A report of a geological survey of a twenty-seven claim group held by Duvay Gold Mines (Toronto) in Stover and Rennie Townships, District of Sudbury, Ontario. (Missanabie mining area)

May 25 to August 1, 1948

by

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Copies - 1 & 2 Ontario Dept. of Mines
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INTRODUCTION

(1) Description, location and accessibility

The property held under option by Duvay Gold Mines Ltd., Toronto, consists of a group of twenty-seven claims in Rennie and Stover Townships, District of Sudbury, Ontario. These are viz:

The property is readily accessible by a good gravel road from the town of Missanabie on the transcontinental line of the C.P.R., eight miles to the west where taxi, trucking and hotel facilities exist. The power line of the Great Lakes Power Co. traverses the property almost for its entire length.

Frame camps have been built on a gravel ridge at the east end of Stover Lake, where good spring water and firewood are in plenty. The camp site is one-half mile by good trail south of the Renabie Mine road.
(2) Early history and previous geological work in this area

Little is known of the early history of this area. It lies just north of the Michipicoten-Hudson's Bay water route through Dog Lake, Crooked Lake and the Missanabie Lake and River to Moose Factory. For over twenty years now, it has been declared a game park consequently trappers and hunters are forbidden to enter. Also as no good canoe routes go near it, prospectors and geologists have not been numerous until the Renabie Mine was developed from an old trappers find in 1939, and the discovery of gold by Sam Pileggi in the greenstone to the west of this group in 1942. Considerable staking resulted after this but interest lagged during the war years due principally to the difficulty of getting satisfactory labor. The property was restaked in 1947 and optioned to the present company early in 1948. Timber operations, mostly tie-cutting, were carried out in the 1920's but no timber cutting has been done since then.

Early geologists who visited this area were all attracted to the volcanic schists of the Michipicoten-Goudreau-Dog Lake gold and iron deposits. Professor Ellis Thomson of the Canadian Geological Survey in his report "Missanabie Map Area" (Mem. 147 Pt. 2, 1926) concentrated mostly in the
area south of the C.P.R. The area is also described by E. M. Burwash - "Geology of the Localsh-Missanabie Area" (Ont. Dept. of Mines Vol. XLIV Pt. VIII, 1935) who, in conjunction with Thomson's report, made a good compilation of the data available at the time, but little work was done on the area covered by this survey.

In 1941 and 1942, E. L. Bruce and H. C. Horwood made a detail study of the Renabie ore bodies and the Pileggi gold discoveries in Stover Twp. The results of their work embodied in the Rennie-Leeson and northern part of Stover Twp. (Ont. Dept. of Mines, Vol. LI, Pt. VII, 1942) has given the best information to date and the geological detail along with their petrographic analyses of rock types has been of much value to the author in this field survey. Again part of this survey was not done in detail by Drs. Bruce and Horwood who naturally concentrated on the discovered ore bodies and their associations.

(3) Natural Resources

In the 1920's tie-cutting was done extensively in this area; an old tie camp is situated on the north shore of Stover Lake. Old tote roads traverse the area. Some timber is still suitable for mining purposes but on the
whole is still too young by ten years or so. The timber is mostly spruce and jackpine with some localized spots of cedar. The higher areas are covered with birch and poplar.

Game and fur are plentiful, moose abundant as well as bear and beaver. As explained previously this area is in a game park.

A few pike have been caught in Stover Lake and they are plentiful in Baltimore Lake. Colborne and Rennie Lakes abound with pike and pickerel. A few of the streams north of Rennie Lake have stream trout. Grouse and duck are not too abundant.

Good quality road and cement gravel is plentiful. Loam and clay of the top soil would provide a good garden during the summer months.

The Renabie Mine is a gold producer. The Dulama Mine is working underground on two levels with satisfactory results to date. To the west, the Stover Gold Mine has been drilling all summer and a shaft is contemplated this spring. On this latter property, over one hundred ounces of gold has been recovered by cobbing the surface of a high grade vein. Other gold properties in the area are more or less dormant, awaiting suitable financing conditions.
(4) Topography

Relief: The extreme eastern part of the group straddles the height-of-land between the Lake Superior and Hudson's Bay watersheds but the relief is not particularly high and stands about one hundred feet above the valleys where small streams meander to ponds created by beaver. The western part of this group is low and flat with little or no relief except that caused by north trending diabase dikes. Gravel ridges of glacial debris trend north eastwards and are usually found in the lee of prominent outcrops.

