2.4017

GEOLOGICAL SURVEY

on the property of

OMAB ENTERPRISES LIMITED

and the

GOLD SHIELD SYNDICATE

Detour Lake Area, Ontario

Timmins, Ontario,
July 9, 1981.

R. J. Bradshaw, P. Eng.,
Geologist.

63.1323

INTRODUCTION

The group of approximately 70 contiguous claims forming the property adjoins to the west the Amoco-Dome property, site of a major new gold mine. Together with magnetic and electromagnetic surveys the geological mapping was completed during the period July 15 to August 15, 1978.

Picket lines at 400 foot intervals over the entire property provide control for the survey work.

Magnetic and electromagnetic trends assist in the structural interpretation of the area. Similarly Open File Report 5279 by the Ontario Ministry of Natural Resources, diamond drilling on the property, and personal communications with various officials associated with the Amoco mine development are used to assist the geological interpretation.

Two maps, termed North Sheet and South Sheet, at a scale of one inch to four hundred feet, accompany this report.

PROPERTY, LOCATION AND ACCESS

The property totals 67 contiguous claims registered in the name of R. J. Bradshaw, licence No. M.16183, as follows:

Claims	Expiry Date
P508542 to P508547 inclusive	March 1, 1983
P508549 to P508559 inclusive	March 1, 1983
P508580 to P508595 inclusive	March 1, 1983
P508597 to P508607 inclusive	March 1, 1983
P508609 to P508612 inclusive	March 1, 1983
P539557 to P539575 inclusive	July 6, 1983

Approximately 125 miles northeast of Timmins, Ontario, the claim group is located adjacent to the northeast of Hopper Lake.

At the present the property may be reached from Timmins or Cochrane by float or ski-equipped aircraft. A road is presently being constructed to the Amoco-Dome mine site from Cochrane which is scheduled for completion in 1983. This road will cross the Gold Shield-Omab property.

CLIMATE, LOCAL RESOURCES AND TOPOGRAPHY

Concerning the climate, it is almost suffice to note that the lakes are ice covered for seven months of the year, approximately a month greater than the Timmins area. Although no detailed statistics are available a greater amount of precipitation than the Timmins area has been experienced by the writer in this area, particularly during the nonwinter months.

At the present time local resources significant to mine development are essentially nonexistent because of the isolation and lack of access to the area. Completion of the road in 1983 from Cochrane will greatly assist future exploration and development in the region.

Although considerable muskeg swamp is present in the area the property and adjacent area to the east is generally better drained than most of the James Bay Lowland because of the extensive sand and gravel deposits. Good stands of spruce, jackpine and some poplar cover particularly higher land where rock is exposed. Rock

exposure south and west of Fault Lake form topographic highs up to 100 feet above the adjacent lakes. Although averaging probably less than five per cent, the rock outcrop is more extensive than usual in the region.

As determined from diamond drilling much of the overburden on the property ranges from 10 to 15 deep. Locally the overburden may be up to 100 feet deep in areas of less resistant rock along shear zones and faults in topographic lows.

HISTORY

Prior to the Amoco gold discovery in 1974, little exploratory work had been undertaken in the region because of its relative isolation. Since then, with the much increased interest in gold, the area has received a good deal of attention from mineral exploration people.

In 1974 Amoco drilled a 350 foot hole on the north boundary of claim P508552 to investigate a geophysical anomaly. Within a sulphide zone, a five foot section assayed 0.02 oz. gold per ton and 0.04% copper.

The Gold Shield Syndicate acquired the claims in 1978-79 and subsequently completed a Ronka EM 16 survey along lines spaced at 400 foot intervals; all but the central portion of the claims was covered by a magnetic survey which had been covered by Noranda Exploration.

Finally in 1980-81 Omab Enterprises Limited sponsored a drill programme on the property consisting of 12 holes, totalling 3835 feet.

GEOLOGY

REGIONAL GEOLOGY

The regional geology is based on published government aeromagnetic maps for the area (maps 2369G and 2370G) and a geological map in Open File Report 5279 published by the Ontario Geological Survey.

