twenty foot wide diorite porphyry dike, in andesite lava, has been traced on strike for two hundred and twenty feet. A mineralized shear zone on the south boundary of dike contains values in gold. This is the original gold showing of the claim group.

Feldspar porphyry outcrops in claims S40388, S40390 and S40395. Quartz phenocrysts are erratically distributed throughout the porphyry body. Quartz is lacking in many specimens. Contacts of rhyolite and feldspar porphyry are mapped in claims S40388 and S40395. Inclusions of rhyolite occur in the feldspar porphyry in claim S40388.

A fresh appearing rock of dioritic texture is mapped in claim S40380. Coarse grained gabbro was identified in claim S40392. Adjacent to but not contacting coarse gabbro, is a fine grained grey weathering rock described above under volcanics. This rock type may represent an altered phase of a coarse grained flow. It is appreciated, that on a lithological basis, the distinction between altered diorite and the coarse phase of an altered andesite lava flow is difficult or impossible to determine.

The north outcrop in claim S40392 is the only exposure of hornblendite in the claim group.

Serpentinized rocks occur in claims S41084 and S40393. The serpentine outcrop in claim S41084 is small and structureless. A number of small exposures of serpentine lie near the east claim boundary of S40393.

A thin section of a typical serpentinized rock sample shows fibrous lamellar antigorite forming polygonal pseudomorphs after olivine. Abundant fine grained magnetite resulting from alteration of olivine to antigorite lines fractures

and outlines of pseudomorphs.

It is presumed that the bulk of similar serpentized rock is derived from peridotite.

STRUCTURAL AND ECONOMIC GEOLOGY

General

Deep overburden and paucity of outcrops has made difficult the determination of the general geological structure of the claim group. However, the particular structure of sections of the claims is determinable.

Two andesite lava flows approximately fifty feet thick are mapped in claim S41084. Gradation from a coarse grained lower portion to a fine grained fragmental top is reported by the junior author. The few elongated pillow structures noted were of no value for a top determination of the flow. The grain gradation to fragmental top suggests that lavas face north over the restricted area of exposures. A slight flexure is indicated over the strike length exposed.

The volcanic rocks of claim S40388 are folded. The axis of fold strikes north 58 degrees east. A large portion of the north limb is covered by deep overburden. A feldspar porphyry body possibly cuts the south limb of fold. The spatial relationship of the two limbs of fold suggests possible faulting at nose in a direction parallel with axial plane.

A diorite porphyry dike traverses the north limb of fold close to the axial plane position. Gold occurs in a sulphide mineralized shear zone on the south contact of dike. A detailed description of this shear is given below.

The rhyolite body at survey station 13 on detailed map of claim S40388 is sheared and altered. Inclusions of rhyolite are found in the feldspar porphyry. The structure appears to be a roof pendant of rhyolite in feldspar porphyry.

The feldspar porphyry of claims S40390 and S40395 is similar to that of the large mass of claim S40388. It is possible that the two bodies may represent parts of a larger mass that may underlie claim S40396.

Shear Zones - Claim S40388

Two classes of shear zones are described from this claim. One, the through-going type, is approximately parallel to the axial plane of fold. The other shear variety is confined to the andesite-rhyolite contact.

Through-going Shears - The principal through-going shear from an economic viewpoint is on the south contact of the diorite porphyry dike. Shear varies in width from one to four feet over an exposed length of two hundred and thirty feet. Accurate dips are difficult to secure. Average dip is steeply north in the west half of shear zone, and possibly steeply south to the east. Deep drift covers both ends of shear.

Pyrite is the most abundant sulphide mineral in this schist. Coarsely crystalline pyrite has a wide distribution in the zone. Gold is associated with fine grained pyrite and massive sphalerite in or adjacent to veins, lenses and stringers of grey quartz. Channel sample locations and values in gold at \$35.00 per ounce are indicated on detailed map. The highly oxidized nature of surface exposure prevents accurate determination of grade and occurrence. More reliable calculations may be derived from results of diamond drilling. Specimens of the gold sphalerite mineral association shows no marked affect on a magnetometer.

South dipping rusted shears possibly subsidiary to the zone described above, strike north 58 degrees east across trenches numbered 8, 9 and 35. Locations of gold values from channel samples in shears are shown on detailed map of claim S40388.

Thirty feet east of survey station A.10, gold values were obtained from discontinuous narrow rusted quartz stringers in a weak shear striking north 72 degrees east.

