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REPORT ON THE
MOON 1 TO 55 MINERAL CLAIMS
DAWSON MINING DISTRICT
NTS 116 B/3

BY

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ARCHEAN ENGINEERING LIMITED

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REPORT ON THE
MOON 1 TO 55 MINERAL CLAIMS
DAWSON MINING DISTRICT
YUKON TERRITORY
NTS 116 B/3

SUMMARY

In 1984, GALLANT GOLD MINES LTD. optioned 55 full-size claims in the Klondike Mining District of northwestern Yukon Territory, approximately 12 km (8 miles) southeast of Dawson City. The claims were staked on the southside of the Klondike River adjacent to some of the most productive placer gravel deposits in the Klondike.

The geology of the claims indicates that the area is underlain by Klondike Schist which is considered to be genetically related to the source of gold. The origin of the gold has long been debated because few sizeable, rich, primary gold-bearing deposits have ever been found in the district. Since the turn of the century it has been assumed that the gold came from quartz deposits near the head waters of the main drainages but a recent re-interpretation of the district indicates three possible sources: 1) a relatively high-grade, undiscovered, and probably stratiform, (pyritiferous graphitic schist) deposit; 2) low-grade, secondary, and younger, narrow quartz veins which are abundant in the Klondike Schist; 3) chemical precipitation within the active stream channels; and 4) hydrothermal veining from Tertiary Aged igneous activity. Recently work (Defresne and Morison, 1985) identified hydrothermal alteration along the base of the White Channel Gravels. This work suggests that gold emplaced within these gravels may be of hydrothermal origin.

Ground geophysics has determined the ground position of several anomalies outlined by the 1984 airborne geophysical programme. Ground geophysics (VLF-EM) has also demonstrated its usefulness as an aid to geologic mapping by identifying and tracing graphitic bearing horizons.

The reconnaissance geochemical survey outlines several areas of anomalous metal values which will require additional sampling to determine its importance.

In view of the conceptual interpretation of the origin of gold in the Klondike these claims are strategically located and warrant additional systematic exploration. Additional work including detail aerial photogrammetric interpretation of all linear features, geologic mapping and prospecting, geophysical and geochemical surveys, trenching, and diamond drilling is recommended.

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1.0 INTRODUCTION

In 1983, an independent aerial photogrametric project was carried out by Mr. William Dawson to trace geologic units and to identify source areas for gold mineralization in the Klondike Placer Gold Camp. This survey identified the existence of a geologic, probably stratiform, unit believed to be the principal source for placer gold in the Klondike. This suspected source was staked for lode mineralization in the late winter and early spring of 1984.

During 1984, a dialogue was established between the staking syndicate and **GALLANT GOLD MINES LTD.** in which the latter company agreed to purchase 55 full-size mineral claims, or parts thereof, **MOON 1 to 55**, located on the southside of the Klondike River near the confluence with Hunker Creek. Prior to these negotiations, the writer was retained by the staking syndicate to examine the general Klondike Gold Camp and appraise this area and, if warranted, to make recommendations for further exploration.

This report discusses the results of this early examination and my continuing involvement in the exploration and development of this area. In addition, this report includes the reviewing of available literature on the Klondike Mining District; and outlines a two-staged exploration and development programme.

1.1 LOCATION AND ACCESS

Dawson City is, and has been since early gold rush days of 1897 and 1898, the principal population and supply centre of northwestern Yukon. Until 1953 it was the territorial capital. It can be reached via the two-lane, mostly gravelled, Klondike Highway from Whitehorse on the Alaska Highway, a distance of 535 km (333 miles). Dawson City is served by scheduled flights of Trans Northern Airways from Whitehorse where connections to Vancouver or Edmonton are available.

The **MOON 1 to 55 Mineral Claims** are located 12 km (8 miles) southeast of Dawson City in the famous Klondike Mining District. The claims are located along the south side of the Klondike River immediately south of the confluence with Hunker Creek (Figure 1). Relief is on the order of 425 metres (1400 feet) with elevations ranging from 365 metres (1200 feet) to 790 metres (2600 feet). Terrestrial coordinates for the centre of the claim block are as follows:

64° 01' North Latitude
139° 12' West Longitude

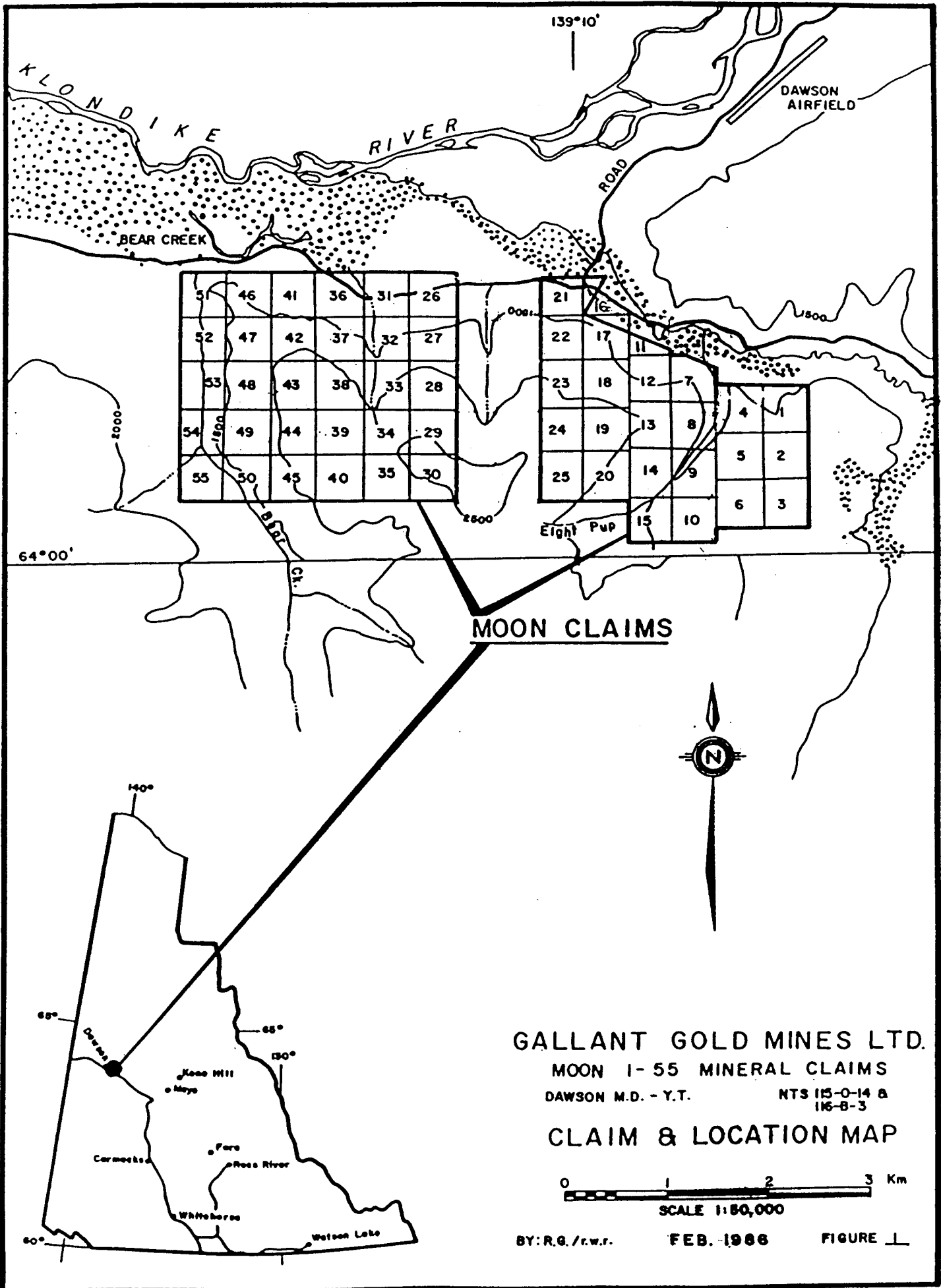
Excellent access to the property is provided by the Dawson-Stewart Crossing Highway. This road is a well-maintained, all-weather, graded gravel road which crosses and parallels the claim's northern boundary.