On the basis of the available data it would appear that the principal structural feature of the area is a major isoclinal anticline having an east trending upright axial plane. The core of the anticline is comprised of fine grained sedimentary rocks. The sediments are overlain by a sequence of mafic to intermediate volcanic rocks. Within the volcanic rocks occurs a cherty sulphide bearing horizon that can be traced utilizing aeromagnetic and geological data around both limbs of the regional anticlinal structure. This form of lean iron formation occurs within a sequence of mafic to intermediate pyroclastic rocks. In this area the volcanic-sedimentary rock assemblage has undergone metamorphism to the almandine-amphibolite facies.

On the Amoco property the known gold mineralization occurs within a sulphide and chert rich intermediate to mafic pyroclastic unit which correlates on a regional scale with the sulphide lean iron formation described above.

Displacement of aeromagnetic linear anomalies and regional topographic lineaments suggest the presence of numerous west-northwest trending faults in the area.

PROPERTY GEOLOGY

The trend and pattern of ground geophysical data on the property indicates a complexity of structural geology not apparent elsewhere in the region. The location of the property at the nose of a major regional anticlinal structure, faulting, and the intrusion of a large granitoid mass from the southwest accounts for this complexity.

Rock Types

Widely scattered exposures of volcanic rock occurs in all but the southwest sector of the property.

With few exceptions these exposures have been identified as mafic to intermediate tuffs. These rocks may be grey to green in colour, fine grained and display a banded or schistose surface. They are chloritic and relatively soft. Felsic tuffs, much less common, are relatively harder and may display a ridged surface, conformable to the banding from differential weathering. Epidote and garnet are common accessory minerals.

Mafic intrusives on the property include gabbro and amphibolite. An area of gabbro outcrop occurs in the south-central part of the property. It is fine to medium grained, equigranular, crystalline, massive to foliated with a dark green weathered surface and a grey green fresh surface. Numerous granite stringers and lenses are present in the outcrop.

Further north along a creek through the centre of the property is the odd outcrop of amphibolite. The best exposure is located along the southeast shore of a small lake in the north-central part of the property.

This rock is medium to coarse grained, massive and dark coloured on a fresh or weathered surface. In drill core the rock is variably feldspathic. At the small lake in the north-central part of the property the amphibolite is rusty and pyritized. A few outcrops of amphibolite are present in the extreme north half of the property.

Granitoid exposures, termed quartz monzonite after Open File Report 5279, are present in the southwest sector of the property.

Rock exposure is light salmon-coloured and medium to coarse grained. In two drill holes the rock is cream coloured with phenocrysts of feldspar in a grey black matrix of micaceous minerals.

Granodiorite was observed primarily in drill holes as lenses conformable to the bedding of the tuff. It is a medium to coarse grained dark grey rock composed of 50% light grey feldspathic mineral and 50% dark minerals.

Structural Geology

The variation in the strike or schistosity of the tuffaceous rocks on the property is thought to be mainly a result of the subsidiary folding on the nose of the major westward plunging anticline. Along the contact between the quartz monzonite to the

southwest and the volcanics to the east the schistosity conformable to the contact may be in part caused by the intrusion.

The few outcrops in the north part of the property trend at about 070° and dip near vertical or steeply south. In the centre of the property tuff bedding strikes north and dips about 60° west. South of Fault Lake the schistosity and bedding strike northwest to north-northwest with dips to the southwest at about 60°.

Faulting on the property is based on the interruption and displacement of magnetic linears and continuous conductive zones. Based on a topographic linear and the interruption of magnetic features in the north part of the property a north-northwest trending fault is interpreted along the east side of the property. This postulated fault is generally parallel to the quartz monzonite contact to the west which is likely faulted. A northwest trending fault in the south half of the property corresponding to a conductor was confirmed by drilling. Almost complementary to this fault is a third direction of faulting, trending about northeast through the centre of the property based on the interruption of magnetic features.

Other less obvious faults likely exist on the property. However, the use of geophysics in establishing these breaks is limited where the strike of the rocks nearly parallels the picket lines.

