

Geological Investigation & Sampling of  
Placer Leaseholds 6600 thru 6604  
Keithley Creek Area; 52° 121° NE  
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Lease Owner: Abatis Exploration Ltd.  
Work Performed: Sept. 30-Oct 6, 1967

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GE OLOGIC INVESTIGATION and SAMPLING

of

PLACER LEASEHOLDS 6600 through 6604

in the

KEITHLEY CREEK AREA, BRITISH COLUMBIA

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GE OLOGIC INVESTIGATION and SAMPLING  
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PLACER LEASEHOLDS 6600 through 6604  
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STATUS of PLACER LEASEHOLDS

Placer leaseholds 6600 (Queen), 6601 (Lord), 6602 (Lady) 6603 (Knave), 6604 (King) were originally recorded on March 30, 1966. A cash payment in lieu of representational work was made in March of 1967 and the leaseholds at the present time are in good standing. They are held by Abatis Exploration Ltd. and have been consolidated to allow concentration of work on one leasehold.

AIMS and METHODS

The geologic history of the area and a study of air photographs show that these leaseholds cover a portion of an abandoned preglacial (or inter-glacial) channel of the Cariboo River. The object of the work was to determine the character and distribution of both the bench gravels in the northwestern part of the leaseholds and the gravels along the flanks of the steep valley walls at lower elevations. Weight restrictions on the Cariboo River bridge south of Keithley Creek precluded the use of heavy bulldozer equipment in the area and it was necessary to dig all sampling pits by hand. At the time the work was performed however, it was locally rumored that a heavier bridge capable of supporting heavy equipment may soon be constructed, at which time transport of bulldozer and drilling equipment will be possible.

Samples were taken at locations indicated on the accompanying maps. Extreme topographic relief in the central and southeastern part of the leaseholds necessitated transport of samples by back-pack to Keithley Creek for rocking and panning. Two, six inch by ten inch canvas bagfulls constituted each sample. A British Columbia Dept. of Mines - type rocker was used to separate the coarse material, and the fines from each sample were panned to determine the presence of any free gold. After a visual inspection the concentrates were collected in plastic vials for subsequent study and/or assay.

Geological mapping was controlled by Brunton-pace traverses.

Both sampling and mapping work was hampered by steep topography, dense forest cover and poor weather conditions.

### PERSONNEL

Geologic work and supervision including mapping and choice of sampling locations was performed by the author. Mr. Keith Braid of Calgary, Alberta did the sampling, rocking and panning with the aid of Mr. Al. Manning of Likely, British Columbia.

The work began on September 30th with reconnaissance of the leaseholds and surveying of sample profiles. A total of seven (7) days were spent in the mapping, sampling, rocking and panning and an additional one and one-half days were required in the office for organization of data and maps, and writing of the report.

### GEOLOGICAL SETTING

The northwestern part of the leaseholds cover a portion of a gravel covered bench on the northwest side of Cariboo Valley believed to have been cut by the ancestral Cariboo River. The bench stands 600 feet above the present level of Cariboo Lake and is flanked on the southeast by the steeply sloping lower wall of the Cariboo Valley. Several old flume

ditches traverse the valley wall below the upper bench and other gravel deposits, mainly younger and more limited in areal extent, can be seen along the southwest side of Keithley Creek on leaseholds 6604 and 6600. Some of these lower gravels may have been worked for their gold content during the time of the early mining activity in the Keithley Creek area. Several large barren scars can be seen on the northeast side of Keithley Creek where gravels were removed during early hydraulicking operations.

Forest cover is dense throughout the area of the leaseholds with the exception of a portion of leasehold 6602 which covers a part of the present Keithly Creek delta in Cariboo Lake. A few small clearings also exist in marshy areas on the upper bench. The remainder of the area is nearly everywhere covered by thick moss which masks both gravel deposits and bedrock. Occasional outcrops of bedrock can be seen on the steeper slopes, in the valley of Keithley Creek, and in some of the larger drainages southwest of Keithley Creek.