1.2 PHYSIOGRAPHY AND CLIMATE

The Klondike region forms a part of the Yukon Plateau or upland surface which, locally, occupies an area between the Pacific and Alaskan Mountain Ranges to the west and northwest, the Ogilvie Mountains to the northeast and east, and the Dawson Range to the southwest and south.

The region has been described as a typical example of a thoroughly dissected upland which was elevated at one period in its history into a high plateau. This plateau was subsequently deeply eroded by a multitude of small streams, tributary to the main water courses. A secondary uplift resulted in further deepening of the valleys of from 150 metres (500 ft.) to 200 metres (700 ft.). Portions of the old valley-bottoms, still covered with thick accumulations of gravel forming terraces of varying width, border the newer valleys (McConnell, 1905; also, G.S.C. Mem. 284, 1957). Today, the valleys are flat and wide in their lower reaches, but gradually narrowing toward their head waters into steep-sided gulches ending in broad, amphitheater-shaped bowls.

Locally within the Klondike region, the drainage is dominated by the northerly flowing Yukon River and its westerly flowing tributaries, the Klondike River on the north and the Indian River on the south. The intervening Klondike area to the east of the Yukon River is a gently rolling, mature, and deeply dissected upland with tributaries to the Klondike and Indian Rivers radiating from a more or less centrally located topographic and drainage high point known as King Solomon Dome, located approximately 32 km (20 miles) southeast of Dawson City.



GALLANT GOLD MINES LTD.
 MOON 1-55 MINERAL CLAIMS
 DAWSON M.D. - Y.T. NTS 115-0-14 & 116-B-3
 CLAIM & LOCATION MAP

The Klondike proper occupies an area of approximately 30 by 60 km (18 by 37 miles), its long axis extending southeasterly from Dawson City which is situated at the northwestern apex of the main gold-producing region. Elevations within the Klondike range from 320 metres (1050 ft.) at Dawson City to 1295 metres (4048 ft.) at the top of King Solomon Dome, a span of approximately 915 metres (3000 ft.). The principal gold-producing streams of the Klondike originate near, and radiate in a general way from, King Solomon Dome, flowing eventually into the Klondike River on the north and the Indian River on the south and thence into the Yukon River.

The Klondike region was not glaciated and, as a result, the deeply weathered, pre-glacial, gently rolling upland surface has been preserved. A thick covering of decomposed schist, usually intermingled with slide rock, mantles the side hills nearly everywhere. On the ridges the covering is less; the schists, often worn into fantastic shapes, occasionally project above the surface or crop out along the sides of the steeper hills.

The region has a northern continental climate, characterized by low precipitation and a wide temperature range. The winters are intensely cold and long, while the summers, although short, are pleasant with cool nights and warm days. Because of the land form there is a tendency for local micro-climates to develop at the bottom of steep valleys which involves higher summer maxima and lower winter minima than are recorded in Dawson City. Precipitation is only about 30 cm (12 in.) per year with more rain in summer than snow in winter. Most of the mountain ridges are free of snow by mid-July, but frost may occur at any time during the summer. As a rule, precipitation is so low that shortages of water for placer mining are sometimes experienced.

Vegetation is mixed boreal forest and tundra. Immature and stunted stands of aspen, balsam poplar, and birch are present in the valley bottoms and are beginning to reclaim the older mining areas. Softwood timber consisting mainly of white and black spruce are limited to slopes and ridge tops.

1.3 CLAIM INFORMATION

The property is located in the Dawson Mining District of northwestern Yukon Territory and consists of 55 claims covering an area of approximately 1300 hectares. Claim information is listed in **TABLE I** below:

TABLE I
CLAIM STATUS

CLAIM NAME	RECORD NO.	DATE CLAIM RECORDED
MOON 1	YA 79671	27 February, 1984
MOON 2	YA 79672	27 February, 1984
MOON 3	YA 79673	27 February, 1984
MOON 4	YA 79674	27 February, 1984
MOON 5	YA 79675	27 February, 1984
MOON 6	YA 79676	27 February, 1984
MOON 7	YA 79677	27 February, 1984
MOON 8	YA 79678	27 February, 1984
MOON 9	YA 79679	27 February, 1984
MOON 10	YA 79680	27 February, 1984
MOON 11	YA 79681	27 February, 1984
MOON 12	YA 79682	27 February, 1984
MOON 13	YA 79683	27 February, 1984
MOON 14	YA 79684	27 February, 1984
MOON 15	YA 79685	27 February, 1984
MOON 16	YA 79686	27 February, 1984
MOON 17	YA 79687	27 February, 1984
MOON 18	YA 79688	27 February, 1984
MOON 19	YA 79689	27 February, 1984
MOON 20	YA 79690	27 February, 1984
MOON 21	YA 79691	27 February, 1984
MOON 22	YA 79692	27 February, 1984
MOON 23	YA 79693	27 February, 1984
MOON 24	YA 79694	27 February, 1984
MOON 25	YA 79695	27 February, 1984
MOON 26	YA 79696	27 February, 1984
MOON 27	YA 79697	27 February, 1984
MOON 28	YA 79698	27 February, 1984
MOON 29	YA 79699	27 February, 1984
MOON 30	YA 79700	27 February, 1984
MOON 31	YA 79701	27 February, 1984
MOON 32	YA 79702	27 February, 1984
MOON 33	YA 79703	27 February, 1984
MOON 34	YA 79704	27 February, 1984
MOON 35	YA 79705	27 February, 1984
MOON 36	YA 79706	27 February, 1984
MOON 37	YA 79707	27 February, 1984
MOON 38	YA 79708	27 February, 1984
MOON 39	YA 79709	27 February, 1984
MOON 40	YA 79710	27 February, 1984

TABLE I (continued)

CLAIM STATUS

<u>CLAIM NAME</u>	<u>RECORD NO.</u>	<u>DATE CLAIM RECORDED</u>
MOON 41	YA 79711	27 February, 1984
MOON 42	YA 79712	27 February, 1984
MOON 43	YA 79713	27 February, 1984
MOON 44	YA 79714	27 February, 1984
MOON 45	YA 79715	27 February, 1984
MOON 46	YA 79716	27 February, 1984
MOON 47	YA 79717	27 February, 1984
MOON 48	YA 79718	27 February, 1984
MOON 49	YA 79719	27 February, 1984
MOON 50	YA 79720	27 February, 1984
MOON 51	YA 79721	27 February, 1984
MOON 52	YA 79722	27 February, 1984
MOON 53	YA 79723	27 February, 1984
MOON 54	YA 79724	27 February, 1984
MOON 55	YA 79725	27 February, 1984

1.4 HISTORY AND PREVIOUS PRODUCTION

The colourful history of discovery, development, and subsequent mining of placer gold in the Klondike has been documented by many authors and historians and is therefore treated only briefly herein.