ECONOMIC GEOLOGY

The Amoco deposit four miles east of the Gold Shield-Omab property is presently being developed by Dome Mines and

Campbell Red Lake. They expect to be in production in the fall of 1983 and ultimately propose a production rate that will make it the largest gold mine in Canada.

Dome has announced an orebody of 30 million tons with a grade of 0.145 oz. per ton.

Geological aspects of the deposit were presented at the 1981 Prospector's Convention. The orebody is largely confined to a chert horizon normally about 15 to 20 feet wide within a sulphide bearing intermediate tuff. Where the favourable horizon widens as a result of bending or twisting, the chert generally contains gold associated with quartz and chalcopyrite.

According to Johns, 1979, arkosic metasediments lie approximately 1500 feet below the favourable chert horizon within the mainly tuffaceous volcanic sequence. He states that the deposit is situated on the north limb of an anticline plunging gently northwest. The mineralized zone strikes 070° and dips steeply. The main mineralized zone is found in a drag fold which plunges 45° to the west. The dip of the main mineralized zone steep near surface becomes more gentle to the north at depth.

The favourable horizon has not yet been firmly established on the Gold Shield-Omab property. The complex faulting and folding at the nose of the anticline structure on the property presents much difficulty in identifying and tracing the tuffaceous horizon.

Two locations, however, apparently conform to the favourable tuffaceous sequence. In the northwest sector of the property

a long somewhat discontinuous conductor corresponds to a similarly discontinuous magnetic linear. Low gold values associated with pyrrhotite, pyrite and chalcopyrite have been intersected in diamond drilling along this zone.

In the centre of Fault Lake a lenticular magnetic anomaly strikes at 070° for almost three-quarters of a mile. A drill hole at the east end of this feature intersected low gold and zinc values.

Other less prominent and obvious locations are thought to represent the favourable horizon.

CONCLUSIONS AND RECOMMENDATIONS

The Gold Shield-Omab property is underlain by a sequence of mainly intermediate tuffaceous rocks which form the nose of a westward plunging enticline. In detail the fold is complex as a result of faulting and the intrusion of quartz monzonite to the southwest. Moreover, it is likely that numerous minor folds are present which are difficult to trace where the trend of the rocks parallel the direction of the picket lines.

The chert horizon within the pyroclastic sequence favourable to the deposition of gold at the Amoco mine undoubtedly occurs on the property. In order to define the location of this horizon will require more detailed mapping and diamond drilling. Thereafter prime targets in the form of widening of the unit caused by

folding, faulting, bending or twisting can be identified for detailed exploration.