Bedrock mainly consists of grey and greenish grey phyllite, sericitic schist, and sericitic quartzite. Bedding attitudes are mainly westerly and range in dip from 20° to 35°. Geological Survey of Canada Map 3-1961 indicates these rocks to be of probable Cambrian age.

Lack of exposures prevents determination of the thickness of the upper bench gravels but the hummocky nature of the bench terrain indicates that the upper part of the gravels may consist partly of moraine gravels deposited during glacial recession. Mapping indicates the near surface bench gravels to consist mainly of tan, silty, fairly well rounded to angular gravels with occasional cobbles to 6 inches. Due to the extensive moss and root cover which is 6 inches to 1 foot in thickness, it was necessary to dig shallow holes with a hand-pick at intervals of 50 to 100 feet along the Brunton-pace traverse lines in order to determine the character of the underlying material. It is evident that gravels on the steeper slopes are of limited extent and minor thickness, and mainly comprised of recent hillwash. Angular bedrock fragments and occasional boulders form a large percentage of these hillwash deposits.

A few small gravel benches around 100 feet in width and 250 feet to 1,000 feet in length were mapped at lower elevations on leaseholds 6604 and 6600. The remains of two old caved prospect pits 3 feet and 8 feet in depth can be seen on these benches in the northern part of leasehold 6604.

### GEOLOGIC MAPPING and SAMPLING of GRAVELS

The accompanying maps (Plates 1, 2, 3 ) indicate the general character and distribution of the surficial deposits on the leaseholds. Two sample profiles (Plates 4 and 5) were run in the eastern part of leasehold 6600. Locations of the profiles are shown on Plate 2.

Mapping was done at a scale of 1 inch to 500 feet. The sidelines blazed during the original location of the leaseholds were flagged at 100 foot intervals to aid in keeping located on the ground. Traverses were designed to tie with the sidelines as often as possible in view of the difficult terrain and heavy forest cover.

Sample profiles A and B are drawn at the scale of 1 inch to 50 feet. Locations and descriptions of each sample are also shown. These gravels are approximately 150 feet in thickness. Samples were taken at 20 foot intervals on the steeper slopes from pits dug from 3 to 4 feet into the face of the hill. The steeper banks slope at 30 to 35 degrees and the resulting samples tested each 10 to 15 foot vertical interval. Samples on the upper more gently sloping parts of the profile were more widely spaced. Samples were transported by back-pack to Keithley Creek for rocking and panning.

Four pits were dug in the gravels in the eastern part of the upper bench and then carried to the creek 600 feet below for rocking and panning. These reached a depth of 4 to 5 feet and thus tested only the upper surface gravels. Though surface mapping indicates the presence of substantial thicknesses and considerable areal extent of gravels, adequate testing can be accomplished only through the use of bulldozing equipment or by drilling. No physical concentration of gold was found during the rocking and panning.

## CONCLUSIONS and RECOMMENDATIONS

Geologic mapping indicates the presence of probably substantial thicknesses of gravel on the upper bench of the Keithly Creek leaseholds. These should be tested by drilling. These deposits occupy approximately 40% of the area covered by leaseholds 6600, 6601, 6603 and 6604.

Gravel deposits on the steep slopes of the central and southeastern leasehold area are small and consist mainly of thin deposits of recent hillwash and silt with a high percentage of angular bedrock fragments.

Gravel benches encountered at lower elevations of the valley walls reach a maximum thickness on the order of 150 feet and are of modest areal extent. Two sample profiles over these gravels revealed no gold concentration.

Recent gravels on leasehold 6602 were untested.

