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QUEENSTON GOLID MINNES LIMITED (NO PERSONAL LIABILITY)

SUITE 1101 85 RICHMOND STREET WEST

TORONTO, ONT.

MINE OFFICE DOBIE, ONTARIO

Dobie, Ontario, 5th March, 1958.

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Mr. M. F. O'Rourke, Mining Recorder, Ontario Department of Mines. TIMMINS, Ontario.

Dear Sir:

Bartlett Township Property

In applying for geological assessment credit on 12 mining claims numbered P-42718, 19, 22, 23, 26, 27, 30, 31, 34, 38, 35, 39 in Bartlett Township we beg to point out the following reasons for this action.

These claims were held in 1952 by Dominion Gulf and were formerly numbered P-36863, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73. 74. A geological map on scale of 200 feet equals 1 inch was filed on these claims. While re-mapping this ground during the summer field season of 1957 new structural information was found which gave a somewhat different geological concept in this area. It should be noted that the basalt group of volcanics was previously mapped as a unit mass of talc-carbonate-rock. Within these volcanics we found north-south striking, east dipping zones, of flow breccia with occasionally well developed associated flow lines along the east bank of the Redstone River on claims 42727 and 31. Sill-like masses of peridotite were found to intrude these rocks on claims 42722, 23, 26, 27 and 31. It is the opinion of the author that this structural evidence points out the volcanic origin of the basalt, hitherto recorded as probably intrusive in character, and that the recognition of peridotite assists placement in the stratigraphic column.

Furthermore, the belt of pyroclastic rocks which flanks the basalt on the west on claims 42718, 19, 22 and 26 was found to contain only one outcrop of iron-formation. Previous mapping showed a band of iron-formation lying adjacent to the lava-pyroclastic contact in this area. Our detailed mapping and diamond drilling could find no rock type resembling iron-formation in this area but rather a series of pyritized zones in tuff and agglomerate.

The horizon of volcanic porphyry shown by previous mapping on claims formerly numbered P-36869, 70, and 71 is indistinguishable from rocks mapped as fragmental in the same area.

DonaldWTully:mj

In view of the above evidence, as well as dip and age relationships noted in diamond drilling in this area, we believe that new geological information of signifigance has been obtained during re-mapping to assist in the geologic interpretation on the claims under discussion.

For these reasons we believe it is reasonable to apply for geological assessment credit on claims P-42718, 19, 22, 23, 26, 27, 30, 31, 34, 38, 39, 35.

Yours very truly,

QUEENSTON GOLD MINES LIMITED,

Chief Geologist.

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Dorwed W. July.

MAR 1 0 1958

MINING RECORDER

PORCUPINE MINING DIVISION

QUEENSTON GOLD MINES LIMITED

GEOLOGICAL REPORT

BARTLETT TOWNSHIP PROPERTY

INTRODUCTION:

Queenston Gold Mines Limited with Head Office at 911

Federal Building, 85 Richmond Street, West, Toronto, holds 40 mining claims
in Bartlett Township, Porcupine Mining Division, Ontario, numbered P-42702
to P-42741 inclusive.

Detailed geological mapping on scale of 1" = 200' was done on 33 claims of this group. The survey was conducted by D. W. Tully and H. W. Marsh of the Geological Staff of Upper Canada Mines, during August, September and October, 1957. Messrs. George W. Glick Jr. and R. A. Wildermuth were employed as geological assistants. Names and addresses of personnel who assisted in the work are listed at the end of this report.

Diamond drilling was done on claims 42722-23 and 42726-27 during the period of September 23rd to December 3rd, 1957.

LOCATION AND ACCESS:

The property is situated in the southeast corner of
Bartlett Township approximately 24 miles south of Timmins, Ontario. The No. 3
post of claim 42738 is located at mile post 1 on the Bartlett - English Township
common boundary line. A key map on the 400 scale map accompanying this report
shows the location of the claim group.