Contact Shear - A strongly magnetic shear zone occupies the folded contact of rhyolite and andesite rock types. Pyrite and pyrrhotite are the common sulphide minerals in this schist. The white coating of melanterite on oxidized samples from this section is distinctive. No gold values were obtained from channel samples in this shear.

The shearing and brecciation of the contact zone is believed to have resulted from differential movement between rhyolite and andesite rock during folding. The contact shear is presumed to predate the through-going type.

Shear Zones - Claims S40390, S40395

Steeply north dipping shears striking north 85 degrees east, intersect rhyolite and feldspar porphyry in claims S40390 and S40395. Gold colours have been panned from rusty seams in schist. No significant values in gold have been obtained from samples of this locality assayed.

Shear Zones - Claim S40394

A sericite schist zone exposed in claim S40394 dips steeply north and strikes north 65 degrees east. Scattered pyrite is in glassy quartz stringers. No gold values are reported from samples assayed.

Faults - Claim S40388

A fault strikes north 40 degrees west between trenches 6 and 7. Indicated horizontal displacement of diorite porphyry dike is ten feet.

A fault approximately parallel with axial plane of major fold is shown on detailed map at survey station 10. If continuous to north-east, this fault may produce displacement of limbs at nose.

A series of faults parallel to and at small angles to the axial plane of fold are mapped at survey station 11. The lack of continuity of rock horizons make determination of amount of displacement difficult.

ECONOMIC SUMMARY AND CONCLUSIONS

A folded volcanic series of rocks lies in claim S40388. Concentrations of pyrrhotite on folded contact of rhyolite and andesite form a strongly magnetic horizon useful for tracing outline of fold.

Post-folding through-going shears, approximately parallel with axial plane of fold, are important loci of gold and associated minerals. In particular, the sheared south contact of the diorite porphyry dike has important concentrations of gold. The through-going shear zone, if persistent to the north-east, may intersect fractured

horizons in the folded strata, favourable to deposition of gold.

The diorite porphyry dike is presumed to be post-folding in age. The extension of the dike into nose of fold may continue to provide the necessary structural conditions for gold deposition.

Gold in the through-going shears is associated with sphalerite and fine grained pyrite in or adjacent to quartz veins and lenses. As specimens of the gold sphalerite association show no marked effect on a magnetometer, the use of this instrument in the definition of gold bearing shears is of doubtful value.

Axial plane shears with or without diorite porphyry dikes may exist in other folds in the volcanic rocks. The location of these folds may be determined by tracing the magnetic andesite-rhyolite contact.

The relationship of the diorite porphyry dike and through-going shears to the mass of feldspar porphyry is not known. The possible continuation of the shears to the west and the probing of the feldspar porphyry contact warrant investigation.

The depth of overburden in claim S40388 precludes any possibility of economically continuing surface exploration. Diamond drilling and a magnetometer survey offer the only substantial opportunities for providing additional information.

RECOMMENDATIONS

Diamond drilling of the gold bearing shear zones of claim S40388 is warranted.

The drilling program is considered to consist of two phases:

- (a) The first phase of drilling program should check grade and length of principal gold bearing shear and subsidiaries.
- (b) The second phase of the drilling program could be devoted to the search for parallel through-going shears, other folds and dikes, and the investigation of the contact of the feldspar porphyry body.

Part two of the diamond drilling program may be accomplished more economically after an attempt by a magnetometer survey to outline major contacts.

J.W. McBean

 J.W. McBean, Chief Geologist,
 Upper Canada Mines Limited

D.W. Tully

 D.W. Tully, Geologist,
 Upper Canada Mines Limited

SHERWOOD GOLD MINES LIMITEDSOTHMAN TOWNSHIP GROUPMAGNETIC SURVEYClaims S40378A and S40383AINTRODUCTION

Sherwood Gold Mines Limited, Head Office 1101 Federal Building, Toronto, Ontario, holds thirty-seven unpatented claims in Sothman Township, District of Sudbury. A dip needle survey of claims S40378A and S40383A of this group was carried out in August and October, 1948.

Locations of claims S40378A and S40383A in claim group are indicated on accompanying key map on scale of forty chains to one inch.

Field work of the magnetic survey was carried out by L. Basher, a graduate of the Haileybury School of Mines. Direction of survey and correlation of results was by J.W. McBean, Chief Geologist of Upper Canada Mines Limited.