The earliest reported discovery of gold dates to the mid-1800's, but not until the phenomenally rich "Klondike Discovery" in 1896 on Bonanza Creek and the subsequent gold rush of 1897-98, was much interest paid to the area. Gold production from the Western Cordillera of Canada to the end of 1978 totals 35 million ounces, of which over 11 million ounces were produced from the Klondike.

The mining history of the Klondike can be divided into four overlapping periods: 1) hand and primitive mining, 2) dredging, 3) dormant, and 4) renewed activity.

Hand and primitive mining methods lasted about nine years (1896 to 1905) and were undertaken usually by individuals or small groups. Production through these early years was estimated by McConnell in 1905 to have been over 5.5 million ounces; this production was primarily by shaft sinking and drifting along bedrock or by open-cut mining. When water was available and the topography allowed the use of hydraulicking operations, good results were possible.

The first dredge was introduced in 1903, and although there were some non-production years during the start of this period, the last dredging operation ceased production in 1966. During the more than 60 years of dredging over 400 million yards of creek and river gravels were treated and more than 5.5 million ounces of gold recovered.

Dredging operations began to decline in the late 1950's and ended in 1966 initiating the 10 to 12 year dormant period. During this time only a few hardy individuals worked their claims on a part-time basis.

In 1977 interest and activity resumed with the increase in the price of gold. Today the area is swarming with activity; although only one dredge is presently working in the Dawson Mining District (at Clear Creek), many operators have introduced the largest earth moving equipment available, and for five months a year the area is alive with small and medium-sized operations re-working or re-examining the area.

1.5 PREVIOUS WORK

The area is covered by placer leases; however, no available information was found to indicate that this area had ever been staked for its lode potential. Regardless of this, as is the case throughout the Klondike, the hillsides are dotted with small shafts and workings that indicate at one time there was interest in the area.

In 1983, an independent aerial photogrametric project was carried out by Mr. William Dawson to trace geologic units and to identify source areas for gold mineralization in the Klondike placer gold camp. This survey identified the existence of a geologic, probably stratiform, unit believed to be the principal source area for placer gold in Bonanza Creek. An initial VLF-EM geophysical survey and a cursory geochemical survey outlined a coincident VLF-EM conductor and anomalous gold overlying some of the photogrametric linear.

In May 1984, Questor Surveys Limited of Mississauga, Ontario was contracted to fly an **INPUT** electromagnetic and magnetic survey over the northern portion of the Klondike. This survey outlined a number of anomalous areas which were to be followed up during the 1984 field season. On the ground presently held by Standard Gold Mines a magnetometer survey was carried out across the Klondike valley at Quigley Gulche as part of the follow-up to the **INPUT** electromagnetic and magnetic survey.

During the 1985 field season the **MOON Claims** were examined and geologically mapped, geochemically sampled, and surveyed using VLF-EM unit as part of an on going programme to determine the economic potential of the Klondike.

2.0 GEOLOGY

2.1 GENERAL GEOLOGY

Bedrock exposures amount to less than one per cent of the area and are generally confined to gulches, recent landslide areas, and road cuts. When exposed, the bedrock is always deeply weathered. The claims are underlain by metamorphic rocks of unknown age, believed to be late Precambrian. These are referred to as the Klondike Schists. This series of metamorphics are locally intruded at numerous points by several types of intrusives. A massive coarse-grained grayish granite, similar to coast granites, cuts the schist to the west of the claim block, and serpentines, derived in part from peridotites, crop out at several points on the crest of the ridge separating Hunker Creek from the Klondike; also, numerous small intrusions of quartz porphyry, rhyolite, and andesite are dotted irregularly throughout the district.

The Klondike Schists were considered as the most important group of rocks in the district, as they constitute the country rock along the productive portions of all the richer creeks and were initially thought to be genetically related to the occurrence of gold. The rocks of this series are mainly light-coloured or greenish micaceous schists; the principal minerals present being quartz, orthoclase, some plagioclase, sericite, and fine-grained chlorite. The schists often occur in alternating white and green bands, the colour of the banding entirely dependent on the predominance of either sericite or chlorite. Ferro-magnesian minerals are almost entirely absent. The rocks are greatly crushed and altered, and in places they are almost entirely recrystallized. Narrow quartz veins, lenses, and blows are ubiquitous within the schists. McConnell (1905) reports that thin-section examination indicates that the schists were derived from quartz and granite porphyries.

The Klondike Schists are cut repeatedly by small faults with indicated displacements ranging from a few centimetres to several metres. Because of the depth of weathering and the resulting decomposition of the bedrock, faults are seldom conspicuous except in areas where bedrock is exposed by mining operations. Figure 3 is a generalized geologic map of the Klondike showing the approximate distribution of the Klondike Schist.

2.2 ECONOMIC GEOLOGY

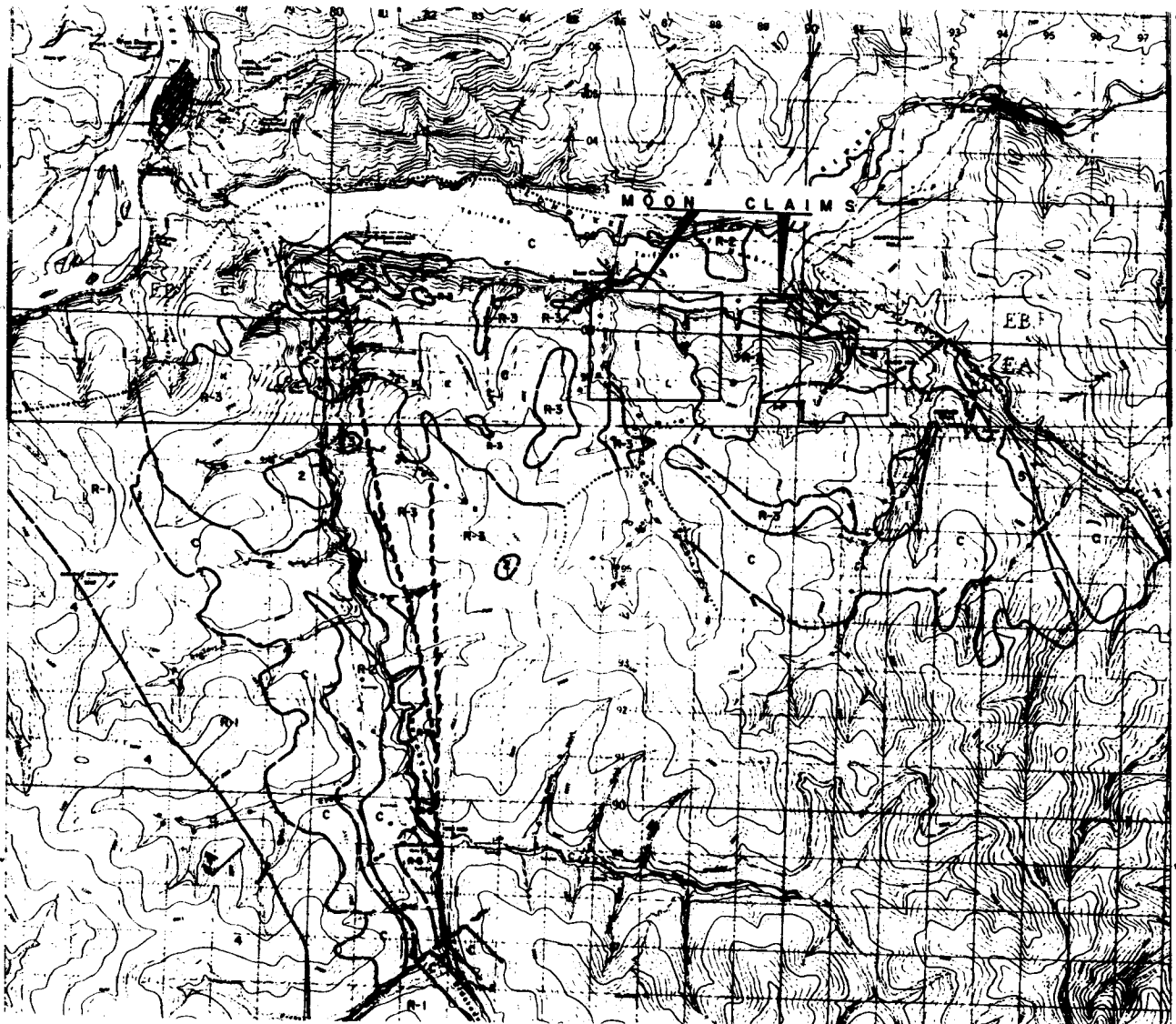
With few exceptions, economic geology of the area has always been focused on the placer deposits. Since production began in 1896, the Klondike district southeast of Dawson City has been the source of more than half the placer gold produced in Western Canada and amounted to over 11 million ounces which at today's price represents approximately five billion Canadian dollars.