Drainage: The drainage is controlled by beaver. Baltimore and Stover Lakes are natural basins and are abated by beaver dams which control both their inlets and outlets. Were it not for the beaver the area would be quite dry in the summer and vegetation would suffer considerably. Most of the water flows from Stover Lake into McKee Creek and thence into Dog Lake. Very little flows into Crooked Lake and thence into the Hudson's Bay.

GEOLOGY

(1) General geology

The area is underlain by rocks of pre-Cambrian age. These are predominantly acid to
intermediate lavas and pyroclastics intruded by dikes and bosses of pre-Algoman (?) quartz and feldspar porphyries and dikes and plugs of diorite and quartz diorite of Algoman age. Keweenawan dikes of diabase occurring along later north-south fractures are the last intrusive rocks to be found here.

The consolidated rocks are covered with a mantle of clay, gravel and sand seldom very thick but sufficient to cause the prospector and geologist arduous work to strip the mantle from "outcrops" for mapping and prospecting. Seldom can a continuous section of an outcrop be examined completely unless on a sheer or fault face. This renders the geological interpretation difficult and at times problematical and conditional. The outcrops shown on the accompanying map are consequently a compromise between actual exposures, grubbing of the surface mantle and the local topography.

In the low ground to the west, peat is fairly abundant.

The table of formations and geological sequence as gathered from observations in this area and the surrounding country is as follows:

QUATERNARY

Recent: Peat
Pleistocene: Sand and gravel

unconformity


PRE-CAMBRIAN

Keweenawan: Diabase dikes
    intrusive contact

Algoman (?): Diorite and quartz diorite dikes and bosses
    intrusive contact

Pre-Algoman (?): Quartz porphyry and feldspar porphyry dikes and bosses

Keewatin: Acid tuffs and breccias
    Intermediate tuffs and breccias
    Basic tuffs and breccias
    Rhyolite flows and rhyolite porphyry dikes
    Dacite and andesite lavas
    with smaller phases of pyroclastics differing from those mentioned above.

THE KEEWATIN

This complex series of metamorphosed volcanics consists of predominately acid pyroclastics in the eastern section of the property and andesitic lava flows in the west. Nowhere have the flows retained any of their original flow structures. Consequently their attitudes are impossible to determine. In the eastern part the flows would appear to be very narrow in width whereas in the western part the andesitic flows could be of considerable thickness, although a paucity of outcrops in this western section can lead one to conjecture only on this point. However the grain size of some of the more massive andesite would
support this theory.

**Andesite:** Commonly a dark green fine-grained rock altered by both metamorphic and pyromorphic stresses until little of its original texture or crystallization is still evident. It predominates in the west-centre and western part of the claim group.

**Dacite:** The classification of these rocks is arbitrary. It is lighter green in color than the andesite and weathers to a dull grey. It is a little coarser-grained and has more quartz identified in the field than the andesite. In many cases it was feared by the writer that alteration and recrystallization caused by the intrusion of nearby porphyries merely changed the andesites to what he now classifies as dacite as no flows were identified as potential markers for classification purposes. However this dacitic classification is not important at this date. Nor have any bands of iron formation, common to the west, been found to act as interflow markers.

**Rhyolite:** At the south-east corner of claim 49315 on the south boundary of the property a rhyolite outcropping was uncovered. This rock is light colored and very silicious. Some quartz eyes were observed in a matrix of fine-grained feldspar and silica. No further outcrops of this
rocks were discovered on the property but it is possible it may extend to the south for some way. The possibility that some of the quartz porphyry dikes, being rhyolite flows, was well considered by the writer but the predominance of the porphyry dikes as offshoots from the great porphyry batholith to the east and north has discounted this theory.

**Tuff and Breccia formations:** Between the various flows small outcroppings of banded tuffs have been found. Like Dr. Horwood states they are dissimilar to the more distinctive and larger tuff and breccia horizons to be described following. They are narrow in width and probably lenticular in shape, mostly fine-grained tuffs and quite possibly delineating different flows.

