



GEOLOGICAL REPORT  
CLAIMS S-39046 to 39049  
PENHORWOOD TOWNSHIP  
SUDBURY MINING DIVISION

GENERAL. The property described is part of a larger group of claims under development by Nib Yellowknife Mines Limited. Work on the entire property has been continuing for the past five months under the direction of F. Joubin, geologist, and L. Tessier, mining engineer. A crew of from two to five men has been employed. Details of the crew, work distribution and dates of its performance are given at the end of this report.

Prior to the recent geological mapping and prospecting on these claims by Nib Yellowknife Mines, some work had been done in the northeast corner of claim S-39046. This earlier work consists of the trenching shown on the plan and the sinking of a test pit or shaft to a depth of about forty feet. This early work was centered about a number of quartz filled shears and narrow quartz arsenopyrite stringer<sup>s</sup> which carry appreciable gold values.

PROPERTY AND TITLE. The four mineral claims considered, Nos. S-39046 to S-39049 inclusive, are part of a fourteen claim group under option to Nib Yellowknife Mines Limited of 19 Melinda Street, Toronto, Ontario.

LOCATION AND ACCESS. The four claims considered are situated in the north central part of Penhorwood Township, Sudbury Mining Division. They lie just to the east of

2-continued

West Creek.

The claims may be reached by a six mile road and river route from Kukatush (a flag-stop on the Canadian National Railway) or by a six mile road from Kukatush to Jehann Lake. From Jehann Lake the claims are traversed by the several trails shown on the accompanying plan.

GEOLOGY. As shown on the accompanying plan on a scale of 1 inch equals 200 feet, small outcrops are relatively numerous in the north and west portions of the four claim block. The central portion of these claims is occupied by a continuous, relatively narrow, north-trending, muskeg-filled depression which forms a widening fan towards the south boundary.

The rock types exposed are as shown on the plan. These consist of quartz diabase, feldspar porphyry, diorite, rhyolite, andesite and talc schist.

The quartz diabase (rock type No. 2 on the plan) is a fresh massive rock of dark green colour and of fine to medium grain. The form of the mass is not known, its contact being observed at only one point with andesite. No showings are known to occur in this rock type.

The feldspar porphyry (rock type No. 3 on the plan) is in places a quartz-feldspar porphyry. This rock type, distributed as shown on the plan, varies from a medium to coarse crystalline texture, is a grey colour and is generally massive with a blocking fracture. Presumably this porphyry forms one or more stock-like masses although their size and the position of the contacts are not exactly known. No mineral showings are known to occur in this rock

3-continued

type.

The diorite (rock type No. 4 on the plan) is a fine to medium grained, in general massive, hornblende diorite. In general it is of quite fresh appearance but locally, as in the north central part of claim S-39046 it is widely and intensely altered to carbonates. The diorite appears to form a single stock, with probably some protruding dykes or tongues, situated in the northeast corner of the block of claims here considered.

It is noteworthy that all known mineral showings of any interest on this property occur in this rock type and are generally localized to what appears to be the un-carbonated core area of the mass, just east of a talc schist zone.

The rhyolite (rock type No. 5 on the plan) is not widely distributed, appearing to form probably isolated patches in or bordering the intrusive rocks. This rock is a dense, fine grained, pale grey acidic rock. It is generally massive and fractures in a brittle manner. This rock type, although here grouped with the volcanics, may be, in whole or in part a fine grained, locally banded aplitic phase of the porphyry.

No mineral showings were found in the outcrops of this rock type examined.

The andesite (rock type No. 6 on the plan) appears limited to claim S-39049. This rock is a fine grained, green, generally massive type, locally containing recognizable amygdules. In general it is chloritized and locally schistose. No recognizable texture or structure was seen that might indicate its attitude.

No mineral showings are known to occur in this rock type on the claims considered.

The talc schist (rock type No. 7 on the plan) is probably the product of shearing associated with carbonatization of the porphyry and diorite intrusives. Not many outcrops of this rock type occur on these claims, probably because their composition and schistose nature allows for easy and quick erosion. This rock type, on the basis of attitude of the shearing, is believed to coincide, in part at least, to the north-south trending muskeg, which traverses the claims. In general, the talcose zones strike from N 10 to N 40 degrees E and dip from 80 degrees east to vertical. In addition to a wide zone of talc schist outcropping at the northeast corner of claim S 39047 and the northwest corner of claim S 39046, which zone is believed on the basis of mapping to the west to be a major fault zone, there is at least one other small zone of talc schist to the east. This latter zone would appear to strike about N 15 degrees E and mark the west boundary of all the quartz showings and surface trenching in the northeast corner of claim S-39046. Incidentally this smaller zone appears to also divide the carbonated (massive talcy) diorite to the west and the relatively fresh but locally sheared diorite to the east. It is not known if the smaller talc schist zone which cuts the diorite is a fault, since no applicable "marker" in determining any offset is present. It is presumed that it may be a fault, however, in view of its apparent association with much shearing and fracturing to its immediate east.