There is little doubt that most of the Klondike gold is detrital in origin. However, the source of the placer gold has long been debated, and for nearly eighty years the only source considered has been the multitude of narrow and supposedly auriferous quartz veins within the Klondike Schist. Further, because of the extensive cover of gold-bearing White Channel gravels that blanket the area from the Yukon River to King Solomon Dome, the source of most of the gold has been thought to be centred near King Solomon Dome. Although the quartz veins seem to be the logical source for the gold, and in fact some veins contain spectacular amounts of gold, a recent sampling of over 1200 previously unsampled quartz veins (sampled in 1983 by the Dept. of Indian and Northern Affairs) failed to detect more than trace amounts of gold.

The earliest reported study on the lode deposits was by Cairnes (1911) in which he briefly described the development work on some of the more promising quartz veins in the district. One property near the head waters of Victory Gulch, a tributary of Bonanza Creek, has long been considered the source of the gold in the gulch and along part of Bonanza Creek. The principal vein with its associated surrounding mineralized zone, varies in thickness from 1 to 3 metres (3 to 10 feet) and is traceable along strike for 120 metres (400 feet) but may extend another 200 metres (600 feet). Cairnes failed to indicate the grade of this deposit, but he suggested that the gold content is in excess of 0.25 ounces per ton. Reserves in this vein indicate approximately 1500 tons per metre containing about 400 ounces per metre. McConnell (1905) reported that ten 500 foot wide claims along the gulch and Bonanza Creek produced over 200,000 ounces: the inference is that all the gold recovered in the placers could not have come solely from this vein.

Very little work has been done regarding the lode potential of the area since the original work done by Cairnes. Gleeson's report (1970) gives useful information concerning possible geochemical exploration techniques; and contains spectrographic analyses of gold from a number of the creeks. Such information is useful for identifying pathfinder elements. All stream samples reported the presence of Ag, Cu, Hg, Ti, Mg, Al, and Fe, and some contain traces of Pb, As, Sb, V, Ba, and Sn.

The origin of the gold in the Klondike placers has long been debated because few sizeable, rich, primary gold-bearing deposits have ever been found in the district. McConnell originally considered that the gold came from the quartz deposits in the district. While this is partially true, this source cannot account for more than a small fraction of the known gold. In addition, the volume of quartz in the White Channel gravels as estimated by Boyle (1979) should exceed 6×10^9 tons, but this amount of material could not possibly have come from the myriad of narrow quartz veins impregnating the Klondike Schist. From the character of the gold and its varying fineness within a given drainage it is apparent that the source is local. In addition to the chemically precipitated gold, the most important source for gold is believed to be in pyrite and pyritiferous graphitic schist layers or beds within the Klondike Series.



LEGEND:

- LATE CRETACEOUS TO EARLY TERTIARY
 - ANDESITE
 - QUARTZ FELDSPAR RHYOLITE PORPHYRY
- TRIMMIC OR OLDER
 - GRANODIORITE
 - FELDSPAR - QUARTZ SCHIST
 - SERPENTINITE
 - RESISTIVE UNIT ONE: Muscovite - Quartz - Feldspar Schist; Quartz - Chlorite Schist.
 - CONDUCTIVE UNIT: Graphite - Chlorite - Sericite Schist; Graphite Schist; Muscovite - Quartz - Feldspar Schist; Quartzite.
 - RESISTIVE UNIT TWO: Quartz - Chlorite Schist; Sericite - Quartz Schist; Quartz - Feldspar Porphyry, Feldspar - Quartz Schist.
 - RESISTIVE UNIT THREE: Muscovite - Quartz - Feldspar Schist; Quartz - Chlorite Schist.
- FAULT
- CONTACT - INFERRED FROM AIRBORNE CONDUCTIVITY AND GAS SURVEY



GALLANT GOLD MINES LTD.

DAWSON AREA

GENERAL GEOLOGY

1:50,000

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2.3 PROPERTY GEOLOGY

Geological mapping was carried out over the **MOON Claims** during the 1985 field season. Much of this mapping was done concurrently with soil sampling to make use of rock chips which were often encountered during sampling. This data, supplemented by geophysical information (Questor survey) and government geology maps (Debicki, 1984) was used to compile a 1:50,000 scale geology map of the property (Figure 4).

The majority of rocks underlying the claim group belong to the Klondike schists. These are quartzo-feldspathic schists containing varying amounts of chlorite, muscovite and sericite. Muscovite schist is the most common variety found, followed by chlorite schist, and sericite schist. The various schist types grade into one another, and contacts are often poorly defined. These rocks display a high degree of schistosity, and commonly contain porphyroblasts of quartz and/or feldspar. In the chlorite schist quartz porphyroblasts make up to 30% of the total rock. Graphite rich beds also occur within the Klondike schists. These stand out where visible in outcrop because of the contrasting black color within the light greens and greys of the surrounding schists. Graphitic beds are fairly continuous and are useful as marker horizons when following stratigraphy, especially along the east side of the property. Graphite is closely associated with chlorite and sericite in graphitic schists, but is also found with marble to the west of Bonanza Creek and in greenstones along the Klondike Valley. Bedding orientations indicate a general north-south strike with dips of 30° to 40° west. Contorted pods and lenses of quartz and quartz-calcite are common throughout the Klondike schists. These are plastically deformed to a high degree, and are generally aligned parallel to foliation. A later set of fracture filling quartz forms narrow stringers, up to 1 cm in width, which both crosscuts and parallels the foliation. The total amount of quartz in a given area may reach up to 50% of total rock, but averages approximately 20%.

Younger rhyolitic intrusives and Late Tertiary andesitic dykes and flows outcrop in several places along Bonanza and Hunker Creeks but were not noted on the Claim Block. These younger volcanic rocks are closely associated with clastic sediments which together comprise the Carmacks Group (Eocene) as mapped by H.S. Bostock. Age Dating by the Department of Indian and Northern Affairs - Geological Services Division suggests that the age of the rhyolitic rocks are approximately 50 million B.P.

