

2031

GEOPHYSICAL REPORT

Gravity Survey of Giant 25 Mineral Claim  
Hope, B. C.  
Near American Creek, 49<sup>o</sup>, 121<sup>o</sup>, S.E.  
New Westminster M.D.

for

Kelso Exploration Ltd.  
Vancouver, B. C.

by

GEO CAL LIMITED  
West Vancouver, B.C.

August 4 to 8, 1969

C. B. Selmser, P. Eng.  
Geophysicist

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Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. **2091** MAP.....

GEOPHYSICAL REPORT

Gravity Survey of Giant 25 Mineral Claim  
Hope, B. C.

INTRODUCTION:

This area as seen on the Index Map (Fig. 1), is some 3 miles north of the town of Hope, B. C. The geographic coordinates of this area are  $49^{\circ} 25'$  north latitude and  $121^{\circ} 27'$  west longitude. Access may be had to the Giant 25 claim from a north to south road on line C and another road on line G. These gravel roads are connected to a system of lumbering roads which connect with Highway No. 1, north of Hope, B.C.

This survey was carried out in order to discover ultra basic host rocks that would contain economic amounts of copper and nickel sulphide ore. These ultrabasic intrusives are composed mostly of the mineral olivine, which gives the rock a high gravity value.

WORK SUMMARY:

This survey was accomplished from August 4th to 8th inclusive with a three man crew. This crew consisted of an instrument man, rodman and meter observer. These were as follows:

Instrument man - Mr. J. Sluggett  
Rodman - Mr. K. Wile  
Meter Observer - Mr. P. Connell

The above named men lived at the Cariboo Motel near the property. They commuted to the survey location each day using a four-wheel-drive vehicle. These men have had a couple of years' experience doing surveys of this nature.

The line cutting had already been performed for a magnetometer survey. It was only necessary to clear a line of sight for the survey party and the same stations were occupied as were used to do a previously performed geochemical survey.

INSTRUMENTATION:

The gravity station values were read with a Worden Gravity Meter No. XP2, which was manufactured by the Houston Technical Laboratories, Houston, Texas.

This instrument automatically compensates for normal temperature changes which were all that were encountered in this survey. A daily diurnal record was kept of the meter while in operation for this survey.

The elevation control was made using a Theodolite of Japanese manufacture. Distances were measured using the stadia hairs of the instrument and a rod. Elevations have been computed using vertical angles and zero closure error was made to the nearest 1/10th of a foot.

SURVEY PROCEDURES AND CALCULATIONS:

The dial constant for this meter is calculated to be 0.1202 Milligal per division and readings were recorded directly from the spring compensating micrometer dial. This meter has proved to give steady operation over the last 12 years.

The base station used for diurnal checks was that at C-1 and subsidiary bases were set up at A-1, B-1, D-1, E-1, F-1 and G-1. Repeat readings were made at all stations which showed unusual readings.

The Bouguer factor correction of 0.622 was used to make a combined elevation correction factor and density plate correction. This factor had been determined in a preceding survey on Giant 1 and BEA 23 claims.

GENERAL GEOLOGY:

The rocks in this area are similar to those found in the vicinity of Giant Mascot Mine. These consist of Peridotite, Hornblendite, Pyroxenite, Diorite and Granodiorite. The Peridotites, Hornblendites and Pyroxenites are ultra basic rocks with a rather high specific gravity and the Diorites and Granodiorites are relatively of lower specific gravity. These rocks collectively will be referred to as basic rocks with high closures and acid rocks with low closures.

The following densities are quoted as a reference in order to relate the lithology of the survey area with the Bouguer Gravity Values. (Fig. 3)

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Handbook of Physical Constants by Francis Birch, Geological Society of America

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<u>Rocks</u>	<u>Mean Density (c.g.s. units)</u>
Quartz Diorite	2.806
Dacite	2.505
Dunite	3.289
Andesite	2.474
Biotite Schist	3.15*

\* Estimated

GEOPHYSICAL INTERPRETATION:

In order to study the terrain effect an Elevation Map (Fig. 2) has been made. This indicates that the land form drops toward the east from 3600 feet a.s.l. to 3300 feet a.s.l. In at least two locations steep ridges are evident. These are on lines B and E. At these points it was necessary to make a terrain correction of +20.0 gravity units. After these corrections and the Bouguer corrections had been made it was discovered that the map (Fig. 3) was so well balanced that it could be interpreted directly without making residual determinations.

The Bouguer Gravity Map (Fig. 3) shows that more basic rock types are centered within the 420.0 gravity unit closures marked (H I) and the more acid rock types are centered within the 400.0 gravity unit closures marked (L O). Also survey line C is occupied by a proposed fault location where acid rock types are situated opposite basic rock types giving a dextral fault movement.