D. Sirola of Wrigley Prospecting Syndicate, in 1946 by a dip needle survey, outlined a magnetic zone extending along the north-east shore of Reading Lake. The present magnetic survey of claim S40383A is a check on the west extension of this zone.

MAPS AND SURVEY CONTROLS

North-south picket lines were cut on claims S40378A and S40383A at intervals of two hundred feet in an east-west direction. Picket lines and the east and west boundaries of claims were chained. Small numbered pickets were driven at fifty foot intervals on chained lines to serve as stations for dip needle readings.

Attached maps of claims S40378A and S40383A to a scale of two hundred feet to one inch show the results of the dip needle work.

MAGNETIC SURVEY METHOD

The distance of claims from an established base station is such that an arbitrary base setting for dip needle was a necessity. The base reading to which all readings relate is that obtained at Point A marked on two hundred foot scale map of claim S40378A.

Magnetic readings were recorded when needle of instrument was free to move in a plane at right angles to magnetic meridian. The reading interval established was fifty feet.

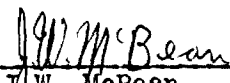
INTERPRETATION

The magnetic survey of the base claim S40378A shows little magnetic variation. A map of magnetic readings is attached.

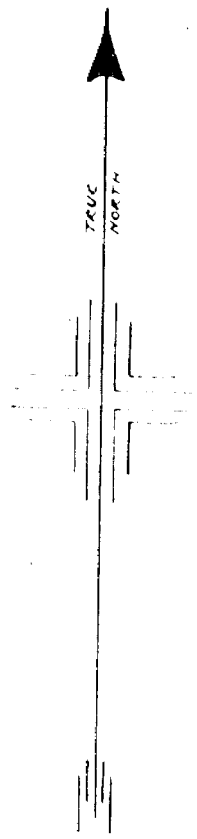
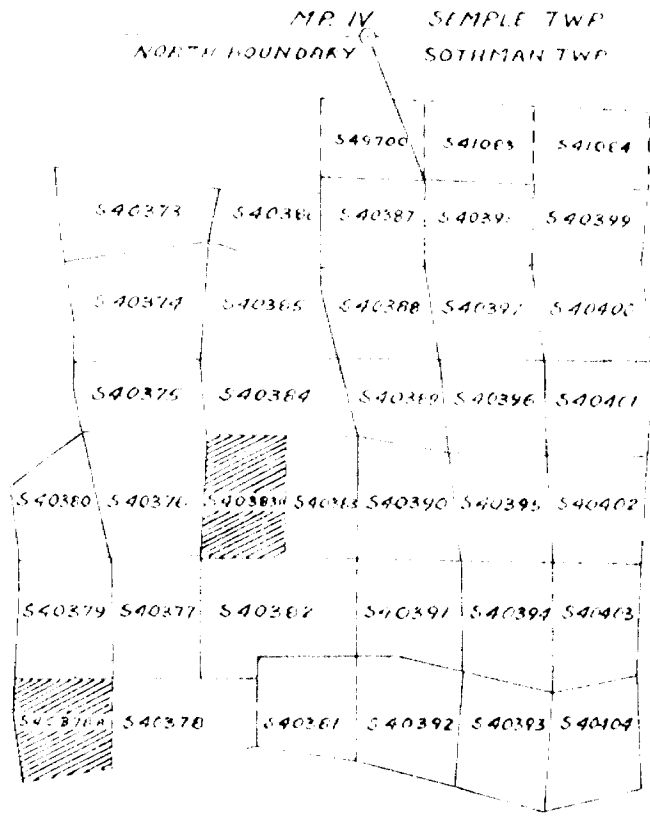
The magnetic readings in claim S40383A are greater than those registered in base claim. However, the maximum relative variation of five degrees is not considered indicative of magnetic bodies in this claim. The accompanying map on a scale of two hundred feet to one inch shows magnetic readings contoured at two degree intervals.

Outcrops of serpentized peridotite occur in claim S40393 of this group. A thin section of the altered peridotite shows the presence of fine magnetite throughout rock. A body of this nature underlying claim S40383A could give general readings relatively greater than those recorded in the base claim S40378A and similar to those determined in S40383A.