2.4 STRUCTURE

Collected field data suggests that at least two events of folding has occurred, one around a northwest-southeast trending fold axis, followed by a second around an east-west trending fold axis. Evidence from other areas in the region suggests that four deformational events have affected the area, ranging from those

related to regional metamorphism, to more localized, lower grade, minor folds.

Faulting along graphitic schists is apparent along Bonanza Creek, and along Hunker Creek to the Klondike River valley. Slickensides were found within outcrops at the mouth of Boulder Creek and on Cheechako Hill, suggesting that normal faulting to some degree has occurred within this bed. More outstanding is the tectonic melange found along some of the benches of Hunker Creek, which suggests that a higher degree of faulting has occurred parallel to the creek valley. Serpentinite float, and altered ultramafics are found along portions of the suspected fault zone. Much of the bedrock along the zone displays a high degree of clay alteration suggesting that a variety of solutions has permeated along the fault zone at different times. In other areas, abundant topographic linears suggest that small scale steep faults may be common.

2.5 ALTERATION AND METAMORPHISM

The possibility of hydrothermally altered zones on the property became evident when heavy mineral concentrate samples collected in 1984 were reanalysed for arsenic in early 1985 (see Figure 3). Source areas for arsenic were especially apparent on the Hunker Creek side of the property. Bedrock exposures on bench placer operations along Hunker Creek further supported the hydrothermal alteration possibility. On Nugget Hill secondary cementation of white channel gravels by an iron rich solution was found overlaying pyritiferous graphitic schists. Highly pervasively clay altered bedrock was found on Paradise, Preido and Dago Hills in trenches which reached upto 15 metres depth. Soil samples and rock chip samples from these areas commonly show high arsenic, mercury or antimony values.

The Klondike schists are low grade metamorphic rocks of the Greenschist Facies. Metamorphism likely resulted from regional burial in the upper mesozone to lower epizone, resulting in moderate pressures, and temperatures of approximately 500°C. Those rocks which were adjacent to the quartz-feldspar schist to the southwest of the property were found to contain secondary biotite and almandine garnets, which are indicative of medium grade metamorphism. This appears to be the result of contact metamorphism with the quartz-feldspar body which would have intruded as a magma producing a higher temperature aureole within adjacent rocks. This aureole grades for 1/2 to 1 kilometre eastward into the Klondike schists.

3.0 GEOPHYSICS

3.1 AIRBORNE GEOPHYSICS

On May 8, 1984 Mark Management Limited of Vancouver, British Columbia commissioned a fixed-wing **INPUT** electromagnetic and magnetic survey over selected areas in the Klondike which included the area underlain by the **MOON 1 to 55 Mineral Claims**.

The electromagnetic system utilized for the survey was the **QUESTOR/BARRINGER MK VI INPUT** system with receiver and transmitter incorporated within a modified **SH-7 SHORT SKYVAN** (Canadian Registration C-FQSL).

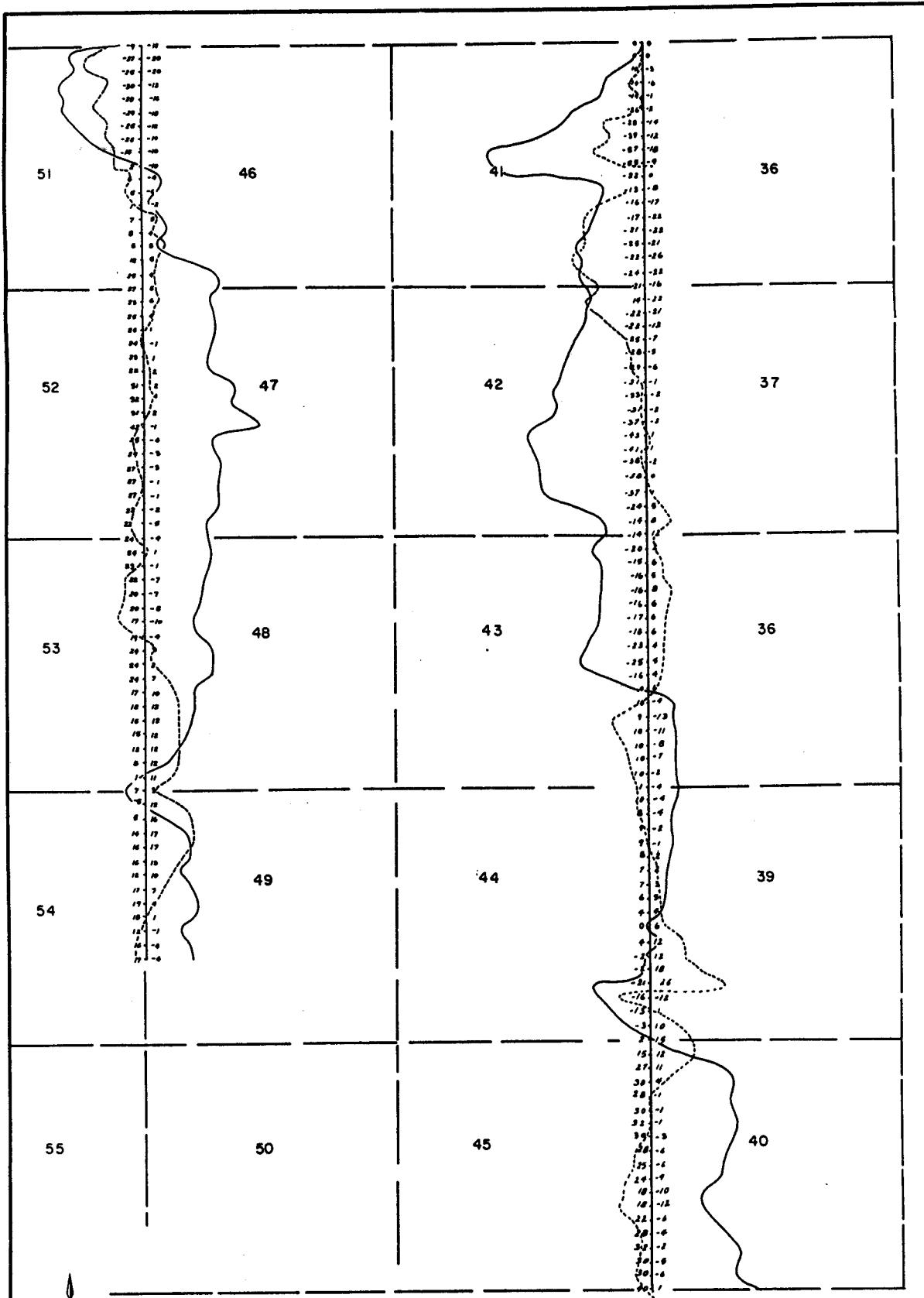
The same aircraft contained a **GEOMETRIC G-803** Proton Magnetometer with its sensor mounted on the tip of a nose boom which also supported the **INPUT** transmitter cable loop. The magnetometer and **INPUT** results are sampled on a time share basis so that the high intensity electromagnetic field produced by the **INPUT** transmitter would not interfere with the magnetometer readings.

The results of this survey have been detailed in a report by Questor Surveys Limited (August 1984). It is sufficient to state that a number of anomalous zones have been outlined some of which appear to correspond to linears outlined in the original aerial photogrametric survey. The corresponding airphoto linears and electromagnetic anomalies appear to be caused by a slightly resistant beds containing silica and pyrite within a graphitic schist which also appears to be the source unit for gold in the placer deposits.