CONCLUSION:

The sharp differentiation between the iso-gravity lines in the area between lines C and D depicts a sharp gravity change which could only be explained in this case by a fault structure. In the vicinity of station D-4 there seems to be a tongue of basic rocks plunging toward the east. Structurally this seems the best location in the area for the existence of a dunite pipe and probable emplacement of sulphide ores.

RECOMMENDATION:

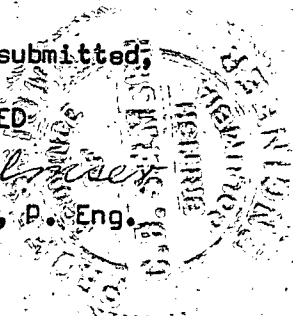
It is proposed that test diamond drill hole be drilled at station D-4 or 50 feet due east of this location. The hole should be drilled in a vertical direction to a mean depth below the ground of 200 feet.

Respectfully submitted,

GEO CAL LIMITED

*C. B. Selmsier*

C. B. Selmsier, P. Eng.



CERTIFICATE OF QUALIFICATIONS

The author is a graduate of McGill University in Mining Geology with a M.Sc. degree, with graduate studies at the University of Toronto in Geophysics. He has also been qualified in both engineering geology and geophysics as a professional engineer.

The author has had over 20 years' experience in the fields of Geology and Geophysics. During this time he was a gravity supervisor for Texaco Exploration Company for 5 years and did gravity work for International Nickel Company as Chief Geophysicist and for Spartan Air Services as Chief Engineer in their Exploration Department.

The author has been a member of the Association of Professional Engineers of Ontario, Alberta and British Columbia for the past 15 years. He has been active in exploration in this province for the past 5 years.

His knowledge of the property outlined in this report has been gained from geophysical surveys performed personally on this property. Reference has also been made to government reports and pertinent text books.

The author has no financial interest in this property, other than the present survey. Any remuneration received has been for expenses incurred during the survey.

*C. B. Selmsier*

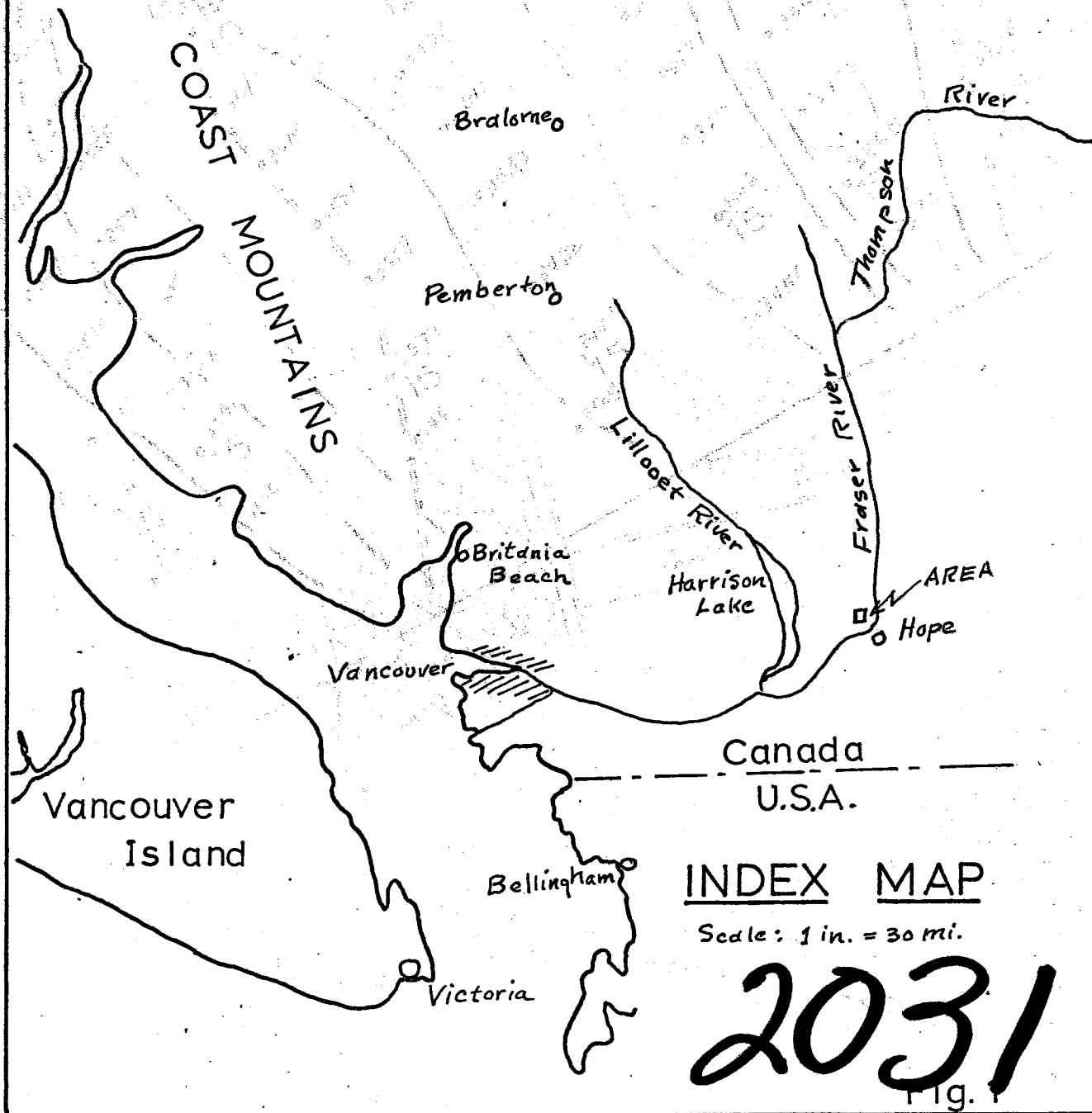
C. B. Selmsier, P. Eng.