**Tuff and Breccia horizons:** The greater mass of the Keewatin rocks in the eastern half of this claim group are breccias and water-lain tuffs, mostly of intermediate (chemical and mineralogical) composition. They are medium to coarse-grained banded somewhat with narrow bands of fine-grained lighter material (silica and feldspar) between wider bands of fragmental feldspars, coarser in texture, consisting of fragments of feldspar crystals, of quartz and feldspar porphyries and of quartz crystals. When the rock is sheared it is very difficult, if not impossible, to distinguish
it from the sheared quartz and feldspar porphyries occurring in this area and to be described later on. The petrographic analyses of these rocks made by Doctors Horwood and Bruce was used as the criteria for this classification.

Two bands of intermediate breccia horizons over eight hundred feet in width occur, one on claim 49316, and the other to the north east on claims 49310 and 49312. These are quite similar in texture and composition and may be merely limbs of an anticline of the same formation. The presence of two acid tuff and breccia horizons between these intermediate ones lends support to this theory. Still more convincing regarding this theory is a band of tuffs and breccias occurring to the west through Pileggi's No. 2 group and across the east end of Baltimore Lake. This latter horizon has been traced by Dr. Horwood for a considerable distance at the time of his survey.

There is ample evidence that the tuffs and breccias were water-lain as some of the larger fragments can be seen to be rounded and a certain amount of classification has taken place within the bands themselves.

The acid bands of tuffs occurring on claim 49314 are fine-grained and considerably more altered, no doubt, due to the proximity of porphyry
and diorite intrusions nearby. They consist mostly of feldspar and quartz fragments and a silicified matrix of the same, weathering cream to buff in color. In many cases the whole has been altered to sericite schist with secondary carbonates replacing the original constituents.

THE PRE-ALGOMAN (?)

This classification is in accordance with the other geologists who have visited this camp, as no definite relationships with the Algoman diorites and granites have been established. The quartz porphyries and feldspar porphyries are considerably more sheared and altered than the Algoman bodies and are definitely intrusive into the Keewatin formations and for this reason are classified as such. The quartz and feldspar porphyries cross the property in dikes of various thicknesses up to three hundred feet in width. No evidence that they occur in stocks and bosses has been uncovered although a huge batholith of this rock occurs to the north and east. The dikes are no doubt offshoots from this. The quartz porphyry and the feldspar porphyry dikes are similar in appearance but one has "bluish" quartz eyes sometimes up to one-tenth of an inch in size. As mentioned previously, when these rocks are
sheared, it is extremely difficult to differentiate them from the tuffs and breccias.

THE ALGOMAN (?)

This classification is also presumptuous but as the diorite and quartz diorite dikes of this period appear considerably fresher and less altered than the porphyry dikes and no intrusive relations have been found with the Algoman granites they are believed to be of the same age of magmatic activity.

The dikes are grey-green on weathering and are composed of plagioclase feldspars and amphibole minerals. Some phases of the diorite have some quartz eyes present hence the additional classification of quartz-diorite. In the south-east part of the property there are two large bodies of this rock which could be termed more correctly bosses than dikes. Elsewhere their occurrences are in dikes more or less following the conformity of the Keewatin and Pre-Algoman formations. There is some evidence that some of the dikes occupy fissures striking across these formations, that is north-east south-west.

THE KEWEENAWAN

These are typical diabase dikes quite fresh on fracture weathering rusty brown. They have typical ophitic texture and are massive coarse-grained rocks made up of anorthite plagioclase with
a pyroxene ground-mass with olivine and magnetite. They occupy north and north west striking fissures and vary in width from a few feet to over two hundred in places. They cut all other formations.

(2) Structural geology

The dominant structural feature in this area is the northwest-southeast strike of the Keewatin formations and to a large part those of the pre-Algoman and Algoman series with their accompanying shears and faults.

The formations, flows, contacts and faults are predominantly vertical, sometimes favoring the south but never by more than ten degrees.

As mentioned previously, the two different horizons of acid and basic tuffs crossing the eastern part of the property are thought to be limbs of an anticline or syncline linking up with the tuff horizon, described by Dr. Horwood in his report of this area, which crosses the western part of Stover Lake and the eastern part of Baltimore Lake.