3.2 GROUND VLF-EM 16 SURVEY

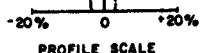
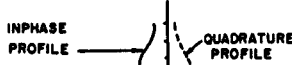
3.2.1 INSTRUMENT AND SURVEY TECHNIQUES

A Geonics EM-16 unit was used to carry out VLF-EM surveys on the west side of the property. This area was selected because of several multi-channel anomalies detected by the airborne survey. Using the submarine transmitting station in Seattle, Washington (NLK, 24.8 kHz), readings were taken at 25-metre intervals along flagged claim lines which are running oblique to the direction of the station. At each station readings were taken in an easterly direction so that west dips were indicated as negative readings. The total ground VLF-EM 16 survey covered approximately 4.5 line kilometres, and 159 individual readings were recorded.



STATION NLK
24.8 kHz. at 138°

LEGEND



PROFILE SCALE
INSTRUMENT: GEONICS EM 16

GALLANT GOLD MINES LIMITED	
MOON CLAIMS	
DAWSON M.D. Y.T.	NTS 115-0-14
VLF-EM SURVEY (PROFILES)	
0 100 200 300	
DATE: FEB. 1986	FIGURE 4
BY: RAG	

3.2.2 PRESENTATION AND DISCUSSION OF RESULTS

Results of the survey are shown as profile plots and is presented on Figure 4. Several conductors were recorded; however, no geological explanation could be found to explain these conductors. Geological mapping in other areas suggests that graphitic schist bands are the likely the source for these conductors. Further work will be required to delineate conductive zones and correlate them with the bedrock geology.

4.0 GEOCHEMISTRY

4.1 SOIL SAMPLING

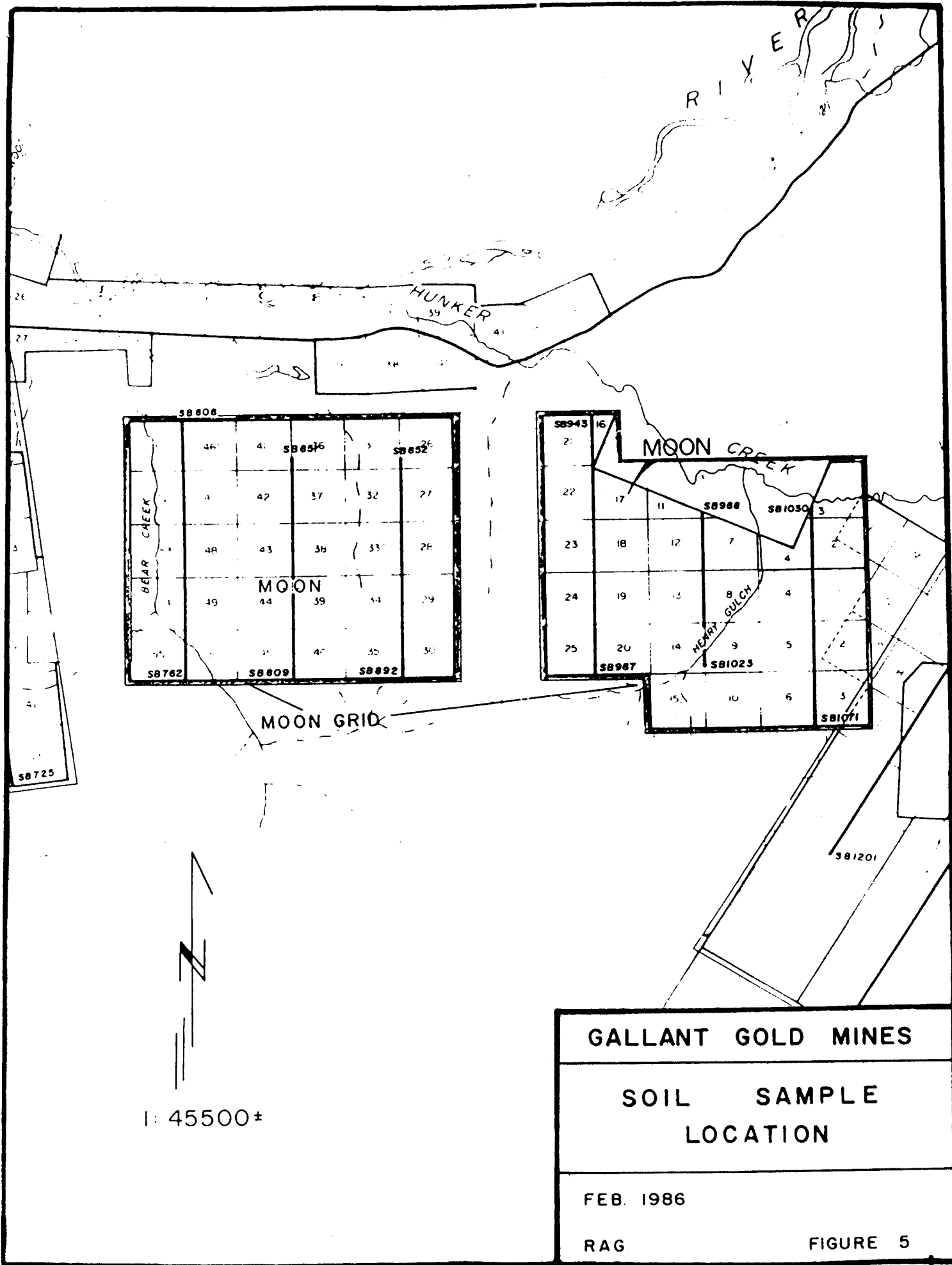
4.2.1 SAMPLING, SAMPLE PREPARATION, AND ANALYTICAL PROCEDURES

Soil sampling was carried out along each claim line used to stake the property. Samples were taken at spacings of 50 metres. All samples were placed in numbered Kraft envelopes and sample locations were marked with colored plastic flagging tape bearing the corresponding number. Samples were shipped to Chemex Labs Ltd. in North Vancouver for analysis. Approximately 310 'B' horizon soil samples were taken.

In the laboratory, samples were oven-dried and sieved to either minus 10 or minus 80 mesh. The coarse fraction was then discarded and the fine fraction analysed for gold by atomic absorption. Analysis for 30 other elements was obtained using the Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES) analytical technique.

4.2.2 TREATMENT, PRESENTATION, AND DISCUSSION OF RESULTS

Soil line and grid locations with the corresponding sample numbers are shown on Figure 5. Results of the chemical analysis for Ag, Au, Ba, Cu, Fe, Pb, and Zn are presented on Figures 6, 7, and 8. In order to interpret results, a statistical study was done to separate anomalous from background values for seven elements of greatest interest. Using the background population, threshold values were determined as the mean plus two standard deviations ($\bar{x} + 2s$) so that all values higher are considered anomalous. The mean plus three standard deviations ($\bar{x} + 3s$) is considered highly anomalous. Threshold and highly anomalous values for seven elements is given in Table II. Sample results and symbols indicating the threshold values for each element are also presented on Figures 6 to 8.