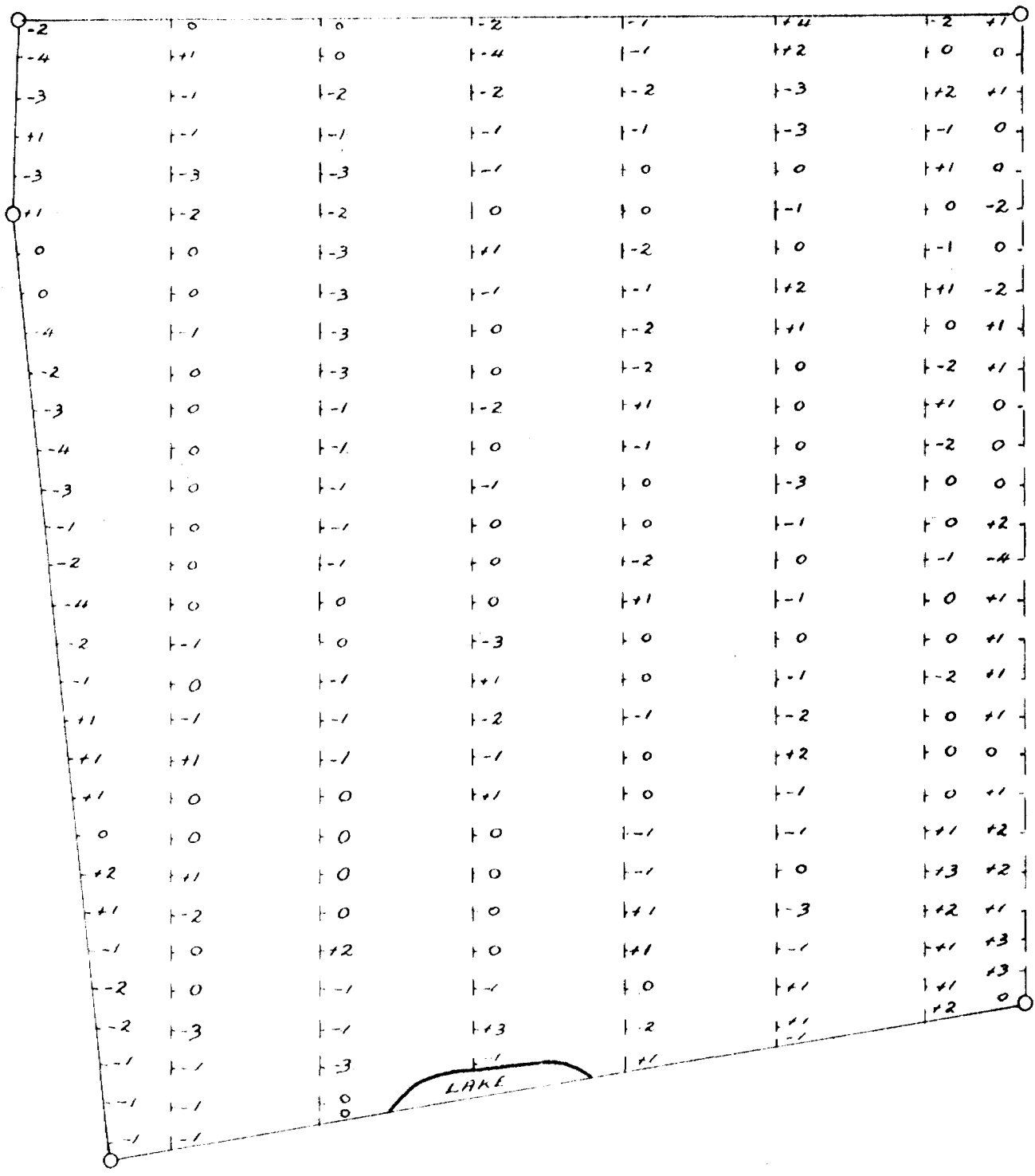
December 15th, 1948.