The shear and fault zones follow the conformity of the formations and are usually spread over wide widths. These favor the tuff and breccia horizons more than the more resistant lava flows.
Another structural feature of the country is the north-northwest trend of the Keweenawan liebase dikes filling fractures striking generally N 20° W and dipping vertically.

The McKee Creek fault (NE-SW) is picked up in the western section of the claim group crossing claims Nos. S-49530, S-49542 and S-49534 and can be traced for several miles to the northwest with serial photographs, crossing all formations except the Keweenawan. This fault is the strongest "break" in the area and in the opinion of the writer may have considerable bearing on the mineralization occurring on both sides of it as a rule filling fractures striking away from it.

The two systems of faults N 65° W and N 55° E may be complementary to each other. Evidence seems to indicate the N 55° E faults are the older.

No intense folding along strike was observed; the strike seldom varying by more than twenty degrees.

(3) Economic geology

No gold occurrences have been discovered to date on these claims, although gold has been discovered on the east, north and west of the group.

Immediately west of the group lies the
Pileggi No. 2 group, developed in 1943 by Sylvanite Gold Mines Ltd. This gold-bearing shear zone lies in a tuff and breccia formation identical to the ones described in this report. It is described by Dr. Horwood as a sheared and silicified acid breccia, veined by small quartz stringers and lenses of quartz across widths up to thirty-five feet. A small amount of pyrite and in places arsenopyrite were the only metallic minerals noticed. Gold values are erratic.

VEIN SYSTEMS: Three vein systems uncovered during the survey are worthy of special mention and further work.

No. 1 vein: A massive milky quartz vein, three feet wide, situated about three hundred feet east of the west boundary of claim S-49319, is very well mineralized with cubic pyrite. It lies in a sheared intermediate breccia formation also very well mineralized. This occurrence is very similar to the showings on the Pileggi No. 2 group. Samples taken returned trace of gold only. Strike of the vein is N 55° W with a dip of 85° to the south. A shearing with quartz stringers in the same formation was picked up a thousand feet to the southeast.

No. 2 vein: This vein is situated along the south boundary of claim S-49309 and consists of quartz
stringers in a sheared porphyry (or perhaps an acid breccia?) with fine disseminated pyrite. Samples returned trace of gold only. The stringers lie in a fault zone striking N 50° W with a vertical dip.

No. 3 vein: This vein occurs about eighteen hundred feet to the southeast of No. 2 vein on claim 3-4934 and may be a continuation of the No. 2 vein. It consists of quartz stringers in acid tuffs which have been very much altered by carbonates and now is mostly sericite schist. There is a good amount of fine disseminated pyrite but no gold values from assays. The strike and dip are the same as No. 2 vein.

A considerable number of quartz veins and stringers shown on the map were uncovered. They are mostly barren quartz frequently blue to black in color. They have shown no trace of gold and carry little to no mineralization.

Along the fault zones, especially in the andesites, the schists are often mineralized with pyrite. Several samples taken of the more promising carbonates returned nil in gold.

PROSPECTING POSSIBILITIES AND RECOMMENDATIONS

The claims in this group have by no means been prospected thoroughly as yet. Nos. 1, 2 and 3 vein systems are worthy of further stripping,
trenching and sampling. The fault zones, although usually in lower ground, should be traced on both sides in an endeavor to uncover favorable mineralized or alteration zones. This is especially so for the McKee Creek fault; two miles to the southwest, the high grade veins of the Stover Gold Mines straddle this fault. This is somewhat difficult, however, as this fault usually lies in low ground.

The gold-bearing veins in this part of the country are characterized by the sparcity and fineness of the pyrite mineralization, consequently, unless an auriferous zone is discovered, a magnetometer survey is not warranted at the present.

The best method of prospecting and doing assessment work at the present stage of development is by drilling short holes with a light X-Ray drill across fault and shear zones where trenching would be difficult or impossible, in conjunction with further prospecting, stripping and trenching in the more favorable zones.

SUMMARY

The claims lie in a favorable geological zone for gold deposition. Commercial ore bodies are being developed on both sides of the property.
The possibility of finding commercial ore zones have not been exhausted by any means.