MOON GRID

1: 45500±

GALLANT GOLD MINES	
SOIL SAMPLE LOCATION	
FEB. 1986	
RAG	FIGURE 5

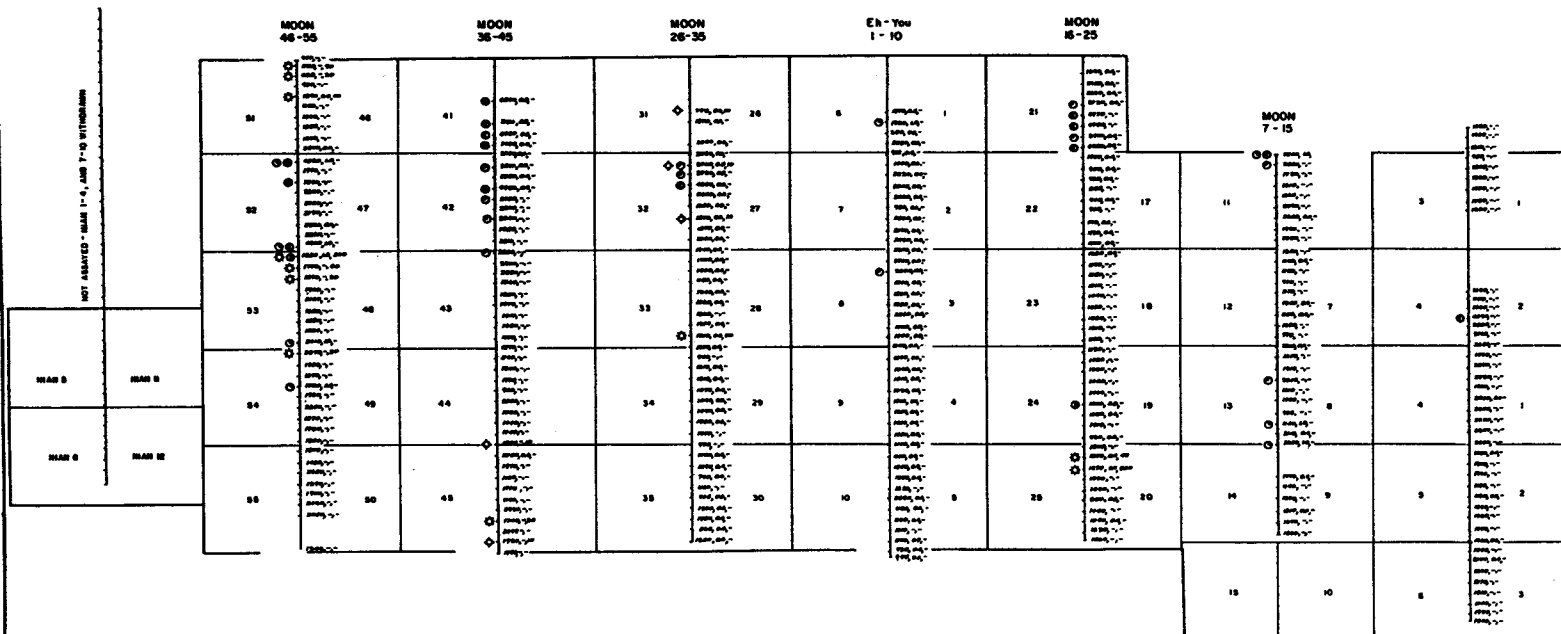
Table II

Mean, Threshold, and Highly Anomalous Element Values in Soil Samples

Element	Mean (X)	Threshold X+2s)	Anomalous (X+3s)
Ag	0.3	0.94	1.24ppm
Au	6	9.8	12.2 ppm
Ba	1500	3293	4113 ppm
Cu	19	48	61 ppm
Fe	2.54	4.32	5.19 %
Pb	21	38	48 ppm
Zn	69	131	161 ppm

The MOON Claims are underlain numerous anomalies for various elements. The best concentration is in the northwest portion of the claim block. The best Au values were in this same area as well as in several areas in the south central and central portion of the Claims. In general, a good correlation exists between anomalous Au values and anomalous Cu Fe, and Ag. Commonly, adjacent to areas of anomalous Au are anomalous values of Zn and Ba suggesting that these may be good indicator elements.

The most outstanding anomalous feature is a multi-element zone lying between claim's 46 to 48 and 51 to 53 in the northwest portion of the claim block. Within this zone, moderate Au values are associated with strong Ba, Cu, Fe, Zn, and moderate Pb values.



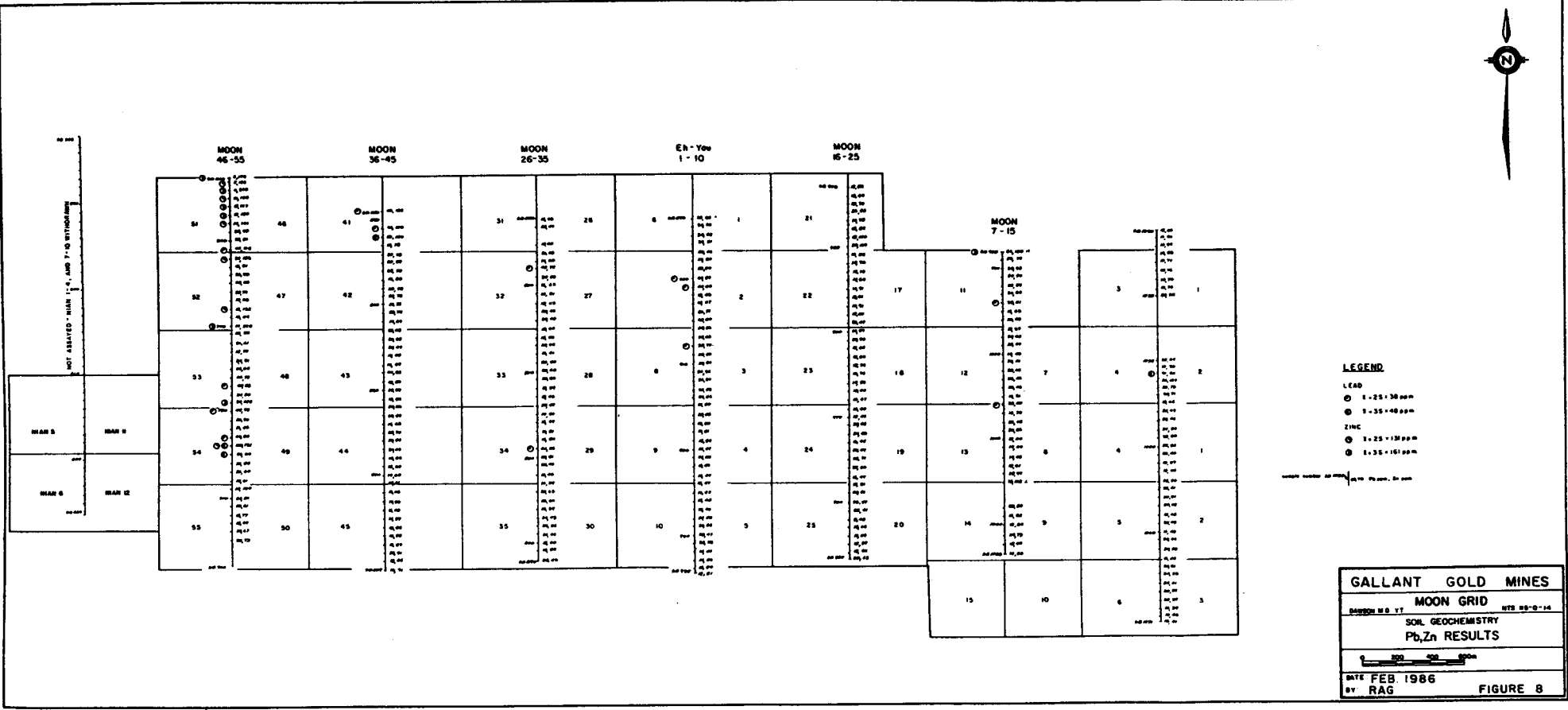
LEGEND

- BARIUM
 - 1-25 + 3293 ppm
 - 1-25 + 4113
- SILVER
 - 1-25 + 10 24 ppm
 - 1-25 + 12 24 ppm
- GOLD
 - 1-25 + 0 800 g
 - 1-25 + 12 2 ppm