J.W. McBean Chief Geologist.
Upper Canada Mines Limited

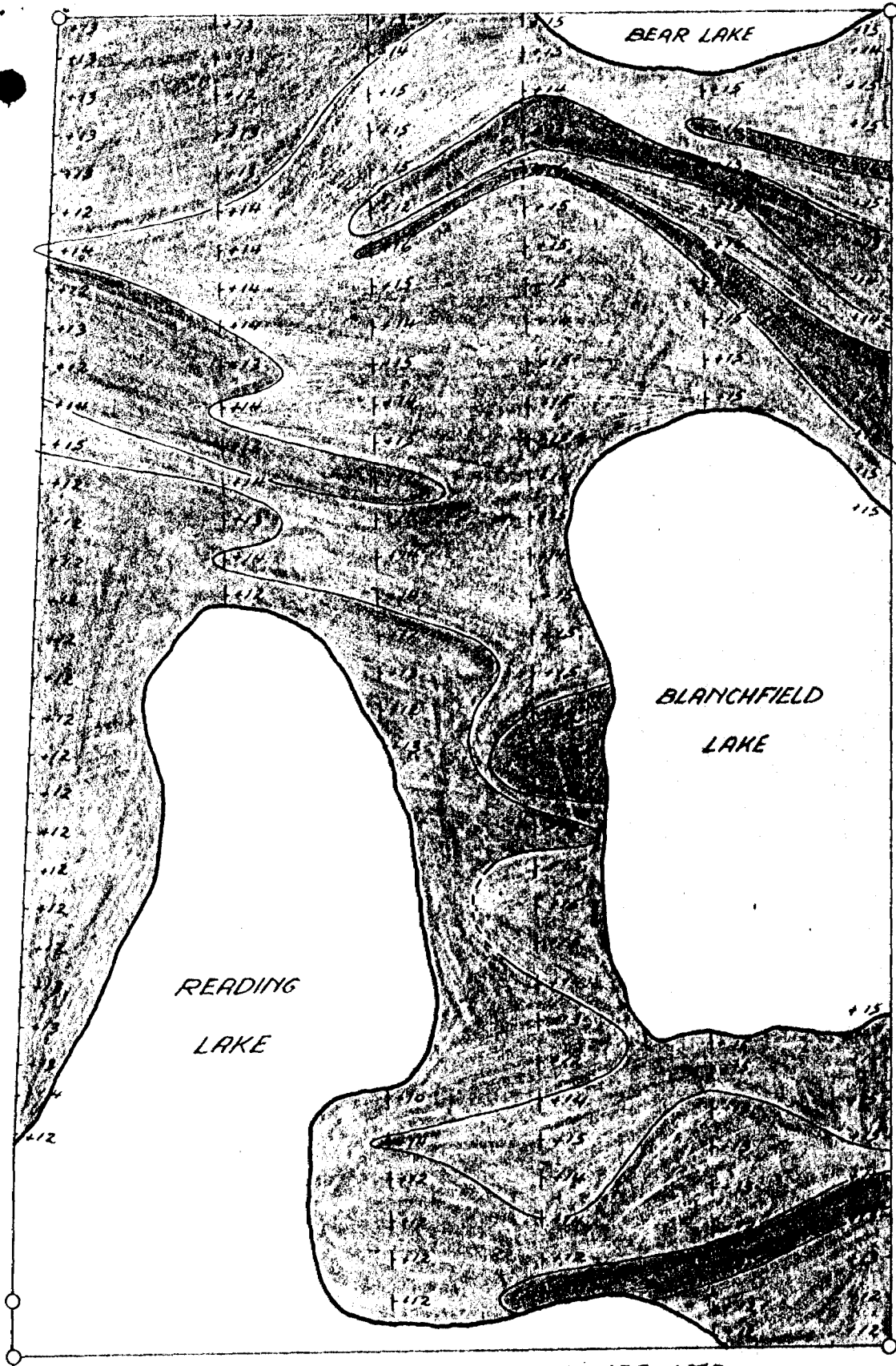


KEY PLAN
SOTHMAN TWP
SCALE 1" = 40 CHS.



TRUE NORTH

SHERWOOD GOLD MINES LTD
SOTHMAN TWP.
DIP NEEDLE SURVEY
CLAIM S-40378A
SCALE 1in=200ft.