Respectfully submitted,

R. R. Miquelon
Mining Engineer & Geologist
March 1st, 1949.

ADDENDA

1. The map: The accompanying map (scale 1" = 200') shows the outcrops and geology as plotted from the field survey. Control for the survey was taken from the three-mile post on the township line. The township line was re-cut and chained. The hydro line poles were chained, surveyed and marked for traverse tie-ins. A control line was cut, surveyed and chained to the camp and thence to the east end of the property for traverse tie-ins. All claim lines and the winter road were traversed by pace and compass as well as the other traverses shown on the map.

A sketch of the surrounding properties is shown in a corner of the big map.

2. Allocation of time and work: (see next page)
REPORT

ON

DUVEX OILS AND MINES LIMITED

DISTRICT OF SUDBURY

BY

P.S. CROSS, MINING ENGINEER

Copies:  1 & 2: Ontario Dept. of Mines
         3: Duvex Oils & Mines Limited
         4: P.S. Cross, M.E.
REPORT
ON
DUVEX OILS & MINES LIMITED
SUDbury DISTRICT

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REPORT
ON
DUVEX OILS & MINES LIMITED
SUDBURY DISTRICT

DATE OF REPORT August 15, 1952

REPORT MADE FOR Mr. Samuel Ciglen, President,
DuveX Oils & Mines Limited,
1300 - 100 Adelaide St. West,
TORONTO, Ontario.

INTRODUCTION

As instructed by Mr. Lou Pancer of Duvex Oils & Mines
Limited, the writer has completed the supervision of
the prospecting and surface exploration work under-
taken on the above company's twenty-seven claim group
in Rennie and Stover townships in the Kissenabie gold
area. This work was carried out during June and July
of 1952. The result of this work is summarized in this
report.

PURPOSE

It is not the purpose of this report to go into a detailed
geological study of the ground held by the Duvex Oils &
Mines. This has been most ably covered by Mr. Richard R
Miquelon, B.Sc., M.E. in his report dated March 1, 1952.
This report is rather a summary of the work undertaken on
the property during the 1952 season. It also records the
observations, conclusions, and recommendations of the writer.

CONCLUSIONS

Prospecting and examination of the property during the
summers of 1948 and 1952 failed to disclose any commercial
concentrations of gold or other precious or base metals. Numerous zones, favourable to the deposition of gold, were opened up by trenching and stripping, but in every case, the gold bearing quartz and sulphide mineralization, so essential in known gold deposits of the area, was extremely lacking.

The work done to date has, by no means, eliminated all the possible areas which are favourable to the deposition of commercial quantities of gold. The writer, during his several years experience in the area, has never encountered shear zones as large nor as strong as those observed on the Duvex ground.

The area is definitely favourable to the deposition of gold as proven by the neighbouring properties of Stover, Braminco, Renahia, Ludulama, Guarnaccio and others.

RECOMMENDATIONS

In view of the favourable location of this group of claims, it is the recommendation of the writer that these claims be kept in good standing. The possibility of finding ore zones has not been exhausted. There are doubtless many strong shear and fault zones which have not been exposed as yet. Only a small portion of the property has been thoroughly prospected.

Conditions in the gold mining industry at the present time are not favourable for the prospect or development property. However, this condition is bound to change at which time risk capital for exploration and development of gold mines should be easily obtainable. When this time comes, thor-
ough prospecting and testing with diamond drill should be undertaken. This work should be done with a view to locating large quartz zones. Many of the fault and shear zones lie under a mantle of clay and sand and can only be tested by employing the diamond drill. Should further work be required to keep these claims in good standing, this can be most easily done with the diamond drill. This is by far the cheapest way of doing assessment work. This work should be done in areas that have not as yet been prospected or examined. All the zones examined to date can be eliminated from further work with the exception of the large shear zone on claim S-49310 which warrants more work.