A truck road, owned by the A. E. Wicks Lumber Company of Timmins, provides access to the property. This road commences south of the Buffalo - Ankerite Mine and extends to a point south of Scott Lake, where a branch road turns easterly to claim 42734 near the Redstone River, a distance

of 37 miles from Timmins.

Air transportation is available from South Porcupine to Scott Lake.

The Redstone River flows from south to north through the claim group. It is shallow but useful for canoe travel in the claim area.

PREVIOUS GEOLOGICAL WORK:

E. L. Bruce describes the geology of Bartlett Township in Volume XXXV, Part 6, 1926, "The Redstone River Area" for the Ontario Department of Mines. Detailed geological mapping was done by Dominion Gulf in 1952 on part of the claim group under consideration. The results are on file with the Ontario Department of Mines at the office of the Resident Geologist, Timmins, Ontario. Dominion Gulf also prepared an aeromagnetic map of this area in 1947, 1948 and 1949. This was published by the Geological Survey of Canada as Geophysics Paper 291G.

HISTORY:

Since the discovery of gold in Porcupine in 1909, prospectors have used the Redstone River as a cance route for access to prospect in the general area. Gold is reported to have been found by C. Peterson on claim 42708 and old trenchings are in evidence on claims 42708, 42715 and 42718 of the claim group.

Following discovery of nickel-bearing sulphides in 1951 as a result of diamond drilling on claims now held by Fatima Mining Company, some interest developed in this area. Queenston Gold Mines staked a group of claims in the southeast part of Bartlett Township in March, 1957. Geological mapping and diamond drilling programs were carried out during the summer field season on the claim group.

SURVEY CONTROLS AND MAPS:

A base line, established in 1952 by Dominion Gulf, forms the west boundary of the south part of the claim group. It commences at Mile Post 1 on the south boundary of Bartlett Township and runs due north. This base line was brushed out and extended north for a total distance of 7800'.

A sub-base line was then established running due north through the property from a point 1900' east of the main base line. Picket lines were cut in an east-west direction from these base lines at 600' - 800' intervals and chained every 100 feet to provide control for pace and compass traverses. A transit and chain were used to control base line projection and picket line turn-offs. Pace and compass traverses were run at 200' intervals. Claim posts and boundaries were tied in to picket lines. Claim numbers, posts and lines, base lines and picket lines are shown on the accompanying map.

TOPOGRAPHY AND FOREST COVER:

The Redstone River occupies a marked depression running north-northeast through the claim group. Swamp areas adjoin east and west of the river. A series of low rounded hills extend northward from Muskrat Lake to the north boundary of the claim group on the west side of the Redstone. A more rugged topography exists east of the river for one mile north of the Bartlett-English Township boundary. A prominent escarpment forms the east bank of the Redstone from line 0.00N to line 54.00N.

Sand, sandy loam and clay are prominent topsoil types.

Sand is abundant in the southeast part of the claim group but elsewhere the overburden is relatively shallow.

Jackpine, birch, poplar, spruce and balsam cover the claims in dense growth. A supply of wood fuel and mine timber is indicated for a considerable period.

GENERAL GEOLOGY:

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The consolidated rocks of the claim group are Precambrian in age. A belt of very basic lavas strike north - south and occupy the major portion of the claim group. A north trending, easterly dipping belt of pyroclastics flanks the basic lavas on the west and has been traced intermittently north-eastward through the property. Structural considerations discussed later suggest that these pyroclastics may form part of the south limb of a major fold in the area. Andesitic lavas were noted on claims 42739, 40, 41 at the south end of the claim group.

Of the intrusive group of rocks granite is by far the most common, particularily in the north part of the claim group. Gabbro and feldspar porphyry were found to the west of the granite contact. Amphibolite was mapped in the marginal facies of the granite as well as remnants of the pyroclastics and volcanics.

The abundance of glacial erratics, chiefly granite, east of the Redstone River, indicates a large granitic mass lying up the direction of glaciation. Fluvid - glacial deposits are common but true glacial till was not observed in the claim area.