Respectfully submitted,

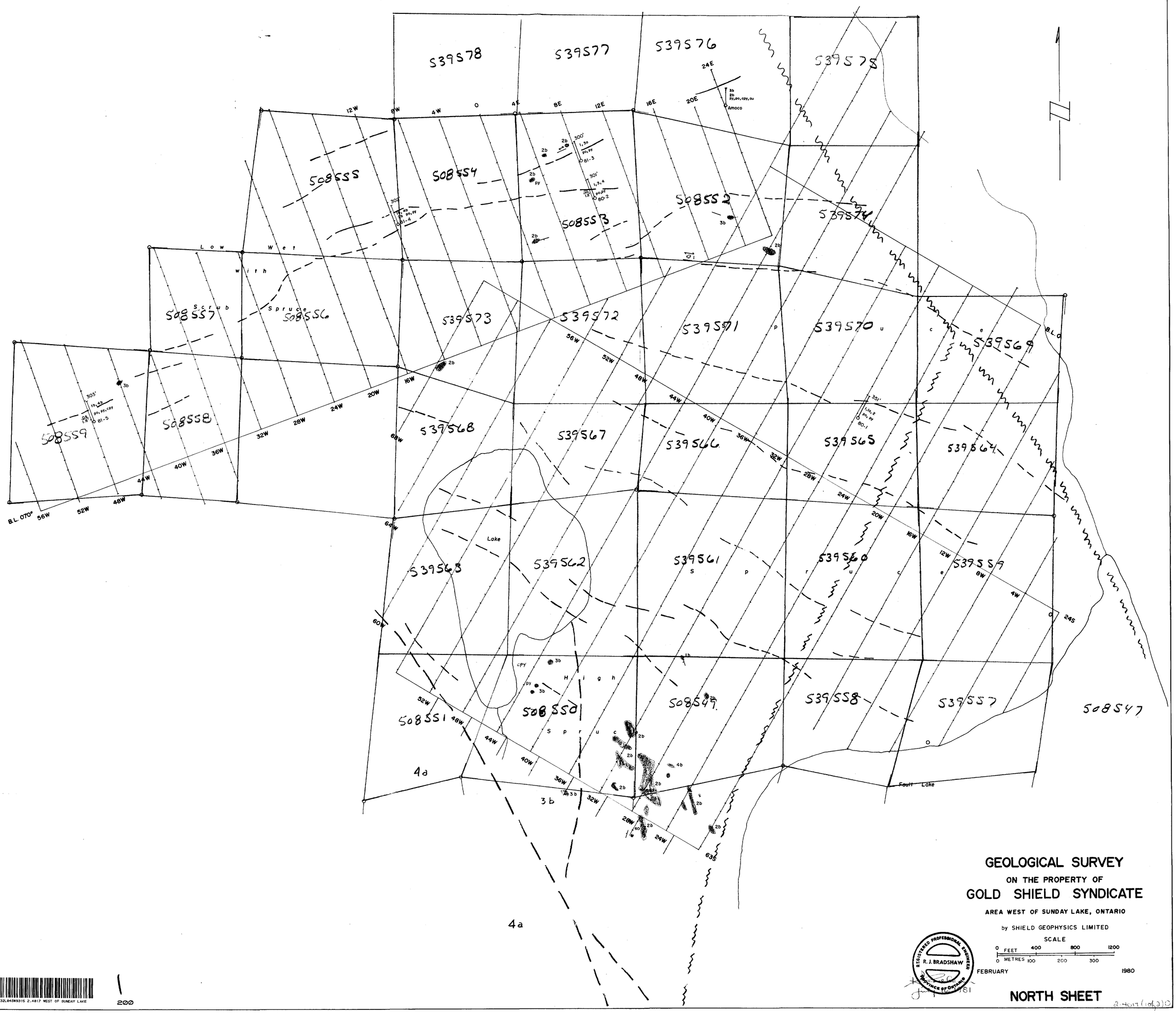
SHIELD GEOPHYSICS LIMITED,

Timmins, Ontario,
July 9, 1981.