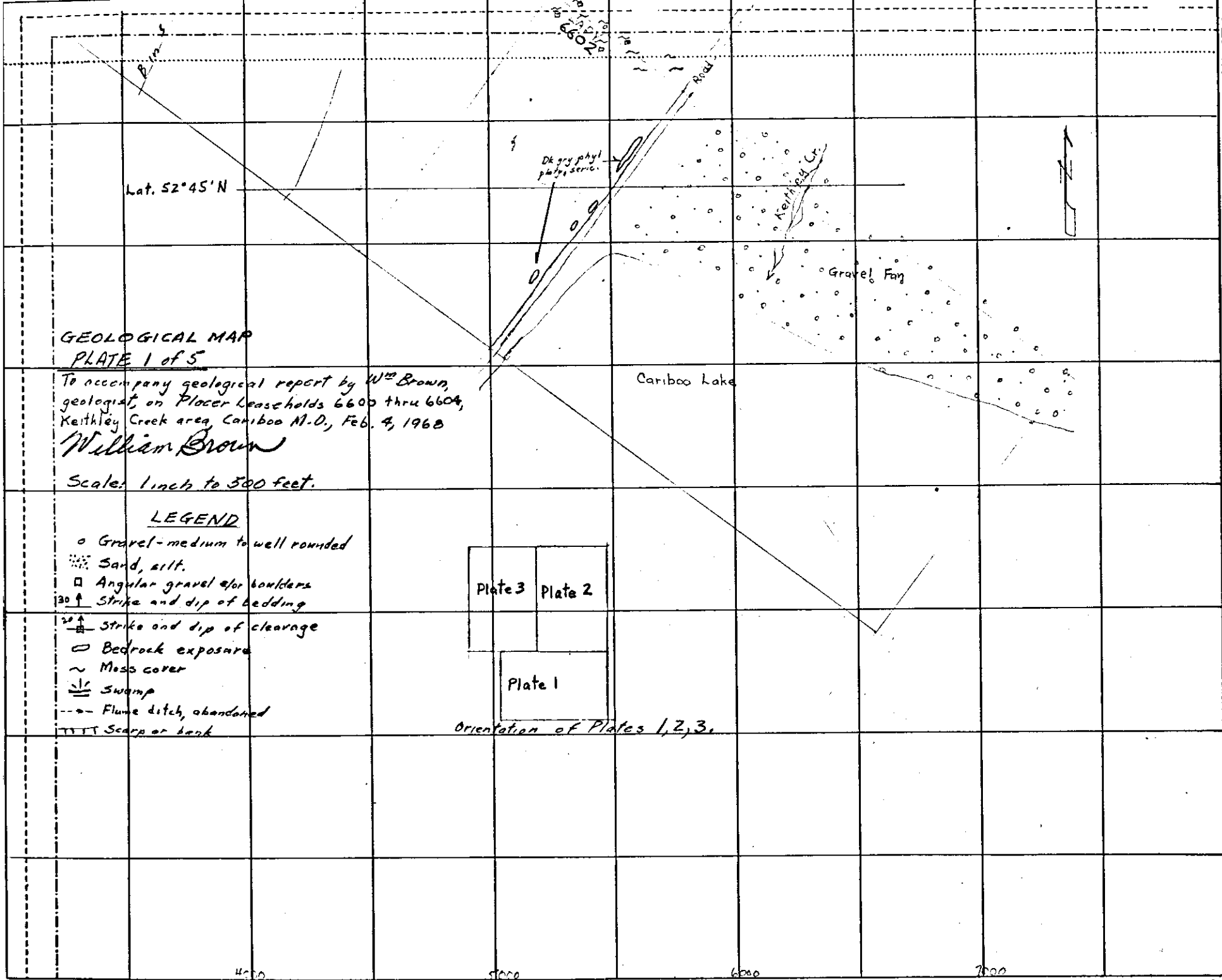
Geologic mapping confirms the presence of a gravel bearing shoulder, probably representing a remnant of pre-glacial or interglacial channel on the valley walls above Cariboo Lake.

A minimum of four or five holes should be drilled on this shoulder to determine their approximate thickness and general character. If results are encouraging, additional drilling should be performed should the gravels prove greater than 20 feet in thickness or if dense boulder clays or other indurated strata are encountered. If the gravels prove less than 20 feet in thickness and consist mainly of unconsolidated material, satisfactory work might be performed by cutting bulldozer trenches followed by sampling.