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

PLEISTOCENE:

Sand, gravel and clay

PRECAMBRIAN:

Intrusives Diabase

Granite

Gabbro

Quartz - Feldspar - Porphyry

PRECAMBRIAN CONT'D:

Diorite

Peridotite

Carbonate rock

Volcanics

Amphibolite

Tuff, crystal tuff (arkose?) agglomerate

Iron formation

Andesite

Basalt

VOLCANICS

Rocks of volcanic origin occupy almost the entire south half of the property. They consist of basalt, andesite and pyroclastics which strike generally north 20° east and are intruded locally by dikes, sills and bosses of varying composition. The basalt group was previously mapped as a unit mass of talc-carbonate-rock. Detailed remapping revealed structural evidence which shed a new light on the mode of occurrence of this group of rocks.

BASALT:

Basalt is exposed over most of the south half of the claim group. At approximately one claim north of the south boundary it occupies the entire breadth of the property. To the north this belt becomes narrower being confined on the east by a large granite mass and on the west by a belt of pyroclastics. The northern limit of the main basalt mass may lie in claim 42716. Two small outliers were mapped on claims 42704 and 42705. Andesitic laws border the basalt in the southeast part of the claim area.

The basalt is a dense, fine-grained equigranular rock with a distinctive conchoidal fracture. It is grey-black on the fresh surface and weathers light-grey. Few of its constituent minerals are recognizable megascopically except magnetite, which is commonly present, and olivine, which is present as fairly large grains in some exposures. In many cases the olivine has been altered to serpentine but this was nowhere found to be abundant. On claim 42727, 400' north of No. 2 post, magnetite is concentrated along narrow crescentic fractures in an excellent exposure near the centre of the aeromagnetic anomaly noted on Geophysics Paper 291G. Other magnetite concentrations of this type were noted elsewhere within this anomalous area. Fine disseminated carbonate is present along the east shore of the Redstone River where this basic lava forms a prominent ridge. Talc and carbonate are common constituents of the basalt and are locally quite abundant, particularily in the vicinity of a peculiar phase, noted as "Chicken Track".

The weathered surface of the basalt exhibits a peculiar fracture pattern which consists of irregular to columnar blocks up to ten inches in diameter. These blocks have an inconsistent number of sides and have indented margins about \(\frac{1}{4} \) of an inch wide. At first sight this fracturing gives a pillow-lava-like appearance. Some outcrops exhibit prominent zones of flow breccia striking slightly east of north and are traceable for considerable distances on claims 42727, 28, 31, 32, and 35.

Structurally, the basalt group appears to be a series of thick lava flows. This mass may form part of a monoclinal east dipping structure and is probably underlain by an ultrabasic intrusive as evidenced by the sill-like peridotite masses.

ANDESITE:

The extreme southeastern portion of the property is

occupied by pillowed lava of andesitic type which abuts along a fault contact against the basalt to the north and against intrusions of diorite and gabbro to the west and northwest. The andesite is a light grey-green, fine-grained type which weathers to a depth of $\frac{1}{2}$ inch. None of the constituent minerals are recognizable megascopically though its colour suggests the presence of abundant ferromagnesian minerals with some chlorite. To the west, this lava is intruded by diorite with disseminated carbonate noted in the contact zone. Numberous deformed pillows were observed having a general strike of N30° with tops facing northeast.

These lavas may have been faulted into their present position from the west. Age relationship to the basalt is not known.

PYROCLASTICS

The Pyroclastic group of rocks consist of tuff, crystal tuff (arkosite), and agglomerate.

This belt of pyroclastics, striking about north 20° east and having an observed width of about twelve hundred feet, crosses the west boundary of the claim group near the No. 4 post of claim 42730 and was traced northward intermittently through the property. North of claim 42715 granite, gabbro and feldspar porphyry have replaced the pyroclastics and only a few exposures remain as roof pendants.

TUFF:

The tuffaceous rocks are grey green granular types with a rust-grey weathered surface. Normally bedding is absent with the exception of one outcrop near the east boundary of claim 42711 where strikes of N20°E and dips 65°E were observed. A light-grey weathering phase showing anhedral quartz grains was mapped on claim 42726 as an intercalated horizon.