SECONDARY STRUCTURES AND INTERPRETIVE GEOLOGY. The attitude of the volcanic rocks, and their structure, are unknown owing to the complete lack of "top"

5-continued

determination data. In only one place was a contact between andesite and rhyolite (?) seen. Here the contact strikes N 45 degrees E and has an indeterminate dip.

The exact form of the porphyry mass is unknown. There may be one large irregular mass or at least two masses separated at surface.

The exact form of the diorite mass is unknown but, on these claims, it seems probable that this rock type forms a single mass.

The age relations between the porphyry and diorite are not indicated by outcrop data.

Shearing on these claims is marked by zones of talc schist and smaller, quartz-filled shears in the diorite. One shear, with N 15 degrees E strike, was observed in the andesite.

MINERAL SHOWINGS. These are all limited to the diorite rock where there is a minimum of carbonatization, as in the northeast corner of claim 8-39046.

The showings consist of quartz-filled shears which strike N 45 degrees E, making a thirty degree angle with the presumed strike of the talc schist zones. The quartz-filled shears contain a little pyrite, and in one instance some arsenopyrite. Gold values in these showings are negligible, running 0.01 or 0.02 ounces gold per ton.

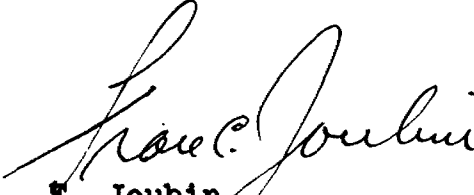
In the vicinity of the pit shown on the plan there is a fracture or shatter zone in relatively massive diorite. The fractures here strike in general northeast, dip in all directions at flat to steep angles and are filled by inch-wide stringers of

6-continued

quartz and quite plentiful arsenopyrite. These mineralized fractures together with the silicified brecciated diorite between them carry gold values. General samples of the fracture zone material extracted from the pit assay up to 0.20 ounces per ton in gold, with selected material returning much higher values. This mineralized fracture zone has been tested on surface for continuity but this important characteristic appears to be lacking.

The recent work by Nib Yellowknife Mines Limited failed to produce any additional showings.

Respectfully submitted,

  
F. Joubin,  
Geologist,  
October 20th, 1947,  
Toronto, Ontario.

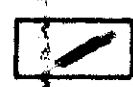



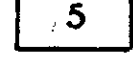


GEOLOGICAL REPORT

CLAIMS S-39046 to 39049


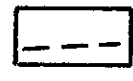
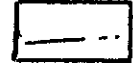
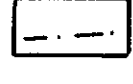

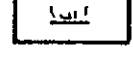
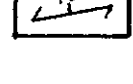