V. ZAY SMITH ASSOCIATES LTD.

  
William Brown, Senior Geologist





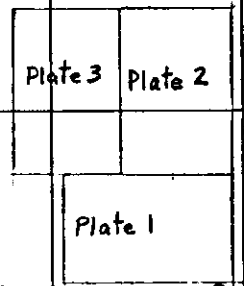
**GEOLOGICAL MAP  
PLATE 1 of 5**

To accompany geological report by W<sup>m</sup> Brown,  
 geologist, on Placer Leaseholds 6600 thru 6604,  
 Keithley Creek area, Cariboo N.D., Feb. 4, 1960  
*William Brown*

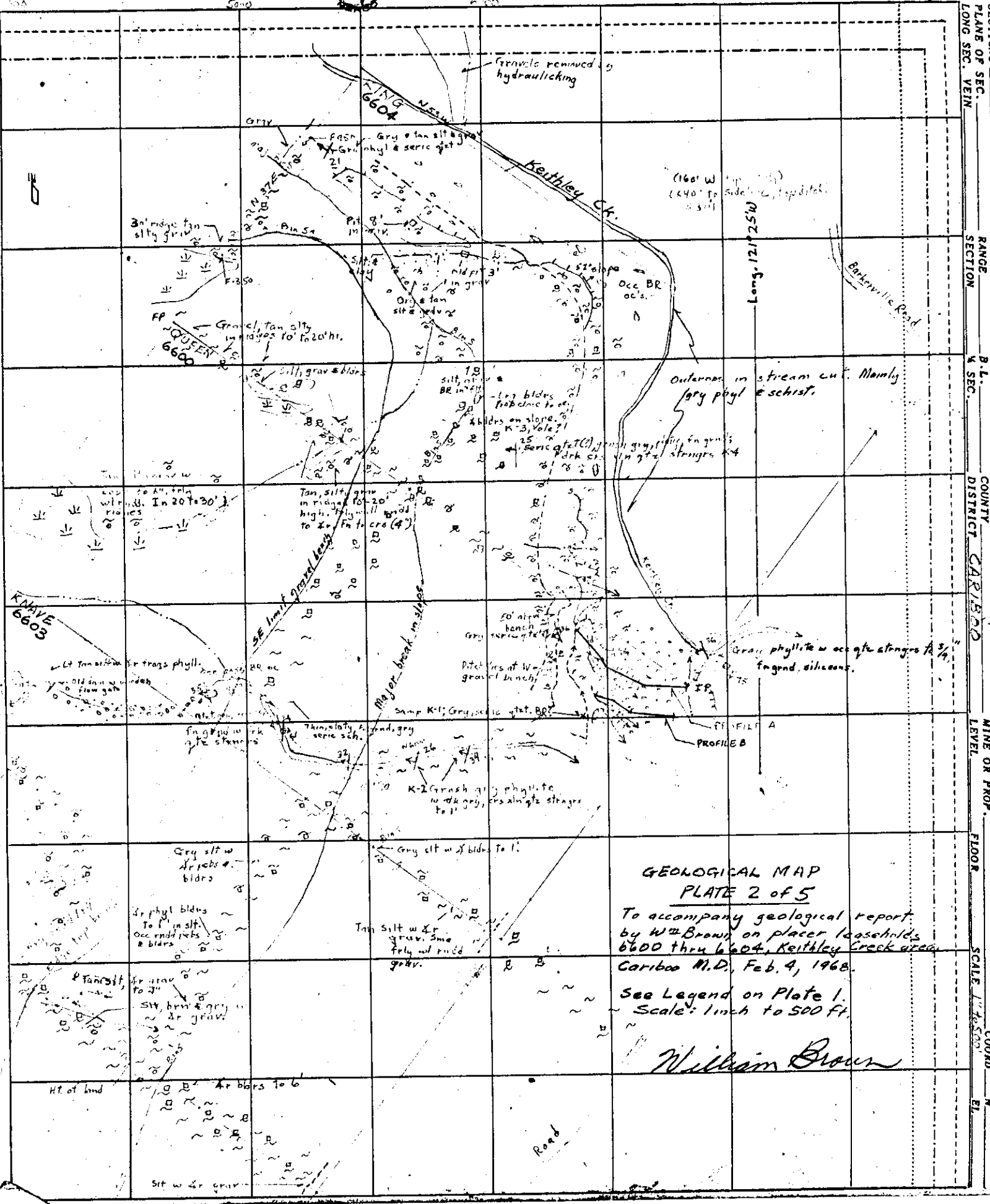
Scale: 1 inch to 500 feet.