1/200000 10% Scale, A-100

NOTE: A DASH INDICATES VALUE BELOW INSTRUMENT DETECTION LIMITS

GALLANT GOLD MINES	
MOON GRID	MTR 88-0-12
SOIL GEOCHEMISTRY	
Ba, Au, Ag, RESULTS	
DATE: FEB 1986	FIGURE 6
BY: RAG	



5.0 CONCLUSIONS

The MOON 1 to 55 Mineral Claims are situated along the south side of the Klondike River, possibly the second most productive placer stream in the Klondike, in an area which appears to represent a possible source area for the gold in the River. The property is an interesting prospect with a potential for hosting a deposit of considerable importance. The results of the photogrametric survey identify a linear feature which represents a slight topographic high. It is possible that this linear could represent the surface expression of what is believed to be a silica rich, pyritiferous bed traceable for several kilometres and suspected of being a significant gold source.

Geochemical sampling on the claims has outlined anomalous areas adjacent to this linear which further suggests that this may be the source of the gold in the Klondike.

Since the present model suggests gold mineralization is associated with quartz-rich, pyritiferous, hydrothermally altered schists, it should be possible to trace the occurrence with detailed geological mapping aided by detail geochemical sampling and VLF-EM surveying. Therefore, detailed geologic mapping, using VLF-EM as a mapping tool, and geochemical sampling should be considered the primary exploration tool used in the first phase of exploration.

6.0 RECOMMENDATIONS

In view of the present price of gold, modern mining methods, and improved exploration techniques, it is recommended that a systematic exploration program be carried out to investigate the property's potential for stratiform mineralization.

Considering the stratigraphic location of these claims along the photogrammetric linear, additional work is warranted in a two-stage program. This work should entail geologic mapping, geochemical sampling, an electromagnetic survey, prospecting, trenching, drilling and systematic sampling of all veins and showings to assess the potential of this prospect. Successive work phases should be undertaken only if results of the previous phase are encouraging.

PHASE I

1. Geological Mapping

- a) Detailed geological mapping and prospecting of the entire property for the purpose of identifying geologic units and structures and to locate all photogrammetric linears. This programme should be completed at a scale of 1:5000.

2. Geophysical Programme

- a) Detailed VLF-EM survey across all INPUT anomalies and airphoto linears. The detailed VLF-EM survey data would also be used as a supplement to the geologic mapping. Its principal use would be for tracing graphitic units to aid in structural determinations and in selecting possible hydrothermal fluid pathways within structural zones.

3. Geochemical Sampling Programme

- a) Detailed geochemical soil sampling around present anomalous areas.
- c) Heavy mineral concentrate sampling along all streams that drain the claims.

4. Trenching Programme

- a) Areas of high geochemical response or areas of where structural information is required should be selectively trenched.

Estimated cost of Phase I including supervision \$40,000.00.

PHASE II**1. Trenching**

- a) Trenching of all important veins, showings and geophysical conductors that are overlain by thin overburden.

2. Diamond Drilling

- a) Preliminary diamond drilling of all important geophysical and geochemical anomalies or surface showings.

ESTIMATED COST OF PHASE II - \$100,000.00

Respectfully submitted,

ARCHEAN ENGINEERING LIMITED

R. A.

GONZALEZ

R.A. Gonzalez, **REGISTERED ENGINEER A.C., P.Eng.**

7.0 REFERENCES

- Bostock, H.S., 1957; Yukon Territory-Selected Field Reports of the Geological Survey of Canada, 1893 to 1937: Geol. Surv. of Canada, Memoir 284.
- Boyle, R.W., 1979; The Geochemistry of Gold and its Deposits: Geol. Surv. of Canada, Bulletin 280, p. 350-357.
- Cairnes, D.D., 1912; Quartz Mining in the Klondike District: Geol. Surv. of Canada, Sum. Rept. for 1911, pp. 4, 17-40: Also Geol. Surv. of Canada, Memoir 284, p. 343-351.
- Debicki, R.L., 1984; Bedrock Geology and Mineralization of the Klondike Area (West), 115 O/14, 15 and 116 B/2, 3. Exploration and Geological Sciences Division, Yukon; Indian and Northern Affairs Canada, Open File 1:50,000 Map.
- DeCarle, R.J., 1984; Airborne Electromagnetic Survey, Mark Management Limited, Dawson Area, Yukon Territory: File No. 26023, Commissioned Report.
- Defresne, M., Morison, S.R., 1985; Sedimentology and Alteration of White Channel Gravel in the Klondike - Implications for Exploration; Presentation given at Cordilleran Geology and Exploration Roundup in Vancouver, British Columbia.
- Desborough, George A., 1970; Silver Depletion Indicated by Microanalysis of Gold from Placer Occurrences, Western United States: Econ. Geol., v. 65, no. 3, p. 304-311.
- Gleeson, C.F., 1970; Heavy Mineral Studies in the Klondike Area, Yukon Territory: Geol. Surv. of Canada, Bull. 173, 63 pp.
- Grunenberg, P., Troup, A.G., 1985; Geological, Geochemical and Geophysical Report on the Dawson Property, 42pp.
- McConnell, R.G., 1905; Report on the Klondike Gold Fields: Geol. Surv. of Canada, Annu. Rep., pt. B, v.14, p. 1-71.
- Tuck, R., 1968; Origin of the Bedrock Values of Placer Deposits: Econ. Geol., v. 63, no. 2, p. 191-193.
- Winkler, H.G.F., 1979; Petrogenesis of Metamorphic Rocks, Fifth Edition, p74-80.

8.0 CERTIFICATE

I, R. A. Gonzalez, do hereby certify that:

1. I am a geologist and reside at 2784 Lawson Ave., West Vancouver, British Columbia.
2. I am a graduate of The University of New Mexico, U.S.A.; with a B.Sc. in geology (1965) and a M.Sc. in geology (1968).
3. I have practiced my profession since 1965 in Canada and abroad as indicated on the following page.
4. I am a Fellow in the Geological Association of Canada, Registration number 4523.
5. I am a registered member of the Association of Professional Engineers of the Province of Manitoba.
6. I have based this report on a property examination done in October 1983 and on my continuing involvement in the Dawson Project since its inception in 1983; on information obtained from the Geological Survey of Canada; and engineering reports and other support documents provided by Archean Engineering Limited.
7. I have no interest, nor do I expect to receive any interest, either directly or indirectly in the securities or properties of **GALLANT GOLD MINES LTD.**
8. I have no past or present, direct or indirect interest in the **MOON 1 to 55 Mineral Claims** or in any other property within the Dawson Mining Division.
9. This report may be used by **GALLANT GOLD MINES LTD.** or their agents for a Statement of Material Facts or Shareholders' newsletter, etc. either in whole or in part.

Dated at Vancouver, British Columbia, this 4th day
of February, 1986;



R. A. Gonzalez
R. A. Gonzalez, M.Sc., F.G.A.C., P. Eng.