Pyrite is common in the tuff and agglomerate in the contact zone with the basaltic lavas on claims 42726 and 27. This accounts for the rusty weathering. This zone was previously mapped as iron-formation discussed below.

Outliers of tuff and agglomerate were mapped in the north part of the map area on claims 42711, 42708 and 42702.

AGGLOMERATE:

This rock is dark grey weathering and carries angular to sub-angular fragments of acidic lavas and porphyry up to 5" in diameter. The groundmass is greenish grey on the fresh surface. Pyrite and pyrrhotite are commonly present in the lava contact zone as mentioned above under tuffs. Tuff and agglomerate were mapped as a unit owing to lack of continuity of any one type. Diamond drilling on claims 42723 and 26 show the tuffs and agglomerates to dip easterly at about 70°.

IRON FORMATION:

Outcrops of iron formation were noted on claims 42726,
42705 and on the north boundary of 42703. This rock differs somewhat from the
typical banded iron-formation noted elsewhere in the area on O.D.M. Map 35H,
in that it lacks banding and interbedded zones of magnetite, jaspilite and
hematite. Disseminated pyrite and pyrrhotite are present.

During the course of the present work the term, ironformation, was retained to cover those phases of the pyroclastics which carried
magnetite with associated disseminated sulphides. Magnetite may form 15-20%
of the rock on occasion.

Previous geological mapping on claims 42719, 23 and 26 indicated the zone of pyritic tuff and agglomerate in the lava-pyroclastic contact area as iron-formation.

AMPHIBOLITE:

Outcrops of amphibolite are common about the margins of the large granite mass in the north and east portions of the property. This is a hybrid phase which is believed to have been a basic lava or tuff now recrystallized and partially assimilated by the granite. It is dark grey in colour composed of fine amphibole crystals, biotite and secondary quartz. Small stocks and irregular masses of granite intrude the amphibolite.

INTRUSIVES

The northern half of the claim group is largely occupied by an intrusive complex of granite, feldspar-porphyry and gabbro stocks and bosses. In the south half of the property smaller intrusive masses of feldspar porphyry, diorite, gabbro, carbonate rock and peridotite were observed. Age relationships are discussed under the following rock type headings:

CARBONATE ROCK:

One outcrop of brown to rusty weathering carbonate rock occurs on line 56 + 00 N on claim 42726. It was noted as a dike in diamond drill holes.

On the fresh surface the groundmass has a lacy filigree of dark green mineral giving it a variegated and mottled appearance. In age, it is younger than the pyroclastics and cut by the peridotite.

PERIDOTITE:

Peridotite occurs as sill-like masses within the basalt flows. The most prominent of these masses lies along the east boundary of claims 42722 and 42726. Another lies along the east boundary of 42727 and others of smaller size occurs on claims 42728, 42729 and 42736. Isolated

outcrops of peridotite were also observed throughout the belt of basalt which it cuts. Peridotite is intruded by the diabase and in turn cuts the carbonate rock.

The peridotite is a dense, medium to fine-grained, dark grey to black type with a greenish grey weathered surface. Magnetite is usually present as fine seams and disseminations and also as concentrations along cresentic fractures. Other minerals observed were olivine and serpentine. Antigorite was noted on an exposure on claim 42726. Short fibre asbestos was observed on this same outcrop as well as on other peridotite outcrops on claims 42731 and 42738. Scattered pyrrhotite "goose-eggs" were noted in a peridotite mass outlined by diamond drilling on claim 42726. These egg-shaped concentrations of pyrrhotite and pyrite have long axis up to one inch in length and are referred to under economic geology.

DICRITE:

Two prominent masses of diorite occur on the property.

The first is exposed by numerous outcrops in the southwest quarter of claim 42739 while the second is exposed by only 3 outcrops in the south half of claim 42734. The diorite exposed on claim 42739 is medium grained and light green in colour. Alteration is common in the form of talc and carbonate. The mass outlined on claim 42734 is fine to medium grained and much less altered. This diorite is known to cut the andesite but age relationship to other rock types is unknown.