**LEGEND**

- Gravel - medium to well rounded
- ⊞ Sand, silt.
- ◻ Angular gravel & boulders
- ↗ Strike and dip of bedding
- ↗<sup>20</sup> Strike and dip of cleavage
- Bedrock exposure
- ~ Moss cover
- ≡ Swamp
- - - Flume ditch, abandoned
- TTT Scarp or bank



Orientation of Plates 1, 2, 3.



**GEOLOGICAL MAP**  
**PLATE 2 of 5**  
 To accompany geological report  
 by W. Brown, on placer leaseholds  
 6600 thru 6604, Keithley Creek area,  
 Cariboo M.D., Feb. 4, 1968.

See Legend on Plate 1.  
 Scale: 1 inch to 500 ft.

*William Brown*

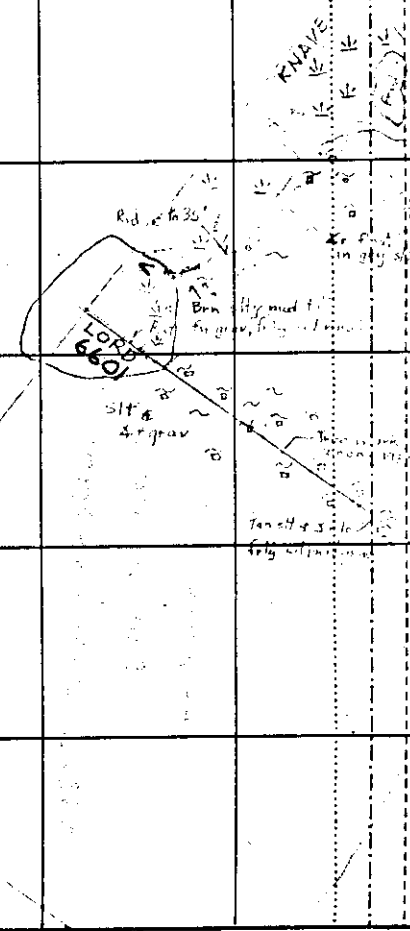
SECTIONS  
 PLANE OF SEC.  
 LONG SEC. VEIN  
 TOWNSHIP  
 RANGE  
 SECTION  
 K SEC.  
 COUNTY  
 DISTRICT  
 CARIBOO  
 STATE  
 MINE OR PROP.  
 LEVEL  
 FLOOR  
 SCALE 1" = 500'  
 COORD  
 EL.

TOWNSHIP \_\_\_\_\_  
 RANGE \_\_\_\_\_  
 SECTION \_\_\_\_\_  
 P. M. \_\_\_\_\_  
 B. S. \_\_\_\_\_  
 COUNTY \_\_\_\_\_  
 DISTRICT \_\_\_\_\_  
 STATE \_\_\_\_\_  
 COMPANY \_\_\_\_\_  
 MINE OR PROP. \_\_\_\_\_  
 LEVEL \_\_\_\_\_  
 FLOOR \_\_\_\_\_  
 ZONE REF. \_\_\_\_\_  
 MER. \_\_\_\_\_  
 COORD \_\_\_\_\_  
 N \_\_\_\_\_  
 E \_\_\_\_\_  
 SCALE 1" = 500'