PENHORWOOD TOWNSHIP

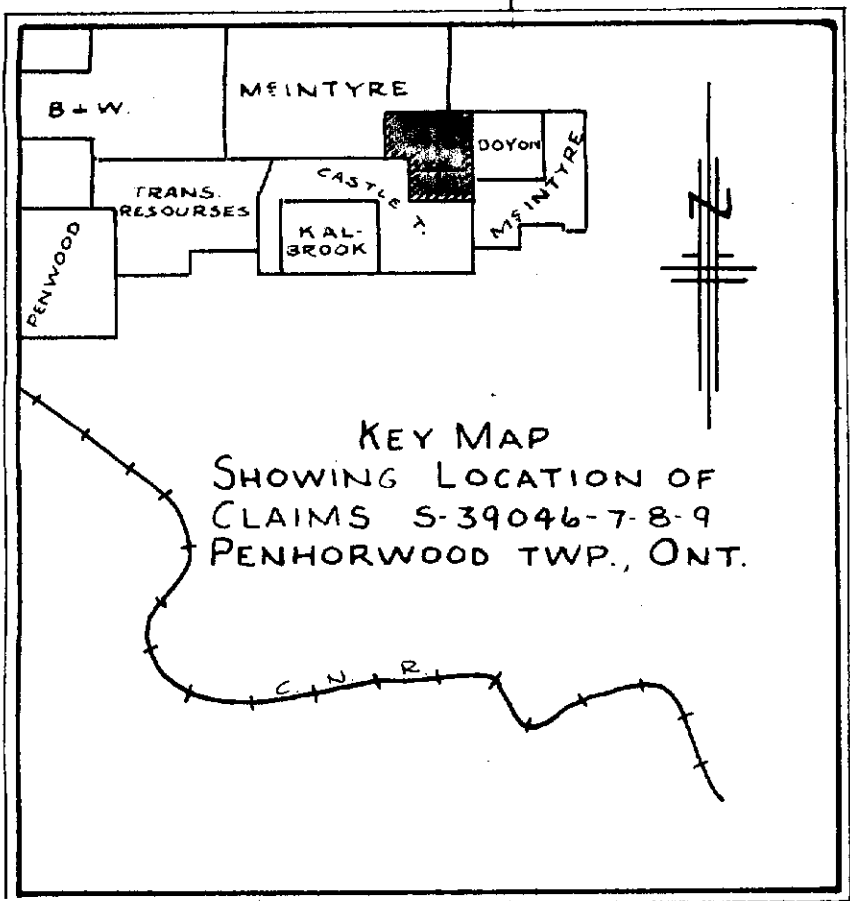
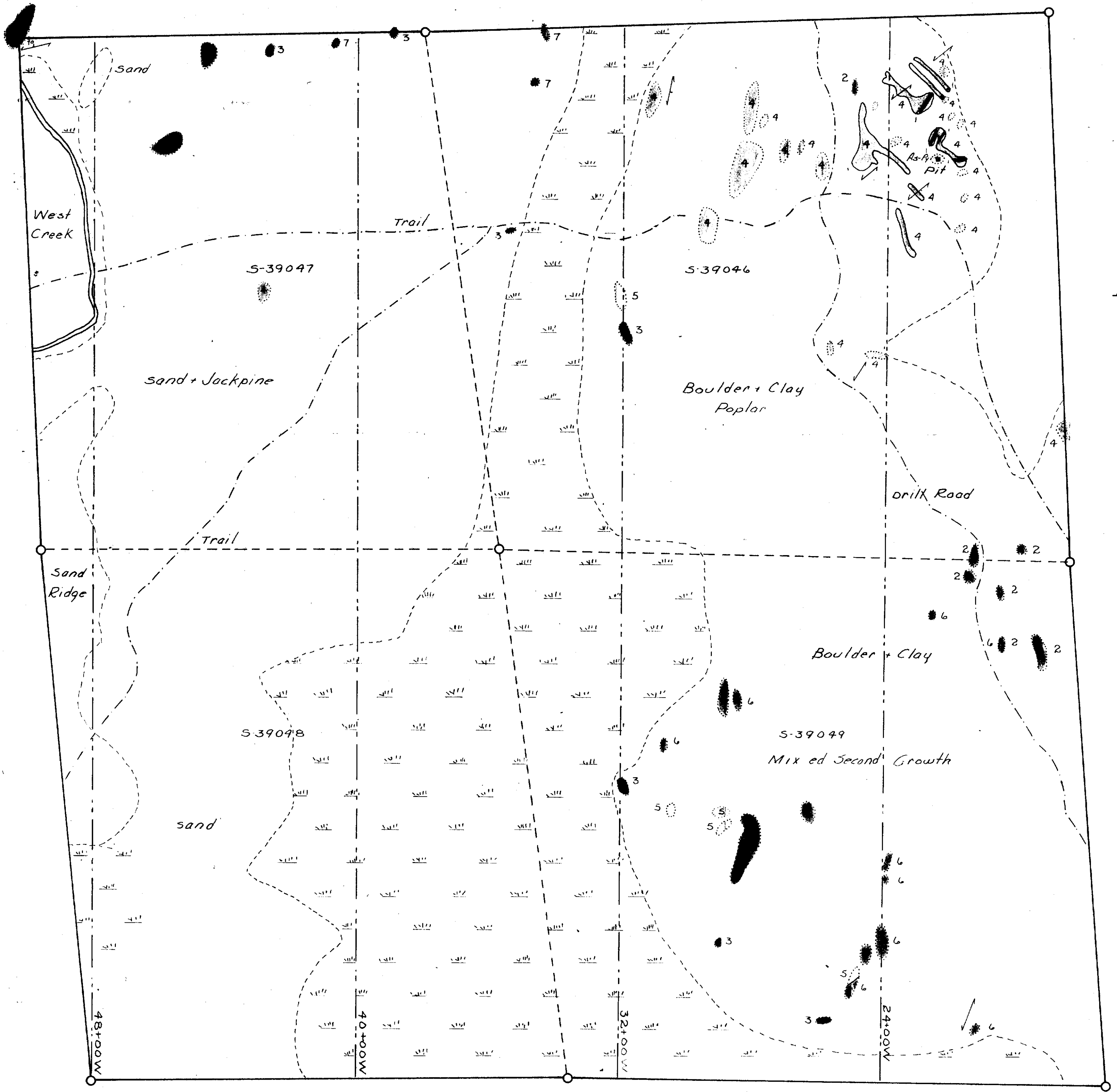
SUDBURY MINING DIVISION

**LEGEND**

-  Qtz Veins
-  Qtz Diabase
-  Feldspar Porphyry
-  Diorite
-  Rhyolite
-  Andesite
-  Tale Schist

**SYMBOLS**

-  Claim Post
-  Claim Line
-  Picket Line
-  Roads + Trails
-  Outcrop
-  Swamp
-  Schistosity
-  Trenches



**NIB YELLOWKNIFE MINES LTD.**  
 PENHORWOOD TWP., ONT.  
**GEOLOGICAL SURVEY**

SCALE: 1" = 200'  
 L. TESSIER & F. JOUBIN

COVERING DATES: JUNE 12th to JUNE 20th, 1947  
 OF SURVEY