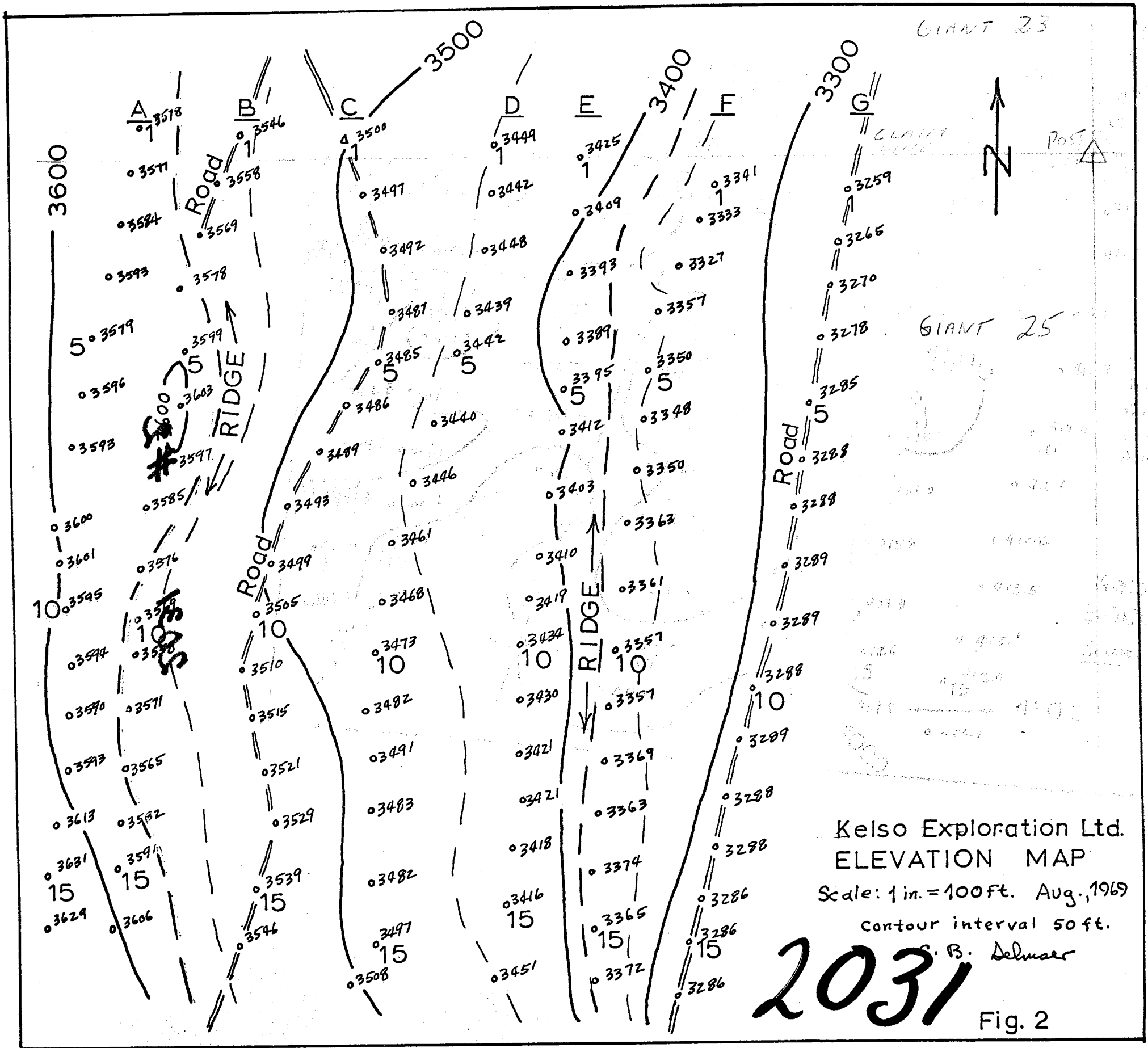


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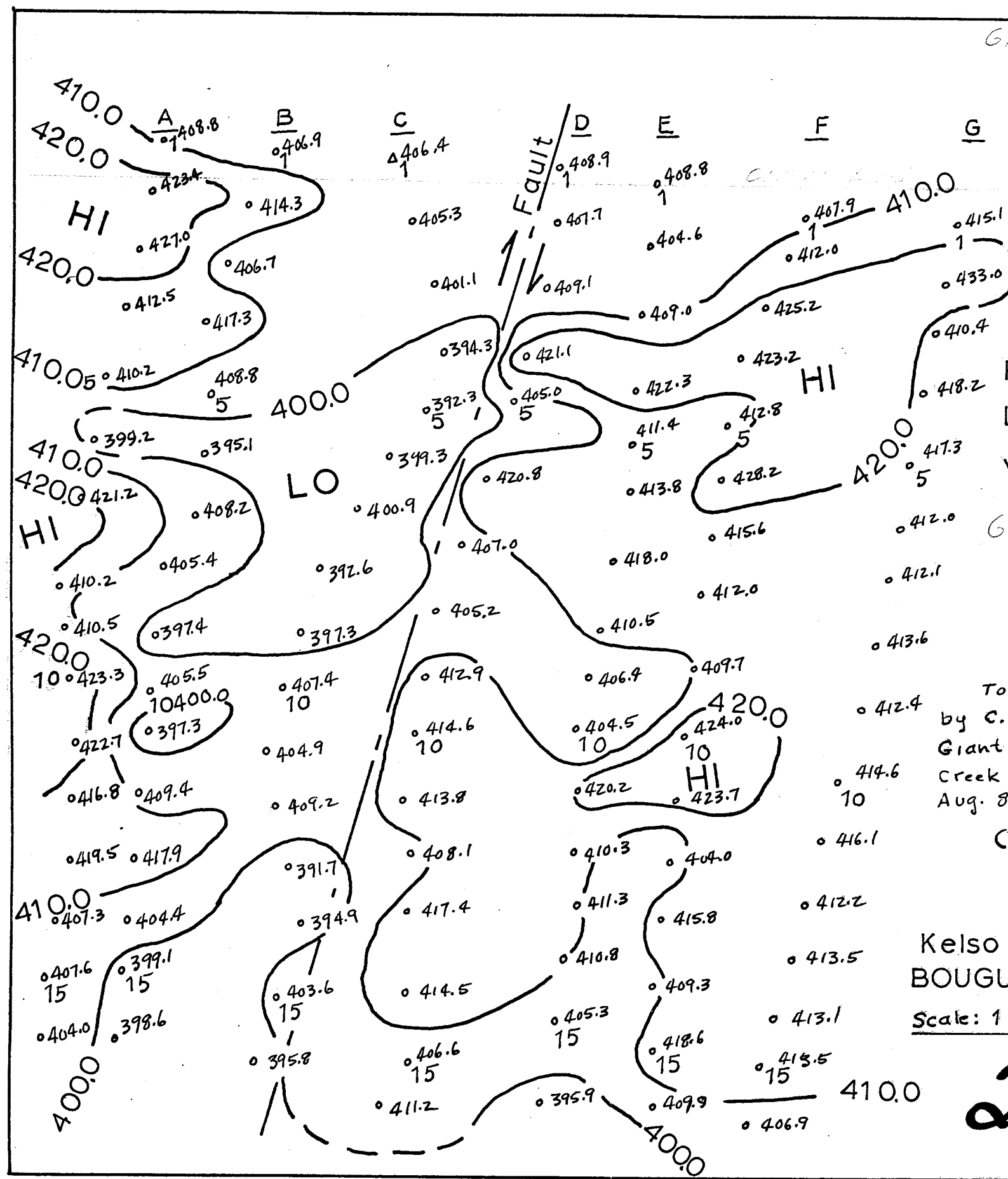
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# BRITISH COLUMBIA





GIANT 23



LEGEND

HI high closure  
 LO low closure  
 values - Gravity Units

GIANT 25

To accompany a report  
 by C. B. SELMSER, P. Eng.  
 Giant 25 M.C. near American  
 Creek, New Westminster M.D.  
 Aug. 8, 1969.  
 C. B. Selmsler, P. Eng.

Kelso Exploration Ltd.  
 BOUGUER GRAVITY  
 Scale: 1 in = 100 ft. Aug. 1969

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Fig. 3