GEOLOGICAL MAP  
 Plate 3 of 5

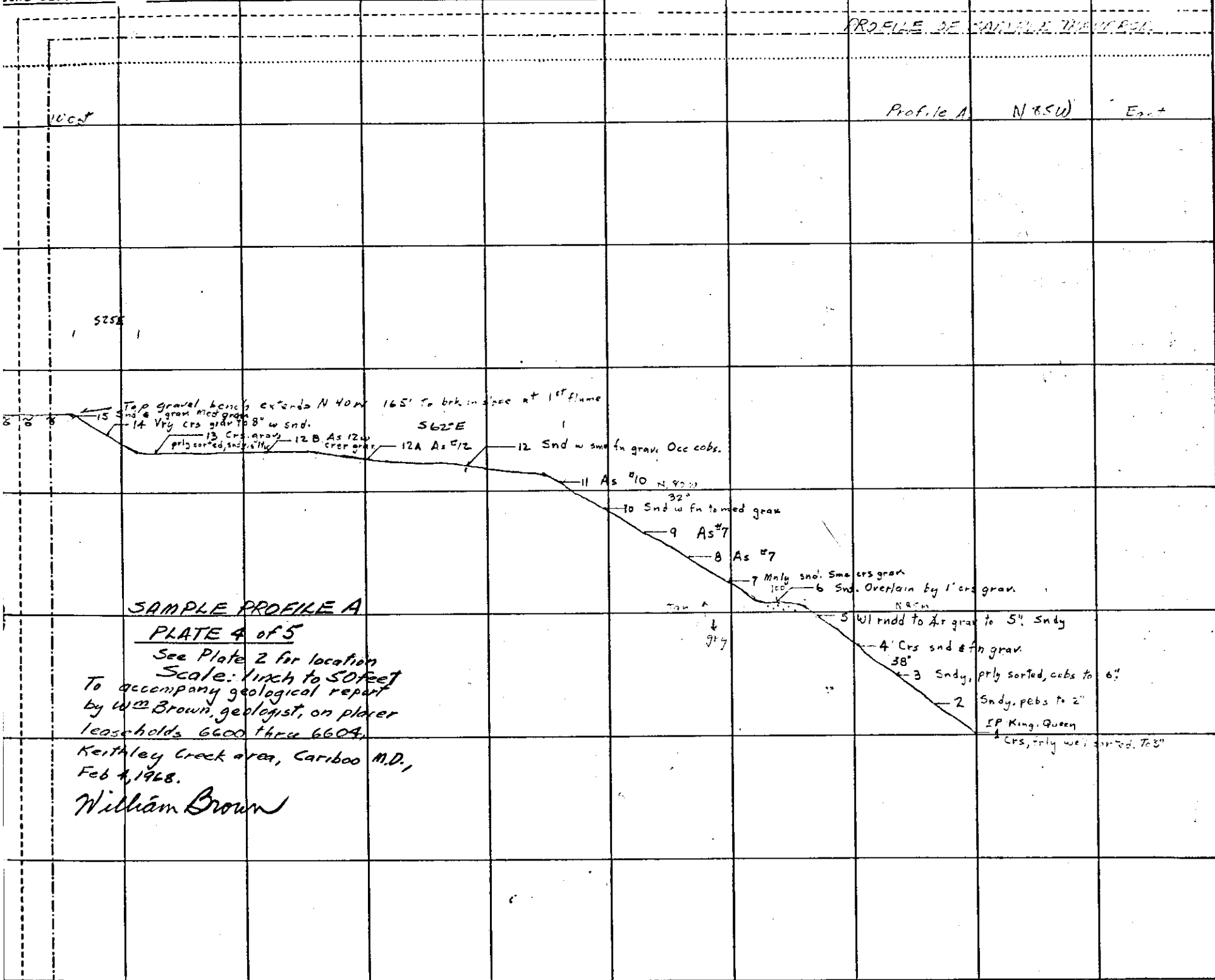
To accompany geological report  
 by W. B. Brown on placer leaseholds  
 6600 thru 6604, Keithley Creek area,  
 Cariboo M.D., Feb. 4, 1948  
 William Brown

See Legend on Plate 1.  
 Scale: 1 inch to 500 ft.