R. J. Bradshaw, P. Eng.,
Geologist.

REFERENCE

Johns, G. W. 1979 — Ontario Geological Survey, Open File Report 5279



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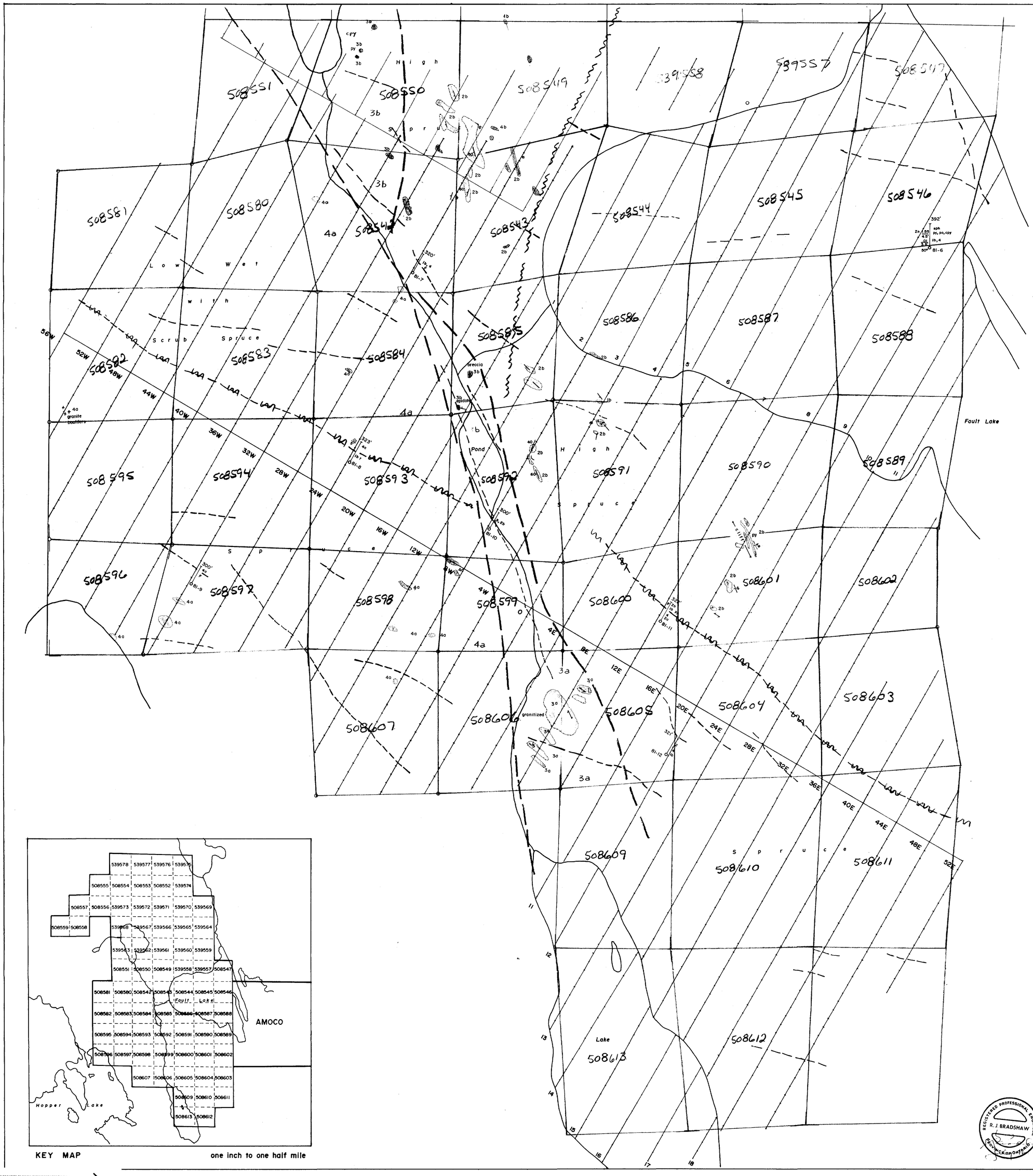

KEY MAP one inch to one half mile

LEGEND

- 4 Felsic intrusive
  - 4a quartz monzonite
  - 4b granodiorite
- Mafic intrusive
  - 3a gabbro
  - 3b amphibolite
- Mafic to intermediate Volcanic
  - 2a flow
  - 2b tuff
- 1 Felsic to intermediate Volcanic
  - 1a flow
  - 1b tuff

SYMBOLS

- Rock exposure
- 60 Strike and dip of bedding
- Strike and dip of schistosity
- Joint
- Strike and dip of fault
- 302' Horizontal projection of drill hole; all drilled at 45° unless otherwise indicated; F indicates obvious fault in core
- 80-2
- po pyrrhotite
- py pyrite
- cpy chalcopyrite
- sph sphalerite
- .04 / 2.1' Gold value in oz. over width in feet
- Zn 1.50 / 4.0' Zinc value in per cent over width in feet
- Conductive zone - EM16 survey
- Rock contact - interpreted
- Fault - interpreted

GEOLOGICAL SURVEY
ON THE PROPERTY OF
GOLD SHIELD SYNDICATE

AREA WEST OF SUNDAY LAKE, ONTARIO

by SHIELD GEOPHYSICS LIMITED

SCALE
0 FEET 400 800 1200
0 METRES 100 200 300

FEBRUARY 1980

REGISTERED PROFESSIONAL ENGINEER R. J. BRADSHAW PROVINCE OF ONTARIO 1981

SOUTH SHEET