SCOPE OF WORK DURING 1952 SEASON

Two prospectors, John Cyr and Alec Poitras of Val d'Or, were employed on the property from June 4th. to August 2nd, 1952. During this time they did 750 feet of trenching and stripping and sank one small pit in opening up six mineralized shear zones. Ninety-eight samples were taken from these showings and assayed for gold. In addition to this work, numerous traverses of the property were made in search of favourable structure and mineralization. Several picket lines were cut and chained. The claim lines were walked, examined and re-cut were required. Work was concentrated on the east side of the property in the vicinity of the large north-south trending porphyry intrusion which is believed to have some bearing on the gold deposition at Renabie Mines.
LOCATION
The property, known as Duvex Oils & Mines Limited, consisting of twenty-seven unsurveyed claims, is located in Rennie and Stover townships in the Missanabie gold area, District of Sudbury, some eight miles from the town of Missanabie, Ontario. (See attached Location Map).

INFORMATION OBTAINED FROM
The geology, with some changes and alterations by the writer, as shown on the maps contained in this report, was taken from the work done by Mr. Richard R. Miquelon, B.Sc., M.E., in 1948. The map, showing the general geology of the Rennie-Leeson Area, is a reproduction of the government map by E.L. Bruce and H.C. Horwood. All other information contained in this report is the result of a personal examination of the property and the supervision of work done thereon by the writer during June and July of 1952.

CLAIMS
This group, known as Duvex Oils & Mines Limited, consists of twenty-seven unsurveyed claims. These are viz: S-49308-19 in Stover township, S-49532-35 in Rennie township, and S-49439-47, S-49530-31 in Stover township. The whole comprises a very compact group consisting of approximately 1,100 acres. (See attached Claim Map).

TITLES
The titles to the above mentioned claims are, to the best knowledge of the writer, believed to be clear.
CLAIM MAP
DUVEX OILS & MINES
RENNIE - STOVER TWP.
TRANSPORTATION & ACCESSIBILITY
This group of claims can be reached over an all-weather gravel road from the town of Missanabie on the main line of the Canadian Pacific Railway. This road traverses the north section of the property. Taxi and trucking service is available at all times from Missanabie. Food supplies can be obtained in Missanabie or at Renabie Mines, four miles to the east. Numerous logging roads spread out over the property running south from the main road.

TIMBER
The immediate area has been completely cut over and only second growth timber of small dimension remains. The area has been the scene of extensive pulp cutting activity during the past few years resulting in heavy slash which makes walking very difficult. Large timber, suitable for mining operations, are well scattered. There is sufficient small second growth timber to supply building lumber. There is ample fuel wood for domestic and plant use.

POWER
Power, at 44,000 volts, as supplied by the Great Lakes Power Company, crosses the northern part of the property following the Renabie road.

WATER
About sixty acres of this group consists of water making up parts of Stover and Baltimore lakes and several other small lakes and beaver ponds. This water is suitable for domestic and plant purposes and is sufficient in quantity.
ACTIVITY IN THE AREA

Renabie Mines, located four miles to the east, went into production in June of 1947 to become the first gold producer in the Missanabie area as well as the first post-war gold producer in Ontario. Since starting production, they have produced close to five millions in gold from some 600,000 tons and have, as of December 31, 1951, positive ore reserves, to the 925 level, of half a million tons grading in excess of quarter ounce per ton. Three new levels are, at the present, being opened up below the 925 level and mill expansion is planned for the near future. The present rate of production is at 475 tons per day.

Their orebodies are quartz replacements of large shear and fault zones which strike both east-west and north-south. They vary in width from five to sixty feet and are up to three hundred feet in length. These orebodies are located wholly within the granite gneiss within five hundred feet of the granite-greenstone contact to the west.

Ladulama Gold Mines Limited, tying onto Renabie immediately to the east, has opened up seven levels from a three compartment shaft to a depth of 1,025 feet. Some 575,000 tons have been proven above the 725 level grading around seven dollar with a possible additional 50,000 tons between the 725 and 1,025 levels. This property is now ready for mining and a 500 ton mill is contemplated as soon as gold mining conditions permit.

Braminco Mines Limited, to the south of Renabie, has developed, by surface work and diamond drilling, some 100,000 tons
grading 0.150 ounces per ton. They are awaiting more favourable conditions before going ahead with underground development.

Abilee Mines Limited, to the north of Renabie, are now conducting an extensive diamond drilling programme testing several large quartz replacement zones. Some encouraging results have been obtained here recently.