GABBRO:

Gabbro occurs as large circular to elongated masses on the north half of the property west of the granite contact. Exposures were mapped on claims 42739, 42740, 42724, 42714, 42715, 42708, 42705 and 42702.

It is a dark green fresh appearing rock with a medium to coarse-grained texture. Identifiable rock-forming minerals are feldspar, hornblende and pyroxene with very subordinate amounts of quartz. The weathered surface is light grey-green and extremely shallow.

This rock is known to be younger than the basalt, andesite and presumably the pyroclastics. If this rock cuts the feldspar - porphyry then it may be classified as a later gabbro as referred to in G. S. C. Memoir 115 - Geology of the Matachewan District.

FELDSPAR PORPHYRY:

Feldspar porphyry occurs extensively from claim 42718 to the north boundary of the property. It is confined to the westernmost tier of claims where it intrudes the tuff horizons. It is light pink in colour, coarse grained and has prominent feldspar phenocrysts with scattered quartz grains. Feldspar porphyry is later in age than the volcanics and pyroclastics.

GRANITE:

A large granite mass occupies all but the western tier of claims in the north half of the claim group. The west contact has been traced from claim 42725, northwesterly to the northwest corner of 42719 and thence northerly to the north boundary of the claim group. Outliers of basalt, pyroclastics and amphibolite occur within the granite mass.

The granite is a coarse grained, equigranular rock varying in colour from light pink to light grey. It is composed essentially of quartz, feldspar and hornblende with minor amounts of biotite and chlorite.

DIABASE:

Numerous diabase dikes were noted in the central portion

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of the claim group. The diabase is a very fresh, massive rock with very shallow weathering. The weathered surface is light grey-green with a greenish mottled texture. The rock is composed essentially of pyroxene, amphibole, minor quartz and radiating feldspar laths. It is remarkably similar to Matachewan diabase.

A strong east-west striking diabase dike was traced almost across the breadth of the property through claims 42733, 42732, 42728 and 42727. This dike has a maximum width of 100 feet. Other east-west diabase dikes of lesser extent occur on claims 42735 and 42729. Diabase is also exposed near the northeast corner of claim 42726 on the east contact of a peridotite sill. Diamond drilling showed this to be part of a north-south dike which cuts the peridotite at a low angle of dip.

STRUCTURAL GEOLOGY

A prominent structural feature on the claim group is the north-south belt of pyroclastic rocks. In the south half of the group these rocks contact the basalt to the east while in the north half they are intruded by granite. The contact has an average strike of N20°E, dips 70° to the east and has been traced north and then northwestward towards McArthur Lake. It may form part of the south limb of a major east plunging fold whose axis may extend northeastward through the property of Fatima Mining Company. Structural observations on pillowed andesitic lavas indicated tops to the northeast with local northwest strikes probably influenced by a major east west fault along the andesite-basalt contact.

SHEARED ZONES AND FAULTS:

Shearing was noted on claim 42740 striking S75° W along the contact between feldspar porphyry and peridotite. Along strike of this

shear to the south west is an outcrop of carbonatized and chloritized schist striking S75°W. South of this shear zone, pillows in the andesite have general strikes of N30°W while to the north, flow brecciation in the basalt strikes N20°E. It is therefore assumed that the shear zone represents a strong zone of faulting having a strike of S75°W. Although amount of displacement along this zone is unknown the direction may have been south side to the east as indicated from the aeromagnetic anomaly.

A second fault zone with a width of about 2 feet was noted to strike N35 E across the west boundary of claim 42728. Brecciation associated with this zone extends over a width of about 20 feet. This fault has displaced a diabase dike about 100 feet in the horizontal plane. The apparent movement along this fault has been east side to the north. The brecciated zone associated with this fault and the general area along the west boundary of claim 42728, where numerous minor fault slips and fracture zones occur, are mentioned under economic geology.