TRUE NORTH

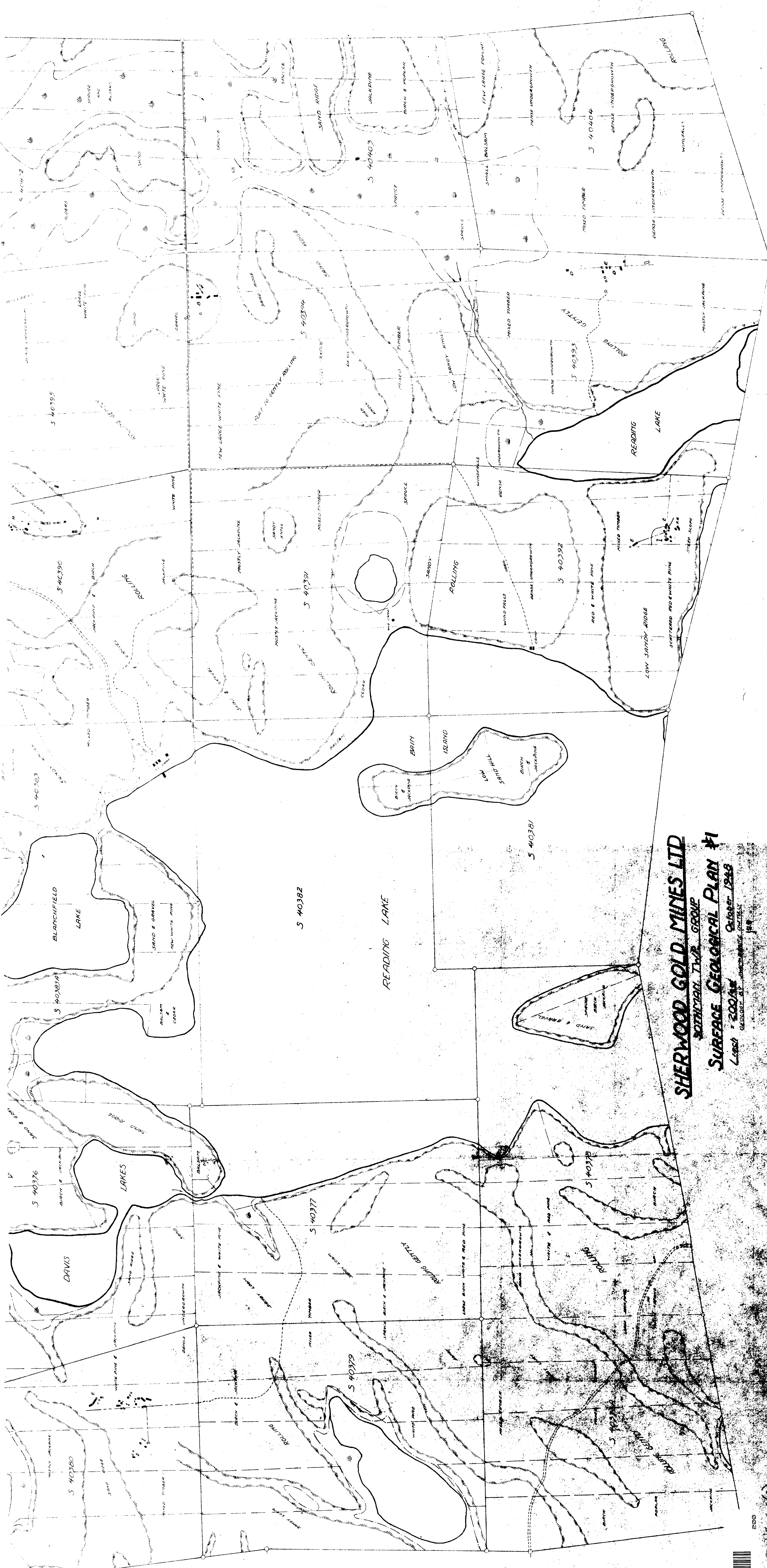
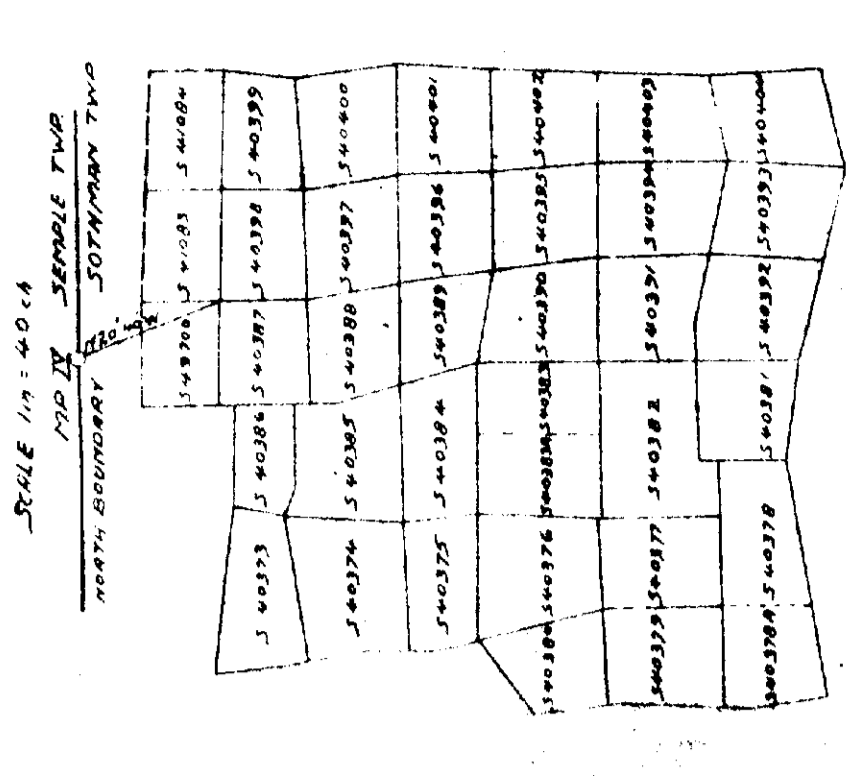
SHERWOOD GOLD MINES LTD.
SOTHMAN TWP.
DIP NEEDLE SURVEY
CLAIM S-40383A
SCALE 1 in. = 200 ft.