Stover Mines Limited, immediately to the west of the Duve group, have developed sufficient ore in shear zones to warrant future underground development. It is understood that financing has been arranged for this work. Their ore occurs as quartz stringers and lenses in shear zones developed in the tuffs and breccias.

Guarnaccio Gold Mines Limited are also carrying on extensive surface work this season on several interesting showings consisting of quartz stringer zones in shears.

The remaining area contained in the four townships of Rennie, Leeson, Stover and Brackin has been covered only lightly by prospecting and several small showings have been uncovered but to date, have not proven to be of commercial importance.

**GEOLOGICAL DISCUSSION**

No detail will be gone into in this report on the general geology of the area, and the various country and dike rocks. This has been covered in an earlier report by Mr. R.R. Miquelon. Sufficient is to say here that the area is underlain by rocks
of pre-Gambrian age. They are mostly acid to basic lavas and pyroclastics which have been intruded by later dikes and bosses of pre-Algoman quartz and feldspar porphyries, dikes of Algoman diorite and Keweenawan diabase. A mantle of clay, gravel and sand covers most of the consolidated rocks in the area.

A general north-west south-east strike appears to be common to all the Keewatin, pre-Algoman and Algoman rock formations with steep dips to the south. The Keweenawan diabase is more north-south and of vertical dip.

The shear and fault zones of the area tend to follow the conformity of the formations and are usually spread over wide widths, quite strong and dipping steeply to the south-west. These shears and faults appear to be more common in the porphyries, tuffs and breccias than in the more competent lava flows. There is two systems of faults in the area having strikes of N65W and N55E with the latter giving indications of being the older.

Little gold bearing mineralization has been observed to date on these claims. Some quartz stringers and lenses of narrow width with sparcely scattered fine disseminated pyrite have been uncovered in several places. Some sphalerite, chalcopyrite and galena has been observed in the area in minor amounts.

One point of interest observed in all the showings examined is the extreme absence of large quantities of quartz and the high temperature pyrite. Although some of the shears
are well silicified and contain numerous narrow quartz stringers and lenses, the total quartz content is very small. The sulphide mineralization, mostly pyrite, is very sparse and is of the low temperature dull type. The ore zones at Renable, Ladulama and Braminco are all massive quartz replacement bodies well mineralized with the brassy yellow high temperature pyrite with minor amounts of galena and chalcopyrite.

The ore zones on the Stover property are somewhat similar to the structure and mineralization encountered on the Duvex group. Here again however, the Stover zones contain considerably more quartz with scattered visible gold which is uncommon in the area. The sulphide content is very low and contains only low gold values.

The general policy in the area with regard to prospecting and surface exploration is to locate large quartz bodies or veins with considerable pyrite mineralization of the high temperature brassy yellow type with minor amounts of galena and chalcopyrite.

SHOWINGS EXAMINED
Six mineralized shear and fault zones were opened up by stripping and trenching. These were sampled and examined.

The No.1 vein, which was discovered in 1948, was further opened up and the general area prospected. Forty feet of trenching was done here as well as one pit. This showing is located about 250 feet east of the west boundary of
claim S-49319 and about 1,100 feet north of the #3 post. (See attached Geological Map No.1 Vein).

The quartz is present as a series of quartz lenses up to three feet in width for lengths of ten to fifteen feet, in a shear, ten feet wide, developed in tuffs and breccia. The zone strikes NSOW and dips about 82 to the south-west. The shear and quartz was traced for 150 feet. The sulphide mineralization is cubic pyrite scattered sparcely throughout the quartz and shear. Seventeen samples were taken from the quartz and shear along the strike all returning only trace in gold.

On the south claim line of S-49477 some 400 feet west of the #2 post, a sheared porphyry zone with quartz stringers was uncovered. Four samples were taken from here yielding only trace in gold. (See Geological Map No.1 Vein).

The No.2 vein, 100 feet north of the south claim line of S-49309 and 600 feet west of the #2 post, was opened up with 100 feet of trenching. The shear here is in the prophyry with several narrow inclusions of greenstone and is thirty feet in width. There are numerous narrow quartz and carbonate stringers throughout with minor amounts of pyrite. The carbonate is well rusted. The porphyry shear has been almost completely altered to sericite. In all eight samples were taken from this zone returning only trace in gold. (See Geological Map No.2 Vein).