PROFILE OF SANDWICH MOUNTAIN

Profile A N 85W East



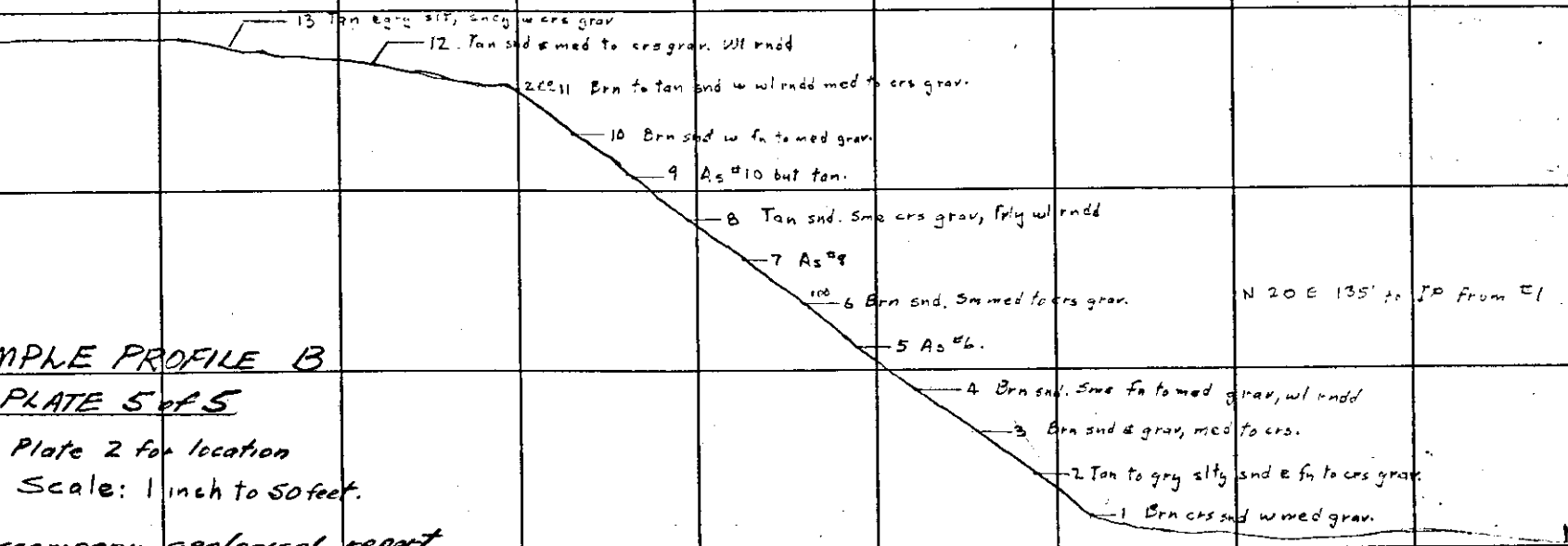
**SAMPLE PROFILE A**

PLATE 4 of 5

See Plate 2 for location  
 Scale: 1 inch to 50 feet  
 To accompany geological report  
 by W. M. Brown, geologist, on placer  
 leaseholds 6600 thru 6604,  
 Keithley Creek area, Cariboo M.D.,  
 Feb 4, 1968.  
 William Brown

STOW 1 S 82 E 1 N 82 W 1 N 82 W 1

SAMPLE PROFILE B



**SAMPLE PROFILE B**

**PLATE 5 of 5**

See Plate 2 for location

Scale: 1 inch to 50 feet.

To accompany geological report  
 by Wm Brown, geologist, on placer  
 leaseholds 6600 thru 6604, Keithley  
 Creek area, Cariboo M.D., Feb 4, 1968  
 William Brown