LEGEND

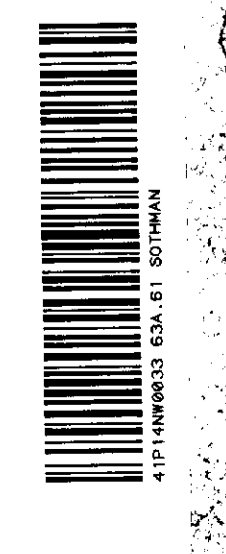
- 10-12
- 12-14
- 14-16
- 16+

- ▶ PICKET LINE
- ▬ TRAVERSE LINE - BRANCH & CORRIDORS
- ▬ TRAIL
- ▬ DIAMOND DRILL ROAD
- ▬ STREAM
- ▬ CABINS
- ▬ CORRIDORS
- ▬ GRAINED

KEY PLAN



SHERWOOD GOLD MINES LTD
 SOUTHERN TIMBER GROUP
SUBFACE GEOLOGICAL PLAN #1
 Scale 1:2000
 Geologist: G. H. ...
 Date: 1948



200
 1948

SHERWOOD GOLD MINES LTD
SOTHMAN GRP
SURFACE GEOL. PL. #2.

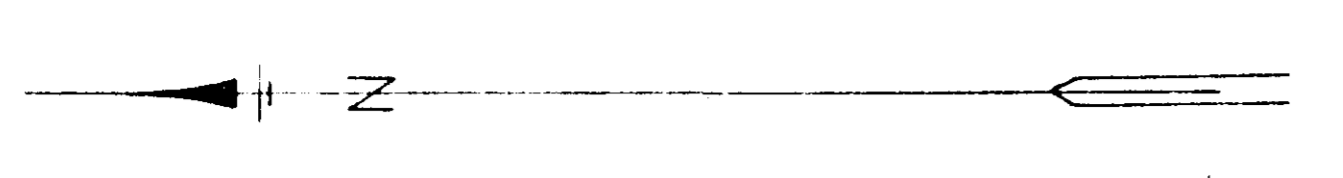
1" = 200'
LEGEND

- MINERALIZED SHEAR ZONE
- SERICITE SCHIST
- DIABASE
- SERPENTINE
- GABBRO & DIORITE
- FELDSPAR PORPHYRY
- DIORITE PORPHYRY
- RYHOLITE & RHYOLITE BRECCIA (BX)
- ANDESITE, FLOW BRECCIA & AGGLOMERATE (BX)