One trench, twenty feet in length, was put across the No.3 vein shear. This shear is twenty feet wide in a porphyry
acid tuff zone well altered to sericite. Quartz and carbonate stringers were found throughout the shear with scattered pyrite mineralization. Thirteen samples were taken from here returning only trace in gold. (See Geological Map No. 3 Vein).

In the north-east corner of claim S-49439 a porphyry shear zone, striking N45W and dipping steeply to the south-west, was opened up with two trenches totalling forty feet. Four feet of very strong sericitized shear was observed in the centre. This zone was traced for 150 feet. Several narrow quartz stringers were observed with sparse cubic pyrite mineralization. Five samples were taken from this zone yielding trace and 0.02 ounces in gold. (See Geological Map Claim S-49439).

On claim S-49308, 500 feet south of the #1 post and 300 feet west, a large porphyry shear zone, 100 feet in width, was crossed with one trench 100 feet in length. The shear strikes N60W and dips steeply to the south. Several quartz stringers were observed in this trench with minor amounts of pyrite mineralization. Two samples were taken from here and returned only trace and 0.02 ounces. (See Geological Map of Claim S-49308).

By far the most impressive showing opened up to date is on claim S-49310. Here two parallel shear zones, striking N60W and dipping 84 to the south, were opened up by 450 feet of stripping and trenching. Both these shears occur in porphyry bounded on both sides by greenstones of intermediate tuffs and breccias. Both these shears were the strongest observed
on the property. The east shear is 150 feet wide containing several zones fifteen to twenty feet wide of intensely sheared rock which had been almost completely altered to sericite. The second shear, 200 feet to the west, is twenty-five feet wide and is strong and sericitized throughout its entire width and length. Both these shears have been traced for 1,000 feet along the strike and are still open at both ends.

A concentration of quartz stringers, up to six inches in width, was located in the centre of the shear. This stringer zone is twenty-five feet wide and would make up approximately 35% quartz. The quartz is well mineralized, the sulphide mineralization being mostly pyrite. Some sphalerite and chalcopyrite were also observed as well as galena. A total of twenty-eight samples were taken from the three trenches across this shear. Channel samples were taken over a total width of 13'6". The highest assay received was 0.04 ounces.

The narrow shear to the west was crossed by three trenches. Quartz stringers were exposed in all three. Sulphide mineralization was not as extensive here as in the wider shear to the east. Eleven samples were taken from these trenches returning only trace in gold. (See Geological Map Claim 8-49310).

**SUMMARY**

Of the six areas examined in detail, the writer considers the two shear zones on claim 8-49310 to be the most favourable. More quartz and sulphide mineralization was observed here than on any of the other showings. The shear is the
strongest observed on the property to date. The possibility of finding other quartz zones with higher gold content in this shear is most promising. The other five zones examined can be eliminated as possible ore making zones.

Respectfully submitted,

P.S. Cross, Mining Engineer.

Dated at Renabie, Ontario, August 15th, 1952.
### ALLOCATION OF TIME AND WORK

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\[145 \times 4 = 580 \text{ days}\]

27 claims = 21.5 days per claim
AFFIDAVIT

I, Philip Sidney Cross of the Improvement District of Renabie in the Province of Ontario, do hereby certify as follows:

1. That I am a Mining Engineer and Geologist residing in the Improvement District of Renabie in the Province of Ontario.

2. That I am a graduate of the University of Toronto having obtained the degree of B.A.Sc. in Mining Engineering and have completed one year of post-graduate study in geology.

3. That I am a Registered Professional Engineer of the Province of Ontario.

4. That I have no financial interest in the company known as Duvex Oils & Mines Limited.

5. That the attached report, dated August 15th, 1952, on the property of Duvex Oils & Mines Limited in Rennie and Stover townships, Sudbury District, is based on my personal examination of the property.

Dated at Renabie this 15th day of August, 1952.

P.S. Cross, Mining Engineer.
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(Signed)
DUVEX OILS AND MINES LIMITED
SKETCH SHOWING LOCATION OF WORK 1962 SEASON