Shearing in the pyroclastics was noted in many locations along the east contact between the pyroclastics and the granite. These shears strike N20°E and are generally pyritic and carbonatized. The strongest of these extends from the central portion of claim 42708 to the northeast corner of claim 42705.

Diamond drill hole No. 5 on claim 42727 intersected a fault zone beneath the Redstone River and it is probable that the course of the river may in some measure mark a zone of fracture north-northeastward through the claim group.

ECONOMIC GEOLOGY

GOLD:

There is evidence on the ground that in years past

considerable prospecting has been done in the pyritic tuffs and porphyry. This has presumably been done for gold. Carbonatized zones marked by flakes of green mica, probably fuchsite and mariposite, and a lattice-work of quartz - carbonate veins and stringers were noted near the central portions of claims 42708 and 42726. Samples taken for gold assay in old trenchings on claims 42708, 15 and 26 gave nil values.

NICKEL:

Current interest in this immediate area stems from the discovery of nickel in a serpentinized peridotite about 2 miles north of the Queenston ground. The nickel discovery on the Fatima property occurs just east of the pyroclastic contact and thus the southward extension of this contact through the Queenston claims was considered as favourable prospecting ground. As noted earlier in this report small peridotite masses, somewhat similar to that in the Fatima zone, occur within the mass of basaltic lava underlying the aeromagnetic anomaly.

Surface exposure of one peridotite mass lying along the lava pyroclastic contact on claims 42722 and 42726 exhibits "Goose-Eggs" of pyrrhotite and pyrite similar to those found on a mineralized outcrop in the Fatima zone. Sampling of these sulphides gave nickel assays up to 0.25%. The sulphide mineralization does not appear to be related to any structures within the peridotite mass and may be the result of magmatic segregation. Furthermore, the nickel content does not appear to be confined to the sulphides. One specimen which carried no visible sulphides but had a high degree of serpentinization assayed 0.25% nickel. Subsequent diamond drilling of this peridotite mass failed to locate any ore grade sections.

Other peridotite masses within the map area were found to

be barren of sulphides and samples of these assayed for nickel gave results up to 0.16%.

Along the west boundary of claim 42728 the basalt is well fractured along a narrow north-south trending zone. Pyrite and pyrrhotite with sparse chalcopyrite occurs along these fractureplanes. These sulphides also occur, less abundantly, as disseminations throughout the basalt in this zone. The fracturing appears to be the result of cross-faulting in the vicinity of an east-west diabase dike. Samples of the more highly mineralized sections of this zone show a nickel content up to 0.56%. In this instance there may be a relationship between nickel content and the amount of pyrrhotite present but in general, it may be said that the lack of apparent relationship between the amount of pyrrhotite and the nickel content would suggest that nickel silicates are present.

COPPER:

No copper mineralization of economic interest was found on the claim group. Very sparse chalcopyrite was noted in fractured basalt along the west boundary of claim 42728 and in one amphibolite outcrop along the north boundary of claim 42715.

ASBESTOS:

Occurences of short asbestos fibre were noted in peridotite near the east boundary of claim 42726 and on the west boundary of claim 42728. In all cases the stringers are very narrow averaging about 1/32 of an inch in weak zones. In the outcrop along the east boundary of 42726 the asbestos stringers are widely spaced. On claim 42728 the stringers are more closely spaced but are still extremely narrow. These occurrences are of mineralogical and not economic interest.

SUMMARY OF EXPLORATION

The following exploration work has been performed to date

on the property:

- (1) Detailed geological mapping of 33 claims.
- (2) Prospecting, stripping and rock trenching on favourable areas.
- (3) A limited number of geochemical soil samples were taken in favourable areas with low results.
- (4) 5 diamond drill holes for a total of 2,411.5 feet.