SYMBOLS

- HIGHER GROUND
- SWAMP



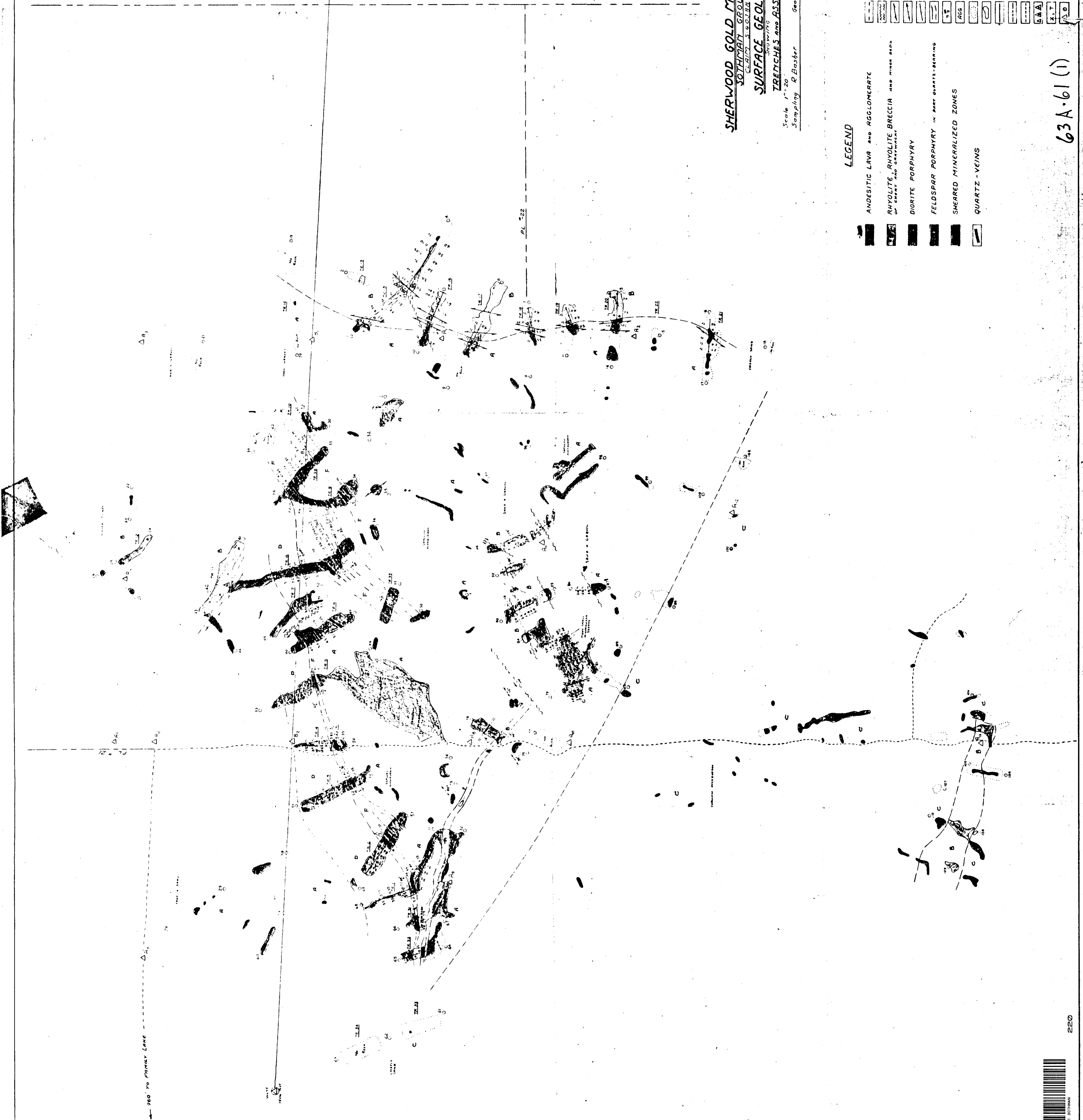


639.67 TO No 2 POST CL 540388

N 37.07 W
RANGE LINE

SHERWOOD GOLD MINES LTD
SOUTHMAN GROUP
CLAIMS 3, 4, 5, 6, 7, 8, 9
SURFACE GEOLOGY
TRENCHES AND ASSAYS

Scale 1"=20' 5 Sep 47
Sampling R. Bosher Geology B.W. THOMAS



LEGEND		SYMBOLS	
ANDESITIC LAVA AND AGGLOMERATE		SMALL MINERALIZED SHEARS	
RHYOLITE, RHYOLITE BRECCIA AND MINOR BEDS OF CHERT AND GNEISS		FAULTS (INDICATED)	
DIORITE PORPHYRY		CONTACT SHEARING	
FELDSPAR PORPHYRY IN PART QUARTZ-BEARING		STRIKE * DIP OF SCHISTOSITY	
SHEARED MINERALIZED ZONES		STRIKE * DIP OF BEDDING	
QUARTZ - VEINS		GEOLOGICAL BOUNDARY (UNCONFORMITY)	
		BLADED STRUCTURE	
		AGGLOMERATE PHASE	
		OUTLINE OF TRENCH	
		CLAIM BOUNDARY - SURVEYED	
		PICKET LINE	
		TRAIL	
		PYRITE, SPHALERITE, PYRRHOTITE	
		CARBONATED, TALCOSE	
		SURVEY STATION, POINT	

63A-61(1)