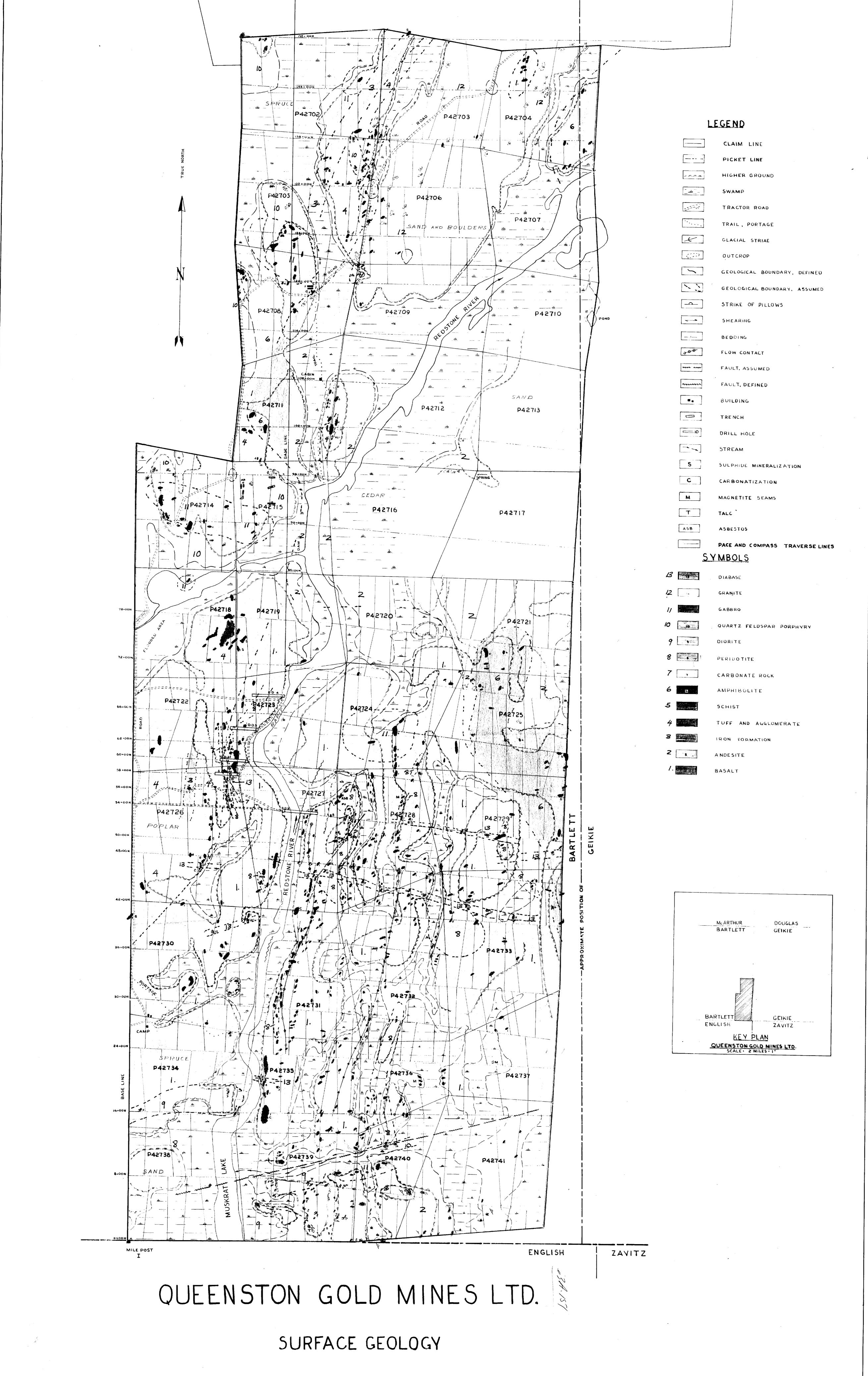
Nonald W. Jully Chief Geologist.

23rd January, 1958.

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Geologist.

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REDSTONE RIVER CLAIM GROUP

AUG. = OCT. 1957 SCALE : 1" = 400' GEOLOGY BY:

D. W. TULLY D. W. July

H. W MARSH Accorden 1

DRAWN BY : A. Mc INNES

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